

# CHAPTER-ONE

## INTRODUCTION

### 1.1 Background of the Study

Nepal is a landlocked country with poor economic status gradually lifts its dependency on agriculture in order to solve its problem of poverty. Economic status of our country is growing very slowly, so development of different institutions is essential for the rapid economic development. So the nonagricultural sector should also be given priority. The nonagricultural sector can also help in economic development and reduction of unemployment to a large extent hence for this various industrial, financial institution, health and stabilities of such institutions is not sufficient for such institutions is not sufficient for economic development, their successful peroration is also necessary. For a successful operation, finance plays a vital role in each organization. Finance is the art and science of managing money which is concerned with the process, institution, markets and intrusions involved in the transfer of money among individual business and government. The proper decision made by the top management relation to the management of funds determines the further of the organization. Investment design, financing decision and assets management decisions are the management decision related to finance. Each managerial decision making is based on financial analysis. It covers the acquisition, utilization, control and administration of fund. "Managerial finance is exciting and dynamic area of study its importance to the long run success of today's business in unquestioned." Managerial finance is important is all types of business whether they are public or private, deal with financial service or are

manufacture.

Any investor purchases the various securities to get returns. So return is the main factor of investment risk. Finance deals with the risk and return on the monetary term of an investment return is the reward for waiting and compensation for risk bearing. Researchers have shown that most of the investor is risk averter. Therefore, it can be concluded that people invested their assets in those opportunities where there is higher return with low level of risk.

"Risk is defined in Webster's Dictionary as "a hazard, a peril, and exposure to loss or injury". So risk refers to the chance that some unfavorable event will occur. Risk is the product of uncertainty whose magnitude depends up on the degree of variability in uncertain case flows. Most people view risk in the manner as just described a chance of loss. In reality, risk occurs when the outcome of a practical activity or event is uncertain.

Common stock investment is a risk investment. There is an uncertainty of future return whose main source is the price fluctuation of the stock. The stock price may be decreased due to the economic factor such as inflation, interest rate, strength of currency, economic growth of the nation. The dividend received by the investor but at the same time reduces the amount of earning reinvested by the firm resulting limited potential growth. Therefore, mainly the risk of a stock investment can be measured by its volatility in price and uncertainty of fluctuation in dividend.

Most of the investors are risk averse, the main problem in investment is to select the security having low risk but having higher return. Even if the investor cannot increase the return substantially they can surely reduce the risk by diversification of the investment funds in different type of

security making a portfolio. Making a portfolio of common stocks an investor can eliminate the unsystematic risk considerably. But the systematic risk cannot be avoided even investing in a portfolio. Any investor will want their investment to yield favorably return and so invest in those securities which provide greater expected returns. Investment is defined as the sacrifice of current amount for future amount. So, investor sacrifices their current amount in securities in anticipations of higher benefits with low level of risk. In the investment of common stock an investor agrees to pay the price for stock in the anticipation of future dividend and growth in stock price. However, various financial and non-financial factors play a great role in price determination.

A financial market brings people and organization willing to borrow money together with those having surplus fund. The capital market is the part of financial market, which is related to long-term debt and corporate stock. In capital market, the financial assets such as stock and bond are purchased or sold. The main objective of stock market is to create opportunity for maximum number of people to get the benefits from the return obtained by directing the economy toward the productive sector by mobilizing long-term capital.

### **1.1.1 Introduction of Banks under Study**

#### **A) Nepal Investment Bank Limited (NIBL)**

Nepal Investment Bank Ltd. (Previously Nepal Indosuez Bank Ltd.) was established as a third joint venture under the company act 1964, in accordance with joint venture and technical services agreement signed between it and Nepalese promoters. Now this bank is operating under full ownership of Nepalese promoters and shareholders. Authorized capital of this bank is 1,00,00,00,000, issued capital is 80,13,52,600 and paid up capital 80,1,52,600. The capital office of this organization is in King's way

Katmandu.

## **B) Everest Bank Limited (EBL)**

EBL was established on 2047 B.S. It was listed in NEPSE in 25122052 B. S. It is also the joint venture bank and the joint venture partner of the bank is Punjab National Bank Ltd. The authorized capital is Rs.60,00,00,000, Issued capital is 52,9,00,000 and paid up capital is Rs.51,80,00,000. The face value of share is Rs.100 and the number of shareholder is 51,80,000 respectively.

### **1.2 Statement of the Problems**

Due to the lack of information and poor knowledge, individual investors are manipulated or exploited by the financial institutions or other top market intermediaries. Investor's attitude and perception plays a vital role in national decision, which is influenced by the knowledge and access to the data required for analysis. Most of Nepalese investors invest their fund in single security because of less knowledge about risk return behavior of the securities. Therefore, main problem is the lack of information to analyze the risk and return common stock investment. People feel more risk in stock investment than as its real risk. Not only general public, but also the university graduates and post graduates cannot analyze risk and return while making stock investment decision.

The burning issue that has influence to carry out this study is as follows:

- Risk & Return Analysis on common stock investment of commercial banks.
- What are the criteria for evaluation that the stock they are holding will give them a favorable return?
- What should be the compensation investor have to receive for

bearing a certain degree of risk?

- How investors know the magnitude of risk?
- How can make higher return assuming lower risk?

### **1.3 Objectives of the Study**

The general objective of this study is to assess the risk and return on common stock investment of two commercial Banks NIBL & EBL specify objective of this study are as follows.

- To evaluate the risk & return on common stock investment of commercial banks.
- To analyze the trend of risk and return diversification of commercial banks.
- To identify whether the share of commercial banks are over – priced, under priced or at equilibrium priced.
- To identify the correlation between return of banks

### **1.4 Significance of the Project**

Nepalese commercial banks have already experienced the practice of stock investment from decades. However, a few studies have been done about the stock investment practice in Nepalese context. There are still lacks of studies related to stock investment practice to understand the condition of commercial banks towards the investment in stock exchange. The studies on stock investment practices have not been made yet properly. Therefore, this study may be milestone in stock investment practice in Nepal especially commercial banks perspectives.

Besides these, this study helpful for the following sectors.

- For the further researchers of the field
- For the shareholders, Management and policy makers.

- For the government official in policymaking, controlling and monitoring activities of commercial banks.
- For the partial fulfillment of the requirements of MBS.

### **1.5 Limitation of the Study**

As every research has its own limitation, this study is not free from it. This study is done for partial fulfillment of the requirement of MBS Programme, so it has some limitations, which are as follows.

- The study covers the relevant data and information on only for seven years i.e. fiscal year 2002/2003 to 2007/2008.
- Variation of data published from various sources e.g. figure published by NEPSE and company differ to some degree.
- Analysis mostly based on the tools developed in the contest of an efficient market condition.
- The study is based on two listed commercial bank only.

