

**RISK AND RETURN ANALYSIS ON COMMON STOCK OF
COMMERCIAL BANKS OF NEPAL**

A Thesis

Submitted

By

Sajeena Maharjan

Central Department of Management

Roll. No. 562/15

Registration no. 7-2-701-27-2010

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CERTIFICATE OF AUTHORITY

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information source and literature used are indicted in the reference section of the thesis.

Sajeena Maharjan

6th December, 2020

RECOMMENDATION LETTER

This thesis entitled “**Risk and Return Analysis of Common Stock of Commercial Banks of Nepal**” is prepared by Sajeena Maharjan under my supervision and guidance for partial requirement for the degree of Master of Business Studies (MBS semester). Therefore, we recommended this thesis for its final approval.

Prof. Bhawani Sankar Acharya
Thesis Supervisor
Central Department of Management
Tribhuvan University, Kirtipur,
Kathmandu, Nepal
Date: 6th December, 2020

APPROVAL-SHEET

We, the undersigned, have examined the thesis entitled “Risk and Return Analysis on Common Stock of Commercial Banks of Nepal” presented by **Sajeena Maharjan**, a candidate for the degree of **Master of Business Studies** (MBS semester) and conducted the viva voice examination of the candidate. We hereby certify that the thesis is worthy of acceptance.

Prof. Bhawani Sankar Acharya

Thesis Supervisor

Lecturer Phul Prasad Subedi

Internal Examiner

Asso. Prof. Dr. Dhruva Lal Pandey

External Examiner

Prof. Dr. Sanjay Kumar Shrestha

Chairperson, Research Committee

Prof. Dr. Ramji Gautam

Head of Department

Central Department of Management

Date: 6th December, 2020

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This thesis has been prepared, as per the course of Master of Business Studies. This report has attempted to explore the risks and returns of some commercial banks and try to compare them with the risk and return of the commercial banking sector and also with that of the market risk and return before reaching into some deciding conclusions. From this thesis we have got practical knowledge of the work to be done in near coming future.

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ABBREVIATIONS

ABBS	-	Any Branch Banking Service
BOKL	-	Bank of Kathmandu
BSE	-	Bombay Stock Exchange
CAPM	-	Capital Assets Pricing Model
C.V.	-	Coefficient of Variance
EBL	-	Everest Bank Ltd
GIME	-	Global IME Bank Limited
NBBL	-	Nepal Bangladesh Bank Ltd
NBL	-	Nepal Bank Limited
NEPSE	-	Nepal Stock Exchange
NIBL	-	Nepal Investment Bank Ltd
NPA	-	Non Performing Assets
NRB	-	Nepal Rastra Bank
NSBI	-	Nepal SBI Bank Limited
SCBL	-	Standard Chartered Bank of Nepal Ltd
S.D.	-	Standard Deviation
SEBON	-	Security Exchange Board of Nepal
SJBL	-	Shahjalal Islamic Bank

ABSTRACTS

Risk and return analysis plays a key role in decision making process. Every investors wants to avoid risk and maximize return. The relationship between risk and return is described by investor's perception about risk and their demand for compensation. No investor will like to invest in risky assets unless he is assured of adequate compensation for the assumption of risk. This research analyzes the risk and return on common stock of Nepalese stock market. This study is based on secondary data of 5 commercial banks for the period of 2014/15 to 2018/19. Data and information has been collected from annual report of selected commercial banks. The research design adopted in this study is descriptive and analytical research design. Expected return, required return, CAPM model and statistical models like mean, standard deviation, coefficient of variance, covariance, correlation and beta are calculated and analyzed. The data gathered for this purpose are presented in tables and graphs.

The descriptive statistics for commercial bank shows that the standard deviation of NIBL, GIME, NSBI, NIBL and NBBL are 30.79%, 28.97%, 54.22%, 63.66% and 74.37% respectively. The expected return of NIBL, GIME, NSBI, NIBL and NBBL are 1.96%, (3.31)%, 0.55%, 7.50% and 16.57% respectively. After the analysis of risk and return of sample banks, it is concluded that all the commercial banks are very risky with fluctuated rate of return. Similarly, required rate of return is greater than expected rate of return. Thus, the stock of sample bank is overpriced. This analysis reveals that the overpriced stock value will decrease in the future providing the investors lower return and it's better to sell these stocks.

Systematic and unsystematic risk has been calculated in which systematic risk is higher. Systematic risk cannot be diversified where as unsystematic risk can diversified and minimized through creation of portfolio. Similarly, correlation coefficient between EBL & NSBI, NSBI & EBL, GIME & NIBL are 0.93, 0.53 and 0.75 respectively which is less than 1. This reveals that there is positive correlation i.e. $\rho_{AB} < 1$ between sample banks. It shows that there is no any beneficiary to make the portfolio combination between the sample banks even if portfolio combination has somehow able to diversify or reduce risk.

Chapter 1

Introduction

1.1 Background of Study

Risk and return analysis plays a key role in decision making process. Every investor wants to avoid risk and maximize return. If an investor wishes to earn high returns than the investor must appreciate that this will only be achieved by accepting a commensurate increase in risk. Risk and return are positively correlated; an increase in one is accompanied by an increase in the other. Investment decision involves a tradeoff between risk and return, which is considered to be central to the investment decision making. In today's environment, it is prudent for a rationale investor to look into the real interest on an investment as the inflation is moving out of gear. While investors like return they abhor risk. This necessitates for optimization of risk and return. Share provides investment opportunities depending on investor's risk, return expectations (Karthikeyan, 2011).

Risk is defined as the possibility of meeting danger or suffering harm of loss. Simply, it is a lack of definite outcome. It is a chance of happening some unfavorable event or danger of losing some material value. Risk in terms of investment means unexpected and unwanted outcome, which are harmful for the business. Investment risk is related to the probability of earning a return less than the expected return. Uncertainty is the major risk to investors. There are different types of risks involved in business that arises from internal and external factors such as business risks and financial risks. The risk associated with uncertainty of future market demand or the cost of inputs are of business risk type and the risk associated with market interest rate, exchange rates, stock prices, default risk, liquidity risk, commodity price etc are financial risk type.

Return is the main objective of investment and a certain degree of risk is associated with it. It is the income received in investment. An investor is ready to sacrifice his present consumption for the future return or reward. Therefore, the motivation of investment is

the return. The return is difference between the terminal wealth (what an investor receive) and initial wealth (what an investor invest). The invested wealth of investor may be increase or decrease or remain the same in the future. If the terminal wealth is greater than the initial wealth there is positive return from investment. If the terminal wealth is less than the initial wealth there is negative return from investment. Similarly if the terminal wealth is equal to initial wealth then there is zero return. Investor always wants higher return other things remaining constant.

Return expected on share investment can be partitioned into dividend and capital gain components. Both these components of the return on share investment are not certain and investors have to make decision in uncertain environment. Investments in shares are risky in relation to investments in other fixed-income securities. Despite the risk element inherent to investment in shares, most investors desire to invest in shares in anticipation that the future price will increase. The intrinsic price of the stock today can be ascertained by analyzing publicly disclosed financial investment.

There is a relationship between the expected return and the expected level of associated risk. The risk and return relationship is characterized as being a direct relationship or a positive relationship. Investors, in most cases, do not analyze published financial statements before they make the investment in shares of a given company (*Poudel, 2002*).

Similarly, most of the shareholders and investors are least familiar with the risk and return. Due to the lack of information and poor knowledge, market intermediaries exploit investors and had to bear losses. So many investors are afraid to invest in stock. And most of the Nepalese investors are found to invest in single security (*Bhatt, 1996*).

Risk measurement and analysis has been a critical issue for any investment decision because risk can be transferred but cannot be eliminated from the system. Risk and return analysis of any securities should be analyzed before making investment in securities to prevent from losses.

In Nepalese context the concept of security market began with the set up of “Nepal Stock Exchange” former known as “Securities Exchange Center” in 1976. This is only the stock

market in Nepal., In spite of considerable development of stock market in Nepal there is a lot more to be done.

1.2 Statement of Problems

Most of the investors make their investment haphazardly. They do not have complete information about market and financial position of investment company. They do not consider risk and return of common stock on which they are going to invest. Not only that they remain idle after investing, they are even manipulated by financial institutions, brokers. Mostly Nepalese investors invest their fund in single security because of less knowledge of risk return behavior of the securities.

Understanding the degree of stock market volatility can help forecasters in predicting the path of economic growth, the structure of volatility gives signals to investors to purchase, sell, and hold stocks in their portfolio to achieve diversification (Krainer 2002).

Pardy (1992) insists that even in less developed countries, capital markets are able to mobilize domestic savings and allocate funds more efficiently. In such markets, long term economic growth is promoted by providing investors with liquidity, risk diversification, information about firms, corporate control and saving mobilization. However, a common problem of small and developing economies like Nepal is the shallow and volatile financial sector.

The stock market is the axis on which economic development fluctuates; it means that the stock market is the corner stone of any economic development. The stock market in developed countries has become integral part of the economy and its role in developing countries is increasing day by day. (Adhikari, 1999)

Tamang (2014) found that there is direct relationship between risk and return. It showed that the higher the return, the risk is also higher. Stock market of Nepal is small in size, illiquid, and dominated by few large companies. It has not sufficient capacity to handle risk relative to the volume of trading (K.C.2010). Stock market volatility in Nepalese economy can be a stumbling block in the way to attract investments.

According to Mishra (2002), found there is a positive correlation between risk and return character of the company. Nepalese capital market being inefficient, the price index itself is not sufficient to give the information about the prevailing market.

Though there are above mentioned empirical evidences using in the context of Nepal and in other countries, no such evidences using more recent data exists in the context of Nepal. Most of researchers had conducted their thesis in the similar topic but this research has further tried to identify the correlation among returns. Thus, this study therefore deals with following aspects in the context of Nepal.

The major statements of the problems of this research are listed below:

1. What are the risk and return of sample banks?
2. What is the sensitivity of stock price of sample banks?
3. What is the portion of systematic and unsystematic risk in relation to total risk?
4. What is the common stock's return under CAPM?
5. How can investor create optimum risky portfolio?

1.3 Purpose of Study

The main purpose of this study is to analyze the risk and return of the sample commercial banks. The specific objectives of the study will be as follows:

1. To assess the risk and return of the sample commercial banks.
2. To identify the sensitivity of stock price of sample banks.
3. To analyze the portion of systematic and unsystematic risk in relation to total risk.
4. To evaluate common stock's return under CAPM.
5. To assess the optimum portfolio risk and return of sample banks.

1.4 Significance of Study

The stock market in developed countries has become an integral part of the economy and its role in developing countries is increasing day by day.(Adhikari,2012).The market is not efficient, there are few magazines and articles related to capital market knowledge

and information. This study will give information about Nepalese capital market by analyzing risk and return and will definitely contribute to increase the analytical power of investor in capital market. The study will be beneficial for all the persons who are directly related to the Nepalese capital market.

Risk and return study is the fundamental study for every stakeholders. Therefore, it is the major concern of stakeholders to know the situation of the bank (Kadel, 2018). Risk and return analysis helps the stakeholders to take appropriate decisions regarding the time of investment, quantum of investment and even portfolio selection (Narayansamy, 2016). The actual return the investor receives from stock may vary from his expected return and risk is expressed in terms of variability of return. As such, it becomes essential to understand magnitude of the rate of return and the degree of risk involved (Bora,2015).

Investor's feeling towards risk and return is on the surface level only. They feel more risky than that exist. As a result, there are fair of laps of investment in common stocks. This study will be more significant for exploring and increasing stock investment. So, the study is significant to investors, students, academicians, policy makers, government officers, bankers and managers in order to make rational decisions, effective policies and to make further studies related to risk and return on common stock.

1.5 Limitations of the Study

As every research has its own limitation. This study is also not free from it. The limitations of this research are as follows:

1. The study covers the relevant data and information only for five years i.e. fiscal year 2014/15 to 2018/19.
2. This study is basically concerned with the risk and return analysis of common stock of sample banks i.e. other aspects of bank have not been taken under consideration.
3. Analysis is based on the secondary data.
4. The study is based on five commercial banks only.

1.6 Chapter Plan

Chapter -I: Introduction

The first chapter of the study is introduction, statement of problems, purpose, significance, limitations of the study.

Chapter - II: Literature Review

This chapter includes the review of books, articles, journals, reports, thesis, researches and other relevant materials related to this topic.

Chapter - III: Research Methodology

It includes research design, sources of data, population and sample, data collection, processing and analyzing procedures and statistical tools.

Chapter - IV: Results and Findings

This chapter attempts to analyze and evaluate secondary data of listed commercial bank with the help of different tools and techniques.

Chapter - V: Conclusion

This chapter deals with summary, conclusion and implication of conclusion for practical application or future studies.

Chapter 2

Review of Literature

2.1 Conceptual Review

2.1.1 Investment

The income received by a person may be used to purchase goods and services that s/he may requires or it may be saved for purchasing goods and services that s/he requires in the future. In other words, income can be spent for consumption or saved for the future consumption. Savings are generated when a person or an organization surplus after present consumption. Investment is an activity that is engaged in by people who have savings, i.e. investment is made from savings. But all savers are not investors. Investment is an activity which is different from saving. An investment is simply any alternative into which funds can be placed with the expectations that they will generate positive income and/ or that their value will be preserved or increased.

If one person has advanced some money to another, he may consider it as an investment. S/he expects to get back the money along with interest at a future date. A person may have purchase an insurance plan for the various benefits it promises in future. The rewards, or returns, from investing are received in either of two basic forms: current income or increased value. Investment in stock market is subjected to diverse risk. The actual return the investor receive may vary from his expectation and risk is expressed in terms of variability of return.

Sharpe, Alexander and Bailey defined “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 his certain. The reward comes later, if at all, and magnitude is generally uncertain. Investment, risk and return are financial terms which are heavily associated with each other.”

Assets are owned by a business, institutions, partnership, or individual and have monetary value. There are two categories of assets: financial assets, which are intangible, such as corporate stocks and bonds, and real assets (also called physical assets or tangible assets, which are tangible, such as metals or real estate).

1. Securities

A security market is a legal document that shows an ownership interest. In other words, security is a piece of paper evidencing the investors' right to the assets. It is the legal representation of the right to receive prospective future benefits under stated conditions and to acquire or sell ownership interests. Share, bond, preferred stock, treasury bill, commercial paper etc are the example of securities.

A security market (alternatively a financial market) is a mechanism designed to facilitate the exchange of financial assets or securities by bringing buyers and sellers of securities together. Precisely speaking, a security market allows suppliers and demanders of funds to make transactions.

2. Capital Market

Capital market refers to the financial market in which long-term securities are traded. Specifically speaking, securities having life spans of more than one year are traded in the capital market. Long- term financial instruments such as stocks issued by corporation are basically traded in a capital market. Capital market facilitates flow of long term fund. The participants of capital market are long term surplus units and deficit units (government, business and individuals). Instruments traded in the capital market are common stock, treasury bonds, corporate bonds etc.

3. Primary market and secondary market

On the basis of the economic function, capital market can be categorized into primary market and secondary markets. The market through which the funds are transferred from savers to investors is called primary market. Hence the transaction of securities issued for the first time takes place in the primary market. Primary market facilitates direct transfer of funds. The participants of primary market are issuing company, investment bankers and investors. The institutions that perform the role of an expert in issuing new securities are called investment bankers (issuing managers). These bankers make available advice to the business firms regarding the nature of security maturity interest rate and underwrite

the issue of securities. Sometimes a business firm can make direct sale of the securities to the buyers without underwriting them. Such direct sale is called direct placement of securities.

The market where the existing and pre-developed securities are bought and sold is called secondary market. A secondary market provides liquidity to the purchases of the securities. Higher liquidity of the secondary market encourages the investors to invest in the primary market as well. The secondary market can be regarded as the center to convert stocks, bonds, and other securities into cash immediately.

4. Trading of Securities

Trading of securities are carried by Nepal Stock Exchange (NEPSE). NEPSE is an organization operating under Security Exchange Act, 2040. The former Securities Exchange Center was converted into NEPSE under the program initiated to reform the capital market. The basic objective of NEPSE is to arrange marketability and liquidity to the government and corporate securities by facilitating transactions in its trading floor through market intermediaries such as brokers, market makers and others.

