RISK AND RETURN ANALYSIS OF COMMON STOCK INVESTMENT

(Special Reference to Nepalese Joint Venture Banks)

A Dissertation submitted to the Office of the Dean, Faculty of Management in partial fulfillment of the requirements for the Master's Degree

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled “Risk and Return Analysis of Common Stock Investment”. The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor has it been proposed and presented as part of requirements for any other academic purposes.

The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of the dissertation.

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REPORT OF RESEARCH COMMITTEE

Mr. Biswas Niraula has defended research proposal entitled "Risk and Return Analysis of Common Stock Investment" successfully. The research committee has registered the dissertation for further progress. It is recommended to carry out the work as per suggestions and guidance of supervisor Prof. Dr. Keshav Raj Joshi and submit the thesis for evaluation and viva voce examination.

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APPROVAL SHEET

We have examined the dissertation entitled Risk and Return Analysis of Common Stock Investment presented by Mr. Biswas Niraula for the degree of **Master of Business Studies (MBS).** We hereby certify that the dissertation is acceptable for the award of degree.

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ABBREVIATIONS

A.D.	=	Anno Domini
ATM	=	Automated Teller Machine
B.S.	=	Bikram Sambat
BAFIA	=	Bank and Financial Institution Act
BFI	=	Bank and Financial Institutions
C.V.	=	Coefficient of Variation
EBL	=	Everest Bank Limited
Et Al.	=	Et Alia
FY	=	Fiscal Year
HBL	=	Himalayan Bank Limited
Ltd.	=	Limited
MBS	=	Master of Business Studies
MPS	=	Market Price per Share
NABIL	=	Nabil Bank Limited
NEPSE	=	Nepal Stock Exchange
NIMBL	=	Nepal Investment Mega Bank Limited
NRB	=	Nepal Rastra Bank
NSBL	=	Nepal SBI Bank Limited
Rs	=	Rupees
S.D.	=	Standard Deviation
SCBNL	=	Standard Chartered Bank Nepal Limited
SEBON	=	Securities of Board Nepal
SR	=	Systematic Risk
T.U.	=	Tribhuvan University
TR	=	Total Risk
USR	=	Unsystematic Risk

ABSTRACTS

This study analyses the risk and return of joint venture commercial banks in Nepal. The study has identified rate of return (R_j), common stock's expected return $E(R_j)$, standard deviation (σ), coefficient of variance (CV), covariance, correlation coefficient and coefficient of beta (β) to analyze the data. The study has selected Nepal Nepal SBI Bank Limited, Standard Chartered Bank Nepal Limited, NABIL Bank Limited, Himalayan Bank Limited, Everest Bank Limited and Nepal Investment Mega Bank Limited for the purpose of the study.

The results the risk per unit as indicated by coefficient of variation of the joint venture banks is higher for the than the market index. Hence, the stocks of joint venture banks are more volatile than the market index. The beta coefficient of all joint venture banks is lower than beta coefficient of market (β_M) resulting defensive stock. The portion of unsystematic risk of the commercial banks are less than the portion of systematic risk indicating less risk can be eliminated or in the control of the banks. The return of joint venture banks has ranges of very low degree to high degree with both positive and negative correlation with the market return and the correlation is both significant and insignificant.

Keywords: *Risk, return, systematic risk, unsystematic risk, joint venture banks.*

CHAPTER I
INTRODUCTION

1.1 Background of the Study

Risk and return are two important aspects to consider when making an investment decision. Similar to two sides of a single coin are risk and return. Within the investing community, risk is characterized as the potential for an investment's realized return to deviate from the projected return. An essential component of financial decision-making is risk-return analysis. The core idea is that investors who are risk averse want a risk premium on riskier assets as payment for taking on more risk. The basic principle of portfolio theory is that idiosyncratic risk and systematic or market-wide risk may be distinguished in terms of a company's risk, at least as determined by the distribution of its historical stock returns. Investors only receive a risk premium for the market risk component since idiosyncratic risk may be diversified out of a portfolio (Schoenmaker & Schramade, 2023).

Risk is the result of uncertainty, and its scale relies on the degree of unpredictability in uncertain cash flow. It is the ability of an investment to have returns that fluctuate or lose value due to a variety of reasons, including market volatility, financial conditions, and external events (Saha, 2023). Low levels of uncertainty (risk) are connected with lower potential returns. There is a correlation between a high potential return and a high level of uncertainty or risk. In a similar vein, return is both the benefit of patience and the price paid for taking chances. The majority of investors avoid taking risks. As a result, it is reasonable to conclude that the majority of people spend their assets in possibilities that offer larger returns with a lower amount of risk (Zobaer et al., 2012). The major challenge in investing is selecting a security with minimal risk but large rewards. Even if the investor cannot significantly enhance the return, he or she can lower the risk by diversifying investing money among multiple securities, forming a portfolio. The goal of portfolio analysis is to minimize risk while maintaining a particular rate of return (Van & James, 1998).

Systematic risk as well as unsystematic risk (often known as diversifiable risk), have an impact on stock returns. Minimal risk and uncertainty are linked to low possible profits. High potential rewards are correlated with high degrees of uncertainty, or risk. The equilibrium between striving for minimal risk and pursuing maximal returns is recognized as the risk and return trade-off. There are two types of investment risks: unsystematic risk and systematic risk. Systematic risk cannot be reduced by diversification because it is caused by outside forces (Sharpe, 1970), whereas unsystematic risk is unique to a portfolio and can be controlled (Ross, 1976).

Market risk is one of the key systematic risk variables influencing stock returns among the many others. Other systematic risk factors, such as changes in macroeconomic variables like oil prices and exchange rates, can also have an impact on stock returns (Chen et al., 1986; Ng, 2004). Thus, economic concerns that a nation faces can be regarded as risk factors that impact stock returns in addition to market risk. Since all of these risk factors have an impact on business profit, they can all have different effects on stock returns. Furthermore, two other risk variables, skewness and kurtosis of returns, can also impact stock returns in the event that the distribution of the return on investment is not normal (Kraus & Litzenberger, 1976).

The compensation for taking on the risk is known as the return. The most crucial result of an investment is return. It calculates the investor's rate of wealth accumulation - that is, how much money they make or lose each period. Risk is characterized as the possibility of adverse events, which are always detrimental to the company. Risk and return go hand in hand. Uncertainty is always produced by it (Van, 1997). Various factors that contribute to uncertainty in investments encompass interest rate volatility, purchasing power fluctuations, market oscillations between bullish and bearish sentiments, managerial uncertainties, and similar variables. A core insight in finance and investing is the relationship between risk and return. Investors often struggle to strike a balance between these two factors. General terms, investments with large potential yields also come with a higher risk. This is due to the fact that these investments are more sensitive to uncertainties and market volatility. Conversely, investments with lower risk frequently yield a smaller return overall (Remesh, 2024).

Investors consistently seek greater returns in tandem with increased risk, making the primary challenge in investing the identification of securities offering a balance of low risk and high returns. While there may be limitations to significantly boosting returns, risk reduction can be achieved through diversification. Unsystematic risk, which cannot be attributed to broader market movements (Markowitz, 1952), can be mitigated through diversification efforts. However, systematic risk, tied to overall market fluctuations, remains impervious to changes in the market and cannot be fully eliminated through diversification (Sharpe, 1970). Despite considerable progress, there are still substantial growth opportunities in Nepal's stock market. Many potential investors and shareholders lack awareness of the risk-return dynamics of stocks due to insufficient information or knowledge. Market intermediates exploit the investors.

Investment objectives might include things like long-term growth, income generation, and capital preservation. The amount of risk that an investor can bear in considering their personal situation and financial objectives is known as their risk tolerance. Investors need to choose a risk-return ratio that fits their objectives and risk tolerance. The risk-return trade-off, which states that larger potential gains include greater risks, symbolizes this relationship (Saha, 2023). Investors' views on risk and their desire for compensation define the relationship between risk and return. Investors will not invest in risky assets unless they believe they will be sufficiently compensated for the risks involved. Sundaram and Mathur (1995) defined risk as the possibility of actual returns deviating from expected returns, noting that risk is an inherent element of uncertainty in future cash flow variability.

In Nepal, investors and shareholders often do not consider the risks and returns of stocks before investing in securities. The majority of typical Nepalese investors put their money into just one security, often without assessing the risks or potential returns. While some investors choose to invest in various securities based on their personal beliefs about each security rather than considering the overall impact on their portfolio, they end up experiencing significant financial losses. Furthermore, investors are hesitant to put their money into the securities. Therefore, it is essential to familiarize them with these tools and their real-life impact on decision-making and evaluation for investments.

1.2 Problem Statement

Many commercial banks concentrate their resources in specific areas to maximize their profits. Under the current economic condition in the nation, the level of financial investment in agriculture, industry, and other key sectors is minimal and insufficient to support economic growth at this time. They are uncertain about investing in long-term projects and plan to implement a cautious loan policy. Investors were unable to access sufficient information regarding the risk-return relationship and portfolio analysis within different investment sectors (Kandel, 2018).

Investors need to base their investment decisions on rational thinking. Analysis of common stock requires essential knowledge. The perspectives and feelings of investors are important for making logical investment choices (Markowitz, 1952). Numerous investors fall prey to manipulation and exploitation by financial institutions and other market intermediaries due to their lack of knowledge about security market regulations. Both the average person and those with advanced degrees from universities struggle to evaluate both risk and return when deciding on stock investments (Francis, 2008). In Nepal, investors are also encountering challenges due to the absence of institutions that can offer sufficient information on investment opportunities. Since NEPSE was established in 1993 AD, some problems have been resolved. However, Nepalese people still feel hesitant about investing in stocks due to perceived higher risk compared to actual risk. This dilemma leads to underutilization of funds, resulting in no benefits for investors or the national economy (Chaudhary, 2021).

Nepal's stock market experiences frequent fluctuations. Because the regulatory authority has not been effectively monitoring and supervising, a small number of players have engaged in several unethical manipulations. Numerous incidents of trading of non-outsider, unauthorized disclosure of confidential data through corporate personnel, and the involvement in immoral activities of government authorities have been reported. Shrestha (2023) documented a particularly noteworthy case where the SEBON’s chairman, along with several other high-ranking authorities, were discovered to have engaged in the unethical practice of purchasing a significant

quantity of shares under the family members' name. Some stock market participants own online and YouTube channels where they distort information for their benefit. The large player also has an impact on the statements made by political leaders, governor, and finance minister regarding NEPSE, both in a positive and negative manner (Regmi, 2022).

In the current scenario, commercial banks are encountering various issues like other economic institutions, but several commercial banks are still functioning. In Nepal, the majority of commercial banks are quickly increasing their profits alongside their expenses. Likewise, banks can also earn significant profits by establishing branches in remote regions. The primary issue is that public companies struggle to accurately assess the risk and return of the market situation. Investors lack understanding of both risk and return. Commercial banks in our nation are of great importance in various aspects such as capital markets, risk and return, as well as other areas. The majority of individuals opt to put their money in a bank rather than investing in financial assets like stocks, bonds, and debentures. Many investors lack knowledge about investing and determining risk and return on their investments. Therefore, it is important to analyze the risk and return for investors who invest in shares of commercial banks. The study has sought the reasonable reasons on the following concentration area of joint ventures banks in Nepal:

i. What is the risk and return position of joint ventures banks?
ii. To what extend the systematic and unsystematic risks of joint ventures banks are related to total risk?
iii. Whether there is any relationship between market and individual stock of joint ventures banks?

1.3 Objectives of the Study

The primary aim of this research is to analyze the risk and potential return associated to the stock price of joint venture banks in Nepal. In the commercial banking sector, the relationship between risk and return relies entirely on portfolio analysis. Thus, this research also examines the risk and return analysis to guide investors on making investment decisions in shares of domestic joint venture commercial banks listed on

the NEPSE in Nepal. Numerous political, economic, social, and technological factors impact the operations of commercial banks. Investors, in general, are hesitant towards risk and are constantly looking for increased returns in exchange for taking on more risk known as risk premium. The main challenge in investing is finding a security with a combination of low risk and high return. To fulfill the primary goal, the following secondary goals must be attained.

i. To analyze the risk and return of joint venture banks.
ii. To assess the proportion of systematic risk and unsystematic risk of joint venture banks.
iii. To examine the relationship between market and individual stock of joint venture banks.

1.4 Rationale of the Study

The study has observed the analysis of risk and return for joint venture banks from 2013/14 to 2022/23 A.D. It has examined both systematic and unsystematic risks of common stock in Nepalese joint venture banks and investigated the connection between market and individual bank stocks. This could be important for future researchers looking to understand risk and return analysis and the relationship between the market and individual stock of Nepalese joint venture banks.

The research has provided a clear understanding of the risk and return assessment, as well as the relationship between the stock market and individual stocks, which could be important for investors, bankers, shareholders, depositors, and the general public interested in the current events of the banking sector. Besides, the organizations find the study important because it provides valuable recommendations that can help in making necessary corrections if any deviations are discovered in past performance related to risk management.

Likewise, the research offers resources to scholars interested in pursuing additional studies in this area. The research is valuable because it offers a theoretical and conceptual framework for analyzing risk and return, as well as studying the

relationship between the market and individual stocks. Similarly, the research helps in completion of MBS level and in acquiring insight on risk and return analysis, as well as the relationship between market and individual stock of Nepalese joint venture banks.

1.5 Limitations of the Study

The research has analyzed risk and return of joint venture banks in Nepal. Even though attempts have been made to accurately and clearly present and analyze the facts within limitations, errors may still occur from factors such as unreliable tools, inexperience in research, time constraints, lack of available data, and more.

The restrictions of the study are as listed below;

i. The research gives emphasis on only on risk and returns analysis with associated with the share price of joint venture banks.
ii. The research is based on only ten years starting from FY 2013/14 to FY 2022/23 A.D.
iii. The outcome of the study hinges on the accessibility of data.
iv. The secondary data has been employed, implying a reliance on existing information and datasets rather than newly gathered data.

CHAPTER II
LITERATURE REVIEW

Investigation of past research works and books fully intent on realizing the issue of the research detailly and figuring out the proper style is defined literature review. Different treatise, articles, and examination reports are accessible on the lookout. An extensive investigation of such report and planning of outline of such concentrate on a point is known as writing survey. Audit of past examinations is vital in scholastic exploration and it assists with finishing the exploration work. Whether published or unpublished, creating a survey might be a part of a bigger study, research effort, proposal, or publication. Writing survey is improved and know the procedure that can be utilized in research. An expert should concentrate on gathering data from publications such as texts, academic papers, reports on research, governmental periodicals, and records of marketing and economic activity that are pertinent to the topic of study.

A variety of sources, including publications such as launched and unregistered economic journals, circulars, magazines, newspapers, and the annual reported balance accounts of important banks, are examined and critiqued in the literature review chapter., previous thesis on related subject and subject related website search. This chapter has been divided into the following parts;

i. Theoretical Review
ii. Empirical Review

2.1 Theoretical Review

2.1.1 Commercial Bank

The simple understanding of a bank typically refers to a commercial bank. Commercial banks serve as organizations that pool the community's savings and enable their efficient use. They use several methods to meet the financial needs of contemporary businesses. Deposits from the general public are accepted by these

institutions, provided that they be repaid promptly or upon demand. A bank deals in loans and debts, functioning essentially as a financial middleman. It takes money from one set of people and uses it for lending operations before lending it out again. While some banks get the majority of their capital from shareholders, others get it mostly from depositors. Additionally, certain banks extend loans primarily to industries, while others focus more on government, both at central and local levels. Furthermore, banks vary in their operations, with some specializing in short-term loans and others in long-term financing arrangements.

Horne et al. (2005) defined a bank as a commercial entity that receives and protects deposits from persons and entities, as well as issuing loans or credits and arranging financial transfers based on depositors' written instructions. Banks act as money mediators, providing cash equivalents such as cheques and bills of exchange. Furthermore, they provide a variety of financial services to its clients. Commercial banks' primary economic duty is to safeguard demand deposits and honor checks issued against them, making them a crucial component of supply of money within.

2.1.2 Joint Venture Bank

A joint venture is an agreement between two or more individuals or businesses to combine their resources and expertise in order to achieve a common commercial goal. It involves two or more parties working together to make an operation more effective. Gupta (1994) stated that a joint venture is when two or more businesses collaborate to do a given function. Foreign funds, new goods, technology, and people resources can be brought in by joint venture banks (JVBs). JVB and international banks have cooperative arrangements. Those types of banks could thus be in a better position to serve their customers and hence function better. Conversely, domestic banks have their roots in the national identity and culture which could so be more motivated to serve the country and its citizens. Better performance might result from the desire (Acharya & Vyas, 2022).

Joint venture banks can take many forms, including partnerships, limited companies and other legal structures. The specific structure of a joint venture bank depends on

the needs and objectives of the participating entities and the regulatory environment in which the bank operates. Joint venture banks can offer a variety of financial services, including savings accounts, loans, credit cards and investment products. Those also offer financial services tailored to the needs of their target market. Joint venture banks can be an attractive option for companies or organizations that want to enter the banking industry, but lack the independent resources or expertise to do so (Pant, 2023).

2.1.3 Investment

Investment is allocating cash with the goal of earning higher returns in the future. Broadly speaking, it refers to a current commitment made with the expectation of future advantages. However, while the commitment is guaranteed, the future outcomes are unknown, posing risks to investors who want to mitigate these risks in order to maximize returns. As a result, making informed investment decisions is critical for investors, necessitating a structured investment decision-making process. This process entails examining assets, detecting overpriced and underpriced securities, developing appropriate investment strategies, and creating successful portfolios (Van 1997).

Investment is about managing an investor's wealth, which includes current income and the present value of all future income. Investment refers to a variety of activities, including income, savings, and other acquired cash. It is widely accepted that investment is only possible when there are sufficient savings, emphasizing the interdependence of saving and investment. An investment is a financial commitment made with the intention of a good return. The return on an investment is often proportional to the level of risk assumed by the investor. Return, risk, and time are all important factors to consider while investing (Fisher & Jordan, 1995).