### **1.6 Organization of the Study**

The present project report is organized in such way that the stated objectives can easily be fulfilled. The structure of the study will try to analyze the study in a systematic way. The study report has presented the systematic presentation and finding of the study. The study report is designed in five chapters which are as follows:

#### **Chapter-I: Introduction**

This chapter describes the basic concept and background of the study, focus of the study, problems of the study, objectives of the study, significance of the study and limitation of the study. It is oriented for

readers for reporting giving them the perspective they need to understand the detailed information about coming chapter.

### **Chapter-II: Review of Literature**

The second chapter of the study assures readers that they are familiar with important research that has been carried out in similar areas. It also establishes that the study as a link in a chain of research that is developing and emerging knowledge about concerned field.

### **Chapter-III: Research Methodology**

Research methodology refers to the various sequential steps to be adopted in studying a problem with certain objectives in view. It describes about the various source of data related with study and various tools and techniques employed for presenting the data.

### **Chapter-IV: Presentation and Analysis of Data**

This chapter includes the presentation and analysis of data and the finding of the study. The major findings are included at last of this chapter.

### **Chapter-V: Summary, Conclusion and Recommendation**

On the basis of the results from data analysis, the summary, conclusion and recommendation are concluded in this chapter.

## **CHAPTER-TWO**

### **REVIEW OF LITERATURE**

The objective of this study is to present basic concept on risk & return provided by various renowned writers through different books, journals

and research papers. Various independent studies, articles, journals are incorporated, in this chapter. Reviewing these all provides us background to research work, guidelines to deal with prospective below consecutively.

## **2.1 Conceptual Framework**

Various writers have defined the theoretical aspect of risk and return in various ways taken into consideration in this chapter.

### **2.1.1 Concept of Investment**

Fund used to get additional income is called Investment. It's done to invest the value of property or to get extra income. "An investment is a commitment of funds made in the expectation of some positive rate of return. If an Investment is properly undertaken, the return will be commensurate with the risk investor assumes" (Chandra, 2001).

### **2.1.2 Concept and type of Return**

Return is the motivating in the investment process, that is, it is the reward for making the investment. It involves both capital gain and losses by the change in security market price. They are two types of return.

- ) Capital Gain Yield
- ) Ordinary Gain Yield



### **2.1.3 Concept and Sources of Risk**

Uncertainty in return from investment is called risk. Risk is defined as the change that the actual outcomes from an investment will differ from the expected outcome. Source of risk can be pointed out as follows.

- ) Management risk
- ) Interest rate risk
- ) Political risk
- ) Inquility risk
- ) Purchasing power risk

### **2.1.4 Measurement of Risk**

The one period rate of return is the basic random variable use in measuring an investment's risk. Two statically tools used for the measurement of risk i.e. variance ( $\sigma^2$ ) standard deviation ( $\sigma$ ).

### **2.1.5 Investment Decision Based on Risk and Return**

For investment decision, consider the following stricture.

- ) At equal level of risk, higher return
- ) At equal level of return, lower risk
- ) For under level of risk and return, find out C.V. and lower C.V. consideration

### **2.1.6 Concepts and Techniques of Portfolio Diversification**

Combining securities of low risks with securities of higher risk, success can be achieve can by an investor in making a choice of investment out less.

- ) simple diversification: systematic and unsystematic
- ) Diversification across different industries
- ) Diversification through equality rating assets
- ) Markowitz diversification (based on correlation of assets)

## **2.1.7 Portfolio analysis for selection**

### **A. Portfolio Opportunity Set (Attainable Set)**

Opportunity set is that area which is occupied by the curve connecting both efficient and inefficient portfolio i.e. its group of all possible portfolios.

### **B. Efficient Set**

Efficient portfolio may be defined as the portfolio which;

- Provides the highest possible expected return for any degree of risk.
- The lowest possible degree of risk for any expected return.

### **C. Efficient Frontier**

The line connecting a portfolio having the highest return in the same level of risk is known as an efficient frontier.

### **D. Optimal Portfolio**

This is a portfolio where the indifference curve touches in the efficient set and this Portfolio will give maximum satisfaction on utility of an investor.

### **E. Minimum Variance Opportunity Set**

This is a group of portfolios with lowest risk at a given level of return.

### **F. Minimum Variance Portfolio Weight**

This is a group of portfolios with lowest standard deviation in an opportunity set.

## **2.1.8 Systematic and unsystematic risk**

Systematic risk also known as un-diversifiable risk and cannot be diversified

through creation of portfolio. This type of risk creates from macro economic factors like GDP, inflation, employment, interest rate etc. Unsystematic risk is a diversifiable risk and creates from micro economic factors or unique factors to a firm. This type of risk can be minimized through portfolio diversification.

### **2.1.9 Portfolio of Risky and Risk Free Assets**

Some of investments, return of which is exactly known as called risk free assets. In other words, the asset with zero standard deviation is a result between actual and expected return is called risk free assets. In investments, return of which is in uncertainty is known as risk assets. Portfolios of risky and risk free assets are essential for risk minimization as well as return maximization.

### **2.1.10 Capital Market Line (CML)**

CML is a line, which expresses the risk and return in the expected portfolio. This is line showing relationship between expected return and standard deviation of portfolio made with risky and risk free assets. This line is known as efficient sets or efficient frontier of portfolio of risky and risk free assets.

### **2.1.11 Capital Assets Pricing Model and Security Market Line**

The relevant risk for an individual asset is systematic risk because non market risk can be eliminated by diversification. The relationship between an asset's return and its systematic risk can be expressed by the CAPM, which is also called the security market line (SML).

The CAPM is an equilibrium model for measuring the risk & return trade off for all assets including both inefficient and efficient portfolios. The CAPM

equation is as:  $E(R_i) = R_f + [(E(R_m) - R_f) \beta_i]$

### 2.1.12 Difference between CML and SML

**Table No. 2.1**

**Difference between CML and SML**

S. N.	CML	S. N.	SML
1.	CML is the relationship between the expected return on efficient portfolios and their total risk.	1.	SML is the relationship between the required return on individual assets and their risk as measurement by beta.
2.	Slope of CML or market price of the risk is the $E(R_m) - R_f / \sigma_m$ which means investors, wants extra return for bearing to the total risk.	2.	Slope of the SML or risk premium is $E(R_m) - R_f / \beta_m$ which means the investors wants the extra return for bearing the systematic risk.