The shareholders of the NEPSE are Nepal Rastra Bank, the central bank, Government of Nepal, Nepal Development Corporation and licensed numbers. It has its own Board of directors to direct, control, and monitor. It consists of 9 directors in accordance with the Securities Exchange Act, 2040.

2.1.2 Risk

Investors purchase financial assets such as stocks or bonds because they desire to increase their wealth, i.e., earn a positive rate of return on their investments. The future is uncertain; investors do not know what rate of return their investment will realize. The possibility of meeting danger or suffering harm or loss is defined to be risk. Risk in terms of investment means unexpected and unwanted outcomes, which are harmful for the business. It is the chance that some unfavorable event will occur.

The risk is the total risk that arises in the business. Any type of business, whether that may be of large or small scale suffers risk because investment is a part of economic and the economic cycle changes frequently. When the market is bullish there is low risk when it starts declining i.e. bearish there may be high risk. The risk that is talked may be systematic risk or unsystematic risk associated with investment. Hence the risk can be classified as systematic risk or unsystematic risk. These two risk forms total risk.

Systematic risk is the portion of total risk of an individual security caused by market factors that simultaneously affect the price of all security. It can't be diversified away. It is also called market risk or undiversified risk or non-diversified risk or beta risk. Systematic risk accounts for 25 to 50 percent of total risk of any security. This risk arises due to the changes in the economic state or due to the change made by government in fiscal or monetary policies. Some examples of systematic risk are change in interest rate policy by government, increase in corporate tax, increase in inflation rate, war etc.

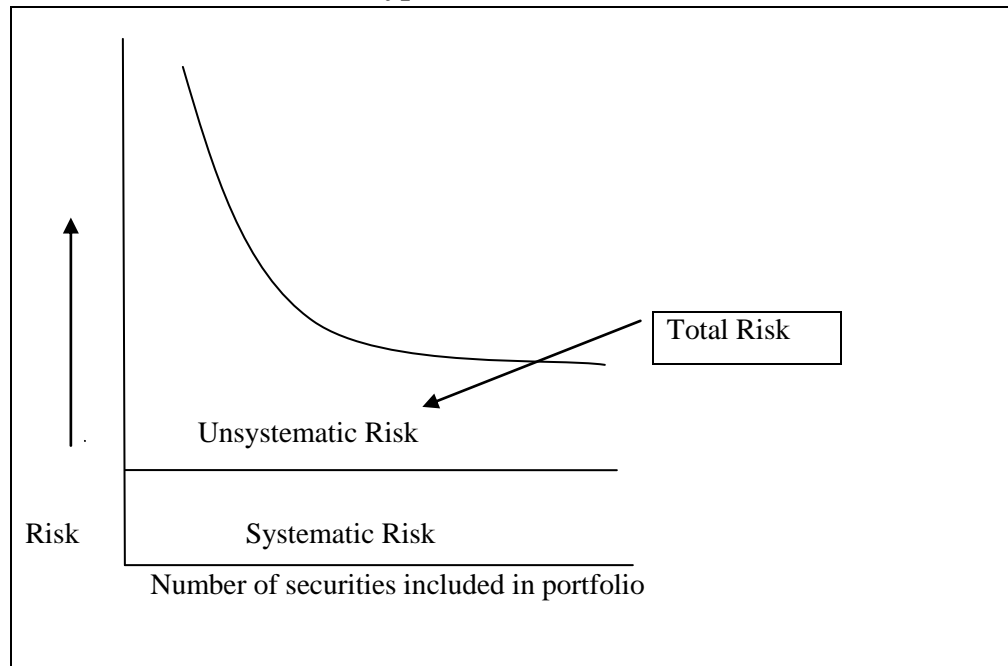
Unsystematic risk is that portion of total risk which results from controllable and known factors, it refers to that portion of the risk which is caused due to factors unique or related to a firm or industry. The unsystematic risk is the change in the price of stocks due to the factors which are particular to the stock. Unsystematic risks arises due to many more reasons, like labor strike, entry of formidable competitor in the market, loss, or big contract bid, company not being able to manage or obtain adequate raw materials on time etc. These types of risk are normally minor one can be handled by the government. That's why this type is called diversifiable risk. The unsystematic risk can be eliminated or reduced by taking appropriate managerial actions or by diversification of portfolio.

As the figure shows, total risk comprises two components:

Total risk = Systematic Risk (undiversifiable and unavoidable) + Unsystematic risk
(diversifiable and avoidable)

Figure no 2.1

Types of Risk



(Source: Bhattra; 2008)

Risk can be measured by using different tools. The mostly used tools in practice are described below;

Standard Deviation: The standard deviation is defined as the square root of the variance. The standard deviation is the statistical measure of the dispersion or deviation of possible outcomes around an expected or mean value; we use it to measure an asset's or an investment's total risk. The symbol of the standard deviation is σ . It is calculated as

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

Coefficient of Variance: Coefficient of variance is the standardized measure of risk per unit of return. It is calculated as the standard deviation divided by the expected return or average return. It provides a more meaningful basis for a comparison when two or more than two investments of different expected returns and standard deviation are to be compared. It is calculated as

$$\text{Coefficient of Variance (C.V)} = \frac{\sigma}{\bar{R}}$$

2.1.3 Return

Return is the reward to the investors for bearing certain risk. It is main target of investment. It is the main objective of investment and a certain degree of risk is also associated with it. Finance mostly deals on monetary risk and return.

1. Holding Period Return (HPR)

The holding period return is the total return earned from the holding an investment for a specified period of time (the holding period). It represents the sum of current income and capital gains (or losses) achieved over the holding period, divided by the beginning investment value. The equation for HPR is

$$\text{HPR or } (r) = \frac{(P_1 - P_0) + D_1}{P_0}$$

Where,

P_1 = ending price or selling price

P_0 = beginning price or purchase price

D_1 = expected dividend

2. Required Rate of Return

Required rate of return is the minimum return that an investor expects at least not to suffer from loss. If an investor gets below required rate he definitely suffers from loss.” While suffering from loss of return an investor must consider the real rate of return expected inflation and risk. Because consumption is forgone today, the investor is entitled to a rate of return that compensates for this deferred consumption. Since the investor expects to receive an increase in that real goods purchased later and assuming for the moment zero expects to receive inflation and risk, the required rate could equal the real rate of return, in which case it would represent the pure time value of money.

3. Expected Rate of Return

The return that an investor expects from his investments in the forthcoming future is called expected rate of return. An investor normally estimates his expected rate of return by analysis the trend of return of previous period (years).

If an investment is to be made, the expected rate of return or the expected holding return should be equal or greater than the required rate of return for those investments. The expected rate of return is based upon the expected cash receipts (e.g. Dividend or interest) over the holding period and the expected ending or selling price. The expected rate of return is an ex-ante or unknown future return. Unless the real rate return is guaranteed, must investor recognizes this possible rate or return into a single number called the expected rate of return.

2.1.4. Relationship between risk and return

The relationship between risk and return is described by investor's perception about risk and their demand for compensation. No investor will like to invest in risky asset unless he is assured of adequate compensation for the assumption of risk. Therefore, it is the investors required risk premium that establishes a link between risk and return. In a market dominated by rational investors higher risk will command by rational premium and the tradeoff between the two assumes a linear relationship between risk and risk premium.

2.1.5. Capital Assets Pricing Model (CAPM) Relating Beta with Required Return:

CAPM is a model that describes the relationship between risk and required return. In this model a securities expected return is the risk free rate plus a premium based on the systematic risk of the securities. The model is:

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

Where,

R_j = required rate of return on stock j

R_f =the nominal risk free rate of return (the real risk free rate of return plus risk premium for inflation)

R_m =the expected rate of return on the market portfolio

β_j = Beta coefficient of risk J

2.1.6 Portfolio Analysis

Individual assets have risk return characteristics. The future return expected from a asset is variable and this variation of return is known as risk. It is rare to find that the investors investing their entire wealth in a single assets. This is because most of investors are risk averter. If money invested in several assets, the loss in one will be compensated by the gain in others. Thus, holding more than one asset at a time is an attempt to spread and minimize risk by not putting all eggs in one basket.

Thus investors should invest in a group of assets rather than single assets. Such a group of assets held together as an investment is known as a portfolio. The process of creating such a portfolio is known as diversification. Diversification is achieved by holding different types of securities across different industry groups.

2.1.7 Markowitz Efficient Frontier

The efficient frontier is the combination of all portfolios called the attainable set of investment opportunities. The efficient frontier is the locus of investment graphed in risk return space which has the maximum expected rate of return in their risk class or the minimum risk at whatever rate of return is selected. An investor can gain higher level of return at any given level of risk. According to Markowitz an investor should seek a portfolio of securities that lies on the efficient frontier set.

A portfolio is not efficient if there is another portfolio with a higher expected return and the same standard deviation. If your portfolio is not efficient you can increase the expected return without increasing the risk, decreased the risk without decreasing the

expected return or some combination of increased expected return and decreasing the risk by switching to a portfolio on the efficient frontier.

2.2 Review of Previous Work

In this subject, effort has been made to examine some of the related articles published in different economic journals, bulletin of banks, newspapers, researchers view and finding towards the risk and return of common stock.

2.2.1 Review of Articles and Journal

Appiah (2020) published the journal entitled “Risk and Return Analysis of listed financial companies of Ghana” and revealed that banks with higher risk levels proved to have higher profitability as compared to the other banks under study. Standard Chartered Bank Limited and Eco Bank Limited showed the highest level of profitability with Standard chartered Bank topping the charts in most years. However, an average, Cal Bank recorded the lowest rates of profitability.

Kandel (2018) published the journal entitled “Risk and Return Analysis of Commercial Banks of Nepal” and analyzed that all the commercial banks which are under the study are very much risky with fluctuating rate of return. From the findings of beta coefficient of NABIL seems very much volatile than NIBL stock. It also showed that required rate of return of both banks are more than expected return, so both stocks are overpriced. Hence it is more profitable to take decision of short selling by investors. This study also shows that both selected banks have high proportion of unsystematic risk i.e. NABIL (89.29%) and NIBL (93.18%) which can be minimized from internal management. Hence it is better to have low proportion of systematic risk and comparatively high proportion of unsystematic risk because unsystematic risk can be reduced to zero but systematic risk cannot be even reduced as it is created from market.

Krishnaprabha (2015) conducted the journal entitled “A Study on Risk and Return Analysis of selected stocks of India” and found that long term investors were able to take advantage of the market as it is less volatile. There is less fluctuation in the shares when compared to market. Long term investors were able to predict about when the share will raise. He too found that majority of information technology, fast moving consumer

goods, pharmaceutical sectors give more return while compared to banking and automobile sector.

Muhammad Masuman and Chowdhury (2013) conducted the journal entitled “Risk-Return Analysis of Three Assets Portfolio using Islami Banks.” This paper aimed to analyze performance of Shahjalal Islami Bank Ltd at micro level. They found that, risk level of an Islamic bank is the combined effect of the three new statutes governing the operations of this institution, namely deposit holders are replaced by equity holders, interest payments to depositors are converted into profit or loss sharing, and loans to customer are transformed into capital participation. The study revealed that SJIBL has high return and low risk characteristics. Portfolio result depicted that combination of Islamic Banks stock in portfolio investment can accelerate portfolio return and can reduce risk.

Karthikeyan (2011) conducted a journal entitled “A study on Comparative Analysis of Risk and Return with reference to Selected stocks of BSE Sensex index, India” is taken into account. This study aimed to compare stocks of selected companies with different sectors like Automobile, Banking, Pharmaceuticals, Information Technology and Oil Sector. He has concluded that the stock market is sometime highly volatile. Cyclical sector like banking and power sectors have high risk. The non cyclical sectors like pharmaceutical, housing related sectors have low risk. The cyclical sectors are those sectors which generally move with the performance of the entire economy and the products of which are highly price elastic and income. Investors can find the best use of the beta ratio in short-term decision making where price volatility is important. If we are planning to buy and sell within a short period of time, beta is a good measure of risk. However, as a single predictor of risk for a long-term investor, the beta has too many flaws. Careful consideration of a company’s fundamental would give a much better picture of the potential long-term risk. The stocks may not be a safe but for a risk adverse investor and for a risk taker the reward may be heavy in the short run than in the long run.

Baral and Shrestha (2006) published the journal entitled “Daily Price Behavior of Commercial Banks of Nepal” and analyzed that there is a large variation in stock price of sample banks. They were not doing well in Nepalese stock market. Most of the serial

coefficients are significantly deviated from zero and statistically insignificant. It signifies that the successive price changes are dependent. Therefore, the Nepalese stock market is inefficient in pricing the shares. Run test results also show that the percentage of deviation between observed and actual number of runs in the series of price changes is significant. It is obvious that the successive price change are not random. Thus, concludes that random walk theory does not hold true in the context of Nepalese stock market.

Poudel (2002) conducted the articles entitled “Investing in Shares of Commercial Banks in Nepal.” The key objective of this study is to examine whether the shares of commercial banks are correctly price. He has concluded that the average mean return on market portfolio, as measured by percent changes in the NEPSE index, was 5.51 percent over the sample period. All the shares produced higher rates of return than the return on market portfolio. However, the risk-return characteristics do not seem to be the same for all the shares reviewed. The shares with larger standard deviations seem to be able to produce higher rates of return. The portion of unsystematic risk is very high with the shares having negative beta coefficient. The risk per unit of return, as measured by the coefficient of variation, is less than that of the market as a whole for all the individual shares. Most of the shares fall under the category of defensive stocks, (having beta coefficients less than 1). From the analysis, it appears that none of the shares are correctly priced. Theoretically, the market price of an over-priced (under-priced) share will fall (rise) in order to increase the expected return such that the expected return equals the required return.

2.2.2 Review of Previous Thesis

Sharma (2015) carried out a study on “Risk and Return on Risk and Return Analysis on Commercial Banks of Nepal” and analyzed that the expected rate of return of BOK, SBI and SCBNL are -6.49%, 19.16% and 4.58% respectively. The standard deviation of BOK, SBI and SCBNL are 18.95%, 21.09% and 40.73% respectively. Similarly, coefficient of BOK, SBI and SCBNL are -2.94, 1.09, and 8.73 respectively. On the basis

of expected return and standard deviation SBI is the perfect bank whereas on the basis of coefficient SCBNL is perfect bank.

Poudel (2013) carried out a study on “Risk and Return on Common Stock of Commercial Banks of Nepal” with the objective to analyze risk and return associated with common stock investment in banking sector and he analyzed that the expected rate of return of market is 3.6% and standard deviation is 55.38% with C.V of 187.77. NBBL has variance of 0.6033 where systematic risk is 0.2103 and unsystematic risk is 0.0667. As we know that unsystematic risk is diversifiable risk and could be eliminated through diversification.

Pradhan (2010) conducted a study entitled “Portfolio Analysis of Common Stock Investment of Listed Companies.” He found that the different shares had different rate of returns with the range of -5.7% to 49.22%. The average rate of return of market is only 27.85% with the standard deviation of 32.62%. Coefficient of variance which measures the risk per unit of return is 1.17. Based on the comparison of excess return to beta ratio with cutoff rate only two securities i.e. STCL and SCBL have been selected for an optimal portfolio from available alternatives. The optimal weights are 18% and 82% respectively. The portfolio returns of two securities are 38.18% and the variance is 4.83%.

Shakya (2009) conducted a study on “Risk and Return analysis of Commercial Banks”. He found that most of the Nepalese investors still invest on different securities on the basis of expectation and assumption of individual security rather than analysis of effect of portfolio. The commercial banking sectors have positive return together with market sector. The covariance and beta-coefficient of the commercial banking sector with that of the market are also good enough for the general investors to invest in this sector.

Shrestha (2007) carried out a study entitled “Analysis of Risk and Return of Commercial Banks of Nepal” and found that risk is variability of return, which is measured in terms of standard deviation of returns. S. D is the only measure of unsystematic risk, which is not defined by market. Similarly the correlation between return of individual banks and

market portfolio have positive correlation which represents that if market return increases then the return of the sampled banks also increases or vice versa.

