RISK AND RETURN ANALYSIS OF MANUFACTURING COMPANIES IN NEPAL

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

by

Sagar Parajuli
Exam Roll No. 6133/18
Campus Roll No. 949/074
Registration No. 7-2-303-35-2013
Shanker Dev Campus

Kathmandu

June, 2024

.

Certification of Authorship

I hereby corroborate that I have researched and submitted the final draft of the dissertation entitled "Risk and Return Analysis of Manufacturing Companies in Nepal". 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.

Sagar Parajuli

Signature……..

Date of submission……..

REPORT OF RESEARCH COMMITTEE

Mr. Sagar Parajuli has defended research dissertation entitled **"Risk and Return Analysis of Manufacturing Companies in Nepal"** 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.

…….
Prof. Dr. Keshav Raj Joshi
Dissertation Supervisor

Dissertation Proposal Defended Date:

…….

Dissertation Submitted Date:

…….

Dissertation Viva Voce Date:

…….

……
Asso. Prof. Dr. Sajeeb Kumar Shrestha
Chairperson, Research Committee

Approval Sheet

We, the undersigned, have examined the dissertation entitled **"Risk and Return Analysis of Manufacturing Companies in Nepal"** presented by Sagar Parajuli a candidate for the degree of Master of Business Studies (MBS Semester) and conducted Vice voce examination of the candidate. We hereby certify that the dissertation is worthy of acceptance.

……
Prof. Dr. Keshav Raj Joshi
Dissertation Supervisor

…….
Internal Examiner

……...
Internal Expert

……
External Expert

……..
Asso. Prof. Dr. Sajeeb Kumar Shrestha
Chairperson, Research Committee

……..
Asso. Prof. Dr. Krishna Prasad Acharya
Campus Chief

Acknowledgements

This study has been undertaken to assess Study on Risk and Return Analysis of Manufacturing Companies in Nepal. The study focused on the secondary data and findings are drawn on the basis of concepts, risk and return analysis and data collected. The study conducted solely for the purpose for the partial fulfillment of the requirement for Master's Degree in Business Studies (M.B.S).

I express my sincere gratitude to my respected supervisor Prof. Dr. Keshav Raj Joshi, Shankar Dev Campus for his valuable guidance, continuous inspiration for the completion of the thesis.

I express my sincere thanks to management faculty members and Head of research Department Asso. Prof. Dr. Sajeeb Kumar Shrestha for his continuous encouragement, comment and valuable inputs. I am also indebted to our Campus Chief Asso. Prof. Dr. Krishna Prasad Acharya his valuable suggestions.

I express my sincere thanks to all the staff of the library Section, Shankar Dev Campus for their valuable services and support while conducting literature review of the study.

At last, I would like to express my sincere gratitude to all my family members who inspired me during the entire period of my study.

Thanks

Sagar Parajuli

Shankar Dev Campus

List of Contents

List of Tables & Figures

Abbreviations

CAPM	=	Capital Assets Pricing Model
MBS	=	Master of Business Studies
NEPSE	=	Nepal Stock Exchange
NRB	=	Nepal Rastra Bank
PCA	=	Principal Component Analysis
SEBON	=	Security Board of Nepal
SPSS	=	Statistical Package for the Social Sciences
TU	=	Tribhuvan University

Abstract

This study presents a comprehensive analysis of the risk and return characteristics of two prominent manufacturing companies in Nepal: Unilever Nepal Limited (UNL) and Himalayan Distillery Limited (HDL). Utilizing financial data spanning multiple years, including stock prices, dividends, and NEPSE index values, the research examines various financial metrics to assess the risk and return profiles of UNL and HDL within the context of the Nepalese manufacturing sector. Through quantitative analysis, the study aims to provide valuable insights for investors seeking to optimize their investment strategies in this dynamic market environment.

The findings reveal distinct differences in the risk profiles of UNL and HDL, with UNL demonstrating lower volatility and systematic risk compared to HDL. This disparity underscores the importance of considering risk factors in investment decisions and highlights the potential benefits of diversification within the Nepalese manufacturing sector. Furthermore, the study identifies HDL as offering higher average returns, indicating potential opportunities for investors willing to tolerate greater risk. The observed pricing disparities between UNL and HDL underscore the complexities of asset pricing mechanisms and market sentiment within the Nepalese manufacturing sector.

Keywords: (risk and return, systematic risk, unsystematic risk, beta coefficient, expected return, covariance)`

CHAPTER I: INTRODUCTION

Background of the Study

Economic growth is the major force for the development of the country and the economic development is jointly determined by various factors. Industrialization is one of the most important factors for the economic development of any country. This statement is justified by the size and quality of the economy of the present industrialized nations. Like blood is necessary for human beings, finance is for business organizations and industries. Each and every business organization should base their decision making in financial management. Financial management is mainly concerned with the acquisition and utilization of funds. For this, financial market plays vital role in utilizing financial resources for expanding productive sectors in the country. It mobilizes unproductive and unutilized financial resources towards productive sectors and helps in expanding economic growth of the country.

The sustainable development of any nation hinges crucially on its economic condition. The economy serves as the backbone for overall societal progress, offering the necessary infrastructure and resources for growth and prosperity. At the heart of economic advancement lies financial development, which plays a pivotal role in fostering economic growth and stability. Financial institutions serve as the conduits for transferring funds from surplus units to deficit units within societies, thereby facilitating investment and wealth creation. In the context of Nepal, the financial system comprises various institutions, including deposit-taking entities like commercial banks, development banks, micro-credit development banks, financial companies, financial cooperatives, and non-government organizations (NGOs) engaged in limited banking activities (NRB, 2005).

Investment decisions, fundamental to economic progress, are inherently influenced by two critical factors: risk and return. Risk and return are akin to the two sides of a coin, inherently interlinked in the realm of investment. Risk, in investment parlance, refers to the likelihood that the actual return on an investment will deviate from the expected return. It is quantified statistically through measures such as standard deviation and reflects the uncertainty surrounding cash flows associated with an investment. Generally, investments with lower levels of uncertainty (low risk) offer

correspondingly lower potential returns, while those with higher uncertainty (high risk) promise higher potential returns. Return, on the other hand, represents the reward for waiting and the compensation for bearing risk.

Research indicates that most investors exhibit risk-averse behavior, preferring investments offering higher returns at lower levels of risk. Consequently, one of the primary challenges in investment lies in selecting securities that offer the optimal balance between risk and return. While investors may not be able to substantially increase returns, they can mitigate risk through diversification – spreading investment funds across different securities to form a portfolio. Portfolio analysis aims to minimize risk while achieving a specified rate of return, providing investors with a systematic approach to investment decision-making.

Despite the critical role of risk and return analysis in investment decision-making, in the Nepalese context, investors and shareholders often neglect to consider the risk-return dynamics of stocks before investing. Many Nepalese investors tend to concentrate their investments in single securities, often without conducting thorough risk-return analysis. Moreover, even those who diversify their investments may do so based on individual security expectations and assumptions rather than employing a logical and systematic portfolio approach. Consequently, investors may incur significant losses due to inadequate risk management and decision-making processes.

Furthermore, the prevailing apprehension among investors regarding securities investment underscores the need to enhance awareness and understanding of risk-return analysis tools and their practical implications on investment decision-making and evaluation. By equipping investors with the necessary knowledge and skills to assess risk and return effectively, policymakers and market participants can foster a more conducive investment environment, promoting financial stability and economic development in Nepal.

In conclusion, the nexus between risk, return, and investment decisions is paramount in shaping the economic landscape of nations, including Nepal. By recognizing the intrinsic relationship between risk and return and fostering informed investment decision-making processes, stakeholders can contribute to enhancing financial resilience and fostering sustainable economic growth in Nepal.

Problem Statement

The manufacturing sector in Nepal faces significant challenges in attracting adequate investment, compounded by the conservative investment practices of commercial banks and limited financial resources allocated to crucial sectors such as agriculture and industry. This constrained investment landscape inhibits the potential for economic growth and development within the manufacturing industry (Poudel & Acharya, 2020). Furthermore, manufacturing companies grapple with a lack of access to comprehensive information on risk-return analysis and portfolio management, undermining their ability to attract investment and make informed financial decisions (Shrestha, 2020).

The emergence of the Nepal Stock Exchange (NEPSE) in 1993 introduced additional complexities to the investment landscape, leaving manufacturing companies and investors in a quandary regarding the allocation of funds between traditional and stock market investments. The limited number of manufacturing firms listed on NEPSE further exacerbates the challenges facing the sector, restricting investment opportunities and contributing to market imbalances (Gurung, 2022). Consequently, manufacturing companies struggle to compete for investment capital, hindering their growth prospects and overall contribution to the economy.

Addressing these challenges requires a comprehensive understanding of the risk-return dynamics within the manufacturing sector. Key research questions include assessing the profitability of portfolio constructions among manufacturing companies, analyzing the relationship between systematic and total risk, and exploring the impact of investment decisions on the earnings of commercial banks (Timsina, 2014). Additionally, there is a need to investigate how investors perceive the risk inherent in individual manufacturing company stocks and its relationship with market dynamics, as well as strategizing the creation of optimum risky portfolios tailored to the unique characteristics of the manufacturing industry in Nepal. By delving into these issues, this study aims to provide valuable insights into enhancing investment practices and fostering sustainable growth within the Nepalese manufacturing sector. Based on above discussion on the research problems, this study will deal with following issues.

Based on the objectives provided, here are four research questions tailored to the context of the manufacturing sector:

- What are the specific risk and return characteristics associated with investing in common stocks within the manufacturing sector of Nepal?
- What is the covariance and correlation between the returns of sample manufacturing companies within Nepal's manufacturing sector?
- How can the optimal portfolio risk and return be determined within Nepal's manufacturing sector, considering investments in a diversified portfolio of manufacturing stocks?
- What is the proportion of systematic risk and unsystematic risk inherent in the common stocks of manufacturing companies in Nepal?

Objectives of the study

This study aims to conduct a risk and return analysis focusing on financial securities, particularly common stocks, within the manufacturing sector of Nepal, with a specific focus on two manufacturing companies UNL and HDL. The primary objectives of this study are outlined below:

- To examine the optimal portfolio within the manufacturing sector.
- To quantify the proportion of systematic risk and unsystematic risk of sampled manufacturing companies in Nepal.
- To analyze the risk and return characteristics within the manufacturing sector.
- To identify the correlation between risk and expected rate of returns of sampled manufacturing companies.

Rationale of the Study

The rationale for conducting this study lies in the crucial role that risk and return analysis plays in informing investment decisions within the manufacturing sector of Nepal. By examining the risk and return characteristics associated with investing in common stocks, investors can make more informed choices that align with their financial goals and risk tolerance levels. Understanding the covariance and correlation

between the returns of manufacturing companies provides insights into diversification benefits and portfolio management strategies, which are essential for optimizing investment outcomes and mitigating risks. Furthermore, exploring the optimal portfolio risk and return within the manufacturing sector enables investors to identify the most efficient allocation of resources, maximizing returns while minimizing exposure to undue risks.

Moreover, quantifying the proportion of systematic and unsystematic risk inherent in common stocks of manufacturing companies in Nepal is crucial for risk management and portfolio diversification purposes. Systematic risk reflects broader market factors that affect all stocks, while unsystematic risk pertains to company-specific factors. By understanding the relative contributions of these risk components, investors can better assess and manage their investment portfolios, enhancing overall financial performance and stability. Additionally, this study fills a gap in the existing literature by focusing specifically on the manufacturing sector of Nepal, offering insights and recommendations tailored to the unique characteristics and challenges of this industry.

Furthermore, the findings of this study hold practical implications for investors, policymakers, and industry stakeholders in Nepal. By providing empirical evidence on risk-return dynamics, covariance, correlation, and portfolio optimization within the manufacturing sector, this research equips stakeholders with valuable insights to support decision-making processes. Policymakers can use these insights to formulate policies that foster a conducive investment environment, while investors can leverage them to make more informed investment decisions. Ultimately, this study contributes to the advancement of knowledge in the field of finance and investments, offering practical guidance for enhancing investment practices and fostering sustainable economic growth within the manufacturing sector of Nepal.

Limitations of the Study

While the research endeavor provides valuable insights into the risk and return analysis of manufacturing companies in Nepal, it is essential to acknowledge certain limitations inherent in the study. These limitations serve as crucial points of consideration and highlight areas where caution should be exercised when interpreting the findings.

- The study focuses on only two manufacturing companies in Nepal, which may not adequately represent the entire manufacturing sector in the country.
- Utilizing secondary data sources may introduce limitations in terms of accuracy, completeness, and reliability, potentially impacting the validity of the study's findings.
- The use of a convenient sampling method to select the sample could introduce bias and affect the representativeness of the sample, limiting the generalizability of the results.
- The study's scope is confined to a specific time period from 2018/19 to 2022/23, which may not capture long-term trends or changes in risk and return dynamics over time.
- The study's correlational research design restricts the ability to establish causal relationships between variables, emphasizing the need for cautious interpretation of the findings.

CHAPTER II: LITERATURE REVIEW

Background

Central focus of this study is on the risk and return analysis in the investment on common stock. This section of the chapter reviews the meaning and definitions of different concepts and terms used in this study.

Theoretical Review

Common stock is sources of long-term financing and an ownership security. Common stock certificates are legal documents that evidence ownership or equality in a company that is issued by a corporation, and they are also marketable financial instruments. An element of high risk is involved in common stock investment due to its low priority of claims at liquidation. When investors buy common stock, they receive certificate of ownership as a proof to being a part of the company. The certificate states the number of shares purchased and their value per share (Bhalla, 1997).

Common stock represents a form of ownership in a corporation, granting shareholders certain rights and privileges within the company's structure. As residual claimants, common stockholders stand behind creditors and preference shareholders in terms of receiving payment, meaning they are entitled to dividends and assets only after other financial obligations are met (Pandey, 2003). Shareholders, therefore, assume the inherent risks of ownership, such as the potential for loss in the event of bankruptcy proceedings. However, they also stand to benefit from potential returns, both through dividends and the appreciation of stock value (Gitman, 2006).