### 2.1.13 Common Stock

In Finance, instrument certifying to shares in the ownership of corporation. Bonds are similar evidence of shares in a loan to a corporation. Stock yields no dividends until claims of bondholders have been met. Preferred stock is entitled to dividends of a specified percentage per annum before common stock is entitled to any dividends; the common stock is then usually entitled to the rest profit. In case of liquidation of the company, holders of bonds and preferred stock take Precedence over holders of common stock in the division of assets. Holders of common stock usually have voting rights in the management of the corporation, bondholders and usually holders of preferred stock have no voting rights. Since, the value of common stock

depends largely on its earning; it is often issued with no par value (William, 1965). Public demanded for securities and the need of corporations for ready capital have led to the development of stock exchange in most of the major cities of the world.(www.columbiaencyclopedia.com)

## **2.2 Reviews from Past Research, Thesis Project Work Articles, Journals**

There are many studies related to the topic Risk and return has been conducted as a thesis for the partial fulfillment of master degree in T.U., which is reviewed here. There are some studies related for this topic such as the study conducted by

Raman Sapkota (2000), “Risk and Return Analysis in Common Stock Investment” includes eight commercial banks are very closely related studies to this study.

### **Objectives:**

- ) To analyses the risk and return of the common stocks in Nepalese stock market the study is focused on the common stocks of commercial banks.”
- ) To evaluate financial performance of bank in terms of investment strategies.

### **Major Findings:**

Expected rate of return of on the common stock of Nepal Bank Limited is maximum (66.99%) and common stock of Nepal SBI Bank Ltd. is around minimum. In this regard, common stock of NBL is the most risky and common stock of NSB is the least risky. In the context of industries and expected returns of finance and insurance, industry is found to be the

highest. Expected return of banking industry is 60.83%.”

### **Conclusion:**

Common stock is the most risky security and life blood of stock market because of the highest expected return, common stock attracts more investor's private common stock holders are the passive owners of the company. But, the private investors play a role in economic development of the nation by mobilizing the dispersed capital remained in different form in the society. As overall economy, Nepalese stocks market is in emerging state. Its development is accelerating since the political change in 1990 in effect of openness and liberalization in national economy. But lack of information and poor knowledge, Nepalese private investors cannot analyze the securities as well as market properly”

### **Recommendations**

#### **1) Recommendation to the Government (HMG)**

- ) Government needs amendment of rules and regulation regarding stock market in time to time, without implementation. Hence HMG needs to monitor to make active to all the components of stocks as well as capital market properly.
- ) HMG needs to manage the trading of government securities in NEPSE in sprite of Nepal Rastra Bank (NRB). Government securities are assumed as risk free security and trading of these securities at the same place to investors so that they can diversity their fund property to construct optimal portfolio. This will also increase the strength of stocks market and mare specifically NEPSE as well.

#### **2) Recommendation to private Investors**

- ) Stock market investment is a risky job. Although there is a chance of mere return than that of expected, there is also a change of heavy loss. So it should really only investment money in the stocks market that it need not for other communities. The stock market is undoubtedly risk in the short term and investor needs to be prepared for it.
- ) Private investors should try to work their attitude towards the risk of various investment strategies.
- ) Investors need to diversify their funds to reduce risk. Proper construction of portfolio is never taken any considerable loss.

Sangita Neupane (2003), Risk and return analysis in common stock investment of listed commercial bank.

**Objectives:**

- ) To analyze Risk and Return on common stock of listed commercial banks
- ) To determine correlation between listed commercial banks
- ) To determine the effect of portfolio on risk and return

**Major Findings:**

- ) “The return is the income received on the stock investment which is usually expressed in percentage. Expected return on the common stock of SCBNL is maximum lie 128.60%, which is very high rate of return. In reality, this rate exists only due to the effect of unrealistic annual return because of the issue of bonus share and increase in share price. Similarly, expected return of the common stock of Himalayan

bank LTD is found minimum (i.e. 28.94%)”

- ) “About the risk he has concluded Risk is the variability of return which is measured in terms of standard deviation. On the basis of s.d. common stock of NIBL is most risky since it has high s.d and common stock of HBL is least risky because of its lowest s.d. other hand we know the coefficient of variation (C.V) is more rational basis of investment decisions which measures the risk per unit of return. On the basis of C.V common stock of NABIL is the best along all banks, NABIL has 0.8600 unit of risk per unit of risk per unit of return but COMMON STOCK of NIBL has the highest risk per unit of return.”

### **Recommendations:**

- ) NEPSE needs to initiate to develop different programs for private investor such as investor’s meetings and serener in different subject matters like” trading rules and regulations “etc. On the other hand, NAPSE is following” “Open cry system” of trading even in the age of digital technology should be modernized. It needs, to develop efficient and effective information channel and to provide up to date.
- ) The corporate firms should communicate the real financial statements should not be manipulated to report the under or over profitability. Every decision of the corporation should be made to maximize the value of the firm and value per share.
- ) Government needs to amount the rules& regulation regarding stock market in time to time and to make the policy that protects the individual investor's right.

### **Conclusion:**

The return is the income received on the stock investment, which is usually



express in percentage. Expected return on common stock of SCBNL is maximum lie 128.60%, which is very high rate of return. In reality, this rate exists only due to the effect of unrealistic annual return because of the issue of bonus share & increase in share price. Similarly, expected return of the common stock of Himalayan bank ltd is found minimum (28.94%).

Dil Bahadur Chhetri (2005), Risk and Return Analysis of Listed Companies in Nepal (With Special Reference to joint venture banks)

**Objectives:**

To analyze the risk and Return on common stock investment companies

**Major Findings:**

- ) Analysis and interpretation as to the industry wise NEPSE index show that banking sector has return than all other. Standard deviation seems in its middle position for this sector.
- ) Most of all the Banks have positive beta showing positive relationship with market return.
- ) The entire stocks under study are under priced.

**Recommendations:**

All of the banks under study have higher level of risk whereas returns were relatively smaller.

Sanjita Thapa (2007), "Risk and Return in Stock market Investment in Nepal: Issue and challenge."

**Objectives:**

To analyze the risk and return as well as to examine the trend of risk, return,

total paid up value annual turnover and capitalization of listed companies.

**Major Findings:**

- ) Most of investors are found to be risk averters. They are investing in portfolio having more than four securities.
- ) The most preferable sector for investors is banking and finance sectors.
- ) Increasing trends of shares price and surplus money for investors are the influence factors to buy share by investors.

**Conclusion:**

Profitability and marketability has equal influence for motivation to invest. The specific risk of market during the consideration period of study is 31.65percent. Bank, Hotel and other sectors have higher specific risk compared to the market specific risk where as the specific risk of manufacturing and processing, finance and insurance are lower than market.

**Recommendations:**

- ) The total paid up value of all sectors expects trading is likely to decreasing in trends. The annual turnover of all the sectors is increasing trends. Likewise, the market capitalization of all sectors expected trading is likely to increasing trends.
- ) In Comparison of market, portfolio and average return of selected companies shows that there is no difference significantly.

Mangal Bhakta Shrestha (2008), "Risk and Return Behaviour of listed

commercial banks in NEPSE."

**Objectives:**

- ) To examine the current status of stock market in Nepal
- ) To analysis risk & return associated with common stock of commercial banks.
- ) To determine the effect of portfolio on risk & return behavior within and between commercial banks.
- ) To analyze & recommend the risk and return behavior within & between commercial banks.