Bolakhe (2004) conducted a study entitled “Risk and Return on Common Stock Investment of Listed Finance Companies of Nepal” and found that there is positive relationship between risk & return of the common stock of finance companies. Majority of finance companies have positive relationship with other finance companies. The portfolio of finance companies have reduced the risk up to some extent & increased the return but some cases it has also increased the risk level & decreased the return up to negative level also.

Shrestha (2004) conducted a study on “Risk and Return analysis on Common Stock Investment of Banking Sector of Nepal” by taking eight commercial banks as sample and concluded that NBBL’s common stock is yielding the highest realized rate of return whereas it is the lowest in case of NIBL. Similarly 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 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. NBL stock consist the highest of the systematic risk, whereas it is lowest in the case of NSBI. Similarly, 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.

Misra (2002) carried out a study entitled “Risk and Return on Common Stock Investment of Commercial Banks of Nepal” and noticed that there is a positive correlation between risk and return character of the economy. Nepalese capital market being inefficient, the price index itself is not sufficient to give the information about the prevailing market.

Research Gap

This study aims to analyze the risk and return analysis of common stock of listed commercial banks of Nepal. In terms of time period, samples, to some extent tools of analysis, this study is different and new from previous studies which will provide updated information regarding the risk and return on common stock investment of listed companies that will help the investors make more rational investment decision. This research has tried to identify the correlation among returns of the commercial banks which plays a significant role in risk reduction by portfolio construction and systematic and unsystematic risk has been identified.

Chapter 3

Research Methodology

Research Methodology is the systematic way of solving research problem, which ultimately refers to the overall research process. It includes all the procedures from theoretical framework to collection and analysis of the 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 throughout activities of gathering, recording, classifying, analyzing and interpreting the data with the purpose of finding answer the problem. Thus the entire process by which we attempt to solve the problem is called research. Research methodology helps to find out accuracy, validity, and suitability. The justification on the present study can't be obtained without help of the proper research methodology.

3.1 Research Design

Since this research is conducted to analyze risk and return of common stock of commercial bank of Nepal, the annual financial reports of different commercial banks are reviewed. The required data is collected from these reports to calculate the risk and return of common stock.

Descriptive research design has been adopted for fact-finding and searching for adequate information about Nepalese commercial banks. It describes the real and actual condition, situation and facts. The study also used analytical research design. The analytical research design has been adopted as the researcher has to use the already available facts or information, analyze them to make a critical evaluation.

3.2 Population and Sample

For the purpose of study, banks trading highest number of shares have been considered for sample. Out of 27 commercial banks 5 commercial banks have been taken as sample. Here five banks named Nepal Credit and Commerce Bank Ltd, Everest Bank Ltd, Nepal

SBI Bank, Global IME Bank Ltd and Nepal Bangladesh Bank Ltd have been taken as sample. This represents 18.52% of total population.

3.3 Sources of Data

This study is based on secondary data. The necessary data and information has been collected from the annual reports of selected commercial banks, banking and financial statistics published by Nepal Rastra Bank and NEPSE report.

3.4 Data collection and processing procedure

Most of the necessary data for the research will be collected from the secondary sources. Data related to the market prices of stocks, market capitalization, movement of NEPSE index etc. will be taken from the Trading report published by NEPSE. Financial statements of commercial banks and their annual reports are also collected.

The collection procedures are summarized below:

- Financial documents provided by the companies.
- Trading report published by Nepal Stock Exchange Limited.
- Related website.
- Materials published in papers and magazines.

3.5 Data analysis tools and techniques

After collecting the data from secondary sources, they would be analyzed and separated into its concerned topics. Financial, statistical tools and different techniques would be used to analyze the collected data to assess the risk and return.

3.5.1 Holding Period Return (HPR)

HPR is the total return earned from the holding an investment for a specified period of time (the holding period). It represent the sum of current income and capital gains (or losses) achieved over holding period, divided by the beginning investment value.

3.5.2 Required Rate of Return

Required rate of return is minimum expected rate of return needed to induce an investor to invest his or her fund. The required rate of return for assets can be by using the equation for the security market line suggested by capital assets pricing model.

Required rate of return = Risk free rate + Risk premium

It is noted that the risk free rate includes the real rate of interest and inflation premium. After calculating the required rate of return, the investment decision should be made. The investment is made if the expected return is greater of at least equal to the required rate of return. If the expected rate of return is less than the required rate of return, the investment should not be made.

3.5.3 Expected Rate of Return

The return an investor expects from his /her investment in the forthcoming future is called expected rate of return. An investor normally estimates his/her expected rate of return by analyzing the trend of return of previous period. If an investment is to be made, the expected rate of return or the expected holding return should be equal or greater than the required rate of return for that investment.

3.5.4 Variance

The variance is defined as the weighted average of the squared deviation of possible outcomes from expected value or mean. The variance is a statistical measure of the dispersion or deviation of possible outcomes around an expected or mean value. The higher the variance, the greater is the degree of dispersion and therefore the higher is the asset's or investments total risk.

3.5.5 Standard Deviation

Standard Deviation is a statistical measure of the dispersion or deviation of possible outcome around an expected or mean value. The measurement unit of standard deviation

is % as return is expressed in percentage. Higher the standard deviation, higher the total risk of securities.

3.5.6 Coefficient of Variance

Coefficient of Variance is the standardized measure of risk per unit of return. It is calculated as the standard deviation divided by the expected return or average return. It provides a more meaningful basis for a comparison when two or more than two investments of different expected returns and standard deviation are to be compared.

3.5.7 Beta Coefficient (β_j)

Beta coefficient shows the market sensitivity of stock. Higher the beta, greater 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.

$$\beta_j = \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2}$$

3.5.7 Capital Assets Pricing Model (CAPM)

The capital assets pricing model (CAPM) is used in finance to determine a theoretically appropriate price of a security. The formula takes into account the asset's sensitivity to non-diversifiable risk (also known as systematic risk or market risk), as well as the expected return of the market and the expected return of a theoretical risk free asset). According to it, any asset's required rate of return is equal to the risk free rate of return plus a risk premium proportional to the systematic risk measured by beta. Therefore, required return consists of two components namely risk free return and risk premium. The first component risk free rate is equivalent to return of Treasury bill. The total risk of this security is zero ($\sigma = 0$) and beta of the risk free asset also equal to zero. The risk free rate is the reward for waiting, representing the time value of money. The second component in the required return is risk premium which is equivalent to the product of market risk premium and beta. The beta of the market is 1. Risk premium is reward for bearing systematic risk. Thus, the greater the systematic risk of an asset, the greater will

be required return of that asset. If the required rate of return is greater than expected return, the asset is said to be overvalued and vice-versa.

$$E(r_j) = r_f + (E(r_m) - r_f) \beta_j$$

3.5.8 Covariance and Correlation

The covariance is the statistical measure of relationship between two random variables. This statistical method is applied here to measure the relationship between the two variables (returns). Hence it is the statistical measure of how the returns of two assets move together. If the returns of the two securities move in the same direction consistently the covariance would be positive. If the returns of the two securities move in opposite direction consistently the covariance would be negative. If the movement of returns were independent of each other, covariance would be close to zero.

$$Cov_{AB} = \frac{\sum (R_A - \bar{R}_A)(R_B - \bar{R}_B)}{n}$$

Dividing the covariance between two securities by product of the standard deviation of each security gives standard measure which is called the coefficient of correlation. This is expressed as:

$$\rho_{AB} = \frac{Cov_{AB}}{\sigma_A \sigma_B}$$

3.5.9 Portfolio Expected Return

It is simply, the weighted average of the return on the individual assets in the portfolio with the weights being the fraction of the total portfolio invested in the each asset. The sum of weight of all assets in a portfolio always must be one because investor spreads his or her funds among the assets.

$$\bar{R}_p = W_A \bar{R}_A + W_B \bar{R}_B$$

Where,

\bar{R}_p = Portfolio return

W_A = Weight of stock A

\bar{R}_A = Expected return on stock A

W_B = Weight of stock B

\bar{R}_B = Expected return on stock B

3.5.10 Risk of a Portfolio

Risk of portfolio is measured by variance or standard deviation and it is the function of standard deviation, weights, and correlation. These statistics measure the extent to which returns are expected to vary around an average over time. For calculating the risk of portfolio of assets, the riskiness of each asset, weight, and relation between assets are considered. For two assets case:

$$\sigma_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B Cov_{AB}}$$

Where,

σ_p = Risk of Portfolio

w_A = Weight of stock A

W_B = Weight of stock B

Cov_{AB} = Covariance between stock A and B

Chapter 4

Results

4.1 Results

This chapter includes analysis of data collected and their presentation. In this chapter effort has been made to analyze risk and return analysis of common stock of commercial banks. Market price of share, dividend has been interpreted and analyzed. With reference to various readings and literature review in the previous chapter, effort is made to diagnose and analyze the recent Nepalese stock market movement with special reference to listed commercial banks. Mostly the data collected from secondary source. Different tables are drawn to make the result more simple and understandable.

4.1.1 Analysis of Individual Commercial Bank

As the study has taken a special reference to listed commercial banks, common stock of listed commercial banks is analyzed here separately. There are twenty eight banks in operation up to 2019. But only twenty five are listed in NEPSE. Among them study has focused on the five commercial banks. Although data coverage for some on banks is less than five years, each bank is introduced and their common stocks risk and return are analyzed here.

Nepal Investment Bank (NIBL)

Nepal Investment Bank Ltd, 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 of the largest banking groups in the world. Later, in 2002 a group of Nepalese companies comprising of bankers, professionals, industrialists and businessmen acquired 50 % shareholding of Credit Agricole Indosuez in Nepal Indosuez Bank Ltd., and accordingly the name of the bank also changed to Nepal Investment Bank Ltd.

Table no. 4.1

Risk and Return of NIBL

Fiscal Year	Year End Price	Dividend	$R_j = \frac{(P_2 - P_1) + D_1}{P_1}$
2013/14	784	-	-
2014/15	960	25	25.64
2015/16	704	1.7	-26.49
2016/17	1040	21	50.71
2017/18	770	25	-23.55
2018/19	621	22	-16.49

Source: Annual Reports of NIBL from the F/Y 2013 to 2019

Table no. 4.1 shows year end price and annual rate of return from fiscal year 2013/14 to 2018/19. There is highest year end price in fiscal year 2016/17 that is Rs. 1040 and has highest rate of return of 50.71%. There are negative returns in fiscal year 2015/16, 2017/18 and 2018/19 due to decrease in year end price.

Figure no. 4.1

Year End Price Movement of Common Stock of NIBL

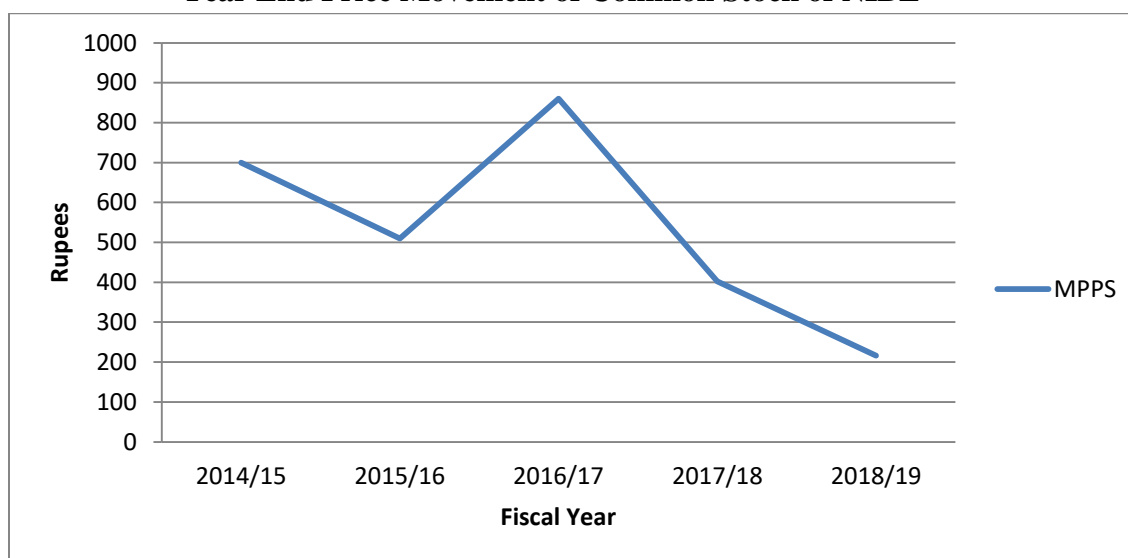


Figure no. 4.1 shows the trend line of market price in several years of NIBL. It can be seen that there is fluctuation of market price from the year 2014/15 to 2018/19. The trend line shows the market price from the year 2014/15 decreases, increases in 2016/17 and has continuously decreases. There is maximum price in 2016/17 and minimum in

2018/19. In fiscal year 2016/17, year end price is higher as demand of share of NIBL is greater than supply.

Figure no. 4.2

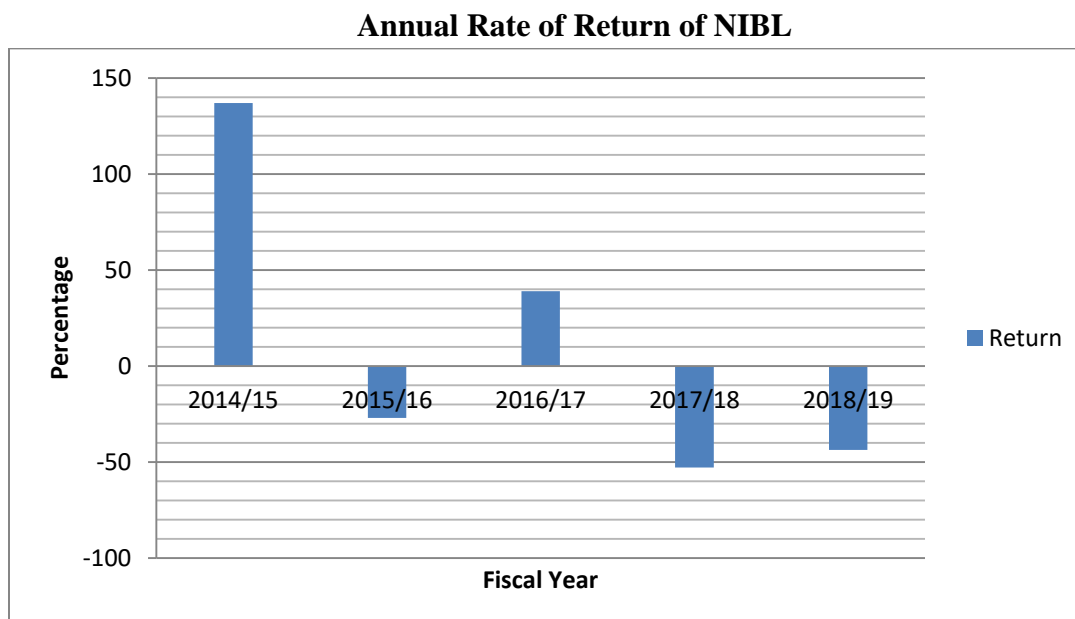


Figure no. 4.2 shows that return is negative in fiscal year 2015/16, 2017/18 and 2018/19 and highest in 2016/17. The annual rate of return in fiscal year 2015/16, 2017/18 and 2018/19 is negative due in decrease in share price level. The risk, return and C.V of NIBL are 30.79 %, 1.96% and 15.71 % respectively.