2.1.4 Common Stock

In addition to being tradable financial instruments, certificates of the common stock serve as legal proof attesting to ownership or equity in a corporation that is organized

as a corporation. By virtue of their voting rights, common stock holders have legal control over the corporation and represent its residual revenue. Nonetheless, the investment in common stock carries a significant degree of risk because of its lower priority in the hierarchy of claims upon liquidation. As proof of their ownership interest in the business, investors who buy common stock receive certificates of ownership. The number of shares bought and their related value per share are specified in these certificates (Bhalla, 1997).

Common stockholders, as the company's residual owners, are only entitled to revenue and assets following the complete payment of creditors and preference shareholders. As a result, investors' return on investment is less predictable than that of lenders' or preference shareholders. Authorized common stock may or may not have a par value; in the company charter, the par value is merely a symbolic number with no practical meaning. Since shareholders who purchase shares below par value may be held accountable to creditors for the difference between the purchase price and the par value, it is generally discouraged to issue stock at a price below par value (Erragraguy & Revelli, 2015).

2.1.5 Risk

The degree of variance in projected returns linked to a specific asset is indicated by the term risk, which is frequently used with uncertainty. The underlying link between risk and return in the market is indicated by variations (Loric et al., 1985). Two primary measures derived from probability distributions are commonly utilized as initial gauges of return and risk: the mean and the standard deviation (Weston & Brigham, 1982). There are certainly numerous methods to measure risk, but three models are widely used in practice (Van, 1997).

Beta Coefficient

A stock's volatility is determined by its beta, which reflects how frequently its price fluctuates in response to changes in the market as a whole. Beta is derived

mathematically so that high beta indicates a high level of risk whereas a low beta represents a low level of risk. It is denoted by β.

Standard Deviation

This is a measurement of the dispersion of forecast returns when such returns approximate a normal probability distribution. A high standard deviation represents a large dispersion of return and is a high risk and vice versa.

2.1.6 Sources of Risk

Every investment involves uncertainty that contribute to investment risk. These risks may be interest rate risk, purchasing power risk, bull-bear market risk, management risk, default risk, liquidity risk, call – ability risk, convertibility risk, political risk, industry risk (Clark, 1997).

Purchasing Power Risk

Inflation, which gradually decreases the value of money, is the source of purchasing power risk. Price indices are used by economists to measure inflation rates, and the consumer price index (CPI) is a commonly used reference point. One often used measure of the tendency toward inflation is the percentage change in the CPI.

Interest Rate Risk

The riskiness that bondholders experience as a result of interest rate fluctuation is known as interest rate risk. The degree of this risk depends on how sensitive the price of a bond is. The bond's coupon rate and maturity period are the two main elements affecting sensitivity. It is the possible variation in returns as a result of changes in market interest rates. Investment value and market prices fall as market interest rates rise, and vice versa. Stocks, bonds and real estate prices are among the investments that are impacted by this interest rate risk.

Liquidity Risk

The term ‘liquidity risk’ describes the fluctuations in asset returns that are ascribed to the requirement for price reductions or sales commissions when assets are swiftly sold. Assets that are perfectly liquid have no liquidation expenses and are very marketable. Less liquid assets, however, need to have price reductions or the selling expenses covered. An asset's price discounts or commissions that are required to ensure a quick sale to a new investor increase with its liquidity.

Default Risk

Default risk has a direct relationship to the financial health of the issuing firm since it concerns the possibility that the issuing firm will not be able to meet its financial obligations. Investors run the risk of losing all or part of their initial capital if the company defaults.

Bull-Bear Market Risk

Bull-Bear market risk arises from the variability of market returns resulting from alternating bull and bear market forces. When a security index rises fairly consistently form a low point called a trough, for a period of time this upward trend is called a bull market. The bull market ends when the market index reaches a peak and starts a downward trend. The period during which the market declines to the next through is called a bear market. Market risk is associated with the consistent fluctuations seen in the trading price of any particulars shares or securities. That is, it arises due to rise or fall in the trading price of listed shares or securities in the stock market.

Industry Risk

It refers to the factors that can impact (both positively and negatively) a particular industry, which can in turn affect companies within the sector. Just as the economic performance of economies can vary widely, the performance of industries across the spectrum too can differ considerably.

Call-ability/Call Risk

Call risk is the risk that a bond issuer will redeem a callable bond prior to maturity. This means the bondholder will receive payment on the value of the bond and, in most cases, will be reinvesting in a less favorable environment-one with a lower interest rate.

Political Risk

It is the element of the overall return variability of an asset that can be allocated to changes in the political environment. It occurs when politically influential organizations take advantage of less influential groups for their own benefit. This causes different factions to work to improve their relative standing, which increases the return variability of assets that are impacted. Political risk can be classified as international political risk and domestic political risk.

2.1.7 Beta Risk

The CAPM model can be used to determine the systemic risk of a particular asset. As a measure of systematic risk, the beta coefficient compares a stock's price volatility to changes in the stock market index as a whole. It is also called slope of the characteristic line. Beta is used to measure the risk premium of an asset. Market return is the return from the market portfolio and market portfolio is the large number of stocks in the stock market. Simply market return is the average rate of return in the market. Higher the index, higher the market return and vice versa. Nepal Stock Exchange (NEPSE) calculated the NEPESE index which represents the Nepalese stock market and Standard and Poor 500 (S&P 500) and Dow Jones Industrial Average (DJIA) are the markets in the USA.

2.1.8 Market Portfolio and Its Beta

The market portfolio is a theoretical concept which, in theory, should include every conceivable security traded in the capital market in proportion to its market value. It

may help to view the market portfolio as a giant weighted average of the market values of all the possible investment assets available in the capital market. In practice, the market portfolio would be impossible to achieve. The return from the market portfolio is known as market return. A similar fluctuation in the return from a single stock is expected when the return from the entire portfolio rises or falls. The stock's beta factor determines how much of a movement this is. The weighted average of the beta components of each security in an investor's portfolio determines the portfolio's beta. The market portfolio's beta coefficient is fixed at 1 by default because it includes every stock in the market. As such, this benchmark value serves as the basis for evaluating all other beta coefficients (Van, 1997). It is denoted by β_{M}.

2.1.9 Total Risk, Unsystematic Risk and Systematic Risk

Total Risk

The possibility of losing all or a portion of the money invested could be the risk. (Chen, 2020). It is the total variation of the rate of return for an individual security as measured by the standard deviation or variance of the rate of return. Market prices fluctuates as a result of the uncertainty of the returns on financial assets, which in turn affects the demand. Investors face the risk of suffering large cash losses if market values drop quickly. Systematic and unsystematic risks are the two main categories of risk.

$$\text{Total Risk} = \text{Systematic Risk} + \text{Unsystematic Risk}$$

Systematic Risk

When it comes to all or most investments, systematic risk, additionally referred to as market risk, is a non-diversifiable risk that cannot be reduced by diversification. It includes many different elements, including risk of market, risk of inflation, risk of tax, event risk, political unpredictability, conflicts, insurgencies, wars, and foreign currency risk, among other economic hazards. Since all stock moves in the same direction, there is a perfect correlation between systematic risk and each stock (Beja, 1972).

Systematic Risk = f (shifts in entire market, interest rates, inflation, and economic conditions)

Unsystematic Risk

It is the variation in returns associated to various kinds of company- or industry-specific influences, including technological advances, expertise, strategic goals, management choices, and other constraints. Since, it is specific to certain stocks, industries, or companies, unsystematic risk can be reduced by portfolio diversification. Unsystematic risk which results from internal sources has no correlation with the stocks (Mokkelbost, 1971).

2.1.10 Relationship of Risk with Return

Hampton (1996) argued that the degree of risk involved in any investment idea directly affects the projected return. In order for a plan with a higher risk to be approved, it needs to offer a higher expected return than one with a lower risk. Loric et al. (1985) noted that differences in both the levels and variability of the rate of return among securities reflect the underlying risk and relationships in the market. Because common stock has a low priority of claims in the event of liquidation, investing in it carries a certain amount of risk. When buying common stock, investors get a certificate of ownership that specifies the ownership in the company mentioning how many shares they have purchased, and how much each share is worth (Bhalla, 1997).

Hampton (1996) determined that a fundamental relationship exists between the level of risk and the projected return of an investment. A larger projected return must be promised by a higher-risk proposition than by a lower-risk one in order for it to be accepted. Additionally, Loric et al. (1985) proposed that variations in the rates of return between securities, as well as their variability, can be used as markers of the linkages and underlying risk in the market. Risk and the rate of return generally have a positive relationship. This suggests that choosing assets with higher degrees of risk usually has the potential to yield larger returns for investors. Higher average rates of

return are not necessarily the result of riskier investments, but this is generally the case. Risk aversion of investors can be blamed for this phenomenon.

2.1.11 Reason to Manage Risk

Risk management is the identification, evaluation, and prioritization of risks in order to limit, monitor, and regulate the likelihood or impact of unfavorable events or to optimize the realization of possibilities, the process entails the coordinated and effective allocation of resources. Van (1997) outlined numerous reasons why organizations participate in risk management, even if there may not be hard evidence that it adds value innately.

Debt Capacity

It has been proven that risk management techniques may minimize cash flow volatility, which in turn reduces the chance of bankruptcy. Through the interest tax shield, companies with reduced operating risks may afford to take on more debt, which in turn can lead to higher stock prices.

Sustaining the Ideal Capital Budget Throughout Time

Due to the more placement expenses and market constraints associated with raising external equity, corporations are often hesitant to choose this option. As a result, capital budget is often financed using a combination of debt and domestically produced money, primarily retained earnings.

Economic Constraints

Cash flows falling short of expectations is linked to economic constraints, which can be caused by rival investors, increased interest rates on debt, consumer churn, or insolvency. Therefore, risk management can lessen the possibility of low cash flows or economic constraints.

Hedging's Comparative Benefits

When it comes to hedging, businesses have some advantages over individual investors. Typically, their high volume of hedging activity leads to reduced transaction costs. Furthermore, managers within an organization can create more potent hedging strategies since they have access to specific facts about the risk exposure of the company.

Cost of Borrowing

Derivative instruments such as swaps are frequently used by businesses to lower input costs, especially debt interest rates. This lower cost of borrowing might increase the company's total worth.

2.1.12 Return

The goal of investing is to get a return, which is the incentive for making the investment. Higher risks usually entail higher rates of return, so it serves as compensation for taking on risk. Hayes and Scott (2021) explained returns may arise from stock capital gains as well as earnings, including dividends. The dividend payments and capital gains on stock ownership are the forms of return. Stock returns are significantly impacted by large price swings that result in either significant capital gains or losses.

The return can be expressed nominally as the change in monetary (Rs/dollars) value of an investment over time. A return can also be expressed as a percentage derives from the ratio of profit to investment. Returns can also be presented as net results (after fees, taxes, and inflation) or gross returns that do not account for anything but the price change. A positive return represents a profit while a negative return marks a loss. With most investments, an individual or business spends money today with the expectation of earning even more money in the future. The concept of return provides investors with a convenient way to express the financial performance of an investment (Brigham & Ehrhardt, 2011).

Expected Rate of Return

The anticipated amount of money an investor expects to receive from an investment in the foreseeable future is the expected rate of return. Investors often assess past trends over previous periods, typically years, to forecast their expected rate of return. Investment decisions are usually based on future expectations. The weighted average rate of return aggregates the expected rates of return for all assets. This anticipated rate is calculated by multiplying the rates of return by their respective probabilities.

Required Rate of Return

The minimal return an investor expects, at the very least, to avoid incurring a loss is termed the required rate of return. Falling short of this needed rate will inevitably result in a loss for the investor. To determine this rate, investors must consider factors such as risk, expected inflation, and the real rate of return. Investors expect a rate of return that compensates them for deferring spending, as they forgo consumption today in favor of future benefits. The required rate may equal the real rate of return if the investor anticipates an increase in real goods acquired later, assuming zero expected inflation and risk. The pure time worth of money is reflected in the real rate of return in this situation (Cheney & Moses, 1992).

2.1.13 Capital Assets Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) is based on capital assets, which include both long-term financial and real assets. Markowitz's modern portfolio theory explains that the asset prices should represent the risk involved in an investment and investors should take this into account when making decisions. But according to the CAPM, which was created in 1972 by William F. Sharpe, John Lintner, and Jan Mossin, investors can build portfolios that virtually completely eliminate diversifiable risk, making only non-diversifiable risk significant. Consequently, undiversifiable risk ought to be the foundation for asset pricing and investment decisions (Bhattarai, 2004).

The following are the presumptions of CAPM:

i. Every investor has the same investing horizon of one term.
ii. Purchasing and selling shares is free of taxes and transaction fees.
iii. Neither inflation nor interest rate changes have occurred.
iv. There is balance in the capital market.
v. Because every investment is infinitely divisible, fractional shares of any portfolio or single assets can be bought.
vi. With the goal of reaching the efficient frontier, all investors are Markowitz efficient diversifiers.
vii. At the risk-free interest rate, money can be borrowed or lent indefinitely.

The extreme example, in which every investor has access to the same information and views future security possibilities equally, is how the CAPM simplifies circumstances. This is predicated on the idea that investors evaluate and process data consistently. Moreover, the Capital Asset Pricing Model (CAPM) makes the assumption that securities markets are flawless, ignoring possible obstacles such finite divisibility, taxes, transaction costs, and varying risk-free borrowing and lending rates.

2.1.14 Capital Market Line

A theoretical idea that stands for all possible combinations of the market portfolio of risky assets and the risk-free rate of return is capital market line (CML). It shows portfolios with the best possible balance between return and risk. As this optimizes profit for a given degree of risk, all investors will, according to the capital assets pricing model (CAPM), take an equilibrium position on the capital market line by lending or borrowing at the risk-free rate.

i. The portfolios with an ideal risk-return combination are represented by the capital market line (CML).
ii. The market portfolio serves as the risk portfolio in the capital allocation line (CML), which is a specific instance of the CAL. As a result, the market portfolio's Sharpe ratio is equal to the slope of the CML.

iii. The tangency portfolio, which is the most efficient portfolio, would be produced by finding the intersection point between the efficient frontier and the CML.
iv. As a generation, purchase assets when the Sharpe ratio is higher than the CML and sell them when it is lower.

Various investors will opt for distinct portfolios within the same efficient set because their risk and return preferences differ. This aspect of CAPM is commonly known as the theorem of separation.

2.1.15 Theorem of Separation

It is possible to find the best mix of hazardous assets for an investor without having any idea how they feel about risk versus return. Put differently, the choice of hazardous asset combinations can be made without any understanding of how investor indifference curves are shaped.

Portfolio of Market

The portfolio-based market portfolio, encompassing all securities, is distributed based on the proportional market value of each security. Determining the relative market value of a security involves dividing its total market worth by the sum of all securities' combined market values, resulting in a value of 26. This element is critical in CAPM as the efficient set comprises an investment in the market portfolio alongside a predetermined level of risk-free lending or borrowing.

Efficiency Set

It is easy to ascertain the relationship between risk and expected return for an efficient portfolio using the capital asset pricing model (CAMP). More information is provided by the figure.

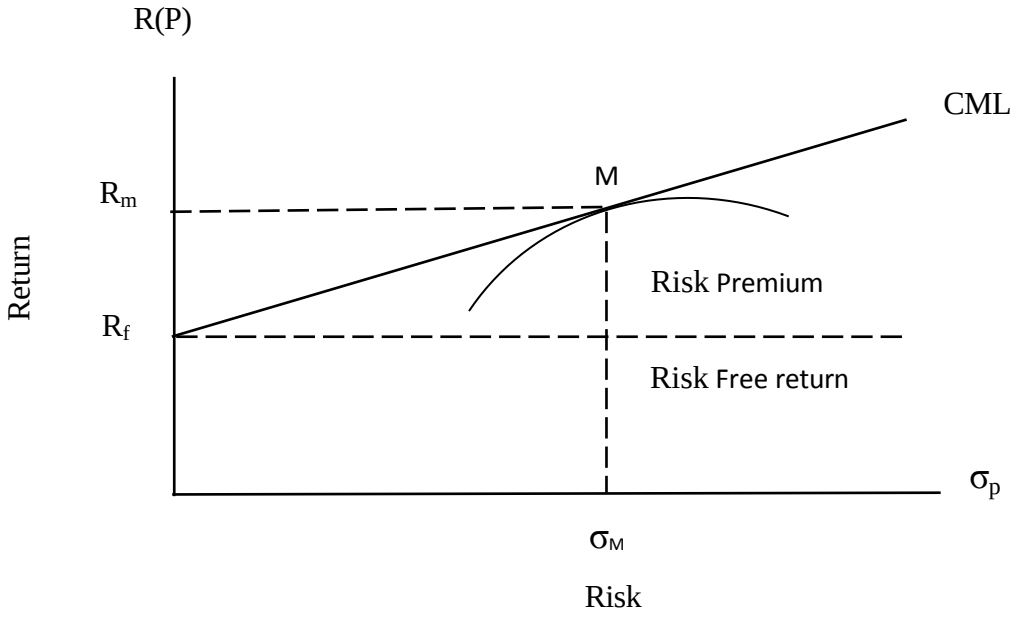

Figure 1. Capital Market Line

Figure 1 represents capital market line graph. Therisk-free rate of return is represented by Rf, while the market portfolio is represented by Point M. The line that graphs efficient portfolios represents different combinations of risk and return and starts at Rf and passes through M. Called the capital market line (CML), this is the linear efficient set described in the CAPM. The portfolios that are located between the CML are those that do not make use of the market portfolio or risk-free lending. Th two characteristics of the CML are its slope $\frac{[E(Rm)- Rf]}{\sigma m}$ and its intercept at Rf.