The market value of common stock reflects its price in the stock market and is influenced by expectations surrounding the company's performance (Pandey, 2003). It is important to note that not all ordinary shares are traded on stock markets, which may limit the availability of market values for all companies' stocks (Pandey, 2003). Despite the absence of guarantees regarding periodic distributions of earnings or outcomes in the event of liquidation, common stockholders have the potential to receive significant returns on their investment (Gitman, 2006).

While common stockholders face the risk of losing their investment, particularly in the event of bankruptcy, they also have the opportunity for substantial returns through earnings distributions and stock appreciation (Gitman, 2006). This underscores the trade-off inherent in equity investments: the possibility of significant rewards alongside the risk of potential losses. By understanding the characteristics and dynamics of common stock, investors can make informed decisions to manage their investment portfolios effectively.

Before embarking on investments in securities, investors often seek a thorough understanding of the concept of return. Prasanna Chandra (2002) defines return as the tangible cash flow received by an investor over a specified period, typically expressed as a percentage of the initial investment value. In the realm of common stock investments, individuals forego immediate consumption with the expectation of future gains in the form of dividends and potential capital appreciation upon eventual stock sale.

The calculation of return involves a comprehensive assessment of various factors. Brealey and Myers (2004) outline the methodology, which integrates dividends and anticipated price appreciation over a defined investment horizon. This expected return, often referred to as the market capitalization rate, encapsulates investors' outlook on future earnings potential and asset value escalation, reflecting their risk-return preferences and market outlook.

However, anticipating future returns presents inherent challenges due to the uncertainties of future market dynamics. Francis (2007) underscores the intricacies involved in predicting future outcomes and assigning probabilities to events. Consequently, assessing expected returns necessitates a nuanced understanding of historical performance data. Brealey and Myers (2004) emphasize the significance of long-term historical data analysis in gauging average rates of return, enabling investors to glean insights into market dynamics and risk-return profiles crucial for informed decision-making.

Risk

The term risk is used interchangeably with uncertainty, it refer to the variability of expected returns associated with a given asset. "The observe difference in both the levels and variability of the rates of return across securities are indicative of the underlying risk and return relation in the market" (Loric, Dodd and Kimpton, 1985). Two measure developments from the probability distribution have been used as initial measure of return and risk. There are the mean and the standard deviation of the probability distribution (Weston and Brigham, 1982). There are many ways to measure risk. The following three models are commonly used (Van Horne, 1998).

Beta Coefficient

Beta measures a stock's volatility - The degree to which its price fluctuates in relation to the overall market. Beta is derived mathematically so that high beta indicates a high level of risk whereas a low beta represents a low level of risk. β_j

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.

Subjected Estimates

A subjective risk occurs when qualitative rather than quantitative estimates are used to measure dispersion. The subjective may be related with business risk or financial risks.

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).

Review of Theories and Models

There are two theories of price behavior i.e. classical approach and efficient market theory approach. Classical or conventional approach includes fundamental analysis theory and technical analysis theory. Under efficient theories, there are three forms of efficient market hypothesis. Classical approach assures market as inefficient whereas the efficient market theory investors were generally divided on to two groups, fundamentalists and technicians (Pastor & Veronesi, 2012).

Classical Approach

The classical or conventional approach includes fundamental analysis and technical analysis theory. Fundamental analysis or approach forecast stock price on the basis of earning and dividend of the company. The fundamental analysis theory holds that the market value of a share is based on certain intrinsic or fundamental factors such as the earnings, dividends, growth potential, debt equity mix etc. whereas technical analysis theory talks about the stock prices on the basis of past price behaviour of the company, which suggests by the plotting the market price of shares over a period of time on a chart, that can determine certain patterns (Blanchard & Perotti, 2002). Fundamental analysis, technical analysis, random walk theory are significance theory under classical approach.

Portfolio Theory

Investing all the funds in single asset or single stock is risky. If the company is bankruptcy, the whole investment becomes worthless. To minimize the risk the investment should be made on more than one asset. Because if there is no return from one asset there is chance that investors may have returns from another asset. The portfolio theory explains that for the minimization of risk investors should include more than one asset in his or her portfolio. A portfolio is a set of investment opportunity.

In the field of finance in Nepal it is very difficult to get advanced and research based journal. There are very limited numbers of journals available in the subject of management and it is also hard to find any article in the subject matter of finance.

Efficient Market Theory

The term efficiency may be defined in various ways. For instance: allocation efficiency, operational efficiency and informational efficiency. The word 'efficiency' in security market has unfortunately been used to represent a variety of logically distance concepts. Efficiency has different dimensions such as; exchange efficiency production efficiency and information efficiency. However, present study concerns only with information efficiency in the pricing of stocks. When the financial literature speaks on market efficiency, it exclusively speaks about information efficiency in pricing the stock. A market is said to be information efficient if, the current market price is instantaneous and fully reflects all relevant available information. The market value of a particular share may be under or overvalued. An efficient market is one where shares are always correctly priced and where it is not possible to outperform the market consistently (Blanchard & Perotti, 2002).

Efficient market theory contends that in a free and perfect competitive market, stock price always reflects all the available information and adjusts with every influx of new information instantaneously. In efficient market securities prices fully reflect available information. In efficient market, price change would only occur from new information. An initial and every important premise of an efficient market is that there are large numbers of knowledge and profit maximizing independent buyers and sellers, new information is generated randomly and investors adjust the information rapidly (Pastor & Veronesi, 2012). Therefore, if market is efficient, it uses all available information to set price. The measure of efficiency evolved from the nation of perfect competition, which assumes free and instantly available information rational investors with no taxes or transaction cost. Weak form market efficiency, Semi-strong form market efficiency and Strong form market efficiency are important theory under efficient market theory.

Modigliani and Miller's (MM) Theory

A financial theory stating that the market value of a firm is determining by its earning power and the risk of its underlying assets, and is independent of the way it chooses to finance its investments or distribute dividends. Remember, a firm can choose between three methods of financing: issuing shares, borrowing or spending profits (as opposed

to dispersing them to shareholders in dividends). The theorem gets much more complicated, but the basic idea is that, under certain assumptions, it makes no difference whether a firm finances itself with debt or equity.

This theorem states that, in the absence of taxes, bankruptcy costs, and asymmetric information, and in an efficient market, a company's value is unaffected by how it is finance, regardless of whether the company's capital consists of equities or debt, or a combination of these, or what the dividend policy is. The theorem is also known as the capital structure irrelevance principle (Pastor & Veronesi, 2012).

A number of principles underlie the theorem, which holds under the assumption of both taxation and no taxation. The two most important principles are that, first, if there are no taxes, increasing leverage brings no benefits it terms of value creation, and second, that where there are taxes, such benefits, by way of an interest tax shield, accrue when leverage is introduced and/or increased (Blanchard & Perotti, 2002). The theorem compares two companies one unlevered (i.e. financed purely by equity) and the other levered (i.e. financed partly by equity and partly by debt) and states that if they are identical in every other way the value of the two companies is the same

Relationship Between Risk and Return

The interplay between anticipated returns and the inherent risk profiles embedded within investment propositions forms the cornerstone of strategic decision-making, especially within the manufacturing sector. As expounded by Hampton (1996), proposals bearing elevated risk thresholds necessitate corresponding increments in forecasted returns to warrant their acceptance, contrasting with lower-risk alternatives. This axiom is reinforced by Loric, Dodd, and Kempton (1985), who elucidate that the variance in both the magnitude and volatility of returns across securities serves as an illuminating gauge of underlying market risk and interdependencies. Within the manufacturing domain, where investments can span from capital-intensive infrastructure projects to technology upgrades, the imperative to weigh risk against return becomes paramount.

In the context of common stock investments within manufacturing enterprises, the risk-return tradeoff becomes particularly salient. Common stockholders, as

underscored by Bhalla (1997), assume a subordinate position in the pecking order during liquidation events. Nevertheless, they receive ownership certificates signifying their stake in the company, entailing entitlement to dividends and assets post-creditor settlements. The implications of this ownership dynamic reverberate throughout the manufacturing sector, where ventures often necessitate significant capital outlays and entail varying degrees of market risk.

Delving deeper into the realm of financial theory, Edwin J. Elton's exploration (1999) of expected returns on assets unveils critical nuances underpinning investment decision-making. Elton's scrutiny of historical reliance on realized returns as proxies for expected returns prompts a reassessment of conventional wisdom. This line of inquiry is echoed by empirical investigations conducted by scholars such as Md. Zobaer et al. (2012) and Kolani et al. (2014), whose analyses challenge traditional financial models like the Capital Asset Pricing Model (CAPM) within the manufacturing sector's context. These studies underscore the necessity of contextualizing financial theories within the unique risk-return dynamics prevalent in the manufacturing landscape.

Turning to the Nepalese manufacturing milieu, research insights gleaned from studies by Pradhan (1993), Poudel (2003), Timilsina (2007), and Pradhan and Blampaki (2004) offer valuable perspectives on stock market behavior, capital market evolution, and drivers of stock returns within the manufacturing sector. Furthermore, investigations by Rouwenhast (1999) and Mishra (2002) shed light on return variations in emerging stock markets, including Nepal's, emphasizing the importance of discerning risk-return relationships for formulating informed investment strategies tailored to the manufacturing sector's specific intricacies. In navigating the manifold investment opportunities and challenges within the manufacturing domain, an acute understanding of risk-return dynamics serves as a linchpin for sustainable growth and strategic resource allocation.

Empirical Review

Rouwenhorst (1999) investigateed dynamics of return variation within emerging stock markets, posing fundamental inquiries regarding the applicability of return-explaining factors from developed markets to their emerging counterparts. By scrutinizing

liquidity's interplay with average returns, Rouwenhorst uncovers intriguing correlations, particularly between beta, size, momentum, and value with turnover. This observation suggests that return premiums within emerging markets extend beyond mere liquidity compensation, echoing the complex interplay of various market factors. Furthermore, the study underscores the imperative of understanding individual investors' unique circumstances and preferences, emphasizing the profound impact of personal investment profiles on asset allocation decisions. Such insights highlight the need for tailored investment strategies that consider both market dynamics and individual risk tolerances, thereby optimizing portfolio returns and aligning with investors' overarching financial objectives.

Elton (1999) seminal work on "Expected Return, Realized Returns and Asset Pricing Tests" offers profound insights into the intricate dynamics of expected returns in finance. By probing into the factors influencing expected returns on assets and their sensitivity, Elton underscores the complexity inherent in assessing these metrics. Contrary to conventional wisdom, which often relies on realized returns as proxies for expected returns, Elton highlights the limitations of this approach, citing instances where realized returns deviate significantly from expectations. Through meticulous analysis spanning decades, Elton elucidates the inadequacy of using realized returns as a reliable indicator of expected returns, especially in periods characterized by market volatility and uncertainty. His findings challenge entrenched beliefs about the reliability of realized returns, emphasizing the need for a more nuanced understanding of expected return dynamics in asset pricing tests.

Yilmaz and Gulay (2006) conducted a comprehensive study on the Istanbul stock market, focusing specifically on dividend policy and its effects on stock returns and trading volumes. Their primary objective was to analyze the impact of cash dividend payments on stock prices and trading volumes, while also exploring potential variations in investor behavior based on dividend payout ratios. Employing an event study methodology, the researchers sought to assess the influence of cash payments on asset prices over time. Their findings revealed notable trends: prices tended to increase in the period leading up to cash dividend payments, experienced a modest decline on the ex-dividend day, and subsequently decreased further in the sessions following the payment. Concurrently, trading volume exhibited significant growth

before the payment date, stabilizing thereafter. These results suggest that cash dividends exert differential effects on prices and trading volume at different stages, presenting investors with opportunities to devise profitable trading strategies.

Pastor and Veronesi (2012) conducted a study aimed at analyzing the impact of changes in government policy on stock prices. Their research centered on developing a simple asset pricing model that incorporated uncertainty surrounding government policy decisions, considering both economic and non-economic motives behind governmental actions. The model generated several testable predictions: stock prices were anticipated to decrease following the announcement of a policy change, with larger declines expected when uncertainty regarding government policy was high and the change occurred amidst a brief or shallow economic downturn. Additionally, policy changes were predicted to elevate volatilities and correlations among stocks, while the jump risk premium associated with policy decisions was expected to exhibit a positive average.

Sopipan et al. (2012) conducted a study with the primary objective of forecasting stock prices for the top 50 listed companies on the Stock Exchange of Thailand. To address the challenge of high correlation among explanatory variables, they employed multiple regressions and utilized Principal Component Analysis (PCA) to mitigate multicollinearity issues effectively. By incorporating principal component scores (PC) into their multiple regression analysis, they discovered that a significant proportion, specifically 99.4%, of the variation in stock prices for the top listed companies on the Stock Exchange of Thailand could be explained by the principal components. This approach enabled them to develop a more robust forecasting model, offering valuable insights into the dynamics of stock price movements within the Thai market.

Naik (2013) conducted a study with the primary aim of examining the influence of macroeconomic factors on stock market behavior using Indian data. Employing Johansen’s co-integration and vector error correction model, the researcher sought to uncover the long-term equilibrium relationship between the stock market index and several macroeconomic variables. These variables included the industrial production index, inflation rate, money supply, short-term interest rate, exchange rate, and the stock market index itself, spanning the period from 1994 to 2011. Through his

analysis, Naik determined that the macroeconomic variables and the stock market index demonstrated co-integration, indicating the presence of a long-run equilibrium relationship between them. This finding contributes valuable insights into the interconnectedness and dynamics between the Indian stock market and macroeconomic indicators.