**Major Findings:**

- ) Risk & Return of selected commercial banks are not consistent. The average risk of selected commercial bank is 40.07% whereas Return is only 9.23%.The higher risk is 67.61% of Bank of Kathmandu Ltd. whereas higher return is 23.49% of Nabil bank.
- ) The selected commercial bank having higher risk pose fewer rates of return & Bank having low risk have higher return.
- ) The average risk of commercial bank combination under portfolio analysis is 28.21% but return is 0.23%.
- ) Bank of Kathmandu Ltd. has higher value of beta (2.25). Similarly, it has highest risk of 67.61% & return is 22.40%.

**Recommendations:**

- ) Investor has to prefer to investment their capital in the sector which provides them a handsome return at minimum risk within the short time period. Investor must be able to inform and analyse the whole component of stock market & financial condition of various banks as

- well as be aware of political factor.
- ) The investors are recommended to receive fact information of their financial position before investing. Investors have to be clear and be aware about the financial statement of relative company and broker's behavior.
  - ) The stock is under price if their expected rate of return is higher than required rate of return & the stock is over price if their expected rate of return is lower than required rate of return, depending upon general rule regarding buy and sell, all the under price stock have to purchase & all the over price stock have to sell.

**Conclusion:**

The present study has been explored some empirical evidences about risk and return behavior in the context of Nepalese commercial banks. There is no positive relationship between risk & return. Through investment on banking sector has more risk, investors are interested to invest their fund in it. The overall effect of portfolio on risk & return shows mixed results.

## **CHAPTER-THREE**

### **RESEARCH METHODOLOGY**

Research methodology is a systematic way to solve the research problem. It is the process of arranging at the solution of problem through the plan and systematic detailing with collection analysis and interrelation of fact and figure. For achieving the objective, the following research methodology has been purpose.

#### **3.1 Research Design**

Research design is the plan structure and strategy for investigation of the facts in order to arrive at conclusion, which is related to the return and risk on common stock of commercial banks of Nepal for this study.

The analytical as well as descriptive research design has been included in this study for analytical purpose the annual reports and financial statement of related commercial bank is collected.

#### **3.2 Population and Sample**

Population refers to the institution of same nature and their services and product in general. A sample is a collection of items or elements from the population. There are 25 commercial banks in Nepal. In this study the risk and return of NIBL and EBL has been considered.

#### **3.3 Sources of Data**

This study is mainly based on secondary data. But, while studying individual investors' opinion bank officials' suggestion and opinion From staff of NEPSE ltd are also taken in to consideration. The secondary data have been

acquired from various other sources like:

### **Secondary Sources**

- ) Annual reports of concerned commercial bank
- ) Trading reports published by NEPSE limited
- ) Materials published in papers and magazines
- ) Related web sites
- ) Other related books and booklets

### **Primary Sources**

Primary data are original data gathered by the researcher for the research project at hand. Thus, these data are collected for meeting the specific objectives of the study. Primary data can be collected through interview, observation or experiments.

### **3.4 Analysis of data:**

After the collection of data analysis is performed for the purpose of data analysis financial tool as well as statistical tools are used to make the analysis more effective, convenient, and reliable and activities.

In this report a following financial and statistical tools have been used.

- ) Return on common stock investment

$$\frac{P_{t+1} - P_t + C_t}{P_t}$$

- ) Expected return on common stock

$$\frac{R}{y}$$

) Beta

$$S_i \times \frac{Cov_{i,MARKET}}{\sigma_{MARKET}^2}$$

) Portfolio beta at equal weight

$$(\beta_p) = W_{NIBL} \times \beta_{NIBL} + W_{EBL} \times \beta_{EBL}$$

) Risk minimizing portfolio

$$W_{NIBL} = \frac{\sigma_{EBL}^2 \times ZCov_{NIBL,EBL}}{\sigma_{NIBL}^2 \times \Gamma + \sigma_{EBL}^2 \times Z2Cov_{NIBL,EBL}}$$

$$W_{EBL} = 1 - W_{NIBL}$$

) Required rate of return

$$E(R_i) = R_f + [E(R_m) - R_f] \beta_i$$

) Total Risk of Bank i

$$\sigma_i^2 = \beta_i^2 \times \sigma_{MARKET}^2 + \sigma_{e_i}^2$$

) Variance

$$\frac{(\sigma_{ZR})^2}{n \times Z1}$$

) Standard Deviation

$$\sqrt{\frac{(\sigma_{ZR})^2}{n \times Z1}}$$

) Coefficient of Variation

$$\frac{\sigma}{E(R)}$$

) Covariance between the returns of two banks.

$$\frac{(R_{NIBL} - Z E(R)_{NIBL})(R_{EBL} - Z E(R)_{EBL})}{n Z 1}$$

) Correlation between the returns of two banks

$$\frac{Cov_{NIBL \& EBL}}{\sqrt{\sigma_{NIBL}^2 \sigma_{EBL}^2}}$$

) Portfolio Standard Deviation of two banks.

$$(\sigma_p) = \sqrt{W_{NIBL}^2 \sigma_{NIBL}^2 + W_{EBL}^2 \sigma_{EBL}^2 + 2 W_{NIBL} W_{EBL} \rho_{NIBL, EBL} \sigma_{NIBL} \sigma_{EBL}}$$



## CHAPTER-FOUR

### PRESENTATION AND ANALYSIS OF DATA

This chapter is concerned with the presentation and analysis of the return and risk characteristics of common stock of EBL & NIBL. Tables, diagrams and charts have been used to depict the information precisely where necessary. This study has been focused only on two banks.

1. Nepal Investment Bank Limited.
2. Everest Bank Limited

#### 4.1 Holding period Return (HPR<sub>t</sub>), expected return E(R)

The Holding period Return has calculated by using yearend price, Year price dividend amounts, Table 2.1 shows the calculation.