Global IME Bank

GIBL emerged after successful merger of Global Bank Ltd, IME Financial Institution and Lord Buddha Finance Ltd in year 2012. Two more development banks (Social Development Bank and Gulmi Bikas Bank) merged with GIBL in year 2013. Later, in the year 2014, GIBL made another merger with Commerz and Trust Bank Nepal Ltd (an “A” class commercial bank). Global Bank Limited was established in 2007 as an ‘A’ class commercial bank in Nepal which provided entire commercial banking services. The bank was established with the largest capital base at the time with paid up capital of NPR 1.0 billion. The paid up capital of the bank has since been increased to NPR 6.16 billion. The bank’s shares are publicly traded as an ‘A’ category company in the Nepal Stock

Exchange. Authorized capital of GIBL is NPR 10,000 million and paid up capital is NPR 7,242.67 million. The promoters hold 51.20% while 48.80 % is floated for the public.

Table no. 4.2

Risk and Return of Global IME Bank

Fiscal Year	Year End Price	Dividend	R_j
2013/14	432	-	-
2014/15	640	4	49.07
2015/16	479	-	-25.16
2016/17	515	-	7.52
2017/18	388	10	-22.71
2018/19	290	-	-25.26

Source: Annual Reports of GIME from F/Y 2013 to 2019

Table no. 4.2 shows year end price and annual rate of return from fiscal year 2013/14 to 2018/19. There is highest year end price in fiscal year 2016/17 that is Rs. 515 and has highest rate of return in fiscal year 2014/15 that is 49.07%. In fiscal year 2015/16, 2016/17 and 2018/19 dividend payments are not made.

Figure no. 4.3

Year End Price movement of Common Stock of GIME

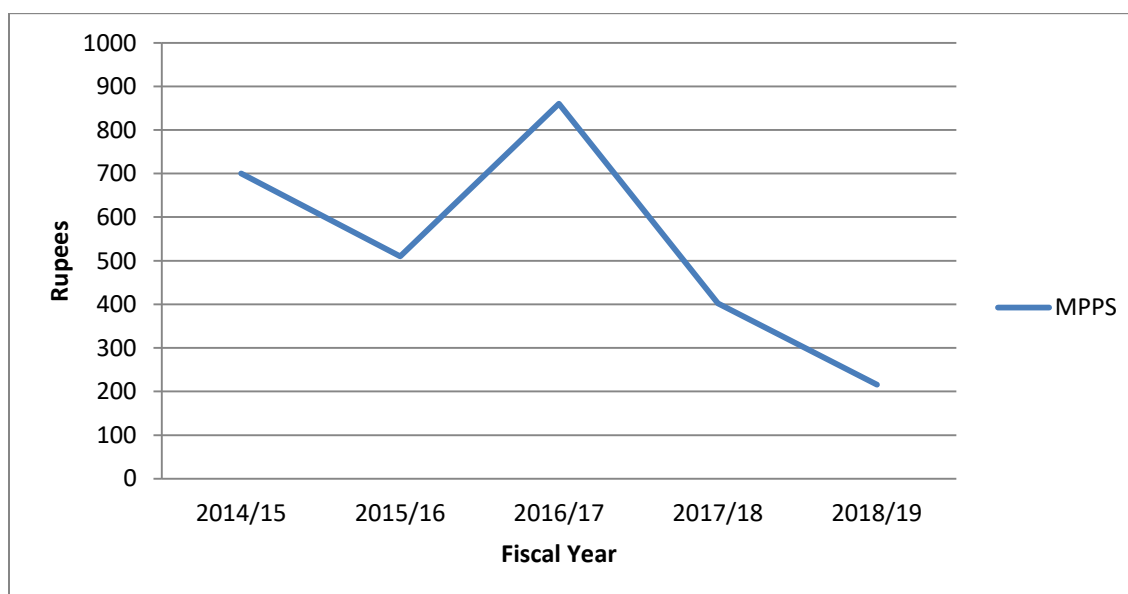


Figure 4.3 shows the trend line of market price in several years of GBL. It can be seen that there is fluctuation of market price from the year 2013/14 to 2017/18. The trend line shows the market price from the year 2013/14 decreases, increases in 2015/16 and has continuously decreases. There is maximum price in 2013/14 and minimum in 2017/18.

Figure no. 4.4

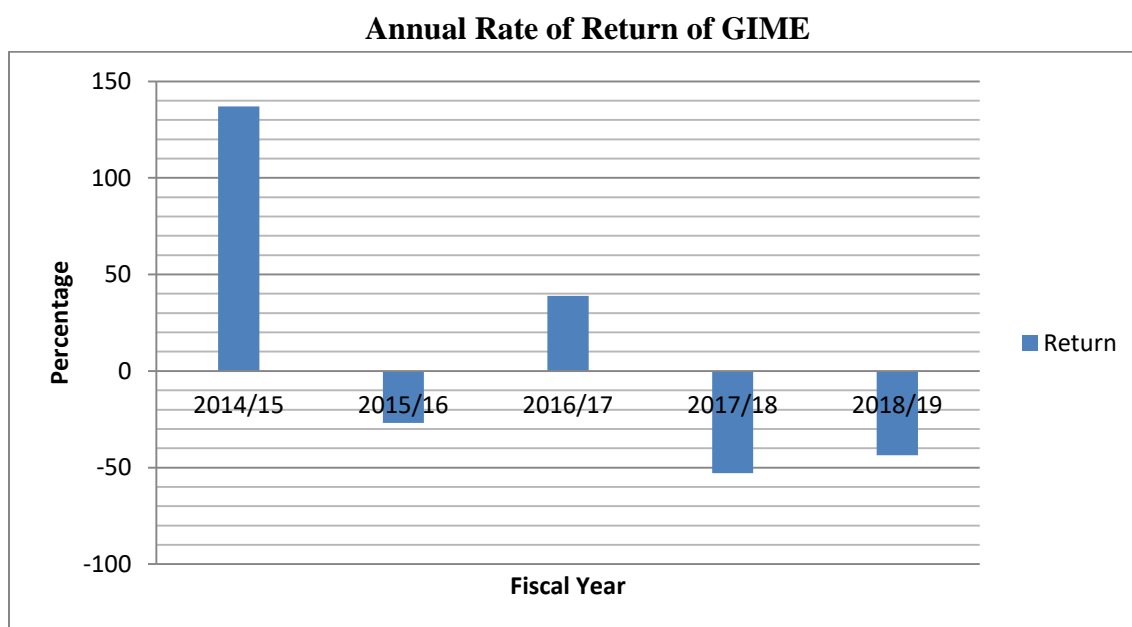


Figure no. 4.4 shows that return is negative in fiscal year 2015/16, 2017/18 and 2018/19 and highest in 2014/15. There is decrease in share price in fiscal year 2015/16, 2017/18 and 2018/19. Hence, there are negative returns. The risk, return and C.V of GIBL are 28.97 %, (3.31) % and (8.76) % respectively.

Everest Bank Ltd (EBL)

Everest Bank Ltd was founded in 1994 catering to more than 7.5 lacks customers, the bank has been one of the leading banks with clients from all walks of life, this has helped develop the nation corporately, agriculturally and industrially. Punjab National Bank is its joint venture partner (holding 20% equity) is the largest nationalized bank in India having presence virtually in all important centers. The bank has more than 6,635 branches and 8,622 ATMs spread all across the India. It has been providing top management support to EBL. EBL provides customer friendly services through its wide

network connected through ABBS system, which enables customer for operational transactions from any branches. The bank has 80 branches, 113 ATM counters, 7 extension counter and 29 revenue collection counters across the country making it a very efficient and accessible bank for its customers, anytime, anywhere.

Table no. 4.3

Risk and return of EBL

F/Y	Year End Price	Dividend	R_j
2013/14	1591	-	-
2014/15	2631	50.63	68.55
2015/16	2120	6.58	-19.17
2016/17	3385	3.68	59.84
2017/18	1353	1.74	-58.98
2018/19	663	20	-47.51

Source: Annual Report of EBL from F/Y 2013 to 2019

Table no. 4.3 shows year end price and annual rate of return from fiscal year 2013/14 to 2018/19. There is highest year end price in fiscal year 2016/17 that is Rs. 3385 and has highest rate of return in fiscal year 2014/15 that is 68.55%. There is higher price fluctuation.

Figure no. 4.5

Year End Price movement of Common Stock of EBL

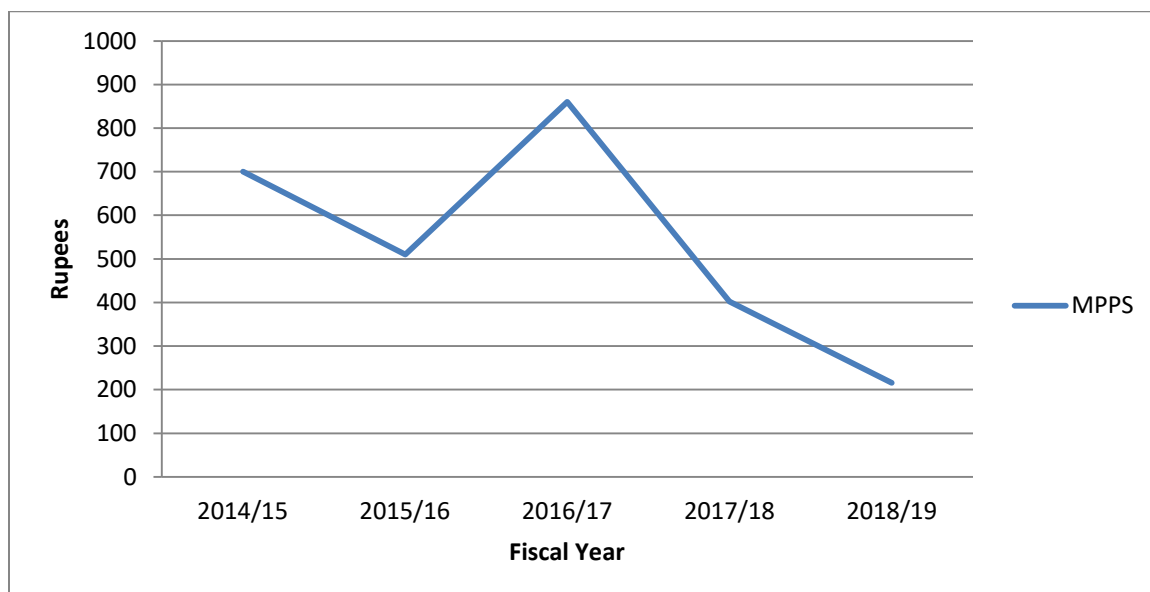


Figure no. 4.5 shows the trend line of market price in several years of EBL. It can be seen that there is fluctuation of market price from the year 2014/15 to 2018/19. The trend line shows the market price from the year 2014/15 decreases, increases in 2016/17 and has continuously decreases. There is maximum price in 2016/17 and minimum in 2018/19.

Figure no. 4.6

Annual Rate of Return of EBL

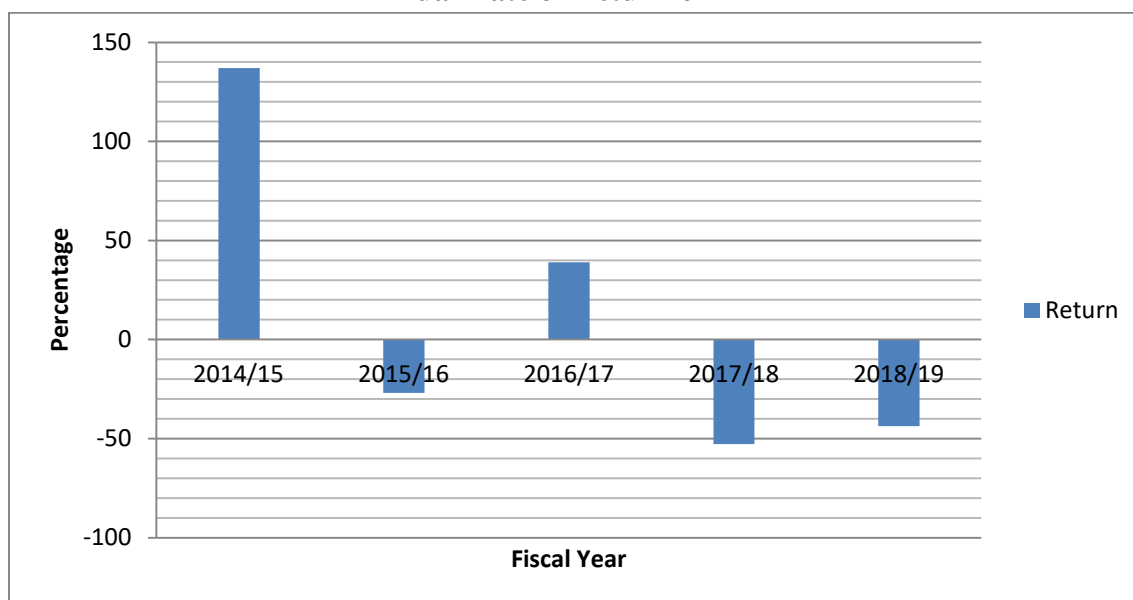


Figure no. 4.6 shows that return is negative in fiscal year 2015/16, 2017/18 and 2018/19 and highest in 2014/15. There is negative return in fiscal year 2015/16, 2017/18 and 2018/19 as share price has declined in these fiscal years. The risk, return and C.V of Everest bank are 54.22 %, 0.55 % and 98.56 % respectively.

Nepal SBI Bank

Nepal SBI bank is a subsidiary of State Bank of India having 55 percentage of ownership established in July 1993. The total partner viz. Employee Provident Fund holds 15% equity and general public 30%. In terms of technological service agreement between SBI and NSBI, the former provides management support to the bank through its expatriate officers including Managing Director who is also CEO of the bank. The bank is moving ahead in the Nepalese Banking Industry with significant growth in Net Profit with very nominal NPA.

Table no. 4.4**Risk and Return of NSBI**

F/Y	Year End Price	Dividend	R_j
2013/14	850	-	-
2014/15	1280	7.02	51.41
2015/16	887	1.42	-30
2016/17	1875	1.48	111.5
2017/18	925	0.82	-50.6
2018/19	499	10.79	-44.8

Source: Annual Reports of NSBI from F/Y 2013 to 2019

Table no. 4.4 shows year end price and annual rate of return from fiscal year 2013/14 to 2018/19. There is highest year end price in fiscal year 2016/17 that is Rs. 1875 and has highest rate of return of 111.5% due regulatory efficiency.

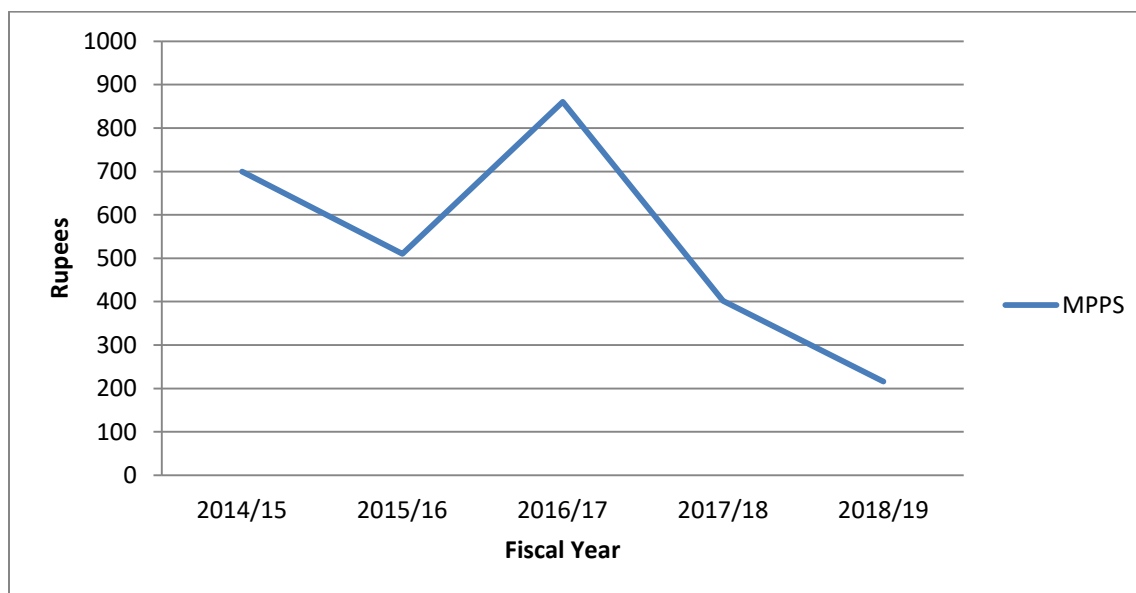
Figure no. 4.7**Year End Price movement of Common Stock of NSBI**

Figure no.4.7 shows the trend line of market price in several years of NSBI. It can be seen that there is fluctuation of market price from the year 2014/15 to 2018/19. The trend line shows the market price from the year 2014/15 decreases, increases in 2016/17 and has continuously decreases. There is maximum price in 2016/17 and minimum in 2018/19.