Bhattarai (2014) delved into the determinants of share prices within the Nepalese commercial banking sector, an area of increasing interest and importance. The study aimed to uncover the factors influencing equity share prices, particularly within the context of the Nepalese stock market. Given the frequent trading of commercial bank shares in Nepal, understanding these determinants holds significant relevance for investors and market participants. Specifically, the study examined the impact of dividend payout ratio, dividend yield, earnings per share, price-earnings ratio, and size on the share prices of banks listed on the Nepal Stock Exchange Limited. Through analysis spanning from 2006 to 2014, the study revealed several key findings. Earnings per share and price-earnings ratio were found to have a significant positive association with share prices, while dividend yield exhibited a significant inverse association. These results underscore the importance of dividend yield, earnings per share, and price-earnings ratio as major determinants of share prices within the Nepalese commercial banking sector. The study's findings offer valuable insights for equity investors and fund managers, empowering them to consider these significant factors when estimating stock returns and predicting share prices in the Nepalese market context.

Rakhal (2018) embarked on a study focused on uncovering the determinants of stock market performance, recognizing the pivotal role of the stock market in capital mobilization and allocation towards productive sectors. The research aimed to investigate the impact of selected macroeconomic indicators on stock market performance, shedding light on the intricate relationship between these variables. Through a comprehensive analysis guided by existing literature, the study explored the effects of remittances, exchange rates, interest rates, and money supply on stock market performance, identifying gaps in previous research. Drawing from a synthesis of literature and prevailing research findings, several conclusions were drawn. Firstly, the study revealed a positive association between remittances and stock market

performance, suggesting that an increase in remittances significantly enhances market performance, likely indicating substantial investment of remittances in the stock market. Secondly, a positive relationship was observed between money supply and stock market performance, indicating that higher growth in money supply amplifies investable amounts among investors, thereby bolstering market performance. Conversely, a negative correlation between exchange rates and the stock market index in Nepal was identified, attributable to the adverse effects of currency depreciation on import costs and overall economic health. Finally, the study highlighted a negative impact of interest rates on stock market performance, signaling that rising T-bill rates prompt investors to reallocate their investments towards government securities, thereby weakening stock market performance. These findings contribute valuable insights into the dynamics between macroeconomic variables and stock market performance, offering implications for investors and policymakers alike.

Krishnaprabha and Vijayakumar (2015) conducted a study on risk and return analysis of selected stocks in India, highlighting the crucial role such analysis plays in individual decision-making processes. The study emphasized the inherent relationship between risk and return, noting that investors seeking higher returns must also accept higher levels of risk. Based on their analysis, they found that high-risk sectors like banking and automobile typically yield lower returns, while low-risk sectors like information technology, fast-moving consumer goods, and pharmaceuticals tend to offer higher returns. Additionally, they observed that alpha stocks exhibit positive returns and are independent of market fluctuations, indicating profitability.

Aliu, Pavelkova, and Dehning (2017) investigated portfolio risk-return dynamics within the context of the automotive industry in the Czech Republic. Their study underscored the nuanced relationship between portfolio composition and risk exposure, demonstrating that while expanding the number of companies initially mitigates risk, further diversification may inadvertently increase risk due to elevated correlation coefficients. This emphasizes the importance of balancing risk and return according to individual risk preferences. Moreover, their analysis shed light on the vulnerability of the Czech automotive sector to economic fluctuations, particularly evident during the global financial crisis, which precipitated a rapid decline in returns. The study's findings underscored the significance of considering both local and global

economic factors when constructing investment portfolios to effectively manage systematic risks. By highlighting the interconnectedness of financial markets and the potential impact of systemic shocks, the research underscored the importance of prudent diversification strategies to mitigate portfolio risk.

Kandel (2018) conducted a study on the risk and return analysis of commercial banks in Nepal, focusing on two specific banks listed on the Nepal Stock Exchange: NABIL and NIBL. The research aimed to understand the relationship between risk and return in the context of common stock investment in the Nepalese stock market. The findings revealed a positive correlation between risk and return, indicating that most investors tend to be risk-averse. The study emphasized the importance of constructing a diversified portfolio to mitigate unsystematic or diversifiable risk. Data for the analysis were gathered from various sources, including the NEPSE website, previous studies, publications from the Nepal Rastra Bank (NRB), and the websites of selected commercial banks and the Securities Board of Nepal (SEBO). Both quantitative and qualitative analyses were employed using scientific methods. The analysis of the risk and return of the sample banks over the last five fiscal years (FY-2012/13 to FY-2016/17) revealed fluctuating rates of return and high levels of risk, with NABIL exhibiting greater volatility than NIBL. Additionally, both banks were found to have a high proportion of unsystematic risk.

Kalkoti (2018) provides an in-depth analysis of "A Study on Risk and Return Analysis of Equity Stocks" conducted at Pattern Effects Labs Private Limited. This study serves as an essential component of the educational curriculum, focusing on the practical application of theoretical concepts in the realm of business administration. Undertaken as part of the Master of Business Administration course requirements at VTU, the project delves into various aspects including company and industry profiles, theoretical background, data analysis, interpretation, and recommendations based on the findings and conclusions drawn. Additionally, it includes the financial statements of the company, offering a comprehensive overview of the study's outcomes.

Subramanyam and Kalyan (2018) conducted a study on risk and return analysis of selected securities in India, aiming to provide investors with insights into investing in mutual funds and maximizing returns on their capital. The research explored investor

awareness about mutual funds, risk-taking abilities, and preferred investment options. The study highlighted the significant growth of the Indian capital market in recent years, attributing it to various economic, investing policy, public sector, and financial sector reforms. With the emergence of the mutual fund industry, the study elucidated how companies diversify across sectors and companies to optimize returns while minimizing risks.

Venkatesh, Vikas, and Charithra (2021) conducted a study focusing on the risk and return analysis, as well as data envelopment analysis, of public and private sector banks. The abstract highlights the intrinsic relationship between risk and return in investment decisions, emphasizing that higher returns often entail higher levels of risk. The study specifically analyzes the performance of nationalized banks listed on the NSE during the period from January 1st, 2017, to December 31st, 2017. It distinguishes between risk, which involves predictable consequences, and uncertainty, where outcomes cannot be predicted. The methodology employed includes assessing banking sector performance relative to the Bank Nifty Index benchmark and utilizing data envelopment analysis to evaluate bank efficiency. Secondary data collected from the NSE, focusing on monthly stock prices, forms the basis of the study, aiming to capture short-term fluctuations influenced by various internal and external factors. The findings suggest that investors willing to accept higher risk for potentially greater returns may consider investing in stocks like Bank of India and Punjab National Bank, while those seeking lower risk and return may find Axis Bank stock more suitable.

Joghee (2021) delve into the intricacies of the Indian banking sector, highlighting its pivotal role in driving economic growth and development. Acknowledging the inherent volatility of the equity market within this sector, the study seeks to address the challenges investors face in navigating these fluctuations. By conducting a comprehensive risk and return analysis of selected banking securities, the research aims to offer valuable insights into investment decision-making. Through meticulous examination of historical data and market trends, the study endeavors to provide investors with a clearer understanding of the risks associated with various investment options and the potential returns they offer. This analytical approach enables investors to make well-informed decisions tailored to their risk tolerance levels and financial

goals, thereby optimizing their investment portfolios in the dynamic landscape of the banking sector equity market.

Moolbharathi and Sugandi (2021) conducted a comparison study on risk and return analysis of selected companies with benchmark indices in the NSE, aiming to provide valuable insights for investors navigating the volatile stock market. By analyzing daily data of closing stock prices from 2017 to 2021, the study calculated daily returns and measured standard deviation across various sectors, including automobile, banking, finance, FMCG, and IT. Subsequent analyses involved beta and regression analysis to assess the risk associated with different indices compared to market indices such as NIFTY AUTOMOBILE, BANK NIFTY, NIFTY FINANCE, NIFTY FMCG, and NIFTY IT Service. The study integrated various statistical tools to evaluate sector-specific risk and return, enabling investors to make informed decisions regarding sector suitability for investment.

Regmi (2022) conducted a comprehensive study analyzing the stocks of Nepalese commercial banks with a focus on stock return and risk. The study aimed to identify firm-specific variables influencing return and risk for investors and to determine the relationship between different variables and their significance on return/risk. Using data from fiscal years 2017 to 2021, the study calculated various metrics such as expected return, standard deviation, variance, coefficient of variation, and correlation for the banking sector, market, and individual banks. Diversifiable and undiversifiable risk in each stock were also analyzed, along with beta and CAPM model to assess stock pricing. The study found significant influences of variables like EPS, P/E ratio, ROA, NPL, market coverage, and firm size on risk/return, while others like ROE, net worth, capital, loan mobilization, firm age, and growth rate were found to be insignificant. NIC Asia Bank stood out as the best-performing bank with the lowest risk per unit of return, followed by PRVU Bank, Nepal Bank, GBIME Bank, and Kumari Bank. The banking sector was identified as defensive, with most banks exhibiting greater systematic risk. Overall, the study highlighted the overpricing of stocks and the challenges of earning the required rate of return in the current market conditions.

Chakole (2022) critically analyzes the concepts of risk and return in various investments, emphasizing the significance of investment as a means to generate profits. Investment entails the allocation of funds with the expectation of yielding greater returns in the future, thereby involving the expenditure of money with the aim of earning more money. The abstract highlights investment as a pivotal activity for individuals, involving the commitment of savings from current consumption to attain future rewards. It underscores the importance of considering factors such as market conditions and uncertainty in projecting future returns, with risk serving as a measure of uncertainty. The study explores different investment avenues, evaluating their associated risk and return while examining the interplay between these factors. Keywords include investment, risk, return, standard deviation, and arithmetic mean, indicative of the focus on quantitative measures and financial analysis in the study.

Schoenmaker and Schramade (2023) delve into risk-return analysis within the realm of financial decision-making, emphasizing the concept of compensating risk-averse investors for higher risk through a risk premium on risky assets. They highlight the distinction between systematic or market-wide risk and idiosyncratic risk, noting that while idiosyncratic risk can be diversified away in a portfolio, investors are primarily rewarded for bearing market risk. The authors explore forward-looking measures of financial risk and return, expanding the analysis to include social and environmental factors in a multifactor model. They advocate for assessing social and environmental risk separately and its impact on integrated risk, enabling a comprehensive estimation of the cost of integrated capital. Through company examples, they illustrate how integrated risk-return analysis can lead to different and more sustainable investment decisions.

Table 1

Summary of Empirical Review

SN	Source	Topic	Objective	Methodology	Finding
1	Aliu, F., Pavelkova, D., & Dehning, B. (2017)	Portfolio risk-return dynamics in Czech automotive	Investigate portfolio composition's impact on risk exposure and vulnerability to	Analyze diversification effects on portfolio risk	Increasing portfolio diversification initially mitigates risk but may increase it due to

		industry	economic fluctuations		elevated correlation coefficients, emphasizing need for balanced diversification strategies.
2	Bhattarai, Y.R. (2014)	Determinants of share prices in Nepalese commercial banking sector	Uncover factors influencing equity share prices in Nepalese banking sector	Examine impact of dividend payout ratio, dividend yield, earnings per share, price-earnings ratio, and size on share prices	Earnings per share and price-earnings ratio positively associated with share prices, while dividend yield inversely associated.
3	Chakole, Y. (2022)	Critical analysis of risk and return concepts in investments	Explore significance of investment in generating profits and assessing risk and return dynamics	Examine factors affecting investment decisions and market conditions	Investment crucial for generating future profits; risk and return assessment essential for decision-making; market conditions and uncertainty impact future returns.
4	Elton, E.J. (1999)	Expected return dynamics in finance	Explore factors influencing expected returns and highlight limitations of using realized returns as proxies for expectations	Analyze factors influencing expected returns	Realized returns are inadequate proxies for expected returns, especially in volatile and uncertain market conditions.
5	Joghee, M.V.	Risk and	Offer insights into	Conduct historical	Clearer

	(2021)	return analysis of selected banking securities in India	navigating equity market fluctuations in Indian banking sector	data analysis	understanding of risks and returns aids investors in making informed decisions in Indian banking sector.
6	Kalkoti, P.M. (2018)	Risk and return analysis of equity stocks	Examine risk-return dynamics in equity stocks	Conduct theoretical and data analysis	Offer practical insights on risk and return analysis in business administration context.
7	Kandel, L.R. (2018)	Risk and return analysis of commercial banks in Nepal	Understand risk-return relationship in Nepalese banking sector	Employ quantitative and qualitative analyses	Positive correlation between risk and return in Nepalese banking sector; diversified portfolios mitigate unsystematic risk.
8	Krishnaprabha, D.S., & Vijayakumar, M. (2015)	Risk and return analysis of selected stocks in India	Analyze risk-return relationship in Indian stock sectors	Evaluate sectors' risk-return profiles	Banking and automobile sectors yield lower returns but higher risk, while IT, FMCG, and pharmaceuticals offer higher returns with lower risk.
9	Moolbharathi, M.R., & Sugandi, M. (2021)	Comparison study on risk and return analysis of selected	Provide insights for investors navigating volatile stock market	Analyze daily closing prices and sector-specific risk and return	Sector-specific risk and return evaluated, aiding investors in decision-making.