**Table No. 4.1**  
**Nepal Investment Bank Limited: Holding Period Return (HPR1) & Expected Return E(R)**

Year	Closing MPS (Rs.) (P <sub>t+1</sub> )	Total Dividend Rs (C <sub>t</sub> )	$HPR_t = \frac{P_{t+1} + ZP_t + \Gamma C_t}{P_t}$
2002/03	1150	760	
2003/04	760	238.5*	0.0317
2004/05	795	208**	0.3197
2005/06	940	135	0.3522
2006/07	800	170	0.0319
2007/08	1260	785***	1.5563
<b>Total</b>			<b>2.2284</b>

*Source: Annual Reports*

\* 0 + 30% of 795 = 238.5

\*\* 20 + 20% of 940 = 208

\*\*\* 20 + 0.5546 of 1380 = 785 (Based on at March 14, 2009)

[Note: Total dividend = Dividend per share + stock dividend percentage × next year MPS]

$$\text{Expected Return } E(R)_{NIBL} = \frac{R_{NIBL}}{y} \times \frac{2.2284}{5} \times 0.4254$$

**Table No. 4.2**

**Everest Bank Limited: Holding Period Return (HPR<sub>t</sub>) and Expected Return E(R)**

Year	Closing MPS (Rs.) (Pt+1)	Total Dividend Rs (Ct)	HPR <sub>t</sub> = $\frac{P_{t+1} Z P_t \Gamma C_t}{P_t}$
2002/03	650	0	-
2003/04	405	89*	-0.24
2004/05	445	20	0.148
2005/06	680	20	0.5730
2006/07	870	276**	0.6834
2007/08	1379	25	0.6134
<b>Total</b>			<b>1.7778</b>

Source: Annual Reports

\* 0 + 0.20 x 445 = 89

\*\* 0 + 0.020 x 1379 = 276

[Note: Total dividend = Dividend per share + stock dividend percentage X next year MPS]

$$\text{Expected Return } E(R)_{EBL} = \frac{R_{EBL}}{n} \times \frac{1.7797}{5} \times 0.3559$$

## 4.2 Standard Deviation, Variance and Coefficient of Variation

The standard deviation ( $\sigma$ ), variance ( $\sigma^2$ ) and coefficient of variation  $\frac{\sigma}{E(R)}$

by using Holding Period Return (R) and expected Return E(R).

**Table No. 4.3**

**Nepal Investment Bank Limited and Everest Bank Limited: Standard deviation ( $\sigma$ ), variance ( $\sigma^2$ ) and C.V.**

Year	R	R <sub>NIBL</sub>	R-R <sup>NIBL</sup>	(R-R) <sup>2</sup> <sub>NIBL</sub>	R	R <sub>EBL</sub>	R-R <sub>EBL</sub>	(R-R) <sup>2</sup> <sub>EBL</sub>
2002/03	-	-	-	-	-	-	-	-
2003/04	-0.1317	0.4254	-0.557	0.3104	-0.24	0.3559	-0.5959	0.3551
2004/05	0.3197	0.4254	-0.106	0.0112	0.148	0.3559	0.2079	0.0432
2005/06	0.3522	0.4254	-0.073	0.0054	0.573	0.3559	0.2171	0.0471
2006/07	0.0319	0.4254	-0.394	0.1548	0.6853	0.3559	0.3294	0.1085
2007/08	1.5563	0.4254	1.1309	1.2789	0.6134	0.3559	0.2575	0.0663
<b>Total</b>				<b>1.7621</b>	<b>Total</b>			<b>0.6202</b>

We have,

$$\text{Standard Deviation } (\sigma)_{\text{NIBL}} = \sqrt{\frac{\sum (R - R_{\text{NIBL}})^2}{n}} \times \sqrt{\frac{1.7621}{5}} \times 0.664$$

$$\text{Standard Deviation } (\sigma^2)_{\text{NIBL}} = 0.664^2 = 0.441$$

$$\text{Coefficient of Variance (C.V.)}_{\text{NIBL}} = \frac{\sigma_{\text{NIBL}}}{E(R)_{\text{NIBL}}} \times \frac{0.664}{0.4254} \times 1.56$$

$$\text{Standard Deviation } (\sigma)_{\text{EBL}} = \sqrt{\frac{\sum (R - R_{\text{EBL}})^2}{n}} \times \sqrt{\frac{0.6202}{5}} \times 0.3938$$

$$\text{Standard Deviation } (\sigma^2)_{\text{EBL}} = 0.3938^2 = 0.15505$$

$$\text{Coefficient of Variance (C.V.)}_{EBL} = \frac{\sigma_{EBL}}{E(R)_{EBL}} \times \frac{0.3938}{0.3551} \times 1.1089 \times 1.11$$

### 4.3 Investment Decision

**Table No. 4.4**

**Table Showing  $\sigma$ , E(R) and C.V. of NIBL and EBL**

	NIBL	EBL
	0.664	0.3938
E(R)	0.4254	0.3559
C.V.	1.56	1.11

For decision purpose higher the C.V. higher the risk and vice versa. So, Investing in NIBL is better than EBL.

$$\text{COV}_{NIBL \& EBL} = \frac{(R_{NIBL} - E(R)_{NIBL})(R_{EBL} - E(R)_{EBL})}{n \cdot Z1} \times \frac{0.4981}{5 \cdot Z1} \times 0.1245$$

$$\text{Correlation } (r_{NIBL \& EBL}) = \frac{\text{COV}_{NIBL \& EBL}}{\sigma_{NIBL} \sigma_{EBL}} \times \frac{0.1245}{0.664 \times 0.3938} \times 0.47625$$

### 4.4 Portfolio Risk and Return

A combination of two or more securities or assets is called portfolio, which is calculated from different weight as follows:

$$\text{Expected Return on Portfolio: } E(R_p) = W_{NIBL} E(R_{NIBL}) + W_{EBL} E(R_{EBL})$$

Expected Risk on Portfolio:

$$\sigma_p = \sqrt{W_{NIBL}^2 \sigma_{NIBL}^2 + W_{EBL}^2 \sigma_{EBL}^2 + 2 W_{NIBL} W_{EBL} \sigma_{NIBL} \sigma_{EBL} r_{NIBL \& EBL}}$$

Value calculated from 0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 percent of

Investment in NIBL are as follows:

**Table No. 4.5**  
**Values of Portfolio Risk and Return with Different Weight**

Weight of NIBL	Weight of EBL	E(R <sub>p</sub> )	* <sub>p</sub>	** <sub>p</sub>	*** <sub>p</sub>
0	1	0.3559	0.3938	0.3938	0.3938
0.1	0.9	0.3629	0.4224	0.2892	0.3926
0.2	0.8	0.3698	0.4482	0.1814	0.3986
0.3	0.7	0.3768	0.4749	0.7668	0.4749
0.4	0.6	0.3837	0.502	0.0447	0.4359
0.5	0.5	0.39065	0.5301	0.1378	0.4648
0.6	0.4	0.3976	0.5568	0.2408	0.497
0.7	0.3	0.4046	0.5831	0.3464	0.5339
0.8	0.2	0.4115	0.6116	0.4539	0.5762
0.9	0.1	0.4185	0.638	0.5595	0.6197
1	0	0.4254	0.664	0.664	0.664

\*<sub>p</sub> assuming correlation between NIBL,EBL = +1

\*\*<sub>p</sub> assuming correlation between NIBL,EBL = -1

\*\*\*<sub>p</sub> assuming correlation between NIBL,EBL = 0.5

#### 4.5 Minimum Variance Portfolio Weight

It's the portfolio with the lowest level of risk in the efficient frontier. It's also called risk minimizing weight.