Figure no. 4.8

Annual Rate of Return

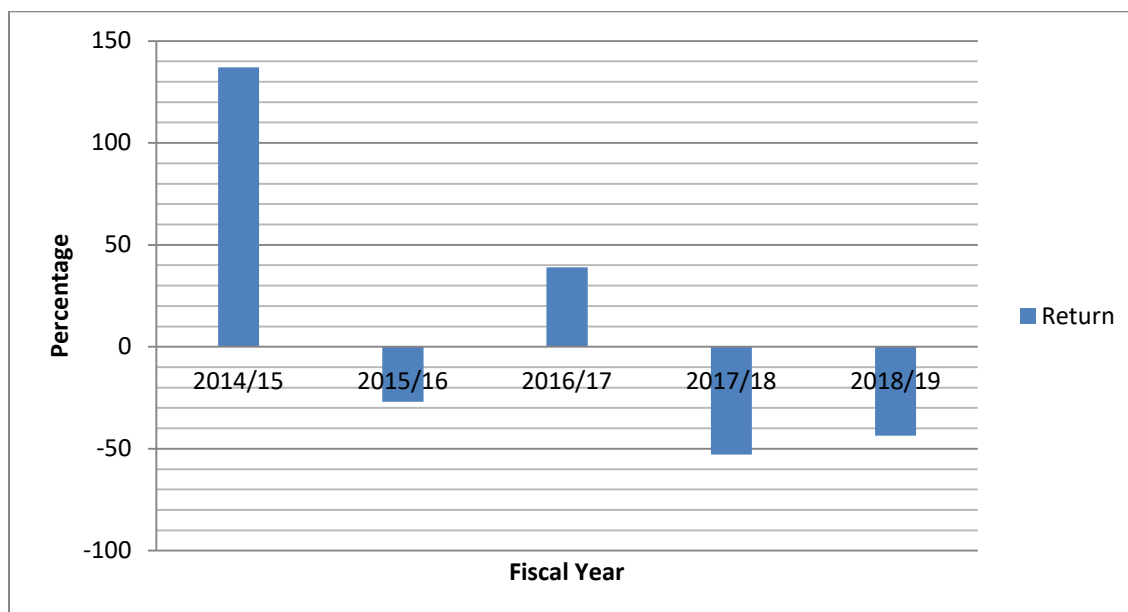


Figure no. 4.8 shows that return is negative in fiscal year 2015/16, 2017/18 and 2018/19 and highest in 2016/17. In fiscal year 2015/16, 2017/18 and 2018/19 is negative as share price has decreased in these fiscal years. The risk, return and C.V of SBI are 63.66%, 7.50% and 8.48 respectively. Investors should take 63.66% risk for earning 7.50% return.

Nepal Bangladesh Bank

Nepal Bangladesh Bank (NBBL) is a leading 'A' class commercial bank licensed by Nepal Rastra Bank. The bank is incorporated in Nepal and registered with Office of Company Registrar (50-050/051, dated January 14, 1994) as a public company limited by shares. The bank started its banking operation from 6th June, 1994. The bank was established as a joint venture bank with IFIC Bank Ltd, Bangladesh shares are listed in Nepal Stock Exchange Ltd since 1995. Deliver quality and complete financial service, provide value to stakeholders, be accountable for delivery what had been promised, demonstrate honesty etc are core values and ethical principal of this bank.

Table no.4.5

Risk and Return of NBBL

F/Y	Year End Price	Dividend	R_j
2013/14	300	-	-
2014/15	700	12	137
2015/16	510	1.32	-26.95
2016/17	860	1.68	38.96
2017/18	402	3.79	-52.82
2018/19	216	10.53	-43.65

Source: Annual Reports of NBBL from F/Y 2013 to 2019

Table no. 4.5 shows year end price and annual rate of return from fiscal year 2013/14 to 2018/19. There is highest year end price in fiscal year 2016/17 that is Rs. 860 and has highest rate of return in fiscal year 2014/15 that is 137.

Figure no. 4.9

Year End Price movement of common stock of NBBL

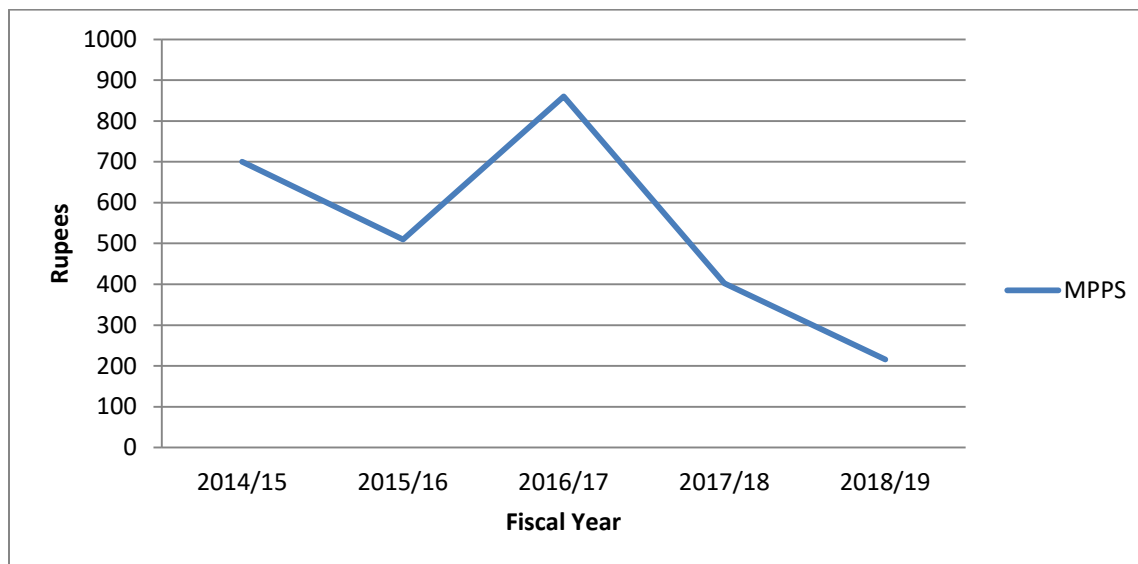


Figure no. 4.9 shows the trend line of market price in several years of NBBL. It can be seen that there is fluctuation of market price from the year 2014/15 to 2018/19. The trend line shows the market price from the year 2014/15 decreases, increases in 2016/17 and

has continuously decreases. There is maximum price in 2016/17 and minimum in 2018/19.

Figure no. 4.10

Annual Rate of Return

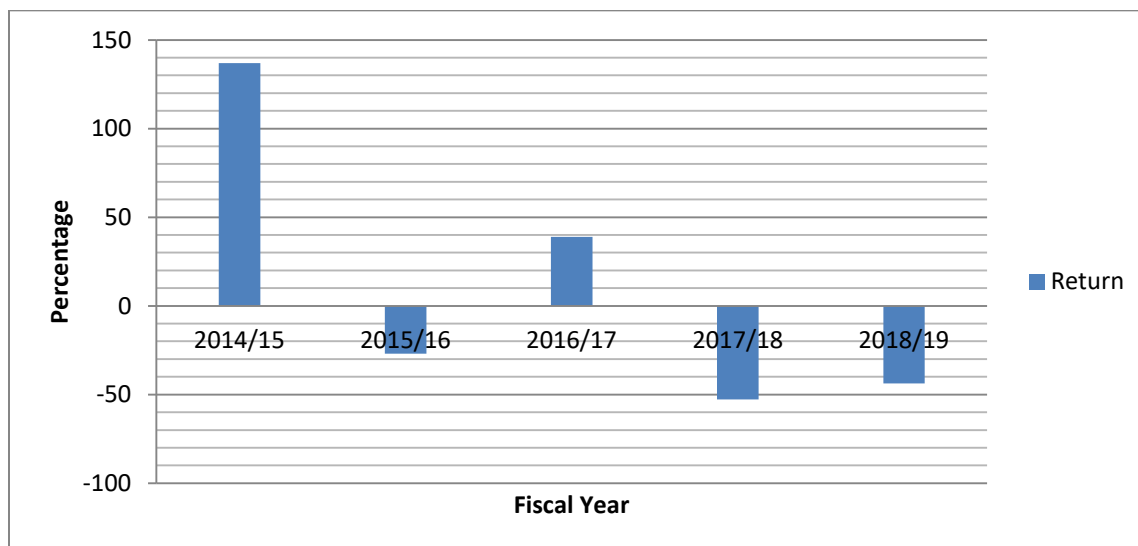


Figure no. 4.10 shows that return is negative in fiscal year 2015/16, 2017/18, 2018/19 and highest in 2014/15. The risk and return of NBBL is 74.37%, 16.57% respectively. The C.V is 4.49, which means for earning 1 unit of return the investor has to bear 4.49 units of risk. Therefore, investors should take 74.37% risk for earning 16.57% return.

4.1.2 Interbank comparison

The result from previous section (4.1.1) is presented in a tabular form from the fiscal year 2013/14 to 2017/18.

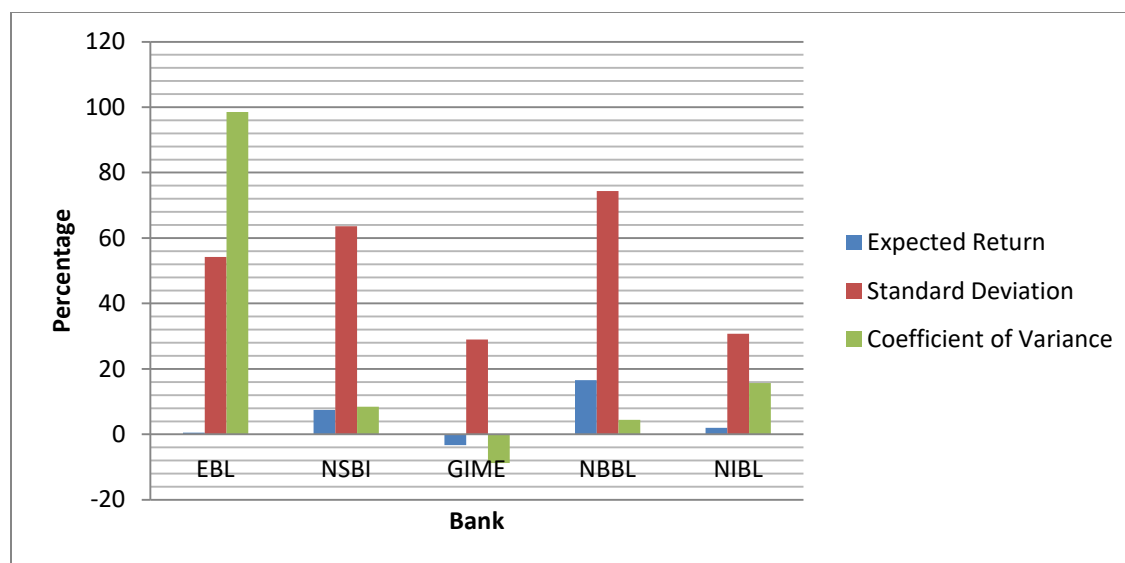
Table no. 4.6

Expected Return, Standard Deviation and Coefficient of Variance of each Bank

Banks	Expected Return (%)	Standard Deviation (%)	Coefficient of Variance	Remarks
EBL	0.55	54.21	98.5	Higher risk
NSBI	7.50	63.66	8.49	Higher risk, higher return
GIME	(3.31)	28.97	(8.76)	Lower risk, lower return
NBBL	16.57	74.37	4.49	Higher risk , higher return
NIBL	1.96	30.79	15.71	Lower risk, lower return

Table no. 4.6 shows that investor can get higher return from investment in the common stock of NBBL and lowest return from GIBL. NBBL has highest S.D and GIME has lowest S.D. EBL has higher C.V. and GIME has lower C.V.

Figure no. 4.11

Expected Return, Standard Deviation and Coefficient of Variance of each Bank

By observing the figure 4.1.5, the comparison of the sample bank in the terms of risk and return can be clearly seen. It clarifies the expected return, standard deviation and

coefficient of variance of each individual bank and from this figure we can analyze that risk is higher than expected return of sample banks.

4.1.3 Market Capitalization of Sampled Commercial Banks

Table no. 4.7

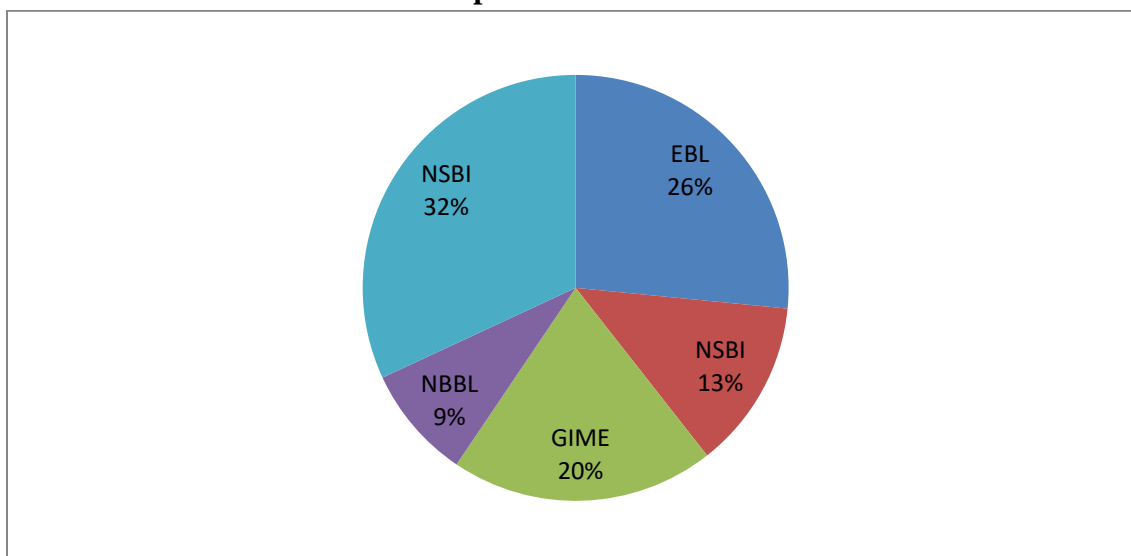
Market Capitalization of Sample Commercial Banks (in millions)		
Banks	Market Capitalization	Percentage (%)
EBL	53,218.11	26.55
NSBI	25,776.29	12.86
GIME	40,154.06	20.03
NBBL	17,317.20	8.63
NIBL	63,990.17	31.92
Total	200,455.81	100

Source: Nepal Stock Exchange Ltd, 2019

Table no.4.1.6 shows market capitalization of sample banks. It seems that NIBL has more market capitalization i.e. 31.92% where as NBBL covers 8.63% amongst five sampled commercial banks.

Figure no. 4.12

Market Capitalization in Pie Chart



The above figure shows that market capitalization of NSBI bank has occupied highest portion with 26% and NBBL has occupied least portion with 9%.