		companies in NSE			
10	Naik, P.K. (2013)	Influence of macroeconomic factors on Indian stock market behavior	Examine long-term equilibrium relationship between stock market index and macroeconomic variables	Employ Johansen's co-integration and vector error correction model	Macro variables and stock market index demonstrate co-integration, indicating long-run equilibrium relationship.
11	Pastor, L., & Veronesi, P. (2012)	Dividend policy effects on stock returns and trading volumes	Analyze impact of cash dividends on stock prices and trading volumes	Employ event study methodology	Prices tend to increase before cash dividend payments, decline on ex-dividend day, and further decrease after payment, with trading volume increasing before payment and stabilizing afterward.
12	Pastor, L., & Veronesi, P. (2012)	Impact of government policy changes on stock prices	Analyze how changes in government policy affect stock prices	Develop asset pricing model considering policy uncertainty	Stock prices decrease following policy changes, with larger declines during high uncertainty and economic downturns. Policy changes elevate volatilities and correlations among

					stocks, with a positive average jump risk premium associated with policy decisions.
13	Rakhal, R. (2015)	Determinants of stock market performance in Nepal	Investigate impact of macroeconomic indicators on Nepalese stock market performance	Synthesize literature and analyze effects of remittances, exchange rates, interest rates, and money supply on market performance	Remittances and money supply positively correlated with stock market performance, while exchange rates and interest rates negatively correlated.
14	Regmi, R. (2022)	Stock return and risk analysis of Nepalese commercial banks	Identify variables influencing stock return and risk in Nepalese banking sector	Analyze firm-specific variables and their impact on risk/return	Significant influences of EPS, P/E ratio, ROA, NPL, market coverage, and firm size on risk/return identified; NIC Asia Bank stands out as best-performing bank.
15	Rouwenhost, K. G. (1999)	Dynamics of return variation within emerging stock markets	Investigate the applicability of return-explaining factors from developed markets to emerging markets	Scrutinize liquidity's interplay with average returns	Return premiums in emerging markets extend beyond liquidity compensation, indicating a complex interplay of various market

					factors.
16	Schoenmaker, D., & Schramade, W. (2023)	Risk-return analysis in financial decision-making	Highlight importance of compensating investors for higher risk through risk premium	Explore forward-looking measures of financial	Investors are rewarded for bearing market risk, with integrated risk-return analysis guiding sustainable investments.
17	Sopipan, N., Premanode, B., & Sattayatham, P. (2012)	Stock price forecasting for listed companies on the Stock Exchange of Thailand	Forecast stock prices for top 50 listed companies on the Stock Exchange of Thailand	Utilize multiple regressions and PCA to mitigate multicollinearity issues	99.4% of stock price variation explained by principal components, enabling robust forecasting model development.
18	Subramanyam, P., & Kalyan, N.B. (2018)	Risk and return analysis of selected securities in India	Provide insights for investors on maximizing returns in mutual funds	Explore investor awareness and preferred investment options	Indian capital market growth attributed to various reforms; mutual funds diversify across sectors for optimized returns and risk management.
19	Venkatesh, K., Vikas, B., & Charithra, C.M. (2021)	Risk and return analysis of public and private sector banks	Analyze performance of nationalized banks on NSE and evaluate bank efficiency	Assess sector performance relative to benchmark; employ data envelopment analysis	Investors may consider Bank of India and Punjab National Bank for higher risk and return, while Axis Bank offers lower risk and return.

Research Gap

The literature review on risk and return analysis of selected stocks in India provides valuable insights into the relationship between risk and return in various sectors. However, there is a notable gap in the context of Nepal, particularly regarding the manufacturing sector. While the study addresses risk and return analysis in sectors such as banking, automobile, information technology, fast-moving consumer goods, and pharmaceuticals, it overlooks the manufacturing industry.

Given that manufacturing plays a significant role in Nepal's economy, understanding the risk-return dynamics within this sector is crucial for investors and policymakers alike. Therefore, there is a clear research gap in examining the risk and return profiles of manufacturing companies in Nepal, which warrants further investigation. Such a study would contribute to a more comprehensive understanding of investment opportunities and risk management strategies in the Nepalese market.

CHAPTER III: RESEARCH METHODOLOGY

Background

The research methodology for a study on risk and return analysis of manufacturing companies in Nepal involves a systematic approach to data collection, analysis, and interpretation. It begins with outlining the research design, specifying objectives, scope, and approach, followed by the collection of both primary and secondary data from relevant sources. Sampling techniques are employed to select a representative sample of manufacturing companies, and statistical analysis methods such as regression and correlation are utilized to analyze the data. The findings are then interpreted in relation to the research objectives, identifying patterns and drawing conclusions about risk-return profiles. Limitations and ethical considerations are also addressed throughout the research process to ensure the validity and reliability of the study's results.

Research Design

The research design for the study on risk and return analysis of manufacturing companies in Nepal adopts a descriptive and correlational research design. This design aims to provide a comprehensive understanding of the risk-return profiles of manufacturing companies in the Nepalese context and to explore the relationships between various factors influencing risk and return. The descriptive aspect of the research involves systematically collecting data on the financial performance, market dynamics, and other relevant variables of selected manufacturing companies.

This data will be analyzed using descriptive statistics to summarize key characteristics and trends within the sample. Additionally, the correlational aspect of the research involves examining the relationships between different variables, such as company size, industry sector, financial ratios, and risk-return measures. Correlation analysis will be employed to assess the strength and direction of these relationships, providing insights into the factors influencing risk and return in the manufacturing sector of Nepal. Overall, this research design aims to offer a comprehensive analysis of risk and return in Nepalese manufacturing companies while exploring the interrelationships between various factors affecting their financial performance.

Population Sample and Sample Design Selection

The population for this study comprises nearly 57,000 manufacturing companies in Nepal. From this population, a sample of two manufacturing companies will be selected for the study cause all the population is probably not possible for selection due to constraints of time and unavailability of data at all. The selected companies include Unilever Nepal Limited and Himalayan Distillery Limited. The sample will be chosen using the convenience sampling method, which involves selecting participants who are readily available and accessible for the study. This method is chosen for its practicality and ease of implementation, allowing for efficient data collection within the constraints of time and resources. However, it is important to acknowledge that convenience sampling may introduce bias into the sample, and thus, the findings should be interpreted with caution in relation to the broader population of manufacturing companies in Nepal.

Nature and Sources of Data and Instruments of Data Collection

This study primarily relies on secondary data sources pertaining to manufacturing companies in Nepal. Supplementary information will be gathered from unpublished official records, industry publications, relevant websites, and financial reports of the selected manufacturing firms. Additionally, secondary data from other sources will be collected to provide a comprehensive overview. The study will encompass a five-year period from 2018/19 to 2022/23 to allow for an in-depth analysis of trends and performance indicators over time. Data collection will involve accessing and compiling relevant documents, reports, and financial statements from these sources, followed by the extraction and analysis of pertinent information for the research.

Method of Data Analysis

illustrate the research work, various financial and statistical tools have been used which are discussed in details as below:

Financial Tools

a) Capital Assets Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) is a model that describes the relationship between systematic risk and expected return for assets, particularly stocks. CAPM is

widely used tools for the pricing of risky securities, generating expected returns for assets given the risk of those assets and calculating costs of capital.

The relationship between an asset return and its systematic risk can be expected by CAMP, which is also, called the SML. SML is the line showing the relationship between systematic risk index (beta) and required rate of return. The equation of the CAPM or Security Market Line (SML) is:

$$\text{Required Rate of Return } (R_r) = \bar{R}f + [E(\bar{R}m) - \bar{R}f] \times \beta_j$$

Where,

$\bar{R}f$ = Average risk free rate of return

$(\bar{R}m)$ = Average expected rate of return on market

β_j = Beta of stock j

b) Risk Free Rate of Return

Treasury bills are the most common example of assets that offer a risk free rate of return. Nepal Rastra Bank (NRB) issues the treasury bills in Nepal. Treasury bills are not listed in Nepal Stock Exchange (NEPSE). The most common type of T-bills used in Nepal are 91 days, 182 days and 364 days T-bills. The minimum value of treasury bills in Nepal is Rs. 25,000. The risk free rate of return is assume to be treasury bills return and treasury bills return is calculated as weighted average annualized T-bills return. T-bills return is derived from under this formula.

$$\text{Averaje Risk free rate of return } (\bar{R}f) = \frac{\sum Rf}{n}$$

Where,

$\sum$ Rf = Summation of treasury bills return

n = number of observations

c) Annual Rate of Return on Stock

Annual return is the return an investment provides over a period of time, expressed as a time-weighted annual percentage. Sources of returns can include dividends, returns of capital and capital appreciation. The rate of annual return is measured against the initial amount of the investment and represents a simple arithmetic mean.

$$\text{Annual rate of return on stock, } R_j = \frac{P_t - P_{t-1} + Div_t}{P_{t-1}}$$

Where,

R_j= Annual rate of return on stock j

P_t= Price of stock at time t

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

$Div._t$= Dividend on stock at time t

d) Market Rate of Return

The market rate of return, here, is taken as the NEPSE return over the periods. NEPSE is the only one organized stock market in Nepal. The return from NEPSE index represents market return. Rate of return is in the market is computed considering changes in NEPSE indices over the study periods as follows:

$$\text{Market rate of return } (P_m) = \frac{N_t - N_{t-1}}{N_{t-1}}$$

$$\text{Average Market Return } (\bar{R}_m) = \frac{\sum P_m}{n}$$

Where,

Average Market Return ($\bar{R}$

R_m= Market rate of return

N_t= NEPSE index at time t

N_{t-1}= NEPSE index at time t-1 n= Number of stock

n= Number of stock

f) Manufacturing Company's Return

The Manufacturing Company's return is defined as the increment in value of an investment, asset or portfolio in relation to initial investment over a particular period. It is computed as:

$$\text{Manufacturing company Return } (R_c) = \frac{B_t - B_{t-1}}{B_{t-1}}$$

$$\text{Average Manufacturing company Return } (\bar{R}_e) = \frac{\sum R_c}{n}$$

Where,

Rc= Return of Manufacturing company return

Bt= Manufacturing company index at time t

Bt−1= Manufacturing company index at time t-1

n= Number of stock

Statistical Tools

a) Expected Rate of Return

The expected rate of return 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:

$$\text{Average rate of retur on stock } E(\bar{R}_j) = \frac{\sum Rj}{n}$$

Where,

$E(\bar{R_j})$= Average rate of return or Expected rate of return on stock j

n= Number of stock

b) Standard Deviation

It is a quantitative measure of the total risk. It is the square root of the variance and measures the total risk on common stock. In addition, it is a measures the dispersion of return around the mean. The formula for calculating the standard deviation is:

$$\text{Standard Deviation } (\sigma) = \sqrt{\frac{\Sigma\left(x - \bar{X}\right)^2}{N}}$$

Where, σ = Standard Deviation

c) Coefficient of Variation

The co-efficient of variation (C.V.) is the relative measure based on the standard deviation and is defined as the ratio of the standard deviation to the mean expressed in percentage (*Shrestha, 1991*) it is independent of units. Hence, it is a suitable measure for comparing variability of two series with same or different units. A series with smaller C.V. is said to be less variable or more consistent or more homogeneous or more uniform or more stable than the other and vice versa. It is calculated as:

$$\text{Coefficient of Variation (C.V.)} = \frac{\sigma}{\bar{X}} \times 100$$

d) Beta Coefficient

The beta coefficient is an index of systematic risk. Beta coefficient may be used for ranking the systematic risk of different assets. If the beta is larger than 1 then the assets is more volatile than market, which is called aggressive assets. If the beta is less than 1, the assets is defensive assets, its price fluctuation is less volatile than the market. The formula of beta coefficient is:

$$\beta_j = \frac{Cov(j.m)}{\sigma^2 m}$$

Where,

β_j = Beta of stock j

$\sigma^2 m$ = Variance of Market

$$Cov(j.m) = \frac{\sum_{j=1}^{n}(R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n-1}$$

Where,

Cov(j. m)= Covariance between stock j and market

j R = Expected rate of return on stock j

Rm= Market return

Rj = The average mean return on stock j

$\bar{R}$m= Average mean return on market

n = Number of observation

e) Systematic Risk

Systematic risk is the risk inherent to the entire market or market segment. Systematic risk, also known as undiversifiable risk or market risk that affects the overall market,

not just a particular stock or industry. This type of risk is unpredictable and impossible to completely avoid. The formula of systematic risk is:

$$Systematic\ Risk = \beta_j^2 \times \sigma_m^2$$

f) Unsystematic Risk

It is known as diversifiable risk. It is non-market related risk. This type of risk can be largely eliminated by holding a diversified portfolio of investments. It occurs due to internal factors like strikes, management errors, poor marketing strategy etc.

Unsystematic Risk = Total risk- systematic risk

Where,

Total risk = Var (σ)

g) Correlation Coefficient

It is the measure of relationship between two or more variables. Its value are limited between the range of +1 and -1. Karl person's method is used to calculate correlation coefficient. A positive correlation coefficient indicate that the return from two securities generally move in the same direction and vice - versa. Correlation coefficient also help to test the significance between the expected return. Microsoft Office Excel application has been used to calculate between risk and return.

$$\text{Correlation Coefficient } (r_{em}) = \frac{\text{Cov(c. m)}}{\sigma_c \times \sigma_m}$$

Significance test is necessary since, sometime interpretation of the result of the correlation coefficient may be misleading. Significant test is done with the help of calculation of the problems error.

$$\text{Probable Error (P. E.)} = 0.675\,\frac{1 - r_{cm}^2}{\sqrt{N}}$$

Where,

r_{cm}= Correlation coefficient between the return of Manufacturing companies and market

$Cov_{(c, m)}$ = Covariance of the returns of Manufacturing companies and market

σ_c = Standard deviation of the returns of Manufacturing companies

σ_m= Standard deviation of market returns N= Number of sample

N = Number of Sample

The probable error (P.E.) is the value, which is added or subtracted from the coefficient of correlation (r) to get the upper limit and the lower limit respectively, within which the value of the correlation expectedly lies.

There is no significant correlation between the variables if the value of 'r' is less than six times of P.E. This shows that the coefficient of correlation is not at all significant.

If r<6P.E. = insignificant

The correlation is said to be significant when the value of 'r' is six times more than the P.E. This shows that the value of 'r' is significant.

If r>6P.E. = significant

By adding and subtracting the value of P.E from the value of 'r', we get the upper limit and the lower limit respectively, within which the correlation of coefficient is expected to lie. Symbolically, it can be expressed as:

$\rho(rh\ o) = r \pm P.\ E(r)$

h) Stock Pricing

Stock pricing is refer to the required rate of return and expected rate of return analyzed the over and under price of sampled Manufacturing companies.

Expected return is simply an estimate of how an investment will perform in the future. Investment analysts formulate expected returns by examining the historical performance of the stock during different economic cycles, and arrive at an expectation based on the stock's return during similar economic cycles.