Therefore, the equation for the capital market line may be expressed as follows.

$$E(Rp)=Rf+ [Rm- \frac{Rf}{\sigma m}] \sigma p$$

Where,

R_f = Risk Free Return

R_m = Expected market return

σ_m = Market Standard deviation

σ_p = Portfolio risk an efficient.

Security Market Line (SML)

The relationship between a portfolio's overall risk (σp) and its projected return E(Rp), which includes both the market portfolio and risk-free assets, is represented by the Capital Market Line (CML). But evaluating an asset's riskiness purely on the basis of its overall risk is insufficient. This is due to the fact that diversity can help to reduce some of the risk that is included in total risk. Consequently, beta, which takes into account risk after diversification effects are taken into account, is a better measure of an asset's riskiness to investors than βj. The relationship between an asset's necessary return and its level of risk is outlined by the Security Market Line (SML). This is an upward-sloping, linear line created in beta space and expected return. It illustrates the connection between the return on an asset and its systemic risk.

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

Where,

R_j = Expected return for an assets

R_f = Risk free rate

β_j = Assets Beta.

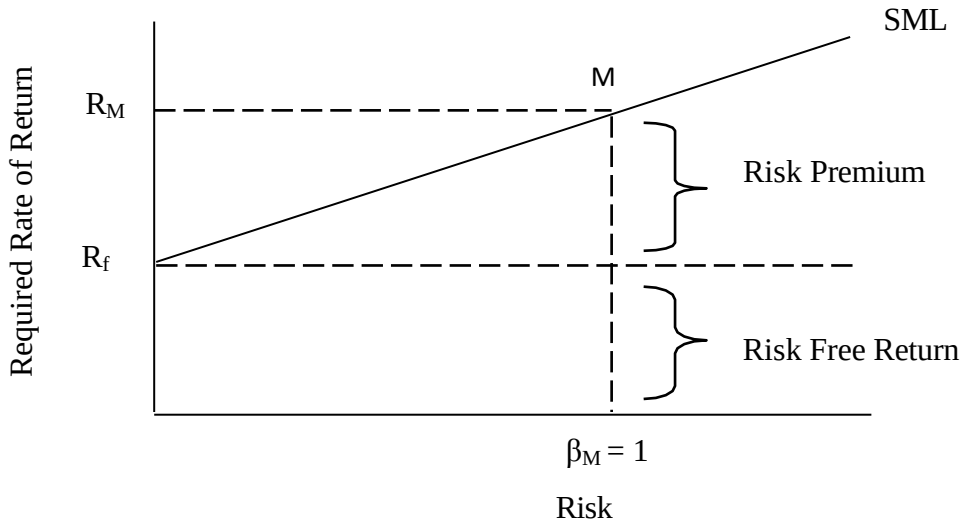

Figure 2. Security Market Line

Figure 2 represents the security market line (SML). If the securities beta is more than 1, SML advances linearly with beta (βj), starting from risk-free assets (Rf). It follows

that the returns on securities are implied to fluctuate more than the returns on the market. The return on a security is less susceptible to changes in the market if beta is smaller than 1. The CAPM theory shows how much of an individual security's rate of return is necessary to cover systematic risk.

2.2 Empirical Review

The preparation of the study has been made clearer by a review of prior research. Previous journals, reports, and theses that addressed the subject of the study provided an abundance of strategies, tactics, data, concepts, and resources that shed light on the planning phase. By focusing on similar or related subjects, earlier researchers have cleared the way for more recent and upcoming research and have illuminated linked avenues. The review of prior research includes;

i. Review of Journals/Articles
ii. Review of Previous Theses

2.2.1 Review of Journals/Articles

Hamonangan et al. (2024) evaluated the Indonesian stock market (IDX) in comparison to global benchmarks with a specific emphasis on risk and return. The research entailed a comparative evaluation of the risk-return attributes of the IDX in relation to six notable benchmark indexes, which are the BSE Sensex, the S&P 500 Index, the FTSE 100 Index, the Shanghai Stock Exchange Composite, and the Straits Times Index. The standard deviation, coefficient of variation, and Sharpe ratio, among other risk and return metrics, were used to evaluate the IDX's comparative performance. IDX had the lowest annual and monthly standard deviation when compared to all other benchmarks. IDX has underperformed the international benchmarks using both Sharpe’s measure.

Anika et. al (2024) examined the effect of stock portfolio diversification with the Markowitz method approach to portfolio risk and return on IDXBUMN20 Index Stocks. The study has selected 20 stocks of the IDXBUMN20 stock segment listed on the IDX for the period January 2018 to December 2023. Expected return, return,

standard deviation, covariance, variance, correlation coefficient, portfolio return, and portfolio expected return are the financial tools used in the study. Covariance of asset returns and Markowitz stock diversification method have been used to examine the portfolio risk and return on IDXBUMN20 index stocks. The results of the study showed that diversification can increase returns and reduce risks. The highest level of return is followed by a high level of risk and vice versa. The result of stock diversification is proven to increase stock returns and reduce the level of risk.

Asthana and Ahmed (2023) investigated and contrasted the link between risk and return using data from several Sectoral Indices included in the S&P BSE 500 Index listed in Bombay Stock Exchange. As investors make judgments about their investments, the relationship between risk and return is heavily considered. Since larger risks are usually correlated with higher profits, these two factors are fundamentally linked. Generally speaking, lower returns are associated with lower risks. The performance of different assets shows that investing in stock markets carries risk by definition. In order to achieve their intended returns, investors must thus decide how much risk they are ready to take. As such, before making any investment decisions, a thorough risk and return analysis is necessary for wise and considerate. The result revealed that the Indices with higher returns had low risk. In comparison, the Indices with lower returns had a higher risk, showing a weak negative linear relationship between the two variables. It was also obtained that there is no significant difference between the Market returns and the monthly returns of the Indices.

Aveliasari and Aveliasari (2023) analyzed Islamic and conventional mutual funds' performance of based on return and risk-adjusted metrics including Tenor, Jensen, Alpha, and appraisal ratio. Purposive sampling was used in the study, and analysis was done using the Mann-Whitney U Test. The results imply that in terms of risk and return, conventional stock mutual funds perform better than Islamic stock mutual funds. Compared to Islamic funds, conventional funds offer larger returns at lesser risk, including market risk. Nevertheless, there is not much of a return difference between the two kinds of funds, with Islamic funds lagging behind conventional ones. Curiously, Islamic stock mutual funds outperform conventional ones when measured

using measures like Jensen Alpha, Treynor ratio, and Sharpe ratio. Stated differently, Islamic funds outperform conventional funds when evaluated using risk-adjusted parameters.

Rezagholizadeh et. al (2022) investigated the variables affecting stock returns in Iran's biggest stock market, the Tehran Stock Exchange. The study focused specifically at the conditional relationship between risk and return in Iran by analyzing the relationship between stock returns in the Tehran Stock Exchange from March 2005 to March 2019 and a number of risk sources, including market, inflation, oil price, exchange rate, gold price, and kurtosis risks. The study accounted for the asymmetric impacts of risk factors based on whether the corresponding risk factor's returns were rising or falling by using a multi-factor model. The top 10 industries by market capitalization, the five industries that consume the most energy, the four major export industries, and the four major import industries were the four industry groupings that were the subject of the investigation. The findings revealed that the significant conditional relationships of risk with return for all the considered risk factors is found.

Venkatesh and Vikas (2021) analyzed the risk and return of private and public sector banks listed on Bank Nifty with respect to return, risk and beta for the period January 2017 to December 2017. The study was based on secondary data collected from the NSE and monthly prices of the bank stocks listed in Bank Nifty has been selected to measure the short-term variations in the banking stocks due to various other internal and external factors. The findings of the study revealed that if the investors are ready to take high risk for more returns, the investors are suggested to invest in stocks like Bank of India and Punjab National Bank in which risk and return are high. The investors who prefer low risk and return are suggested to invest in Axis Bank stock.

Suryadi et. al (2021) examined the risk and return level of conventional stocks on the IDX30 index and Islamic stocks listed in the Jakarta Islamic Index (JII) for the months of January through July of 2019. The risk and stock returns were evaluated using the Sharpe ratio approach. By contrasting the risk premium portfolio with the portfolio risk, which is expressed as the standard deviation of total risk, the performance of the stock portfolio was assessed. Using the Sharpe ratio approach, the

return value and risk of both conventional and Islamic stocks were calculated. The results show that the performance of conventional and Islamic stocks differs significantly. Conventional and Islamic equities performed poorly overall, with performance variations between the two categories of companies. However, the performance of Islamic stocks is worse than conventional stocks.

Makkar et. al (2020) examined the risk and return analysis of BSE (Bombay Stock Exchange) and National Stock Exchange (NSE). Risk and return, standard deviation, variance, covariance and beta were the financial tools used in the study. The investigation came to the conclusion that stock market volatility exists. Investors universally aim to achieve a high rate of return while minimizing risk. However, the potential rate of return varies based on the level of risk involved. Through market analysis, investors make decisions regarding investments that offer a balance of low risk and high return.

Rao et al. (2020) conducted an analysis of the risk and return profiles of selected banking stocks over the study period and compared the risk and return characteristics of public and private sector banks during this timeframe. Return, average return, standard deviation, variance, beta and coefficient of variation were the financial tools used in the study. The results of the analysis showed that every stock examined had a positive rate of return and that all of the stocks had positive values, some of which were in the double digits. The study noted that IndusInd Bank and Yes Bank had good performance among private sector banks throughout the course of the study period in relation to the coefficient of variation. If the investors are ready to take higher risk for more returns then the investors are suggested to invest in Yes bank. Whereas the maximum return and minimum risk are performed by Kotak Mahindra bank and HDFC banks during the study period. If the investors are looking for low risk are suggested to invest in HDFC bank and for moderate return are suggested to invest in Union bank.

Charithra and Vikas (2019) evaluated the risk and return characteristics of eight financial services companies listed on the NSE. The study also had a secondary objective of comparing the volatility of individual company stocks before and after

the event of demonetization. Mean, standard deviation, beta, correlation, covariance and T-test were the tools and techniques used for analysis by Throughout a predetermined time period, the study used the monthly closing prices of a subset of the following companies: Mahindra & Mahindra, Max Financial Services, HDFC, ICICI, Axis, Cholamandalam Investment and Finance, State Bank of India, Bajaj Finserv, and more. Out of all the firms that were chosen, Bajaj Finserv showed the best returns, according to the results. Additionally, all eight of the firms that were chosen for the research had the same level of volatility both before and after the demonetization ceremony.

Pandow and Butt (2018) conducted an analysis of the risk and return profiles of 40 selected mutual funds in India, using daily net asset values (NAVs) of the funds as the basis of evaluation. To evaluate the performance of the funds from 2007 to 2011, they used Treynor and Sharpe metrics. The study's conclusions showed that every fund produced gains, with the exception of the Sahara Growth Fund. In addition, eighty percent of the schemes produced mean returns that were greater than the mean return of the benchmark S&P CNX Nifty, and they did so with a standard deviation that was lower than the average market standard deviation for the research period. Furthermore, 31 funds had returns that were noticeably higher than the risk-free rate.

Poornima and Swathiga (2017) investigated the relationship of risk with return among selected stocks listed on the NSE. The study used data from January 2005 to December 2017 to examine the link between risk and return of the Sensex and banking equities listed on the BSE. The study found that the Healthcare and Pharmaceutical sector exhibited positive returns with low risk, as well as low returns with high risk and low returns with low risk. The results also showed that the returns of banking equities and the Sensex differed significantly. Regression research, however, revealed a statistically negligible correlation between the returns of banking equities and the Sensex. The results of the ANOVA test also revealed that all stocks had significantly different beta values, but there were no significant differences between all equities in terms of standard deviation, predicted return by CAPM, absolute return, or alpha value.

Yimka (2016) aimed to explore the relationship between risk management practices and the financial performance of ten selected commercial banks in Nigeria. The study concentrated on how these banks' systems generate value utilize credit risk management. After conducting a comprehensive analysis of pertinent theories, concepts, regulation, and requirements related to credit risk management, the study created a conceptual model that included four factors that precede credit risk: loss provision for loans and advances, total loans and advances, non-performing loans, and total assets. After then, these antecedents were looked at in terms of accounting return on assets (ROA) and return on equity (ROE). The panel data from 10 commercial banks that were listed between 2006 and 2015 on the Nigeria Stock Exchange (NSE) were used. The results showed that credit risk management has a big effect on commercial banks' bottom lines.

2.2.2 Review of Previous Theses

Acharya (2023) examined the risk and return analysis of commercial banks in Nepal. Various financial tools along with capital asset pricing model (CAPM) analysis are used to analyze the data. The study has selected Nepal SBI Bank Limited, Sidhhartha Bank Limited and Nabil Bank Limited for the purpose of the study. The results the risk per unit as indicated by coefficient of variation of the commercial banks was higher for the than the market index. Hence, the stocks of commercial banks were more volatile than the market index. The portion of unsystematic risk of the commercial banks are less than the portion of systematic risk indicating less risk can be eliminated or in the control of the banks.

Regmi (2022) conducted an analysis of Nepalese commercial bank stocks focusing on stock return and risk. The main objectives of the study were identifying the firm-specific variables influencing return and risk to investors, and determination of the relationship between different variables and their significance on return/risk. The calculation of returns was based on dividends received and realized capital gains or losses at the conclusion of each fiscal year, 2011/12–2021/22. In order to find aggressive or defensive stocks, the study estimated and separated the risk associated with each stock that is both diversifiable and undiversifiable. It also used the CAPM

model to identify overpriced and underpriced stocks. The results showed that risk/return was highly impacted by EPS, P/E ratio, ROA, NPL, market coverage with branches, and firm size. On the other hand, ROE, growth rate, business age, capital, net worth, and loan mobilization were found to have insignificant effects on risk/return.

Adhikari (2021) examined the dynamics of risk and return in Nepal's commercial banking industry. The study used a number of metrics to evaluate return, including the CAPM, yearly return, return on market, and expected rate of return; to measure risk, the researchers used the standard deviation, coefficient of variation, beta coefficient, and correlation coefficient. It examined a wide range of risk factors, all of which had an effect on banks' stock prices and profits, including interest rate swings, changes in market mood, default probability, liquidity restrictions, industry dynamics, and political unrest. Focusing on a sample of four Nepalese banks spanning ten fiscal years (2011/12 to 2020/21), the study found that the banks' levels of risk fluctuated; higher beta coefficients indicated higher risk, while lower coefficients indicated lesser risk exposure. Furthermore, the research uncovered a negative correlation between risk and return among the bank stocks.

Chaudhary (2021) scrutinized the risk and return landscape of commercial banks in Nepal, focusing on a sample of 18 out of 27 commercial banks from the fiscal years 2015/16 to 2019/20 AD. The study found a positive connection between the market price of the bank's stocks and the variables that measure earnings per share (EPS), price-to-earnings (PE), dividend yield ratio, and book value per share. This suggests that a rise in one of these factors will also likely result in an increase in the stock price. It's interesting to note that the study discovered a very small negative link between market price per share and bank size. Moreover, the study demonstrated that a substantial 95 percent of the variation in stock prices may be attributed to factors including book value per share, return on equity, dividend yield, bank size, price-to-earnings ratio, earnings per share, and return on assets. But it also pointed out that return on equity and book value per share showed negative and very weak influence on share price of market.

Thapa (2020) conducted an analysis focusing on the risk associated with common stock in commercial banks in Nepal, aiming to comprehend stock movements relative to the market. Based on conceptual research, the analysis looked at several articles published between 2010–11 and 2019–20. It listed the several instruments used in risk assessment, such as coefficient of variation, beta, and standard deviation. The study underscored the importance of beta in evaluating systemic risk, highlighting investors' ongoing pursuit of a balance between increased returns and reduced risk. In the end, this study helps investors make well-informed decisions and provides information on how various banking securities perform in the market in terms of return and risk.

Thapa (2019) investigated the factors influencing stock prices in Nepal, specifically within the commercial banking sector, spanning from the fiscal year 2009/10 to 2018/19 AD. Investigating the factors that cause price swings and volatility in the market, the study found strong positive correlations between market price and regulatory frameworks, market attitudes, earnings per share, dividend per share, and corporate profiles. On the other hand, it found negative correlations between market price per share and financial measures such as interest rates and the price-to-earnings ratio. The study also shown how sensitive the Nepalese stock market is to changes in interest rates and dividends.

Kandel (2018) analyzed the risk and return on common stock investment of Nepalese stock market and it is focused on common stock of two commercial banks listed in Nepal stock exchange Limited. Investors have varying perception towards risk and enterprising activities. They invest in those opportunities which have certain degree of risk associated with it. This research study found that there is a positive relationship between risk and return. Following a risk and return study of the sample bank and using historical data from their previous five fiscal years, from FY-2012/13 to FY-2016/17, it is determined that all commercial banks have very variable rates of return and are thus extremely dangerous. The standard deviation of NABIL appears to be significantly more volatile than that of NIBL stock, according to the results of the beta coefficient of each sample bank. It was also discovered that a significant amount of unsystematic risk exists in both of the selected banks.

Gautam (2017) investigated the impact of firm-specific variables on the stock returns and price movements of Nepalese commercial banks spanning from the fiscal year 2008/09 to the fiscal year 2015/16. Market capitalization, leverage ratio, dividend payout ratio (DPR), asset growth, price-to-earnings (P/E) ratio, dividend yield, and price-to-book value are just a few of the firm-specific variables that were examined in the study. It discovered that market capitalization, dividend yield, leverage ratio, and DPR all correlated favorably with stock performance. On the other hand, it found that returns were negatively correlated with market price-to-book value, asset growth, and profits per share (EPS).