4.1.4 Market Risk and Return

In Nepal there is only one stock market, NEPSE. Overall market movement is represented by market index [i.e. NEPSE Index]. The market return, its S.D. and C.V. is calculated here:

Table no. 4.8

Statistical Analysis of Overall Market on the Basis of NEPSE Index

F/Y	Year End Index	R_m	$(R_m - \overline{R_m})$	$(R_m - \overline{R_m})^2$
2013/14	518.33	-	-	-
2014/15	1036.11	100	71.95	5,176.8
2015/16	961.23	-7.23	-35.28	1,103.3
2016/17	1718.15	78.74	50.69	2,569.48
2017/18	1583.5	-7.84	-35.89	1,287.81
2018/19	1212.36	-28.437	-51.48	2,650.56
		$\sum R_m = 140.23$		$\sum (R_m - \overline{R_m})^2 = 12,787.94$

Source: Annual Trading Report of NEPSE from F/Y 2013 to 2019

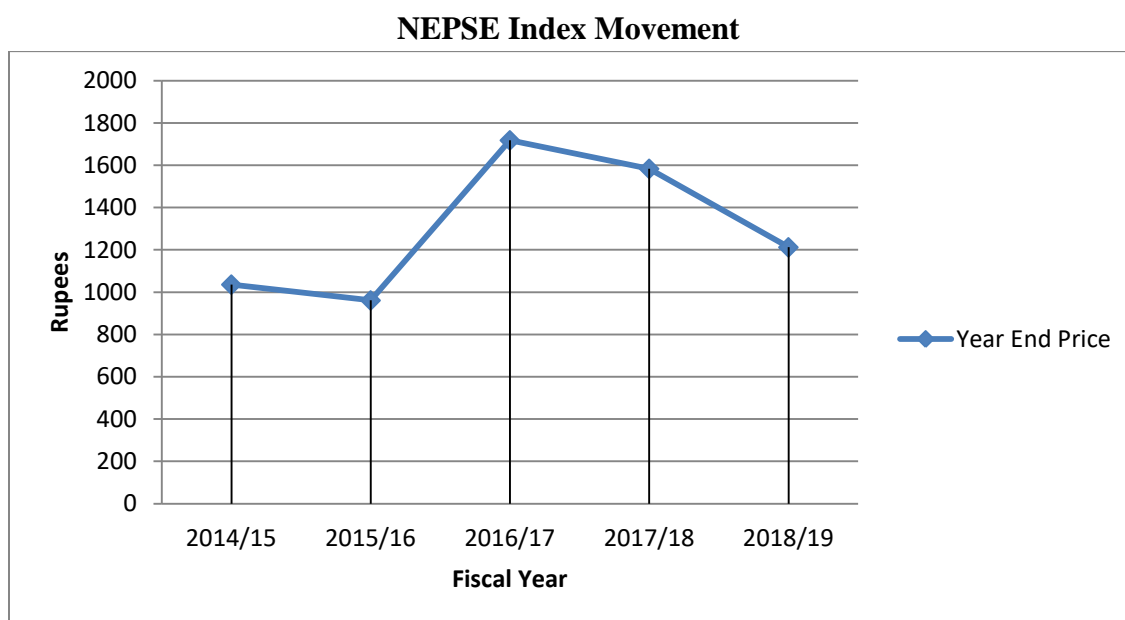
We have,

$$\begin{aligned} \text{Expected Rate of Return } (\overline{R_m}) &= \frac{\sum R_m}{n} \\ &= \frac{140.23}{5} \\ &= 28.05 \% \end{aligned}$$

$$\begin{aligned} \text{Standard Deviation } (\sigma_M) &= \sqrt{\frac{\sum (R_m - \overline{R_m})^2}{n}} \\ &= \sqrt{\frac{12,787.94}{5}} \\ &= 50.57 \% \end{aligned}$$

$$\begin{aligned} \text{Coefficient of Variance (C.V)} &= \frac{\sigma_m}{R_m} \\ &= \frac{50.58}{28.05} \\ &= 1.80 \end{aligned}$$

Figure no. 4.13



The above diagram shows that the movement of NEPSE index decreases in fiscal year 2015/16 from 2014/15, increases in 2016/17 and continuously declines then after. In fiscal year 2016/17, the market is boom up. This occurs when supply is less than demand of market. As a result stock price increases.

4.1.5 Market sensitivity Analysis

Market sensitivity of stock is measured by its beta coefficient. Beta also measures systematic risk which is unavoidable.

Table no. 4.9**Beta Coefficient of Selected Commercial Banks**

S.N	Banks	Beta	Degree of Risk
1	NIBL	0.55	Defensive
2	GIME	0.53	Defensive
3	EBL	1.06	Aggressive
4	NSBI	0.72	Defensive
5	NBBL	1.44	Aggressive

The above table shows the beta of different commercial bank of Nepal. The beta of Everest bank and Nepal Bangladesh bank are greater than 1 and similarly other three banks have lesser beta that is less than 1. Higher beta prefers higher risk and return where as lesser beta shows lower risk and return.

The beta coefficient of Everest Bank is 1.06 which indicates that the stock is 1.06 times as volatile as market (1% increase in market return will raise stock return by 1.06%). Its return is highly sensitive to the market. Nepal Investment bank has lower beta coefficient i.e. 0.55 which means that it is less risky than other banks.

4.1.6 Required Rate of Return (R_j) , Expected Rate of Return [$E(\bar{R}_j)$] and price evaluation analysis.

Required return consists of two components namely risk free return and risk premium. The first component risk free rate is equivalent to return of Treasury bill. The total risk of this security is zero ($\sigma = 0$) and beta of the risk free asset also equal to zero. The risk free rate is the reward for waiting, representing the time value of money. The second component in the required return is risk premium which is equivalent to the product of market risk premium and beta. The beta of the market is 1. Risk premium is reward for bearing systematic risk. Thus, the greater the systematic risk of an asset, the greater will be required return of that asset. If the required rate of return is greater than expected return, the asset is said to be overvalued and vice-versa.

Table no. 4.10**Calculation of Required Rate of Return and Price Evaluation under CAPM model**

Banks	R_f	R_m	β_j	R_j	$E(\bar{R}_j)$	Price Evaluation
NIBL	3.29	28.05	0.55	16.90	1.96	Over priced
GIME	3.29	28.05	0.53	16.41	(3.31)	Overpriced
EBL	3.29	28.05	1.06	29.53	0.55	Over priced
NSBI	3.29	28.05	0.72	21.11	7.50	Over priced
NBBL	3.29	28.05	1.44	38.94	16.57	Over priced

Where,

R_f = Risk free rate of return

R_m = Expected rate of return of market

β_j = Beta of individual sample bank

R_j = Required rate of return of sample bank

$E(\bar{R}_j)$ =Expected rate of return of sample bank

The stock of sample bank is overpriced. The overpriced stock value will be decreased in future providing the investor lower return. So, investors should sell these stocks.

4.1.7 Portfolio Analysis**Table no 4.11****Calculation of Portfolio Risk and Return**

Banks	\bar{R}_p	σ_p
EBL & NSBI	2.64	53.17
NSBI & NBBL	11.58	60.48
GIME & NIBL	(1.19)	27.83

From referring above calculation of output data, it is observed that investing in only one security has higher risk. But after investing in two securities in fixed proportion risk has been reduced which is lower than risk before diversification.

4.1.8 Systematic and Unsystematic risk of Sample banks with Market

Table no. 4.12

Systematic and Unsystematic risk

Bank	Total Risk (σ_j)	ρ_{jm}	SR = $\sigma_j \cdot \rho_{jm}$	USR = $\sigma_j (1 - \rho_{jm})$
NIBL	30.79	0.9	27.71	3.08
GIME	28.97	0.93	26.94	2.03
EBL	54.21	0.98	53.13	1.08
NSBI	63.66	0.57	36.17	27.49
NBBL	74.37	0.98	73.03	1.34

Table no. 4.19 show total risk, systematic risk and unsystematic risk of sample banks. It seem that NBBL more riskier than other sample banks as it has highest total risk of 74.37%. Systematic risk seems to be higher than unsystematic risk. It means that risk cannot be diversified by portfolio creation. There is zero effect is risk reduction.

4.1.9 Correlation Coefficient between Common Stock of Sample Banks

Table no. 4.13

Correlation coefficient between sample banks

Banks	ρ_{AB}	Remarks
EBL, NSBI	0.93	Positive correlation, $\rho_{AB} < 1$
NSBI, NBBL	0.53	Positive correlation, $\rho_{AB} < 1$
GIME, NIBL	0.75	Positive correlation, $\rho_{AB} < 1$

In the above table there is positive correlation i.e. $\rho_{AB} < 1$ between sample banks. Therefore, it shows that there is no any beneficiary to make the portfolio combination between the sample banks which means that portfolio investment has zero effect on their systematic risk reduction.

4.2 Findings

The major findings of study are as follows:

1. The return received in common stock investment is usually expressed in percentage. The return of NIBL, GIME, EBL, NSBI and NBBL are 0.34%, (3.31)%, 0.55%, 7.56% and 16.67% respectively. Among selected five commercial banks, expected return of NBBL is maximum i.e. 16.56% and GIME bank is minimum i.e. (3.31) %.
2. Risk is associated with return and it is variability of returns which is measured in terms of standard deviation. Common stock of NIBL, GIME, EBL, NSBI and NBBL have S.D. of 30.43%, 28.97%, 54.22%, 63.66% and 74.37% respectively. Common stock of NBBL is more risky as it has S.D.74.27% and GIME is less risky. All the commercial banks, which are under the study, are very much risky with fluctuated rate of return.
3. Coefficient of variation is more rational basis of investment decision which measures the risk per unit of return, common of NBBL is best among all selected commercial banks as it has lowest C.V. 4.49.
4. Standard deviation measures unsystematic risk which is not defined by the market. Another aspect of the risk is systematic risk which is defined by the market and measured by beta coefficient. Beta coefficient measures the sensitivity or volatility of the stock with market. We found that EBL and NBBL have aggressive stock as they have beta coefficient of 1.06 and 1.44 respectively. Such stocks are more volatile than market. Whereas NSBI, GIME and NIBL have defensive stock as they have beta coefficient of 0.55, 0.53 and 0.72 respectively. Such stocks are less volatile than market.
5. Capital assets pricing model describes the relationship between risk and required rate of return. Summation of risk free rate and premium based in the systematic risk of the security is required rate of return of that common stock. Comparison between required rate of return and expected rate of return helps to predict whether the stock is overpriced or underpriced. This study shows that all the common stock of commercial

- bank which is analyzed is overpriced. So, the stocks of these banks do not seem to be in demand so investors cannot buy the stocks of these banks.
6. Proportion of systematic risk of sample banks is more than unsystematic which is not good as we cannot diversify systematic risk by portfolio creation.
 7. Investing in only one security has higher risk. But after investing in two securities in fixed proportion risk has been reduced which is lower than risk before diversification.
 8. There is positive correlation i.e. $\rho_{AB} < 1$ between sample banks. Therefore, it shows that there is no any beneficiary to make the portfolio combination between the sample banks which means that portfolio investment has zero effect on their systematic risk reduction.

Chapter 5

Conclusion

This chapter summarizes the whole study. This chapter is divided into three sections i.e. summary, conclusion and implication. The first section deals with summary. The second one contains the major facts of the study, and the third one presents the implication of the study.

5.1 Discussion

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. Investment in common stock is subject to diverse risks. The actual return the investor receives may vary from his expected and risk is expressed in terms of variability of return. In order to be acceptable a higher risk proposal must offer a higher forecast return than lower risk proposal (Hampton, 1996). “The observed difference in the both the levels and variability of the rate of return across securities are indicative of the underlying risk and relation in the market” (Loric, Dodd and Kempton, 1985).

When assessing the bank's performance, income statements do not always reveal the whole story. To assess a bank's performance potential, bank stock price movement can be analyzed (Madura, 1992). Investors should analyze the market on a continuous basis which will help them to pick the right companies to invest their funds (Shini, 2016).

The major objectives of the study are a. to calculate of risk and return on common stock of sample commercial banks, b. to examine the sensitivity of stock price of sample banks, c. to find out proportion of systematic and unsystematic risk in relation of total risk, d. to evaluate common stocks return under CAPM, e. to examine the optimum portfolio risk and return of sample banks.

Karthika and Karthikeyan (2011) suggested that if an investor does not have an enthusiasm for bearing risk, then he can go for companies with beta values less than one.

Shakya (2009) mentioned that the commercial banking sectors have positive return together with market sector. The covariance and beta coefficient of the commercial banking sector with that of the market are also good for the general investors to invest in this sector.

This study is based on the secondary data of 5 Nepalese commercial banks for the period of 2013/14 -2017/18. Data has been extracted from annual reports of commercial banks and NEPSE. This study has employed analytical and descriptive research design.

5.2 Conclusion

The study enables investors to keep the return they can expect and the risk they may take into better perspective. We know that Nepalese stock market is in emerging state. Its development is accelerating rapidly but it is affected by openness and liberalization in national economy. Nepalese investors cannot analyze the securities as well as market properly because of the lack of information and poor knowledge about the analysis of securities for investment.

As a whole stock market is somehow highly volatile, it depends upon the investors how they can make use of this in order to get the money which they have put in the market. An investors should be in the a position to analyze the various investment option available to him and thus minimize the risk and maximize the return

Beta is useful for comparing the relative systematic risk of different stocks, it is used by investors to judge stocks riskiness. The investors should keep the risk associated with the return proportional as the risk is directly correlated with return. It is generally believed that higher the risk, greater the reward but seeking excessive risk does not ensure excessive return. At a given level of return, each security has different degree of risk. One can minimize somehow risk or diversify risk by portfolio formation.

Based on calculations the investor can come to a conclusion that the investors should analyze the market on a continuous basis which will help them to pick the right securities

to invest their fund. The stock prices of sample banks are overpriced. It indicates that stock price will decline in near coming future.

5.3 Implications

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

1. The proper analysis of the individual stock, the industry and whole market is essential to take investment decision. The general knowledge about economic condition, government policy, peace and political situation of nation etc. is necessary which affect the price of share.
2. At present individual potential investors due to lack of their education, awareness and confidence, are hesitated to invest in common stock, so their education, awareness and confidence should be uplifted by providing related information.
3. The financial institution and companies should provide the real financial statements. The data provided by NEPSE and the company itself are different in some cases. It creates confusion to the possible investors about the 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.
4. Analysis of personal risk attitude, needs and requirement will be helpful before making an investment decision in stock market. Investors should make several discussions with stockbrokers before reaching at the decision. Investors should make their decision on the basis of reliable information rather than the imagination and rumors.
5. Government needs to amend the rules and a regulation regarding stock market in time to time and to make the policy that protects the individual investor's right. And also need to follow up the implementation of rules and regulation and to make sure the objectives are achieved. On that regard Government of Nepal needs to monitor and make market policy properly. At present share market is in declining trend and

acquisition and merger has been speed up in order to compete with foreign market in near coming future.

6. Corporate organization must publicize the financial statement, value of assets and liabilities and should not be manipulated. Each and every managerial decision of organization must be made to maximize shareholders wealth.

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Annex 1

Risk and Return of NIBL

Fiscal Year	Year End Price	Dividend	$R_j = \frac{(P_2 - P_1) + D_1}{P_1}$	$(R_j - \bar{R}_j)$	$(R_j - \bar{R}_j)^2$
2013/14	784	-	-	-	-
2014/15	960	25	25.64	23.64	558.85
2015/16	704	1.7	-26.49	-28.45	809.41
2016/17	1040	21	50.71	48.75	2,376.56
2017/18	770	25	-23.55	-25.51	656.76
2018/19	621	22	-16.49	-18.45	340.41
			$\sum R_j = 9.82$		$\sum (R_j - \bar{R}_j)^2 = 4,741.99$

(Source: Annual Reports of NIBL from the F/Y 2013 to 2019)

We have,

$$\begin{aligned} \text{Expected Rate of Return } (\bar{R}_j) &= \frac{\sum R_j}{n} \\ &= \frac{19.82}{5} \\ &= 1.96 \% \end{aligned}$$

$$\begin{aligned} \text{Standard Deviation } (\sigma_j) &= \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n}} \\ &= \sqrt{\frac{4741.99}{5}} \\ &= 30.79 \% \end{aligned}$$

$$\begin{aligned} \text{Coefficient of Variance (C.V)} &= \frac{\sigma_j}{R_j} \\ &= \frac{30.43}{0.34} \\ &= 15.7 \end{aligned}$$

Risk and Return of Global IME Bank

Fiscal Year	Year End Price	Dividend	R_j	$(R_j - \bar{R}_j)$	$(R_j - \bar{R}_j)^2$
2013/14	432	-	-	-	-
2014/15	640	4	49.07	52.37	2,743.45
2015/16	479	-	-25.16	-21.85	477.51
2016/17	515	-	7.52	10.83	177.25
2017/18	388	10	-22.71	-19.40	376.44
2018/19	290	-	-25.26	-21.95	481.89
			$\sum R_j = 16.54$	-	$\sum (R_j - \bar{R}_j)^2 = 4,196.54$

(Source: Annual Reports of GIME from F/Y 2013 to 2019)

We have,

$$\begin{aligned} \text{Expected Rate of Return } (\bar{R}_j) &= \frac{\sum R_j}{n} \\ &= \frac{-16.54}{5} \\ &= (3.31) \% \end{aligned}$$

$$\begin{aligned} \text{Standard Deviation } (\sigma_j) &= \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n}} \\ &= \sqrt{\frac{4196.536}{5}} \\ &= 28.97\% \end{aligned}$$

$$\begin{aligned} \text{Coefficient of Variance (C.V)} &= \frac{\sigma_j}{\bar{R}_j} \\ &= \frac{28.97}{(3.308)} \\ &= (8.76) \end{aligned}$$

Risk and return of EBL

F/Y	Year End Price	Dividend	R_j	$(R_j - \bar{R}_j)$	$(R_j - \bar{R}_j)^2$
2013/14	1591	-	-	-	-
2014/15	2631	50.63	68.55	68.61	4,706.78
2015/16	2120	6.58	-19.17	-19.11	365.35
2016/17	3385	3.68	59.84	59.90	3,587.54
2017/18	1353	1.74	-58.98	-59.53	3,590.82
2018/19	663	20	-47.51	-48.46	2,446.68
			$\sum R_j = 2.73$		$\sum (R_j - \bar{R}_j)^2 = 14,697.15$

(Source: Annual Report of EBL from F/Y 2013 to 2019)

We have,

$$\begin{aligned} \text{Expected Rate of Return } (\bar{R}_j) &= \frac{\sum R_j}{n} \\ &= \frac{2.73}{5} \\ &= 0.55 \% \end{aligned}$$

$$\begin{aligned} \text{Standard Deviation } (\sigma_j) &= \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n}} \\ &= \sqrt{\frac{14697.15}{5}} \\ &= 54.22\% \end{aligned}$$

$$\begin{aligned} \text{Coefficient of Variance (C.V)} &= \frac{\sigma_j}{\bar{R}_j} \\ &= \frac{54.216}{0.55} \\ &= 98.56 \end{aligned}$$

Risk and Return of NSBI

F/Y	Year End Price	Dividend	R_j	$(R_j - \bar{R}_j)$	$(R_j - \bar{R}_j)^2$
2013/14	850	-	-	-	-
2014/15	1280	7.023	51.41	48.91	1,927.9
2015/16	887	1.42	-30	37.50	1,406.4
2016/17	1875	1.48	111.5	104.10	10,815.58
2017/18	925	0.82	-50.6	-58.10	3,376.89
2018/19	499	10.79	-44.8	52.30	2,735.5
			$\sum R_j = 37.50$		$\sum (R_j - \bar{R}_j)^2 = 20,262.27$

(Source: Annual Reports of NSBI from F/Y 2013 to 2019)

We have,

$$\begin{aligned} \text{Expected Rate of Return } (\bar{R}_j) &= \frac{\sum R_j}{n} \\ &= \frac{37.50}{5} \\ &= 7.50 \% \end{aligned}$$

$$\begin{aligned} \text{Standard Deviation } (\sigma_j) &= \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n}} \\ &= \sqrt{\frac{20,262.27}{5}} \\ &= 63.66 \% \end{aligned}$$

$$\begin{aligned} \text{Coefficient of Variance (C.V)} &= \frac{\sigma_j}{\bar{R}_j} \\ &= \frac{63.659}{7.502} \\ &= 8.49 \end{aligned}$$

Risk and Return of NBBL

F/Y	Year End Price	Dividend	R_j	$(R_j - \bar{R}_j)$	$(R_j - \bar{R}_j)^2$
2013/14	300	-	-	-	-
2014/15	700	12	137	120.73	14,575.7
2015/16	510	1.32	-26.95	-43.518	1,893.8
2016/17	860	1.68	38.96	52.39	2,744.7
2017/18	402	3.79	-52.82	-69.39	4,814.97
2018/19	216	10.53	-43.65	-60.2172	3,626.89
			$\sum R_j = 82.84$		$\sum (R_j - \bar{R}_j)^2 = 27,656.06$

(Source: Annual Reports of NBBL from F/Y 2013 to 2019)

We have,

$$\begin{aligned} \text{Expected Rate of Return } (\bar{R}_j) &= \frac{\sum R_j}{n} \\ &= \frac{82.841}{5} \\ &= 16.57 \% \end{aligned}$$

$$\begin{aligned} \text{Standard Deviation } (\sigma_j) &= \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n}} \\ &= \sqrt{\frac{27,656.06}{5}} \\ &= 74.37 \% \end{aligned}$$

$$\begin{aligned} \text{Coefficient of Variance (C.V)} &= \frac{\sigma_j}{R_j} \\ &= \frac{74.37}{16.57} \\ &= 4.49 \end{aligned}$$

Annex 2
Calculation of Beta Coefficient of stock EBL

F/Y	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$
2014/15	68.61	71.953	4,936.43
2015/16	-19.11	-35.28	674.28
2016/17	59.89	50.69	3,036.33
2017/18	-59.93	-35.89	2,150.43
2018/19	-49.46	-51.48	2,694.98
			$\sum(R_j - \bar{R}_j) (R_m - \bar{R}_m) = 13,492.45$

We have,

$$\begin{aligned} \text{Cov} (R_j, R_m) &= \frac{\sum(R_j - \bar{R}_j) (R_m - \bar{R}_m)}{n} \\ &= \frac{13,492.45}{5} \\ &= 2,698.49 \end{aligned}$$

$$\begin{aligned} \text{Beta} (\beta_j) &= \frac{\text{Cov} (j, R_m)}{\sigma_m^2} \\ &= \frac{2,698.49}{(50.57)^2} \\ &= \frac{2698.49}{2557.58} \\ &= 1.06 \end{aligned}$$

The beta coefficient of EBL is 1.06 which is greater than 1. So, we can conclude that common stock of EBL is aggressive. Its common stock is more volatile in market.

Calculation of Beta coefficient of stock NSBI

F/Y	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$
2014/15	43.908	71.9534	3,159.329
2015/16	-37.502	-35.2766	1,322.943
2016/17	103.998	50.6934	5,272.012
2017/18	58.102	35.8860	2,085.048
2018/19	52.302	-51.4836	-2,692.695
			$\sum(R_j - \bar{R}_j) (R_m - \bar{R}_m) = 9,146.64$

We have,

$$\begin{aligned} \text{Cov} (R_j, R_m) &= \frac{\sum(R_j - \bar{R}_j) (R_m - \bar{R}_m)}{n} \\ &= \frac{9,146.64}{5} \\ &= 1,829.33 \end{aligned}$$

$$\begin{aligned} \text{Beta} (\beta_j) &= \frac{\text{Cov} (R_j, R_m)}{\sigma_m^2} \\ &= \frac{1,829.33}{(50.57)^2} \\ &= \frac{697.81}{16823.64} \\ &= 0.72 \end{aligned}$$

The beta coefficient of NSBI is 0.72 which is less than 1. So, we can conclude that common stock of NSBI is defensive. Its common stock is less volatile in market.

Calculation of Beta coefficient of stock GIME

F/Y	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$
2014/15	52.378	71.9534	3,768.78
2015/16	-21.852	-35.2766	683.46
2016/17	10.828	50.6934	548.91
2017/18	-19.402	-35.8860	696.26
2018/19	-21.952	-51.4836	1,130.17
			$\sum(R_j - \bar{R}_j) (R_m - \bar{R}_m) = 6,827.57$

We have,

$$\begin{aligned} \text{Cov} (R_j, R_m) &= \frac{\sum(R_j - \bar{R}_j) (R_m - \bar{R}_m)}{n} \\ &= \frac{6,827.57}{5} = 1,365.51 \end{aligned}$$

$$\begin{aligned} \text{Beta} (\beta_j) &= \frac{\text{Cov} (R_j, R_m)}{\sigma_m^2} \\ &= \frac{1,365.51}{(50.57)^2} \\ &= \frac{1,365.51}{2557.59} \\ &= 0.53 \end{aligned}$$

The beta coefficient of GIME is 0.53 which is less than 1. So, we can conclude that common stock of GIME is defensive. Its common stock is less volatile in market.

Calculation of Beta coefficient of stock NBBL

F/Y	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$
2014/15	120.73	71.95	8,686.93
2015/16	-43.518	-35.28	1,535.17
2016/17	52.39	50.69	2,655.83
2017/18	-69.39	-35.89	2,490.13
2018/19	-60.22	-51.48	3,100.20
			$\sum (R_j - \bar{R}_j) (R_m - \bar{R}_m) = 18,468.25$

We have,

$$\begin{aligned} \text{Cov} (j, R_m) &= \frac{\sum (R_j - \bar{R}_j) (R_m - \bar{R}_m)}{n} \\ &= \frac{18,468.25}{5} \\ &= 3,693.65 \end{aligned}$$

$$\begin{aligned} \text{Beta} (\beta_j) &= \frac{\text{Cov} (R_j, R_m)}{\sigma_m^2} \\ &= \frac{3,693.65}{(50.57)^2} \\ &= \frac{3,693.65}{2,557.58} \\ &= 1.44 \end{aligned}$$

The beta coefficient of NBBL is 1.44 which is more than 1. So, we can conclude that common stock of NBBL is aggressive. Its common stock is more volatile in market.

Calculation of Beta Coefficient of stock of NIBL

F/Y	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$
2014/15	23.64	71.95	1,700.89
2015/16	-28.45	-35.27	1,003.43
2016/17	48.75	50.69	2,471.14
2017/18	-25.51	-35.89	915.55
2018/19	-18.45	-51.48	949.81
			$\Sigma(R_j - \bar{R}_j) (R_m - \bar{R}_m) = 7,040.82$

We have,

$$\begin{aligned} \text{Cov} (R_j, R_m) &= \frac{\Sigma(R_j - \bar{R}_j) (R_m - \bar{R}_m)}{n} \\ &= \frac{7,040.82}{5} \\ &= 1,408.16 \end{aligned}$$

$$\begin{aligned} \text{Beta} (\beta_j) &= \frac{\text{Cov} (R_j, R_m)}{\sigma_m^2} \\ &= \frac{1,408.16}{(50.57)^2} \\ &= \frac{1,408.16}{2,557.58} \\ &= 0.55 \end{aligned}$$

The beta coefficient of NIBL is 0.55 which is less than 1. So, we can conclude that common stock of NIBL is defensive. Its common stock is less volatile in market.

Annex 3

Calculation of portfolio Risk and Return between EBL (A) and NSBI(B)

FY	$(R_A - \bar{R}_A)$	$(R_B - \bar{R}_B)$	$(R_A - \bar{R}_A) (R_B - \bar{R}_B)$
2014/15	68.61	43.91	3,012.67
2015/16	-19.12	-37.50	717
2016/17	59.89	104.12	6227.96
2017/18	-59.92	-58.10	3481.47
2018/19	-49.46	52.30	2586.86
			$\Sigma(R_A - \bar{R}_A) (R_B - \bar{R}_B) = 16,025.96$

We have,

$$\begin{aligned}
 \text{Covariance } (Cov_{AB}) &= \frac{\Sigma(R_A - \bar{R}_A) (R_B - \bar{R}_B)}{n} \\
 &= \frac{16,025.96}{5} \\
 &= 3,205.19
 \end{aligned}$$

$$\begin{aligned}
 \bar{R}_p &= W_A \bar{R}_A + W_B \bar{R}_B \\
 &= 0.70 * 0.55 + 0.30 * 7.50 \\
 &= 0.39 + 2.25 \\
 &= 2.64\%
 \end{aligned}$$

$$\begin{aligned}
 \sigma_p &= \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B Cov_{AB}} \\
 &= \sqrt{(0.70)^2 (54.21)^2 + (0.30)^2 (63.66)^2 + 2 * 0.70 * 0.30 * 3,205.19} \\
 &= \sqrt{0.49 * 2,938.72 + 0.9 * 4,052.59 + 1,346.18} \\
 &= \sqrt{1,439.97 + 3,647.33 + 1,346.18} \\
 &= \sqrt{2,826.98} \\
 &= 53.17\%
 \end{aligned}$$

Calculation of portfolio Risk and Return between NSBI (A) and NBBL (B)

FY	$(R_A - \bar{R}_A)$	$(R_B - \bar{R}_B)$	$(R_A - \bar{R}_A) (R_B - \bar{R}_B)$
2014/15	43.91	120.73	5,301.25
2015/16	-37.5	-43.52	1,632
2016/17	103.99	52.39	5,448.04
2017/18	-58.1	-69.39	4,031.56
2018/19	52.3	-60.22	-3,149.51
			$\sum(R_A - \bar{R}_A) (R_B - \bar{R}_B) = 13,263.34$

We have,

$$\begin{aligned} \text{Covariance } (Cov_{AB}) &= \frac{\sum(R_A - \bar{R}_A) (R_B - \bar{R}_B)}{n} \\ &= \frac{13,263.32}{5} \\ &= 2,652.67 \end{aligned}$$

$$\begin{aligned} \bar{R}_p &= W_A \bar{R}_A + W_B \bar{R}_B \\ &= 0.55 * 7.50 + 0.45 * 16.57 \\ &= 4.13 + 7.46 \\ &= 11.58\% \end{aligned}$$

$$\begin{aligned} \sigma_p &= \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B Cov_{AB}} \\ &= \sqrt{(0.55)^2 (63.66)^2 + (0.45)^2 (74.37)^2 + 2 * 0.55 * 0.45 * 2,652.67} \\ &= \sqrt{0.30 * 4,052.59 + 0.20 * 5,530.89 + 1,313.07} \\ &= \sqrt{1,225.91 + 1,120 + 1,313.07} \\ &= \sqrt{3,658.98} \\ &= 60.48\% \end{aligned}$$

Calculation of portfolio Risk and Return between GIME (A) and NIBL (B)

FY	$(R_A - \bar{R}_A)$	$(R_B - \bar{R}_B)$	$(R_A - \bar{R}_A) (R_B - \bar{R}_B)$
2014/15	52.38	23.64	1,238.26
2015/16	-21.85	-28.45	621.63
2016/17	10.83	48.75	527.96
2017/18	-19.40	-25.51	494.89
2018/19	-21.95	-18.45	404.97
			$\sum(R_A - \bar{R}_A) (R_B - \bar{R}_B) = 3,377.71$

We have,

$$\begin{aligned} \text{Covariance } (Cov_{AB}) &= \frac{\sum(R_A - \bar{R}_A) (R_B - \bar{R}_B)}{n} \\ &= \frac{3,377.71}{5} \\ &= 675.54 \end{aligned}$$

$$\begin{aligned} \bar{R}_p &= W_A \bar{R}_A + W_B \bar{R}_B \\ &= 0.60 * (3.31) + 0.40 * 1.96 \\ &= (1.98) + 0.78 \\ &= (1.19) \% \end{aligned}$$

$$\begin{aligned} \sigma_p &= \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B Cov_{AB}} \\ &= \sqrt{(0.60)^2 (28.97)^2 + (0.40)^2 (30.43)^2 + 2 * 0.60 * 0.40 * 675.54} \\ &= \sqrt{0.36 * 839.26 + 0.16 * 925.98 + 324.26} \\ &= \sqrt{302.13 + 148.16 + 324.26} \\ &= \sqrt{774.55} \\ &= 27.83\% \end{aligned}$$

Annex-4

Calculation of correlation coefficient between the returns (stock and market)

$$\rho_{jm} = \frac{Cov_{jm}}{\sigma_j \sigma_m}$$

$$NIBL = \frac{1,401.41}{30.438 * 50.57}$$

$$= \frac{1,401.41}{1,538.92}$$

$$= 0.91$$

$$GIME = \frac{1,327.57}{28.97 * 50.57}$$

$$= \frac{1,327.57}{1,465.12}$$

$$= 0.93$$

$$EBL = \frac{2,698.49}{54.21 * 50.57}$$

$$= \frac{2,698.49}{2,741.56}$$

$$= 0.98$$

$$NSBI = \frac{1,829.33}{63.66 * 50.57}$$

$$= \frac{1,829.33}{3,219.40}$$

$$= 0.56$$

$$NBBL = \frac{3,693.65}{74.37 * 50.57}$$

$$= \frac{3,693.65}{3,761.19}$$

$$= 0.98$$

Calculation of correlation coefficient between sample banks

$$\rho_{AB} = \frac{Cov_{AB}}{\sigma_A \sigma_B}$$

EBL(A), NSBI(B)

$$\begin{aligned}\rho_{AB} &= \frac{3,205.19}{54.21 * 63.66} \\ &= \frac{3,205.19}{3,451.01} \\ &= 0.93\end{aligned}$$

NSBI(A), NBBL(B)

$$\begin{aligned}\rho_{AB} &= \frac{2,652.67}{63.66 * 74.37} \\ &= \frac{2,652.67}{4,734.39} \\ &= 0.56\end{aligned}$$

GIME(A), NIBL(B)

$$\begin{aligned}\rho_{AB} &= \frac{658.32}{28.97 * 30.43} \\ &= \frac{658.32}{881.56} \\ &= 0.75\end{aligned}$$

**RISK AND RETURN ANALYSIS ON COMMON STOCK OF
COMMERCIAL BANKS OF NEPAL**

A Thesis Proposal

By

Sajeena Maharjan

Central Department of Management

Roll. No. 562/15

Registration no. 7-2-701-27-2010

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Introduction

1. Background of Study

Risk and return analysis plays a key role in decision making process. Every investor wants to avoid risk and maximize return. If an investor wishes to earn high returns than the investor must appreciate that this will only be achieved by accepting a commensurate increase in risk. Risk and return are positively correlated; an increase in one is accompanied by an increase in the other. Investment decision, therefore, involve a tradeoff between risk and return, which is considered to be central to the investment decision making.

Risk is defined as the possibility of meeting danger or suffering harm or loss. Simply, it is a lack of definite outcome. It is a chance of happening some unfavorable event or danger of losing some material value. Risk in terms of investment means unexpected and unwanted outcome, which are harmful for the business. Investment risk is related to the probability of earning a return less than the expected return. Uncertainty is the major risk to investors. There are different types of risks involved in business that arises from internal and external factors such as business risks and financial risks. The risk associated with uncertainty of future market demand or the cost of inputs are of business risk type and the risk associated with market interest rate, exchange rates, stock prices, default risk, liquidity risk, commodity price etc are financial risk type.

Return is the main objective of investment and a certain degree of risk is associated with it. It is the income received in investment. An investor is ready to sacrifice his present consumption for the future return or reward. Therefore, the motivation of investment is the return. The return is difference between the terminal wealth (what an investor receive) and initial wealth (what an investor invest). The invested wealth of investor may be increase or decrease or remain the same in the future. If the terminal wealth is greater than the initial wealth there is positive return from investment. If the terminal wealth is less than the initial wealth there is negative return from investment. Similarly if the

terminal wealth is equal to initial wealth then there is zero return. Investor always wants higher return other things remaining constant.

Return expected on share investment can be partitioned into dividend and capital gain components. Both these components of the return on share investment are not certain and investors have to make decision in uncertain environment. Investments in shares are risky in relation to investments in other fixed-income securities. Despite the risk element inherent to investment in shares, most investors desire to invest in shares in anticipation that the future price will increase. The intrinsic price of the stock today can be ascertained by analyzing publicly disclosed financial investment. Investors, in most cases, do not analyze published financial statements before they make the investment in shares of a given company (*Poudel, 2001*).

Similarly, most of the shareholders and investors are least familiar with the risk and return. Due to the lack of information and poor knowledge, market intermediaries exploit investors and had to bear losses. So many investors are afraid to invest in stock. And most of the Nepalese investors are found to invest in single security (*Bhatt, 1996*).

Risk measurement and analysis has been a critical issue for any investment decision because risk can be transferred but cannot be eliminated from the system. Risk and return analysis of any securities should be analyzed before making investment in securities to prevent from losses.

1.1. Brief Profile of Selected Bank

Global IME Bank Limited (GIBL)

GIBL emerged after successful merger of Global Bank Ltd, IME Financial Institution and Lord Buddha Finance Ltd in year 2012. Two more development banks (Social Development Bank and Gulmi Bikas Bank) merged with GIBL in year 2013. Later, in the year 2014, GIBL made another merger with Commerz and Trust Bank Nepal Ltd (an “A” class commercial bank). Global Bank Limited was established in 2007 as an ‘A’ class commercial bank in Nepal which provided entire commercial banking services. The bank was established with the largest capital base at the time with paid up capital of NPR 1.0 billion. The paid up capital of the bank has since been increased to NPR 6.16 billion. The

bank's share are publicly traded as an 'A' category company in the Nepal Stock Exchange. Authorized capital of GIBL is NPR 10,000 million and paid up capital is NPR 7,242.67 million. The promoters hold 51.20% while 48.80 % is floated for the public.

Nepal Credit and Commerce Bank Ltd (NCC Bank)

NCC bank formally registered as Nepal – Bank of Ceylon Ltd. (NBOC), commenced its operation on October 14, 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. 1,000 million. The name of bank was changed to Nepal Credit and Commerce Bank Ltd on 10th September, 2002, due to transfer of shares and management of the bank from bank of Ceylon, to Nepalese Promoters. Recently, it has entered into a historical merger with four development banks –Infrastructure Development Bank Ltd, Apex Development Bank Ltd, Supreme Development Bank Ltd and International Development Bank Ltd. At present NCC provides banking services and facilities to rural and urban areas of the country through its 96 branches and 61 ATMs scattered all over the country. The bank has developed corresponding agency relationship with more than 150 international banks having worldwide network. Authorized capital of NCC bank is NPR 10 billion, paid up capital is NPR 4.679 billion.

Everest Bank Ltd (EBL)

Everest Bank Ltd was founded in 1994 catering to more than 7.5 lacks customers, the bank has been one of the leading banks with clients from all walks of life, this has helped develop the nation corporately, agriculturally and industrially. Punjab National Bank is its joint venture partner (holding 20% equity) is the largest nationalized bank in India having presence virtually in all important centers. The bank has more than 6,635 branches and 8,622 ATMs spread all across the India. It has been providing top management support to EBL. EBL provides customer friendly services through its wide network connected through ABBS system, which enables customer for operational transactions from any branches. The bank has 80 branches, 113 ATM counters, 7 extension counter and 29 revenue collection counters across the country making it a very efficient and accessible bank for its customers, anytime, anywhere.

Nepal Bangladesh Bank

Nepal Bangladesh Bank (NBBL) is a leading 'A' class commercial bank licensed by Nepal Rastra Bank. The bank is incorporated in Nepal and registered with Office of Company Registrar (50-050/051, dated January 14, 1994) as a public company limited by shares. The bank started its banking operation from 6th June, 1994. The bank was established as a joint venture bank with IFIC Bank Ltd, Bangladesh shares are listed in Nepal Stock Exchange Ltd since 1995. Deliver quality and complete financial service, provide value to stakeholders, be accountable for delivery what had been promised, demonstrate honesty etc are core values and ethical principal of this bank.

Nepal SBI Bank

Nepal SBI bank is a subsidiary of State Bank of India having 55 percentage of ownership established in July 1993. The total partner viz. Employee Provident Fund holds 15% equity and general public 30%. In terms of technological service agreement between SBI and NSBL, the former provides management support to the bank through its expatriate officers including Managing Director who is also CEO of the bank. The bank is moving ahead in the Nepalese Banking Industry with significant growth in Net Profit with very nominal NPA.

2. Statement of Problem

Most of the investors make their investment haphazardly. They do not have complete information about market, financial position of investment company. They do not consider risk and return of common stock on which are they are going to invest. Not only that they remain idle after investing. They are even manipulated by financial institutions, brokers. Mostly Nepalese investors invest their fund in single security because of less knowledge of risk return behavior of the securities. So, main problem is the lack of information to analyze the risk and return on common stock investment.

The major statements of the problems of this research are listed below:

1. What are the risk and return of sample banks?
2. What is the sensitivity of stock price of sample banks?
3. What is the portion of systematic and unsystematic risk in relation to total risk?

4. What is the common stock's return under CAPM?
5. How can investor create optimum risky portfolio?

3. Purpose of Study

The main purpose of this study will be to analyze the risk and return of the sample commercial banks. The specific objectives of the study will be as follows:

1. To assess the risk and return of the sample commercial banks.
2. To assess the sensitivity of stock price of sample banks.
3. To analyze the portion of systematic and unsystematic risk in relation to total risk.
4. To find out common stock's return under CAPM.
5. To assess the optimum portfolio risk and return of sample banks.

4. Significance of Study

The some of the significance of the study are

- i. This study will give information about Nepalese capital market by analyzing risk and return and will definitely contribute to increase the analytical power of the investor in capital market.
- ii. The study will be beneficial for all the persons who are directly related to Nepalese capital market
- iii. It will also provide little contribution to Nepalese stock market development.
- iv. This study will be a matter of interest for academics students, researchers, teachers, or persons prating in the field of finance.

5. Limitations of the Study

As every research has its own limitation. This study is also not free from it. The limitations of this research are as follows:

- i. The study covers the relevant data and information only for five years i.e. fiscal year 2014/15 to 2018/19.

ii. This study is basically concerned with the risk and return analysis of common stock of sample banks i.e. other aspects of bank have not been taken under consideration.

iii. Analysis is based on the secondary data.

iv. The study is based on three commercial banks only.

6. Literature review

In this subject, effort has been made to examine some of the related articles published in different economic journals, bulletin of banks, newspapers, researchers view and finding towards the risk and return of common stock.

Pradhan (2010) found in her study that among 7 banks, the different shares had different rate of returns with the range of -5.7% to 49.22%. The average rate of return of market is only 27.85% with the standard deviation of 32.62%. Coefficient of variance which measures the risk per unit of return is 1.17. Based on the comparison of excess return to beta ratio with cutoff rate only two securities i.e. STCL and SCBL have been selected for an optimal portfolio from available alternatives. The optimal weights are 18% and 82% respectively. The portfolio return of two securities are 38.18% and the variance is 4.83%.

Shrestha (2007) made a study on “Analysis of Risk and Return on Commercial Banks” and found that risk is variability of return, which is measured in terms of standard deviation of returns. S. D is the only measure of unsystematic risk, which is not defined by market. Similarly the correlation between return of individual banks and market portfolio have positive correlation which represents that if market return increases then the return of the sampled banks also increases or vice versa. He also says that it is not true that riskier asset will pay a higher average rate of return. CAPM is model that describes the relationship between risk and required rate of return.

Poudel (2002) concluded that the average mean return on market portfolio, as measured by percent changes in the NEPSE index, was 5.51 percent over the sample period. All the shares produced higher rates of return than the return on market portfolio. However, the risk-return characteristics do not seem to be the same for all the shares reviewed. The shares with larger standard deviations seem to be able to produce higher rates of return. The portion of unsystematic risk is very high with the shares having negative beta

coefficient. The risk per unit of return, as measured by the coefficient of variation, is less than that of the market as a whole for all the individual shares. Most of the shares fall under the category of defensive stocks, (having beta coefficients less than 1). From the analysis, it appears that none of the shares are correctly priced. Theoretically, the market price of an over-priced (under-priced) share will fall (rise) in order to increase the expected return such that the expected return equals the required return.

7. Research Methodology

7.1 Research Design

Since this research will be conducted to analyze risk and return of common stock of commercial bank of Nepal. This research would follow analytical and descriptive research design. Different statistical and financial tools would be used to analyze risk and return.

7.2 Population and Sample

Out of 28 commercial banks 5 commercial banks would be taken for study. Here five banks named Global IME Bank Ltd, Nepal Credit and Commerce Bank Ltd, Everest Bank, Nepal Bangladesh Bank and Nepal SBI Bank would be taken as sample. Similarly, financial statement of five yrs of these banks would be studied for the research purpose.

7.3 Sources of Data

The data collection is mainly secondary in nature. The sources of data for this research include books, newspaper, annual reports, published articles, journals etc dealing with the current banking scenario.

7.4 Data collection and processing procedure

Most of the necessary data for the research will be collected from the secondary sources. Data related to the market prices of stocks, market capitalization, movement of NEPSE index etc. will be taken from the Trading report published by NEPSE. Financial statements of commercial banks and their annual reports are also collected.

The collection procedures are summarized below:

- Financial documents provided by the companies.
- Trading report published by Nepal Stock Exchange Limited.
- Related website.
- Materials published in papers and magazines.
- Other related books and booklets.

7.5 Data analysis tools and techniques

After collecting the data from secondary sources, they would be analyzed and separated into its concerned topics. Financial, statistical tools and different would be used to analyze the collected data to assess the risk and return.

7.5.1 Holding Period Return (HPR)

HPR is the total return earned from the holding an investment for a specified period of time (the holding period). It represent the sum of current income and capital gains (or losses) achieved over holding period, divided by the beginning investment value.

7.5.2 Required Rate of Return

The required rate of return is the function of real rate of return and risk. It is the minimum rate of return an investor will accept. The required rate of the return for an assets or portfolio of assets can be estimated using the equation for the SML suggested by the CAPM model.

Required rate of return = Risk free rate + Risk premium

7.5.3 Expected Rate of Return

The return an investor expects from his /her investment in the forthcoming future is called expected rate of return. An investor normally estimates his/her expected rate of return by analyzing the trend of return of previous period. If an investment is to be made, the expected rate of return or the expected holding return should be equal or greater than the required rate of return for that investment.

7.5.4 Variance

The variance is defined as the weighted average of the squared deviation of possible outcomes from expected value or mean. The variance is a statistical measure of the dispersion or deviation of possible outcomes around an expected or mean value. The higher the variance, the greater is the degree of dispersion and therefore the higher is the asset's or investment's total risk.

7.5.5 Standard Deviation

Standard Deviation is a statistical measure of the dispersion or deviation of possible outcome around an expected or mean value. The measurement unit of standard deviation is % as return is expressed in percentage. Higher the standard deviation, higher the total risk of securities.

7.5.6 Coefficient of Variance

Coefficient of Variance is the standardized measure of risk per unit of return. It is calculated as the standard deviation divided by the expected return or average return. It provides a more meaningful basis for a comparison when two or more than two investments of different expected returns and standard deviation are to be compared.

3.5.7 Beta Coefficient (β_j)

Beta coefficient shows the market sensitivity of stock. Higher the beta, greater 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.

3.5.8 Covariance and Correlation

The covariance is the statistical measure of relationship between two random variables. This statistical method is applied here to measure the relationship between the two variables (returns). Hence it is the statistical measure of how the returns of two assets move together. If the returns of the two securities move in the same direction consistently the covariance would be positive. If the returns of the two securities move in opposite direction consistently the covariance would be negative. If the movement of returns were independent of each other, covariance would be close to zero.

Dividing the covariance between two securities by product of the standard deviation of each security gives standard measure which is called the coefficient of correlation.

8. Chapter Plan

Chapter -I: Introduction

The first chapter of the study is introduction, statement of problems, purpose, significance, limitations of the study.

Chapter - II: Literature Review

This chapter includes the review of books, articles, journals, reports, thesis, researches and other relevant materials related to this topic.

Chapter - III: Research Methodology

It includes research design, sources of data, population and sample, data collection, processing and analyzing procedures and statistical tools.

Chapter - IV: Results and Findings

This chapter attempts to analyze and evaluate secondary data of listed commercial bank with the help of different tools and techniques.

Chapter - V: Conclusion

This chapter deals with summary, conclusion and implication of conclusion for practical application or future studies.

9. References

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