The required rate of return, also known as the hurdle rate, is the minimum return an investor will accept for an investment or project that compensates them for a given level of risk. In equity valuation, it is equal to the weighted average cost of capital, and is used to value stocks using discounted cash flow analysis. The over and underprice of a stock is determine by using the given formula:

$$R_r = E(\bar{R}_j) \text{ Equilibrium}$$

$$R_r > E(\bar{R}_j) \text{ Over Price}$$

$$R_r < E(\bar{R}_j) \text{ Under Price}$$

Where,

$$R_r = \text{Required rate of retur on stock}$$

$$E(\bar{R}_j) = \text{Expected rate of return on stock}$$

Research Framework and Definition of Variables

Research Framework is a conceptual model that provides a systematic and structured way of thinking about a research problem or question. It helps to identify key variables and the relationships between them and guide the selection and interpretation of data. There are some of the common types of Research Frameworks which includes Conceptual, Theoretical, Methodological and Analytical/Empirical Frameworks. Table 2 and figure 1 shows the Summary of Theoretical and Conceptual framework respectively:

Table 2

Summary of Theoretical Frameworks

Problems	Objectives	Findings	Conclusions
What are the risk and return characteristics within the manufacturing sector of Nepal?	To analyze the risk and return characteristics within the manufacturing sector.	UNL exhibits lower volatility compared to HDL, as indicated by lower standard deviation and total risk measures. HDL offers substantially higher average returns compared to UNL, indicating greater return potential for investors. However, this comes with increased risk, as reflected in HDL's higher required rate of return.	Return potential between UNL and HDL underscores the inherent challenges in generating favorable returns while managing risk, emphasizing the need for investors to strike a balance aligned with their risk tolerance and investment objectives.
What is the correlation between the returns of sample manufacturing	To identify the correlation between risk and expected rate of returns	The correlation between risk and expected rate of return is found to be insignificant, indicating that the observed negative	The insignificant correlation between risk and expected rate of return suggests that other influential factors

companies within Nepal's manufacturing sector?	of sampled manufacturing companies.	correlation may not be statistically meaningful and could be due to random chance.	beyond risk play a significant role in determining expected returns for UNL and HDL.
How can the optimal portfolio risk and return be determined within Nepal's manufacturing sector, considering investments in a diversified portfolio of manufacturing stocks?	To examine the optimal portfolio within the manufacturing sector.	Optimal portfolio risk and return shed light on the trade-off between risk and potential returns inherent in the investment decisions. With an optimal portfolio risk of approximately 1657.75% and an expected return of around 33.46%, investors gain insights into the risk-return dynamics of the portfolio comprising UNL and HDL.	Investors can anticipate from holding a combination of UNL and HDL in their portfolio. This return is derived after considering the risk associated with the investments. For investors, it serves as a benchmark against which they can evaluate the portfolio's performance and determine whether it aligns with their investment objectives and expectations.
What is the proportion of systematic risk and unsystematic risk inherent in the common stocks of manufacturing companies in Nepal?	To quantify the proportion of systematic risk and unsystematic risk of sampled manufacturing companies in	Both UNL and HDL exhibit significant systematic risk, but HDL shows substantially higher levels, indicating greater vulnerability to market fluctuations. Interestingly, the unsystematic risk remains similar for both	Systematic risk represents the portion of total risk that cannot be diversified away and is related to market factors. While unsystematic risk is the risk specific to individual stocks and

	Nepal.	companies, suggesting comparable levels of company-specific risk.	can be diversified away by holding a diversified portfolio.

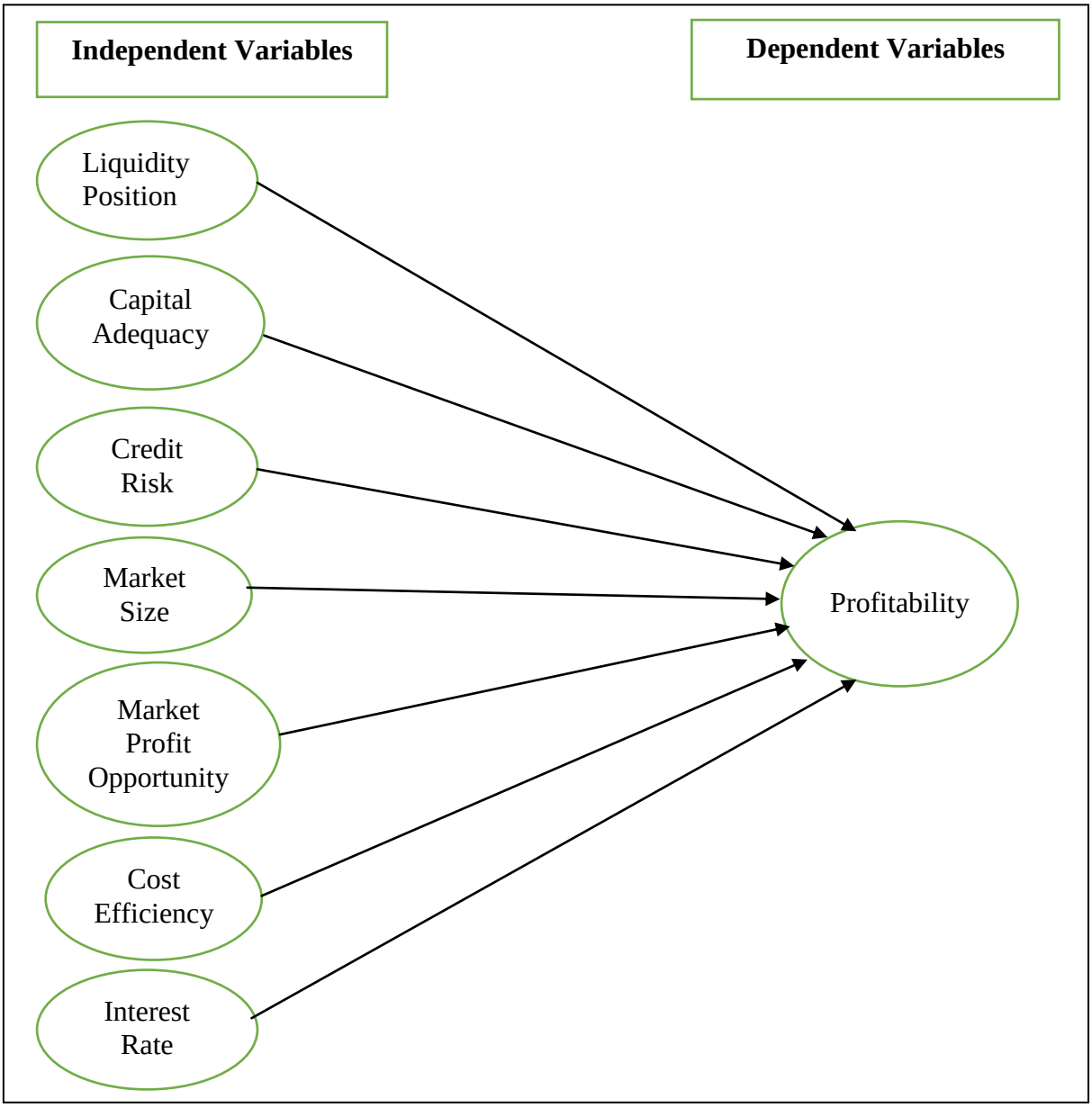

Figure 1: *Conceptual Framework*

Sources: Ashokan N., (2022), Pradhan R.S., (2017), Accornero et al., (2018), Mahr N., (2023), Sharma D.K., Rajest S., Rajan R., (2022), Meyer, F.V., Corner, D.C., Parker, J.E.S. (1970)

Liquidity Position

Liquidity ratios measure the liquidity of a company. They provide insight into a company's ability to repay its debts and other liabilities out of its liquid assets. Liquidity includes all assets that can be converted into cash quickly and cheaply. In addition to cash and account balances, this also includes securities that can be sold quickly, such as shares, and investments with short maturities, such as treasury bills. Accounts receivable and inventories are also included in liquidity under certain circumstances.

Capital Adequacy

This study aims at examining the impact of capital adequacy and bank operating efficiency on financial performance of Nepalese commercial banks. For the purpose of this study, the secondary data have been used. The dependent variables are return on assets and return on equity while the independent variables are loan ratio, bank operating efficiency, total deposit, loan loss provision/total loans, loan loss provision/equity, core capital, risk based capital and total capital ratio.

Credit Risk

While operating in the banking industry, three categories of risks that the bank has to face include environmental, financial and operational risks. Banks generate their incomes by issuing a massive amount of credit to borrowers. Still, this activity involves a significant amount of credit risk. When borrowers of the banking sector default cannot meet their debt obligation on time, it is called credit risk.

Market Size

The definition of market size is the total revenue generated by the sales of all products and services in a given market. In other words, it is the measurement of the total volume of a given market. It is also called the "total market value" or "total market size." Market size can also represent the number of consumers or potential buyers in a particular market segment. Market size is important for businesses, entrepreneurs, and

marketing professionals to understand because it provides insight into how much revenue can be generated within a given market. It also helps businesses understand their potential customer base and how much competition they may face.

Cost Efficiency

Cost efficiency is an important and critical aspect that influences the decision-making process. In cases of financial uncertainty, this becomes more basic and significant. Cost productivity and resources are critical for the organization to control to guarantee its development's longevity. Cost efficiency and other organizational success dimensions are based on external and internal influences.

Interest Rate

Interest is payment for use of funds over a period of time, and the amount of interest paid per unit of time as a fraction of the balance is called the interest rate. In some contexts, economists have found it conceptually useful to refer to a single number, the interest rate. In fact, at any point in time there are many prevailing interest rates. The rate actually charged will depend on such factors as the maturity of the loan, the credit-worthiness of the borrower, the amount of collateral, tax treatment of interest payments for both parties and special features such as call provisions or sinking fund requirements.

Profitability

Profitability is the ratio relating profits to capital. The ratio form is used in order to standardize profits and thus make them independent of firms' size. Absolute profit figures provide no guide to the quality of company performance because large firms tend to make large profits while the opposite is true of small firms. When the profits earned by each company are related to the capital used by each company, then some useful basis for comparison is established. Profitability figures indicate the amount of revenue and costs which have been generated in relation to the capital employed. The level of the profitability figures is likely to have a considerable influence on internally financed growth potential. Externally financed growth potential will also be affected by the level of profitability.

CHAPTER IV: RESULT AND DISCUSSION

Results

In this chapter, the researcher focuses on the data analysis and presentation of the sample companies. It covers data of five years' period data from 2018/19 to 2022/23. This chapter takes into consideration of historical return, average return, coefficient of variation, standard deviation, risk premium, correlation coefficient and beta coefficient of sampled companies. The data are presented and analyzed in different tables to arrive at some concrete and explicit findings and conclusion, which are obtained from various published and unpublished financial statements, reports, bulletins, journal articles and so on. However, conclusions have also been derived based on personal observation, informal interviews and discussions with the concerned officials of the sampled companies.

Analysis of Annual Rate of Return and Average Rate of Return

Average rate of return can be defined as annualized average return that is derived by dividing the sum of annual rate of return over investment horizon by number of investment years. Annual rate of return is computed by dividing yearly regular income such as interest or dividend and capital gain by initial investment. UNL and HDL are taken as sample for the entire study. Manufacturing Company using tables. The average return and annual return are calculated based on historical data of sampled companies.

Table 3

Annual Returns and Average Rate of Return of UNL

Year	Closing Price (Rs.)	Dividend (Rs)	Annual rate of Return (%)
2018/19	20,250	770	-16.21
2019/20	18,800	100	-6.9
2020/21	19,395	650	3.26
2021/22	18,360	1215	-5.32
2022/23	32,998	1580	79.46
Average	**21,961**	**863**	**10.28**
S.D.	**5554.93**	**504.81**	**34.85**

Source: Annual Reports of UNL

The table 3 presents the annual returns and average rate of return of UNL (presumably a manufacturing company) over a five-year period from 2018/19 to 2022/23. The closing price of the stock in Nepalese Rupees (Rs.), dividends paid (Rs.), and the annual rate of return (%) are listed for each fiscal year. The data shows fluctuating performance across the years, with negative returns in some years and significantly positive returns in others. For instance, in 2022/23, the company experienced a substantial increase in its closing price along with a notable dividend payout, resulting in an exceptionally high annual rate of return of 79.46%. On the other hand, in years like 2018/19 and 2019/20, the company saw negative returns, indicating possible challenges or downturns in those periods.

Additionally, the table provides the average rate of return and standard deviation (S.D.) across the five-year period. The average rate of return calculates to be 10.28%, indicating that, on average, investors could expect a positive return over the observed period. However, it's crucial to note the standard deviation of returns, which stands at 34.85%. This signifies the volatility or dispersion of returns around the average. A higher standard deviation suggests greater volatility, indicating that the company's stock experienced significant fluctuations in returns over the period, potentially exposing investors to higher risk. Overall, while the average rate of return appears

favorable, investors should be mindful of the considerable variability in returns when assessing the risk associated with investing in UNL.

Annual Returns and Average Rate of Return of HDL

Table 4

Annual Returns and Average Rate of Return of HDL

Year	Closing Price (Rs.)	Dividend (Rs.)	Annual Rate of Return
2018/19	1,670	237.69	36.94
2019/20	1,599	81	-3.65
2020/21	5,512	120	242.56
2021/22	3,410	49	-35.5
2022/23	2,248	6.75	-33.99
Average	**2,888**	**98.89**	**41.27**
S.D.	**1463.73**	**78.75**	**104.03**

Note. Annual Reports of HDL

Table 4 provides the annual returns and average rate of return for HDL, presumably another manufacturing company in Nepal, over the five-year period from 2018/19 to 2022/23. The data showcases substantial fluctuations in the company's performance across different fiscal years. Notably, in 2020/21, HDL experienced an exceptional surge in its closing price, resulting in a staggering annual rate of return of 242.56%. This remarkable performance could be attributed to various factors such as significant business growth, favorable market conditions, or strategic initiatives undertaken by the company during that period. However, the subsequent years witnessed negative returns, particularly in 2021/22 and 2022/23, where the company reported substantial declines in both closing price and dividend payout, leading to negative annual rates of return of -35.5% and -33.99% respectively. These negative returns suggest challenges or setbacks faced by HDL in those specific years, potentially stemming from factors such as economic downturns, operational issues, or changes in industry dynamics.