Nepali (2015) explored the influence of income diversification on the risk-return trade-off within Nepalese commercial banks. The dependent variables in the study were risk-adjusted performance indicators such risk-adjusted return on equity and risk-adjusted return on assets. Regression models were used to evaluate the importance and effect of revenue diversification factors on the risk-adjusted performance of twenty Nepalese commercial banks during the period of 2010/11 to 2014/15. The results showed a positive association between risk-adjusted returns and non-interest income, foreign ownership, and bank size. This suggests that greater non-interest income levels, larger bank sizes, and foreign ownership were linked to better risk-adjusted returns. The research did find, however, a negative correlation between risk-adjusted return on equity and risk-adjusted return on assets and the equity to total assets ratio and the loan to total assets ratio.

Summary of Empirical Review

An empirical review is more commonly called a systematic literature review and it examines past empirical studies to answer a particular research question. After reviewing the various previous works conducted by the various researchers during different time frame, the empirical review can be summarized as:

Table 1

Review Table Matrix

S. N.	Authors (Date of Publication)	Article	Objectives	Methodology	Findings
1	Hamonangan, Sumirat and Sunitiyoso (2024)	Analysing Risk & Return Profiles: A Comparative Study of the Indonesian Stock Market against International Benchmarks	To evaluate the Indonesian stock market (IDX) when compared to international benchmarks, with a specific focus on risk and return.	Markowitz's modern portfolio theory, Sharpe measures	IDX had the lowest annual and monthly standard deviation when compared to all other benchmarks. IDX has underperformed the international benchmarks using both Sharpe's measure.
2	Refi, Febriyana, Maisyaroh, and Pandin (2024)	Analysis of the Effect of Stock Portfolio Diversification with the Markowitz Method Approach to Portfolio Risk and Return on Idxbumn20 Index Stocks	To examine the portfolio risk and return on IDXBUMN20 index stocks.	Covariance of asset returns, Markowitz stock diversification method	The results of the study show that diversification can increase returns and reduce risks. The highest level of return is followed by a high level of risk and vice versa.
3	Asthana and Ahmed (2023)	Risk and Return Analysis of Sectoral Indices in the context of the Bombay Stock Exchange	To analyze and compare the risk and return relationship in the context of the Bombay Stock Exchange	Simple regression model	There is weak negative correlation coefficient between the risk and return. As the value of beta increases, the value of return decreases

					slightly. There is no significant difference between the market returns and the monthly returns of the Indices.
4	Aveliasari and Aveliasari (2023)	Islamic and conventional mutual funds performance by return and risk adjusted performance	To analyze the performance of Islamic and conventional mutual funds by return and risk adjusted performance Tenor, Jensen, Alpha and appraisal ratio	Tenor, Jensen, Alpha and appraisal ratio	The performance of stock mutual funds based on risk and return of conventional stock mutual funds had better performance because the risk of both mutual funds and market risk was low.
5	Rezagholizadeh, Lawell and Yavari (2022)	An Analysis of the Conditional Relationship between Risk and Return in the Tehran Stock Exchange	To examine the factors that affect stock returns in the Tehran Stock Exchange, the largest stock exchange in Iran.	Multiple regression model	Market risk has a significant positive relationship with stock returns in up market and a significant negative relationship in down market.
6	Venkatesh, Vikas and Charithra (2021)	A Study on Risk and Return Analysis and Data Envelopment Analysis of	To analyze the risk and return of private and public sector banks listed on Bank	Simple correlation technique	There is no negative correlation found among the stocks listed in Bank Nifty

		Public and Private Sector Banks	Nifty		with the Bank Nifty Market Index.
7	Suryadi, Endri and Mukhamad (2021)	Risk and Return of Islamic and Conventional Indices on the Indonesia Stock Exchange	To compare the level of risk and return of Islamic stocks in the Jakarta Islamic Index (JII) with conventional stocks on the IDX30	Sharpe ratio method	Both Islamic and conventional stocks have experienced fluctuating performance, with both types showing poor performance, indicated by negative returns. However, the performance of Islamic stocks has been notably worse than that of conventional stocks.
8	Makkar, Mittal, Chugh and Dhaka (2020)	Risk and Return Analysis of Stocks listed in BSE and NSE: A Review Study	To examine the risk and return analysis of BSE (Bombay Stock Exchange) and National Stock Exchange (NSE)	Risk and return, standard deviation, variance, covariance & beta	The research findings indicate that there is volatility in the stock market. Prior to making any investment decisions, the investors thoroughly consider the state of the market. They choose assets that have low risk and high potential returns in an effort to achieve a

					balance between risk and return.
9	Rao, Podile and Navvula (2020)	Risk and return analysis of selected NIFTY banking stocks	To analyze risk and return of selected banking stocks during the study period. To compare risk and return of public vs. private sector banks during the study period.	Return, average return, standard deviation, variance and beta	All the stocks under examination have shown a positive rate of return, with each stock demonstrating a double-digit value. During the study period, IndusInd Bank and Yes Bank exhibited strong performance in terms of coefficient of variation among private sector banks.
10	Charithra and Vikas (2019)	Risk and Return analysis of NSE Companies	To assess the risk and return of the eight NSE listed financial services companies	Correlation and covariance	While other companies demonstrated moderate correlations with market returns and movements, Cholamandalam Company stood out with a notably low correlation with the market, indicating high volatility in its stock.
11	Pandow and Butt (2018)	Risk and Return Analysis of Mutual Fund Industry in	To analyze risk and return of select 40 mutual funds in India on	Sharpe and Treynor measures	All the funds except Sahara Growth Fund yielded positive returns. 31 funds were able

		India	basis of daily net assets values (NAVs) of the fund		to generate sufficiently better returns than risk free rate.
12	Poornima and Sudhamathi (2017)	Performance Analysis of Growth Oriented Equity Diversified Mutual Fund Schemes Using Sortino Ratio	To examine the relationship between the risk and return of selected stocks listed in NSE	Multiple Regression Model	The returns of banking stocks and the Sensex are significantly different. Regression study results showed that there was a statistically negligible correlation between the returns of banking equities and the Sensex.

2.3 Research Gap

Numerous studies with various objectives and results have already been carried out on the analysis of risk and return for Nepalese commercial banks and other countries. The research conducted in the Nepalese context focused primarily on risk and return analysis by determining the correlation between the returns of the commercial banks under investigation which is important for risk reduction through portfolio construction, as it allows for the identification of both non-diversified and diversified risk for individual bank, something that has not been conducted by other researchers. Despite numerous previous studies, there remains a gap in micro-level analysis, with many relying on traditional risk and return analysis techniques. However, the majority of research does not show a relationship between the market and individual commercial bank stocks. Focusing on the aforementioned attempts, the study's objective is to evaluate a joint venture commercial bank in Nepal's risk and return profile. over a ten-year period, as well as examine the relationship between market and individual commercial bank stocks using a quantitative correlation approach.

CHAPTER III
RESEARCH METHODOLOGY

The process used in research to gather data and information, analyze it, and draw conclusions using various facts and figures is known as research methodology. It also discusses tools for data analysis. It motivates the researcher and ensures that they stay on course from choosing the topic to researching to making recommendations.

3.1 Research Design

The research design serves as a blueprint for the study, offering a structured framework for completing the research project from beginning to end. The descriptive and correlational research design has been used in the study. The descriptive research design describes the risk and return of the individual stock and the market, and the correlational research design investigates relationships between the market and individual stock of joint venture banks.

3.2 Population and Sample

Population refers to the entire group that the researcher wishes to investigate. Since, the study is about the cash flow analysis of Nepalese commercial banks, the total number of commercial banks operating in Nepal is the population of the study. As of January 2024, the Nepal Rastra Bank (NRB) lists 20 'A' class commercial banks, constituting the population of the study (Banking and Financial Statistics, 2024). Out of 20 commercial banks, 6 commercial banks are joint ventures banks which are selected for the purpose of the study i.e. Nepal SBI Bank Ltd., Standard Chartered Bank Nepal Ltd., Nabil Bank Ltd., Himalayan Bank Ltd., Everest Bank Ltd., and Nepal Investment Mega Bank Ltd. using convenience sampling method.

3.3 Nature and Sources of Data

Multiple sources of data and information have been sought during the research process. The Security Board of Nepal (SEBON), the Nepal Stock Exchange (NEPSE), as well as the annual reports and publications of the selected banks are the sources of the essential data. Libraries, websites, and earlier studies pertaining to the topic are consulted for further relevant material.

3.4 Methods of Analysis

The collected data from above stated sources are classified, tabulated and interpreted to make study easy and meaningful. Such data are presented in the tabular form which makes reading and understanding the data feasible. The statistical and financial tools and techniques such as market price of stock (P), dividend per share (D), rate of return (Rj), expected return on common stock E(Rj), standard deviation (σ), coefficient of variance (C.V), covariance, correlation coefficient, beta coefficient (β), and others are used to analyze the data.

Market Price per Share (P)

Market price per share (MPS) or simply share price (P) is the trading price of the common stock. It is impacted by several elements, including the company's present and projected dividend payments as well as investors' perceptions of the stock's risk. Shares are frequently traded at closing market prices (MPS) on the Nepal Stock Exchange (NEPSE). As a result, the researcher used the closing MPS to represent the common stock market price.

Dividend per Share (D)

The earning distributed to the shareholders out of earnings per share (EPS) is known as dividend per share (DPS) or simply dividend (D). It also affects the market price of stock. If EPS is greater, DPS will be greater. It is calculated by dividing total dividend to equity shareholders by the total number of the equity shares.

$$D = \frac{\text{Total Dividend to Common Shareholders}}{\text{Number of Common Stock Outstanding}}$$

Rate of Return (Rj)

Rate of return is a usual practice to calculate total return in terms of parentage rather than expressing it an absolute term. The total rupee return expressed as a percentage on beginning value of investment is known as rate of return. It is calculated using following equation.

$$Rj = \frac{P_1 - P_0 + D_1}{P_0}$$

Where,

P_0 = Beginning price of share

P_1 = Ending price of share

D_1 = Dividend at the end of the period

Expected Rate of Return

The expected rate of return E(Rj) is the expected outcome increment in the value of initial investment over the holding period. The expected rate of return based on the historical data, so the average rate of return and expected rate of return is the same. The expected rate of return can be computed using following formula:

$$\text{Expected rate of return on Stock, } E(Rj) = \frac{\sum Rj}{n}$$

Where,

E(Rj) = Average rate of return or Expected rate of return on stock j

N = Number of stocks

Standard Deviation

The standard deviation is the most criteria for a reliable measure of dispersion, embodying an absolute measure where flaws found in other dispersion measures are mitigated. Defined as the positive square root of the mean squared variation from the arithmetic mean, it quantifies the variability inherent in data. Higher standard deviations indicate increased variability, while lower ones suggest less variability. Thus, assessing data quality involves examining its variability. The computation of standard deviation is as follows:

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\sum [Rj - E(Rj)]^2}{n-1}}$$

Where,
n = Total number of Observation

Coefficient of Variation (CV)

The standard deviation quantifies dispersion in absolute terms, while the coefficient of variation (CV) provides a relative measure of dispersion based on the standard deviation. Lower CV values indicate greater homogeneity and consistency, whereas higher values suggest greater variability. Standard deviation alone is inadequate for comparing two datasets, but CV allows for comparisons between two variables independently based on their variability.

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

Correlation

Concept of diversification is basically attributed to the contribution of Harry Markowitz, and is popularly known as Markowitz Diversification. Correlation is the statistical measure of relationship between two sets of data. It measures the degree to which two sets of data move together. The correlation between two sets of data may be positive or negative or zero. A positive correlation implies that two series move together into the

same direction. For example, when there is a heavy rain fall in any year, agricultural output increases. Thus, agricultural output is positively correlated with the amount of rain fall. Similarly, negative correlation indicates that two series move into opposite direction of each other. For example, when bank interest rate declines people tend to inject their investments into stock market. Thus, supply of funds in stock market tends to increase with decline in bank interest rate. Finally, zero correlation implies that there is no relation between two sets of data. For example, we expect no relationship between numbers of students appeared in examination and agriculture yield in a given year. The numerical measure of correlation is given by correlation coefficient. It is worked out as follows:

$$r_{AB} = \frac{\sigma_{AB}}{\sigma_A \ \sigma_B}$$

where

r_{AB} = Correlation coefficient between asset A and B

σ_{AB} = Covariance of returns between asset A and B

σ_A = Standard deviation of returns on asset A

σ_B = Standard deviation of returns on asset B

The correlation coefficient, which has a range of -1 to +1, can be interpreted as follows:

i. A complete positive association exists when r = +1.
ii. There is a significant positive association when r is near to 1.
iii. There is a modest degree of positive association when r is positive and near to 0.
iv. There is no link when r = 0.
v. There is a low degree of negative association when r is negative and near to 0.
vi. There is a strong negative association when r is near -1.

In this study, simple coefficient of correlation is used to examine the relationship between market and individual stock of joint venture banks.

Simple correlation coefficient

i. Between return from stock of Nepal SBI Bank Ltd. and NEPSE index.
ii. Between return from stock of Standard Chartered Bank Nepal Ltd. and NEPSE index.
iii. Between return from stock of Nabil Bank Ltd. and NEPSE index.
iv. Between return from stock of Himalayan Bank Ltd. and NEPSE index.
v. Between return from stock of Everest Bank Ltd. and NEPSE index.
vi. Between return from stock of Nepal Investment Mega Bank Ltd. and NEPSE index.

Covariance

The covariance (σ_{AB}) is also a measure of relationship between two variables. The difference between covariance and correlation is that covariance shows the direction of relationship whereas correlation shows both direction as well as magnitude of relationship. Correlation is standardized measure of statistical association between two variables, and hence correlation coefficient is used. The equation given below is used to work out covariance from a historical data set on asset returns.

$$\text{Covariance} = \frac{\Sigma [R_A - E(R_A)] [R_B - E(R_B)}{n - 1}$$

Components of Risk

The CAPM asserts that market portfolio is a well-diversified portfolio and only the risk associated with the market portfolio is the non-diversifiable risk, or systematic risk. Non-diversifiable risk is related to broad market; they affect all investments and are uncontrollable. Such risk arises due to the change in general state of economy, monetary and fiscal policy, inflation, political events, war and so on. Forming a portfolio cannot diversify this risk. Therefore, if an asset is included in a well diversified portfolio, the asset must be priced to compensate only for undiversifiable risk. Another component of risk is diversifiable risk, or unsystematic risk. It is unique for each individual investment. In other words, diversifiable risk is firm specific and thus related only to an individual firm. It arises out of strikes, production cost and other activities unique to an individual firm. These events occur independently to any firm and therefore can be eliminated by forming a portfolio.

The total risk is measured by standard deviation. Total risk is the sum of non-diversifiable and diversifiable risk and can be written as follows:

$$\text{Total risk} = \text{Non-diversifiable risk} + \text{Diversifiable risk}$$

$$\text{Symbolically,} \quad \sigma_j = \frac{\sigma_{jM}}{\sigma_M} + \sigma_j (1 - r_{jM})$$

where,

σ_j = Standard deviation of asset j, a measure of total risk

σ_{jM} = Covariance of returns between asset j and the market

σ_M = Standard deviation of the market return

r_{jM} = Correlation between the returns from asset j and the market.

In an efficient market, CAPM postulates that only a component of total risk, which is related to the market, is relevant for pricing of capital assets. It explains that only non-diversifiable risk remains in a well-diversified portfolio and it is as inescapable. Thus, the CAPM establishes a link between non-diversifiable risk and return for all assets

Beta Coefficient

Capital asset pricing model estimates asset's return using beta coefficient. A beta coefficient is an index of non-diversifiable or systematic risk. It shows the extent to which return on an asset response to the market forces. In other words, it shows the degree of movement in an asset's return in response to the overall market return. If an asset's price is more responsive to the change in the market, its beta coefficient will be higher. Beta coefficient can be estimated by regressing an asset's return on the market return. The market return is the average return on all securities in the market. The following equation can be used to calculate beta coefficient of an asset.

$$\beta_j = \frac{\sigma_{jM}}{\sigma_M^2}$$

where

β_j = beta coefficient of asset j

σ_{jM} = Covariance of returns between asset j and the market

σ_M^2 = Variance of the market return

The beta coefficient for the market portfolio is equal to 1.0. All other betas for individual assets are compared with this value. The beta for individual assets may take on values that are either positive or negative. The beta coefficient of any asset ranging above zero implies that the asset's return move in the same direction to the market. Similarly, beta coefficient of any asset below zero implies that asset's return move in opposite direction

to the market. If an asset's return fluctuates exactly by the same degree to market as a whole, the beta for the asset is one. Such asset is said to have duplicated the risk factor of the market.