$$W_{NIBL} = \frac{\sigma_{EBL}^2 \sigma_{NIBL}^2 - \text{Cov}_{NIBL,EBL}}{\sigma_{NIBL}^2 \sigma_{EBL}^2 - 2 \text{Cov}_{NIBL,EBL}} \times \frac{0.1555 \sigma_{EBL}^2 - 0.1245 \text{Cov}_{NIBL,EBL}}{0.441 \sigma_{EBL}^2 - 0.15505 \sigma_{NIBL}^2 - 0.1245 \text{Cov}_{NIBL,EBL}} \times 0.10$$

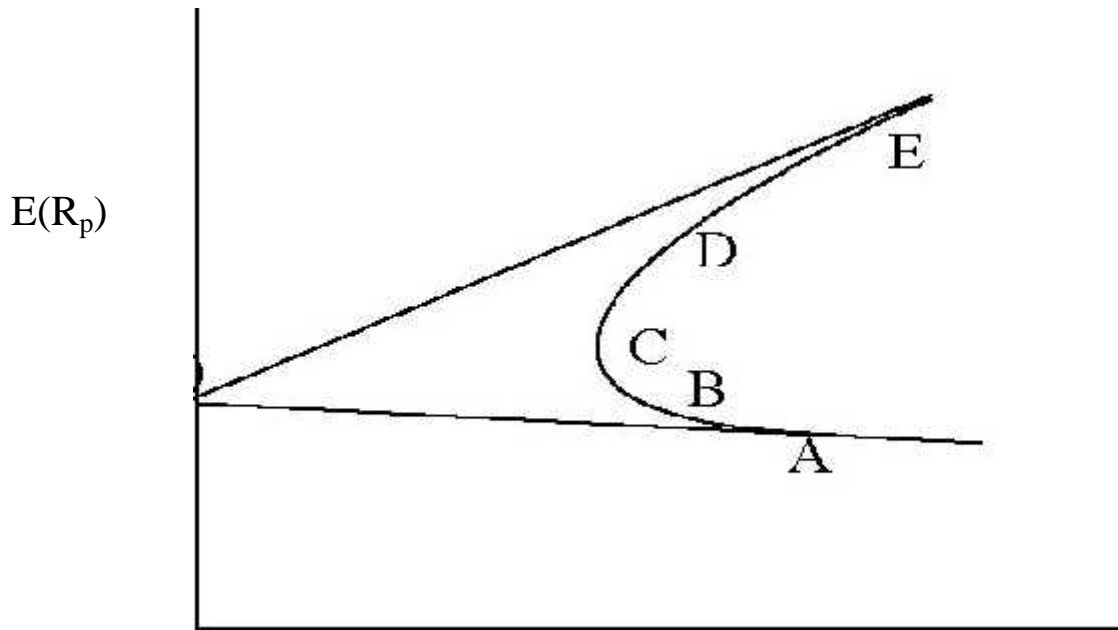
Hence,

$$W_{EBL} = 1 - W_{NIBL} = 1 - 0.10 = 0.90$$

#### 4.6 Portfolio Selection

Optimal portfolio depends upon the attitude towards risk available opportunity investment; here try 70 Identity opportunity set, efficient set and optimal portfolio at correlation 0.5 between NIBL and EBL.

**Figure No. 4.1**  
**Portfolio Selection**



In the above figure X axis shows the standard deviation portfolio and Y axis show expected return of portfolio. In the figure AE arc is opportunity set, point C is optimal portfolio point and CE is the efficient set at 0.5 correlations.

#### 4.7 Beta coefficient portfolio beta and types of beta

Beta is an indicator of systematic risk. Beta coefficient of each company is as follow:

$$S_{NIBL} = \frac{Cov_{NIBL,MARKET}}{\sigma_{MARKET}^2} \times \frac{0.4548}{4} \times 0.1137$$

$$S_{EBL} = \frac{Cov_{EBL,MARKET}}{\sigma_{MARKET}^2} \times \frac{0.3895}{4} \times 0.10$$

Portfolio beta at equal weight:

$$\begin{aligned} \beta_p &= W_{NIBL} \times \beta_{NIBL} + W_{EBL} \times \beta_{EBL} \\ &= 0.50 \times 0.11 + 0.05 \times 0.10 = 0.105 \end{aligned}$$

$$S_{MM} = \frac{Cov_{MM}}{\sigma_M^2} \times \frac{0.074}{0.074} \times 1$$

Thus, Beta coefficient of NIBL is 0.11 and that of EBL is 0.10, and portfolio beta at equal level is 0.105. Beta of market is always 1. This also is proved. Generally, there are three types of beta. One of them is aggressive beta, which has  $>1$ , another beta is defensive beta, which has  $<1$ , and at last, one is normal beta, which has  $=1$ .

#### 4.8 Portioning of Total Risk

Total risk = Systematic Risk + Unsystematic Risk  
Total Risk of NIBL & EBL calculated as follows:

$$\sigma_{NIBL}^2 = \sigma_{NIBL}^2 + \sigma_{MARKET}^2 \Gamma^2 = (0.1137)^2 \times 0.074 + 0.44 = 0.441$$

$$\sigma_{EBL}^2 = \sigma_{EBL}^2 + \sigma_{MARKET}^2 \Gamma^2 = (0.10)^2 \times 0.074 + 0.1543 = 0.15505$$

Where,

$$\sigma_e^2 = \sigma_{NIBL}^2 - \sigma_{MARKET}^2 \Gamma^2 = 0.440$$

$$\sigma_e^2 = X \sigma_{EBL}^2 + Z S_{EBL}^2 + \beta^2 \sigma_{MARKET}^2 = 0.1543$$

Hence, among the total risk of NIBL is 0.00096 systematic and 0.440 unsystematic. Similarly systematic risk of EBL is 0.0074 and unsystematic risk is 0.1543.

#### 4.9 Selection of company on the basis of systematic risk

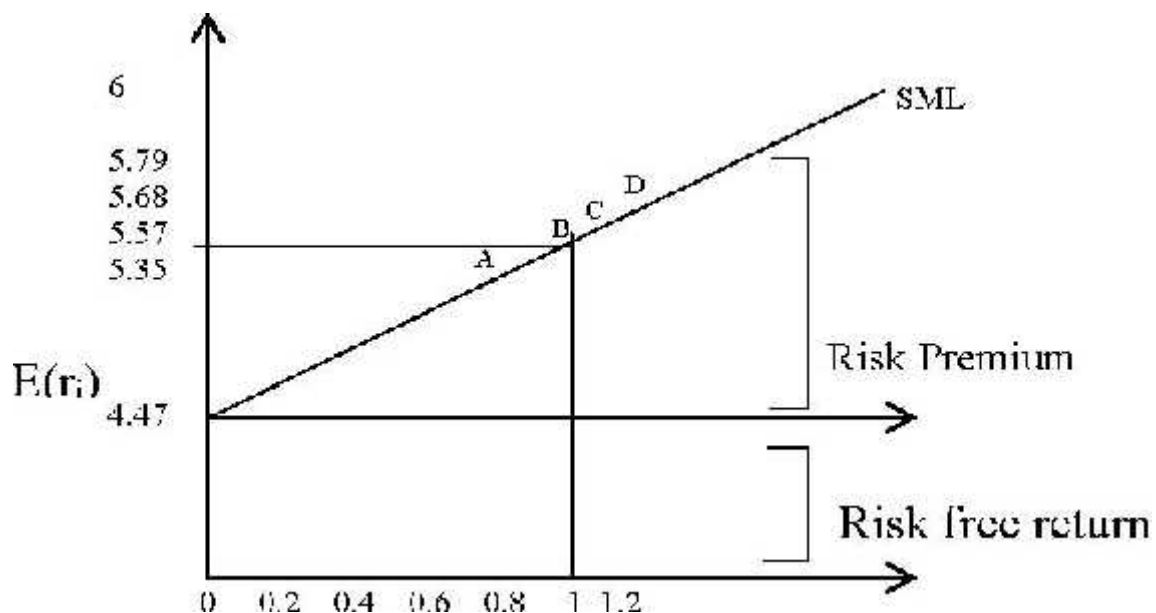
Systematic risk of EBL is lower than that of NIBL with equal level of market risk. So EBL selected on the basis of systematic risk. Whereas systematic risk of NIBL, is 0.096% and EBL is 0.0074%.

#### 4.10 Security Market Line (SML)

Risk free rate of return ( $R_f$ ) is based on 364 days weighted average treasury bill rate of five years from 2003/04 years to 2008/09 Hence,

$$\text{Required rate of return } E(R_i) = R_f + [E(R_m) - R_f] \beta_i$$

**Figure No. 4.2**  
**Security Market Line (SML)**





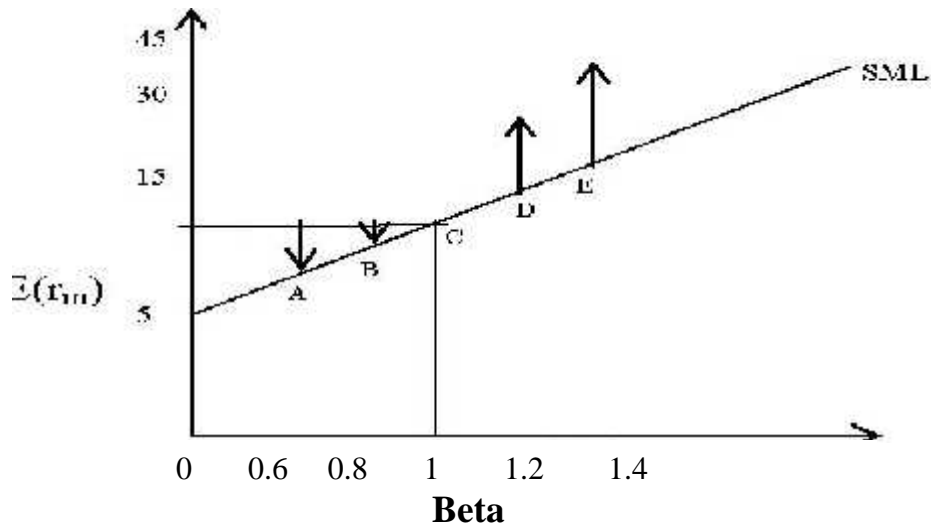
In above figure shows that required rate of return at beta 0.80 is 5.35, at beta 1 is 5.57, at 1.1 beta is 5.68 and 1.2 beta is 5.79 by A, B, C, D respectively.

#### 4.11 Overpriced and under priced of stock

**Table No. 4.6**  
**Overpriced and under priced of stock**

<b>S. No.</b>	<b>Expected Return</b>	<b>Required Rate</b>	<b>Beta</b>	<b>Result</b>
A	34.64	22.57	0.6	Under Priced
B	9.97	8.87	0.8	Under Priced
C	8.33	8.39	1	Cost Priced
D	29.11	34.098	1.1	Over Priced
E	34.94	47.17	1.2	Over Priced

**Figure No. 4.3**  
**Overpriced and under priced of stock**



In above figure at point A and B the stock price is in under priced because of having less required rate of return than expected return. At point D & E stock price is overpriced, where required rate of return is greater than expected return, which is also clearly shown in the Following.

#### 4.12 Major Findings

- For decision purpose higher the C.V. higher the risk and vice versa. So Investing in NIBL is better than EBL.
- Optimal portfolio depends upon the attitude towards risk available opportunity investment; here try 70 Identity opportunity set, efficient set and optimal portfolio at correlation 0.5 between NIBL and EBL. The standard deviation portfolio and Y –axis show expected return of portfolio. In the figure AE arc is opportunity set, point C is optimal portfolio point and CE is the efficient set at 0.5 correlations.
- Beta coefficient of NIBL is 0.11 and that of EBL is 0.10, and portfolio

beta at equal level is 0.105. Beta of market is always 1. This also is proved. Generally, there are three types of beta. One of them is aggressive beta, which has  $>1$ , another beta is defensive beta, which has  $<1$ , and at last, one is normal beta, which has  $=1$ .

- The total risk of NIBL is 0.00096 systematic and 0.440 unsystematic. Similarly, systematic risk of EBL is 0.0074 and unsystematic risk is 0.1543.
- Systematic risk of EBL is lower than that of NIBL with equal level of market risk. So EBL selected on the basis of systematic risk. Whereas systematic risk of NIBL, is 0.096% and EBL is 0.0074%.
- In above figure at point A and B the stock price is in under priced because of having less required rate of return than expected return. At point D & E stock price is overpriced, where required rate of return is greater than expected return. This is also clearly shown.
- The stocks of banks are under priced since their required rates of return are less than their average rate of returns. The government securities are assumed to be risk free. In a portfolio, government securities play a significant role for reducing portfolio risk.

## **CHAPTER-FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATION**

#### **5.1 Summary**

Capital market is a significant mechanism for the development of national economy. It reinvigorated and boosts up the economic activities by mobilizing especially domestic financial resources. It provides best investment opportunities by transferring the funds from surplus savings to need based sectors through the transaction of financial instrument.

Before Investment on any security the risk and return analysis is performed. Being the speculative nature, common stock is taken for analyzing risk and return. The common stock is the most risky security. An investment in common stock of a company cannot ensure the annual fixed return. Dividends are given to the stockholders only if there will earning available to equity shareholders.

There is a mutual relationship between risk and return. Risk and return play a vital role in the process of investment decision. However, the relationship between risk and return is described by investors about risk and their demand for compensation. The investors will invest in risky assets only when he is assured of adequate compensation for risk bearing.

In the course of this study, brief review of related studies has been performed. The collected data has analyzed by using tables, graphs, and diagrams to present the data more clearly. The data were collected from the NEPSE, web sites. Annual reports, security board of Nepal's, Journals previous thesis and concerned books.