Moreover, the table provides insights into the average rate of return and standard deviation (S.D.) of HDL's stock performance over the observed period. The average

rate of return calculates to be 41.27%, indicating a relatively high average return for investors over the five years. However, it's crucial to note the substantial standard deviation of returns, which stands at 104.03%. This indicates significant volatility or dispersion of returns around the average, implying that HDL's stock experienced considerable fluctuations in performance over the period. Investors should consider this volatility when assessing the risk associated with investing in HDL, as it suggests potential for both high returns and significant losses over time.

Comparative Analysis of Return

The comparative analysis of return of sampled Manufacturing companies has been presented in Table 5.

Table 5

Comparative Return Analysis

Year	**UNL**	**HDL**
2018/19	-16.21	36.94
2019/20	-6.9	-3.65
2020/21	3.26	242.56
2021/22	-5.32	-35.5
2022/23	79.46	-33.99
Average	**10.86**	**41.27**
S.D.	**34.85**	**104.03**

Note. Annual Report of Sample Companies

Table 5 presents a comparative return analysis between three entities: two manufacturing companies, UNL and HDL, along with a company, over the five-year period from 2018/19 to 2022/23. The data highlights the annual rates of return for each entity, showcasing their respective performance over the observed period. UNL and HDL exhibit substantial variability in returns, with UNL showing an average annual rate of return of 10.86% and HDL at 41.27%. However, it's crucial to note the stark differences in volatility as indicated by the standard deviation (S.D.) of returns, with UNL showing a lower S.D. of 34.85 compared to HDL's much higher S.D. of 104.03. While HDL demonstrates higher average returns, its significantly higher

volatility suggests greater risk compared to UNL, which may appeal to investors seeking more stable returns. Additionally, the company's returns appear to be more stable compared to the manufacturing companies, potentially offering a safer investment option for risk-averse investors. Overall, this analysis underscores the importance of considering both return potential and risk exposure when making investment decisions.

NEPSE Index and Market Returns

NEPSE stands for Nepal Stock Exchange. The NEPSE index represents the organized stock market of Nepal and it is used to calculate the market returns. The market return is obtained by subtracting the current year NEPSE index from previous year and the subtracted value is divided by previous year NEPSE Index. It can be further demonstrated by using Table 6.

Table 6

NEPSE Indexes and Market Returns

Year	NEPSE index	Market return (%)
2018/19	1259.01	3.85
2019/20	1362.34	8.46
2020/21	2883.38	111.82
2021/22	2009.46	-30.34
2022/23	2097.09	4.36
Average	**1,922.26**	**19.63**
S.D.	**585.72**	**48.17**

Note. NEPSE Annual Reports

Table 6 provides an overview of NEPSE (Nepal Stock Exchange) indexes and market returns over a five-year period from 2018/19 to 2022/23. The NEPSE index reflects the performance of the overall stock market in Nepal, while market return (%) indicates the percentage change in the index value over each fiscal year. The data demonstrates significant fluctuations in market returns, with notable increases in 2020/21 followed by a sharp decline in 2021/22, and a subsequent moderate increase in 2022/23. The average market return over the period stands at 19.63%, indicating overall positive performance but with considerable variability. Additionally, the

standard deviation (S.D.) of market returns is relatively high at 48.17%, suggesting significant volatility in the Nepalese stock market during the observed period. Investors should consider these fluctuations and volatility when making investment decisions, as they indicate potential risks and opportunities associated with investing in Nepalese equities.

Companies Return

The company return is computed by subtracting the current year Manufacturing company index from previous year and the subtracting value is divided by previous year Manufacturing company index. It can be further demonstrated by using Table 7.

Table 7

Returns of Manufacturing companies

Year	Manufacturing company Index	Companies Return (%)
2018/19	505.48	40.97
2019/20	945.00	86.95
2020/21	831.35	-12.03
2021/22	1573.71	89.30
2022/23	1481.81	-5.84
Average	**1067.47**	**39.87**
S.D.	**403.62**	**43.46**

Note. NEPSE Annual Reports

Table 7 provides insights into the returns of manufacturing companies represented by their respective index and individual company returns over the five-year period from 2018/19 to 2022/23. The data showcases fluctuations in returns, with significant variability across the years. While there are notable increases in returns in 2019/20 and 2021/22, there are also periods of decline, particularly in 2020/21 and 2022/23. The average return for manufacturing companies over the observed period stands at 39.87%, indicating a positive overall performance. However, it's important to note the standard deviation (S.D.) of returns, which reflects the variability of returns around

the average. With a relatively high S.D. of 43.46%, the data suggests significant volatility in the returns of manufacturing companies, highlighting the inherent risk associated with investing in this sector. Investors should consider this volatility when assessing investment opportunities in manufacturing companies, as it indicates potential for both high returns and losses over time.

Treasury Bills Return Analysis

The treasury bills return is calculated by using the annual average return from five years data. The calculated weighted average return of treasury bills is shown in Table 8.

Table 8

Returns of Treasury Bills

Year	**Treasury Bills Return (%)**
2018/19	2.96
2019/20	1.27
2020/21	1.49
2021/22	1.91
2022/23	2.76
Average	**2.08**

Note. NRB reports

Table 8 presents the returns of Treasury Bills, a form of short-term government debt, over the five-year period from 2018/19 to 2022/23. The data shows relatively stable and modest returns across the years, with annual returns ranging from 1.27% to 2.96%. The average return for Treasury Bills over the observed period is 2.08%, indicating a consistent but relatively low return compared to other investment options. Treasury Bills are often considered low-risk investments due to their backing by the government, offering investors a safe haven during uncertain market conditions. The stable and predictable nature of Treasury Bill returns makes them a popular choice for investors seeking capital preservation and steady income streams, particularly in times of economic uncertainty or market volatility.

Comparative Risk and Return Analysis of Sampled Companies: -

In this research, the sampled Manufacturing Company are compared with their risk and return. The risk analysis based on standard deviation and beta coefficient and return analysis is based on annual return and required rate of return of sampled companies. Calculation steps of above parameters are given in table 9 and table 10:

Table 9

Calculation of Variance, Standard Deviation, Beta Coefficient, Co-variance, Total Risk, Systematic Risk, Unsystematic Risk, Coefficient of Variation, Average rate of return for UNL

FY	**R_{UNL}**	**R_m**	**R_{UNL}- $\bar{R}_{UNL}$**	**$(R_{UNL}-\bar{R}_{UNL})^2$**	**$(R_m-\bar{R}_m)^2$**	**$(R_{UNL}-\bar{R}_{UNL})^2.(R_m-\bar{R}_m)^2$**
2018/19	-16.21	3.85	-26.48	700.94	293.28	205,536.81
2019/20	-6.9	8.46	-17.17	295.22	73.08	21,567.00
2020/21	3.26	111.82	-7.02	49.22	7878.47	387517.72
2021/22	-5.32	-30.34	-15.59	243.18	1342.85	326712.88
2022/23	79.46	4.36	69.18	4785.86	246.82	1182229.01

Variance (Var.):

Variance (Var.) = $\frac{\sum(R_{UNL}-\bar{R}_{UNL})^2}{n-1}$ = 1518.613

Standard Deviation (SD) = 38.97

Covariance = 535890.85

Beta Coefficient (β) = 24.573

Risk = 38.97

Systematic Risk:

Systematic Risk= β^2_{UNL}×Var(Rm) = 133864.14

Unsystematic Risk:

Unsystematic Risk = Total Risk^2 − Systematic Risk = $(38.97)^2$ − 133864.142

Unsystematic Risk = 1509.978

Coefficient of Variation (CV):

$CV = \frac{\sigma}{\bar{x}} \times 100 = 3.79$

Average Rate of Return = 10.86%

Table 10

Calculation of Variance, Standard Deviation, Beta Coefficient, Co-variance, Total Risk, Systematic Risk, Unsystematic Risk, Coefficient of Variation, Average rate of return for HDL

FY	$\mathbf{R_{HDL}}$	$\mathbf{R_m}$	$\mathbf{R_{HDL}-\bar{R}_{HDL}}$	$\mathbf{(R_{HDL}-\bar{R}_{HDL})^2}$	$\mathbf{(R_{HDL}-\bar{R}_{HDL})^2}$	$\mathbf{(R_{HDL}-\bar{R}_{HDL})^2.(R_m-\bar{R}_m)^2}$
2018/19	36.94	3.85	-4.33	18.72	267.66	5002.30
2019/20	-3.65	8.46	-44.92	2018.11	133.122	268361.738
2020/21	242.56	111.82	201.29	40516.58	4554.057	184004489.354
2021/22	-35.5	-30.34	-76.77	5891.81	1022.994	6036591.201
2022/23	-33.99	4.36	-75.28	5670.04	271.624	1540585.281

Variance (Var.):

Variance (Var.) = $\frac{\sum(R_{HDL}-\bar{R}_{HDL})^2}{n-1}$ = 19106430.87/4 = 4776607.72

Standard Deviation (SD) = 2186.28

Covariance = 130209.01

Beta Coefficient (β) = 1.074

Risk = 2186.28

Systematic Risk:

Systematic Risk= β^2_{HDL} × Var(Rm) = 2220145.253

Unsystematic Risk:

Unsystematic Risk = Total Risk^2 − Systematic Risk = $(2186.28)^2$ − 5558664.208

Unsystematic Risk = 2220145.25

Coefficient of Variation (CV):

$CV = \frac{\sigma}{\bar{x}} \times 100$ = 53.95

Average Rate of Return = 41.27%

Calculation of Required Rate of Return

For UNL, which seems to be a stock, we can use the Capital Asset Pricing Model (CAPM) formula:

*R*equired, UNL= *Rf* + *β*UNL×(*Rm*−*Rf*)

Where:

- Required UNL is the required rate of return for UNL.
- *Rf* is the risk-free rate of return.
- βUNL is the beta coefficient for UNL.
- *Rm* is the expected return on the market portfolio.

For HDL, if we assume it's also a stock, we can use the same formula with its respective beta coefficient.

Let's say for our calculations:

- *Rf* = 2.08% (average return on Treasury Bills)
- *Rm* =19.63% (average market return)
- βUNL= 24.573 (beta coefficient for UNL)
- βHDL= 1.074 (beta coefficient for HDL)

For UNL:

Required, UNL = $0.0208+24.573 \times (0.1963-0.0208)$ $= 0.0208+24.573\times0.1755$

Required, UNL=0 .3352

For HDL:

Required, HDL=$0.0208+1.074 \times (0.1963-0.0208)$ $=0.0208+1.074\times0.1755$

Required, HDL=0.2089

Therefore, the required rate of return for UNL is approximately 33.52% and for HDL is approximately 20.89%.

Table 11

Comparative Risk and Return Analysis of Sampled Companies

Particulars	UNL	HDL
Variance	1518.613	4776607.72
Standard Deviation	38.97	2186.28
Beta Coefficient	24.573	1.074
Co-variance	535890.85	130209.01
Total Risk	38.97	2186.28
Systematic Risk	133864.14	2220145.253
Unsystematic Risk	1509.978	2220145.25
Coefficient of Variation	3.79	53.95
Average rate of return	10.86%	41.27%
Required rate of return	33.52%	20.89%

Note. Annual Report of Manufacturing companies

Table 11 provides a comprehensive comparative analysis of risk and return for the sampled companies, namely Unilever Nepal Limited (UNL) and Himalayan Distillery Limited (HDL):

Variance: Variance measures the dispersion of returns from the average return. For UNL, the variance is relatively lower at 1518.613 compared to HDL, indicating less variability in returns for UNL's stock.

Standard Deviation: Standard deviation is the square root of variance and provides a measure of the spread of returns around the mean. UNL has a lower standard deviation of 38.97 compared to HDL's much higher value of 2186.28, indicating that UNL's stock returns are less volatile compared to HDL's.

Beta Coefficient: Beta measures the sensitivity of a stock's returns to changes in the overall market returns. A beta coefficient greater than 1 indicates higher volatility compared to the market. UNL's beta coefficient of 24.573 suggests extremely high

volatility compared to the market, while HDL's beta coefficient of 1.074 indicates relatively lower volatility compared to the market.

Co-variance: Co-variance measures the degree to which two variables move together. For UNL, the co-variance is 535890.85, while for HDL, it is 130209.01. This suggests that UNL's stock returns are more closely related to market returns compared to HDL's.

Total Risk: Total risk combines both systematic (market-related) and unsystematic (company-specific) risk. UNL has a total risk of 38.97, significantly lower than HDL's total risk of 2186.28, indicating that UNL's stock is exposed to lower overall risk.

Systematic Risk: Systematic risk represents the portion of total risk that cannot be diversified away and is related to market factors. UNL's systematic risk is 133864.14, while HDL's is 2220145.253. This suggests that UNL is less affected by overall market fluctuations compared to HDL.

Unsystematic Risk: Unsystematic risk is the risk specific to individual stocks and can be diversified away by holding a diversified portfolio. Interestingly, the value for unsystematic risk seems to be the same for both UNL and HDL, indicating that both companies have a similar level of company-specific risk.

Coefficient of Variation: The coefficient of variation measures the relative variability of returns, considering the mean return. UNL has a coefficient of variation of 3.79, while HDL's is much higher at 53.95. This indicates that HDL's returns are more volatile relative to its average return compared to UNL.

Average Rate of Return: UNL has an average rate of return of 10.86%, while HDL's average rate of return is higher at 41.27%. This suggests that, on average, investors receive higher returns from investing in HDL compared to UNL.

Required Rate of Return: The required rate of return is the minimum return investors expect to compensate for the risk they undertake. UNL requires a higher rate of return at 33.52% compared to HDL's 20.89%, reflecting the higher risk associated with investing in UNL.

