A Comparative Study on
Risk and Return of Selected Commercial Banks

(with reference to Himalayan Bank, Nepal Investment Bank and Nepal Credit & Commerce Bank)

A THESIS

Submitted by:

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VIVA VOCE SHEET

We have conducted the viva voce examination of the thesis presented by

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and found the thesis to be the original work of the student and written according to the prescribed format. We recommend the thesis to be accepted as partial fulfillment of the requirement for Master Degree of Business Studies (MBS).

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RECOMMENDATION

This is to certify that the thesis submitted by:

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A Comparative Study on Risk and Return of Selected Commercial Banks (with reference to Himalayan Bank, Nepal Investment Bank and Nepal Credit & Commerce Bank)

has been prepared as approved by this department in the prescribed format of the Faculty of Management. This thesis is forwarded for examination.

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Date: _____

DECLARATION

I hereby declare that the work reported in this thesis entitled "**A Comparative Study on Risk and Return of Selected Commercial Banks (with reference to Himalayan Bank, Nepal Investment Bank and Nepal Credit & Commerce Bank)"** submitted to Research Department of Kabhre Multiple Campus, Banepa, Faculty of Management, Tribhuvan University, is my original work done is the form of partial fulfillment of the requirement for the degree of Masters of Business Studies under the supervision of **Sundar Shrestha** and **Achutam Thapa,** Lecturers of Kabhre Multiple Campus, T.U.

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Date:……

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Table of Contents

List of Tables

List of Figures

ABBREVIATIONS

ABBS	=	Any Branch Banking Service
ATM	=	Automatic Teller Machine
BOKL	=	Bank of Kathmandu Limited
CV	=	Coefficient of Variation
CAPM	=	Capital Assets Pricing Model
Co.	=	Company
COV	=	Covariance
CPI	=	Consumer Price Index
DPS	=	Dividend per Share
EBL	=	Everest Bank Limited
EBL	=	Everest Bank Limited
EPS	=	Earning per Share
etc.	=	et cetera
Fig.	=	Figure
FY	=	Fiscal Year
GDP	=	Gross Domestic Product
HBL	=	Himalayan Bank Limited
HPR	=	Holding Period Return
i.e.	=	That is
KBL	=	Kumari Bank Limited
Ltd.	=	Limited
MPS	=	Market Price per Share
NABIL	=	Nepal Arab Bank Limited
NB Bank	=	Nepal Bangladesh Bank
NBBL	=	Nepal Bangladesh Bank Limited
NBL	=	Nepal Bank Limited
NCC	=	Nepal Credit and Commerce Bank Limited
NEPSE	=	Nepal Stock Exchange
NIBL	=	Nepal Investment Bank Limited
NRB	=	Nepal Rastra Bank
NRs.	=	Nepalese Rupees

P/E	=	Price Earning
SBI Nepal	=	State Bank of India Nepal
SCB	=	Standard Chartered Bank
SCBNL	=	Standard Chartered Bank Nepal ltd
SCT	=	Smart Choice Technology
SD	=	Standard Deviation
SEBON	=	Security Board of Nepal
SML	=	Security Market Line
SR	=	Systematic Risk
T.U.	=	Tribhuvan University
USR	=	Unsystematic Risk
viz.	=	namely

CHAPTER - I
INTRODUCTION

This chapter is highlighted the background, the concept of risk and return on the common stock of selected commercial banks with reference to HBL, NIBL, and NCC, statement of problem, aims, limitations and significance of the study.

1.1 Background of Study

Investment is spending or setting aside money for future financial gain. For an individual, investment might include the purchase of financial assets, such as stocks, bonds, mutual funds, or life insurance. Investment can also include the purchase of durable goods, such as housing or a car. For an economist, investment refers to the increase in real capital in an economy.

Investment in its simplest form means employing money to generate more money in future. It is the sacrifice of current rupees for future rupees. The sacrifice takes place in the present and is certain. But the reward comes later and is an uncertain. Return is the primary motive of investment, but it always entails some degree of risk. Buying common stocks, bonds, deposited money into bank account, buying a piece of land, gold or silver are some example of investment. All these examples involve sacrifice of current rupees in expectation of future return. Hence, they are investment. The main objective of investment is to maximize the wealth of an investor.

Investors sacrifice their cash reserves in securities in anticipation of higher future benefits than in risk free sector. An investor seeking common stock investment usually pays the price for stock based on his estimation about future dividends and growth in price of stock. Though in case of imperfect capital market, so many financial and non-financial factors plays a great role in price determination.

Investment can be made on real assets or financial asset. Investment on real assets is known as real investment and investment on financial assets is known as financial investment. Real investment means investment on real assets like land buildings, factory etc. Financial investment means investment on financial assets like share, debentures, warrants and convertibles etc.

Investors invest their fund on the securities of certain companies for the long run future returns. The return is defined as the reward for bearing the risk. Return is the most important outcome from an investment. It measures the investor's rate of wealth accumulation i.e. increase or decrease per period. Risk is defined as the occurrence of unfavorable outcomes, which is ever harmful for the business. Risk is inseparable from return. It constantly creates uncertainty. Some of the factors that create investment uncertainty such as interest rate risk, purchasing power risk, bull-bear market risk, management risk and so on.

Investors have varying perceptions towards risk and enterprising ability. Investors will want their investment to yield favorable return and they invest in those opportunities, which have greater expected return. Investors sacrifice their current cash in securities in anticipation of higher future benefits than in risk free sectors. An investor seeking common stock investment usually pays the price for stock based on his estimation about future dividends and growth in stock price. Although in case of imperfect capital market, so many financial and non-financial factors plays a great role in price determination.

The term risk and return is closely associated with investment. Investment simply means sacrificing current funds for future returns, bearing certain risk. The investment may be on fixed assets like land, building or precious metals and collectibles or something else. But here as a student of finance, I have focused the term investment as sacrificing current fund on financial assets like shares, debenture, warrants, convertibles etc for the long term return.

Risks are the facts of life which are a product of uncertainty and its magnitude depends upon the degree of variability in uncertain cash flows. Risk in fact is the indication of chance of losing investment values. Different people interpret risk in different ways. To some, it is simply a lack of definite outcome, which can be any unknown event and which may be unfavorable. It is a chance of happening some unfavorable event or danger of losing some material value.

Return is the income received in investment. People invest their belongings with an expectation of getting some reward for leaving its liquidity; they only invest in those opportunities where they can get higher return. Hence, investor wants favorable return yield by its stock, and go for those, which yield more.

Assessing risk and incorporating the same in the final decision is an integral part of financial analysis. The objectives in decision making are not to eliminate or valid risk often it may be neither feasible nor necessary to do so. But to properly assets it and determine whether it is worth bearing.

Investor generally does not invest their money in the only on risky asset. The investor should invest their money in portfolio of many assets. It will help to the investor to minimize the risk. Therefore, an investor is concerned with the portfolio risk, which is the sum of the relevant risk of individual assets included in portfolio. The relevant risk of an asset is defined as the portion of its total risk that changes proportionately with market risk. Some stocks are riskier than other and even in years when the overall money into one stock goes down. Therefore, putting all your money into one stock is extremely risky. The single best weapon against risk is diversification.

In general, investors are risk averse. They always seek higher return for more risk as risk premium. So the primary problem in investment is to identify the security, which has low risk and high return. Although, return cannot be increased substantially, risk can be reduced by diversification of funds in different stocks making a portfolio. Well diversification can eliminate the unsystematic risk, which is not explained by general market movement, i.e. systematic risk is associated with change in return on the market as a whole, cannot be avoided by diversification.

A stock reflects the uncertainty about future returns, such that the actual return may be less than expected. The main source of uncertainty is the price at which the stock will be sold. Dividends tend to be much more stable than the stock prices. Which contribute to the immediate return received by the investors, and at the same time reduces the amount of earnings reinvested by the firm, which limits its potential growth. Stock prices can be affected by economic factors such as interest rates, economic growth inflation and the strength of dollar. They can also be affected by microeconomic factors such as specific policies enacted by a particular firm that will affect its future earnings. The risk of a stock can be measured by its price volatility, its beta by the value at risk method.

1.2 Focus of the Study

Risk and return analysis is concerned to identify the sustainable position of financial sector. Risk and return is the basic concept in the corporate finance and it guides the other modern theories and principal as well as it assists in taking various financial and qualitative financial decisions. The relationship between risk and return can be defined by the investors' perception about risk and the demand for compensation. No investor will take any investment position in risky assets unless they are convinced of adequate compensation for the percept risks. In fact, there is positive relation between risk and return.

Risk has been defined as the chance that the actual return deviation from the expected returns and risk is the percept fact of life that is the product of uncertainty and it magnitude depend upon the degree of variability in future's uncertain cash flows. Risk and return is an indication of opportunity of losing investment value. It is insensible to talk about returns without talking about risks because investment decision involves the trade off between risk and return and the trade off between these two variables is positive. There is positive relation between risk and return. Thus an investor, in general, can attain more return through the selection of dominating assets that involves high risks.

Risk in a stock reflects the uncertainty about the future return i.e. actual return may be less than the expected return. The main source of uncertainty about future return is that, the price at which the stock can be affected by economics factors such as interest rates, economic growths, inflation, marketability, financial performance and strength of the dollar. The risk of stock can be measured by the price volatility.

One of the main sectors of financial market is capital market where stocks and bonds are traded. Among all, stock market is seemed to very active market and basically concerned to maximize the wealth of stockholders. It plays vital role in economy. Financial market is the mechanism designed to facilitate the exchange of security by bringing buyer and seller in the trading floor. It allows supplier and demanders of funds to make transaction. Capital market is important intermediary through the networks of funds within the economy can be made active. In general, capital market refers to the market where various long-term securities are issued and traded for the tradeoff between liquidity position risk of their prospective portfolio in the response to availability of information and marketability of securities and its prices. If

the capital market is efficient, the current stock price fully reflects available information but full efficient market is very difficult to meet in the real corporate world. So, investor should learn fully and carefully as possible as about actual investment world. Political, legal, economical, social, and technological factors affect the capital market. All financial institutions are also affected by capital market.

SEBON was established by the government of Nepal on June 7, 1993 as an apex regulator of Securities Markets in Nepal. It has been regulating the market under Securities Act, 2007.

There are thirty commercial banks registered in Nepal Rastra Bank. The list of commercial banks is as follows:

Table 1.1

List of Licensed Commercial Banks in Nepal

S. No.	Name of Banks	Established Date
1	Nepal Bank Limited	15 Nov.1937
2	Rastriya Banijya Bank	23 Jan,1996
3	Agriculture Development Bank Limited	19 Feb,1968
4	NABIL Bank Limited	16 July,1984
5	Nepal Investment Bank Limited	27 Feb,1986
6	Standard Chartered Bank Nepal Limited	30Jan,1987
7	Himalayan Bank Limited	18Jan,1993
8	Nepal SBI Bank Limited	7 July, 1993
9	Nepal Bangladesh Bank Limited	5 June,1993
10	Everest Bank Limited	18 Oct.,1996
11	Nepal Credit and Commerce Bank Limited	14 Oct,1996
12	Bank of Kathmandu	12,March 2005
13	NIC Bank Limited	21 June,1998
14	Lumbini Bank Limited	17 July,1998
15	Machhapuchchhre Bank Limited	3 Dec,2000
16	Development Credit Bank Limited	23 Jan,2001
17	Kumari Bank Limied	3 April,2001
18	Laxmi Bank Limited	3 April , 2002
19	Siddartha Bank Limited	24 Dec,2002
20	Global Bank Limited	2 Jan,2007
21	Citizens Bank Limited	21 June, 2007
22	Prime Commercial Bank Limited	24 Sept,2007
23	Bank of Asia Nepal Limited	12Oct,2007
24	Sunrise Bank Limited	12 Oct,2007
25	Nepal Merchant Bank Limited	26 Nov,1996
26	Kist Bank Limited	7 May,2009
27	Janata Bank Limited	28 Apr,2010
28	Mega Bank Limited	July, 2010
29	Nepal commerz and Trust Bank Nepal Limited	20 Sep,2010
30	Civil Bank limited	15 Dec,2010

Source: www.nrb.org.np

Out of thirty commercial banks, only twenty-four commercial banks are listed on SEBON. The list of listed commercial banks on SEBON is given below:

Table 1.2

Listed Commercial Banks of Nepal

SN	Name of Commercial Bank	Stock Symbol	Listed Shares
1	NABIL Bank Ltd.	NABIL	20,297,694
2	Nepal Investment Bank Ltd.	NIBL	24,090,977
3	Standard Chartered Bank Ltd.	SCB	16,101,680
4	Himalayan Bank Ltd.	HBL	20,000,000
5	Nepal SBI Bank Limited	SBI	18,598,336
6	Nepal Bangladesh Bank Ltd.	NBB	18,603,890
7	Everest Bank Ltd	EBL	10,796,065
8	Bank of Kathmandu	BOK	13,594,807
9	Nepal Industrial And Co. Bank	NICB	13,115,520
10	Machhachapuchhre Bank Ltd	MBL	16,271,965
11	Laxmi Bank Limited	LBL	16,135,205
12	Kumari Bank Ltd	KBL	13,063,489
13	Lumbini Bank Ltd.	LUBL	13,000,000
14	Nepal Credit And Com. Bank	NCCB	13,978,200
15	Siddhartha Bank Limited	SBL	16,517,158
16	NMB Bank Ltd.	NMB	16,516,500
17	Bank of Asia Nepal Limited	BOAN	15,000,000
18	Citizens Bank International Limited	CZBIL	18,934,820
19	KIST Bank Limited	KIST	20,000,000
20	DCBL Bank Ltd.	DCBL	19,209,109
21	Global Bank Limited	GBL	14,962,140
22	Prime Commercial Bank Limited	PCBL	22,457,460
23	Sunrise Bank Limited	SRBL	16,250,000
24	Agricultural Development Bank Ltd	ADBL	30,375,000

Source: Annual Report of SEBON (2009/2010)

But the present study however includes only three listed commercial banks viz. Nepal Investment Bank, Himalayan Bank and Nepal Credit and Commerce Bank as the sample of the study. This study has mainly focused on the risk and return analysis of common stocks investment of the selected listed banks.

1.3 Introduction of Selected Sample Banks

For the collection of funds and investment in the productive field so many financial institutions are established throughout the country as commercial bank, development bank, finance company and cooperative union. Among them 31 commercial banks in the country registered in NRB for the financial activities. Out of them 24 are listed in share market for the trading their shares and for the investment.

1.3.1 Himalayan Bank Limited

Himalayan Bank was established in 1993 in joint venture with Habib Bank Limited of Pakistan. Despite the cut-throat competition in the Nepalese Banking sector, Himalayan Bank has been able to maintain a lead in the primary banking activities- Loans and Deposits. Products such as Premium Savings Account, HBL Proprietary Card and Millionaire Deposit Scheme besides services such as ATMs and Tele-banking were first introduced by HBL. The bank has 50 ATM's and 30 branches located in the various strategic hubs of the country.

All Branches of HBL are integrated into Globus (developed by Temenos), the single Banking software where the Bank has made substantial investments. This has helped the Bank provide services like ABBS, Internet Banking and SMS Banking. Living up to the expectations and aspirations of the Customers and other stakeholders of being innovative, HBL very recently introduced several new products and services. Millionaire Deposit Scheme, Small Business Enterprises Loan, Pre-paid Visa Card, International Travel Quota Credit Card, Consumer Finance through Credit Card and online TOEFL, SAT, IELTS, etc. fee payment facility are some of the products and services. Looking at the number of Nepalese workers abroad and their need for formal money transfer channel; HBL has developed exclusive and proprietary online money transfer software- HimalRemit^{TM}.

Himalayan Bank has access to the worldwide correspondent network of Habib Bank for fund transfer, letter of credit or any banking business anywhere in the word. Habib Bank is the largest and oldest bank in Pakistan having over 1700 domestic and 65 overseas branches covering all continents and over 1800 correspondents worldwide. Besides, Himalayan Bank has correspondent arrangement with 178 internationally renowned banks like Citibank, ABN Amro etc.

Awards and Recognitions received by HBL in the last five years are

- Best Presented Accounts and Corporate Governance Disclosure Award - 2008 awarded by South Asian Federation of Accountants
- Best Presented Accounts Award - 2008 awarded by The Institute of Chartered Accountants of Nepal
- Number 1 Bank of Nepal- 2006 awarded by The Bankers' Almanac, Britain
- Number 1 Bank of Nepal- 2003 awarded by The Bankers' Almanac, Britain
- National Excellence Award- 2003 awarded by Federation of Nepal Chambers of Commerce and Industry

The structure of investors of the HBL is:

Habib Bank Ltd, Pakistan	20%
Institutional Investors	65%
General Public	15%

The authorized capital of HBL is NRs. 3,000,000,000 (NRs. three billion). It's issued and paid-up capital amounted NRs. 1,600,000,000 (NRs. one billion and six hundred million). The shares of HBL were listed in SEBON in 2050/3/21 (BS) for trading.

1.3.2 Nepal Investment Bank Limited

Nepal Investment Bank Ltd. (NIBL), previously Nepal Indosuez Bank Ltd., was established in 1986 as a joint venture between Nepalese and French partners. The French partner (holding 50% of the capital of NIBL) was Credit Agricole Indosuez, a subsidiary of one the largest banking group in the world. With the decision of Credit Agricole Indosuez to divest, a group of companies comprising of bankers, professionals, industrialists and businessmen, had acquired on April 2002 the 50% shareholding of Credit Agricole Indosuez in Nepal Indosuez

Bank Ltd. The name of the bank has been changed to Nepal Investment Bank Ltd. upon approval of bank's Annual General Meeting, Nepal Rastra Bank and Company Registrar's office.

NIBL has the following shareholding structure:

- A group of companies holding 50% of the capital
- Rashtriya Banijya Bank holding 15% of the Capital.
- Rashtriya Beema Sansthan holding 15% of the Capital.
- The remaining 20% being held by the General Public.

NIBL has total 40 branches and 70 ATMs through out the country. NIBL also released an electronic payment gateway, enabling secure VISA, MasterCard and PayPal transactions and e-commerce on the internet for the e-banking customers. American Life Insurance Company, ALICO has also tied up with NIBL to offer its life Insurance Products through NIBL's Bancansurance program.

NIBL has maintained a consistent rating of Nepal [A] from Indian Credit Rating Agency, ICRA, an affiliate of Moody's Investor Group, reflecting NIBL's strong creditworthiness and our position as the first and only bank in Nepal to have a credit rating, which adds extra transparency to its shareholders.

NIBL also entered into an arrangement with China Development Bank CDB to promote project relationships in infrastructure finance in terms of project cooperation, financial consultancy, credit grants and currency swaps. NIBL has new and innovative added features in the e-banking product such as online airline ticket booking and payments, alongside enabled Online and ATM pre/post paid bill payments for Telecom companies including PSTN landline payments throughout Nepal. NIBL also tied up with Nepal Derivatives Exchange allowing the e-banking users to conduct derivative transactions. NIBL released an electronic payment gateway, enabling secure VISA, MasterCard and PayPal transactions and e-commerce on the internet for e-banking customers.

The Bank has started remittance business from USA and UK and also expanded its remittance business team in Saudi market and Malaysia. This has registered strong growth

and success in the first year of operation, making NIBL the largest Nepali Bank remitting money back to Nepal. Bank Albilad has awarded NIBL the Best Remittance Partner Award 2010. The award was given on the basis of NIBL's steady performance level, outstanding support and excellent customer relations.

The Bank added 300 domestic remittance disbursement agents during this period making the total number of remittance disbursement agents to 500 throughout Nepal. NIBL qualified to join the Global Trade Finance Program offered by the International Finance Corporation (IFC), enabling the Bank to conduct international finance arrangements with a wider range of correspondent banks.

The authorized capital of NIBL is NRs. 4,000,000,000 (NRs. four billion). It's issued and paid-up capital amounted NRs. 2,409,097,700 (NRs. two billion four hundred nine million ninety-seven thousand and seven hundred). The Shares of NIBL was listed in SEBON in 2042/8/5 (BS) for trading.

1.3.3 Nepal Credit and Commerce Bank Limited

Nepal Credit & Commerce Bank Ltd. (NCC Bank) formally registered as Nepal - Bank of Ceylon Ltd. (NBOC), commenced its operation on 14th October, 1996 as a Joint Venture with Bank of Ceylon, Sri Lanka. It was the first private sector Bank with the largest authorized capital of NRs 1000 million. The Head Office of the Bank is located at Siddhartha Nagar, Rupandehi, while its Corporate Office is placed at Bagbazar, Kathmandu. The name of the Bank was changed to Nepal Credit & Commerce Bank Ltd., (NCC Bank) on 10th September, 2002, due to transfer of shares and management of the Bank from Bank of Ceylon, an undertaking of Government of Sri Lanka to Nepalese Promoters.

At present, NCC Bank provides banking facilities and services to rural and urban areas of the Kingdom through its 17 branches. The Bank has developed corresponding agency relationship with more than 150 International Banks having worldwide network.

The Bank is using Pumori Plus, the most commonly used software by Nepalese Banks. The Bank offers Any Branch Banking Service (ABBS) in all 17 branches. Telex and SWIFT are other modes of communication for efficient and effective transmission of information. In

order to facilitate the customers with state of art technology, Bank is providing Debit Card facilities under the SCT (Smart Choice Technology) Network jointly in consortium with 40 other member Banks. This facility enables the customers to withdraw cash from any of the 167 ATM Terminals located at different parts of the country and to purchase goods from more than 743 shopping complexes and departmental stores under POS arrangement.

NCC Bank has strategic alliance with ICICI Bank, which facilitates its customers to remit their money to more than 670 locations of India through ICICI Bank branches and their correspondent Banks in India.

NCC customers can affect their money transfer to India either through Speed Transfer Arrangement or through Demand Draft Arrangement. Under Speed Transfer Arrangement, money can be credited on-line to the beneficiary's account at more than 400 branches of ICICI Bank, India. Under Demand Draft Arrangement, the Bank can issue draft payable at more than 670 locations in India. NCC is globally connected through various prominent Banks in Asia, Europe and North America like American Express Bank, Standard Chartered Bank, UBAF etc.

The authorized and issued capital of NCC is NRs. 2,000,000,000 (NRs. two billion). It’s paid-up capital amounted NRs. 1,399,671,500 (NRs. one billion three hundred ninety-nine million six hundred seventy-one thousand and five hundred). The Shares of NCC Bank were listed in SEBON in 2062/10/18 (BS) for trading.

1.4 Statement of the Problem

Capital market in Nepal has grown rapidly after the establishment of the security market named Nepal Stock Exchange (NEPSE) with in the very short period of time. However, the attitudes and knowledge of the most investors have not changed yet. They are influenced by liquidity position rather than information in the financial market. Investors usually lack idea of risk and return because most of the investors appear to be least familiar with the financial market. They can make wrong investment decisions based on the hunches rather than on real financial analysis.

Nepalese investors are investing their funds in the single stock or securities not calculating the return that the stock provide and even they do not have an idea of calculating risk involve

in it. They have low level of knowledge about making portfolio investment to minimize the risk.

Though some investors follow the rational investment procedure and portfolio analysis but they still lack perfect awareness about the risk and return factors. Without getting theoretical knowledge about risk associated with investment, most of the investors are making investment on stocks.

Many investors are not rational towards their investment decision. They don't know how to make rationale investment by assessing the risk percept in the investment and the level of return to compensate the percept risk. In Nepal, most of the financial institution issues only the common stocks and capital market is also dominated by the trading of the stocks.

The study is directed towards the answer of these questions:

1. What is the level of systematic risk and unsystematic risk on common stocks of commercial banks?
2. Does the bank provide appropriate compensation for bearing risk in common stock?
3. Does the price of the stock is analyzed to make appropriate investment decision?
4. Does the investor make return through lower risk in common stock of banks?
5. Does investors' perception on the risk and return is supportive in their investment decision?

1.5 Objective of the Study

The main objective of the study is to analyze the risk, return and other relevant variable on common stock of listed sample commercial banks that helping in making the decision about the investment on securities of the banks.

The major objectives of the study are as follows:

1. To analyze and compare common stocks of selected commercial banks in terms of risk and return.
2. To evaluate optimum portfolio in the investment in shares of sample commercial banks.
3. To evaluate the investors' perception on risk and return of their investment in common stock of commercial banks.
4. To provide suggestions to investors on the basis of study findings.

1.6 Significance of the Study

The study gives information about Nepalese capital market by analyzing risk and return and contributes to increase the analytical power of the investors in capital market. The study is beneficial for all the persons who are directly or indirectly related to the Nepalese capital market.

This research has attempted to analyze the market share of sample commercial banks with reference to their financial indicators and risk in common stock investment. This provides real pictures of sample banks, to both the outstanding and potential investors in order to take proper investment decision. Similarly, this piece of task may work as guide for future research and concerned persons.

The study is maximum significant for exploring and increasing stock investment. It provides little contribution to Nepalese stock market development. This study is not only to fulfill MBS level course of T.U., but also to provide some knowledge about the Nepalese stock market along with providing ideas to minimize the risk on stock investment.

From the viewpoint of investors, the analysis of risk and return is significant on management decisions which influence the shareholder risk and return. Consequently, the risk and return analysis influences the market price of stock, by making it at an appropriate level. Apart from this study is a matter of interest for academicians, students, researchers, teachers and other persons practicing in the field of finance.

1.7 Limitations of the Study

Every research study has its own limitations since the study cannot cover whole part of the given topic. The particular topic gives the wide meaning and covering. The present study has following limitations:

1. There are 23 commercial banks are listed in NEPSE. But the study does not include the entire listed commercial banks.
2. The study is basically concerned with the risk and return of the listed sample commercial banks other aspects of the banks are not taken under consideration.
3. This study incorporates the data from economic years 2004/05 to 2009/10 AD.

1.8 Organization of the Study

This research is organized in five chapters which are listed below:

Chapter I: Introduction

This chapter is introductory and deals with subject matter of the study including general background of the study, statement of the problem, objectives of the study, significance of the study, limitation of the study, and organization of the study.

Chapter II: Review of Literature

This chapter contains the review of available literature related to this study. It is directed towards the review of conceptual framework and review of major related studies. Risk and return, its relationship, determinants, measuring techniques and methods are reviewed from the various available literatures.

Chapter III: Research Methodology

This unit is for the research methodology which is used in the study that includes various tools and techniques for the analysis of data. It consists of research method as library research and field research, sources of data, population and sample, research design, methods of data analysis etc.

Chapter IV: Data Presentation and Analysis

This chapter presents the analysis and presentation of data by using various methods of statistical and financial tools. Tables, figures and pie charts, etc. will be used as per necessity.

Chapter V: Summary, Conclusion and Recommendations

This chapter is for summary of main findings, conclusion, recommendation and suggestions for further improvement.

Bibliography

Appendices

CHAPTER - II
LITERATURE REVIEW

This part includes the Review of previous studies, articles and conceptual framework for the related studies. More analysis is not sufficient to present real framework of the study. So, review of related materials should deal to give the research a clear vision, and knowledge of past study provides foundation to the present day.

2.1 Theoretical and Conceptual Review

Various books dealing with theoretical aspect of risk and return are taken into consideration. Major focus is on the investment of common stock and its impact on individual risk and return.

2.1.1 Investment

An investment is a commitment of money that is expected to generate additional money. Generally, investment means to pay out money to get more but in depth, investment a present commitment for the future benefits. While the commitment takes place with certainty, the future benefits are shrouded in uncertainty. The uncertainty creates risk to investors and they desire to minimize return by minimizing such risk. Therefore, taking decision about proper investment is crucial to the investor and it requires a specific investment decision process, analysis of securities, identification of overpriced, under priced securities, making appropriate investment strategies as well as construction of efficient portfolio.

An investment is a commitment of fund made in expectation of some positive rate of return. If the investment is properly under takes, the return will be comments rate with the risk the investor assumes (Fisher and Jordan, 1994).

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 the present and is certain. The reward comes later, if at all, and the magnitude is generally uncertain (Sharpe & *et.al.,* 2002).

Investment is concerned with the management of an investor's wealth, which are the sum of current income and the present value of all future income. The term investment is conceptualized as income, saving or other collected fund. It covers wide range of activities. This commonly known fact that an investment is possible only when there is adequate saving. Therefore both saving and investment are interrelated. Investment is an exchange of financial claim stocks and bonds etc. investment if the employment of funds with the rim of achieving additional income or growth in value it involves the commitment of resources that have been saved or pot away from current consumption in the hope that some benefit will occur in future. Investment involves long term commitment and waiting for a reward.