## **5.2 Conclusions**

The following conclusions can be draw on the basis of the analysis of the stocks of Nepal Investment Bank and Everest Bank Limited market sensitivity analysis, portfolio analysis etc.

- Books move in the same direction of means they have positive correlation between them.
- The unsystematic risk of the companies is high in compression to total risk. It seems that the variability of return on the common stocks of the companies is specific. The company specific risk can be diversified away with a well diversified portfolio.
- The stocks of banks are under priced since their required rates of return are less than their average rate of returns. The government securities are assumed to be risk free. In a portfolio, government securities play a significant role for reducing portfolio risk
- The government securities are assumed of be risk free. In a portfolio, government securities play a significant role for reducing portfolio risk.

## **5.3 Recommendations**

On the basis of finding of the study the following recommendations are prescribed on the basis of data analysis.

- The practice of creating a well-diversified portfolio cannot be found in banks. The investment risk can be significantly reduced with a well-diversified portfolio. Hence it is suggested to diversify their investment in different securities that behave differently i.e. with negative or low correlation for reducing poor portfolio performance.

- Analysis the market sensitivity of common stock guides in investment in stock market. The under proceed common stock should be purchased and the overpriced common stock should be sold. This study recommends selling the common stock of NIBL, which is overpriced.
- The investment strategies adopted by individual investors are passive. They just hold the securities and wait for dividend. Hence, active strategy should be followed to gain from the transactions.
- The financial institutions and companies should provide the real financial statements. The data provided by NEPSE and the company itself are different I some cases. It creates confusion to the possible investors about actual financial condition of the company. The value of assets and liabilities should not be manipulated by the company to show the under profitability or over profitability.

There are few book and research based journals in the risk of finance in Nepalese context. Almost no articles about the risk and return analysis on common stock investment can be found. So here the foreign published journal of finance related to this topic has been reviewed. Thus, study also helps to build the theoretical framework on this topic.

American Association of individual investors anger the "Investing Basis" describes – It is important to understand how personal circumstances affect investment decisions. If these factors make no differences we could simply publish on suggested portfolio for everyone to follow. However, your tolerance for risk, your return needs (whether income or growth), the length of time you can remain invested and your tax status all have an important effect on the kinds of investments. Investment profile is the beginning of the

asset allocation process, which consists of dividing your portfolio among the major asset categories of stock, bonds and cash. The asset allocation decision that you make here will have a far more effect on your overall portfolio return. Make allocation decisions with the major categories. For instance, stock portfolio can be divided among large capitalization stocks, small capitalization stocks and international stocks. Once these decisions are reached, you will be ready to select among the various investment options. Lastly, once you have setup your investment portfolio you must monitor it making changes, when appropriate. Every investor wants the highest assured return possible. But as we have seen returns aren't certain and different investors have varying degree of uncertainty that they are willing to accept. Some alligators are shifting their resources to capture the greater gains they expect overseas. Indeed, the best way to exploit the benefits of falling rates around the world may be carved up a portfolio into even slices ([http://www.business week/com](http://www.businessweek.com)) Hence, from above reviews of journals, thesis and independent studies it can be concluded that the Nepalese capital market is just growing up and all related sectors, personnel, organizations, intersected persons have to work seriously for its growth.

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## **ANNEX-1**

### **INTRODUCTION OF THE COMPANY**

#### **1. Nepal Investment Bank Limited (NIBL)**

Nepal Investment Bank Ltd. (Previously Nepal Indosuez Bank Ltd) was established as a third joint venture under the company act 1964, in accordance with joint venture and technical services agreement signed between it and Nepalese promoters. Now this bank is operating under full ownership of Nepalese promoters and shareholders. Authorizes capital of this bank is 1,00,00,00,000, issued capital is 80,13,52,600 and paid up capital 80,1,52,600. The capital office of this origination is in kings' way Katmandu.

#### **2. Everest Bank Limited (EBL)**

EBL was established on 2047 B.S. It was listed in NEPSE in 2052 B.S. It's also the joint venture bank and the joint venture partner of the bank is Punjab National Bank Ltd. The authorized capital is Rs.60,00,00,000, Issued capital is 52,9,00,000 and paid up capital is Rs.51,80,00,000. the face value of share is Rs.100 and the number of shareholder is 51,80,000 respectively.

**ANNEX-2**  
**Calculation of Beta Coefficient**

Year	RNIBL	E(RNIBL)	RNIBL - E(RNIBL)	Rm	E(Rm)	Rm - E(Rm)	(Rm - E(Rm)) <sup>2</sup>	[RNIBL - E(RNIBL)]. [Rm - E(Rm)]	REBL	E(REBL)	REBL - E(REBL)	[REBL - E(REBL)]. [Rm - E(Rm)]
2002/03												
2003/04	0.1317	0.4254	0.5571	0.3464	0.096	0.4419	0.1953	0.2462	0.24	0.3559	0.5959	0.2633
2004/05	0.3197	0.5254	0.1057	0.0997	0.096	0.0037	0.0001	0.0004	0.148	0.3559	0.2079	0.0008
2005/06	0.3522	0.4254	0.0732	0.0839	0.096	0.0121	0.0002	0.0009	0.573	0.3559	0.2171	0.0026
2006/07	0.0319	0.4254	0.3935	0.2911	0.096	0.1951	0.038	0.0768	0.6853	0.3559	0.3294	0.0643
2007/08	1.5563	0.4254	1.1309	0.3494	0.096	0.2534	0.064	0.2867	0.6134	0.3559	0.2575	0.065
<b>Total</b>							<b>0.2976</b>	<b>0.4548</b>	<b>Total 0.3895</b>			

$$Cov_{NIBL \& M} = \frac{[R_{NIBL} Z E(R_{NIBL})] [R_M Z E(R_M)]}{n Z 1} = \frac{0.4548}{4} = 0.1137$$

$$\sigma_M^2 = \frac{[R_M Z E(R_M)^2]}{n Z 1} = \frac{0.2975}{4} = 0.074$$

**ANNEX-3**  
**Calculation of Market Beta**

Year	NEPSE Index	Rm	E(Rm)	RmE(Rm)	[RmE(Rm)] <sup>2</sup>	[RmE(Rm)].[RmE(Rm)]
2002/03	348.13					
2003/04	227.54	0.03464	0.096	0.4419	0.1953	0.1953
2004/05	204.83	0.0997	0.096	0.0037	0.00001	0.00001
2005/06	222.04	0.839	0.096	0.0121	0.0002	0.0002
2006/07	286.67	0.2911	0.096	0.1951	0.038	0.038
2007/08	386.83	0.3494	0.096	0.2534	0.064	0.064
						0.2975

$$Cov_{MM} = \frac{[R_{Mz}E(R_M)] \mid [R_M Z E(R_M)]}{n Z 1} \times \frac{0.2975}{4} \times 0.074$$

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