3.4 Research Framework and Definition of Variables

A theoretical framework is an analytical tool with several variations and contexts. It is used to make conceptual distinctions and organize ideas. After the review of previous studies conducted by various researchers over various period, the conceptual framework that has been constructed, which determines the link between the aforementioned models and variables, market index (NEPSE) and individual stock of commercial banks (NSBL, SCBNL, NABIL, HBL, EBL and NIMBL). Thus, the identified theoretical framework can be presented in the correlation model as:

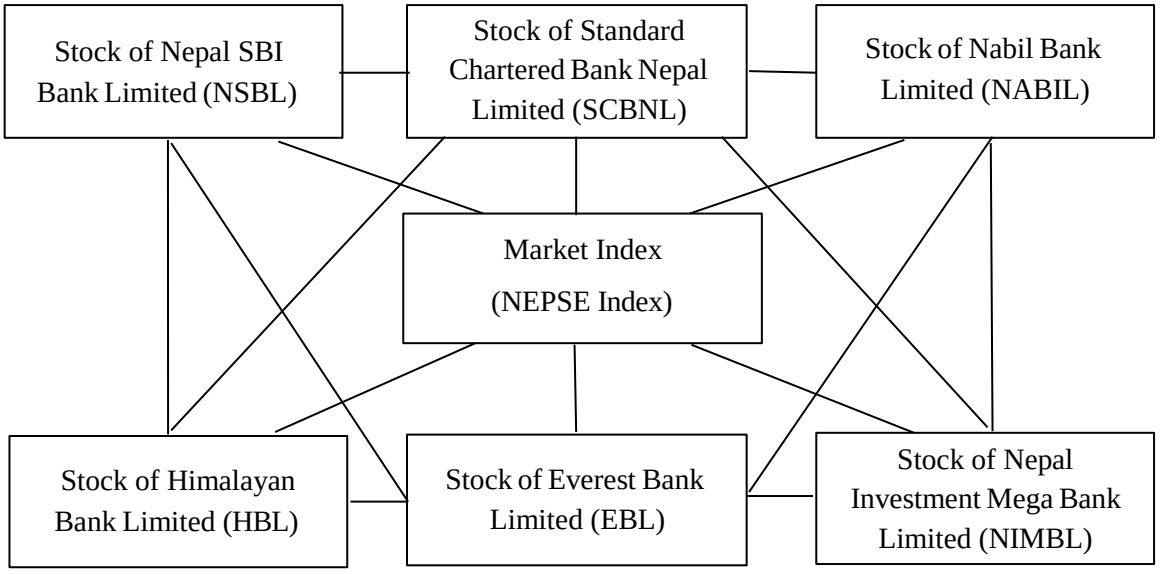

Figure 3. Correlation Research Framework. Source: Aveliasari and Aveliasari (2023); Venkatesh et al. (2022); Charithra and Vikas (2019)

Market Index

Market index is an index that measures the performance of a stock market, or a subset of a stock market. It tracks the performance of a specific basket of stocks that represent a particular market or economic sector. Nepal Stock Exchange (NEPSE) index represents

the market index in Nepal. The NEPSE index is the capitalization weighted index of all stocks on the Nepal Stock Exchange. Reflecting the large market capitalization of many Nepalese banks, the index is said to predominantly reflect of banking sector.

Stock of Nepal SBI Bank Limited

Share price of market or simply stock of Nepal SBI Bank Ltd is the current price of the bank where there is a trade of stock. The company's present and anticipated future dividends, as well as investors' perceived level of stock risk, determine the market price of common stock. Market share prices are traded on the Nepal Stock Exchange (NEPSE) after MPS closes. Since the stock price is the NSBL's closing MPS, the researcher has applied it.

Stock of Standard Chartered Bank Nepal Limited

The current price of the bank at which the stock or market price per share of Standard Chartered Bank Nepal Ltd is traded is stock of SCBNL. Market price of common stock is the function of the current and expected future dividend of the company and the perceived risk of the stock on the part of investors. The researcher has applied the stock price as closing MPS of SCBNL because with the closing of MPS, NEPSE has started trading market share price of SCBNL.

Stock of Nabil Bank Limited

Market price or stock of Nabil Bank Ltd is the amount that would cost to buy one share of the bank. The present and expected future dividends of the firm, as well as the perceived risk that investors have attached to the shares, all influence the market price of common stock. Shares are frequently traded at closing market prices (MPS) on the Nepal Stock Exchange (NEPSE). Therefore, the researcher has applied the stock price as closing MPS of NABIL. The price of the share is not fixed, but fluctuates according to the market conditions.

Stock of Himalayan Bank Limited

The price at which the stock of Himalayan Bank Limited is being traded at the bank is known as the market price of Himalayan Bank Limited. The present and anticipated future dividends of the firm, as well as investors' perceived risk of the shares, determine the market price of common stock. The market share price on closing MPS has been traded on the Nepal Stock Exchange (NEPSE). As a result, the researcher used the stock price as the HBL closing MPS.

Stock of Everest Bank Limited

The current price of the bank at which the stock or market price per share of Everest Bank Ltd is traded is stock of EBL. Market price of common stock is the function of the current and expected future dividend of the company and the perceived risk of the stock on the part of investors. The researcher has applied the stock price as closing MPS of EBL because NEPSE trades share of EBL at its closing price.

Stock of Nepal Investment Mega Bank Limited

Market price or stock of Nepal Investment Mega Bank Ltd is the amount that would cost to buy one share of the bank. The company's present and anticipated future dividends, as well as investors' perceived level of stock risk, determine the market price of common stock. Market share price on closing MPS has been traded by NEPSE. Since the stock price is the closing MPS, the researcher has used the closing share price. The price of the share is not fixed, but fluctuates according to the market conditions.

CHAPTER IV
RESULTS AND DISCUSSION

Data analysis utilizing various statistical and financial methods is covered in this chapter. The primary emphasis of the chapter is on data presentation and interpretation. The data are presented in appropriate format, then analyzed and discussed. Secondary data has been used in the study. To make the analysis clear and easy to comprehend, collected data related risk and return analysis of Nepalese joint venture banks is displayed in a variety of tables.

4.1 Results

The study deals with the risk and return analysis of Nepalese joint venture banks over 10 fiscal years. The proportion of systematic and unsystematic risk related to total risks of Nepalese joint venture banks have also been examined. market price of stock, dividend per share, rate of return, expected return on common stock, standard deviation, coefficient of variance, covariance, correlation coefficient, beta coefficient, etc. statistical tools have also been used to analyze the risk and return more effectively.

4.1.1 Market Price per Share

Market price per share (MPS) is the current price at which the stock is traded. The price of a share is not fixed, but fluctuates according to market conditions. The market price of common stock is influenced by factors such as the current and anticipated future dividends of the company, as well as the perceived risk of the stock among investors. Trading on the Nepal Stock Exchange (NEPSE) typically occurs based on the closing market price (MPS) of shares. Therefore, the researcher has applied the MPS as closing MPS.

Table 2

Market Price per Share of Joint Venture Banks (in Rs)

FY	NSBL	SCBNL	NABIL	HBL	EBL	NIMBL
2013/14	1,280.0	2,799.0	2,535.0	941.0	2,631.0	960.0
2014/15	887.0	1,943.0	1,910.0	813.0	2,120.0	704.0
2015/16	1,875.0	3,600.0	2,344.0	1,500.0	3,385.0	1,040.0
2016/17	925.0	2,295.0	1,523.0	886.0	1,353.0	770.0
2017/18	499.0	755.0	921.0	551.0	663.0	621.0
2018/19	469.0	682.0	800.0	552.0	666.0	519.0
2019/20	435.0	645.0	765.0	540.0	675.0	431.0
2020/21	409.0	590.0	1,359.0	484.0	738.0	460.0
2021/22	282.3	396.0	824.0	299.2	439.0	265.0
2022/23	341.0	530.0	599.2	212.8	563.0	174.0
Mean	740.23	1,423.5	1,358.02	677.90	1,323.30	594.40
SD	509.73	1,145.53	699.55	373.41	1,032.11	281.16
CV	0.69	0.80	0.52	0.55	0.78	0.47

Source. Annual Reports of Concerned Banks, 2013/14-2022/23.

Table 2 represents market price per share (MPS) of Nepalese joint venture banks over 10 different fiscal years. Among 60 observations, SCBNL has the highest MPS of Rs 3,600 in FY 2015/16 and NIMBL has the lowest MPS of Rs 174 in FY 2022/23. The mean MPS of NSBL, SCBNL, NABIL, HBL, EBL and NIMBL are Rs 740.23, Rs 1,423.50, Rs 1,358.02, Rs 677.90, Rs 1,323.30 and Rs 594.40 respectively, and the standard deviation on MPS of NSBL, SCBNL, NABIL, HBL, EBL and NIMBL are Rs 509.73, Rs 1,145.53, Rs 699.55, Rs 373.41, Rs 1,032.11 and Rs 281.16 respectively.

4.1.2 Dividend per Share

Dividend per share (D_t) is the amount of dividend which is distributed to the shareholders of the single unit of share. Generally, the higher dividend per share creates positive attitude among the shareholders towards the bank, which accordingly helps to increase the market value of shares. It is the part of the profit the company earns, that is distributed to investors. If an investor sees that the dividend payout ratio of a company is lower that means the bank is reinvesting more to increase the value (Mukhopadhyay, 2018).

Table 3

Dividend per Share of Joint Venture Banks (in Rs)

FY	NSBL	SCBNL	NABIL	HBL	EBL	NIMBL
2013/14	22.07	51.50	65.00	21.05	62.63	40.00
2014/15	28.42	44.21	36.84	42.11	36.58	34.70
2015/16	29.53	35.09	45.00	31.58	73.68	41.00
2016/17	16.34	105.26	48.00	26.32	34.74	40.00
2017/18	15.59	17.50	34.00	15.79	20.00	40.00
2018/19	16.84	22.50	34.00	22.00	25.00	19.00
2019/20	9.47	11.84	35.26	20.00	10.53	18.50
2020/21	5.31	13.06	38.00	26.00	10.32	16.00
2021/22	10.53	16.51	30.00	19.11	20.68	11.00
2022/23	10.55	19.00	11.00	-	20.53	-
Mean	16.47	33.65	37.71	22.40	31.47	26.02
SD	8.09	28.58	13.79	10.88	21.30	14.89
CV	0.49	0.85	0.37	0.49	0.68	0.57

Source. Annual Reports of Concerned Banks, 2013/14-2022/23.

Table 3 represents dividend per share (D_t) of joint venture banks in Nepal over 10 different fiscal years. Among the 60 observations, HBL and NIMBL have the lowest with no dividend per share in FY 2022/23 and SCBNL has the highest dividend per share of Rs 105.26 in FY 2016/17. The mean dividend per share of NSBL, SCBNL, NABIL, HBL, EBL and NIMBL are Rs 16.47, Rs 33.65, Rs 37.71, Rs 22.40, Rs 31.47 and Rs 26.07 respectively, and the standard deviation on dividend per share of NSBL, SCBNL, NABIL, HBL, EBL and NIMBL are Rs 8.06, Rs 28.58, Rs 13.79, Rs 10.88, Rs 21.30 and Rs 14.89 respectively.

4.1.3 Risk and Return Analysis

The expected return from any investment proposal will be linked in fundamental relationship to the degree of risk in the proposal. In order to be acceptable a higher risk proposal must offer a higher forecast return than lower risk proposal. Generally, there is a positive relationship between rate or return and risk. It means an investor can usually attain more return by selecting dominant assets that involve more risk. While it is not always true that a riskier asset will pay a higher average rate of return,it is usually. The reason is that investors are risk averse (Hampton, 1996).

Rate of return is a usual practice to calculate total return in terms of parentage rather than expressing it in absolute term. The total rupee return expressed as a percentage on beginning value of investment is termed rate of return. When it is positive, it is considered a gain and when the rate of return is negative, it reflects aloss on the investment. Investor can use it to compare the investment's performance with past periods or returns from other investments. Companies can use rates of returnto measure the performance of various business segments or assets which can assist them in making future decisions about how to best invest their capital. A rate of returncalculates the percentage change in value for any investment, regardless of whether it continues to be held, or sold (Best, 2023).

Table 4

Risk and Return Analysis of Nepal SBI Bank Limited

FY	MPS (P)	D_t	$R_j = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$	$[R_j - E(R_j)]^2$
2012/13	850.00	20.00	-	-
2013/14	1,280.00	22.07	53.18	2,530.99
2014/15	887.00	28.42	-28.48	983.36
2015/16	1,875.00	29.53	114.72	12,508.22
2016/17	925.00	16.34	-49.80	2,774.23
2017/18	499.00	15.59	-44.37	2,232.03
2018/19	469.00	16.84	-2.64	30.39
2019/20	435.00	9.47	-5.23	65.71
2020/21	409.00	5.31	-4.76	58.25
2021/22	282.30	10.53	-28.40	978.39
2022/23	341.00	10.55	24.53	468.94
Total			28.76	22,630.50

Source. Annual Reports of Nepal SBI Bank Limited, 2013/14-2022/23.

where,

Expected rate of return on Stock, $E(Rj) = \frac{\sum Rj}{n} = \frac{28.76}{10} = 2.876$

Standard Deviation $(\sigma_j) = \sqrt{\frac{\sum [Rj - E(Rj)]^2}{n - 1}} = \sqrt{\frac{22,630.50}{10 - 1}} = 50.145$

Coefficient of Variation (C.V.) $= \frac{\sigma_j}{E(Rj)} = \frac{50.145}{2.876} = 17.44$

Table 4 represents risk and return analysis of Nepal SBI Bank Limited (NSBL) over 10 different fiscal years. The rate of return of the joint venture bank is both positive and negative. NSBL has negative rate of return in all fiscal years except in three fiscal years i.e. 2013/14, 2015/16 and 2022/23. The rate of return on stock of the bank is mostly negative which implies the investors are facing loss on the investment. The highest and the lowest rate of return on stock of NSBL are 114.72% and -49.80% respectively. The

rate of return of the bank is in fluctuating trend. The NSBL's return of is expected to be 2.876% with standard deviation 50.145%. With a coefficient of variation of 17.44, it means that a rupee return requires the sacrifice of Rs 17.44 in risk.

Table 5

Risk and Return Analysis of Standard Chartered Bank Nepal Limited

FY	MPS (P)	D_t	$R_j = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$	$[R_j - E(R_j)]^2$
2012/13	1,820.00	50.00	-	-
2013/14	2,799.00	51.50	56.62	3,130.37
2014/15	1,943.00	44.21	-29.00	880.55
2015/16	3,600.00	35.09	87.09	7,467.60
2016/17	2,295.00	105.26	-33.33	1,155.81
2017/18	755.00	17.50	-66.34	4,490.48
2018/19	682.00	22.50	-6.69	54.17
2019/20	645.00	11.84	-3.69	19.01
2020/21	590.00	13.06	-6.50	51.46
2021/22	396.00	16.51	-30.08	945.82
2022/23	530.00	19.00	38.64	1,441.36
Total			6.71	19,636.63

Source. Annual Reports of Standard Chartered Bank Nepal Limited, 2013/14-2022/23.

where,

Expected rate of return on Stock, $E(Rj) = \frac{\sum Rj}{n} = \frac{6.71}{10} = 0.671$

Standard Deviation $(\sigma_j) = \sqrt{\frac{\sum [Rj - E(Rj)]^2}{n - 1}} = \sqrt{\frac{19,636.63}{10 - 1}} = 46.71$

Coefficient of Variation (C.V.) $= \frac{\sigma_j}{E(Rj)} = \frac{46.71}{0.671} = 69.60$

Table 5 represents risk and return analysis of Standard Chartered Bank Nepal Limited (SCBNL) over 10 different fiscal years. The rate of return of the joint venture bank is both positive and negative. SCBNL has negative rate of return in all fiscal years except

in three fiscal years i.e. 2013/14, 2015/16 and 2022/23. The rate of return on stock of the bank is mostly negative which implies the investors are facing loss on the investment. The highest and the lowest rate of return on stock of SCBNL are 87.09% and -66.34% respectively. The rate of return of the bank is in fluctuating trend. SCBNL's anticipated return is 0.671%, and its standard deviation indicates the overall risk, which is 46.71%. The coefficient of variation is 69.60, meaning that risk must be given up in order to receive a rupee return of Rs 69.60.

Table 6

Risk and Return Analysis of Nabil Bank Limited

FY	MPS (P)	D_t	$R_j = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$	$[R_j - E(R_j)]^2$
2012/13	1,815.00	65.00	-	
2013/14	2,535.00	65.00	43.25	2,003.08
2014/15	1,910.00	36.84	-23.20	470.74
2015/16	2,344.00	45.00	25.08	706.69
2016/17	1,523.00	48.00	-32.98	990.53
2017/18	921.00	34.00	-37.29	1,280.91
2018/19	800.00	34.00	-9.45	63.06
2019/20	765.00	35.26	0.03	2.36
2020/21	1,359.00	38.00	82.61	7,076.08
2021/22	824.00	30.00	-37.16	1,271.25
2022/23	599.20	11.00	-25.95	597.39
Total			-15.05	14,462.09

Source. Annual Reports of Nabil Bank Limited, 2013/14-2022/23.

where,

Expected rate of return on Stock, $E(Rj) = \frac{\sum Rj}{n} = \frac{-15.05}{10} = -1.505$

Standard Deviation $(\sigma_j) = \sqrt{\frac{\sum [Rj - E(Rj)]^2}{n - 1}} = \sqrt{\frac{14,462.09}{10 - 1}} = 40.09$

Coefficient of Variation (C.V.) = $\frac{\sigma_j}{E(Rj)} = \frac{40.09}{-1.505} = -26.63$

Table 6 represents risk and return analysis of Nabil Bank Limited (NABIL) over 10 different fiscal years. The rate of return of the joint venture bank is both positive and negative. NABIL has negative rate of return in all fiscal years except in four fiscal years i.e. 2013/14, 2015/16, 2019/20 and 2020/21. The rate of return on stock of the bank is mostly negative which implies the investors are facing loss on the investment. The highest and the lowest rate of return on stock of NABIL are 83.61% and -37.29% respectively. The rate of return of the bank is in fluctuating trend. The expected return of NABIL is -1.505% with the total risk measured by standard deviation 40.09%.

Table 7

Risk and Return Analysis of Himalayan Bank Limited

FY	MPS (P)	D_t	$R_j = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$	$[R_j - E(R_j)]^2$
2012/13	700.00	15.00	-	
2013/14	941.00	21.05	37.44	1,194.39
2014/15	813.00	42.11	-9.13	144.08
2015/16	1,500.00	31.58	88.39	7,312.04
2016/17	886.00	26.32	-39.18	1,768.57
2017/18	551.00	15.79	-36.03	1,513.52
2018/19	552.00	22.00	4.17	1.69
2019/20	540.00	20.00	1.45	2.03
2020/21	484.00	26.00	-5.56	71.09
2021/22	299.20	19.11	-34.23	1,377.09
2022/23	212.80	-	-28.88	1,008.24
Total			-21.55	14,392.74

Source. Annual Reports of Himalayan Bank Limited, 2013/14-2022/23.

where,

Expected rate of return on Stock, E (Rj) = $\frac{\sum Rj}{n} = \frac{-21.55}{10} = -2.155$

$$\text{Standard Deviation } (\sigma_j) = \sqrt{\frac{\sum [Rj - E(Rj)]^2}{n - 1}} = \sqrt{\frac{14{,}392.74}{10 - 1}} = 39.99$$

$$\text{Coefficient of Variation (C.V.)} = \frac{\sigma_j}{E(Rj)} = \frac{39.99}{-2.155} = -18.56$$

Table 7 represents risk and return analysis of Himalayan Bank Limited (HBL) over 10 different fiscal years. The rate of return of the joint venture bank is both positive and negative. HBL has negative rate of return in all fiscal years except in four fiscal years i.e. 2013/14, 2015/16, 2018/19 and 2019/20. The rate of return on stock of the bank is mostly negative which implies the investors are facing loss on the investment. The highest and the lowest rate of return on stock of HBL are 88.39% and -39.18% respectively. The rate of return of the bank is in fluctuating trend.

Table 8

Risk and Return Analysis of Everest Bank Limited

FY	MPS (P)	D_t	$R_j = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$	$[R_j - E(R_j)]^2$
2012/13	1,591.00	60.00	-	-
2013/14	2,631.00	62.63	69.30	4,710.50
2014/15	2,120.00	36.58	-18.03	349.81
2015/16	3,385.00	73.68	63.15	3,903.02
2016/17	1,353.00	34.74	-59.00	3,561.04
2017/18	663.00	20.00	-49.52	2,519.11
2018/19	666.00	25.00	4.22	12.62
2019/20	675.00	10.53	2.93	5.11
2020/21	738.00	10.32	10.86	103.86
2021/22	439.00	20.68	-37.71	1,473.32
2022/23	563.00	20.53	32.92	1,040.15
Total			19.12	17,678.53

Source. Annual Reports of Everest Bank Limited, 2013/14-2022/23.

where,

Expected rate of return on Stock, $E(Rj) = \frac{\sum Rj}{n} = \frac{19.12}{10} = 1.912$

Standard Deviation $(\sigma_j) = \sqrt{\frac{\sum [Rj - E(Rj)]^2}{n - 1}} = \sqrt{\frac{17,678.53}{10 - 1}} = 44.32$

Coefficient of Variation (C.V.) $= \frac{\sigma_j}{E(Rj)} = \frac{44.32}{1.912} = 23.18$

Table 8 represents risk and return analysis of Everest Bank Limited (EBL) over 10 different fiscal years. The rate of return of the joint venture bank is both positive and negative. EBL has positive rate of return in all fiscal years except in four fiscal years i.e. 2014/15, 2016/17, 2017/18 and 2021/22.

The rate of return on stock of the bank is mostly positive which implies the investors are gaining profit on the investment. The highest and the lowest rate of return on stock of EBL are 69.30% and -59.00% respectively. The rate of return of the bank is in fluctuating trend. The standard deviation of EBL indicates a total risk of 44.32%, while the expected return is 1.912%. With a coefficient of variation of 23.18, it means that a rupee returns of Rs. 23.18 requires the sacrifice of risk.

Table 9

Risk and Return Analysis of Nepal Investment Mega Bank Limited

FY	MPS (P)	D_t	$R_j = \frac{(P_t - P_{t-1}) + D_t}{P_{t-1}}$	$[R_j - E(R_j)]^2$
2012/13	784.00	35.00	-	-
2013/14	960.00	40.00	27.55	844.26
2014/15	704.00	34.70	-23.05	464.27
2015/16	1,040.00	41.00	53.55	3,031.19
2016/17	770.00	40.00	-22.12	424.79
2017/18	621.00	40.00	-14.16	160.04
2018/19	519.00	19.00	-13.37	140.67
2019/20	431.00	18.50	-13.39	141.28
2020/21	460.00	16.00	10.44	142.70
2021/22	265.00	11.00	-40.00	1,481.86
2022/23	174.00	-	-34.34	1,078.11
Total			-68.88	7,909.17

Source. Annual Reports of Nepal Investment Mega Bank Limited, 2013/14-2022/23.

where,

Expected rate of return on Stock, $E(Rj) = \frac{\sum Rj}{n} = \frac{-68.88}{10} = -6.89$

Standard Deviation $(\sigma_j) = \sqrt{\frac{\sum [Rj - E(Rj)]^2}{n - 1}} = \sqrt{\frac{7,909.17}{10 - 1}} = 29.64$

Coefficient of Variation (C.V.) $= \frac{\sigma_j}{E(Rj)} = \frac{29.64}{-6.89} = -4.30$

Table 9 represents risk and return analysis of Nepal Investment Mega Bank Limited (NIMBL) over 10 different fiscal years. The rate of return of the joint venture bank is both positive and negative. NIMBL has negative rate of return in all fiscal years except in four fiscal years i.e. 2013/14, 2015/16 and 2020/21. The rate of return on stock of the bank is mostly negative which implies the investors are facing loss on the

investment. The highest and the lowest rate of return on stock of NIMBL are 53.55% and -40.00% respectively. The rate of return of the bank is in fluctuating trend. In terms of overall risk, the standard deviation is 29.64%, while the predicted return for NIMBL is -6.89%. A rupee return requires sacrificing Rs 4.30 in risk, as indicated by the coefficient of variation of -4.30.

Table 10

Risk and Return Analysis of NEPSE Index

FY	Index	$R_M = \frac{(P_t - P_{t-1})}{P_{t-1}}$	$[R_M - E(R_M)]^2$
2012/13	518.33	-	0.00
2013/14	1,036.11	100.06	5,816.23
2014/15	961.23	-7.30	967.36
2015/16	1,718.15	78.74	3,019.22
2016/17	1,582.67	-7.89	1,003.80
2017/18	1,212.36	-23.40	2,227.40
2018/19	1,259.02	3.85	397.96
2019/20	1,362.35	8.21	243.06
2020/21	2,883.41	111.65	7,718.00
2021/22	2,009.47	-30.31	2,927.55
2022/23	2,097.09	4.36	377.80
Total		237.98	24,698.37

Source. Annual Report of Securities Board of Nepal, 2022/23.

where,

Expected rate of return on market, $E(R_M) = \frac{\sum R_M}{n} = \frac{237.98}{10} = 23.80$

Standard Deviation $(\sigma_M) = \sqrt{\frac{\sum [R_M - E(R_M)]^2}{n - 1}} = \sqrt{\frac{24,698.37}{10 - 1}} = 52.39$

Coefficient of Variation (C.V.) $= \frac{\sigma_M}{E(R_M)} = \frac{52.39}{23.80} = 2.20$

Table 10 represents rate of return on market (NEPSE) over 10 different fiscal years. The market return is both positive and negative. NEPSE has positive market return in all fiscal years except on four fiscal years. The negative market return has been observed on fiscal year 2014/15, 2016/17, 2017/18 and 2020/21. The highest and the lowest market return are 100.06% and -30.31% respectively. The rate of return of the bank is in fluctuating trend. The standard deviation of the entire risk is 52.39%, while the predicted return on the market is 23.80%. The coefficient of variance is 2.20, meaning that a risk of Rs 2.20 must be given up in order to receive a rupee return.

4.1.4 Descriptive Statistics

Descriptive statistic is a summary statistic that quantitatively describes or summarizes features from collection of information. It is the process of using and analyzing the statistics. Some measures that are commonly used to describe a data set are measures of central tendency and measures of variability or dispersion. In this section, measures of central tendency include mean, while measures of variability include the standard deviation, the minimum and maximum values of the variables.

Table 11

Descriptive Statistics

Variables	Indicators	N	Minimum	Maximum	Mean	Std. Deviation
MPS	Rs	60	174.00	3,600	1,019.56	797.90
D_t	Rs	60	-	105.26	27.95	18.35
R_j	%	60	-66.34	114.72	-0.85	40.50

Source. Annual Reports of Joint Venture Banks, 2013/14-2022/23.

Table 11 displays descriptive statistics for joint venture banks across ten consecutive years, spanning from FY 2013/14 to FY 2022/23 AD. The total number of observations (N) for the variable was 60. The result shows that the average of market price per share (MPS) is Rs 1,019.56 per share with standard deviation of Rs 797.90 per share and ranges from Rs 174 per share to Rs 3,600 per share. This means that MPS value of can differ dual sides by Rs 797.90. Similarly, the mean of dividend per share (D_t) is Rs 27.95 per share with standard deviation of Rs 18.35 per share and ranges from no

dividend and Rs 105.26 dividend per share. It means D_t in both sides can range by Rs 18.35 per share. Similarly, the mean rate of return is -0.85%, accompanied by a standard deviation of 40.50%, with values ranging from -66.34% to 114.72%. This indicates that the rate of return can fluctuate by up to 40.50% in either direction.

4.1.5 Beta Coefficient

Capital asset pricing model estimates asset's return using beta coefficient. A beta coefficient serves as a gauge of non-diversifiable or systematic risk, revealing how much an asset's return reacts to market forces. In other words, it shows the degree of movement in an asset's return in response to the overall market return. If an asset's price is more responsive to the change in the market, its beta coefficient willbe higher. Beta coefficient can be estimated by regressing an asset's return on the market return. The market return is the average return on all securities in the market (Van, 1997).

Table 12

Beta Coefficient of Joint Venture Banks

Banks	Covariance (σ_{jM})	Market Variance (σ_M^2)	Beta Coefficient (β_j)
NSBI	1,743.70	2,744.26	0.6354
SCBNL	1,632.07	2,744.26	0.5947
NABIL	2,018.20	2,744.26	0.7354
HBL	1,417.42	2,744.26	0.5165
EBL	1,749.70	2,744.26	0.6376
NIMBL	1,261.53	2,744.26	0.4597

Source. Appendix 8

where,

$$\text{Beta Coefficient } (\beta_j) = \frac{\sigma_{jM}}{\sigma_M^2}$$

$$\text{For NSBI, Beta Coefficient } (\beta_j) = \frac{1,743.70}{2,744.26} = 0.6354 < 1 \text{ i.e. Defensive Stock}$$

For SCBNL, Beta Coefficient (β_j) = $\frac{1,632.07}{2,744.26}$ = 0.5947 < 1 i.e. Defensive Stock

For NABIL, Beta Coefficient (β_j) = $\frac{2,018.20}{2,744.26}$ = 0.7354 < 1 i.e. Defensive Stock

For HBL, Beta Coefficient (β_j) = $\frac{1,417.42}{2,744.26}$ = 0.5165 < 1 i.e. Defensive Stock

For EBL, Beta Coefficient (β_j) = $\frac{1,749.70}{2,744.26}$ = 0.6376 < 1 i.e. Defensive Stock

For NIMBL, Beta Coefficient (β_j) = $\frac{1,261.53}{2,744.26}$ = 0.4597 < 1 i.e. Defensive Stock

Table 12 represents covariance of returns between individual stock and the market, variance of the market return and beta coefficient of Nepalese joint venture banks. The market beta (β_M) is equal to 1. The beta coefficient of all joint venture banks is lower than beta coefficient of market. If beta coefficient of stock is less than 1, it is less volatile than market. The stock is called defensive stock as expected return changes proportionally less than the change in market return. Hence, the stocks of all joint venture banks are defense.

4.1.6 Systematic and Unsystematic Risk

A non-diversifiable risk that impacts all or most investments and cannot be reduced by diversification is called systemic risk, often referred to as market risk. This category of risk includes a wide range of variables, including but not limited to market volatility, tax rate changes, political unrest, war, inflation, economic downturns, and fluctuations in foreign currency rates. Due to their uniform movement in the same direction, stocks all exhibit perfect correlations with systemic risk (Beja, 1972). The unpredictability in returns, on the other hand, that may be attributed to many factors such technology improvements, corporate objectives, management decisions, and knowledge bases is known as unsystematic risk. The risk associated with these elements can be reduced by portfolio diversification, as they are unique to a certain sector, firm, industry, or business (Mokkelbost, 1971).

Table 13

Systematic and Unsystematic Risk of Joint Venture Banks with Market

Banks	Total Risk (TR)	Systematic Risk (SR)	Unsystematic Risk (USR)	Portion of SR	Portion of USR
NSBL	50.145	33.286	16.859	66.38%	33.62%
SCBNL	46.710	31.155	15.555	66.70%	33.30%
NABIL	40.086	38.526	1.560	96.11%	3.89%
HBL	39.637	27.057	12.579	68.26%	31.74%
EBL	44.301	33.400	10.901	75.39%	24.61%
NIMBL	29.096	24.082	5.015	82.76%	17.24%
NSBI	50.145	33.286	16.859	66.38%	33.62%

Source. Appendix 9

Table 13 represents systematic and unsystematic risk of joint venture banks in Nepal with the market. Out of total risk in stock of NSBL, SCBNL, NABIL, HBL, EBL and NIMBL, 66.38%, 66.70%, 96.11%, 68.26%, 75.39% and 82.76% respectively are risk that is not diversifiable due to market or systemic factors, and the residual 33.62%, 33.30%, 3.89%, 31.74%, 24.61%, and 17.24% respectively are diversifiable risk created from bank related factor. It means NSBL, SCBNL, NABIL, HBL, EBL and NIMBL can reduce their 33.62%, 33.30%, 3.89%, 31.74%, 24.61%, and 17.24% respectively of unsystematic risk from their total risk.

4.1.7 Correlation Analysis

It is investigating and evaluating the strength of the association, whether positive or negative, between two variables. Furthermore, it indicates the significance or lack thereof of this association. Correlation analysis is conducted to identify and quantify the correlation between the variables of returns between stockof the joint venture banks in Nepal.

Table 14

Correlation Analysis

Banks	NSBL	SCBNL	NABIL	HBL	EBL	NIMBL	Market
NSBL	1						
SCBNL	0.9621*	1					
NABIL	0.5101	0.5062	1				
HBL	0.9097*	0.8227*	0.5716	1			
EBL	0.9165*	0.9387*	0.6398*	0.8086*	1		
NIMBL	0.8028*	0.7000*	0.7229*	0.9086*	0.7103*	1	
Market	0.6062	0.4003*	0.8224*	-0.2927*	0.3539	-0.0342	1

Note. * indicates that correlation is significant at the 5% level

Table 14 explains the correlation between stock returns of Nepalese joint venture banks with the market return. The return of NABIL exhibits the greater impact on market return, with a significant positive correlation score of 0.8224. The positive and moderate but insignificant correlation is observed between market return and NSBL, with a correlation value of 0.6062. Additionally, there is insignificant but positive a low degree correlation between the return of EBL and market, as well as a very low degree of insignificant but negative correlation between the return of NIMBL and market, with correlation values of 0.3539 and -0.0342, respectively. Furthermore, a low degree of positive and negative correlation is observed between the return of SCBNL and HBL, with correlation values of 0.4003 and -0.2927, respectively, and the correlation is significant.

4.2 Discussion

The study has analyzed the risk and return of joint venture banks as well as determined the portion of systematic and unsystematic risks of joint venture banks related to total risk over 10 years. It has also attempted to examine relationship market index and individual stock of joint venture banks through correlation analysis. The results have been examined in terms of related theories and empirical findings of other researchers.

The risk per unit as indicated by coefficient of variation of the commercial banks is higher for the than the market index. Hence, the stocks of commercial banks are more volatile than the market index. The result is consistent to priori expectation and supports of the findings of Hamonangan et. al (2024), Asthana and Ahmed (2023), Acharya (2023), Rezagholizadeh et. al (2022), Suryadi et. al (2021), Adhikari (2021), Charithra and Vikas (2019), Thapa (2019) and Pandow and Butt (2018). The beta coefficient of joint ventures banks is less than that of market resulting defensive which is consistent to Regmi (2022), Kumar and Choudhary (2021), Gupta (2020), Makkar et. al (2020), Poornima and Swathiga (2017) and others.

The portion of unsystematic risk of the commercial banks are less than the portion of systematic risk indicating less risk can be eliminated or in the control of the banks. The result is consistent with the study of Anika et. al (2024), Acharya (2023), Aveliasari and Aveliasari (2023), Asthana and Ahmed (2023), Regmi (2022), Patjoshi (2022), Rezagholizadeh et. al (2022), Chaudhary (2021), Gupta (2020), Thapa (2020), Kandel (2018), Poornima and Swathiga (2017), Yimka (2016) and Nepali (2015).

The return of commercial banks has high degree of positive correlation with the market return and the correlation is significant which is supported by Hamonangan et. al (2024), Anika et. al (2024), Asthana and Ahmed (2023), Rezagholizadeh et. al (2022), Chaudhary (2021), Rao et. al (2020), Gupta (2020), Thapa (2020), Thapa (2019), Pandow and Butt (2018), Kandel (2018) and Yimka (2016). The risk cannot be diversified as there is nearly perfectly positive correlation between return of banks and market which is consistent to Venkatesh and Vikas (2021) and Kandel (2018).

However, the result is contrary to Aveliasari and Aveliasari (2023), Asthana and Ahmed (2023), Regmi (2022), Suryadi et. al (2021), Poornima and Swathiga (2017) who found insignificant relationship between market returns and stock returns. The study found high degree of correlation between return of commercial banks and market return which is contrary to Asthana and Ahmed (2023) who found weak correlation among them. Asthana and Ahmed (2023), Adhikari (2021), Yimka (2016) and Nepali (2015) who found the banks' return is negatively correlated with individual stock return of commercial banks and market index is another contrary.

Therefore, the results discussed above confirm that the risk per unit of return as indicated by coefficient of variation is higher for the joint venture banks than for the market index which implies that the MPS of the joint venture banks is more volatile than market index. The portion of unsystematic risk of the joint venture banks are less than the portion of systematic risk indicating less risk can be eliminated or in the control of the banks. The results report a positive and significant association between individual stock return of joint venture banks and market index demonstrating an increase in market return due to an increase in stock return of joint venture banks and vice versa. However, the negative and insignificant association between individual stock return of joint venture banks and market index has become a contrary to most of the empirical studies.

CHAPTER-V
SUMMARY AND CONCLUSION

5.1 Summary

The study has been conducted with the objective of analyzing risk and return on stock as well as examining the relationship between market index and individual stock of joint venture banks in Nepal. Among 20 commercial banks operating in Nepal, 6 joint venture commercial banks i.e. Nepal SBI Bank Ltd., Standard Chartered Bank Nepal Ltd., Nabil Bank Ltd., Himalayan Bank Ltd., Everest Bank Ltd., and Nepal Investment Mega Bank Ltd. have been selected for the purpose of the study. The study has observed ten different fiscal years. The rate of return, common stock's expected return, coefficient of variance, standard deviation, covariance, coefficient of correlation and coefficient of beta have been used to analyze the data. Simple correlation model has been used to examine the relationship between market index and individual stock of joint venture banks in Nepal.

The study has given the real picture of the risk and return analysis and relationship between market and individual stock which could hold importance for investors, depositors, shareholders, bankers and all general public who show willingness on present situation of banking industry. Additionally, the research holds equal significance for organizations, as it provides valuable insights that can aid in implementing corrective measures if any deviations are identified in past performance related to risk management. Similarly, the study provides literature to the researchers who want to carry on further research in this field. The study holds importance as it offers both theoretical and conceptual frameworks for various aspects of risk and return analysis and relationship between market and individual stock. Similarly, the study assists in achieving mastery at the MBS level and acquiring knowledge about risk and return analysis and relationship between market and individual stock of Nepalese joint venture commercial banks.

The risk per unit as indicated by coefficient of variation of the commercial banks is higher for the than the market index. Hence, the stocks of commercial banks are more volatile than the market index. The result is consistent to priori expectation and supports of the findings of Hamonangan et. al (2024), Asthana and Ahmed (2023), Acharya (2023), Rezagholizadeh et. al (2022), Suryadi et. al (2021), Adhikari (2021), Charithra and Vikas (2019), Thapa (2019) and Pandow and Butt (2018). The beta coefficient of joint ventures banks is less than that of market resulting defensive which is consistent to Regmi (2022), Kumar and Choudhary (2021), Gupta (2020), Makkar et. al (2020), Poornima and Swathiga (2017) and others.

The portion of unsystematic risk of the commercial banks are less than the portion of systematic risk indicating less risk can be eliminated or in the control of the banks. The result is consistent with the study of Anika et. al (2024), Acharya (2023), Aveliasari and Aveliasari (2023), Asthana and Ahmed (2023), Regmi (2022), Patjoshi (2022), Rezagholizadeh et. al (2022), Chaudhary (2021), Gupta (2020), Thapa (2020), Kandel (2018), Poornima and Swathiga (2017), Yimka (2016) and Nepali (2015).

The return of commercial banks has high degree of positive correlation with the market return and the correlation is significant which is supported by Hamonangan et. al (2024), Anika et. al (2024), Asthana and Ahmed (2023), Rezagholizadeh et. al (2022), Chaudhary (2021), Rao et. al (2020), Gupta (2020), Thapa (2020), Thapa (2019), Pandow and Butt (2018), Kandel (2018) and Yimka (2016). The risk cannot be diversified as there is nearly perfectly positive correlation between return of banks and market which is consistent to Venkatesh and Vikas (2021) and Kandel (2018).

However, the result is contrary to Aveliasari and Aveliasari (2023), Asthana and Ahmed (2023), Regmi (2022), Suryadi et. al (2021), Poornima and Swathiga (2017) who found insignificant relationship between market returns and stock returns. The study found high degree of correlation between return of commercial banks and market return which is contrary to Asthana and Ahmed (2023) who found weak correlation among them. Asthana and Ahmed (2023), Adhikari (2021), Yimka (2016) and Nepali (2015) who found the banks' return is negatively correlated with

individual stock return of commercial banks and market index is another contrary.

Therefore, the results discussed above confirm that the risk per unit of return as indicated by coefficient of variation is higher for the joint venture banks than for the market index which implies that the MPS of the joint venture banks is more volatile than market index. The portion of unsystematic risk of the joint venture banks are less than the portion of systematic risk indicating less risk can be eliminated or in the control of the banks. The results report a positive and significant association between individual stock return of joint venture banks and market index demonstrating an increase in market return due to an increase in stock return of joint venture banks and vice versa. However, the negative and insignificant association between individual stock return of joint venture banks and market index has become a contrary to most of the empirical studies.

5.2 Conclusion

The general purpose of the research is based on risk and return analysis of Nepalese joint venture banks. The risk per unit of return as indicated by coefficient of variation is higher for the selected joint venture banks than for the market index which implies that the MPS of the joint venture banks is more volatile than market index. Thus, it is concluded that the joint venture banks is performing less than the market in terms of risk per return.

The study assessed the portion of the systematic and unsystematic risks of joint venture banks related to total risk. The higher portion of total risk is created from systematic factor and lower portion is created by the unsystematic or bank related factor. Thus, the study concluded that the higher portion of risk is out of the control of the bank.

The study also has attempted to examine the relationship between market index and individual stock of joint venture banks. There exists positive and significant relationship between the return of the joint venture banks and the market return. Thus, it can be concluded that the increase in market return due to an increase in return of joint venture banks and vice versa.

5.3 Implications

Risk and return analysis is very important to investors as investment decision depends upon these two factors. Due to this reason, the study of risk and return analysis of joint venture banks. The study has observed rate of return, common stock's expected return, standard deviation, coefficient of variance, covariance, coefficient of correlation, and coefficient of beta for analyzing risk and return on stock of joint venture banks different ten fiscal years from 2013/14 to 2022/23. The research have various notiable implications across various fields based on findings, discussions, summary, and conclusions drawn from

Nepal Rastra Bank (NRB), as a policy maker for the commercial banks and other financial institutions, has made provisions on eliminating the risk through its directives. The commercial banks should abide by the unified directives of NRB. Thus, the study may provide proper homework for NRB to review its directives time-to-time according to the requirement of the economic situation of the country and workout on formulating more effective policies on eliminating the risks on upcoming days.

The practitioners such as investors, creditors, bankers, equity holder, depositor and all general public showing willingness on the present scenario of banking industry can understand the risk and return, and the relationship between the return on individual stock of joint venture banks and the market which help the stakeholders make the investment decisions. The return is the concern of every investor, and the bank with lower risk per return or the underpriced stock will be the center of attraction. The study helps the investors in strategy planning for the bear and bull market. To optimize profit and reduce risk, it recommends choosing defensive stocks during a bear market and aggressive stocks for bull markets.

The research has observed a decade risk and return analysis of joint venture banks in Nepal and the market which may serve as a data base for future academic communities. The future researchers who have interest on the risk and return can evaluate the paper and conduct research. The study is significant because it offers a

theoretical and conceptual foundation for several aspects of risk and return. Ten distinct fiscal years have been detected by the research. Future researchers will be able to continue their work on following fiscal years. Likewise, every aspect of risk and return has been noted. Therefore, if could be more interesting to include more indicators to analyze the risk and return.

A suggestion for further research could be performing research on the relationship between risk and return focusing on multiple regression model. Another area of research could be the inclusion of development banks, finance companies, and cooperatives which are successfully operating in the Nepalese market. In addition, portfolio risk and return can also be the matter of concerns. Exploring the other portfolio risk and return is also an interesting expansion for this research.

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APPENDICES

Appendix 1

Principal Indicators of Nepal SBI Bank Limited

Nepal SBI Bank Ltd.

Annual Report 2022-23

5.29. Principal Indicators

Particulars	Indicators	Restated as per NFRS reporting				
		2075/2076	2076/2077	2077/2078	2078/2079	2079/2080
1. Percent of Net Profit/Gross Income	%	18.33	12.33	9.30	17.07	14.32
2. Earnings Per Share	Rs.	27.13	17.23	10.15	16.19	19.44
3. Market Value per Share (as on Ashadh end)	Rs.	469.00	435.00	409.00	282.30	341.00
4. Price Earnings Ratio	Times	17.29	25.24	40.30	16.93	17.54
5. Dividend (including bonus) on share capital	%	16.84	9.47	5.31	10.53	10.55
6. Cash Dividend on Share Capital	%	10.84	3.47	1.81	7.53	6.80
7. Interest Income/Loans & Advances	%	12.72	12.10	8.87	9.81	12.32
8. Staff Expenses (excluding staff bonus)/Total Operating Expenses	%	52.41	51.97	54.91	59.86	59.46
9. Interest Expenses/Total Deposit and Borrowings	%	6.49	6.40	5.13	6.08	7.38
10. Exchange Gain/Total Income	%	2.54	2.30	3.20	2.08	1.77
11. Staff (Statutory) Bonus/ Total Staff Expenses (excluding bonus)	%	22.76	14.78	9.65	16.91	18.96
12. Net Profit/Loans & Advances	%	2.59	1.63	0.95	1.48	1.61
13. Total Credit/Deposit	%	90.52	85.50	95.58	92.37	81.42
14. Total Operating Expenses/Total Assets	%	7.57	7.65	6.32	7.12	8.16
15. Adequacy of Capital Fund on Risk Weightage Assets						
a. Core Capital	%	12.72	12.39	11.02	10.42	10.10
b. Supplementary Capital	%	1.40	3.16	2.83	2.83	2.48
c. Total Capital Fund	%	14.12	15.55	13.86	13.25	12.58
16. Liquidity (CRR)	%	6.65	8.89	3.22	3.05	4.06
17. Non-Performing Credit/Total Credit (as per NRB provision)	%	0.20	0.23	0.23	0.15	2.43
18. Base Rate (For the month of Ashadh)	%	9.72	9.25	7.37	9.70	10.59
19. Weighted Average Interest Rate Spread	%	4.43	3.87	3.18	4.36	3.99
20. Book Net worth	Rs.	14,154,449,362	14,781,851,324	15,400,071,110	17,113,427,417	18,266,699,245
21. Total Shares	No.	84,492,505	89,562,056	94,935,779	98,258,531	101,206,287
22. Total Employees	No.	1,029	1,004	967	910	923
23. Return on Shareholder's Equity (on outstanding figure)	%	16.20	10.44	6.26	9.57	10.77
24. Return on Assets (on outstanding figure)	%	1.94	1.17	0.70	1.07	1.06
25. Book Value Per Share	Rs.	167.52	165.05	162.22	174.17	180.49
26. Cost to Income Ratio (for NFRS cost excludes staff bonus and impairment provisions)	%	40.19	53.61	55.34	42.48	35.95
27. ATM/CDM/CRM Terminals	No.	118	124	122	129	124
28. POS Terminals	No.	1,060	1,513	1,395	1,134	1,154
29. Branches	No.	88	88	88	91	93

Source. Annual Report of Nepal SBI Bank Limited, 2022/23 AD.

Appendix 2

Key Indicators of Standard Chartered Bank Nepal Limited

Key Indicators

Particulars	Indicators	NFRS based				
		FY 2018/2019	FY 2019/2020	FY 2020/2021	FY 2021/2022	FY 2022/2023
1. Net Profit/Gross Income	Percent	46.72	39.97	34.42	42.30	44.19
2. Earning Per Share	Rs.	30.39	24.81	23.92	23.92	36.75
3. Market Value Per Share	Rs.	682	645	590	396	530
4. Price Earning Ratio	Ratio	22.44	26.00	36.16	16.56	14.42
5. Dividend (including bonus) on Share Capital	Percent	22.50	11.84	13.06	16.51	19.00
6. Cash Dividend on Share Capital	Percent	22.50	4.84	3.06	16.51	19.00
7. Interest Income/Loan & Advances	Percent	11.71	11.52	7.40	8.40	13.40
8. Staff Expenses/Total Operating Expenses	Percent	65.89	65.48	64.06	64.74	67.89
9. Interest Expenses/Total Deposit and Borrowings	Percent	3.91	3.14	2.82	3.70	5.32
10. Exchange Fluctuation Income/Total Income	Percent	16.20	14.97	18.81	12.27	7.65
11. Staff (statutory) Bonus/Total Staff Expenses	Percent	35.60	28.55	21.20	28.32	35.72
12. Net Profit/Loan and Advances	Percent	4.39	3.48	1.95	2.52	3.65
13. Net Profit/Total Assets	Ratio	2.61	1.71	1.22	1.83	2.29
14. Total Credit/Deposit	Percent	72.81	57.45	74.91	87.91	77.61
15. Total Operating Expenses/Total Assets	Percent	1.76	1.45	1.43	1.59	1.50
16. Adequacy of Capital Fund on Risk Weighted Assets						
a. Core Capital	Percent	18.31	16.85	15.53	14.40	14.17
b. Supplementary Capital	Percent	1.38	1.66	1.64	1.55	2.92
c. Total Capital Fund	Percent	19.69	18.51	17.17	15.95	17.09
17. Liquidity (CRR)	Ratio	7.52	14.49	7.53	4.44	4.71
18. Non-performing Credit/Total Credit	Percent	0.15	0.44	0.96	0.59	1.18
19. Base Rate	Percent	7.63	7.00	5.51	8.81	9.02
20. Weighted Average Interest Rate Spread	Percent	4.45	3.63	3.88	4.23	4.00
21. Book Net-worth	Rs'000	14,927,075	15,102,495	16,222,118	18,135,102	20,142,691
22. Total Shares	No.	80,114,307	80,114,307	85,722,308	94,294,539	94,294,539
23. Total Staff	No.	531	535	504	505	504
24. Networth Per Share	Rs.	186	189	189	192	214
25. Return on Equity	Percent	19.49	15.15	9.44	14.21	20.78
26. Profit per Employee	Rs'000	4,585	3,715	2,775	4,467	6,876

Source. Annual Report of Standard Chartered Bank Nepal Limited, 2022/23 AD.

Appendix 3

Principal Indicators of Nabil Bank Limited

४.४३ प्रमुख सूचकाङ्कहरु

रु.

विवरण	सूचकाङ्क	आर्थिक वर्ष				
		२०७५/७६	२०७६/७७	२०७७/७८	२०७८/७९	२०७९/८०
१. खुद नाफा / कूल आम्दानी	प्रतिशत	२४.२५	१८.५५	२१.७२	१६.१५	१२.६५
२. प्रति शेयर आम्दानी	रु.	५०.५७	३६.१६	३३.५७	१८.६४	२३.६७
३. प्रति शेयर बजार मूल्य	रु.	८००	७६५	१,३५९	८२४	५९९.२०
४. मूल्य आम्दानी अनुपात (PE Ratio)	अनुपात	१५.८२	२१.१५	४०.४८	४४.२१	२५.३१
५. शेयर पूँजी लाभांश (बोनस सहित)	प्रतिशत	३४.००	३५.२६	३८.००	३०.००	११.००
६. शेयर पूँजीमा नगद लाभांश भुक्तानी	प्रतिशत	२२.००	१.७६	४.४०	११.५०	११.००
७. ब्याज आम्दानी / कर्जा तथा सापटी	प्रतिशत	११.४१	१०.९८	९.३७	१०.२८	१३.८९
८. कर्मचारी खर्च / कूल सञ्चालन	प्रतिशत	१७.६५	१५.८०	२४.७३	१४.०२	१२.६७
९. ब्याज खर्च / कूल निक्षेप तथा सापटी	प्रतिशत	४.९६	५.३९	४.३५	५.७७	७.८४
१०. सटही घटबढ आम्दानी / कूल आम्दानी	प्रतिशत	४.६६	४.१४	३.६८	२.६४	१.२४
११. कर्मचारी बोनस / कूल कर्मचारी खर्च	प्रतिशत	३४.४३	२८.१७	२०.३७	२६.२७	२२.७९
१२. खुद नाफा / कर्जा तथा सापटी	प्रतिशत	३.३८	२.३३	२.४९	१.८८	१.९४
१३. खुद नाफा / कूल सम्पति	प्रतिशत	२.११	१.५८	१.७१	१.२०	१.४२
१४. कूल कर्जा / निक्षेप	प्रतिशत	८१.९६	७९.७२	८९.८४	९२.४९	८४.१९
१५. कूल सञ्चालन खर्च	प्रतिशत	५.४९	५.८०	५.२२	५.३३	७.९३
१६. जोखिम भारित सम्पतिमा पूँजी कोषको पर्याप्तता						
क) प्राथमिक पूँजी	प्रतिशत	११.४०	१०.६७	१०.६७	१०.७७	१०.२२
ख) पूरक पूँजी	प्रतिशत	१.१०	२.४०	२.०९	२.३२	२.३२
ग) कूल पूँजी कोष	प्रतिशत	१२.५०	१३.०७	१२.७७	१३.०९	१२.५४
१७. तरलता (CRR)	प्रतिशत	४.७८	११.२०	३.६६	४.१३	६.८९
१८. निष्क्रिय कर्जा / कूल कर्जा	प्रतिशत	०.७४	०.९८	०.८४	१.६२	३.३९
१९. आधार ब्याजदर	प्रतिशत	८.०९	७.३२	५.८६	८.७७	९.५२
२०. ब्याजदर अन्तर	प्रतिशत	४.१९	३.५१	३.३१	२.७५	३.८०
२१. बुक नेटवर्थ प्रतिशेयर	रु.	२५७	२५६	२५१	२३२	२१०
२२. कूल शेयर	संख्या	९,०१,१८,४५४	१०,०९,७४,९७४	१३,८४,४४,५१२	२२,८३,२९,०८६	२७,०५,६९,९६७
२३. कूल कर्मचारी	संख्या	१,०८०	१,१२८	१,२७१	२,१३०	२,२३५
२४. जेथामा प्रतिफल	प्रतिशत	१७.७६	१३.६१	१५.१९	९.७८	११.६६
२५. सम्पतिमा प्रतिफल	प्रतिशत	२.११	१.५८	१.७१	१.२०	१.४२
२६. लाभांश वितरण अनुपात	प्रतिशत	६७.२४	९७.५१	११३.१८	१६०.९५	४६.४७
२७. आम्दानी दर	प्रतिशत	६.३२	४.७३	२.४७	२.२६	३.९५
२८. लाभांश दर	प्रतिशत	४.२५	४.६१	२.८०	३.६४	१.८४
२९. खर्च / आम्दानी अनुपात	प्रतिशत	६३.२०	६८.१३	६६.१७	७१.९२	७०.५१
३०. कूल सम्पति / जेथा अनुपात	प्रतिशत	८.६७	९.१९	८.६०	७.९२	८.४६
३१. पूँजीकोष / दायित्व अनुपात (मैपरी आउने दायित्व सहित)	प्रतिशत	९.८०	९.०७	९.८८	९.९४	८.५६
३२. कार्यालय संख्या	संख्या	८२	११८	१३५	२३१	२६५
३३. ए. टि. एम. संख्या	संख्या	१३६	१८५	१८५	२५०	२९८

Source. Annual Report of Nabil Bank Limited, 2022/23 AD.

Appendix 4

Principal Indicators of Himalayan Bank Limited

HBL Himalayan Bank Ltd.

PRINCIPAL INDICATORS

Particulars	Unit	FY 2018/2019 2075/2076	FY 2019/2020 2076/2077	FY 2020/2021 2077/78	FY 2021/2022 2078/79	FY 2022/2023 2079/80
Profit before Bonus and Tax/Total Income	Percent	32.64	28.06	33.68	19.69	7.26
Per Share Income	Rs.	32.44	27.60	28.07	18.26	9.18
Per Share Market Value	Rs.	552	540	484	299.2	212.80
Price Earning Ratio	Ratio	17.02	19.57	17.25	16.39	23.18
Dividend on Share Capital (Including Bonus)	Percent	22.00	20.00	26.00	19.11	-
Cash Dividend on Share Capital	Percent	12.00	6.00	4.62	11.11	-
Interest Income/Loans and Advances	Percent	11.67	10.79	7.71	10.35	13.16
Staff Expenses/Total Operating Expenses	Percent	53.79	53.02	54.92	50.63	51.97
Interest Expenses on Total Deposit	Percent	6.13	5.77	4.42	6.59	7.92
FX Fluctuation Gain/Total Income	Percent	5.50	5.33	4.61	2.98	1.23
Net Profit after Tax/Total Assets (ROA)	Ratio	2.21	1.79	1.68	1.09	0.47
Net Profit after Tax/Total Equity (ROE)	Percent	18.34	15.40	14.89	10.76	4.65
Total Loan/Deposit	Percent	87.37	82.31	89.87	92.14	88.64
Total Operating Expenses/Total Income	Percent	16.68	16.81	17.96	12.89	11.46
Capital Adequacy Ratio:						
A. Core Capital	Percent	11.63	11.76	11.21	10.49	9.03
B. Supplementary Capital	Percent	0.97	3.13	2.68	1.26	3.27
C. Total Capital Fund	Percent	12.6	14.89	13.89	11.75	12.31
Liquidity	Percent	26.25	31.39	26.51	23.48	27.38
Non-performing Loan/Total Loan	Percent	1.12	1.01	0.48	1.59	4.93
Weighted Average Interest Rate Spread	Percent	4.47	3.77	3.32	4.02	4.79
Book Networth per share	Rs.	187.73	187.67	188.43	169.72	155.29
Total Share	Number	85,202,558	93,722,814	106,844,008	129,687,257	216,566,156*
Total Staff	Number	910	1029	1018	1019	1935
Number of Branches	Number	59	68	71	74	176
Number of ATMs	Number	122	138	144	156	264

* 76,503,918.49 shares were issued to shareholders of erstwhile Civil Bank Limited during acquisition of the bank

* Staff Bonus has not been considered while calculating the ratio for staff expenses and operating expenses.

Source. Annual Report of Himalayan Bank Limited, 2022/23 AD.

Appendix 5

Main Indicators of Everest Bank Limited

एभरेस्ट बैंक लिमिटेड
EVEREST BANK LIMITED
Consistent, Strong & Dependable

Main Indicators of last 5 years

S.No.	Particulars	Financial Years				
		Indicator	2018/19	2019/20	2020/21	2021/22	2022/23
1	Net Profit/Total Income	%	21.13	16.25	13.54	14.29	13.99
2	Per share Earning (after tax income)	Rs.	38.05	29.71	19.91	26.30	31.43
3	Market price per share	Rs.	666	675	738	439	563
4	Price/Earning Ratio		17.50	22.72	37.06	16.69	17.91
5	Dividend on share- Bonus share	%	5.00	5.00	6.00	13.00	10
6	Cash Dividend	%	20.00	5.53	4.32	7.68	10.53
7	Interest Income/Loans & advances	%	10.66	10.51	7.37	8.62	11.45
8	Employee expenses/Total operating expenses	%	16.60	14.50	15.69	15.17	11.55
9	Interest expenses on deposit & borrowing	%	5.53	5.93	4.62	5.79	7.39
10	Exchange Income/total Income	%	2.12	1.81	3.26	1.50	0.25
11	Staff bonus/total employee expenses	%	41.28	31.87	21.32	31.29	33.54
12	Net Profit/Loans & advances	%	2.70	2.08	1.29	1.57	1.97
13	Net Profit/Total Assets	%	1.94	1.42	0.89	1.13	1.41
14	Total Loans & advances/Total Deposits	%	87.01	83.52	85.30	90.77	85.70
15	Total operating expenses/total Assets	%	5.86	6.14	4.85	5.98	7.37
16	Capital Adequacy Ratio:						
	a) Core Capital	%	12.38	11.92	11.24	10.78	11.17
	b) Supplementary Capital	%	1.36	1.46	1.24	1.11	2.13
	c) Total Capital Funds	%	13.74	13.38	12.48	11.89	13.30
17	Cash Reserve Ratio (CRR)	%	18.56	14.43	18.15	6.50	7.11
18	NPAs/Total Loans & advances	%	0.16	0.22	0.12	0.12	0.79
19	Base Rate	%	8.12	8.05	5.99	8.82	9.47
20	Weighted Average Interest Rate Spread	%	4.29	3.59	3.24	4.06	3.97
21	Book Networth (Rs. in Lakh)	Rs.	175451	185974	206436	227546	253717
	Total Shares	Number	80268633	84702068	88937172	94273402	106980944
	Total Employee	Number	885	868	945	1057	1097
22	Others						
23	Per Employee Business (Rs. in Lakh)	Rs.	2751	3060	3129	3131	3372
24	Employee expenses/Total Income	%	11.44	10.63	12.32	11.79	8.87

Note : i) CRR have been calculated on the basis of year end figures.

29TH ANNUAL REPORT | 2079/80 (2022/23 AD) | EVEREST BANK LIMITED

Source. Annual Report of Everest Bank Limited, 2022/23 AD.

Appendix 6

Principal Indicators of Nepal Investment Mega Bank Limited

NIMB
नेपाल इन्भेष्टमेण्ट मेगा बैंक लि.
NEPAL INVESTMENT MEGA BANK LTD.

5.24 Principal Indicators

5 Years Principal Indicators						
Particulars	Indicators	F/Y 2018/2019 (F/Y 075/76)	F/Y 2019/2020 (F/Y 076/77)	F/Y 2020/2021 (F/Y 077/78)	F/Y 2021/2022 (F/Y 078/79)	F/Y 2022/2023 (F/Y 079/80)
1. Percent of Net Profit/ Operating Income	Percent	39.82	30.00	42.39	47.07	25.19
2. Earning Per Share (Basic)	Rs.	26.4	17.0	22.0	20.7	13.9
3. Market Value Per Share	Rs.	519	431	460	265	174
4. Price Earning Ratio	Ratio	19.6	25.3	20.9	12.8	12.5
5. Dividend (including bonus) on share capital	Percent	19.0	18.5	16.0	11.0	-
6. Cash Dividend on Share Capital	Percent	8.5	5.5	3.389	4.0	-
7. Interest Income/ Loan & Advances	Percent	10.9	10.1	8.2	8.7	12.3
8. Staff Expenses/ Total operating Expenses	Percent	59.1	56.3	60.3	60.8	61.6
9. Interest Expenses on Total Deposit and Borrowings(YTD)	Percent	6.1	6.0	4.6	5.7	7.9
10.Exchange Gain/ Operating Income	Percent	11.0	11.5	9.1	8.4	3.5
11.Staff Bonus/ Total Staff Expenses	Percent	32.2	27.05	32.91	31.94	19.53
12.Net Profit/Loan and Advances (Gross)	Percent	2.5	1.7	2.1	2.3	1.2
13.Net Profit/Total Assets	Ratio	1.79	1.19	1.56	1.55	0.83
14. Credit Deposit Ratio	Percent	71.97	72.93	75.12	85.1	85.05
15.Total Operating Expenses**/ Total Assets	Percent	1.4	1.3	1.2	1.3	1.1
16.Adequacy of Capital Fund on Risk Weighted Assets						
a. Core Capital	Percent	11.39	11.77	11.11	12.15	10.73
b. Supplementary Capital	Percent	1.87	1.77	3.60	3.81	2.59
c. Total Capital Fund	Percent	13.26	13.54	14.71	15.96	13.32
17.Liquidity (CRR)	Percent	5.5	8.7	4.4	3.1	3.5
18.Non-performing credit/ Total credit	Ratio	2.78	2.91	2.46	1.49	4.54
19. Base Rate(YTD)	Percent	8.74	8.36	6.40	7.47	9.75
20.Weighted Average Interest Rate Spread (YTD)	Percent	4.32	4.83	3.89	3.22	4.50
21.Total Net-worth (Net Assets)	Rs. '000	25,579,196	27,173,163,731	32,234,911,628	33,991,914,255	55,600,636,822
22.Total Shares	No.	128,697,491	142,489,545	162,573,295	183,075,413	341,285,949
23.Total Staffs	No.	1,408	1,437	1,506	1,521	3,217
24.Book Value Per Share	Rs.	199	191	198	186	163
25. Return on Paid-Up Capital	Percent	25.8	17.0	22.0	20.7	10.9
26. Return on Shareholders' fund (Closing)	Percent	13.0	8.9	11.0	11.1	6.69
27. Market Capitalization (in Billion)	Rs.	66.8	61.4	74.8	48.5	59.3
28. Total number of Branches	No.	81	82	86	88	296
29. Total number of ATMs	No.	117	125	130	132	282
30. Total employee expenses per employee	Rs. '000	744	733	761	839	759
31. Total Deposit per employee	Rs. '000	107,153	117,322	116,897	122,428	111,532
32.Employee expense/ Total income	Percent	18.5	17.9	20.3	23.2	20.6

Source. Annual Report of Nepal Investment Mega Bank Limited, 2022/23 AD.

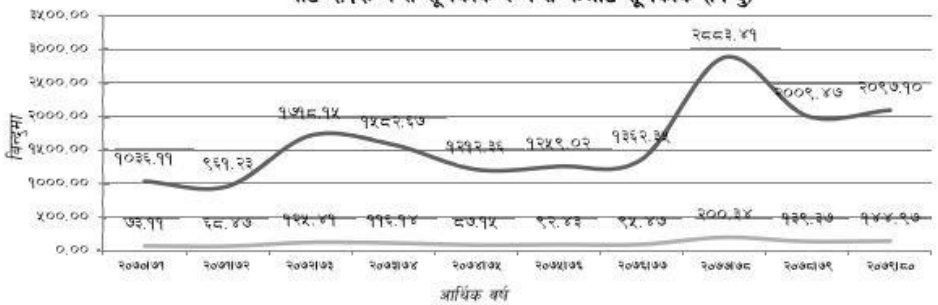
Appendix 7

NEPSE Index

विन्दु पुगेको थियो भने सबैभन्दा कम असोज ९ मा १८१५.१४ विन्दु कायम भएको थियो ।

त्यसैगरी नेप्से फ्लोट सूचकांकतर्फ समिक्षा वर्षमा करिब ४.०२ प्रतिशतले वृद्धि भई १४४.९७ बिन्दु पुगेको छ । उक्त सुचकांक गत वर्षको अन्त्यमा १३९.३७ बिन्दुमा रहेको थियो । नेप्से सूचकांक र नेप्से फ्लोट सूचकांकको विगत १० वर्षको वार्षिक प्रवृत्ति चार्ट २.१६ मा प्रस्तुत गरिएको छ ।

चार्ट २.१६: नेप्से सूचकांक र नेप्से फलोट सूचकांक (विन्दु)



Source. Annual Report of Securities Board of Nepal, 2022/23 AD.

Appendix 8

Calculation of Covariance of Returns between Individual Stock and the Market

FY	R_A	R_B	R_C	R_D	R_E	R_F	R_M
2012/13	53.18	56.62	43.25	37.44	69.30	27.55	100.06
2013/14	-28.48	-29.00	-23.20	-9.13	-18.03	-23.05	-7.30
2014/15	114.72	87.09	25.08	88.39	63.15	53.55	78.74
2015/16	-49.80	-33.33	-32.98	-39.18	-59.00	-22.12	-7.89
2016/17	-44.37	-66.34	-37.29	-36.03	-49.52	-14.16	-23.40
2017/18	-2.64	-6.69	-9.45	4.17	4.22	-13.37	3.85
2018/19	-5.23	-3.69	0.03	1.45	2.93	-13.39	8.21
2019/20	-4.76	-6.50	82.61	-5.56	10.86	10.44	111.65
2020/21	-28.40	-30.08	-37.16	-34.23	-37.71	-40.00	-30.31
2021/22	24.53	38.64	-25.95	-28.88	32.92	-34.34	4.36
Total	28.76	6.71	-15.05	-21.55	19.12	-68.88	237.98

FY	R_A - E (R_A)	R_B - E(R_B)	R_C - E(R_C)	R_D - E (R_D)	R_E - E(R_E)	R_F - E(R_F)	R_M - E(R_M)
2012/13	50.31	55.95	44.76	39.59	67.39	34.44	76.26
2013/14	-31.36	-29.67	-21.70	-6.97	-19.94	-16.16	-31.10
2014/15	111.84	86.42	26.58	90.54	61.23	60.44	54.95
2015/16	-52.67	-34.00	-31.47	-37.02	-60.92	-15.23	-31.68
2016/17	-47.24	-67.01	-35.79	-33.87	-51.43	-7.27	-47.20
2017/18	-5.51	-7.36	-7.94	6.33	2.31	-6.48	-19.95
2018/19	-8.11	-4.36	1.54	3.60	1.02	-6.50	-15.59
2019/20	-7.63	-7.17	84.12	-3.40	8.95	17.33	87.85
2020/21	-31.28	-30.75	-35.65	-32.08	-39.62	-33.11	-54.11
2021/22	21.65	37.97	-24.44	-26.72	31.01	-27.45	-19.44
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00

FY	[R_A - E (R_A)] [R_M - E(R_M)]	[R_B - E (R_B)] [R_M - E(R_M)]	[R_C - E (R_C)] [R_M - E(R_M)]	[R_D - E (R_D)] [R_M - E(R_M)]	[R_E - E (R_E)] [R_M - E(R_M)]	[R_F - E (R_F)] [R_M - E(R_M)]
2012/13	3,836.77	4,266.96	3,413.26	3,019.39	5,139.59	2,626.44
2013/14	975.33	922.93	674.81	216.85	620.31	502.75
2014/15	6,145.33	4,748.30	1,460.70	4,975.03	3,364.60	3,320.95
2015/16	1,668.76	1,077.13	997.14	1,173.00	1,929.97	482.46
2016/17	2,229.71	3,162.61	1,689.11	1,598.63	2,427.34	343.02
2017/18	109.98	146.82	158.42	(126.27)	(46.10)	129.23
2018/19	126.38	67.98	(23.97)	(56.20)	(15.91)	101.39
2019/20	(670.49)	(630.21)	7,390.08	(298.70)	786.28	1,522.35
2020/21	1,692.41	1,664.01	1,929.16	1,735.64	2,143.98	1,791.60
2021/22	(420.91)	(737.94)	475.07	519.39	(602.75)	533.59
Total	15,693.27	14,688.60	18,163.78	12,756.76	15,747.31	11,353.78
Covariance	1,743.70	1,632.07	2,018.20	1,417.42	1,749.70	1,261.53

Notes.

1. R_A, R_B, R_C, R_D, R_E, R_F and R_M indicate returns of NSBL, SCBNL, NABIL, HBL, EBL, NIMBL and NEPSE index respectively.
2. Covariance between the returns of stock and the market = $\frac{\Sigma [R_j - E(R_j)] [R_M - E(R_M)]}{n - 1}$

Appendix 9

Calculation of Systematic and Unsystematic Risk

	NSBL	SCBNL	NABIL	HBL	EBL	NIMBL	Market
Standard deviation of individual stock (σj) and market (σ_M)	50.14	46.71	40.09	39.64	44.30	29.10	52.39
Covariance between returns of individual stock and the market ($COVj_M$)	1,743.70	1,632.07	2,018.20	1,417.42	1,749.70	1,261.53	-
Correlation returns of individual stock and the market (rj_M)	0.6638	0.6670	0.9611	0.6826	0.7539	0.8276	-
Systematic Risk	33.29	31.15	38.53	27.06	33.40	24.08	-
Unsystematic Risk	16.86	15.56	1.56	12.58	10.90	5.01	-
Total Risk	50.14	46.71	40.09	39.64	44.30	29.10	-

where,

Total risk = Systematic Risk (Non diversifiable risk) + Unsystematic risk (Diversifiable risk)

$$\sigma_j = \frac{COV_{jM}}{\sigma_M} + \sigma_j (1 - r_{jM})$$

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ABSTRACTS This study analyses thevriskvandvreturnvof joint venturevcommercialvbanksvin Nepal. The study has identified rate of return (Rj), common stock's expected return

E(Rj), standard deviation (σ), coefficient of variance (CV), covariance, **correlation coefficient** and coefficient of **beta (β**