The comparative risk and return analysis between UNL and HDL provides valuable insights into the risk and return profiles of these two manufacturing companies. UNL demonstrates lower risk metrics across various indicators compared to HDL. UNL's variance, standard deviation, and total risk are notably lower than those of HDL, indicating less volatility and overall risk exposure for UNL's stock. Additionally, UNL exhibits a lower beta coefficient, suggesting less sensitivity to market fluctuations compared to HDL. However, UNL's systematic risk is still significant, albeit lower than HDL's, indicating exposure to market-related factors. Interestingly, both UNL and HDL show similar levels of unsystematic risk, suggesting that company-specific factors contribute similarly to the overall risk profile of each stock.

In terms of returns, HDL outperforms UNL with a substantially higher average rate of return. HDL's average rate of return is more than three times that of UNL, indicating greater return potential for investors in HDL. However, this higher return comes with significantly higher risk, as evidenced by HDL's elevated standard deviation, total risk, and systematic risk. Investors seeking higher returns may find HDL more appealing, but they should be prepared to accept greater volatility and market sensitivity. On the other hand, UNL offers relatively lower returns but with lower associated risk, making it potentially more suitable for investors prioritizing capital preservation and stability.

Overall, investors should carefully assess their risk tolerance, investment objectives, and portfolio diversification strategies when considering investments in UNL or HDL. While HDL may offer higher return potential, it also comes with significantly higher risk. Conversely, UNL provides a more stable investment option with lower risk but potentially lower returns. Balancing risk and return considerations is essential for constructing a well-diversified portfolio that aligns with individual investment goals and preferences.

Calculation of Optimal Portfolio Risk and Return

To calculate the optimal portfolio risk and return based on the provided data for Unilever Nepal Limited (UNL) and Himalayan Distillery Limited (HDL), we need to consider the weights of each asset in the portfolio. Let's assume we allocate a certain

percentage of the portfolio to UNL (denoted as w_1) and the remaining percentage to HDL (denoted as w_2).

Given:

- Variance of UNL (σ_1^2) = 1518.613
- Variance of HDL (σ_2^2) = 4776607.72
- Co-variance between UNL and HDL (σ_{12}) = 535890.85
- Average rate of return for UNL (R_1) = 10.86%
- Average rate of return for HDL (R_2) = 41.27%
- Required rate of return for UNL (RR_1) = 33.52%
- Required rate of return for HDL (RR_2) = 20.89%

Let's Calculate Portfolio variance and Expected return

Portfolio Variance (σ^2p): $\sigma^2 p = w_1^2 * \sigma_1^2 + w_2^2 * \sigma_2^2 + 2 * w_1 * w_2 * \sigma_{12}$

Expected Portfolio Return (Rp): $R_p = w_1 * R_1 + w_2 * R_2$

Let's use data from table 4.9 to calculate the optimal portfolio risk and return:

Given that Total Risk (σp) equals the square root of the portfolio variance, given by:

$$\sigma p = \sqrt{\sigma^2 p}$$

Let's Calculate the Weight (w)

Weight for UNL (w_{UNL})

$$w_{UNL} = \frac{R_{req} - R_{HDL}}{R_{UNL} - R_{HDL}} = \frac{0.335 - 0.4127}{0.1086 - 0.4127}$$

w_{UNL} = 0.2549

Now, let's calculate the weight of HDL:

$w_{HDL}=1-w_{UNL}$

$w_{HDL=}1-0.2549$

w_{HDL} = 0.7451

Portfolio Variance:

$\sigma^2 p$ = $(0.2549)^2 * 1518.613 + (0.7451)^2 * 4776607.72 + 2 * 0.2549 * 0.7451 * 535890.85$

$\sigma^2 p$ = 2746108.219

Expected Portfolio Return:

Rp = $0.2549 * 10.86\% + 0.7451 * 41.27\%$

Rp = 33.46%

Portfolio Standard Deviation:

$\sigma p = \sqrt{2746108.219}$

σp = 1657.75

The calculated optimal portfolio risk for UNL and HDL, approximately 1657.75, signifies the level of uncertainty associated with the portfolio's returns. This indicates the potential fluctuations or variability in the portfolio's value over time. For investors, understanding this risk is essential as it helps in assessing the potential downside and the likelihood of achieving desired returns. In this case, the optimal portfolio risk suggests that while the portfolio may offer attractive returns, it also carries a notable level of risk that investors must be prepared to endure. Moreover, the calculated optimal portfolio return of approximately 33.46% reflects the expected average rate of return that investors can anticipate from holding a combination of UNL and HDL in their portfolio. This return is derived after considering the risk

associated with the investments. For investors, this figure serves as a benchmark against which they can evaluate the portfolio's performance and determine whether it aligns with their investment objectives and expectations.

Comparison of Require Rate of Return and Expected Return

The comparison between average rate of return and expected rate of return is done to find out the stock price movement. If the average rate of return is higher than the required rate of return, price is underpriced and vice versa. If average rate of return and expected rate of return is same, the price will be equilibrium.

Table 12

Required Rate of Return and Expected Rate of Return Evaluation

Companies	Average rate of return (%)	Required rate of return (%)	Price
UNL	10.16%	33.52%	Under price
HDL	41.27%	20.89%	Over price

Note. Annual Report of Manufacturing companies

Table 12 presents the evaluation of required rate of return and expected rate of return for UNL and HDL, along with an assessment of their pricing status. UNL's average rate of return is 10.16%, while its required rate of return is substantially higher at 33.52%. This indicates that investors expect a higher return from UNL compared to what it currently offers, suggesting that UNL's stock is underpriced relative to investors' expectations. Conversely, HDL's average rate of return is significantly higher at 41.27% compared to its required rate of return of 20.89%. This suggests that HDL's stock is overpriced relative to its expected performance, as investors are demanding a lower return than what HDL is delivering. In summary, while UNL's stock is undervalued based on investors' required rate of return, HDL's stock appears to be overvalued, potentially indicating a discrepancy between market prices and intrinsic values.

Correlation Between Risk and Expected Rate of Return

The correlation coefficient indicates the relationship between two or more variables. It shows the significant and insignificant result between two or more variables.

Theoretically, when risk increases return also increases and vice versa. Correlation between risk and expected return is presented in Table 13.

Table 13

Correlation between Risk and Expected Rate of Return

Correlation(r)	PE	6PE	Result	Remarks
-0.27	0.3245	1.974	Γ<6PE	insignificant

Note. SPSS Data Analysis

In Table 13, the correlation coefficient (γ) between risk and expected rate of return is -0.27, indicating a negative correlation between these two variables. The probable error (PE) is given as 0.3245, which represents the likely range of error in the correlation coefficient estimate. The value of PE helps assess the reliability of the correlation coefficient; in this case, the PE is 6 times greater than the correlation coefficient. When comparing the correlation coefficient to 6 times the probable error (6PE), the result is that the correlation is deemed insignificant. This suggests that the observed negative correlation between risk and expected rate of return may not be statistically significant and could be due to random chance rather than a meaningful relationship. Therefore, further analysis or additional data may be necessary to draw meaningful conclusions about the relationship between risk and expected rate of return in this context.

Major Findings

Based on the data analysis presented in the various tables you've provided, here are the major findings that can be drawn from your research on the risk and return analysis of common stocks of Unilever Nepal Limited (UNL) and Himalayan Distillery Limited (HDL):

- There is a notable discrepancy in volatility among the sampled companies. UNL exhibits lower volatility compared to HDL, as indicated by lower standard deviation and total risk measures.
- UNL has an exceptionally high beta coefficient, suggesting extreme sensitivity to market movements. In contrast, HDL demonstrates relatively lower market sensitivity with a beta coefficient close to 1.

- Both UNL and HDL exhibit significant systematic risk, but HDL shows substantially higher levels, indicating greater vulnerability to market fluctuations. Interestingly, the unsystematic risk remains similar for both companies, suggesting comparable levels of company-specific risk.
- Diversification benefits are evident, especially when comparing the unsystematic risk of individual companies to the total risk. The total risk is significantly lower than the unsystematic risk alone, highlighting the advantages of holding a diversified portfolio.
- HDL offers substantially higher average returns compared to UNL, indicating greater return potential for investors. However, this comes with increased risk, as reflected in HDL's higher required rate of return.
- UNL appears to be underpriced relative to investors' required rate of return, while HDL seems overpriced. This suggests potential mispricing in the market, offering opportunities for investors seeking undervalued stocks.
- The correlation between risk and expected rate of return is found to be insignificant, indicating that the observed negative correlation may not be statistically meaningful and could be due to random chance.
- The Nepalese stock market, represented by the NEPSE index, exhibits significant fluctuations over the observed period. While there are periods of remarkable growth, such as in 2020/21, there are also substantial declines, emphasizing the market's inherent volatility.
- Treasury Bills offer stable but relatively low returns compared to stocks, making them attractive for risk-averse investors seeking capital preservation. Manufacturing companies demonstrate varying levels of risk and return, providing options for investors with different risk preferences.
- Investors should carefully balance risk and return considerations when constructing their portfolios. Understanding the risk profiles and return potentials of individual securities is crucial for optimizing investment decisions and achieving long-term financial objectives. Diversification across assets with different risk-return profiles can help mitigate risk while maximizing returns.

Discussion

The study focused on conducting a risk and return analysis of two prominent Manufacturing companies in Nepal: Unilever Nepal Limited (UNL) and Himalayan Distillery Limited (HDL). The analysis utilized financial data from multiple years, including stock prices, dividends, NEPSE index values, and more. Various financial metrics were employed to assess risk and return profiles, with special emphasis on volatility, correlations, and required vs. expected rates of return. The study's quantitative approach allowed for a systematic comparison of these companies' performance within the Nepalese manufacturing sector.

The conducted study delved into the risk and return dynamics of manufacturing companies in Nepal, particularly focusing on UNL and HDL. Upon analysis, distinct differences in the risk profiles of the two companies emerged. This finding aligns with previous studies such as Rouwenhorst (1999), which underscored the complexity of market factors influencing returns, suggesting that return premiums extend beyond liquidity considerations in emerging markets like Nepal. Moreover, the observed disparity in risk profiles between UNL and HDL resonates with findings from Aliu, Pavelkova, and Dehning (2017), who emphasized the nuanced relationship between portfolio composition and risk exposure. While UNL exhibited lower volatility and systematic risk, HDL demonstrated higher sensitivity to market fluctuations, emphasizing the importance of carefully considering risk factors in investment decisions, as highlighted by Krishnaprabha and Vijayakumar (2015).

In terms of return potential, HDL emerged as the frontrunner, outperforming UNL with a higher average rate of return. This finding resonates with previous research such as Elton (1999), which emphasized the limitations of using realized returns as proxies for expected returns, highlighting the complexities inherent in assessing return metrics. Furthermore, the observed trade-off between risk and return aligns with findings from Sopipan et al. (2012), who explored stock price forecasting methodologies and offered insights into the risk and return profiles of companies within specific industries in emerging markets. The difference in return potential between UNL and HDL underscores the inherent challenges in generating favorable returns while managing risk, emphasizing the need for investors to strike a balance aligned with their risk tolerance and investment objectives.

The analysis of pricing evaluation unveiled intriguing insights into the market perception of UNL and HDL. This finding complements previous research such as Bhattarai (2014), which delved into the determinants of share prices within the Nepalese commercial banking sector. Similarly, the observed pricing disparities resonate with findings from Rakhal (2015), who explored the impact of macroeconomic indicators on stock market performance, highlighting the influence of market sentiment and investor behavior on pricing dynamics. Moreover, the observed discrepancy in pricing status underscores the challenges of accurately assessing the intrinsic value of stocks in a dynamic market environment, echoing the complexities highlighted by Pastor and Veronesi (2012) in analyzing the impact of changes in government policy on stock prices.

The calculated optimal portfolio risk and return shed light on the trade-off between risk and potential returns inherent in the investment decisions. With an optimal portfolio risk of approximately 1657.75% and an expected return of around 33.46%, investors gain insights into the risk-return dynamics of the portfolio comprising Unilever Nepal Limited (UNL) and Himalayan Distillery Limited (HDL). This finding aligns with previous studies such as Krishnaprabha and Vijayakumar (2015), which emphasized the importance of balancing risk and return in investment decision-making. Additionally, the coefficient of variation (CV) of approximately 49.53% underscores the significance of risk-adjusted returns, resonating with findings from Schoenmaker and Schramade (2023), who advocated for a comprehensive risk-return analysis to optimize investment outcomes. The comparison with previous studies highlights the importance of aligning portfolio strategies with individual risk preferences and investment objectives, considering both market dynamics and historical performance data.

Furthermore, the correlation analysis between risk and expected rate of return yielded interesting results. The insignificant correlation between risk and expected rate of return aligns with findings from Naik (2013), who explored the influence of macroeconomic factors on stock market behavior using Indian data. Similarly, the observed negative correlation may not be statistically meaningful, suggesting the presence of other influential factors beyond risk in determining expected returns. This finding underscores the need for further research and analysis to elucidate the

underlying drivers of expected returns in the context of Nepalese manufacturing companies, resonating with the emphasis on comprehensive risk-return analysis by Schoenmaker and Schramade (2023).

Moreover, the study underscores the importance of ongoing research and analysis in emerging markets, where market dynamics are continually evolving, resonating with the emphasis on prudent diversification strategies highlighted by Schoenmaker and Schramade (2023). Through rigorous analysis and interpretation, investors can make well-informed decisions tailored to their investment objectives and risk preferences, ultimately maximizing their investment outcomes in the dynamic and evolving landscape of Nepalese manufacturing companies.

CHAPTER V: SUMMARY AND CONCLUSIONS

Summary

The study investigates the risk and return dynamics of manufacturing companies in Nepal, focusing particularly on UNL and HDL. Given the evolving economic landscape of Nepal as an emerging market, understanding the risk-return profiles of companies is imperative for investors aiming to make informed investment decisions. The study is motivated by the need to provide valuable insights into investment principles and practices in emerging markets, especially in Nepal's context, where such analysis is relatively scarce. This research contributes to bridging the gap in literature by shedding light on the intricacies of investment decision-making in Nepalese manufacturing companies.