2.1.2 Capital market

Capital market is also called security market as well as financial market. Capital market is the mechanism designed to facilitate the exchange the financial assets or securities by bringing buyer and seller of securities together. Precisely speaking, security market allows suppliers and demanders of funds to make transactions.

Financial transactions involve financial assets and financial liabilities. The creation and transfer of such assets and liabilities constitute financial markets (Weston & Copland, 1990). Financial markets comprised of all trades that result in the creation of financial assets and financial liabilities. Those trades are made through organized institution.

Financial markets can be various types and forms classified as different bases capital market and money market, share and debenture market. For our research concern, capital markets the market defined as any body of the individuals, whether incorporated or not, constituted for the purpose of regulating controlling the business of selling or dealing securities. Capital markets are defined as the markets for long-term debt and corporate stocks (Weston & Brigham, 1996).

Intermediate term refers those financial assets having the maturity periods equal to five years and more than five years. Capital market consists of the security market and non security market implies mobilization of the funds through issuance of securities like share, debenture, and other derivative securities. These securities traded in the markets are generally negotiable and hence can be traded in secondary market. Non security market refers to the mobilization

of the non-financial resources. Basically capital market can be divided into two parts viz. Primary capital market and Secondary capital market.

2.1.2.1 Primary Capital Market

Primary markets are markets in which newly issued securities are bought and sold for the first time. If new bank were to issue new common stock to raise the capital, this would be the primary market transaction.

2.1.2.2 Secondary Capital Market

The market in which securities and other financial assets are traded after they have been issued by corporation is called secondary capital market. NEPSE is the example of secondary capital market.

2.1.3 Common Stock

Common stock is a type of security that represents the ownership of a company. It is also known as equity share or ordinary share. Common stock means equity without priority for dividend or in bankruptcy (Ross & *et.al.*, 2009). Common stocks are securities that represent the ultimate ownership and risk position in a corporation (Van Horne & Wachowicz, 2009).

Common stock is a security representing the residual ownership of a corporation. It guarantees only the right to participate the sharing earning of the firm if the firm is profitable (Hampton, 2001).

The study is focused on the common stock investment that's why light is thrown on it. It is sources of long term financing and an ownership security. Common stock certificates are legal documents that evidence ownership or equality in a company that is organized as a corporation, and they are also marketable financial instruments. Common stock is recipient of the residual income of the corporation. Through the right to vote, holders of common stock have legal control of the corporation. An element of high risk is involved with common stock investment due to its low priority of claims at liquidation. When investors buy common stock

they receive certificate of ownership as a proof to their being part of the company. The certificate states the number of shares purchased and their value per share (Bhalla, 1997).

Ordinary shares or common stock are the source of permanent capital since they not have a maturity date. For the capital contributed by shareholders by purchasing ordinary shares, they are entitled for dividends (Pandey, 2002). The amount or rate of dividend is not fixed; it is decided by the company's board of directors.

Common stock holders of a corporation are its residual owners, their claim to income and asset comes after creditors and preference share holders have been paid in full. As a result, a stockholders return on investment is less certain than the return to lender or to preference stock holder. On the other hand, the share of the common stock can be authorized either with or without par value. The par value of the stock is merely a stated figure in the corporate character and is of little economic significance (Van Horne, 1997). A company should not issue stock at a price less than par value because stock holders who bought stock for less than par value would be liable to creditors for the difference between the below pre price they paid and the par value.

In Nepal, as per the provision of Nepal Company Act 2057, common stocks must be issued at par value. The par value must be either Rs. 10 or Rs. 100. Common stock has one important investment characteristics and is important speculative characteristics. Their investment value and average market price tend to increase regularly but persistently over the decreases as their net worth builds through the reinvestment of undistributed earning. However, most of the time common stocks are subject to irrational and excessive price fluctuation in both directions, as most people to speculate or gamble i.e. give way to hope fear and greed.

2.1.4 The Return of Common Stock

The concept of return has different meaning to different investors. Some investors seek near term cash flows and five less value to more distant return. Such an investor might purchase the stock of other from that pays a large cash dividend.

Return is the income received on an investment plus any change in market price, usually expressed as a percentage of the beginning market price of the investment. Holding period

return from an investment is the change in market price plus any cash payments received due to ownership divided by beginning price (Van Horne & Wachowicz, 2009).

Return better known or reward from an investment includes both current income and capital gain or loss that arises by the increase or decrease of the security price. Return is the income received on an investment plus any change in market price. Usually expressed as a percent of beginning price of the investment, the overall rate of return can be decomposed into two parts as capital appreciation and dividend. Capital appreciation is the difference between ending value and beginning value of an investment. Return is defined as the dividend yield plus the gain or loss. The relationship between different levels of return on their relative frequencies is called a probability distribution. We could formulate a probability return over the previous period but we know that history never repeats itself exactly. Hence after analyzing relative frequencies of historical data plus the analysis for the out look for the economy and the outlook for the industry, the outlook for the firm in its industry and other factors.

For investors, return is considered as the main attraction to invest in a risky security as a stock (equity) accepting a varying degree of risk tolerance. The return from holding an investment over some period says a year is simply and cash payments received due to ownership plus the change in market price dividend by the beginning price. Thus the return comes from source, income and price appreciation.

Single period return may be defined as the change in value plus any cash distributions expressed as a percentage of the beginning of period investment value (Thapa & *et.al.*, 2008).

For common stock, we can define, one period (single period) return as:

$$\text{HPR or } R = \frac{P_t - P_{t-1} + D_t}{P_{t-1}}$$

Where,

R = Annual rate of return

P_t = Price of a stock at time t

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

D_t = Cash dividend received at time

Above formula can be used to determine both actual one period return (when based on historical figure) as well as expected one period return (when based on expected dividends and prices). The return in the parenthesis is the number of the above equation represents the capital gain or loss during the period.

The rate of return on an assets or investment for a given period is the annual income received plus any change in market price, usually expressed as percent of the opening market price (Khan & Jain, 2007).

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

Annualized rate or return over several periods can be calculated in two ways. The first one is simply to take the arithmetic average of the annual holding period returns over a given period and the second one, which also takes account the compounding effects of cash receipts over different time intervals is the geometric mean rate or return.

The simple arithmetic means:

$$\overline{HPR} = \sum_{t=1}^{n} \frac{HPR_t}{n}$$

The Geometric mean

$$\overline{HPR} = \prod_{t=1}^{n} (1 + HPR_t)^{1/2} - 1$$

Where,

HPR_t = the individual period return

t = the number of period

Σ = the product or the result of multiplication.

2.1.5 The Risk on Common Stock

Risk, in simple word, is an uncertainty. Risk is the variability of return from those that are expected. Risk, simply in investment, means a chance of happening some unfavorable event or danger of losing some value. Risk suggests that a decision maker known the possible

consequences of a decision and their relative livelihoods at the times he makes decision. In other, uncertainty is simple a lack of definite outcomes, its anything that could happen-any unknown event, which may be favorable, or unfavorable on the other hand. Uncertainty involves a situation about which the likelihood of the possible outcomes is not known. The trouble arises from the fact that despite different interpretation of uncertainty and risk, people often use them interchangeably. Although it is quit clear what precisely these two terms mean, authorities in the field of finance do agree that the risk is the product of uncertainty. If we interpret certainty as future outcomes, which is 100% sure to happen, uncertainty is then just the opposite of certainty that refers to all possible future outcomes none of which is know for sure to happen.

The variability of the actual return from the expected returns associated with a given asset or investment is defined as risk. The greater the variability, the riskier the security is said to be. The more certain the return from an asset, the less variability and therefore, the less the risk (Khan & Jain, 2007).

Risk, on the other hand, is the product of all potential outcomes expressed with probability associated with each of them and it is measure in terms of the degree of variability in the probability distribution of such outcomes.

Assets having greater chances of loss are viewed as move risky than those with lesser chances of loss. More systematically, the term risk is used interchangeably with certainty to refer to the variability of return associate with a given asset. For example, a government bond that guarantees its holder Rs.100 interest after 30 days has no risk, since there is no variability associated with return. In equivalent investment in a firm's common stock that may earn over the same period anywhere from Rs.0 to Rs.100 is very risky due to high variability of return. The more certain returns from an asset, the less variability and therefore the less risk.

In the basic sense, risk can be defined as the chance of loss. Assets having greater chances of loss are viewed as more risky than those with lesser chances of loss. More formally, the term risk is used interchangeably with uncertainty to refer to the variability of expected returns associated with a given asset.

Risk is a complicated subject and needs to be properly analyzed. The relationship between risk and return is described by investor perception about risk and their demand for compensation. Generally, Investors are mostly interested in the project yielding higher returns in less 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 investor's higher risk will be commanded by rational premium and the trade-off between the two assumed linear relationships between risk and risk premium. The observe difference in both the levels and variability of the rates of return across. Securities are indicative of the underlying risk and return relation in the market. (Loric & *et.al.*, 1991).

Risk is defined in Webster's as a hazard, exposure to loss or injury. So risk is concerned with the some chance of bad happening. Risk refers to the chance that some unfavorable event will occur. If anybody engage in skydiving, such people is taking chance with his/her life skydiving is risky. (Brigham & *et.al.*, 2001).

Risk defines most generally is the probability of the occurrence of unfavorable outcomes. But risk had different meaning in the different context in our context; two measure developments from the probability distribution have been used as initial measure of return and risk. There are the mean and the standard deviation of the probability distribution (Weston and Brigham, 1982).

2.1.5.1 Beta coefficient

Beta coefficient is mathematical value that measures the risk of one asset in terms of its effects on the risk of a group of assets, as would be the concern for an investor holding stocks and bonds. It is derived mathematically so that high beta indicates a high level of risk whereas a low beta represents a low level of risk.

Beta coefficient is an index of systematic risk. It measures the sensitivity of a stock’s returns to changes in returns on the market portfolio. The beta of a portfolio is simply a weighted average of the individual stocks betas in the portfolio (Van Horne & Wachowicz, 2000).

Mathematically, β_j denotes the beta coefficient of any stock j.

2.1.5.2 Standard Deviation

Standard deviation is a measurement of the dispersion of forecast returns when such returns approximate a normal probability distribution. It is a statistical concept and is widely used to measure risk from holding a single asset. The standard deviation is derives so that a high standard deviation represents a large dispersion of return and is a high risk. On the other hand, a low standard deviation is a small dispersion and represents low risk. Standard deviation is a statistical measure of the variability of distribution around its mean. It is the square root of the variance (Van Horne & Wachowicz, 2000).

Standard deviation represents the square root of the average squared deviations of the individual's returns from the expected returns (Khan & Jain, 2007).

Mathematically, standard deviation of any stock j is denoted by σ_j.

2.1.5.3 Coefficient of Variance (CV)

The coefficient of variation is the other useful measure of risk. It is the standard deviation divided by the expected return, which measures risk per unit of return. The larger the CV the larger the relative risk of the investment. It provides a more meaningful basis for comparison when the expected returns on two alternatives are not the same. The CV is more useful when we consider investments, which have different expected rates of return and different levels of risk.

The coefficient of variation is standardized measure of the risk per unit of return; calculated as the standard deviation divided by the expected return. It shows the risk per unit of return, and it result in a more meaningful comparison when the expected returns on two alternatives are not the same (Weston & Brigham, 1996).

The coefficient of variation (CV) is a 'relative measure of dispersion' that is useful in comparing the risk of assets with differing expected returns. Higher the coefficient of variation, greater is the risk. It is the ratio of the standard deviation of a distribution to the mean of that distribution. It is a measure of relative risk.

The coefficient of variation is the ratio of the standard deviation of a distribution to the mean of that distribution. It is a measure of relative risk.

2.1.6 Subjected Estimates

A subjective risk measure occurs when qualitative rather than quantitative estimates are used to measure dispersion. As an example: an analyst may estimate that a proposal offers a low level of risk. This means that, in the analyst's view – the dispersion of return will not be very wide. Similarly, a high risk level will accompany a project whose forecast return may very a great deal.

With the overall definition of risk as dispersion of return, there are two components of risk may be identified.

2.1.6.1 Business Risk

Business risk may be defined as the chance that the firm will not have ability to complete successfully with the assets that it purchases. For an example: the firm may acquire a machine that may not operate properly, that may not produce stable products or that may face other operating or market difficulties that causes losses. Any operational problems are grouped as business risk.

2.1.6.2 Financial Risk

This is the chance that an investment will not generate sufficient cash flows either to cover interest payment on money borrowed to finance it or principal repayment on debt or to provide profits to the firm.

2.1.7 Sources of Risk

Every investment involves uncertainty that contribute to investment risk are as follows:

2.1.7.1 Interest Rate Risk

Interest rate risk is defined as the potential variability of return caused by changes in the market interest rates. In more general terms, if market interest rate rise, then investment values and market prices will fall, and vice versa. The variability of return that results is interest rate risk. This interest rate risk affects the prices of bonds, stocks, real estate gold, puts, calls, futures contracts and other investment a swell.

2.1.7.2 Purchasing Power Risk

Purchasing power risk is the variability of return and investor suffers because of inflation. Economists measure the rate of inflation by using a price index. The consumer price index (CPI) is a popular price index in the United States. The percentage change in the CPI is widely followed measure, of the rate of inflation.

2.1.7.3 Bull-Bear Market Risk/Market Risk

As its name suggests, bull-bear market arises from the variability in market return resulting from alternation 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 next trough is called a bear market.

2.1.7.4 Management Risk

Management risk is defined as the variability of return caused by decision made by a firm's management and board of directors. Though many top executives earn princely salaries, occupy luxurious offices, and wield enormous power within their organizations, they are mortal and capable of making mistake or a poor decision. Furthermore, errors made by business managers can harm those who have invested in their firms. Forecasting management

errors is difficult work that may not be worth the effort and, as a result, imparts needlessly skeptical outlook. Agency theory provides investors with an opportunity to replace skepticism with the informed insight as they endeavor to analyze subjective management risk.

2.1.7.5 Default Risk

Default risk is that portion of investments total risks that results from changes in the financial integrity of the investment. It is related to the probability that some or all of the initial investment will not be returned.

2.1.7.6 Liquidity Risk

Liquidity risk is the portion of an assets total variability of return which results from price discounts given or sales commissions paid in order to sell the without delay. Perfectly liquid asses are highly marketable and suffer no liquidation cost. Illiquid assets are not readily marketable either price discounts must be given or sales commissions must be paid, or both of these costs must be incurred by the seller, in order to find a new investor for an illiquid asset. The more illiquid an asset is the large the price discounts and/or commissions which must be given by the seller in order to affect a quick sale.

2.1.7.7 Call – Ability Risk

Some bonds and preferred stocks are issued with provision that allows the issuer to call them in for repurchase. Issuers like the call provision because it allows them to buy lack outstanding preferred stocks and /or bonds with fund from a newer issue if market interest rates drop below the level being paid on the outstanding securities. The portion of a security's total variability of return that derives from the possibility that the issue may be called is the call-ability risk. Call-ability risk commands risk premium that comes in the form of a slightly higher average rate of return. This additional return should increase as the risk that the issue will be called increase.

2.1.7.8 Convertibility Risk

Call-ability risk and convertibility risks are similar in two respects. First, both are contractual stipulations that are included in the terms of the original security issue. Second, both of these provisions alter the variability of return from affected security. Convertibility risk is that portion of the total variability of return from convertible bond or a convertible preferred stock that reflects the possibility that the investment may be converted into issuer's common stock at a time or under terms harmful to the investor's best interests.

2.1.7.9 Political Risk

Political risk arises from the exploitation of politically weak group for the benefit of a politically strong group, with the efforts of various groups to improve their relative positions increasing the variability of return from the affected assets. Regardless of whether the changes that cause political risk are sought by political or by economic interests, the resulting variability or return is called political risk if it is accomplished through legislative, judicial or administrative branches of the government. Political Risk can be future classified as international political risk and domestic political risk.

2.1.7.10 Industry Risk

An industry may be viewed as a group of companies that complete with each other to market a homogeneous product. Industry risk is that portion of an investment total variability of return caused by events that affect the products and firms that make up an industry. The stage of the industry's life cycle, international tariffs and/or quotas on the products produced by an industry related taxes industry wide labour union problems environmental restriction, raw materials availability and similar factors interact and affect all the firm sin an industry simultaneously. As a result of these commonalties, the prices of the securities issued by competing firms tend to rise and fall together.

The uncertainties discussed above are the major sources of investment risk, but by no means do they make up and exhaustive test. If all the uncertainties could be listed, they would add up to total risk or total variability of returns.

2.1.8 Relationship between Risk and Return

The expected return from any investment proposal will be linked in fundamental relationship to the degree of risk in the proposal. In order to be acceptable a higher risk proposal must offer a higher forecast return than lower risk proposal (Hampton, 1996).

Generally, there is a positive relationship between rate or return and risk. It means an investor can usually attain more return by selecting dominant assets that involve more risk. While it is not always true that a riskier asset will pay a higher average rate of return, it is usually. The reason is that investors are risk averse. As a result, high-risk assets must offer investors' high return to induce them to make the riskier investment normally; investors are likely to prefer more return and less risk. It means investors will not choose an investment that guarantee less return when investments promising higher returns in the same level of risk class are readily available.

2.1.9 Portfolio Analysis

Investors rarely place their entire wealth into a single asset or investment rather they construct a portfolio or a group of investments. Therefore, it is needed to extend analysis of risk and return to include portfolio. A combination of two or more securities or assets is portfolio. Portfolio management is related to the efficient portfolio investments in financial assets. It has following two types of objective.

A portfolio is a bundle or a combination of individual assets or securities. The returns of a portfolio are equal to the weighted average of the returns of individual assets or securities in the portfolio with weights being equal to the proportion of investment in each asset (Pandey, 2002).

Primary objectives:

- To minimize risk
- To maximize return

Secondary objectives:

- Regular return

- Safety of investment
- Stable income
- Tax benefit
- Appreciation of capital

Portfolio returns is the expected return on a portfolio is simply the weighted average expected return of the individual stocks in the portfolio, with the weights being the fraction of the total portfolio invested in each stock (Weston & Brigham, 1996).

The expected return on the portfolio is simply a weighted average of the expected returns of the individual securities that they are included in the portfolio. The weighted are equal securities (the weight must sum to 100% or 1). The general formula for expected return of a portfolio ($\overline{R_p}$) is as follows.

$$\overline{R_p} \; X \sum_{j X 1}^{n} W_j . \overline{R_j}$$

Where,

$\overline{R_p}$ = Expected return of a portfolio

$\overline{R_j}$ = Expected return for security j

W_j = Proportion of total funds invested in security j

n = Total no. of different securities in the portfolio

While the portfolio expected return is a straight forward weighted average of returns on the individual security where as portfolio standard deviations would be to ignore the relationship or correlation between the returns of two securities. The Standard deviation of probability distribution of possible portfolio return σ_p is

$$\pm_p \; X \sum_{j X 1}^{n} \sum_{k X 1}^{n} W_j . W_k . Cov_{j,k}$$

Where,

n = Total no. of different securities in the portfolio.

W_j = Proportion of total funds invested in security j.

W_k = Proportion of total funds invested in security k.

$Cov_{j,k}$ = Covariance between the possible return of securities j and k.

Covariance is a statistical measure of the degree to which two variables move together. Positive covariance shows that, on average, the two variables move together. Negative covariance suggests that, on average, the two variables move in opposite direction. Zero covariance means that the two variables show no tendency to vary together in either a positive or a negative linear fashion. Covariance between security returns complicates our calculation of portfolio standard deviation (Van Horne & Wachowicz, 2000).

The covariance of the possible returns of two securities is a measure of the extent to which they are expected to very together rather than independently of each other.

The covariance term in the above formula can be written as.

$Cov_{j,k} = r_{jk} . \sigma_j . \sigma_k$

Where,

r_{jk} = Correlation coefficient between possible return for security j and k

σ_j = S.D. of the security j.

σ_k = S.D. of the security k.

When j = k, the correlation coefficient is 1 as variance movement correlated perfectly with itself.

The correlation coefficient which is significant in portfolio construction is standardized statistical measured of the linear relationship between two variables. Its range from -1 (perfect negative correlation) to +1 (perfect positive correlation). Lesser the correlation, higher is the reduction in portfolio risks (Van Horne and Wachowicz, 1995).

The positive correlation coefficient shows that the return from the securities generally moves in the some direction. While negative correlation coefficient shows that they move to opposite direction and zero correlation coefficient shows that the returns from two securities are uncorrelated. They show no tendency to vary together in either a positive or negative in linear function.

Diversification through combination of securities can be used to reduce overall risk of portfolio. By combining assets that have negative or low positive correlation with existing assets, overall risk of the portfolio can be reduced. By combining negatively correlated assets, the overall variability of returns or risk can be reduced. Even if the assets are not negatively correlated, the lower the positive correlation between them, the lower the resulting risk (Khan & Jain, 2007).

2.1.10 Systematic Risk and Unsystematic Risk

Systematic and unsystematic risks are the terms frequently used in the portfolio context. Combining securities that are not perfect-positively correlated helps to reduce the risk of a portfolio to some extent.

In the case of single stock, the risk of a portfolio is the standard deviation of that stock. As the randomly selected stocks held in the portfolio are increased, the total risk of the portfolio is reduced. Such a reduction is at a decreasing rate. Thus a substantial proportion of the portfolio risk can be eliminated with a relatively moderate amount of diversification.

Systematic risk has its source factors the affect all the marketable assets and this cannot be diversified way. Systematic risk is due to the risk factor that affects the overall market such as changes in national economy, tax reform by the government or changes in the world energy situation. The sources of systematic risk are market pervasive. The measure of systematic risk permits an investor to evaluate an assets required rate of return relative to the systematic risk of the stock. In other words over an investor who holds a well diversified portfolio will be exposed to this type of risk.

Systematic risk is the variability of return on stocks or portfolios associated with change in return on the market as a whole. These risks can not be diversified away (Van Horne and Wachowicz, 2000).

Unsystematic risk is risk unique to a particular company or industry. It is independent of economic, political and other factor that affect all securities in systematic manner. A wild cat risk may affect only one company a new competitor may begin to produce essentially the same product or a technological break through can make an existing product absolute.

Unsystematic risk is the variability of return on stock or portfolios not explained by general market movements. It is avoidable through diversification.

A part of the risk arises from the uncertainties which are unique to individual securities and which is diversifiable if large number of securities are combined to form well-diversified portfolios. The unique risk of individual securities in a portfolio cancels out each other. The part of the risk can be totally reduced through diversification, and it is called unsystematic or unique risk. The risk arises on account of the economy-wide uncertainties and tendency of individual securities to move together with changes in the market. The part of risk can not be reduces through diversification, and it is called systematic or market risk (Pandey, 2002).

The relationship among systematic, unsystematic and total risk are shown below.

Total risk (σj) = Systematic risk + unsystematic risk

Systematic Risk and Unsystematic Risk can be written as:

Systematic Risk (SR)

$$SR = \frac{Cov_{j,m}}{\pm_{m}}$$

Where,

SR = Systematic Risk

$Cov_{j,m}$ = Covariance of Stock j and Market Return

σ_m = Standard Deviation of Market

Unsystematic Risk (USR)

$$USR = \pm_{j} Z \frac{Cov_{j,m}}{\pm_{m}}$$

σ_j = Standard Deviation of Stock j

$$\text{Proportion of SR} = \frac{SR}{TR}$$

Where,

TR = Total Risk

Proportion of USR = 1- Proportion of SR

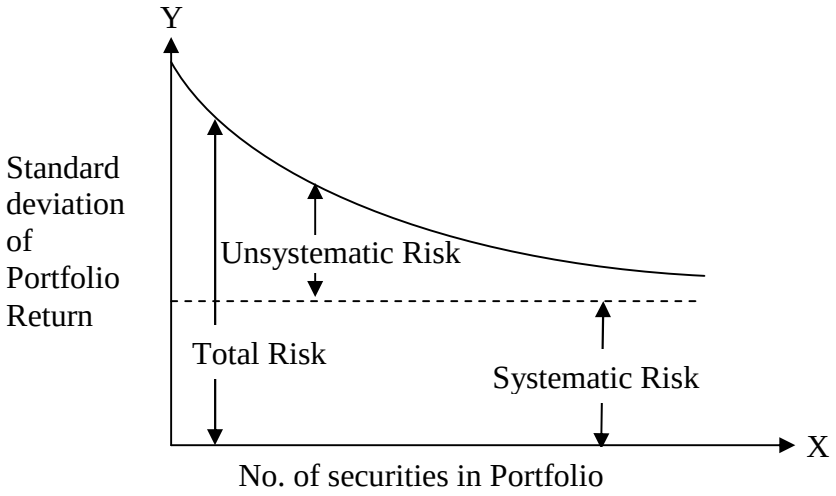

Figure 2.1: Systematic Risk and Unsystematic Risk

Where, Systematic risk $= \sigma_j \circ_{jm}$

Unsystematic risk $= \sigma_j (1-\circ_{jm})$

Here $\circ_{jm}$ is the Correlation coefficient between the return of given stock (j) and the return on market portfolio.

However by diversification, unsystematic risk can be reduced and ever eliminated if diversification is efficient. Therefore, not all the risk involved in holding a stock is relevant since part of their risk can be diversified away. The important risk of stocks is its unavoidable systematic risk. Investor will be compensated for bearing this systematic risk. They should not however expect the market to provide may extra compensation for bearing avoidable risk. It is the large that lies behind Capital Assets Pricing Model (CAPM).

2.1.11 Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model provides us a means by which to estimate required rate of return on a security. This models was developed by William F. Sharpe and John Linter in the 1960's and it has had important implications for finance ever since. And on the basis of price and divided data, expected return can be calculated with comparison of these two returns investors can analyzed whether the stock is under priced or overpriced. Based on the behavior of the risk adverse investors, there is implied on equilibrium relationship between risk and expected return to provide a return on common stock with its unavoidable risk. This is simply the risk that cannot be avoided by diversification. The great unavoidable risk of security, the greater the return that investor will expected from the security.

CAPM is the model that describes the relationship between risk and expected return. In this model, a security's expected (required) return is the risk free rate plus a premium based on the systematic risk of the security. This model is expressed as:

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

Where,

$E(R_j)$ = Required rate of return for stocks j

R_f = Risk free rate

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

β_j = An index of systematic risk of stock j (beta coefficient)

Beta measures the sensitivity of a stock's returns to change in the returns on the market portfolio. The beta of a portfolio is simply a weighted average of the individual stock betas in the portfolio (Van Horne, 1997).

If beta is one (i.e. $\beta=1$) then the required return is simply the average return for all situation, that is the return on market portfolio, otherwise, the higher the beta, higher the risk premium and the total required return. However, a relatively high beta does not guarantee a relatively high return. The actual return depends partly on the behavior of the market, which acts as a prissy for general economic factor.

The major implication of the CAPM is that the expected return of an asset will be related to a measure of risk for that asset known as beta (β). The exact manner in which expected return and beta are related is specified by the CAPM. The model provides the intellectual basis for a number of the current practice in the investment industry (Sharpe 1995).

The CAPM states that the expected risk premium on each investment is proportion to its beta. This means that each investment should lie on the sloping security market line connecting treasury bills and market portfolio. CAPM is the predominant model used for estimating equity risk and return. Comparison between the expected rate of return and required rate of return indicates whether the stock is under priced or overpriced. And when these two return is equal then it is said table market equilibrium i.e. all the stocks lay on the Security Market Line (SML).

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

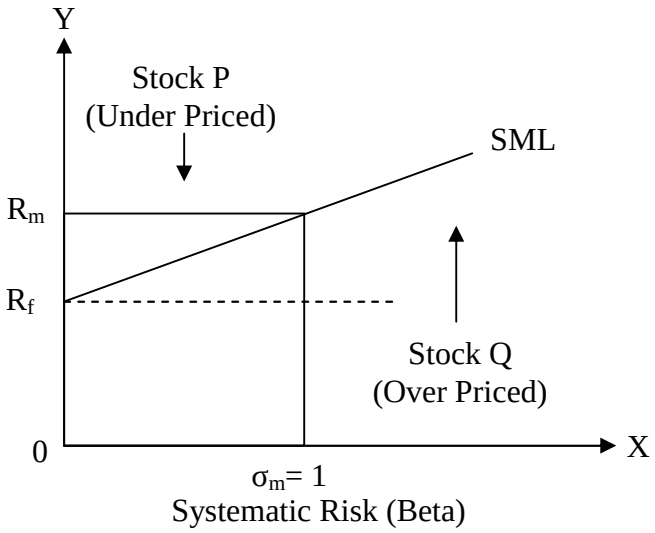

Figure 2.2: Security Market Line

Above figure clarifies that stock P is under priced relative to the security market price while stock Q is over priced. As a result stock P is expected to provide a rate of return greater than that required based on its systematic risk. In contact stock Q is expected to provide a lower return than that required to compensate for its systematic risk. Investors seeing the opportunity for the superior return by investing in stock P will rush. This situation would drive the price up and expected return comes down. It would continue until the market price was seen that the expected return would row lies on the SML. In the case of stock Q, investors holding this stock will start to sell it, recognizing that they could obtain a higher return for some amount of systematic risk with other stocks. This selling pressure would drive market price down and its expected return goes up until the expected return matches on the SML. When expected return for these two stocks returns to SML, market equilibrium will again prevail (Van Horne and Wachowicz, 1995).

Under the CAPM, each investors hold the market portfolio and is concerned with its standard deviation because this will influence the slope of the SML and hence the magnitude of his/her investment in the market portfolio.

The CAPM is sometimes used to estimate the required rate of return for my form with publicly traded stock. The CAPM is based on the promise that the only important risk of firms is systematic risk, or the risk that returns form expose to general stock market movements. The CAPM is not concerned with so-called unsystematic risk, which is specific to an individual firm, because investors can avoid that type of risk by holding diversify portfolio.

Investor appears to be concerned principally with risk that they cannot eliminated by diversification. If this is not so, we find that stock price increases. Whenever two companies merge to spread their risk and we should find that investment companies which invest in the share of other firm are more highly valued that than the shares they hold. But we do not observe either phenomenon. Mergers under taken just to spread risk don't increase stock prices and investment companies are no more highly valued than the stocks held. The CAPM model captures these ideas in simply way. That's why many financial mangers find it is the most convenient for coming to decision with slippery motion of risk. And it is why economist often uses the CAPM to demonstrate important ideas in finance even when there are other ways to prove these ideas.

2.2 Reviews from Related Studies

Previous topic dealt with regarding to the basic well known books, which are academically accepted in most of the world. In this section reviewing procedure will slightly twist as we review the journals and other related studies made by different experts.

The book entitled as An Introduction to Investment Theory by William N' Goetz Mann in the year 1999 is also relevant to this study. Here, he explained finance from the investor's perspective as, Investors, whether they are individuals or institutions such as pension funds, mutual funds, or college endowments hold portfolio i.e. they hold a collection of different securities. Much of the innovation in investment research over the past forty years has been the development of a theory of portfolio management and this model is principally an introduction to there new methods. It will answer the basis question, what rate or return will investors demand to hold risky security in their portfolio. To answer this question we first must consider what investors want how we define return, and what we mean by risk.

Investors want to make more money in the future. The key measure of benefit derived from a security is the rate or return. The investor return is a measure of growth in wealth resulting from that investment. This growth measure is expressed in percentage forms to make it comparable across large and small investors. Stock returns 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 us to quantity assets returns by risk and it also provides the basis for investor decisions about portfolio choice.

In recent years, we have seen that an explosion of research into the opportunities and risks of investing in emerging equity markets, stimulated in part by the growing exposure of U.S. and European investors to these markets, but also following the rapid rise and fall of returns on the assets class. Here we consider two more books in this growing portfolio. Both analyze the structural characteristics of the markets and issues related to asset allocation but they have different emphases. These books are:

(i) Emerging markets portfolio Diversification and Hedging strategies edited by Michael Papaioannous and George Testsekos, Chicago: Irwin professional publishing, 1997

(ii) Emerging market: Research, Strategies and benchmarks by Michael Kepler and Martin Lencher, Chicago: Irwin professional publishing, 1997, which were reviewed simultaneously by Kent Hergis (Goldman, Sacha and co.) in the journal of finance, February 1999.

In emerging Markets Portfolio Diversification and Hedging Strategies, Papaionannous and Tsetsekos focus more on regulatory issues and derivatives instrument in emerging markets, following a number of chapter on risk characteristics and potential diversification opportunities. Their book will be or greater interest to policy makers or a more academically including people and portfolio managers concerned with quantifying and managing risk in emerging markets. Although the stated objective of the book is to develop a framework for portfolio management in emerging markets, many chapters focus on topics of direct concern to policy makers. Topic that have received less attention on the literature, such as market based measures to manage commodity price risk and the preconditions for the development of derivatives markets in emerging economics. The book analyze four broad themes: investment risk and opportunities in emerging markets, structural features and the role of government in the market development, the impact of return, correlation and the development and use of derivatives markets in emerging economics by government and investors.

Although the chapters are separated into seven different parts, they don’t fit very well into their grouping. A chapter on optimal asset allocation provides a useful analysis of how the portfolio allocation to emerging markets should vary under different assumptions for expected return correlation and investor's risk tolerance. Among with investment opportunities, additional risk such as volatility, currency and political risk, lack of liquidity and information, market access and repatriation restrictions serve as a deterrent to investing in these markets. The chapter also discusses the role of policy makers in encouraging market development and concludes that the role of government is to provide a legal structure and promotes policies that allow market forces to work. Recent institutional reforms and liberalization efforts should help to promote their development.

Political portfolio diversification benefits are assessed by examining linkages in returns and volatility, co-integration among markets and factor models. Although, the chapters are informative, they often simply correlated the results of earlier studies, with a notable lack of data from recent years. These factors limit the value added to the chapters. The empirical studies support the view that diversification benefits of investing in emerging markets are present but have been reduced in recently years as a result of growing foreign institutional investor involvement and are less effective during periods of large market movements.

In emerging markets: Research, strategic and Benchmarks, Keppler and Lenchner focus on the examination of the performance of specific investment strategies. Second, the presentation format, comprising emerging market investment strategies with previously published work by the authors (e.g. Keppler and Traub, 1993) in the developed markets in effective. Third another examines a wide range of measure of the portfolio risk in addition to standard deviation, which has not been analyzed in other work. Such measure includes the probability and expectation of monthly loss, number of losing months and lowest monthly return. The Keppler Ration is introduced as an alternative to the Sharpe ration, replacing the standard deviation by the expectation of monthly loss. In many cases, the standard risk measures such as standard deviation shows to be misleading when compared to those other measures. Even though it is well known that emerging market returns are not normally distributed, the comparison of various risk measures helps the practitioner to understand more effectively how this impacts to the portfolio allocation decisions.

Keppler and Lechner shows that return on values strategies based in part on looking at dividend yields and price to cash flows of different markets; are even greater than those based on the small country effect. Although risk is higher according to standard deviations other risk measures show that this portfolio can also be less risky. The analysis is then extended to forming regional portfolios. Strategies based on industry selection and company selections are less promising. A strategy based on equally weighting individual companies within a market gives small excess returns. After a reviewing the historical growth experience across regions, the authors give and in depth discussion into why emerging markets have grown faster than developed markets in the past, and they offer projections for the future. Among the factors analyzed are liberalization of capital markets, reduced debt servicing burden, expanding global trade, and improving education and infrastructure. Although higher growth rates have been achieved, the risk of investing in these markets are also greater Keppler and Lechner explore risk caused by political instability and corruption, high levels of foreign debt commodity prices and short term speculators. The causes of higher cash flow and greater risk are then analyzed in the context of the risk and return characteristics of the markets, followed by discussion of the different emerging market benchmarks.

These two books provide a useful compliment to the existing literature. They provide investors with valuable tools for investment strategies in emerging markets and they provide policy makers with a framework for analyzing the benefits and costs of developing derivatives markets and using market based techniques for managing risk in emerging markets.

2.3 Reviews of Previous Thesis

However risk and return is not a new concept for financial analysis, in context of Nepal and its very slow growing capital market, few studies are made regarding this topic. Some studies related to the topic of risk and return has been conducted for the fulfillment of master degrees in T.U. In this study only relevant subject matters are reviewed which are as follows:

Bhatta, Tanka Raj (2003) in his thesis "Investment in Shares of Commercial Banks in Nepal" had tried to assess the risk and return on common stocks investment of eight commercial banks (on the basis of financial and statistical tools). An assessment of risk and return elements using the data over the period of FY 1996/97 to 2000/01 has been made. The main

objective of his study was to examine the movement of market price of shares, to find out the relationship between the return on individual shares and return on market and to determine the shares of commercial banks in Nepal are correctly priced or not.

In his thesis, he finds out that:

- Risk return characteristics do not seem to be the same for all the shares reviewed and the portion of unsystematic risk is very high with shares having negative beta coefficient.
- Most of the shares fall under the category of aggressive stock(having beta coefficient more than one) while some under the defensive stock (having beta coefficient 0.99 approximately one)
- According to the price evaluation, all the banks shares are under priced and hence positively correlated with market return.

Shrestha, Amit (2004) in his thesis "Risk and Return Analysis on Common Stock Investment of Banking Sector in Nepal" is conducted by taking eight-listed commercial bank as sample and data using six years from 1996 to 2001 is based in descriptive and analytical research design. The main objective of the study was to analyze the volatility of common stock and other relative variables, to identify whether stocks of the samples companies equilibrium priced or not and to study returns associated with common stock investment of bank.

Mr. Shrestha has used various scientific analytical tools such as calculation of expected and realized rate of return, coefficient of Variation of sampled banks, risk measuring tools such as standard deviation and beta coefficient and systematic and unsystematic risk of the sampled Banks as well. Detailed analysis of the risk and return associated with the sampled banks has made the findings more reliable and applicable.

The major findings of his study are:

- NBBL’s common stock is yielding the highest realized rate of return whereas it is the lowest in case of NIBL.
- BOKL’s common stock has the highest total risk, whereas HB Ltd’s common stock has the least risky.

- The C.V is considered the best tool for relative measurement of risk per unit of return. BOKL seems to be the riskiest one for investment, whereas the lowest risky is of SCBL.
- According to beta coefficient NBBL, EBL, BOKL and NBL fall in aggressive investment category because of beta coefficient is higher than 1 that is and the rest defensive except NSBI, bank whose beta coefficient is negative.
- All of the sampled companies realized rate of return are positively correlated except SBI bank whose realized rate of return is negatively correlated.
- All the commercial banks common stocks are under priced.
- Among them SCBL seems to be in the best position and BOKL is in the worst position.

Tiwari, Kedar Prasad (2007) conducted a research on the title of "Risk and Return Analysis of Selected Finance Companies Listed in Nepal" on the specific object to analysis the risk and return associated with the common stock of six finance companies. They are Kathmandu Finance Co. Ltd., Samjhana Finance Co. Ltd., National Finance Co. Ltd., Citizen Investment Trust, Ace Finance Co. Ltd., and peoples Finance Co. Ltd. His research has been based on the collected data from the secondary source. Nepal Stock Exchange (NEPSE) Ltd is the main organization, which provides most of the data required for the study from year 1998 to 2002. For analyzing the data, he has used various statistical techniques of simple liner regression as well as other financial tools.

The major findings of his study were as follows:

- All the finance company have positive expected return as well as most of the finance company has the return near to the average.
- All the investment involved certain amount of risk (i.e. standard deviation) as well as most of finance companies have the risk less than the average.
- The value of best suggests majority of finance company stock volatility is less than the market volatility and they are defensive stock.

- Some finance companies securities have highest value of CV (3.49). Although many of the finance companies CV is less than the average CV (1.77) but not in acceptable level.
- There is positive relationship between expected return and deferent measure of risk of the finance company.
- The return of majority of finance companies has higher degree of positive correlation with the return of other companies.
- The overall effect of portfolio on risk and return shows mixed result. It means the portfolio helps to increase the return in some case but in some case it has also decreased the result up to negative level. But in other hand, neatly in all case it has helped to decrease the level of risk up to some extent.

Thapa, Sangita (2007) has carried out a research on title "Risk and Return in Stock Market Investment in Nepal: Issue and Challenges". Her major objectives of the study were to find out and analyze the risk and return as well as to examine the trend of risk, return, total paid up value, annual turnover and capitalization of twenty three companies out of listed companies. Five companies of each sector from Banking, Finance and Insurance sector; two of each from Hotel, Trading, Manufacturing and Processing and other companies, are included in this study. Her research has been based on the collected data from secondary source as well as some information primary source (2054/55 to 2062/63). For analyzing data, she has applied various statistical tools in her study to find out the risk and return.

She has concluded with findings which are as follows:

- Most of the investors are found to be risk averters. They are investing in portfolio having more than four securities.
- Most preferable sector for investors is banking and finance sectors.
- Stock brokers are major source of information to the investors which show they have a remarkable role in share market.
- Increasing trends of share price and surplus money for investors are the influencing factors to buy share by investors.
- Profitability and marketability has equal influence for motivation to invest.
- The level of investor's satisfaction towards the present trading system (openout cry system) has found low. Most investors are not satisfied with it, because whim and

rumors influenced every time. Thus, most of investors wish to have automation trading system.

- The expected return of securities market as a whole by using NEPSE index is 11.72 percent. Banking and other sectors stand higher expected return then market, while Manufacturing and Processing, Finance, Insurance, Hotel and Trading sectors have lower expected return compared to the market return.
- In terms of CV, market has 2.70 CV. All sectors have found highest CV in comparison with market relative risk.
- In comparison of market portfolio and average return of selected companies shows that there is no difference significantly.
- The total paid of value of the all sectors expects trading is likely to decreasing in trends. The annual turnover of the all sectors is increasing trends. Likewise, the market capitalization of all sectors expected trading is likely to increasing trends.

Shrestha, Mangal Bhakta (2008) has carried out a research on title "Risk and Return Behavior of listed Commercial Banks in NEPSE". His major objectives of the study were to find out and analyze the risk and return behavior of listed commercial banks of Nepal. His research has been based on the collected data from secondary source as well as some information primary source. For analyzing data, he has applied various statistical tools in his study to find out the risk and return.

He has concluded with findings which are as follows:

- Risk and Return of the selected commercial banks are not consistence. The average risk of selected commercial banks is 40.07% whereas return is only 9.23%. The highest risk is 67.61 % of Bank of Kathmandu Ltd. whereas higher return is 23.49% of NABIL Bank Ltd.
- The selected commercial bank having higher risk pose fewer rates of return and Bank having low risk have higher return.
- The portfolio analysis provides empirical evidence of disparity between risk and return of selected commercial banks.
- The average risk of the commercial bank combination under portfolio analysis is 28.21% but return is -0.23%.

- Among 28 combinations, 4 combinations have higher risk and higher return, 11 combinations have higher risk but low rate of return and 13 combinations have higher risk whereas negative return.
- Most of the selected commercial banks have sensitive stock with market. Among 8 selected commercial banks, 5 of the banks have value of beta greater than 1 and 3 of them have value of beta is less than 1.
- Bank of Kathmandu Ltd has the higher value of beta (2.25). Similarly it has the highest risk of 67.61% and return is 22.04%.
- In comparison of overall market return of NEPSE and average return of selected commercial banks shown that there is no significantly difference.

Adhikari, Deepa (2010), has made thesis on "Risk and Return Analysis of Common Stock Investment of Joint Venture Banks in Nepal" with objectives of assessing the volatility of different stocks and their relevant variable, evaluation of risk and return comparing with market and pricing of stock. She has used past six years data from secondary sources for her analysis of five joint venture banks.

Her findings regarding to the title of study are:

- Expected return and standard deviation of NABIL bank's stock is highest ie 77.41% and 0.7218 respectively.
- On the basis of CV, EBL is most risky and SCB is less risky.
- Required rate of sample banks are lower than expected rate of return.
- Portfolio for the highest return is found with the combination of SBI and SCB.
- Portfolio for the lowest risk is determined with the combination of NABIL and HBL.

Rajak, Anita (2010), has submitted thesis on the title of "Impact of Risk and Return on Share Price with Reference to Financial Sectors". She has made objectives of evaluating the price of stocks, their risk & return and risk minimizing process. She has taken three banks, four finance companies and three insurance companies as her sample for the study.

The main findings of her study are:

- Market prices of stock are not constant.
- Nepalese capital market is very sensitive.

- Most of the common stock is under-priced.
- Creating portfolio is beneficial to reduce the risk on the investment in common stock.

Koirala, Murari (2011), has conducted research work in the title of "A Study on the Performance of Investment in Common Stock Including Risk and Return Analysis of the Listed Commercial Banks" with some objectives to ascertain the share price behaviour and risk and return proportion on the common stock of sample banks.

He has used all secondary sources of data and his major findings are:

- Average return of NABIL is highest with highest SD ie risk.
- CV of HBL is found to have highest value.
- Average returns of sample banks are found lower than the expected return except HBL.
- Stock of NABIL and SCB are under-priced whereas stock of HBL is over-priced.
- Covariance between stock of NABIL and market is highest.

Bhattarai, Dipak (2011) has studied on a title of "Risk and Return Analysis of Common Stocks of Commercial Banks of Nepal" keeping the focus on risk and return, covariance, correlation, beta coefficient and optimum portfolio among the NCC and KBL.

Using past historical data he has drawn the following conclusions on his study:

- Among KBL and NCC, the return on stock of KBL is higher i.e. 76.76% than NCC but risk factor is also determined higher i.e. standard deviation 116.4%.
- NCC is under-priced and KBL is over-priced.
- There is negative correlation between stocks of KBL and NCC.
- Beta coefficient of NCC is found higher i.e. 3.83 which shows that it is more volatile to market.
- Portfolio return between KBL and NCC is 77.33% and portfolio risk is

2.4 Research Gap

Previous researcher had made study on the risk and return on the common stock in some commercial banks regarding to the secondary data published by the Bank. But this study

covers study regarding to the secondary data from NEPSE, SEBON & annual reports of sample banks as well as primary data collected from the investors. The study covers common stock investment in three commercial banks HBL, NIBL and NCC Bank. Latest six years data is analyzed with due consideration High MPS, Low MPS, Closing MPS, Stock Dividend, Portfolio in investment, systematic and unsystematic risk. Taking in mind for more elaborate and extensive analysis, company wise analysis is also made. In order to assess the impact of risk and return on market price of share, available information from concerned banks is reviewed and analyzed. Finally, testing of hypothesis is done. So, it is believed that this study is different from earlier one.

CHAPTER - III
RESEARCH METHODOLOGY

Research methodology is the systematic way of solving research problems and which ultimately refer to the overall research process. It includes all the procedures from theoretical framework to the collection and analysis of the data. As most of the data are quantitative the research is based on the specific models. It is composed of both parts of technical aspect and logical aspect on the basis of historical data. Research is systematic and organized effort to investigate a specific problem that needs a solution. This process of investigation involves a series of well though out activities of gathering, recording, classifying, analyzing and interpreting the data with the purpose of finding answer to the problem. Thus the entire process by which we attempt to solve problems is called research. Methodology is the research method used to test the hypothesis.

3.1 Research Design

A research design is a plan for the collection and analysis of data. It presents a series of guide posts to enable the researcher to progress in the right direction in order to achieve the specific goal. The design may a specific presentation of the various steps in the research process. These steps include the selection of a research problem, presentation of the problem, formulation of hypothesis, conceptual clarity, methodology, survey of literature and documentation, bibliography, data collection, testing of the hypothesis, interpretation, presentation and report writing (Joshi, 2010).

Research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance. The plan is the over all scheme or program of research. It includes an outline of what the investigator will do from writing the hypothesis and their operational implications to the final analysis of data (Kerlinger, 1983).

3.2 Population and Sample

This study is the comparative study of risk and return on the basis of common stock investment of three commercial banks listed in NEPSE. Population is all the listed companies in NEPSE. Concentration of this study is listed commercial banks only. There are a total of 30 commercial banks registered under Nepal Rastra Bank.

For this study three commercial banks are taken as sample. They are

1. Himalayan Bank Limited (HBL)
2. Nepal Investment Bank Limited (NIBL)
3. Nepal Credit and Commerce Bank Limited (NCC)

3.3 Nature and Sources of Data

Data necessary for the research collected from primary as well as secondary sources. For more analysis data related to market prices of shares (MPS), market capitalization, movement of NEPSE index and etc will be taken from the trading report published by NEPSE; other relevant data will be collected from individual banks, SEBON and from their web sites.

The necessary data will be collected from the sources given below: -

1. Perception of individual investors from primary data collection.
2. Trading manual published by NEPSE.
3. Related websites of banks, NEPSE and SEBON.
4. Materials published in Newspapers and Magazines.
5. Annual reports published by sample banks.
6. Other related journals, periodicals, books and booklets.

Primary data is collected from investors who have invested money in common stock of commercial banks to know their perception. For primary data collection, 60 questionnaires are distributed to the different investors. The primary data and information are based on interview and field questionnaire from respondents at Kavre, Kathmandu and Bhaktapur. Sixty questionnaires were sent to respondents but 46 filled questionnaires (76.67%) are collected. Out of the total received forty six, 4 questionnaires are rejected. So, this study has

used 42 (70%) filed questionnaires out of total distributed questionnaires. Both open ended and closed ended questions are used in the questionnaire.

3.4 Financial and Statistical Tools

The study employs various financial tools and statistical tools to analyze the data collected from various sources. Before, analysis, data will be presented in the tabular format, charts and graphs.

The collected data are analyzed by using various factors and financial as well as statistical tools which are given and defined below.

3.4.1 Financial Tools

The financial tools for analysis of risk and return are as follows:

3.4.1.1 Market Price of Shares (MPS)

Here in this study, each year closing price is taken as the market price of stock which has specific time span of one year and the study has focused in annual basis. To get the real average, volume and price of each transaction in the stock and duration of time of each transaction in the whole year are essential, which is tedious and impossible too, considering the data availability and maintenance.

Market value in the secondary market is determined by the supply and demand factors and reflects the opinion of investors and trader concerning the values of the stock closing price is used as market price of stock because it is very different to obtain and include these all information and average of high and low price may not be reliable and representative information.

3.4.1.2 Dividend per Share (DPS)

Dividend is the part of earning that is distributed to the share holders as a part of their investment. Dividend is return to equity capital that consist price of time and price of risk taking by the investors. The total amount of dividend out of earning available to the shareholder if distributed, the common stock's portion is said Dividend per share (DPS). Symbolically DPS can be expressed as follows:

$$\text{DPS} = \frac{\text{Total Dividend Paid}}{\text{No. of Shares Outstanding}}$$

Dividend is relevant during computation of rate of return, which is reward to the shareholders for their investment, which can be given in different for, for investment, which can be given in different form. For instance cash dividend and stock dividend etc. if company declares only cash dividend. There is no problem while taking the exact amount of dividend that is relevant. But if the company declares stock dividend (Bonus share), it is difficult to obtain the amount that really shareholders has grained. In this case, they get extra numbers of shares as dividend and simultaneously price of the stock declines as a result of increased number of stocks. To get a real amount of dividend following model has been used throughout.

Total Dividend Amount = Cash Dividend + Stock Dividend

3.4.1.3 Holding Period Return (HPR)

Holding period return indicates the summation of price appreciation and dividend gain. Here price appreciation means gain on capital investment.

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

Where,

HPR = Annual rate of return

P_t = Price of a stock at time t.

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

D_t = Cash dividend received at time t.

3.4.1.4 Return on Market (Rm)

It is the percentage increase in NEPSE index. Market return is the average return of the market as a whole.

Market return is calculated by,

$$R_m \text{ X} \frac{R_m}{n}$$

Where,

ϕ = sign of summation.

R_m = Market return

n = Number of samples period

3.4.1.5 Portfolio Risk and Return

Portfolio is combination of individual or a group of assets. Investors have different types of investment opportunity but they have limited resource for investment so that investors have to choose that investment opportunity which maximizes return for a given level of risk or minimize risk for a given level of return. Thus the combination of these investments is called portfolio.

3.4.1.6 Portfolio Return

The expected return on a portfolio is simply the weighted average of expected returns on the individual assets in the portfolio with weights being the fraction of the total portfolio invested in each asset.

$$E(R_P) = W_i\, E(R_i) + W_j\, E(R_j)$$

Where,

$E(R_P)$ = Expected return on portfolio.

W_i = Proportion of wealth invested in i assets.

W_j = Proportion of wealth invested in j assets.

$E(R_i)$ = Expected return on i assets.

$E(R_j)$ = Expected return on j assets.

3.4.1.7 Portfolio Risk

It is the combined standard deviation of individual stock return. it is the risk of individual securities plus covariance between the securities. It can be written as:

$$\pm_p X\sqrt{\pm_i^2 w_i^2 \Gamma \pm_j^2 w_j^2 \Gamma 2 w_i w_j . Cov_{ij}}$$

Where,

σ_p = Standard deviation of stock i & J.

w_i = Proportion of asset i.

w_j = Proportion of assets j.

σ_i^2 = Variance of assets i.

σ_j^2 = Variance of assets j.

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

3.4.1.8 Beta Coefficient (β)

Beta coefficient shows the market sensitivity of stock. Higher the beta, higher the sensitivity and reaction to the market movement. Beta coefficient of a particular stock will be less than equal or more than 1, but the beta for market will be always 1.

$$_j X \frac{Cov(R_j, R_m)}{\pm_m^2}$$

Where,

β_j = Beta coefficient of stock j.

$Cov(R_j, R_m)$ = Covariance between return on stock j and return on market.

σ_m = Variance of market return.

a. Beta more than one ($\beta_j > 1$)

This implies that the stock is aggressive i.e. risky. This means if market return changes by one percent than the return of individual stock or portfolio return changes by more than one percent.

b. Beta equal to one ($\beta_j=1$)

This means the stock is fair, whose rate of return is equal to the market rate of return.

c. Beta less than one ($\beta_j<1$)

This is defensive stock i.e. change in market return by one percentage changes individual or portfolio return by less than one percentage.

3.4.1.9 Portfolio Beta

The beta of portfolio can be easily estimated by using beta of individual assets it includes. Symbolically, Portfolio beta is represented by:

$$_p = \phi W_j . b_j$$

Where,

W_j = proportion of the portfolio.

b_j = beta coefficient of asset j.

b_p = portfolio beta coefficient.

3.4.1.10 Risk Minimizing Portfolio

It is the ratio of stock that will minimize the possible unsystematic risk. The risk minimizing portfolio is calculated by using following formula.

$$W_A \text{ X} \frac{\pm_B^2 \text{ Z} Cov(R_A.R_B)}{\pm_A^2 \Gamma \pm_B^2 \text{ Z} 2Cov(R_A.R_B)}$$

Where,

W_A = Weight of proportion of stock A that minimize the portfolio risk.

$W_A + W_B = 1$,

$W_B = 1 - W_A$

3.4.1.11 Required Rate of Return

Required rate of return is minimum expected rate of return needed to induce an investor to invest his/her fund. It is always more than risk less rate of return. Normally, when an

individual investment is given higher return, i.e. realized rate of return then its required rate of return, this type of investment is known as under priced investment. Such under priced assets should be purchased.

On the other hand, if realized rate or return is less than required rate of return of a particular asset, it is said to be overpriced assets, such assets should be purchased, instead if one is holding such asset, if should be sold immediately.

The required rate of return is calculated by using following formula.

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

Where,

$E(R_j)$ = Required rate of return for stocks j

R_f = Risk free rate

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

$\wp$ = An index of systematic risk of stock j (beta coefficient)

3.4.2 Statistical Tools

3.4.2.1 Average Rate of Return

One of the main aims of the study is to determine the average return on the investment in common stock. Average rate or return is the arithmetic mean of the past years returns.

$$\overline{R_j}\ \mathrm{X}\frac{R_j}{n}$$

Where,

R_j = rate of return on stock j.

n = Number of years that the return is taken.

ϕ = sign of summation.

3.4.2.2 Standard Deviation

Standard deviation is a statistical measure and is widely used to measure risk from holding a single asset. It is also a statistical measure of the variability of a set of observations. The standard deviation represents a large dispersion of return and is a high risk and vice versa. The symbol is called (σ) sigma. It is the measure the total risk on stock investment.

$$\pm_j \sqrt{\frac{\sum (R_j - E(R_j))^2}{n - 1}}$$

If data is of probability distribution, then SD is calculated as

$$\pm_j \sqrt{\sum (R_j - E(R_j))^2 \mid P_j}$$

Where,

σ_j = Standard deviation on of return stock j during the time period

P_j = Probability distribution of the observation.

Rj = Probability distribution of the observation.

$E(R_j)$ = Expected rate or return on stock j.

n = Number of years that the returns are taken.

3.4.2.3 Coefficient of Variation (C.V.)

It is the relative measurement of risk and return. It measures the risk per unit of return. It provides a more meaningful basis for comparison when the expected returns on two alternatives are not the same. Higher coefficient of variation shows the higher the risk.

$$C.V. = \frac{\pm_j}{E(R_j)}$$

Where,

$C.V.$ = Coefficient of variation of stock.

σ_j = Standard deviation of return on stock j.

$E(R_j)$ = Expected rate of return on stock j.

3.4.2.4 Correlation Coefficient

Two variables are correlated when they are related that the change in the value of one variable is accompanied by change in the value of other. Correlation may be positive or negative. If return on two securities is negatively correlated which combined in portfolio reduces the risk. If securities are positively correlated risk cannot be reduced. Correlation coefficient measures the relationship between two variables in quantitative terms. Correlation coefficient always lies in the range of +1 to -1. A positive correlation coefficient indicates that the returns from two securities generally move in the same direction and vice versa.

Correlation coefficient and covariance are related by the following equation.

$$Cov_{ij} = \pm_i . \pm_j . \circ_{ij}$$

$$Or, \ \circ_{ij} \ X \frac{Cov_{ij}}{\pm_i \pm_j}$$

Where,

$\pm_i$ and $\pm_j$ are the standard deviations of returns for assets i and j and $\circ_{ij}$ is correlation coefficient for asset i and j. there are various cases of correlation and risk condition which are presented below.

i) Perfectly Positive Correlation ($\circ_{ij}$ = + 1)

Return on two perfectly positive correlated stocks would move up and down together and a portfolio of two such stocks would be exactly as risk if the portfolio consists of perfectly positive correlated stocks.

ii) Perfectly Negative Correlation ($\circ_{ij}$ = -1)

Returns on two perfectly negative correlated stocks would move perfectly together put in exactly opposite in directions. In this condition, risk can be completely eliminated perfect negative correlation almost never found in the real world.

iii) No Relation between Return ($\circ_{ij}$ = 0)

When the correlation between two stocks is exactly zero, there is no relationship between the return they are independent of each other. In this condition some risk can be reduced.

iv) Intermediate Risk ($\circ_{ij}$ = +0.5)

Must of the stocks are positively correlated but not perfectly. On average the returns on two stocks would lie on the range of +0.4 and +0.75 under this condition combining stock into portfolio reduced risk but not eliminate it completely.

3.4.2.5 Test of Hypothesis (T-test)

All the companies listed in the NEPSE index is population of this study, which in other words can be said market. The sample is the selected companies. At the sample for the study is less than 30, t-test is the best way for testing the hypothesis.

Null Hypothesis (H_0): $\overline{R_j} X \overline{R_m}$, i.e. there is no significant difference between the average return of selected banks and overall market return.

Alternative Hypothesis (H_1): $\overline{R_j} \mid \overline{R_m}$, i.e. there is significant difference between the average return of selected banks and overall market return.

Under the Ho the test statistics (t) is calculated by using following formula:

$$t = \frac{\overline{R_j} Z \overline{R_m}}{\sqrt{S^2 \frac{1}{n_1} \Gamma \frac{1}{n_2}}}$$

Where,

$\overline{R_j}$ = Average return of the portfolio of Common Stock of Selected banks

$\overline{R_m}$ = Average return of market

$S^2 = \frac{f n_1 Z 1 A \exists_1^2 \Gamma (n_2 Z 1) \exists_2^2}{n_1 \Gamma n_2 Z 2}$

$n_1 = n_2$ = Number of observation.

$\exists_1^2$= Variance returns of selected banks.

$\exists_2^2$ = Variance of market returns.

Test result: If t calculated value is less or equal to tabulated value, the null hypothesis is accepted and vice versa.

CHAPTER - IV
DATA PRESENTATION AND ANALYSIS

This chapter includes the effort in analysis of data collected and their presentation. Detail data of MPS, EPS, P/E ratio and dividend of each bank and their analytical interpretation is done. The study made to analyze the recent Nepalese stock market movement, with a special reference to the sample taken from listed commercial banks. The analysis of data consists of organizing, tabulating and assessing financial and statistical result from different tables and figures, which are drawn to make the result more simple and understandable.

4.1 Analysis of Secondary Data

4.1.1 Financial Performance of Sample Banks

4.1.1.1 Financial Performance of HBL

The financial performance of the HBL is as follows:

Table 4.1

Financial Performance of HBL

Fiscal Year	MPS (Rs)	DPS (Rs)	EPS (Rs)	P/E Ratio
2004/05	920.00	164.91	39.50	20.25
2005/06	1100.00	82.38	59.35	21.23
2006/07	1740.00	363.00	62.57	27.63
2007/08	1980.00	355.00	57.87	42.33
2008/09	1760.00	434.21	37.42	37.10
2009/10	816.00	175.04	52.55	13.42

Source: Annual Report of HBL

In above table the market price (MPS) of common stock of HBL is highest in fiscal year 2007/08 over six year sample period and lowest in fiscal year 2009/10. Similarly, HBL paid highest dividend in the year 2008/09 and lowest in the year 2005/06. The earning per share is found almost the same amount being distributing every year.

Financial Performance of HBL

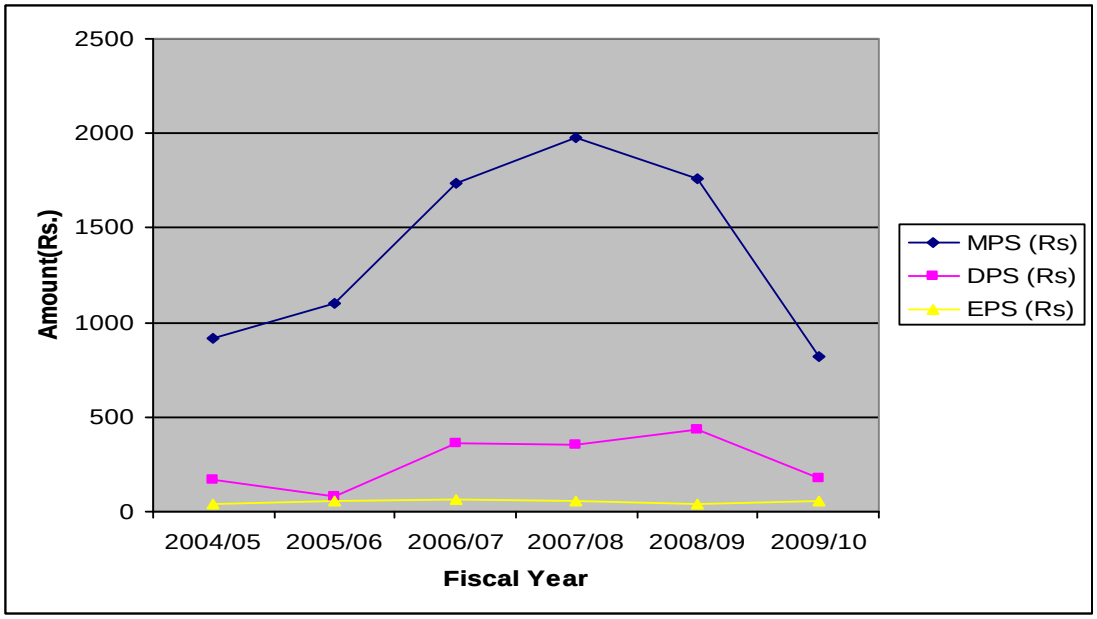

Figure 4.1: Trend Line Showing Financial Performance of HBL

Above figure shows the trend of MPS, DPS and EPS of common stock of HBL in different sample fiscal years. Market price is in bullish trend from fiscal year 2004/05 to 2007/08 and bearish trend from fiscal year 2007/08 to 2009/10. But the DPS and EPS are not fluctuating much as comparison to the market price of the share.

4.1.1.2 Financial Performance of NIBL

The financial performance of the NIBL is as follows:

Table 4.2

Financial Performance of NIBL

Year	MPS (Rs)	DPS (Rs)	EPS (Rs)	P/E Ratio
2004/05	800.00	12.50	39.50	20.25
2005/06	1260.00	349.84	59.35	21.23
2006/07	1729.00	350.80	62.57	27.63
2007/08	2450.00	619.95	57.87	42.33
2008/09	1388.00	20.00	37.42	37.10
2009/10	705.00	25.00	52.55	13.42

Source: Annual Report of NIBL

Above table shows the list of market price of common stock of NIBL in the sample period of study. The MPS is found highest in the fiscal year 2007/08 and the MPS is lowest in the fiscal year 2009/10. NIBL paid highest dividend in the fiscal year 2007/08 and lowest in the fiscal year 2004/05.

Financial Performance of NIBL

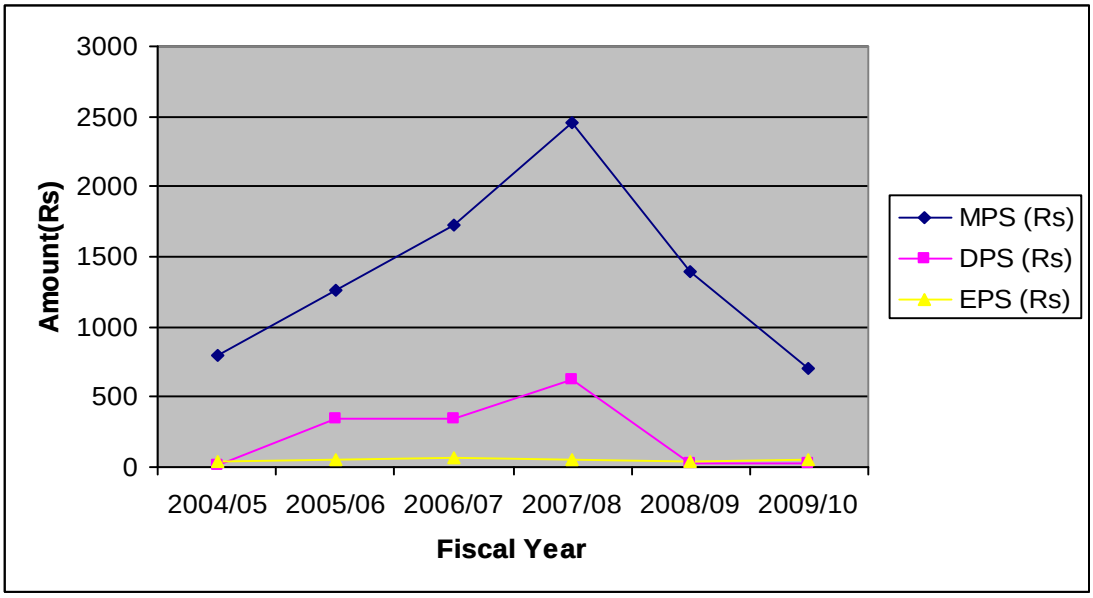

Figure 4.2: Trend Line Showing Financial Performance of NIBL

The movement of MPS is shown in above figure MPS is in steadily increasing up to fiscal year 2007/08 from the beginning of study period and seen constantly decreasing up to the last study year 2009/10. Highest dividend paid in the year 2007/08.

4.1.1.3 Financial Performance of NCC

The financial performance of the NCC is as follows:

Table 4.3

Financial Performance of NCC

Year	MPS (Rs)	DPS (Rs)	EPS (Rs)	P/E Ratio
2004/05	120.00	0.00	-0.74	-162.16
2005/06	94.00	0.00	-84.77	-1.11
2006/07	316.00	0.00	-16.56	-19.08
2007/08	457.00	0.00	35.63	12.83
2008/09	335.00	0.00	29.35	11.41
2009/10	275.00	0.00	30.28	9.08

Source: Annual Report of NCC

In above table the market price of common stock of NCC is seen fluctuating. The price of NCC's share is seen highest in the fiscal year 2007/08 and lowest in the fiscal year 2005/06. NCC bank has not paid any dividend neither cash nor stock dividend so far during the study period of five year.

Financial Performance of NCC

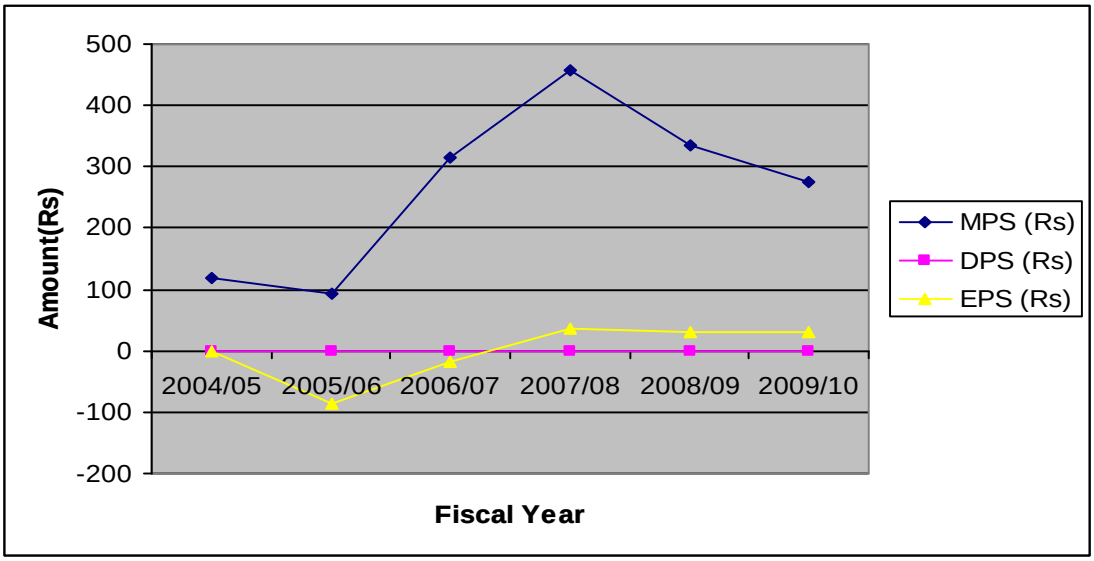

Figure 4.3: Trend Line Showing Financial Performance of NCC

Above figure shows the movement of MPS of NCC, in which the MPS initially seen dropped in the fiscal year 2005/06 and then seen rising till 2007/08. Then the MPS is getting decreased up to the last study year 2009/10. There is no dividend paid in the stock of NCC and EPS is also seen negative in the fiscal year 2005/06 and 2006/07.

4.1.2 Risk and Return of Sample Banks

4.1.2.1 Risk and Return of HBL

The risk and return on the common stock of the HBL is tabulated below:

Table 4.4

Holding Period Return, Standard Deviation & Coefficient of Variation of HBL

Year	MPS(Rs)	DPS(Rs)	HPR (R_h)
2004/05	920.00	164.91	-
2005/06	1100.00	82.38	0.2852
2006/07	1740.00	363.00	0.9118
2007/08	1980.00	355.00	0.3420
2008/09	1760.00	434.21	0.1082
2009/10	816.00	175.04	-0.4369
		pR_h	1.2102
		Average Return	0.2420
		Standard Deviation	0.4846
		Coefficient of Variation	2.0021

Source: Annex 1

From the table 4.2, the holding period return of common stock of HBL is highest in the fiscal year 2006/07 and lowest in the fiscal year 2009/10. The average rate of return over the five year sample period of the common stock of HBL is 24.20%. The standard deviation for investment in the common stock of HBL is 48.46% which means the expected return for next year lies in between (24.20 ± 48.46) %.

Annual Rate of Return on Common stock of HBL

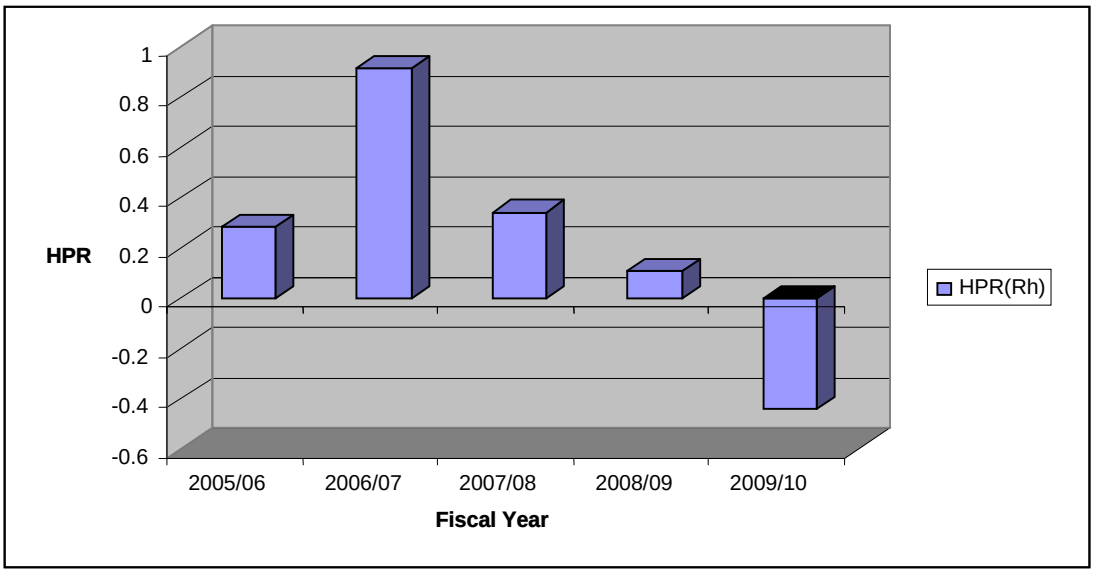

Figure 4.4: Bar Diagram Showing Annual Rate of Return on Common Stock of HBL

Above figure shows the HPR of common stock of HBL over 5 year sample period. The HPR for common stock investment in HBL is highest in the fiscal year 2006/07 which is 91.18% and lowest in the fiscal year 2009/10 i.e. 43.69% in negative.

4.1.2.2 Risk and Return of NIBL

The risk and return on the common stock of the NIBL is tabulated below:

Table 4.5

Holding Period Return, Standard Deviation & Coefficient of Variation of NIBL

Year	MPS(Rs)	DPS(Rs)	HPR (R_i)
2004/05	800.00	12.50	-
2005/06	1260.00	349.84	1.0123
2006/07	1729.00	350.80	0.6506
2007/08	2450.00	619.95	0.7756
2008/09	1388.00	20.00	-0.4253
2009/10	705.00	25.00	-0.4741
		pR_h	1.5391
		Average Return	0.3078
		Standard Deviation	0.7038
		Coefficient of Variation	2.2866

Source: Annex 2

Above table shows the annual return or holding period return of common stock of NIBL. Holding period return is seen highest in the fiscal year 2005/06 and lowest in the fiscal year 2009/10. The average rate of return on its share over the five year study period is 30.78%. The standard deviation for investment in the share of NIBL is 70.38%, which shows return in next year lies in between (30.78 ± 70.38) %.

Annual Rate of Return on Common stock of NIBL

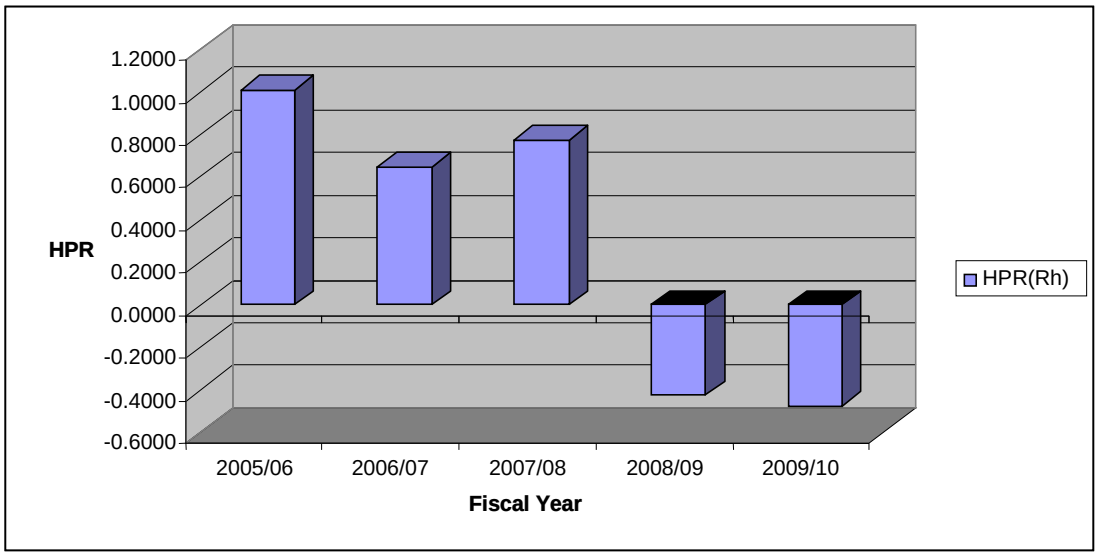

Figure 4.5: Bar Diagram Showing Annual Rate of Return on Common Stock of NIBL

Above figure shows the annual HPR of common stock investment in NIBL over the five year study period. HPR is highest in the fiscal year 2005/06 and lowest is in the fiscal year 2009/10.

4.1.2.3 Risk and Return of NCC

The risk and return on the common stock of the NCC is tabulated below:

Table 4.6

Holding Period Return, Standard Deviation & Coefficient of Variation of NCC

Year	MPS(Rs)	DPS(Rs)	HPR (R_n)
2004/05	120.00	0.00	-
2005/06	94.00	0.00	-0.2167
2006/07	316.00	0.00	2.3617
2007/08	457.00	0.00	0.4462
2008/09	335.00	0.00	-0.2670
2009/10	275.00	0.00	-0.1791
		pR_h	ϕR_n=2.1452
		Average Return	0.4290
		Standard Deviation	1.1188
		Coefficient of Variation	2.6077

Source: Annex 3

The above table of the HPR of the common stock of NCC shows that the value is maximum in the fiscal year 2006/07 and the lowest in the fiscal year 2008/09. During the study period of five years, the average rate of return is found 42.90%. The standard deviation for the stock of NCC is found 111.88%. This high value of standard deviation tells that the next HPR lies in the range of (42.90 ± 111.88) %.

Annual Rate of Return on Common stock of NCC

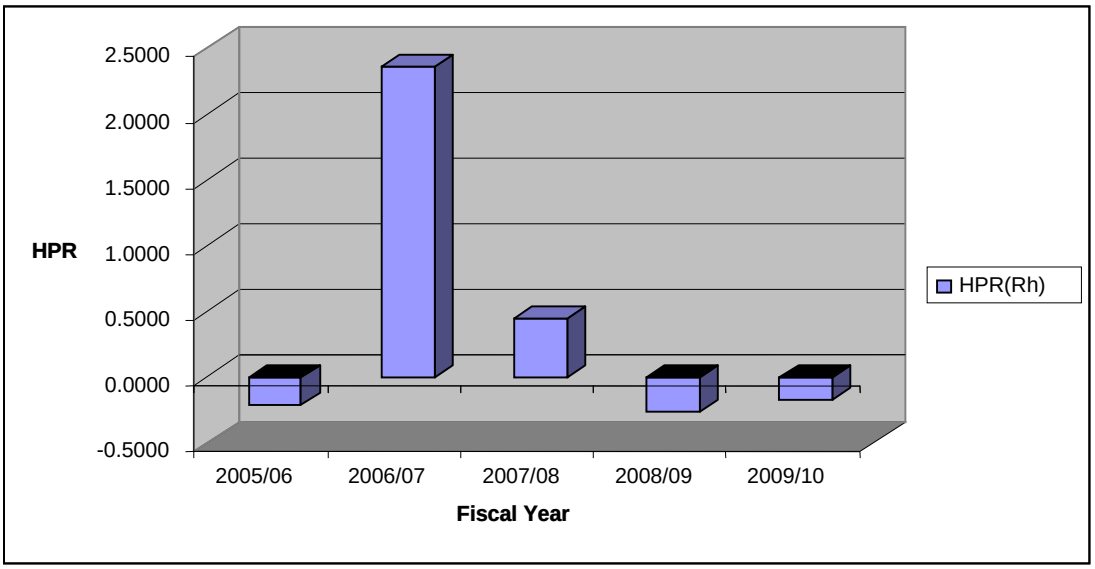

Figure 4.6: Bar Diagram Showing Annual Rate of Return on Common Stock of NCC

Figure shows the HPR of stock of NCC over the five year study period. Among the study year, fiscal year 2006/07 has highest HPR, whereas the fiscal year 2008/09 has lowest and even in negative.

4.1.3 Year-wise Comparative Return Analysis of HBL, NIBL and NCC

Table 4.7

Annual Rate of Return of HBL, NIBL and NCC

Year	R_h	R_i	R_n
2004/05	-	-	-
2005/06	0.2852	1.0123	-0.2167
2006/07	0.9118	0.6506	2.3617
2007/08	0.3420	0.7756	0.4462
2008/09	0.1082	-0.4253	-0.2670
2009/10	-0.4369	-0.4741	-0.1791

Source: Annex 1, 2 & 3

Comparative Annual Returns of HBL, NIBL and NCC

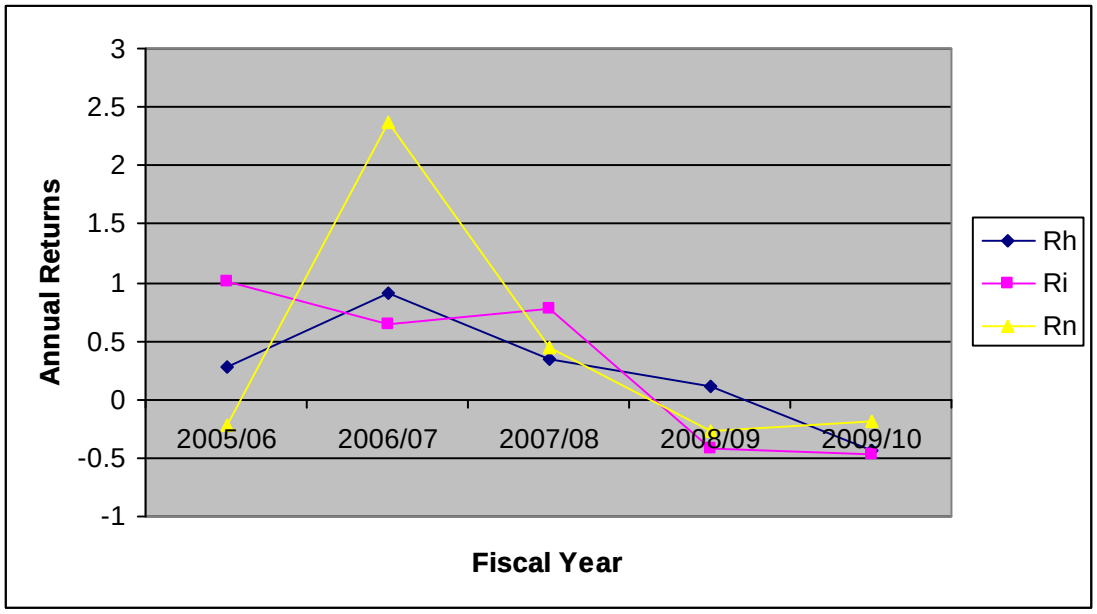

Figure 4.7: Trend Line Showing Comparative Annual Rate of Return on Common Stock of HBL, NIBL and NCC

Above figure shows that the holding period return of NCC is found highest in fiscal year 2006/07 but on other years the return is not found satisfactory. The Holding period return provided by HBL and NIBL is found not highest but also they are some what paying same rate of return.

4.1.4 Comparative Analysis of Risk and Return

Table 4.8

Average Rate of Return, SD and CV of HBL, NIBL and NCC

SN	Name of Bank	ARR	SD	CV	Remarks
1	HBL	0.2420	0.4846	2.0021	
2	NIBL	0.3078	0.7038	2.2864	
3	NCC	0.4290	1.1188	2.6077	Highest HPR, SD & CV

Source: Annex 1, 2 & 3

From above table surprisingly, the common stock of NCC provides highest average return then the stock of other two banks of the sample study. This is because the NCC pays no any dividend during the study period 2004/05 to 2009/10. The standard deviation, the

measurement of absolute risk is also highest for the stock of same bank, i.e. NCC than other two bank's stock.

But there is the contradiction between average return and SD of three banks. Therefore we should adopt another statistical tool coefficient of variation (CV) of stocks of three banks. Since CV measures risk per unit return, the stock of HBL has lowest CV. So, we should consider the stock of HBL for the investment even its average return is comparatively lowers than other.

HPR, SD, and CV of HBL, NIBL and NCC

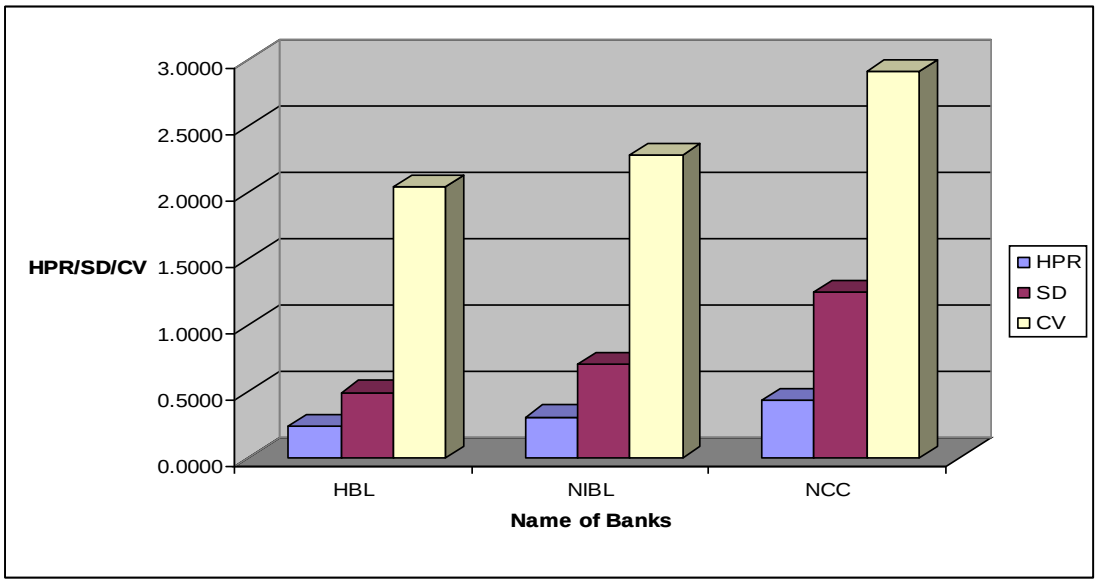

Figure 4.8: Multiple Bar Diagram Showing Comparative Risk and Return of HBL, NIBL and NCC

4.1.5 Market Capitalization

By the end of the fiscal year 2009/10, the market capitalization of the listed securities reached to Rs. 376,871.37 million. The sector wise market capitalization in the fiscal year 2008/09 is presented in table 23.

Table 4.9

Market Capitalization

(Rs. in million)

S.N.	Sector	Market Capitalization	Percent
1	Commercial Bank	206,282.52	54.74
2	Development Bank	27,488.87	7.29
3	Finance Company	29,869.59	7.92
4	Insurance Company	9,756.61	2.59
5	Hotel	5,285.58	1.40
6	Manufacturing & Processing Company	7,592.03	2.01
7	Trading Company	1,617.51	0.43
8	Other Company	88,978.67	23.61
	Total	**376,871.37**	**100.0**

Source: SEBON Annual Report 2009/10

Sector-wise Market Capitalization

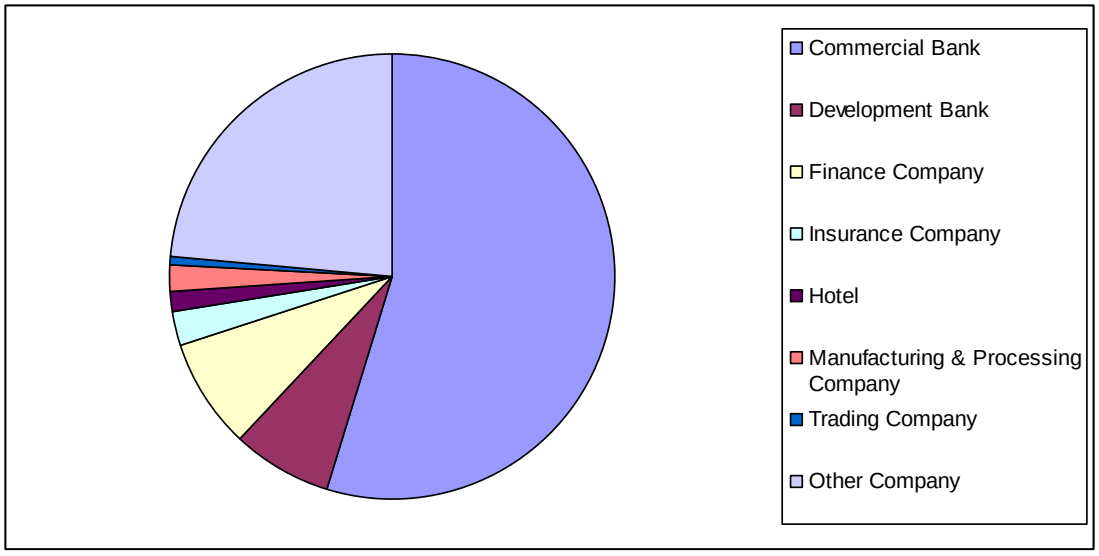

Figure 4.9: Pie Chart Showing Total Market Capitalizations

4.1.6 Market Capitalization of Sample Banks

Among the total market capitalization, the market capitalization of the three sample banks is Rs 33,889.2 million. Among them NIBL has highest market capitalization Rs. 16,984.1 million and NCC has lowest market capitalization amounted Rs. 3,849.1 million.

Table 4.10

Market Capitalization of HBL, NIBL and NCC

Rs. in million

SN	Bank	Market Capitalization (Rs)	Percentage
1	HBL	13,056.0	38.5
2	NIBL	16,984.1	50.1
3	NCC	3,849.1	11.4
		33,889.2	100.0

Source: Annual Reports of Sample Bank

Market Capitalization of HBL, NIBL and NCC

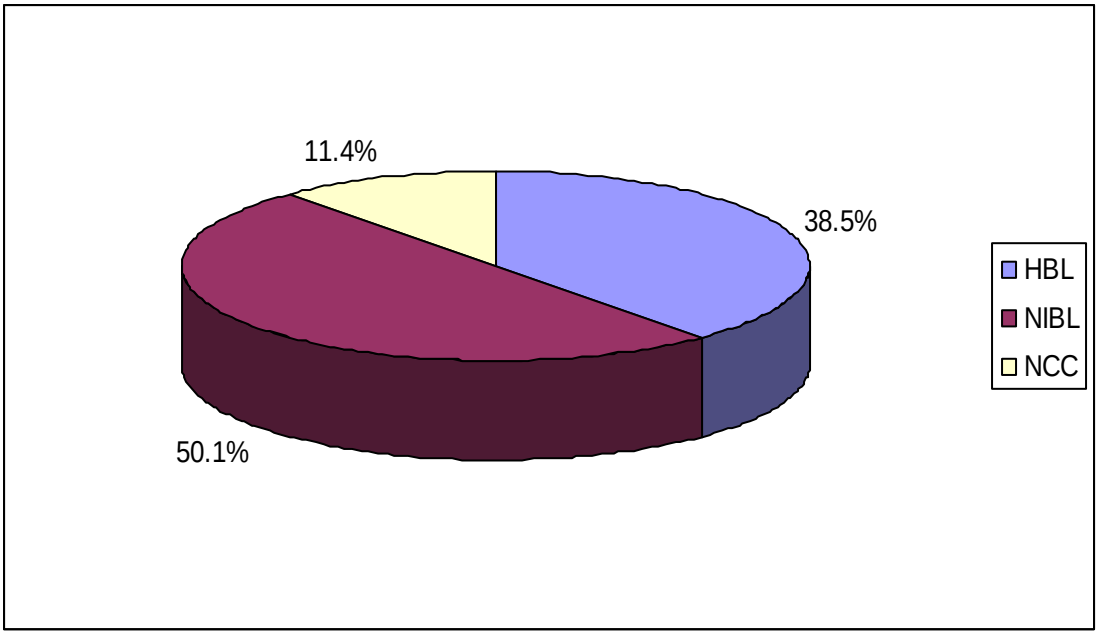

Figure 4.10: Pie-chart Showing Capital Formed by the HBL, NIBL and NCC

Above figure shows the market capitalization of the three sample banks of the study. Among them, NIBL covers 50.1%, HBL occupies 38.5% and 11.4% by NCC.

4.1.7 Year-wise Market (NEPSE Index) Rate of Return and SD

Table 4.11

Annual Market Return and Risk

Fiscal Year	Market Index	R_m
2004/05	286.67	-
2005/06	386.83	0.3494
2006/07	683.95	0.7681
2007/08	963.36	0.4085
2008/09	749.10	-0.2224
2009/10	477.73	-0.3623
	pR_m	**0.9413**
	Average Return	**0.1883**
	SD	**0.4697**

Source: Annex 4

Above table shows, the NEPSE Index movement over five year period, the average market return is 18.83% and the market standard deviation is 46.97%.

Annual Market Return

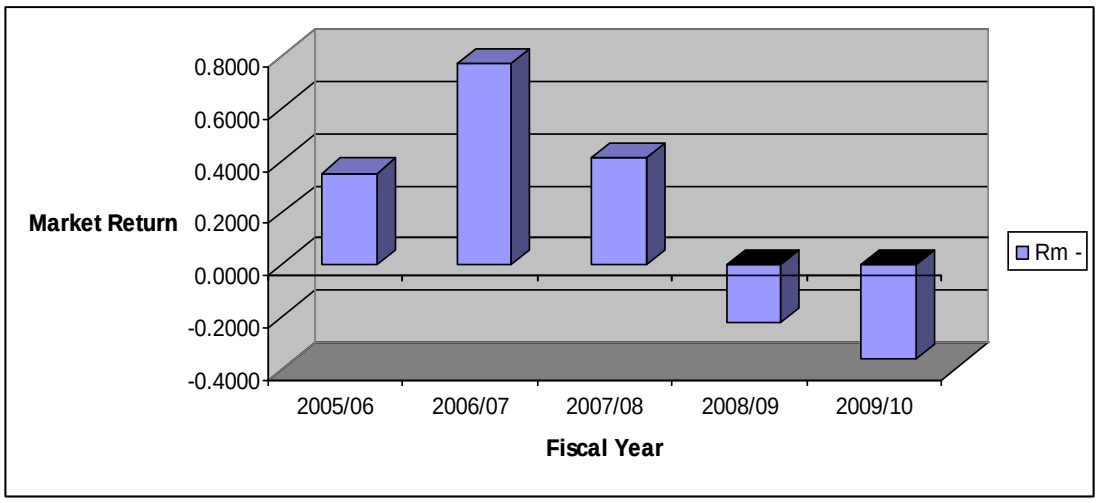

Figure 4.11: Bar Diagram Showing Comparative Annual Market Return

Above figure shows the annual market return over the five year period and highest is seen in the year 2006/07 and lowest in the year 2009/10.

4.1.8 Portfolio Analysis

Portfolio is the right combination of investment in different stocks, which maximize profit and minimizes the risk. For the study we have constructed three minimum variance portfolio; P1 that is combination of HBL & NIBL, P2 that is combination of NIBL & NCC and P3 that the combination of HBL & NCC from the common stock of sample commercial banks.

Table 4.12

Portfolio Return and Risk of Common Stock of Banks

SN	Portfolio	Combination of Banks	R_p	$\pm_p$
1	P1	HBL and NIBL	0.2423	0.4846
2	P2	NIBL and NCC	0.3284	0.6798
3	P3	HBL and NCC	0.1769	0.4026

Source: Annex 5

After the calculation the table shows that the list of portfolio returns and portfolio SDs. Result shows, portfolio P2 has highest average return and portfolio P3 has lowest average return. Among them portfolio p3 has least risk i.e. 40.26% and portfolio p2 has highest portfolio risk. So the study shows that depending on the capacity to bear risk by investor; risk taker investor should form portfolio P2 having highest risk and risk averter investor should form portfolio p3 having lowest risk. Likewise risk neutral investor choose portfolio P2. The following cart shows the above result in pictorial form.

Return and Risk of Portfolios

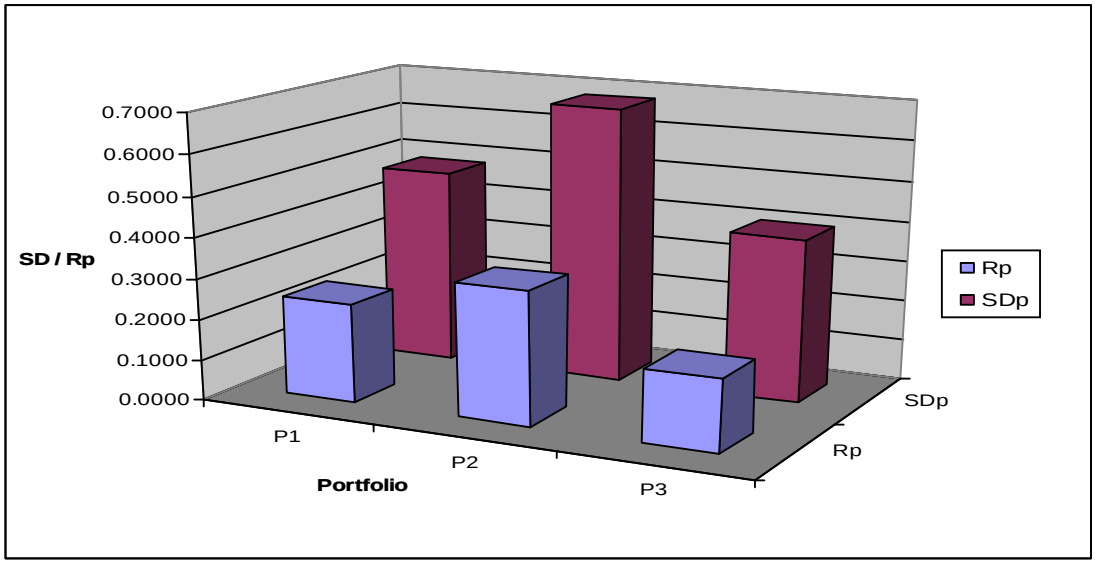

Figure 4.12: Multiple Bar Diagram Showing Comparative Risk and Return of Portfolio

Among three stocks of sample banks Portfolio P2 has higher return and highest risk of portfolio which is composed of HBL and NCC.

4.1.9 Analysis of Beta Coefficient

The following table shows the covariance and beta coefficient:

Table 4.13

Covariance and Beta of Sample Banks

SN	Sample Bank	Covariance with Market	Beta Coefficient
1	HBL	0.2115	0.9587
2	NIBL	0.2867	1.3
3	NCC	0.4103	1.86

Source: Annex 6

The values of covariance presented in above table shows the positive relationship between individual return and the return of the market because values of covariance with the market are all positive.

The values of beta presented in above table shows that the stock of HBL is less risky than market because it has lower beta coefficient than market beta. Likewise the stock of NCC is most risky than market because it has higher value of beta than market beta and its beta is higher than other two stocks. Market beta is always equal to 1.

Covariance with market and Beta coefficient of Banks

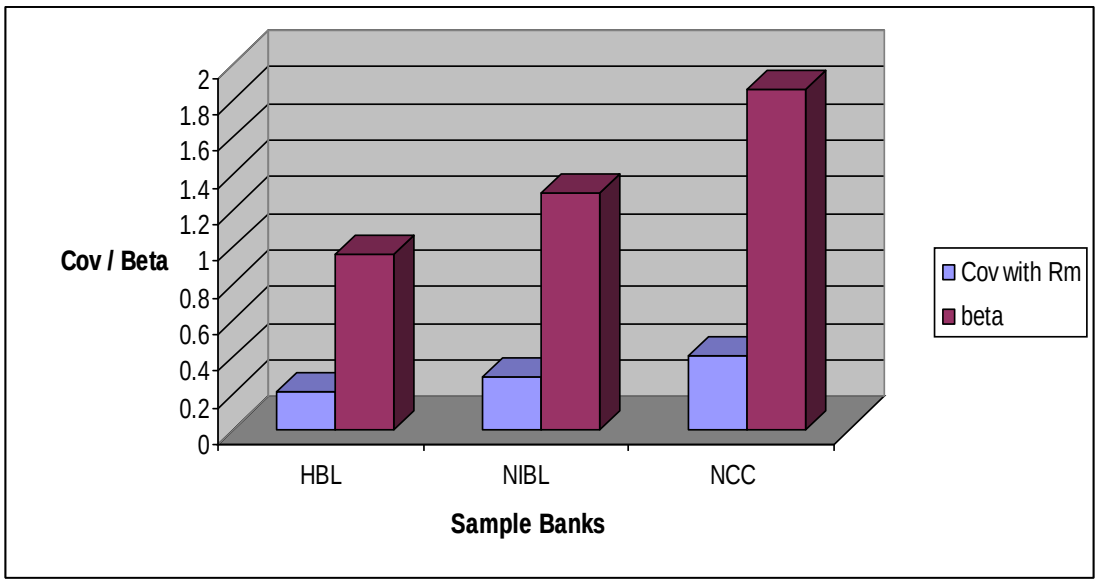

Figure 4.13: Multiple Bar Diagram Showing Comparative Analysis of Covariance and Beta of Sample Banks

The above chart shows that among the stock of three banks NCC has highest beta coefficient and covariance with market return. This implies that the stock of NCC is move volatile with market. But HBL has Lesser Beta and Cov with market.

4.1.10 Analysis of Portfolio Beta

Table 4.14

Portfolio Beta

SN	Portfolio	Combination of Banks	p
1	P1	HBL and NIBL	0.9599
2	P2	NIBL and NCC	1.3948
3	P3	HBL and NCC	0.6450

Source: Annex 7

Among the three portfolio, above table shows that portfolio P2 made from the combination of NIBL and NCC is most risky than market because the value of portfolio beta is more than one. Portfolio P1 made from HBL & NIBL and P3 made from HBL & NCC are less risky as their values of portfolio beta are lesser than the market beta. Portfolio P3 is least risky among all.

4.1.11 Systematic and Unsystematic Risk on Stock of HBL, NIBL and NCC

Table: 4.15

Calculation of Systematic & Unsystematic Risk of HBL, NIBL & NCC

SN	Bank	Systematic Risk	Unsystematic Risk	Systematic Risk Proportion	Unsystematic Risk Proportion
1	HBL	0.4503	0.0343	0.9292	0.0708
2	NIBL	0.6104	0.0934	0.8673	0.1327
3	NCC	0.8733	0.2455	0.7806	0.2194

Source: Annex 8

The above table shows that, systematic risk of HBL is highest which cannot be reduced or cannot be avoided as it is arises from the external environment and NCC has lowest systematic risk. Among three banks NCC has highest unsystematic risk and that can be reduced by creating well diversified portfolio through well management.

Total Risk with Systematic and Unsystematic Risk of Banks

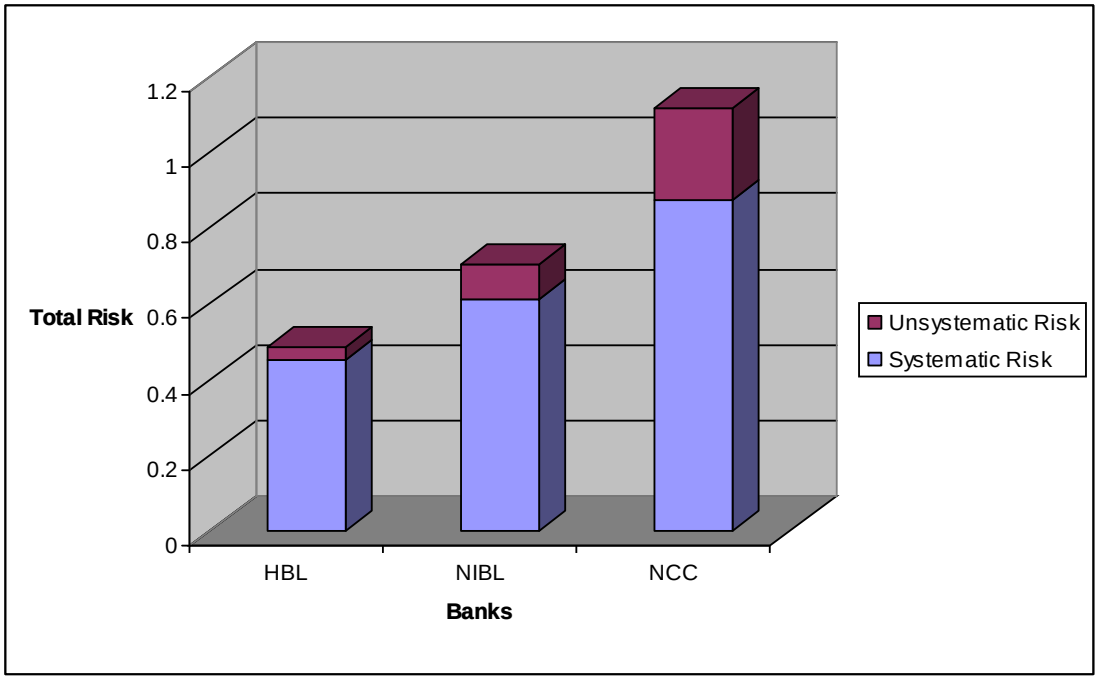

Figure 4.14: Bar Diagram Showing Total Risk with Systematic and Unsystematic Risk of Banks

Above bar diagram shows that the total risk of NCC is more than other banks and the proportion of unsystematic risk also more. The HBL has lesser risk and proportion of unsystematic risk

4.1.12 Testing of Hypothesis

Since the number of sample is less than 30, student's t-test is applicable for testing the hypothesis. Hypothesis for the return of three sample banks are:

a. Hypothesis testing for HBL

Null Hypothesis (H_0):

$\overline{R_m}$ X $\overline{R_h}$, the average return of market is equal to the average return of HBL.

Alternative Hypothesis (H_1):

$\overline{R_m}$ | $\overline{R_h}$, the average return of market is not equal to the average return of HBL.

b. Hypothesis testing for NIBL

Null Hypothesis (H_0):

$\overline{R_m} X \overline{R_i}$, the average return of market is equal to the average return of NIBL.

Alternative Hypothesis (H_1):

$\overline{R_m} \mid \overline{R_i}$, the average return of market is not equal to the average return of NIBL.

c. Hypothesis testing for NCC

Null Hypothesis (H_0):

$\overline{R_m} X \overline{R_n}$, the average return of market is equal to the average return of NCC.

Alternative Hypothesis (H_1):

$\overline{R_m} \mid \overline{R_n}$, the average return of market is not equal to the average return of NCC.

Table 4.16

Calculation of t-Statistics for Hypothesis Testing

SN	Bank	R_m	R_x	s_x	s_m	s^2	t-statistics
1	HBL	0.1883	0.2420	0.4846	0.4697	0.2277	0.1781
2	NIBL	0.1883	0.3078	0.7038	0.4697	0.3580	0.3159
3	NCC	0.1883	0.4290	1.1188	0.4697	0.7361	0.4436

Source: Annex 9

Result of the t-statistic is shown in the above table. The calculation shows that the calculated values of t-statistic of all three banks are less than the tabulated value of t-statistic. The value of t-statistic for 5% level of significance (ℑ) and 8 degree of freedom is 2.306. But all the calculated values are less than tabulated value. So, for all the three banks null hypothesis (H_0) is accepted, that means the average return of all three banks are equal to the average return of market.

4.2 Analysis of Primary Data

For the fulfillment of the research, primary data collected from the investors who had invested in the common stock of commercial banks.

4.2.1 Gender Profile

The gender profile of respondents is shown in the following table:

Table 4.17

Gender Profile of Respondents

SN	Gender	Number	Percentage
1	Male	33	78.6
2	Female	9	21.4
	Total	**42**	**100**

Source: Opinion Survey

Gender Profile of Respondents

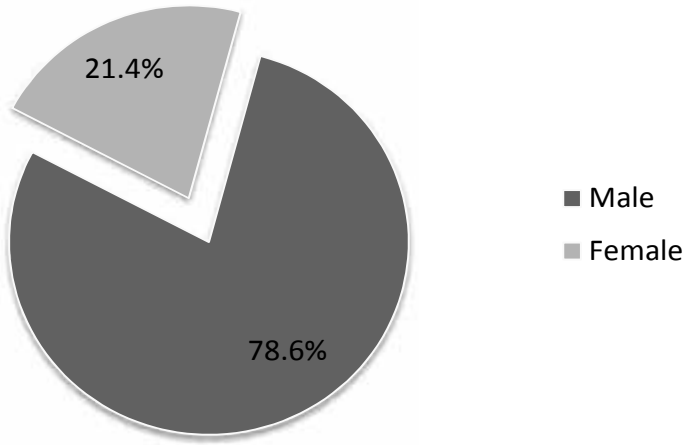

Figure 4.15: Pie Chart Showing Male and Female Respondents

Above table and pie chart shows that, among the 42 respondents 78.6% are male and 21.4% are female. This result shows that the male are likely to invest on the shares of commercial banks. Male investors are more dominantly exist than the female investor in the share market of Nepal.

4.2.2 Age Group Profile

For the research purpose questionnaire is distributed to the different people for filling the answer. The age groups of different respondents are listed in the following table:

Table 4.18

Age Group of Respondents

SN	Age Group	Number	Percentage
1	Below 30	20	47.6
2	30-40	16	38.1
3	40-50	5	11.9
4	Above 50	1	2.4
	Total	**42**	**100**

Source: Opinion Survey

Age Group of Respondents

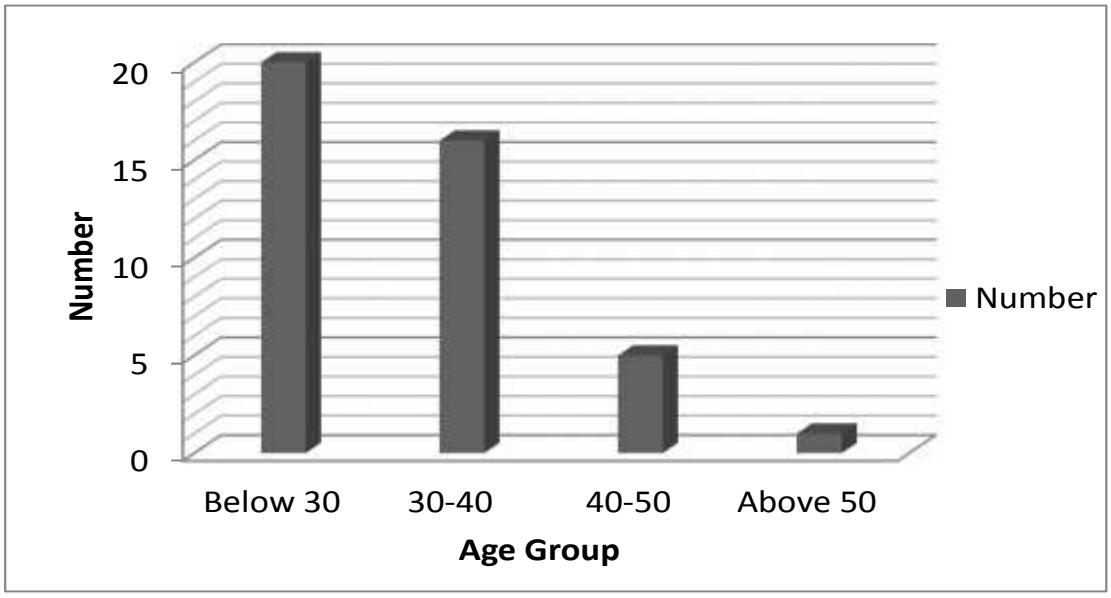

Figure 4.16: Bar Diagram Showing Different Age Groups of Respondents

Above table and bar diagram of respondent shows that people of age group below 30 are found 47.6%, age group of 30-40 are 38.1%, age group of 40-50 are 11.9% and above 50 are found 2.4%. Respondents of age group below 30 are found more than other age groups. Whereas the age group above 50 are lesser in percentage.

4.2.3 Educational Status

The educational background of the respondents is shown in the table below:

Table 4.19

Educational Status of Respondents

SN	Education	Number	Percentage
1	SLC	4	9.5
2	Intermediate	10	23.8
3	Graduate	16	38.1
4	Postgraduate	12	28.6
	Total	**42**	**100**

Source: Opinion Survey

Educational Background of Respondents

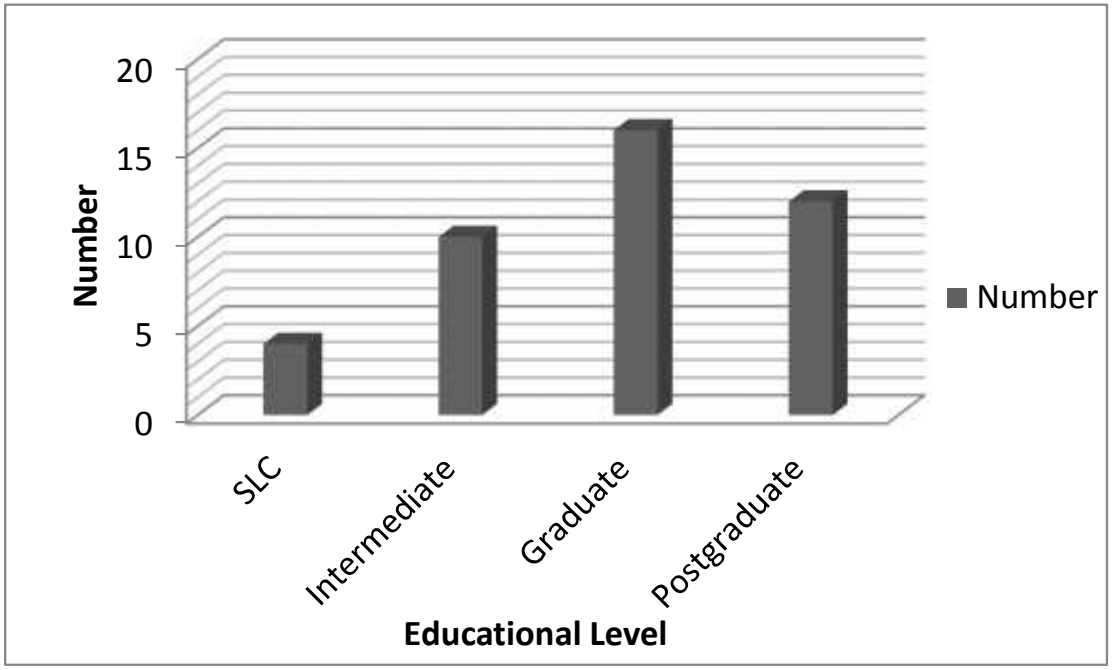

Figure 4.17: Bar Diagram Showing Education Level of Respondents

Above table and bar diagram shows the educational background of respondents, in which respondents having level of SLC are 9.5%, intermediate are23.8%, graduate are 38.1% and postgraduate are 28.6%. Most of the investors are found graduate.

4.2.4 Marital Status Profile

The marital status of respondents is shown as:

Table 4.20

Marital Status of Respondents

SN	Marital Status	Number	Percentage
1	Single	20	47.6
2	Married	22	52.4
	Total	**42**	**100**

Source: Opinion Survey

Marital Status of Respondents

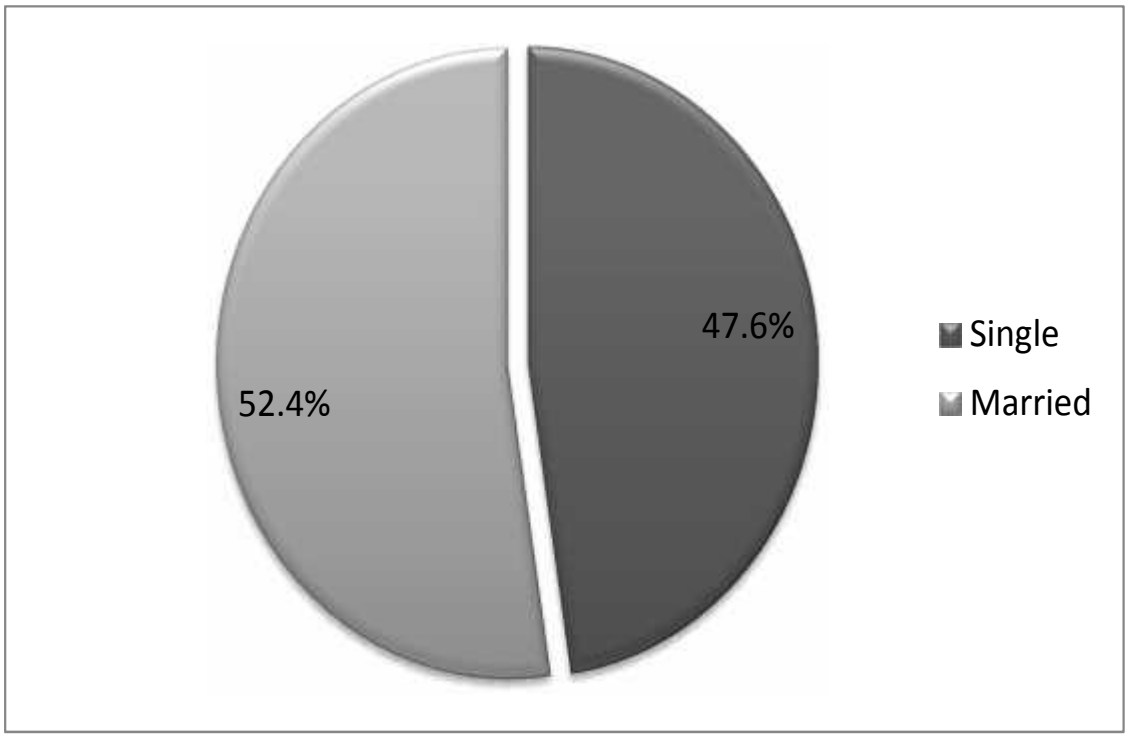

Figure 4.18: Pie Chart Showing Unmarried and Married Respondents

Among our respondents, most of the investors are married which is shown in the above table and pie chart. Married are found 52.4% and single or unmarried are 47.6%.

4.2.5 Number of Children Profile

Number of children of our respondents is listed in the following table:

Table 4.21

Number of Children of Respondents

SN	No of Child	Number	Percentage
1	No Child	23	54.8
2	One	10	23.8
3	Two	5	11.9
4	More than two	4	9.5
		42	**100**

Source: Opinion Survey

Number of Children of Respondents

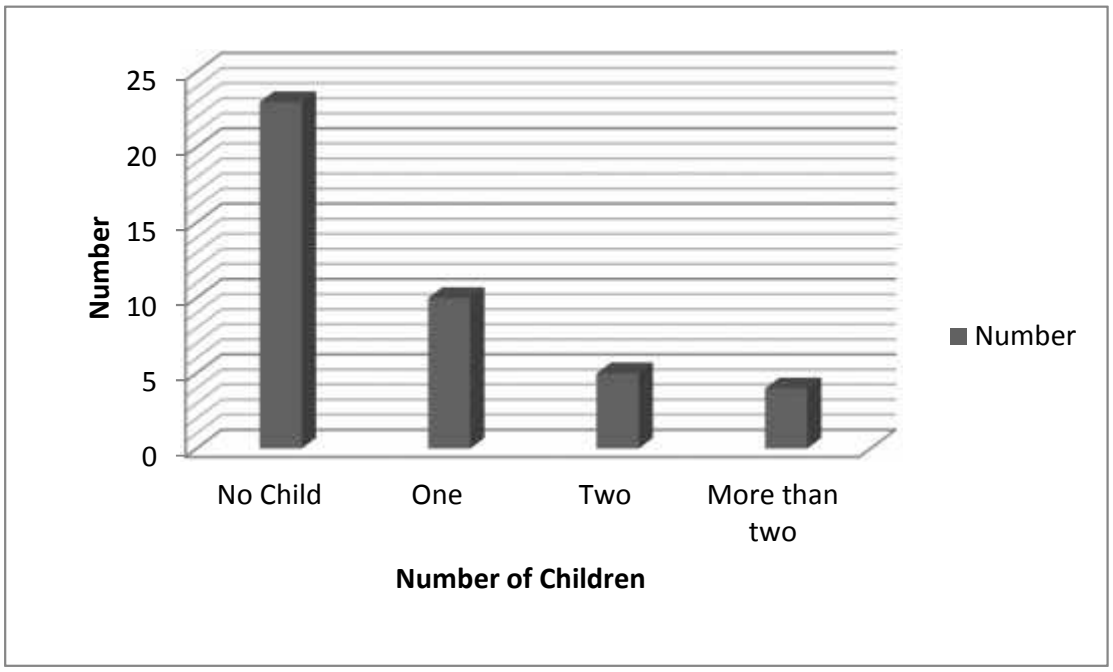

Figure 4.19: Bar Diagram Showing Number of Children of Respondents

Above table and bar diagram shows that the respondents having no child are 54.8%, having one child are 23.8%, having two children are 11.9% and more than two children are 9.5%. Most of the investors have no child.

4.2.6 Occupation Profile

The following table shows the occupation of the respondents:

Table 4.22

Occupation of Respondents

SN	Occupation	Number	Percentage
1	Farmer	4	9.5
2	Business	11	26.2
3	Service	20	47.6
4	Students (Other)	7	16.7
		42	**100**

Source: Opinion Survey

Occupation of Respondents

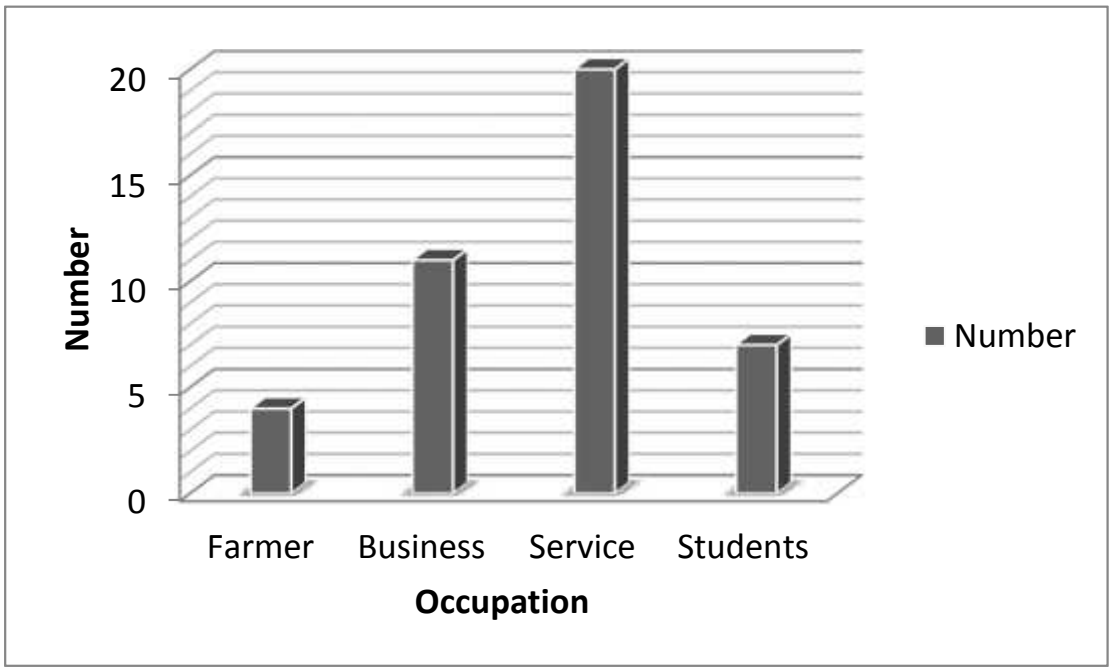

Figure 4.20: Bar Diagram Showing Occupation of Respondents

Among 42 respondents, the above table and bar diagram shows the occupation of investors. 9.5% are farmer, 26.2% are businessman, 47.6% are service holder and 16.7% are students. On this research it is found that majority of investors are service holders.

4.2.7 Income Profile

Income profile of the respondents is shown in the table below:

Table 4.23

Income Profile of Respondents

SN	Income	Number	Percentage
1	Below 5000	6	14.2
2	5000-10000	12	28.6
3	10000-20000	12	28.6
4	Above 20000	12	28.6
		42	**100**

Source: Opinion Survey

Monthly Income of Respondents

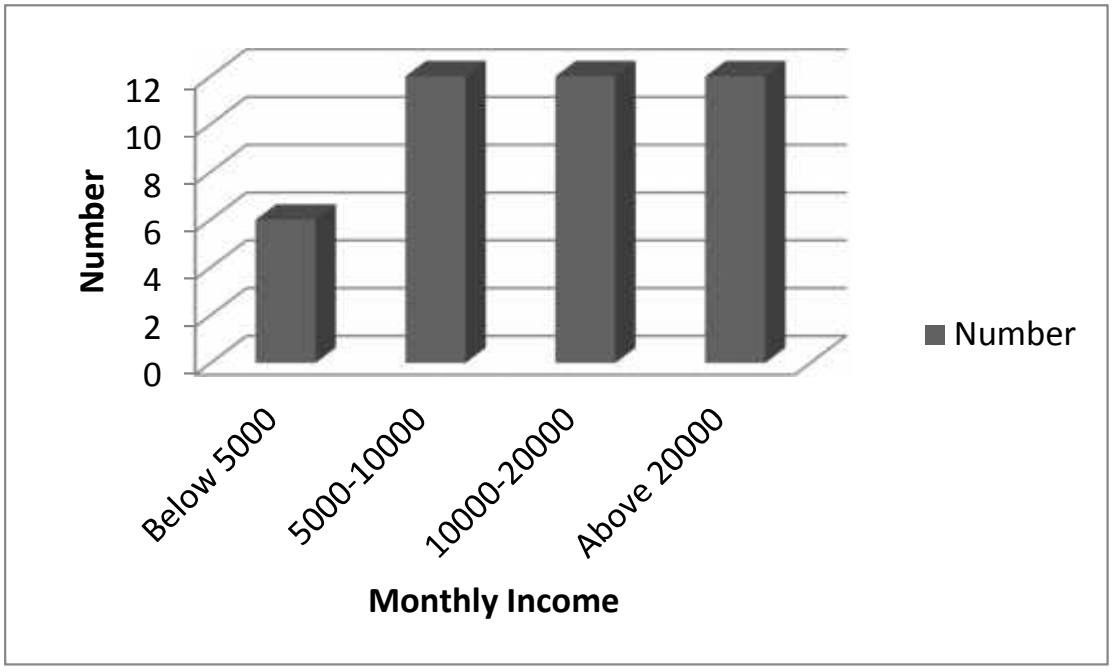

Figure 4.21: Bar Diagram Showing Monthly Income of Respondents

Among the 42 respondents of this research, the above table and bar chart of income shows that 14.2% of the respondents have income below 5000. But other respondents of group 5000-10000, 10000-20000 and above 20000 are found equal of 28.6%.

4.2.8 Family Structure Profile

Family structure also plays vital role for the investment of the Nepalese investors. The table below shows the profile of family structure:

Table 4.24

Family Structure of Respondents

SN	Family	Number	Percentage
1	Single	27	64.3
2	Joint	15	35.7
	Total	**42**	**100**

Source: Opinion Survey

Family Structure of Respondents

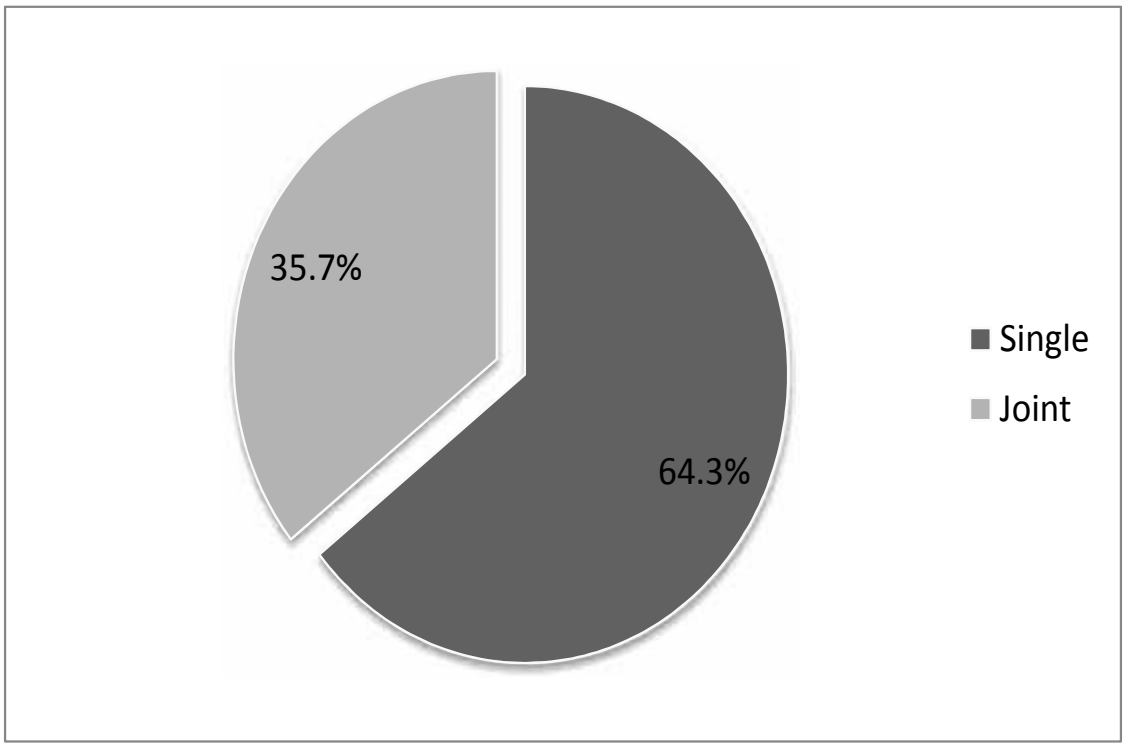

Figure 4.22: Pie Chart Showing Joint Family and Single Respondents

The above table and pie chart above shows that maximum of the investors are single which is 64.3% and 35.7% of the investor are staying as joint family structure.

4.2.9 Basis of Investment

Investors invest their money on the common stock of commercial bank from the different basis. The given table shows the different investor and their basis for of investment:

Table 4.25

Basis of Investment of Respondents

SN	Basis	Number	Percentage
1	Friend's Advice	14	33.3
2	Market Survey	12	28.6
3	Financial Statement Review	9	21.4
4	Whim and Rumor	7	16.7
		42	**100**

Source: Opinion Survey

Basis of Investment of Respondents

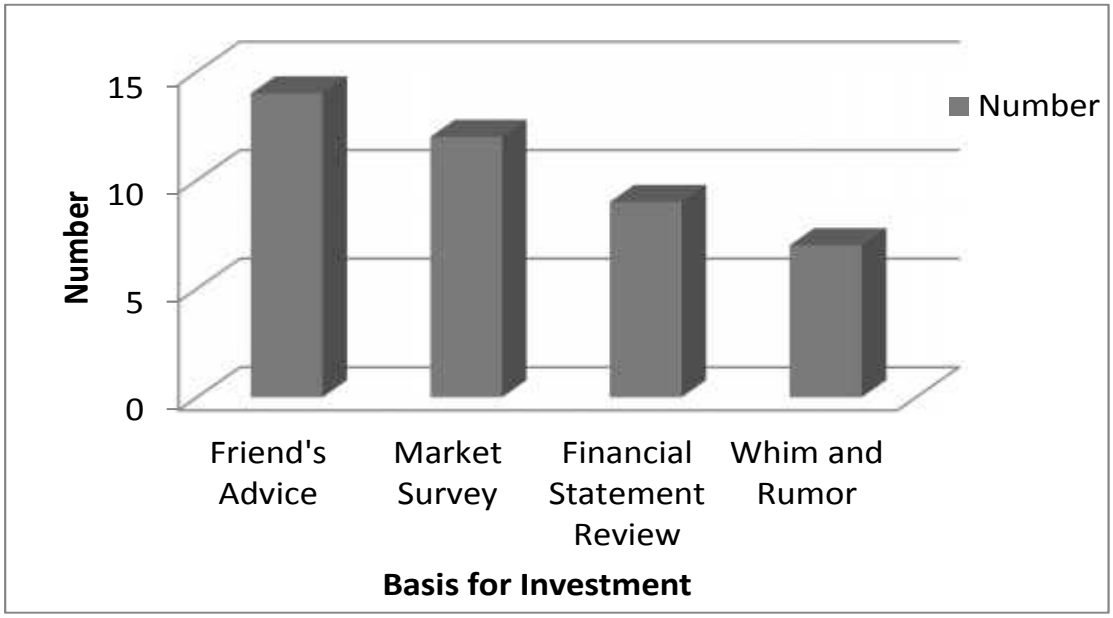

Figure 4.23: Bar Diagram Showing Basis of Investment of Respondents

Above table and bar chart shows that the maximum of investors 33.3% gets advice from their friend for their investment in common stock of bank, others 28.6% by market survey, 21.4% by financial statement reviews and least 16.7% from the whim or rumor of the market.

4.2.10 Type of Investor

The given table lists the different types of investors on the risk point of view:

Table 4.26

Type of Respondents

SN	Investor	Number	Percentage
1	Risk Seeker	9	21.4
2	Risk Averter	13	31.0
3	Neutral on Risk	15	35.7
4	Don't Know	5	11.9
		42	**100**

Source: Opinion Survey

Types of Respondents

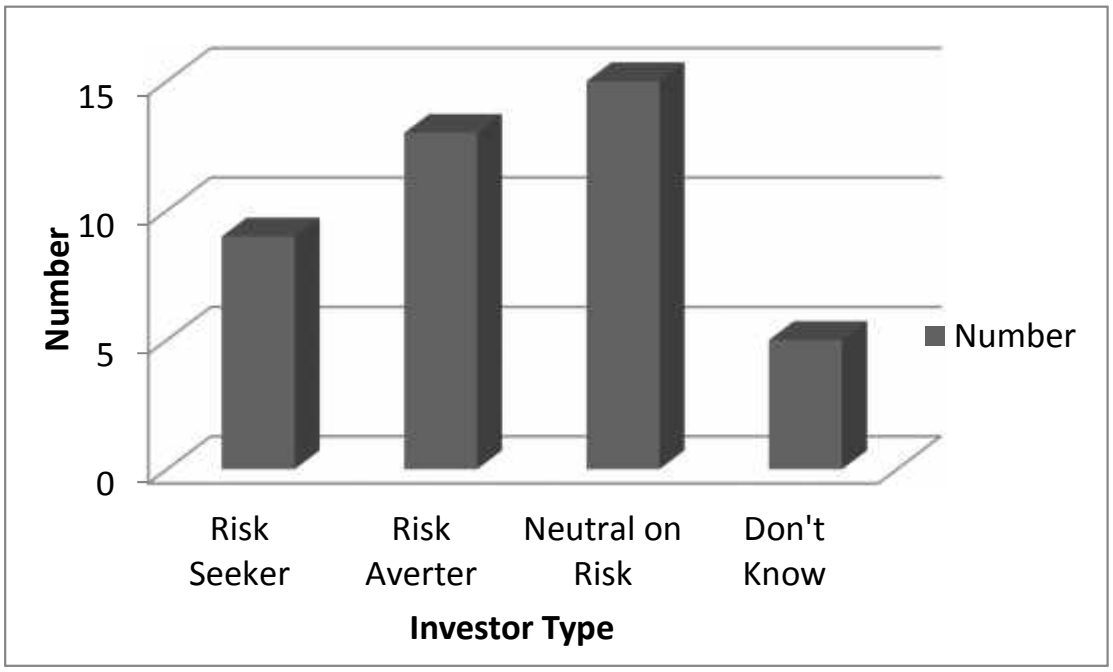

Figure 4.24: Bar Diagram Showing Type of Respondents in Their Investment

Investors are of different nature on the basis of risk which is shown in the above table and bar chart. 21.4% risk seeker, 31% are risk averter, 35.7% are risk neutral and 11.9% are unknown about the type of investor they are. But the majority is neutral to the risk.

4.2.11 Return Consideration

The profiles of respondent who consider return on their investment are as follows:

Table 4.27

Respondents' Consideration on Return

SN	Return Consideration	Number	Percentage
1	Yes	31	73.8
2	No	6	14.3
4	Don't Know	5	11.9
		42	100

Source: Opinion Survey

Consideration of Return by Respondents

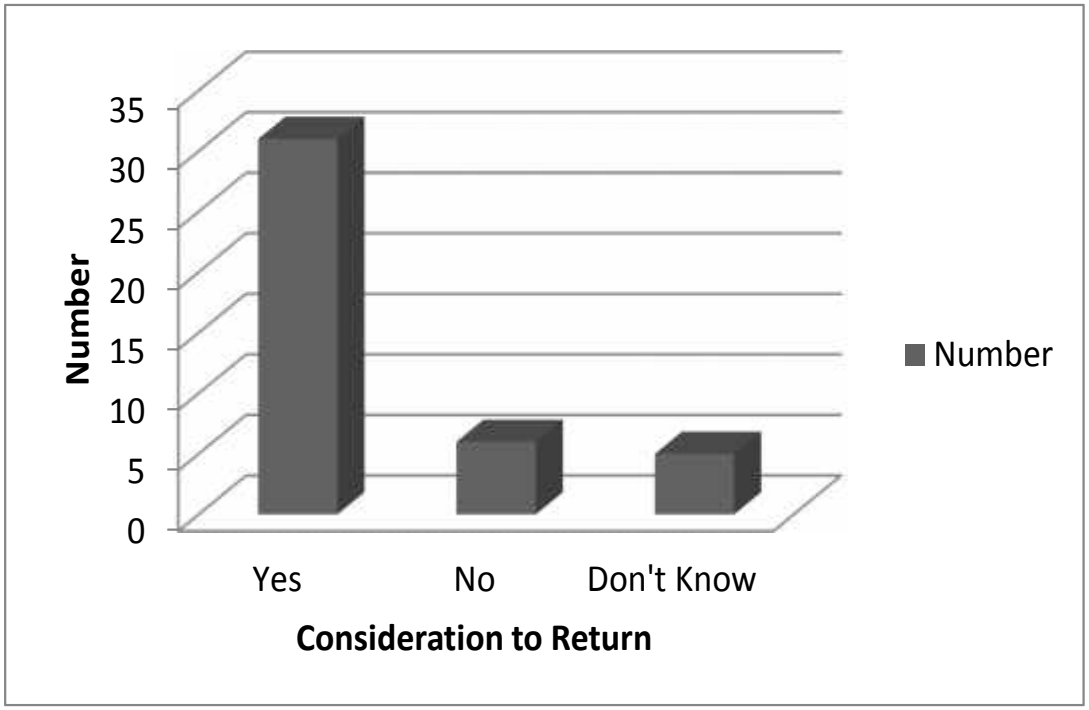

Figure 4.25: Bar Diagram Showing Consideration of Return

The above table and bar diagram shows the consideration of return by investor. Out of the 42 respondents 73.8% consider return, 14.3% do not consider return and 11.9% do not know about the return factor on the common stock of commercial banks. Majority of the investors are aware of the return on their investment.

4.2.12 Extent of Return Consideration

The following table shows the extent of the return considered by the investors:

Table 4.28

Respondents' Extent of Consideration on Return

SN	Return Consideration	Number	Percentage
1	High	9	21.4
2	Medium	27	64.3
4	Low	6	14.3
		42	100

Source: Opinion Survey

Extent of Return Consideration by Respondents

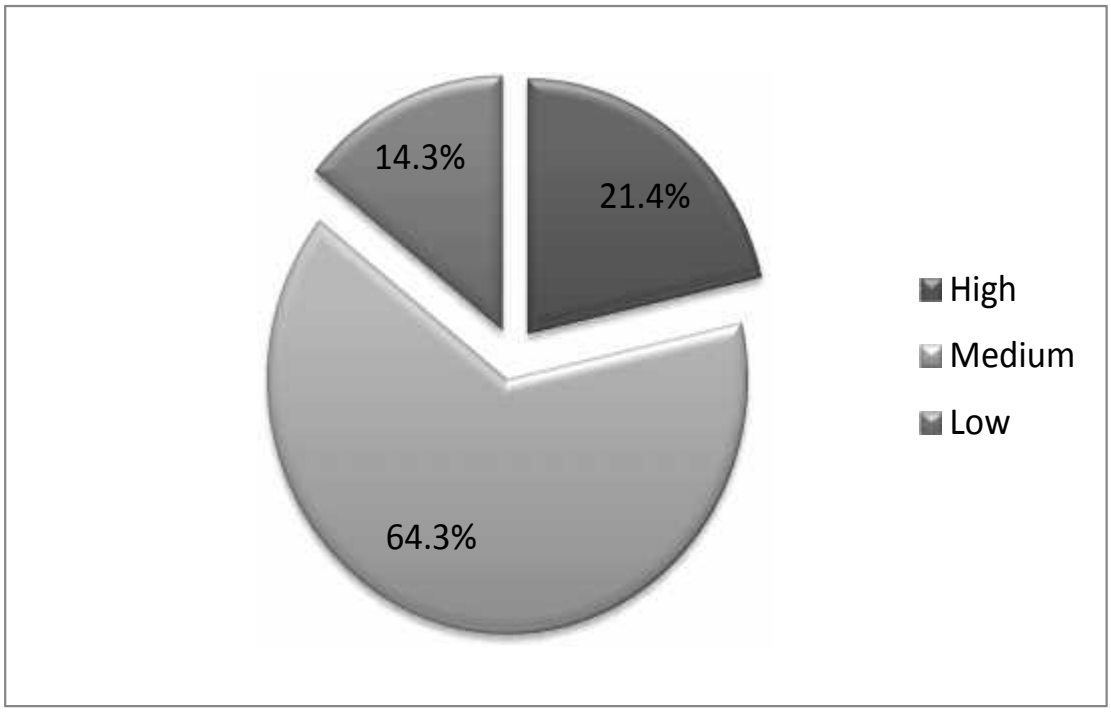

Figure 4.26: Pie Chart Showing Extent of Consideration of Return by Respondents

The above table and pie chart above shows that 21.4% consider high return, 64.3% consider medium return and 14.3% consider low return. Their view shows that maximum investor considers medium level of return.

4.2.13 Risk Consideration

The profiles of respondent who consider risk on their investment are as follows:

:

Table 4.29

Respondents' Consideration on Risk

SN	Risk Consideration	Number	Percentage
1	Yes	28	66.7
2	No	10	23.8
4	Don't Know	4	9.5
		42	100

Source: Opinion Survey

Consideration of Risk by Respondents

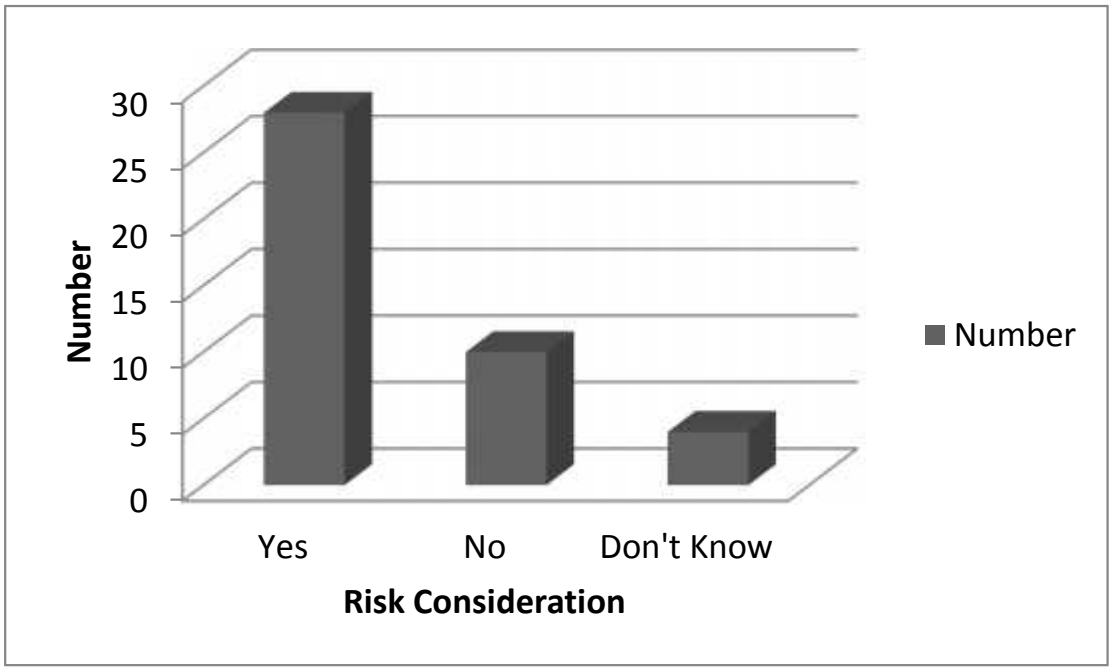

Figure 4.27: Bar Diagram Showing Consideration of Risk

The above table and bar diagrams above shows the consideration of risk by investor. Out of the 42 respondents 66.7% consider risk, 23.8% do not consider risk and 9.5% do not know about the risk factor on the common stock of commercial banks. Majority of the investors are aware of the risk on their investment.

4.2.14 Extent of Risk Consideration

The following table shows the extent of the risk considered by the investors:

Table 4.30

Respondents' Extent of Consideration on Risk

SN	Risk Consideration	Number	Percentage
1	High	5	11.9
2	Medium	22	52.4
4	Low	15	35.7
		42	100

Source: Opinion Survey

Extent of Risk Consideration by Respondents

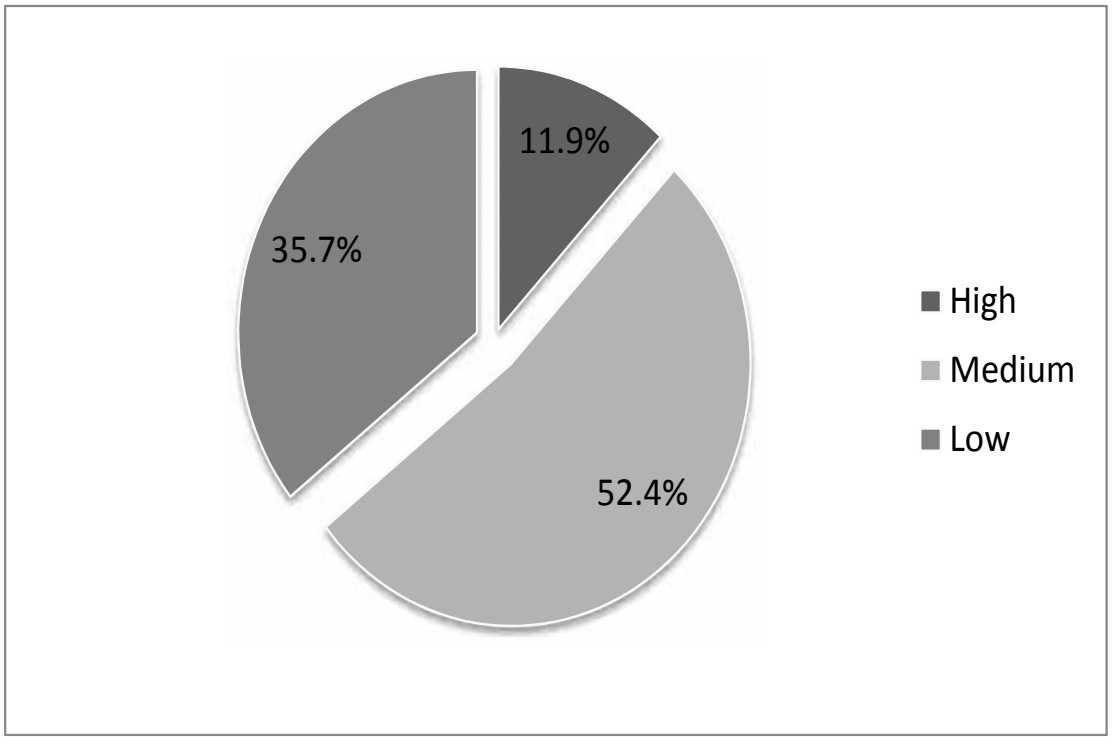

Figure 4.28: Pie Chart Showing Extent of Consideration of Risk by Respondents

The above table and pie chart shows that 11.9% consider high risk, 52.4% consider medium risk and 35.8% consider low risk. Their view shows that maximum investor considers medium level of risk.

4.2.15 Type of Analysis for Investment Decision

For the investment point of view, investor performs different analysis. They are either financial or market. The following table shows the type of analysis performed by the investors:

Table 4.31

Respondents' Analysis for Investment

SN	Analysis	Number	Percentage
1	Financial	3	7.1
2	Market	17	40.5
3	Both	18	42.9
4	None	4	9.5
		42	100

Source: Opinion Survey

Analysis by Respondents

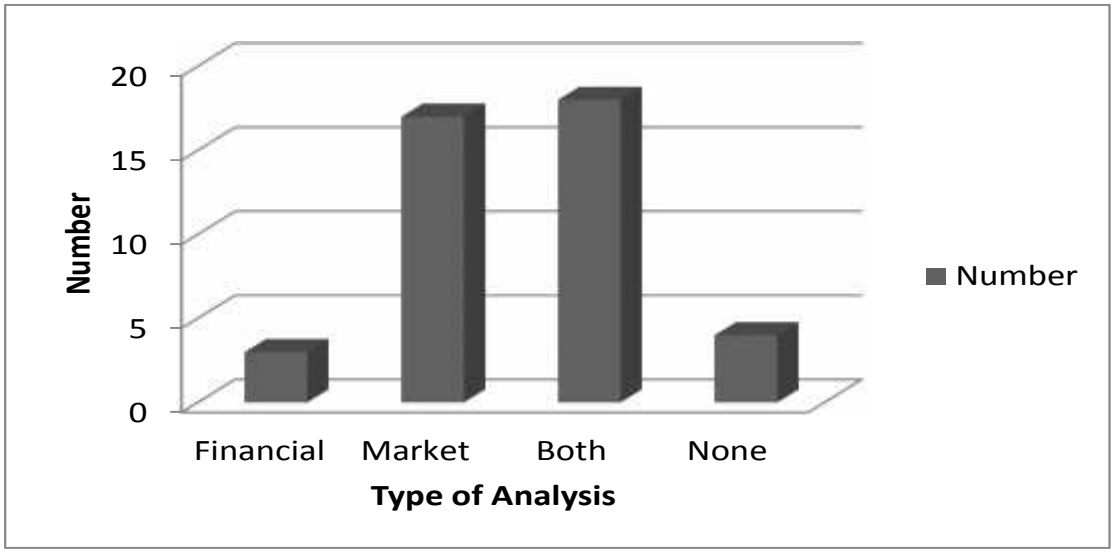

Figure 4.29: Bar Diagram Showing Type of Analysis Conducted by Respondents

The above table and bar diagram shows that, among 42 investors, 7.1% conduct financial analysis, 40.5% conduct market analysis, 42.9% conduct both and 9.5% do not conduct any analysis for their investment. The test result shows majority of the investors perform both type of analysis.

4.2.16 Factors of Financial Analysis Conducted by Respondents

Investors conduct financial analysis and take the decision on the basis of following factors:

Table 4.32

Respondents' Financial Analysis for Investment

SN	Factor	Number	Percentage
1	Return	14	33.3
2	Risk	4	9.5
3	Dividend Policy	6	14.3
4	Market Price	18	42.9
		42	100

Source: Opinion Survey

Factors of Financial Analysis by Respondents

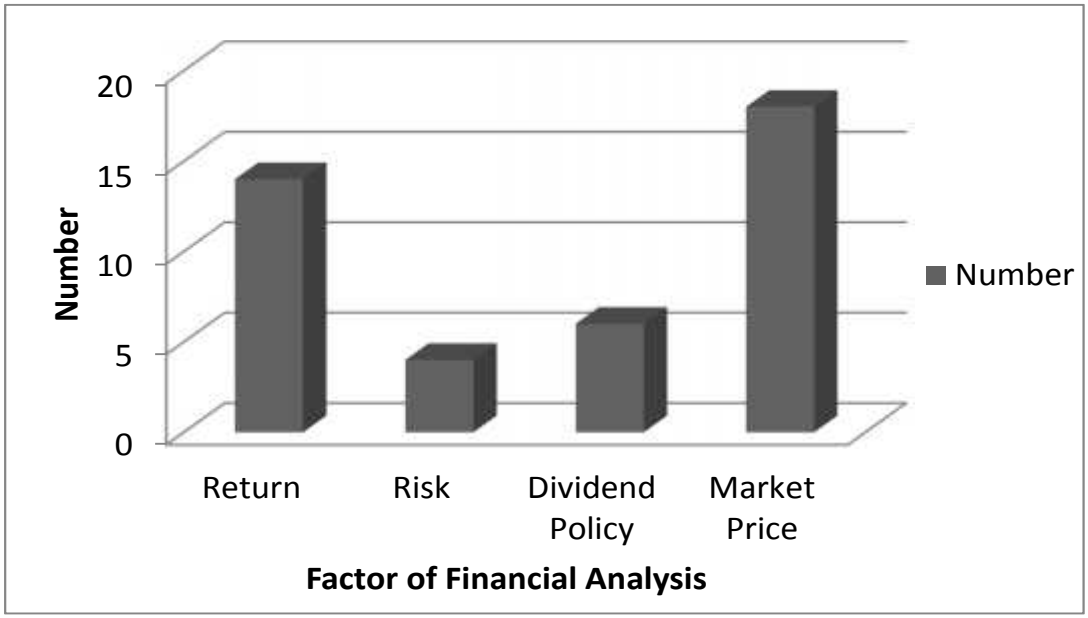

Figure 4.30: Bar Diagram Showing Factors of Financial Analysis Conducted by Respondents

The priority of factors in the financial analysis is shown in above table and bar diagram. 33.3% of the investors give priority on return factor, 9.5% give priority on risk factor, 14.3% give priority on dividend policy and most of the investor 42.9% give priority on the market price per share.

4.2.17 Factors of Market Analysis Conducted by Respondents

The following table shows the factors of market analysis conducted by respondents:

Table 4.33

Respondents' Market Analysis for Investment

SN	Factor	Number	Percentage
1	Share Market Performance	12	28.6
2	Future Expectation	6	14.3
3	Goodwill of the Bank	22	52.4
4	Market Rumor	2	4.8
		42	100

Source: Opinion Survey

Factors of Market Analysis by Respondents

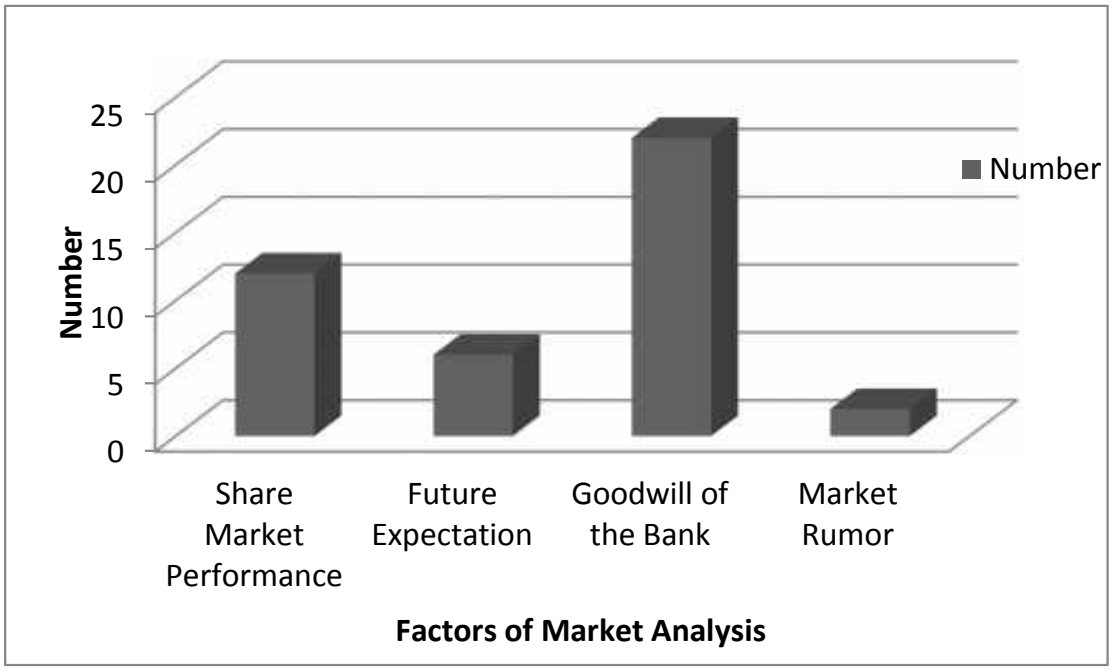

Figure 4.31: Bar Diagram Showing Factors of Market Analysis Conducted by Respondents

The view of investors about the factor of market analysis is shown in the above table and bar diagram. The table and chart shows that 28.6% investors make decision from the share market performance, 14.3% make regarding the future expectation, the most 52.4% decide on the goodwill of the bank and least 4.8% follow the market rumor or whim.

4.2.18 Awareness of Nepalese Investor on Risk and Return

Decision on anything is influenced by the investors' perception on particular subject matter. The following table shows the view of investors about whether Nepalese people are aware on risk and return on common stock of commercial banks:

Table 4.34

Respondents' View on Awareness on Risk and Return

SN	Awareness	Number	Percentage
1	Yes	11	26.2
2	No	24	57.1
4	Don't Know	7	16.7
		42	100

Source: Opinion Survey

Awareness on Risk and Return of Respondents

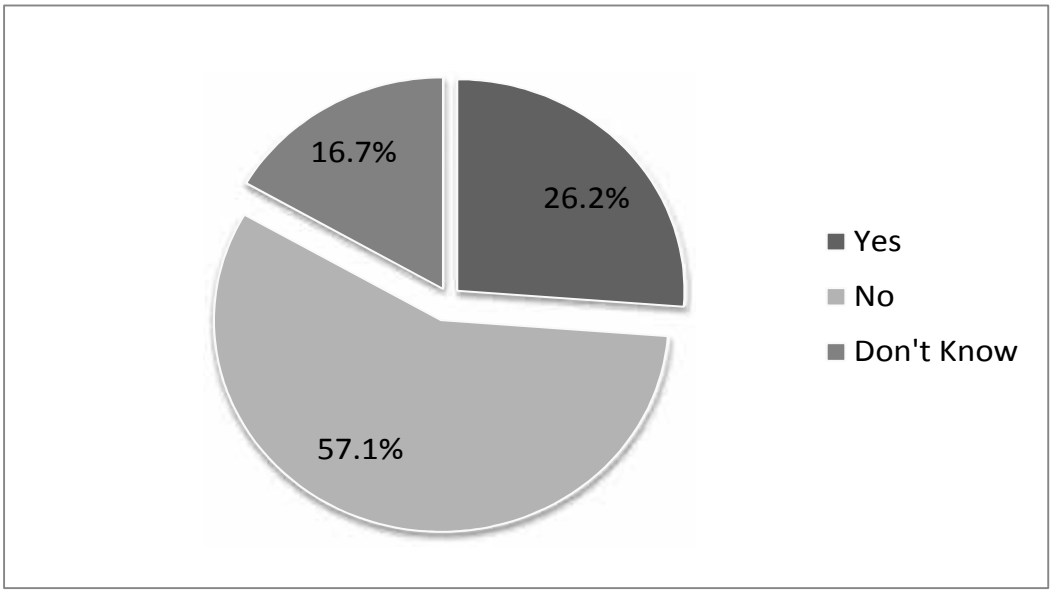

Figure 4.32: Pie Chart Showing View of Respondents' Awareness on Risk and Return

The above table and bar diagram shows that the investors perception or view about the Nepalese investor about their knowledge. Most of the investors think that people are not aware on the risk and return. 26.2% investors think that people are aware on the risk and return, 57.1% thinks that people are not aware and 16.7% are unknown about the risk and return.

4.3 Major Findings

4.3.1 Major Findings from Secondary Data

The market price (MPS) of common stock of HBL is highest in fiscal year 2007/08 over six year sample period and lowest in fiscal year 2009/10. Similarly, HBL paid highest dividend in the year 2008/09 and lowest in the year 2005/06. The earning per share is found almost the same amount being distributing every year.

The MPS of NIBL is found highest in the fiscal year 2007/08 and the MPS is lowest in the fiscal year 2009/10. NIBL paid highest dividend in the fiscal year 2007/08 and lowest in the fiscal year 2004/05.

The price of NCC's share is seen highest in the fiscal year 2007/08 and lowest in the fiscal year 2005/06. NCC bank has not paid any dividend neither cash nor stock dividend so far during the study period of five year.

The holding period return of common stock of HBL is highest in the fiscal year 2006/07 and lowest in the fiscal year 2009/10. The average rate of return over the five year sample period of the common stock of HBL is 24.20%. The standard deviation for investment in the common stock of HBL is 48.46% which means the expected return for next year lies in between (24.20 ± 48.46) %.

Holding period return of NIBL is seen highest in the fiscal year 2005/06 and lowest in the fiscal year 2009/10. The average rate of return on its share over the five year study period is 30.78%. The standard deviation for investment in the share of NIBL is 70.38%, which shows return in next year lies in between (30.78 ± 70.38) %.

During the study period of five years, the average rate of return of NCC is found 42.90%. The standard deviation for the stock of NCC is found 111.88%. This high value of standard deviation tells that the next HPR lies in the range of (42.90 ± 111.88) %.

The common stock of NCC provides highest average return then the stock of other two banks of the sample study. This is because the NCC pays no any dividend during the study period 2004/05

to 2009/10. The standard deviation, the measurement of absolute risk is also highest for the stock of same bank, i.e. NCC than other two bank's stock.

The portfolio returns and portfolio SD shows, portfolio P2 has highest average return and portfolio P3 has lowest average return. Among them portfolio P3 has least risk i.e. 40.26% and portfolio P2 has highest portfolio risk. So the study shows that depending on the capacity to bear risk by investor; risk taker investor should form portfolio P2 having highest risk and risk averter investor should form portfolio P3 having lowest risk. Likewise risk neutral investor choose portfolio P2.

The values of covariance show the positive relationship between individual return and the return of the market because values of covariance with the market are all positive.

The values of beta presented shows that the stock of HBL is less risky than market because it has lower beta coefficient than market beta. Likewise the stock of NCC is most risky than market because it has higher value of beta than market beta and its beta is higher than other two stocks. Market beta is always equal to 1.

Among the three portfolio, portfolio P2 made from the combination of NIBL and NCC is most risky than market because the value of portfolio beta is more than one. Portfolio P1 made from HBL & NIBL and P3 made from HBL & NCC are less risky as their values of portfolio beta are lesser than the market beta. Portfolio P3 is least risky among all.

Systematic risk of HBL is highest which cannot be reduced or cannot be avoided as it is arises from the external environment and NCC has lowest systematic risk. Among three banks NCC has highest unsystematic risk and that can be reduced by creating well diversified portfolio through well management.

The t-statistic shows that the calculated values of t-statistic of all three banks are less than the tabulated value of t-statistic. The value of t-statistic for 5% level of significance ($\Im$) and 8 degree of freedom is 2.306. But all the calculated values are less than tabulated value. So, for all the three banks, null hypothesis (H_0) is accepted, that means the average return of all three banks are equal to the average return of market.

4.3.2 Major Findings from Primary Data

Among the 42 respondents 78.6% are male and 21.4% are female.Respondents of age group below 30 are found 47.6%, age group of 30-40 is 38.1%, age group of 40-50 is 11.9% and above 50 is found 2.4%. Among our respondents, most of the investors are married which is shown in the above pie chart. Married are found 52.4% and single or unmarried are 47.6%.

Respondents of age group below 30 are found more than other age groups. The educational of respondents having level of SLC are 9.5%, intermediate are23.8%, graduate are 38.1% and postgraduate are 28.6%.

The respondents having no child are 54.8%, having one child are 23.8%, having two children are 11.9% and more than two children are 9.5%. Among 42 respondents, 9.5% are farmer, 26.2% are businessman, 47.6% are service holder and 16.7% are students. 14.2% of the respondents have income below 5000. But other respondents of group 5000-10000, 10000-20000 and above 20000 are found equal of 28.6%.

The maximum of the investors are single which is 64.3% and 35.7% of the investor are staying as joint family structure.

33.3% of investors get advice from their friend for their investment in common stock of bank, others 28.6% by market survey, 21.4% by financial statement reviews and least 16.7% from the whim or rumor of the market.

Among the respondents, 21.4% risk seeker, 31% are risk averter, 35.7% are risk neutral and 11.9% are unknown about the type of investor they are.

Out of the 42 respondents 73.8% consider return, 14.3% do not consider return and 11.9% do not know about the return factor on the common stock of commercial banks

Study finds that 21.4% consider high return, 64.3% consider medium return and 14.3% consider low return. Their view shows that maximum investor considers medium level of return.

Out of the 42 respondents 66.7% consider risk, 23.8% do not consider risk and 9.5% do not know about the risk factor on the common stock of commercial banks. Majority of the investors are aware of the risk on their investment.

Among the respondents 11.9% consider high risk, 52.4% consider medium risk and 35.8% consider low risk. Their view shows that maximum investor considers medium level of risk.

Among 42 investors, 7.1% conduct financial analysis, 40.5% conduct market analysis, 42.9% conduct both and 9.5% do not conduct any analysis for their investment. The test result shows majority of the investors perform both type of analysis.

33.3% of the investors give priority on return factor, 9.5% give priority on risk factor, 14.3% give priority on dividend policy and most of the investor 42.9% give priority on the market price per share.

The study shows that 28.6% investors make decision from the share market performance, 14.3% make regarding the future expectation, the most 52.4% decide on the goodwill of the bank and least 4.8% follow the market rumor or whim.

Most of the investors think that people are not aware on the risk and return. 26.2% investors think that people are aware on the risk and return, 57.1% thinks that people are not aware and 16.7% are unknown about the risk and return.

On the opinion of respondents' reliability of management team of bank, cost benefit analysis, current market value, promoters profile study helps to know about the risk of the particular stock of commercial banks. Knowledge of monetary & fiscal policy, share market movements also are some of the factors which are to be kept in mind before investing money. Investment in the common stock also affected by notices issued by NRB, politics, market blow, and good governments policies. By making interaction with brokers about the financial position of the bank provides the necessary information for the investment in the common stock of the commercial banks

CHAPTER - V

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This preceding chapter have discussed and explored the facts and matters required for the various parts of the study. Having completed the basic analysis required for the study, the final and vital task of the researcher is to enlist findings, issues and gaps of the study and give suggestions for further improvement. This part is a complete suggestive package, which contains summary, conclusion and actionable plans. Findings are based on the consequences of the analysis of relevant data. Actionable plans are presented in terms of suggestions which are prepared on the basis of the findings.

5.1 Summary

In present business world investors are aware of how and where to invest their money. No investors want to invest their capital on risky assets unless they are fully assured that investment is safe for the future. There are different types of investors with their nature. According to the risk bearing capacity some are risk seeker, some are risk averter and some are neutral. Risk is the fact of life and return is reward for bearing risk. Risk plays a central role in the analysis of investment. Higher risk give higher return and the trade off between the two assumes a linear relationship between risk and return.

Risk and return are the important elements for the investment. Every investment involves uncertainties that make future investment return risky. A risk return trade off is related to preference of the investor. Risk is possibility that the actual return from holding a security will deviate from the expected return. Hence, risk is inseparable from return.

The main purpose of the study is to know risk and return of the listed commercial banks with reference to HBL, NIBL and NCC. This study is based on primary as well as secondary data collected from the NEPSE, NRB, sample banks, SEBON and Internet. The study covers the period of six years from the fiscal year 2004/05 to 2009/10. Primary data are collected from the respondents through questionnaire. The data have been analyzed by using financial tools and statistical tools like expected rate of return, SD, CV, correlation coefficient, beta coefficient. t test etc. While analyzing risk and return, review of related studies has performed. Scientific methods

are used in data analysis. Table and diagrams have been used for presenting and interpreting the results.

The main objectives of this, study are to know the risk and return of the individual banks, to find out the relationship between EPS and MPS of the commercial banks, to measure systematic and unsystematic risk of the individual banks, the study is focused on the common stock of HBL, NIBL, and NCC. From the analysis following findings are concluded.

5.2 Conclusion

After the analysis of primary and secondary data following major findings are taken as conclusion:

From Secondary Data

1. The market price (MPS) of common stock of HBL is highest in fiscal year 2007/08 over six year sample period and lowest in fiscal year 2009/10. Similarly, HBL paid highest dividend in the year 2008/09 and lowest in the year 2005/06. The earning per share is found almost the same amount being distributing every year.

2. The MPS of NIBL is found highest in the fiscal year 2007/08 and the MPS is lowest in the fiscal year 2009/10. NIBL paid highest dividend in the fiscal year 2007/08 and lowest in the fiscal year 2004/05.

3. The price of NCC's share is seen highest in the fiscal year 2007/08 and lowest in the fiscal year 2005/06. NCC bank has not paid any dividend neither cash nor stock dividend so far during the study period of five year.

4. The holding period return of common stock of HBL is highest in the fiscal year 2006/07 and lowest in the fiscal year 2009/10. The average rate of return over the five year sample period of the common stock of HBL is 24.20%. The standard deviation for investment in the common stock of HBL is 48.46% which means the expected return for next year lies in between (24.20 ± 48.46)%.

5. Holding period return of NIBL is seen highest in the fiscal year 2005/06 and lowest in the fiscal year 2009/10. The average rate of return on its share over the five year study

period is 30.78%. The standard deviation for investment in the share of NIBL is 70.38%, which shows return in next year lies in between (30.78 ± 70.38) %.

6. During the study period of five years, the average rate of return of NCC is found 42.90%. The standard deviation for the stock of NCC is found 111.88%. This high value of standard deviation tells that the next HPR lies in the range of (42.90 ± 111.88) %.

7. The common stock of NCC provides highest average return then the stock of other two banks of the sample study. This is because the NCC pays no any dividend during the study period 2004/05 to 2009/10. The standard deviation, the measurement of absolute risk is also highest for the stock of same bank, i.e. NCC than other two bank's stock.

8. The portfolio returns and portfolio SD shows, portfolio P2 has highest average return and portfolio P3 has lowest average return. Among them portfolio P3 has least risk i.e. 40.26% and portfolio P2 has highest portfolio risk. So the study shows that depending on the capacity to bear risk by investor; risk taker investor should form portfolio P2 having highest risk and risk averter investor should form portfolio P3 having lowest risk. Likewise risk neutral investor choose portfolio P2.

9. The values of covariance show the positive relationship between individual return and the return of the market because values of covariance with the market are all positive.

10. The values of beta presented shows that the stock of HBL is less risky than market because it has lower beta coefficient than market beta. Likewise the stock of NCC is most risky than market because it has higher value of beta than market beta and its beta is higher than other two stocks. Market beta is always equal to 1.

11. Among the three portfolio, portfolio P2 made from the combination of NIBL and NCC is most risky than market because the value of portfolio beta is more than one. Portfolio P1 made from HBL & NIBL and P3 made from HBL & NCC are less risky as their values of portfolio beta are lesser than the market beta. Portfolio P3 is least risky among all.

12. Systematic risk of HBL is highest which cannot be reduced or cannot be avoided as it is arises from the external environment and NCC has lowest systematic risk. Among

three banks NCC has highest unsystematic risk and that can be reduced by creating well diversified portfolio through well management.

13. The t-statistic shows that the calculated values of t-statistic of all three banks are less than the tabulated value of t-statistic. the average return of all three banks are equal to the average return of market.

From Primary Data

1. From the view of respondents, 33.3% of investors get advice from their friend for their investment in common stock of bank, others 28.6% by market survey, 21.4% by financial statement reviews and least 16.7% from the whim or rumor of the market.

2. Among the respondents, 21.4% risk seeker, 31% are risk averter, 35.7% are risk neutral and 11.9% are unknown about the type of investor they are.

3. Out of the 42 respondents 73.8% consider return, 14.3% do not consider return and 11.9% do not know about the return factor on the common stock of commercial banks

4. Study finds that 21.4% consider high return, 64.3% consider medium return and 14.3% consider low return. Their view shows that maximum investor considers medium level of return.

5. Out of the 42 respondents 66.7% consider risk, 23.8% do not consider risk and 9.5% do not know about the risk factor on the common stock of commercial banks. Majority of the investors are aware of the risk on their investment.

6. Among the respondents 11.9% consider high risk, 52.4% consider medium risk and 35.8% consider low risk. Their view shows that maximum investor considers medium level of risk.

7. Among 42 investors, 7.1% conduct financial analysis, 40.5% conduct market analysis, 42.9% conduct both and 9.5% do not conduct any analysis for their investment. The test result shows majority of the investors perform both type of analysis.

8. 33.3% of the investors give priority on return factor, 9.5% give priority on risk factor, 14.3% give priority on dividend policy and most of the investor 42.9% give priority on the market price per share.

9. The study shows that 28.6% investors make decision from the share market performance, 14.3% make regarding the future expectation, the most 52.4% decide on the goodwill of the bank and least 4.8% follow the market rumor or whim.

10. Most of the investors think that people are not aware on the risk and return. 26.2% investors think that people are aware on the risk and return, 57.1% thinks that people are not aware and 16.7% are unknown about the risk and return.

11. Respondents' put forward the view that the reliability of management team of bank, cost benefit analysis, current market value, promoters profile study gives an idea about the risk and return on stock of commercial banks. Knowledge of monetary & fiscal policy, share market movements also are some of the factors which are to be kept in mind before investing money. Investment in the common stock also affected by notices issued by NRB, politics, market blow, and good governments policies. By making interaction with brokers about the financial position of the bank provides the necessary information for the investment in the common stock of the commercial banks.

5.3 Recommendations

This study is focused on individual investors. Other related components of stock market are also taken into account to some extent. The following recommendations and suggestions are prescribed on the basis of data analysis and major findings of this research.

- The annual return provided by the stock of all three sample banks is seen fluctuating greatly and found decreasing trend. Banks should manage the factors to make the return on the common stock to attract more investors.

- From the research, it is obtained the average return of NCC is found highest and HBL is lowest, but the investors are suggested to invest on HBL and NIBL rather than NCC since the SD and CV of NCC is higher which shows that risk on NCC is high.

- Beta coefficient shows the sensitivity of return provided by the common stock of the sample banks. The beta of HBL is found lesser than market so it is recommended that investor can invest in the common stock of HBL as its return is lesser affected by the market.

- From the result of portfolio analysis, it is recommended to make the portfolio from the combination of HBL and NCC because the portfolio beta of that combination is least among other combination. Investor should borrow funds from NCC by short-sale and that money should be invested on stock of HBL.

- The unsystematic risk of NCC is found greater than other banks. So, such unsystematic risk of NCC should be reduced by the proper diversification through creation of well portfolio.

- Most of the investors are seen investing money in common stock on the advice of friends. They are recommended to view and analyze the financial statements of banks and market survey before their investment.

- There is no gain without risk. So, risk neutral investors are suggested to bear some risk on their investment for the achievement of better return from their investment.

- Most of the investors are not aware on the risk and return in the investment on common stock of commercial banks. They are following the market whim or rumor. It is recommended to all the investors that the evaluation of financial statements, banks management profile, information of NRB notices should be done before making the investment decision.

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Annex: 1
Holding Period Return, Standard Deviation & Coefficient of Variation of HBL

Year	MPS(Rs)	DPS(Rs)	HPR (R_h)	$(R_h - \overline{R_h})$	$(R_h - \overline{R_h})^2$
2004/05	920.00	164.91	-	-	-
2005/06	1100.00	82.38	0.2852	0.0432	0.0019
2006/07	1740.00	363.00	0.9118	0.6698	0.4487
2007/08	1980.00	355.00	0.3420	0.1000	0.0100
2008/09	1760.00	434.21	0.1082	-0.1338	0.0179
2009/10	816.00	175.04	-0.4369	-0.6789	0.4609
			ϕR_h=1.2102		$p(R_h - \overline{R_h})^2$=0.9393

Average Rate of Return ($\overline{R_h}$) $= \frac{R_h}{n}$

$= \frac{1.2102}{5}$

$= 0.2420$

Standard Deviation ($\exists_h$) $= \sqrt{\frac{\int R_h - \overline{R_h} \text{Å}}{n - 1}}$

$= \sqrt{\frac{0.9393}{5 - 1}}$

$= 0.4846$

Coefficient of Variation (CV_h) $= \frac{\exists_h}{\overline{R_h}}$

$= \frac{0.4846}{0.2420}$

$= 2.0021$

Annex: 2

Holding Period Return, Standard Deviation & Coefficient of Variation of NIBL

Year	MPS(Rs)	DPS(Rs)	HPR (R_i)	$(R_i - \overline{R_i})$	$(R_i - \overline{R_i})^2$
2004/05	800.00	12.50	-	-	-
2005/06	1260.00	349.84	1.0123	0.7045	0.4963
2006/07	1729.00	350.80	0.6506	0.3428	0.1175
2007/08	2450.00	619.95	0.7756	0.4678	0.2188
2008/09	1388.00	20.00	-0.4253	-0.7331	0.5374
2009/10	705.00	25.00	-0.4741	-0.7819	0.6113
			ϕR_i=1.5391		$p(R_i - \overline{R_i})^2$=1.9814

Average Rate of Return ($\overline{R_i}$) $= \frac{R_i}{n}$

$= \frac{1.5391}{5}$

$= 0.3078$

Standard Deviation ($\exists_i$) $= \sqrt{\frac{\int R_i - \overline{R_i} \text{Å}}{n - 1}}$

$= \sqrt{\frac{1.9814}{5 - 1}}$

$= 0.7038$

Coefficient of Variation (CV_i) $= \frac{\exists_i}{\overline{R_i}}$

$= \frac{0.7038}{0.3078}$

$= 2.2866$

Annex: 3

Holding Period Return, Standard Deviation & Coefficient of Variation of NCC

Year	MPS(Rs)	DPS(Rs)	HPR (R_n)	$(R_n - \overline{R_n})$	$(R_n - \overline{R_n})^2$
2004/05	120.00	0.00	-	-	-
2005/06	94.00	0.00	-0.2167	-0.6457	0.4169
2006/07	316.00	0.00	2.3617	1.9327	3.7353
2007/08	457.00	0.00	0.4462	0.0172	0.0003
2008/09	335.00	0.00	-0.2670	-0.6960	0.4844
2009/10	275.00	0.00	-0.1791	-0.6081	0.3698
			ϕR_n=2.1452		$p(R_n - \overline{R_n})^2$=5.0067

Average Rate of Return ($\overline{R_n}$) $= \frac{R_n}{n}$

$= \frac{2.1452}{5}$

$= 0.4290$

Standard Deviation ($\exists_n$) $= \sqrt{\frac{\int R_n - \overline{R_n} \text{Å}}{n - 1}}$

$= \sqrt{\frac{5.0067}{5 - 1}}$

$= 1.1188$

Coefficient of Variation (CV_n) $= \frac{\exists_n}{\overline{R_n}}$

$= \frac{1.1188}{0.4290}$

$= 2.6077$

Annex: 4

Annual Market Return and Risk

Fiscal Year	Market Index	R_m	$(R_m - \overline{R_m})$	$(R_m - \overline{R_m})^2$
2004/05	286.67	-	-	-
2005/06	386.83	0.3494	0.1611	0.0260
2006/07	683.95	0.7681	0.5798	0.3362
2007/08	963.36	0.4085	0.2202	0.0485
2008/09	749.10	-0.2224	-0.4107	0.1687
2009/10	477.73	-0.3623	-0.5506	0.3031
		$\sum R_m$ **= 0.9413**		$\sum (R_m - \overline{R_m})^2$ **= 0.8824**

Average Market Return ($\overline{R_m}$) $= \frac{R_m}{n}$

$= \frac{0.9413}{5}$

$= 0.1883$

Standard Deviation (σ_m) $= \sqrt{\frac{\sum R_m - \overline{R_m}}{n - 1}}$

$= \sqrt{\frac{0.8824}{5 - 1}}$

$= 0.4697$

Annex: 5

A. Covariance, Minimum Variance Portfolio weight, Average Return and SD of Portfolio (P1)

Calculation of Covariance between HBL & NIBL

Fiscal Year	R_h	R_i	$(R_h - \bar{R_h})$	$(R_i - \bar{R_i})$	$(R_h - \bar{R_h})(R_i - \bar{R_i})$
2004/05	-	-	-	-	-
2005/06	0.2852	1.0123	0.0432	0.7045	0.0304
2006/07	0.9118	0.6506	0.6698	0.3428	0.2296
2007/08	0.3420	0.7756	0.1000	0.4678	0.0468
2008/09	0.1082	-0.4253	-0.1338	-0.7331	0.0981
2009/10	-0.4369	-0.4741	-0.6789	-0.7819	0.5308
			$\sum (R_h - \bar{R_h})(R_i - \bar{R_i})$		= 0.9357

a. Covariance between return of stock of HBL and NIBL

$$Cov(R_h,R_i) = \frac{[(R_h - \bar{R_h})(R_i - \bar{R_i})]}{n - 1}$$

$$= \frac{0.9357}{5 - 1}$$

$$= 0.2339$$

b. Minimum Variance Portfolio Weight between stock of HBL and NIBL

$$W_h = \frac{\sigma_i^2 - Cov(R_h,R_i)}{\sigma_h^2 + \sigma_i^2 - 2Cov(R_h,R_i)}$$

$$= \frac{0.7038^2 - 0.2339}{0.4846^2 + 0.7038^2 - 2 \times 0.2339}$$

$$= 0.9966$$

$$W_i = 1 - W_h$$

$$= 1 - 0.9966$$

$$= 0.0034$$

c. Average Return on Portfolio P1

$$\bar{R}_{P1} = W_h \times \bar{R}_h + W_i \times \bar{R}_i$$

$$= 0.9966 \times 0.2420 + 0.0034 \times 0.3078$$

$$= 0.2423$$

d. SD of Portfolio P1

$$\sigma_{P1} = \sqrt{W_h^2 \sigma_h^2 + W_i^2 \sigma_i^2 + 2 W_h W_i Cov(R_h,R_i)}$$

$$= \sqrt{0.9966^2 \mid 0.4846^2 \Gamma 0.0034^2 \mid 0.7038^2 \Gamma 2 \mid 0.9966 \mid 0.0034 \mid 0.2339}$$

$$= 0.4846$$

B. Covariance, Minimum Variance Portfolio weight, Average Return and SD of Portfolio (P2)

Calculation of Covariance between NIBL & NCC

Fiscal Year	R_i	R_n	$(R_i Z\overline{R_i})$	$(R_n Z\overline{R_n})$	$(R_i Z\overline{R_i})(R_n Z\overline{R_n})$
2004/05	-	-	-	-	-
2005/06	1.0123	-0.2167	0.7045	-0.6457	-0.4549
2006/07	0.6506	2.3617	0.3428	1.9327	0.6626
2007/08	0.7756	0.4462	0.4678	0.0172	0.0080
2008/09	-0.4253	-0.2670	-0.7331	-0.6960	0.5102
2009/10	-0.4741	-0.1791	-0.7819	-0.6081	0.4755
			$p(R_i Z\overline{R_i})(R_n Z\overline{R_n})$		= 1.2014

a. Covariance between return of stock of NIBL and NCC

$$Cov(R_i,R_n) = \frac{[(R_i Z\overline{R_i})(R_n Z\overline{R_n})]}{n Z1}$$

$$= \frac{1.2014}{5 Z1}$$

$$= 0.3004$$

b. Minimum Variance Portfolio Weight between stock of NIBL and NCC

$$W_i = \frac{\exists_n^{\,2} Z Cov(R_i,R_n)}{\exists_i^{\,2} \Gamma \exists_n^{\,2} Z2Cov(R_i,R_n)}$$

$$= \frac{1.1188^2 Z0.3004}{0.7038^2 \Gamma 1.1188^2 Z2 \mid 0.3004}$$

$$= 0.8299$$

$$W_n = 1 - W_i$$

$$= 1 - 0.8299$$

$$= 0.1701$$

c. Average Return on Portfolio P2

$$\overline{R_{P2}} X W_i \mid \overline{R_i} \Gamma W_n \mid \overline{R_n}$$

$$= 0.8299 \times 0.3078 + 0.1701 \times 0.4290$$

$$= 0.3284$$

d. SD of Portfolio P2

$$\sigma_{P2} = \sqrt{W_i^2\sigma_i^2 + W_n^2\sigma_n^2 + 2W_iW_nCov(R_i,R_n)}$$

$$= \sqrt{0.8299^2 \times 0.7038^2 + 0.1701^2 \times 1.1188^2 + 2 \times 0.8299 \times 0.1701 \times 0.3004}$$

$$= 0.6798$$

C. Covariance, Minimum Variance Portfolio weight, Average Return and SD of Portfolio (P3)

Calculation of Covariance between HBL & NCC

Fiscal Year	R_h	R_n	$(R_h - \overline{R_h})$	$(R_n - \overline{R_n})$	$(R_h - \overline{R_h})(R_n - \overline{R_n})$
2004/05	-	-	-	-	-
2005/06	0.2852	-0.2167	0.0432	-0.6457	-0.0279
2006/07	0.9118	2.3617	0.6698	1.9327	1.2946
2007/08	0.3420	0.4462	0.1000	0.0172	0.0017
2008/09	0.1082	-0.2670	-0.1338	-0.6960	0.0931
2009/10	-0.4369	-0.1791	-0.6789	-0.6081	0.4128
			$\sum(R_h - \overline{R_h})(R_n - \overline{R_n})$		= 1.7744

a. Covariance between return of stock of HBL and NCC

$$Cov(R_h,R_n) = \frac{[(R_h - \overline{R_h})(R_n - \overline{R_n})]}{n - 1}$$

$$= \frac{1.7744}{5 - 1}$$

$$= 0.4436$$

b. Minimum Variance Portfolio Weight between stock of HBL and NCC

$$W_h = \frac{\sigma_n^2 - Cov(R_h,R_n)}{\sigma_h^2 + \sigma_n^2 - 2Cov(R_h,R_n)}$$

$$= \frac{1.1188^2 - 0.4436}{0.2348^2 + 1.1188^2 - 2 \times 0.4436}$$

$$= 1.3483$$

$$W_n = 1 - W_h$$

$$= 1 - 1.3483$$

$$= -0.3483$$

c. Average Return on Portfolio P3

$$\overline{R_{P3}} = W_h \times \overline{R_h} + W_n \times \overline{R_n}$$

= 1.3483 × 0.2420 + (-0.3483) × 0.4290

= 0.1769

d. SD of Portfolio P3

$$\exists_{P3} X\sqrt{W_h{}^2\exists_h{}^2 \Gamma W_n{}^2\exists_n{}^2\Gamma 2W_hW_nCov(R_h,R_n)}$$

$$= \sqrt{1.3483^2 \mid 0.4846^2 \Gamma (Z0.3483)^2 \mid 1.1188^2 \Gamma 2 \mid 1.3483 \mid (Z0.3483) \mid 0.4436}$$

= 0.4026

Annex: 6

Calculation of Beta Coefficient

A. Calculation of HBL

Fiscal Year	R_m	R_h	$(R_m - \bar{R}_m)$	$(R_h - \bar{R}_h)$	$(R_m - \bar{R}_m)(R_h - \bar{R}_h)$
2004/05	-	-	-	-	-
2005/06	0.3494	0.2852	0.1611	0.0432	0.0070
2006/07	0.7681	0.9118	0.5798	0.6698	0.3884
2007/08	0.4085	0.3420	0.2202	0.1000	0.0220
2008/09	-0.2224	0.1082	-0.4107	-0.1338	0.0550
2009/10	-0.3623	-0.4369	-0.5506	-0.6789	0.3738
			$\sum (R_m - \bar{R}_m)(R_h - \bar{R}_h)$		= 0.8461

a. Covariance between return of market and stock of HBL

$$Cov(R_m,R_h) = \frac{[(R_m - \bar{R}_m)(R_h - \bar{R}_h)]}{n - 1}$$

$$= \frac{0.8461}{5 - 1}$$

$$= 0.2115$$

b. Beta coefficient of HBL

$$\beta_i = \frac{Cov(R_m, R_h)}{\sigma_m^2}$$

$$= \frac{0.2115}{0.4697^2}$$

$$= 0.9587$$

B. Calculation of NIBL

Fiscal Year	R_m	R_i	$(R_m - \bar{R}_m)$	$(R_i - \bar{R}_i)$	$(R_m - \bar{R}_m)(R_i - \bar{R}_i)$
2004/05	-	-	-	-	-
2005/06	0.3494	1.0123	0.1611	0.7045	0.1135
2006/07	0.7681	0.6506	0.5798	0.3428	0.1988
2007/08	0.4085	0.7756	0.2202	0.4678	0.1030
2008/09	-0.2224	-0.4253	-0.4107	-0.7331	0.3011
2009/10	-0.3623	-0.4741	-0.5506	-0.7819	0.4305
			$\sum (R_m - \bar{R}_m)(R_i - \bar{R}_i)$		= 1.1468

a. Covariance between return of market and stock of NIBL

$$\text{Cov}(R_m,R_i) = \frac{[(R_m - \overline{R_m})(R_i - \overline{R_i})]}{n - 1}$$

$$= \frac{1.1468}{5 - 1}$$

$$= 0.2867$$

b. Beta coefficient of NIBL

$$\beta = \frac{\text{Cov}(R_m, R_i)}{\sigma_m^2}$$

$$= \frac{0.2867}{0.4697^2}$$

$$= 1.300$$

C. Calculation of NCC

Fiscal Year	R_m	R_n	$(R_m - \overline{R_m})$	$(R_n - \overline{R_n})$	$(R_m - \overline{R_m})(R_n - \overline{R_n})$
2004/05	-	-	-	-	-
2005/06	0.3494	-0.2167	0.1611	-0.6457	-0.1040
2006/07	0.7681	2.3617	0.5798	1.9327	1.1206
2007/08	0.4085	0.4462	0.2202	0.0172	0.0038
2008/09	-0.2224	-0.2670	-0.4107	-0.6960	0.2858
2009/10	-0.3623	-0.1791	-0.5506	-0.6081	0.3348
			$\sum(R_m - \overline{R_m})(R_n - \overline{R_n})$		= 1.6410

a. Covariance between return of market and stock of NCC

$$\text{Cov}(R_m,R_n) = \frac{[(R_m - \overline{R_m})(R_n - \overline{R_n})]}{n - 1}$$

$$= \frac{1.6410}{5 - 1}$$

$$= 0.4103$$

b. Beta coefficient of NCC

$$\beta = \frac{\text{Cov}(R_m, R_n)}{\sigma_m^2}$$

$$= \frac{0.4103}{0.4697^2}$$

$$= 1.860$$

Annex: 7

Calculation of Portfolio Beta Coefficient

a. Beta for portfolio P1

$$\beta_{P1} = W_h . \beta_H + W_i . \beta_I$$

$$= 0.9966 \times 0.9587 + 0.0034 \times 1.2966$$

$$= 0.9599$$

b. Beta for portfolio P2

$$\beta_{P2} = W_i . \beta_I + W_n . \beta_n$$

$$= 0.8299 \times 1.2996 + 0.1701 \times 1.8595$$

$$= 1.3948$$

c. Beta for portfolio P3

$$\beta_{P3} = W_h . \beta_H + W_n . \beta_n$$

$$= 1.3483 \times 0.9587 + (-0.3483) \times 1.8595$$

$$= 0.6450$$

Annex: 8

Calculation of Systematic and Unsystematic Risk of HBL, NIBL and NCC

SN	Bank	$\pm_x$	$\pm_m$	Cov (R_m,R_x)	Systematic Risk	Unsyste-matic Risk	Systematic Risk Proportion	Unsystematic Risk Proportion
1	HBL	0.4846	0.4697	0.2115	0.4503	0.0343	0.9292	0.0708
2	NIBL	0.7038	0.4697	0.2867	0.6104	0.0934	0.8673	0.1327
3	NCC	1.1188	0.4697	0.4102	0.8733	0.2455	0.7806	0.2194

1. Systematic and Unsystematic Risk of HBL

Cov (R_m,R_h) = 0.2115

SD of market ($\exists_m$) = 0.4697

SD of HBL ($\exists_h$) = 0.4846

Systematic Risk $= \frac{\text{Cov } (R_m,R_h)}{\exists_m}$

$= \frac{0.2115}{0.4697}$

= 0.4503

Unsystematic Risk = Total Risk ($\exists_h$) – Systematic Risk

= 0.4846 – 0.4503

= 0.0343

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

$= \frac{0.4503}{0.4846}$

= 0.9292

Proportion of Unsystematic Risk $= \frac{\text{Unsystematic Risk}}{\text{Total Risk}}$

$= \frac{0.0343}{0.4846}$

= 0.0708

2. Systematic and Unsystematic Risk of NIBL

Cov (R_m,R_i) = 0.2867

SD of market ($\exists_m$) = 0.4697

SD of NIBL ($\exists_i$) = 0.7038

Systematic Risk $= \frac{\text{Cov } (R_m,R_i)}{\exists_m}$

$$= \frac{0.2867}{0.4697}$$

$$= 0.6104$$

Unsystematic Risk = Total Risk ($\exists_i$) – Systematic Risk

= 0.7038 – 0.6104

= 0.0934

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

$$= \frac{0.6104}{0.7038}$$

= 0.8673

Proportion of Unsystematic Risk $= \frac{\text{Unsystematic Risk}}{\text{Total Risk}}$

$$= \frac{0.0934}{0.7038}$$

= 0.1327

3. Systematic and Unsystematic Risk of NCC

Cov (R_m,R_n) = 0.4102

SD of market ($\exists_m$) = 0.4697

SD of NCC ($\exists_n$) = 1.1188

Systematic Risk $= \frac{\text{Cov } (R_m,R_n)}{\exists_m}$

$$= \frac{0.4102}{0.4697}$$

= 0.8733

Unsystematic Risk = Total Risk ($\exists_n$) – Systematic Risk

= 1.1188 – 0.8733

= 0.2455

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

$$= \frac{0.8733}{1.1188}$$

= 0.7806

Proportion of Unsystematic Risk $= \frac{\text{Unsystematic Risk}}{\text{Total Risk}}$

$$= \frac{0.2455}{1.1188}$$

= 0.2194

Annex: 9

Calculation of t-Statistics for Hypothesis Testing

SN	Bank	R_m	R_x	s_x	s_m	s^2	t-statistics
1	HBL	0.1883	0.2420	0.4846	0.4697	0.2277	0.1781
2	NIBL	0.1883	0.3078	0.7038	0.4697	0.3580	0.3159
3	NCC	0.1883	0.4290	1.1188	0.4697	0.7361	0.4436

1. Calculation of HBL

Average return of HBL ($\overline{R_h}$) = 0.2420

SD of HBL ($\exists_h$) = 0.4846

Average return of market ($\overline{R_m}$) = 0.1883

SD of market ($\exists_m$) = 0.4697

No. of observations = $n_1 = n_2 = 5$

$$S^2 = \frac{(n_1 - 1)\exists_h^2 + (n_2 - 1)\exists_m^2}{n_1 + n_2 - 2}$$

$$= \frac{4 \text{ x } 0.4846^2 + 4 \text{ x } 0.4697^2}{5 + 5 - 2}$$

$$= 0.22773$$

$$t = \frac{\overline{R_h} - \overline{R_m}}{\sqrt{S^2(\frac{1}{n_1} + \frac{1}{n_2})}}$$

$$= \frac{0.2420 - 0.1883}{\sqrt{0.22773\ (\frac{1}{5} + \frac{1}{5})}}$$

$$= \frac{0.0537}{0.301815}$$

$$= 0.1779$$

2. Calculation of NIBL

Average return of NIBL ($\overline{R_i}$) = 0.3078

SD of NIBL ($\exists_i$) = 0.7038

Average return of market ($\overline{R_m}$) = 0.1883

SD of market ($\exists_m$) = 0.4697

No. of observations = $n_1 = n_2 = 5$

$$S^2 = \frac{(n_1 - 1)\exists_i^2 + (n_2 - 1)\exists_m^2}{n_1 + n_2 - 2}$$

$$= \frac{4 \text{ x } 0.7038^2 + 4 \text{ x } 0.4697^2}{5 + 5 - 2}$$

$$= 0.35798$$

$$t = \frac{\overline{R_i} - \overline{R_m}}{\sqrt{S^2(\frac{1}{n_1} + \frac{1}{n_2})}}$$

$$= \frac{0.3078 - 0.1883}{\sqrt{0.35798\ (\frac{1}{5} + \frac{1}{5})}}$$

$$= \frac{0.1195}{0.37841}$$

$$= 0.3158$$

3. Calculation of NCC

Average return of NCC ($\overline{R_n}$) = 0.4290

SD of NCC ($\exists_n$) = 1.1188

Average return of market ($\overline{R_m}$) = 0.1883

SD of market ($\exists_m$) = 0.4697

No. of observations = $n_1 = n_2 = 5$

$$S^2 = \frac{(n_1 - 1)\exists_n^2 + (n_2 - 1)\exists_m^2}{n_1 + n_2 - 2}$$

$$= \frac{4 \text{ x } 1.1188^2 + 4 \text{ x } 0.4697^2}{5 + 5 - 2}$$

$$= 0.73620$$

$$t = \frac{\overline{R_n} - \overline{R_m}}{\sqrt{S^2(\frac{1}{n_1} + \frac{1}{n_2})}}$$

$$= \frac{0.4290 - 0.1883}{\sqrt{0.73620\ (\frac{1}{5} + \frac{1}{5})}}$$

$$= \frac{0.2407}{0.54266}$$