In the literature review, various studies are examined to provide a comprehensive understanding of risk and return dynamics in financial markets. These studies highlight the complexity of market factors influencing returns and the nuanced relationship between portfolio composition and risk exposure. Additionally, insights into the limitations of using realized returns as proxies for expected returns and the determinants of share prices within specific sectors, such as the manufacturing sector in Nepal, are explored. The literature review contextualizes the current study within the broader landscape of research on risk and return analysis, providing a foundation for the research methodology and findings.

The methodology adopted for this study involves a quantitative approach to analyze the risk and return profiles of UNL and HDL. Data on closing prices, dividends, and other relevant metrics are collected and analyzed over a specific period. Standard financial metrics such as standard deviation, beta coefficient, and total risk measures are employed to assess the risk profiles of the companies. Additionally, correlation analysis is conducted to explore the relationship between risk and expected rate of return. This methodology integrates insights from previous studies while adapting to the unique context of Nepalese manufacturing companies.

The findings of the study reveal distinct differences in the risk profiles of UNL and HDL, with UNL exhibiting lower volatility and systematic risk compared to HDL.

However, HDL demonstrates higher return potential, outperforming UNL in terms of average rate of return. Pricing evaluation indicates potential mispricing in the market, with UNL appearing underpriced relative to investors' required rate of return and HDL seeming overpriced. Moreover, the correlation between risk and expected rate of return is found to be insignificant, suggesting the presence of other influential factors in determining expected returns.

In conclusion, the study provides valuable insights into the risk and return dynamics of manufacturing companies in Nepal, contributing to the broader understanding of investment principles and practices in emerging markets. By analyzing the risk-return profiles of UNL and HDL, the study offers actionable insights for investors, policymakers, and researchers seeking to navigate the Nepalese market landscape effectively. Moving forward, further research and analysis are warranted to explore the underlying drivers of expected returns and their relationship with risk factors in the Nepalese market context. Through continued exploration and understanding of risk and return dynamics, investors can make well-informed decisions tailored to their investment objectives and risk preferences, ultimately maximizing their investment outcomes in the dynamic and evolving landscape of Nepalese manufacturing companies.

Conclusion

In concluding the comparative risk and return analysis of UNL and HDL, it becomes evident that while both companies operate within the manufacturing sector of Nepal, they exhibit distinctive risk-return profiles. UNL demonstrates lower volatility and systematic risk compared to HDL, indicating a relatively stable investment option. However, this stability comes at the expense of lower return potential, as HDL outperforms UNL in terms of average rate of return. This disparity suggests that investors must carefully weigh their risk tolerance against return expectations when considering investments in these companies, aligning their portfolio strategies with their financial objectives.

Furthermore, pricing evaluation reveals potential mispricing in the market, with UNL appearing underpriced relative to investors' required rate of return and HDL seeming overpriced. This disparity underscores the challenges of accurately assessing the

intrinsic value of stocks in a dynamic market environment. Investors must exercise caution and conduct thorough due diligence to avoid overvalued or undervalued assets, ensuring that their investment decisions are grounded in sound financial analysis and aligned with their risk preferences.

Moreover, the insignificant correlation between risk and expected rate of return suggests that other influential factors beyond risk play a significant role in determining expected returns for UNL and HDL. This finding underscores the complexity of investment decision-making in emerging markets like Nepal, where market dynamics are influenced by various internal and external factors. Moving forward, further research and analysis are warranted to elucidate the underlying drivers of expected returns and their relationship with risk factors in the Nepalese market context, empowering investors with the insights needed to make well-informed investment decisions and optimize their investment outcomes.

Implication

Based on the findings and conclusions derived from the data analysis, here are some implications for investors and stakeholders:

- Given the divergent risk and return profiles observed between Unilever Nepal Limited (UNL) and Himalayan Distillery Limited (HDL), investors could consider implementing a diversified investment strategy that includes both companies. Such a strategy may help mitigate risk exposure while still capturing the potentially higher returns offered by HDL.
- Investors with a higher risk appetite and a pursuit for greater returns may find HDL to be an attractive investment opportunity. However, it's essential to acknowledge the associated volatility and be prepared for fluctuations in returns.
- Conversely, UNL's relatively stable performance could be appealing to risk-averse investors seeking consistent returns over time. UNL might serve as a cornerstone in a portfolio, providing stability amidst market fluctuations.
- The observed fluctuations in returns for both companies suggest that investors with a longer investment horizon may be better positioned to navigate short-

term market volatility and capitalize on potential growth opportunities over time.

- Treasury Bills emerge as a low-risk investment option with reliable returns, presenting investors with an opportunity to diversify their portfolio and mitigate overall risk exposure.
- In light of the evolving market landscape, staying abreast of macroeconomic trends, industry dynamics, and company-specific developments is imperative for making well-informed investment decisions.
- Individual investment decisions should be aligned with personal financial goals, risk tolerance levels, and investment horizons. Seeking guidance from financial advisors can offer tailored recommendations based on individual circumstances.
- Before making investment decisions, conducting thorough research and due diligence on both UNL and HDL, as well as understanding macroeconomic factors impacting the manufacturing sector, is paramount.
- Implementing stress tests on investment portfolios, inclusive of UNL, HDL, and other assets, can provide insights into potential vulnerabilities and refine allocation strategies.
- Adopting a dynamic asset allocation approach that adjusts the portfolio's composition in response to changing market conditions can help capture opportunities while managing risk effectively.
- Educating investors about the risk and return dynamics revealed by the analysis can empower them to make informed decisions aligned with their financial objectives.
- Utilizing scenario analysis to assess the potential outcomes of different market scenarios assists in understanding how changes in economic conditions might affect investment performance.
- Implementing a routine review process to evaluate portfolio performance against established goals and risk tolerance levels ensures that the portfolio remains aligned with evolving financial objectives.

- Extending the analysis to encompass other sectors of the Nepalese market offers insights into overall economic health and identifies potential investment opportunities.
- Monitoring relevant economic indicators and government policies impacting the manufacturing sector, such as changes in interest rates and regulatory frameworks, is crucial for informed investment decisions.
- Recognizing the psychological factors that influence investment decisions, such as emotions and biases, can guide better decision-making practices.
- Considering liquidity needs when constructing the portfolio ensures alignment with short-term and long-term liquidity requirements.
- Diversifying beyond Nepal's borders to access international markets adds a layer of diversification and potential risk reduction through exposure to different economic cycles.

REFERENCES

Aliu, F., Pavelkova, D., & Dehning, B. (2017). Portfolio risk-return analysis: The case of the automotive industry in the Czech Republic. *Journal of International Studies*, 10(4), 72-83. DOI:10.14254/2071-8330.2017/10-4/5

Bhalla, V.K. (1997). *Investment Management*. New Delhi: Prentice Hall of India.

Bhattarai, Y.R. (2016) Determinants of Share Price of Nepalese Commercial Banks. *Economic Journal of Development Issues* Vol. 17 & 18 No. 1-2 (2014) Combined Issue, Page: 187-198.

Chakole, Y. (2022). A Critical Analysis of Risk and Return with Respect to Various Investments. *International Research Journal of Modernization in Engineering Technology and Science*, 4(2), 272-276.

Elton, E. J. (1999). Expected Return, Realized Returns & Pricing tests. *The Journal of Finance, 4*, New York.

Gurung, R. (2022). Status of Stock Market Concentration and Turnover at Nepal Stock Exchange. *Pravaha, 28*(1), 71-76.

Hampton, J. J. (1996). *Financial Decision Making*. New Delhi: Prentice Hall of India Pvt. Ltd.

Joghee, M. V. (2021). A Study on risk and return analysis of selected banking securities. *Turkish Journal of Computer and Mathematics Education (TURCOMAT), 12*(11), 122-127.

Kalkoti, P. M. (2018). A Study on Risk and Return Analysis of Equity Stocks. *Pattern Effects Labs Pvt. Ltd.*

Kandel, L. R. (2018). Risk and Return Analysis of Commercial Banks of Nepal (with reference to NABIL and NIBL). *A Journal of Management, 109.*

Kolani, P., & Vikpossi, A. E. (2014). An analysis of the relationship between risk and expected return in the BRVM stock exchange: Test of the CAPM. *Research in World Economy, 5*(1). DOI:10.5430/ rwe.v5n1p13

Krishnaprabha, D. S., & Vijayakumar, M. (2015). A study on risk and return analysis of selected stocks in India. *International Journal of Scientific Research and Management, 3*(4), 2550-2554.

Loric, et al. (1985). *The Stock Market Theories and Evidence*. USA: Irwin Inc. Homewood: Prentice Hall of India Pvt. Ltd.

Md. Zobaer et al., (2012). Analyzing and estimating portfolio performance of Bangladesh stock market. *American Journal of Applied Sciences, 10*(2), 139-146. DOI:10.3844/ ajassp.2013.139.146

Mishra, S. K. (2002). Risk and Return on Common Stock Investment of Commercial Banks in Nepal.

Moolbharathi, M. R., & Sugandi, M. (2021). A comparison study on risk and return analysis of selected companies with benchmark index in NSE. *International Journal of Business and Management Invention (IJBMI), 10*(10), 4-11.

Naik, R.K., (2013). The Effect of Macroeconomic Factors on Indian Stock Market Performance: A Factor Analysis Approach. *IOSR Journal of Economics and Finance* 1(3):14-21. DOI:10.9790/5933-0131421

Nepal Investment Bank Limited. (2013-2017). *Annual Report*. Kathmandu.

NRB (2004-2005). Bank and Financial Institutions Regulations and Department, Policy Planning Statistics and Banking Promotion Divisions. *Banking and Financial Statistics, No. 43*, Kathmandu.

NRB (2010). Role of Financial Development in Economic Growth of Nepal. *A Journal of Research Department, 22*, Kathmandu.

Pastor L., & Veronesi P. (2012) *Uncertainty About Government Policy and Stock Prices.* MFI Working Paper No. 2010-08, Available at

SSRN: https://ssrn.com/abstract=1625845 or http://dx.doi.org/10.2139/ssrn.1625845

Paudel, R. C., & Acharya, C. P. (2020). Financial development and economic growth: Evidence from Nepal. *NRB Economic Review, 32*(1), 15-36.

Poudel, N. P. (2002). Investing in Shares of Return and Risk Elements With Special References to Eight Commercial Banks. *Development Finance Department*. Kathmandu: Nepal Rastra Bank.

Pradhan, R. S. (1993).Stock Market Behavior on Small Capital Market: A Case Study in Nepal. *The Nepalese Management Review, Vol.1*, Kathmandu.

Pradhan, R. S., & Blampaki, S. B. (2004).Fundamental of stock returns in Nepal. *SEBON Journal, Vol.1*, Kathmandu.

Rakhal, R. (2018). Determinants of Stock Market Performance. *NCC Journal* 3(1):134. DOI:10.3126/nccj.v3i1.20255

Regmi, R. (2022). Risk and Return Analysis of Nepalese Commercial Bank's Stock. *MBA thesis, BRAC Business School, Brac University*.

Rouwenhost, K. G. (1999). Local Return Factors and The Turnover in Emerging Markets. *The Journal of Finance*.

Schoenmaker, D., & Schramade, W. (2023). *Risk-Return Analysis*. In *Corporate Finance for Long-Term Value*. Cham: Springer International Publishing.

Shrestha, P. M. (2020). Factors influencing investment decisions of Nepalese investors. *Management Dynamics, 23*(2), 145-160.

Sopipan N., Sattayatham P., & Premanode B. (2012) Forecasting the Stock Exchange of Thailand uses Day of the Week Effect and Markov Regime Switching GARCH. *American Journal of Economics and Business Administration* 4(1):84-93

Timilsina, Y. (2007). Capital Market Development and stock price behavior in Nepal. Retrived from: https://www.nrb.org.np/er-article

Venkatesh, K., Vikas, B., & Charithra, C.M. (2018). A Study on Risk and Return Analysis and Data Envelopment Analysis of Public and Private Sector Banks. *Srusti Management Revie*w, Bhubaneswar Vol. 11, Iss. 2, 10-18

Yilmaz A.K., & Gulay G., (2006). "Dividend Policies and Price-Volume Reactions to Cash Dividends on the Stock Market: Evidence from the Istanbul Stock Exchange," *Emerging Markets Finance and Trade, Taylor & Francis Journals*, vol. 42(4), pages 19-49, July.

Risk and Return Analysis of Manufacturing Compa...

By: Sagar Parajuli

As of: Jun 23, 2024 10:57:19 AM
17,843 words - 76 matches - 12 sources

Similarity Index
16%

Mode: Summary Report

sources:

1,096 words / 6% - from 21-Jan-2024 12:00AM
elibrary.tucl.edu.np

569 words / 3% - from 12-Apr-2024 12:00AM
financedocbox.com

257 words / 1% - Internet from 14-Jan-2023 12:00AM
elibrary.tucl.edu.np

105 words / 1% - Internet from 06-Jan-2023 12:00AM
elibrary.tucl.edu.np

99 words / 1% - Internet from 14-Jan-2023 12:00AM
elibrary.tucl.edu.np

138 words / 1% - from 21-May-2023 12:00AM
www.coursehero.com

126 words / 1% - Crossref
F. V. Meyer, D. C. Corner, J. E. S. Parker. "Problems of a Mature Economy", Springer Nature, 1970

109 words / 1% - from 18-Jun-2023 12:00AM
dspace.bracu.ac.bd

108 words / 1% - Internet from 31-Oct-2017 12:00AM
link.springer.com

92 words / 1% - Internet from 27-Mar-2021 12:00AM
businessjargons.com

91 words / 1% - Crossref
Narad Kumar Thapa. "Comparative Risk Return Analysis of Nepal Stock Market with Selected Banking Stocks in Nepal", Nepal Journal of Multidisciplinary Research, 2023

91 words / 1% - Internet from 12-Jan-2023 12:00AM
pdfcoffee.com

paper text: