

Chapter-1

Introduction

1.1 BACKGROUND

Return is the main aim of investment and a certain degree of risk of risk is associated with it . Finance mostly deals on the monetary risk and return , which is the most affecting subject matter for an individual to large corporation . In recent years the field of finance has truly undergone a revolution and its one of the leading sector , stock market , has become a global phenomenon . Even in the least developed country like Nepal stock market is being one of the important part of the national economy . In capitalistic economy , justification for encouragement of the stock market is taken not on the ideological background but also on the development that stock market expansion is partly a natural progression the development of a country's financial sector as long – team economic growth proceeds .

“So far as the securities (stock) market is concerned , it is an important constituent of capital market . It has a wide term embracing the buyers and sellers securities and resale of corporate securities .” “ Stock market is a financial market , which probably has the greatest glamour , and is perhaps the least understood . Some observers consider it as a legalized heaven for gambling and many investors consider stock market investing as a game in which the sole purpose is picking winners.” Having said this , stock market investment can be both rewarding and fun so long as sufficient time is given to appreciate its many facet and characteristics

“ The Nepalese capital market has been passing through the transaction phase over the past few after since independence . There are various inconsistencies and hindrance existed on the way to smooth way of functioning of market . Not only that institutional bottlenecks are hampering the growth of capital , but at times , the existing imperfect

national characteristics phenomenon deeply noted in socioeconomic system has undermine the proper trading in securities market . The arbitrarily quoting of stock price without fundamental and technical justification made market not to look alter the protection of investors .

The concept of financial institution in Nepal was introduced when the first commercial bank . Nepal Bank Limited , was established in 1937 . It was established under special Banking Act 1936 having elementary function of commercial bank Later in 1955 , the first central bank , named as Nepal Rastra Bank was established with an objective of supervising , protecting and directing the function of commercial banking activities . Another commercial bank fully owned by HMG/N, named as Rastriya Banijya Bank got establishes in 1966 . The establishment of joint venture banks gave a new horizon to the financial sector of the country . Since 1984 , J.V.banks were established in different times with company act and their shares were listed in Nepal Stock Exchange Limited (NEPSE) . The focus of the study is those commercial banks whose shares are listed in NEPSE .

Banking sector is the most dynamic part of economy , which collect unused funds and mobilize it in needed areas . It is the heart of trade , commerce and industry . In Nepalese context , commercial banks have comparatively good performance among the public limited companies . Because most of the banks are counted within the top ten position among the listed companies on the basis of amount traded , number of transaction , market capitalization , etc. Most of the banks are established with collaboration of foreign well-known banks . As a public limited company , Nepal Bank Limited (NBL) is only one Nepalese Commercial Bank which is listed in NEPSE. Besides this oldest bank there are eight other joint venture banks which are listed in NEPSE . As a public limited company a new J.V. Bank , Bank of Silon's securities are not listed in NEPSE yet . Besides these , a government bank , Rastriya Banijya Bank , also plays a vital role in banking sector . “ In Nepal altogether there are 13 commercial banks and their 461 branches in mid April 1999 “

“There nature of bank funds and its payment depends and investment of funds are of short –term nature .As long-term investments are associated with higher risk , banks are confined to make short –term investment only .R.W. Goldsmith suggests that significance of commercial banks is greater in countries , of comparatively lower level of economic development . The shares of commercial banks in the net issues of all financial institutions is much higher in such countries in the ones with higher stage of economic development .”

In Nepal foreign joint venture banks perform better than Nepalese ones do. Because they have higher management efficiency and they can manage risk properly . Specifically , Nepalese banks have a high degree of internal (firm specific) risk .At the same time they have to bear more social obligation and government intervention than foreign banks . However , Nepalese banks have high potentialities to increase their performance by changing their risk attitude and by improving their internal management .

Risk is related to future and future is uncertain . But risk is management rather than uncertain . Company-specific risk (earning variability) and company’s ability to service its debt burden are intimately related to the particular characteristics of the business or businesses in which the company operates . Moreover ,they are affected by economic conditions – apart management’s ability to generate satisfactory operating performance .

There are different types of securities as treasury bills , long-term government bonds , long-term corporate bonds , common stocks etc . Among these securities this study concerns with common stocks ,” Common stocks represents a corporation to pay periodically whatever its board of directors deems appropriate as a cash dividend .”

Common-stock holders of a company are its ultimate owners . Collectively they own the company and it is assumed that ultimate risk is associated with ownership . So the common stock is known as risky security . But what is risk ? “ Risk is like pornography . It’s hard to define , but you know it when you see it .” Investors invest in common stock for higher return . But their expected return may or may not change in realities . This uncertainty is a major risk to investors in stock market investment .

The return is income received on an investment , which is expressed as dividend ,plus any change in market price of the share (MPS) and usually expressed in percent . Both dividend and market price of the share are uncertain figures . So , the actual return on investment in common stock may differ substantially from the expected return . “The variability , the riskier the security is said to be .” The market price of the share of a company is driven both by fundamental business values and stock market sentiment . For a given business , it is always worth attempting to identify which of these is driving its share price .

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

A systematic investment process should be followed to win the stock market .” Investment process describes how an investor should go about making decisions with regard to what marketable to invest in , how extensive the investment should be , and when the investment should be

made . A five-step procedure for making these decisions forms the basis of the investment process . “

1. Set investment policy
2. Perform security analysis
3. Construct a portfolio
4. Revise the portfolio
5. Evaluate the performance of the portfolio .

Setting investment policy involves determining the investor’s objectives and the amount of his or her invest able wealth . But , the focuses on securities analysis and portfolio selection . Securities analysis involves examining a number of individual securities (or group of securities) within the broad categories of financial assets . There are many approaches in securities analysis . Portfolio construction involves identifying those specific assets in which to invest , as well as determining the proportion of the investor’s wealth to put into each one . Diversification involves constructing the investor’s portfolio in such a manner that risk is minimized , subject to certain restrictions . Another step of portfolio revision concerns the periodic repetition of the previous three steps . That is over time the investor may change his or her investment objectives , which ,in turn, means that currently held .

Portfolio may on longer be optimum . Portfolio performance evaluation involves determining periodically how the portfolio in terms of not only the return earned ,but also the risk experienced by the investor . Thus appropriate measures of return and risk as well as relevant standards (or “bench marks”) are needed .”

In Nepalese context , the institutional set up of securities market began along with the “Securities Exchange Center “ (now Nepal Stock Exchange Ltd) in 1976. In spite of considerable development there are still more potentialities to be explored for the development of stock market in Nepal .

Most of the potential investors and the shareholders (public) themselves are unknown or least understood about risk-return behavior of stock .” Most of the Nepalese investors are finding to invest in single security .” Due to lack of information and poor knowledge , market intermediaries exploit investors . So, many investors afraid to invest in stocks . People participation in security investment and its dynamic trading plays a vital role in overall economic development . For this purpose potential investors must be able to analyze risk and return of individual stock and portfolio as well . This will increase their confidence and ultimately increase stock investment and increase the degree of market efficiency , which is essential to speeding economic development of the nation .

1.2 STATEMENT OF THE PROBLEM

Due to the lack of information and poor knowledge , individual investor is manipulated or exploited by the financial institutions or other market intermediaries to such an extent that investing in common stocks is intolerably hazardous . But investors are responsible to make rational investment decision rather than switching blame to others . For this purpose , knowledge is essential . Investors ‘ attitude and perception also plays a vital role in rational decision . Previous research shows that “in Nepal most of the investors their fund in single security rather they can be benefited by investing in portfolio of securities through diversification of risk .” Not only general public but commerce or business administration cannot perfectly analyze the risk and return in stock market investment . There are no any separate institutions , which gives such valuable information that accelerate the stock investment and market efficiency .

Government policy is less encouraging in creating proper investment situations . Some plans and policies are not implemented . There are no strong commitment towards increasing public investment in policy makers and government . Investors are the main bases for any company , they are

they are the source of revenue as a customer for the stockbrokers and financial intuitions , and ultimately they are the backbone of economic development of the nation . But any above body has no any effective program to develop investors knowledge .

People feel more risk in stock investment than its real risk . To built their confidence unbiased analysis and information about it is a must . Unavailability of a simple and clear way or technique to analyze risk and return of individual stock and portfolio is therefore being a major weakness to increase stock investment and stock market efficiency as well .

1.3 OBJECTIVE OF THE STUDY

The main objectives of the study are as follows :

1. One of the major objective of the study is to describe the risk , return and other relevant variable which are very important in making decision about stock investment . Study will also identify the unseen problem facing by the individual investors .
2. Another main objective is to analyze the risk and return of the common stocks and their portfolio in a simple way . Study will also analyze the volatility of different stocks and other relevant variables that should be considered while deciding investment in stocks .
2. Lastly the study aims to provide suggestive package , some practical ideas and materialize recommendations based on the analysis of the data .

1.4 NEED OR SIGNIFICANCE OF STUDY

As discussed above main target of the study is potential investor who wants to invest in security but repel by imaginary or unreal risk . So the study will be more significant for exploring and increasing stock investment . Study not only used as partial fulfillment of T.U. course of MBA , but it also will provide little contribution to Nepalese Stock Market development .

After the political change in 2046 BS, people participation in security investment and stock trading increased unexpectedly . But the attraction did not proceed long Because they had been entered in stock market without proper analysis but due to the exaggeration and rumors about it . Now , most of the participants repel from the stock market . This situation indicates that there is a high potentiality on stock investment . These potentialities can change into fruitful investment by increasing transparency , increasing information flow and developing analytical power of public stock investors , which ultimately increase national economic health . Thus study will fulfill a little need in this aspect .

The study will also open many doors to further research in the area of investment and asset management for business .

1.5 HYPOTHESES

This study will test the following hypotheses : (The hypotheses tests are based on student's test)

Hypothesis 1

Null Hypothesis (HO): There is no significant difference between the portfolio return of the common stocks of commercial and overall market portfolio return . In other words , average return on common stocks of commercial banks is equal to the market return .

Alternative Hypothesis (h): There is a significant difference between the portfolio return of the common stocks of commercial banks and overall market portfolio return . In other words average return on common stocks of commercial banks is not equal to the market return .

Hypothesis 11

Null Hypothesis (HO) : There is no significant different between the portfolio beta of commercial banks and beta . In other words , portfolio beta of commercial banks is equal to 1 (i.e. market beta)

Alternative Hypothesis (H1): There is a significant difference between the portfolio beta of commercial banks and market beta . In other words , portfolio beta of commercial banks is not equal to 1 .

Major limitation of the study is the differential coverage of data . For analysis , data availability differs in various periods . Bank of kathmandu's data is available for two years 2054/56. NBB and EBL's data are available for 4 years .

Another limitation of the study is the variation data published from various sources . Fiture published by NEPSE and companies differ to some extent However , in this study NEPSE is taken as basis source of data .

The study is to fulfil the partial requirement of MBA course of Tribhuvan University , Nepal So, the study cannot cover all the dimensions of the subject matter and cannot penetrate the extreme depth also . A student as a researcher , the study is unbiased , but resource and time period is limited .

CHAPTER – II

Review of Literature

On the ground of the research topic , this chapter shoes a competent exploration of the background to the work and a comprehensive review of recent and relevant literature . In this regard , basis academic course books on finance , recent published books specifically related to the topic , some of the major research based journals and the related studies are reviewed .

Due to the poor economic and educational development , there are mo any good books and research work in Nepal . Our stock market is also in emerging state . So most of the materials , which are reviewed here , are published in U.S.A. Although , there are no any research work performed in this specific topic in Nepal , some master degree these are available in Tribhuvan University which are related to some extent with this topic “risk and return “ . These theses are also reviewed to the extent of relation . In addition independent studies carried out by well-known Nepalese financial experts are taken into consideration .

REVIEW FROM BOOKS

Central focus of the finance is trade off between risk and return . Here , main focus is its implication in the investment of common stock . Verities of book deal with the theoretical aspect of this matter . Here some major well popular and world wide accepted books are taken account .

“The return from holding an investment over some period say a year is simply any cash payments received due to ownership , plus the change in market price ,

derived by the beginning price . For common stock we can define one period return as :

$$R = \frac{D + (P_t - P_{t-1})}{P_{t-1}}$$

Where R is the actual return when it refers to a particular times period in the past (future). D_t is the cash dividend at the end of time period t . P_t is the stock's price at time period t , and P_{t-1} is the stock's price at time period t-1 . Notice that this formula can be used to determine both actual one – period returns (When based on historical figures), as well as expected one period returns (When based on expected dividends and prices). Also note that the term in parenthesis in the numerator of the above equation represents the capital gain or loss during the period .”

This explanation of return on common stock investment is based on the historical dividend and price data its expected future data . The return can be defined also on the basis of probability distribution of alternative outcome .

“In the financial market , many outcomes are possible . The domination influence on financial events is the general state of the economy . For illustration reading the annual reports of business , will often find statements such as : the general state of the economy was depressed last years , causing our company's earning to decline .

The relationship between the expected future state of the economy and the performance of individual firms enables a relationship to be set forth between the state of the economy and the returns from investments in firms . The relationship between different levels of returns “and their relative frequency is called a probability distribution . for the relative frequency of a firm's annual returns by analyzing its historical returns over the previous years , But we know that history never repeats exactly company . We can form a probability distribution based on historical data plus our analysis for the out look for ht economy , the outlook for the firm in its industry an other factors we deem relevant as inputs for judgment .”

But this study can not analyze the overall economy due to time , resource and data constraint . However mean of the probability distribution is known as expected returns for the subsequent years . We use only the mean of historical annual returns for this measure .

The study is focusing the common stock investment . Hence a light is thrown on it . “Of all the forms of securities . Common stock (equity shares) appears to be the most romantic . While fixed income investment Avenue may be more important to most of the investors , equity shares associated with equity . Shares make them an interesting even exciting proposition , no wonder , equity investment is a favorite topic for conversation in parties and get-togethers .”

Bengamin Graham has described the nature of common stock very aptly : “Common stocks have one important investment characteristics and one important speculative characteristics . Their investment value and average market price tend to increase irregularly but persistently over the decades as their net worth builds up through the reinvestment of undistributed earning . However , most of the time common stocks are subject to irrational and excessive price fluctuations in both directions , as consequence of the ingrained tendency of most people to speculate or gamble , i.e. , to give way to hope , fear , and greed .”

According to a study conducted by Narayan Rao , the arithmetic average of the yearly returns on CS in India over 41 years period , 1953-93 has been recorded to 17.63 .

Common stocks are termed also risky securities . But why it is called risky securities ? What is risk and how it measures ? Let’s examine .

As per oxford-advanced learner’s dictionary by A.S. Hornby “risk is the possibility or chance of meeting danger or suffering loss .” But in the context of investment ,

Let's first consider a couple of examples . Assume that you buy a one – year treasury bill (T-bill) to yield 8 percent , if you hold it for the full year , you will realize a government guaranteed 8 return on your investment not more, not less . Now buy a share of common stock in any company and hold it for one year . The cash dividend that you anticipate receiving may or may not materialize as expected . And , what is more ,the year-end price of the stock might be much less than expected – may be even less than you started with . Thus , your actual return on this investment may differ substantially from your expected . If we define the risk as the variability of returns from those that are expected , the T-bill would be a risk – free security while the common stock would be a risky security . The greater the variability , the riskier the securities is said to be .”

“Risk defined most generally , is the probability of the occurrence of unfavorable outcomes . But risk has different meaning in different context . In our context two measures developed from the probability distribution have been used as initial measures pf return and risk . There are the mean and the standard deviation of the probability distribution .”Instead of measuring the probability of a number of different possible outcomes , the measure of risk should some how estimate the extent to which the actual outcome is likely to diverge from the expected outcome . Standard deviation is a measure that does this since it is an estimate of the likely divergence of actual return from an expected return .”

“The standard deviation can sometimes be misleading in comparing the risk on uncertainty , surrounding alternatives of they differ in size . To adjust the size or scale , problem, the standard deviation can divided by the expected return to compute the coefficient of variation (C.V.) . Thus , the coefficient of variation is a measure of relative dispersion (risk) – a measure of risk per unit of expected return . The larger the C.V.the larger risk of the investment .”

In generally accepted view , investors are by and large , risk averse . This implies that risky investments must offer higher expected returns than less risky

investments in order for people to buy and hold them .”This risk aversion attitude of investors portfolio theory was developed and being very important subject in the field of finance .

“Investors rarely place their entire wealth into a single asset or investment . Rather ,they construct a portfolio or group of investment . Portfolio is simply a combination of two or more securities or assets .” But risk analysis in a portfolio context is not so simple .

“The expected return of a portfolio is simply a weighted average of the expected returns of the securities comprising that portfolio . The weights are equal to the proportion of total funds invested in each security (The weight must sum to 100 percent)”

Standard deviation of portfolio is not a simple average . In portfolio standard deviation correlation between security returns plays a vital role in risk reduction .

“Correlation between security returns complicates our calculation of portfolio standard deviation by forcing us to calculate the covariance between returns for every possible pair-wise combination of securities in the portfolio . But this dark cloud of mathematical complication contains a silver lining – correlation between securities provides for the possibility of eliminating some risk without reducing potential return .”

General model for the portfolio standard deviation is little complex . The related specific model for two assets portfolio necessary to this study is portfolio standard deviation is little complex . The related specific model for two assets portfolio necessary to this study , is presented in next chapter .

“Correlation coefficient , which is significant in portfolio construction , is standardized statistical measure of the linear relationship between two variables .

Its range is from -1 (perfect negative correlation) to + 1 (perfect positive correlation).” Lesser the correlation higher the reduction in portfolio risks . But there are “three influences reduce portfolio risk in relation to the standard deviation of individual securities in isolation (1) the extent to which the correlation between the returns from the individual securities is less than 1 , (2) the individual securities in the portfolio , and (3) the proportions or weights of the individual securities in the portfolio in relation to their correlation among one another . The effect of these three influences combined can be determined by relating individual securities to all securities – the market portfolio .”

The risk measured by standard deviation (0), is known as specific firm risk and also called as unsystematic risk , can be avoided totally by well diversification .”Unsystematic risk is the variability of return on stocks or portfolios not explained by general market movements . It is avoidable through diversification .” But another risk is also involved in investment termed as systematic risk .” It is the variability of return on stocks or portfolios associated with changes in return on the market as a whole .It is due to risk factors that affect the overall market such as changes in the nation’s economy , tax reform by the government securities overall and , consequently , cannot be diversified away .”

Unsystematic risk is measured by standard deviation . But in the context of systematic risk the concept of Capital Assets Pricing Model (CAPM) is essential .

“CAPM is a model that describes the relationship between risk expected (required) return . In this model , a security’s expected (required) return is the risk-free rate plus a premium based on the systematic risk of the security . The model is :where k_j is the required rate of return for stock j, R_f is the risk – free rate , R_m is the expected return for the market portfolio , and B_j is the beta coefficient for stock j . Here , beta (B) is an index of systematic risk . It measures the sensitivity of a stock’s returns to changes in returns on the market portfolio . The beta of a

portfolio is simply a weighted average of the individual stock betas in the portfolio .”

Betas for selected stocks in American stock markets are shown in table 2.1

Table 2.1 Betas for selected stocks (July 1993)

	Beta
Common Stock	
Apple Computer	1.82
Boeing	0.94
Bristor-Myess Squibb	1.21
Control Data Systems	0.98
Dow Chemical	1.04
General Electric	1.35
Georgia-Pacific	1.19
Hershey Foods	1.04
Hewlett Packed	2.08
The limited	1.48
Microsoft	1.28
Nike	1.86
Wrigley	1.53

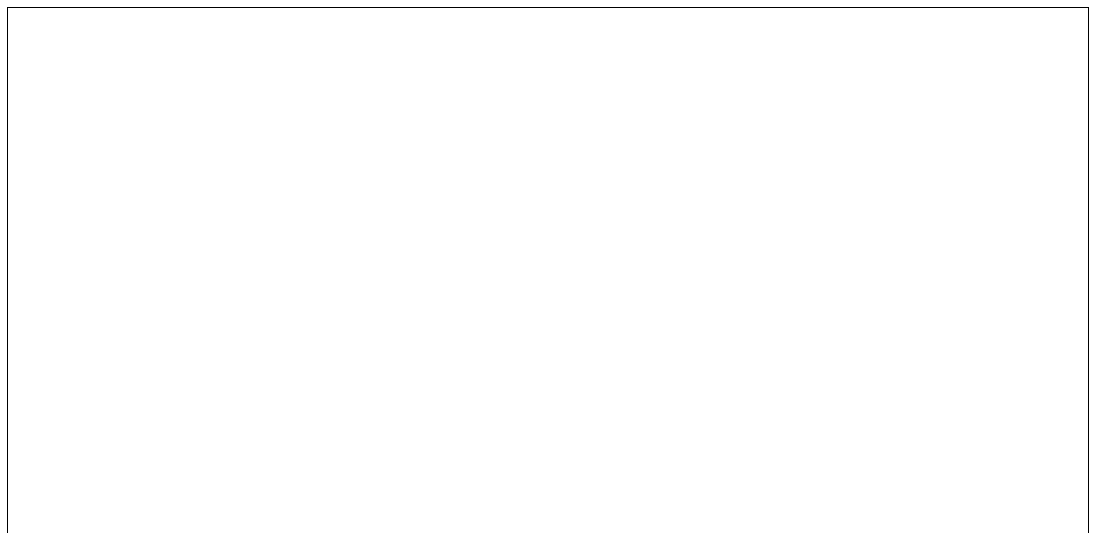
Source : American Association of individual investors .(AAII)

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

The capital asset pricing model provides us a means by which to estimate the required rate of return on a security .And on the basis of price and dividend data , expected return can be calculated . With comparison of these two returns investors can analyze whether the stock is under – priced .

“..... In market equilibrium the required rate of return on stock equals its expected returns when this is not so ? Suppose that in diagram 2.1 the security market line is drawn on the basis of what investors as a whole know to be the approximate relationship between the required rate of return and systematic or unavoidable risk . For some reason , two stocks call them X and Y are improperly priced . Stock X is under – priced relative to the security market line , While stock Y is overpriced .

Diagram 2.1 Under – priced and overpriced stock during temporary market disequilibrium .



As a result , stock X is expected to provide a rate of return greater than that required , based on its systematic risk . In contrast , stock Y is expected to provide a lower return than that required to compensate for its systematic risk . Investors seeing the opportunity for superior returns by investing in stock X , should rush to buy it . This action would drive the price up and the expected return down . How long would this continue ? It would continue until the market price was seen that the expected return would now lie on the security market line . In the case of stock Y : investors holding this stock would sell it recognizing that they could obtain a higher return for the same amount of systematic risk with other stocks . This selling pressure would drive Y's market price down and its expected return up until the expected return was on the SML.

When the expected returns for these two stocks to the SML, market equilibrium will again prevail .”

So far , we have focused on the well- known books , which are academically accepted in most of the world . Furthermore , recent published books which reviewed in the famous

journal in the section of “ book review “, are presented . There are two books reviewed simultaneously by Kent Hargis , (Goldman , Sacha and Co) in the journal of Finance , February 1999 . The books are:

“Emerging Market : Research, strategies and Benchmarks by Michael kepler and Martin . Chicago : Irwi Professional Publishing , 1997 . Po. X+374

And

Emerging Market Portfolios : Diversification and Hedging Strategies .

Edited by MICHAEL PAPALOANNOU and GEORGE TSETSEKOS . Chicago Irwin Professional Publishing , 1997 , Pp. xv+367.”

The book review is as follows :

“In recent years we have seen an explosion of research into the opportunities and risks of investing in emerging equity markets , stimulated in part by the growing exposure of U.S.and European investor to these markets , but also following the

rapid rise and fall of returns on the asset class, here we consider two more books in this growing portfolio . Both analyze the structural characteristics of the markets and issues related to asset allocation but they have different emphases .

In *Emerging Markets : Research , Strategies and Benchmarks* , Keppler and Lechner focus on the examine the performance of specific investment strategies . In *Emerging Markets Portfolios : Diversification and Hedging Strategies* , Papaioannou and Tsetsekos focus more on regulatory issues and derivatives instruments in emerging markets , following a number of chapters on the risk characteristics and potential diversification opportunities in emerging markets . Their book will be of greater interest to policymakers or a more academically inclined audience .

Keppler and Lechner's book is divided into four parts : opportunities and risks of investing in emerging markets , and a summary of market characteristics in twenty – five emerging markets investing by Park and Van Agtmael (1993), Stanley (1995), Price (1994), and Geoge (1994), which examine the case for investing in emerging markets . different investment vehicles , and structural characteristics of the markets .

Keppler and Lechner provide a good description of recent trends and structural characteristics , though they do not distinguish themselves from the rest of the literature . Pank and Van Agtmael (1993), although not as current , still provide a more detailed examination of structural characteristics of the markets , Posner (1998) is stronger in presenting investment vehicles such as American Depositary Receipts (ADR), mutual funds , and bonds , and Barry, Peavy , and Rodriguez (1997)examine in depth the risk and diversification benefits. Malkiel and Mei (1998)are targeted more toward retail investors and is the most accessible book for introducing novice investors to emerging markets .

So what is the value added by Keppler and Lechner ?The second section of the book on investment strategies in the most interesting and useful , with kepler and Lechner systematically explore a large number of investment strategies Second ,

the presentation format , company emerging market investment strategies with previously published work by the authors (e.g. Keppler and Traub (1993) in the developed markets is effective . For example , analysis of the small country effect in emerging markets is presented following discussion of the small country effect in developed markets . Third ., the authors examine a wide range of measures of portfolio risk in addition to standard deviations , which have not been analyzed in order work . Such measures include the probability and expectation of monthly loss , average loss , number of losing months, and lowest monthly return . The Keppler ratio is introduced as an alternative to the Sharpe ratio , replacing the standard deviation by the expectation of monthly loss . In many cases , the standard risk measures such as standard deviation are shown to be misleading when compared to these other measures . Even though it is well known that emerging market returns are measures helps the practitioner to understand more effectively how this impacts portfolio allocation decisions

These measures complement the extensive analysis of country risk measures , such as Institutional Investor Credit Ratings , reviewed in Erb , Hervey, and Viskanta (1997).

Keppler and Traub (1993) argue that the case for active management in emerging markets is strengthened by features of those markets which make indexing more expensive , such as frequent changes in the composition of the market indices and illiquidity of many companies in the indices . They investigate the performance of various weighting strategies – equal , market capitalization , liquidity , GDP, and manager composite and find that equally weighting markets results in higher returns and lower risk in both the developed and emerging markets , a result that it is driven in part by the small country effect present in both developed and emerging markets . For example , an equally weighted portfolio of small countries outperforms an equally Bekaert et al (1997) for a longer historical period , Bekaert et al , find that this strategy has been less effective since 1991.

Following Keppler's previous research, Keppler and Lechner show that returns on value strategies , based in part on looking at dividend yields and price to cash flows

of different markets , are even greater than those based on the small country effect . Although risk is higher according to standard deviations , other risk measures shows that these portfolios can also be less risky . The analysis is then extended to forming regional portfolios . Strategies based on industry selection and company selection are less promising . A strategy based on equally weighting individual companies within a market gives small excess returns .

The other three sections of the book provide a useful introduction and reference to the markets and are similar in content to others such as Park and Van Agtmael (1993) and Posner (1998).The first section (Chapters 1 and 2) begins by discussing broad trends market capitalization ,trading volume , and new issues . After reviewing the historical growth experience across regions , the authors give an in – depth discussion into why emerging markets have grown faster than developed markets in the past , and they offer projections for the future . Among the factors analyzed are the liberalization of capital markets , education and infrastructure .

Although higher growth rates have been achieved , the risk of investing in these markets are also greater . Keppler and Lechner explore risks caused by political instability and corruption , high levels of foreign debt , commodity prices , and short-term speculators . The causes of higher cash flows and greater risk are then analyzed in the context of the risk and return characteristics of the markets , followed by a discussion of the different emerging markets benchmarks .

The third section (chapter 4 and 5) looks at asset allocation and at different way of investing in emerging markets .The section on asset allocation shows the standard result that adding , emerging markets to a U.S or global portfolio reduces risk . However , a detailed analysis of different asset allocations for investors with different risk tolerance and a large number of risk measures are also presented .

Vehicles for accessing these markets , such as direct share purchases. American Depositary Receipts , open-end and closed-end mutual funds , options , and multinationals are analyzed , with a focus on closed-end funds into open –end

mutual funds and American Depositary Receipts , a more detailed examination of these investment vehicles would have been helpful .

The longest and final section (according for about half of the book) is a summary of twenty-five emerging markets around the world accessible to foreign investors , The economic structure , recent economic and stock market developments and foreign investment regulations for each market are reviewed . Though the information is similar to that in other books , these chapters provide a useful introduction and reference for investors , and the reformulation of many of many of the IFC valuation indicators . Return on equity , earnings , books value and divided growth along with relative price/earning price/book value and dividend yields are added to the standard indicators such as market price / earnings ratios .

The volume of papers assembled by Papaioannou and Tsetsekos in Emerging Markts Portfolios . Diversification and Hedging Strategies will be of interest to both policymakers and portfolio managers convened with quantifying and managing risk in emerging markets . Although the stated objective of this book is to “develop a framework for portfolio management “in emerging markets many chapters focus on topics of direct concern to policymakers-topics that have received less attention on the literature , such as market – based measures to manage commodity price risk and the preconditions for the development of derivatives markets in emerging economies .

The book analyses four broad themes : investment risk and opportunities in emerging market development , the impact of return , correlation , and the development and use of derivatives markets in emerging economies by government parts , they do not fit very well into their groupings .

Chapters 2 through 4 survey the risks and opportunities faced by U.S. investors in emerging markets . The case for investing in emerging markets is argued to have become more important in asset allocation as correlation among developed

markets are claimed to be increasing. A chapter on optimal asset allocation provides a useful analysis of how portfolio allocation to emerging markets should vary under different assumptions for expected returns, correlation, and investor risk tolerance. Among with investment opportunities additional risks such as volatility, currency and political risk, lack of liquidity and information in these markets.

The chapter also discusses the role of policymakers in encouraging market development and concludes that the role of government is to provide a legal structure and promote policies that allow market forces to work. Recent institutional reforms and liberalization efforts should help to promote their development.

Chapters 6 through 9 present a number of empirical studies analyzing the ability of emerging markets to reduce risk for investors based in developed markets. Potential portfolio diversification benefits are assessed by examining linkages in returns and volatility, cointegration among markets and factor models. Although the chapters were informative, they often simply correlate the results of earlier studies, with a notable lack of data from recent years. These factors limit the value added of the chapters.

The empirical studies support the view that diversification benefits of investing in emerging markets are present but have been reduced in recent years as a result of growing foreign institutional investor involvement and are less effective during periods of large market movements. Ratner finds that the United States has little contemporaneous or causal influence on Latin American countries, with the U.S.-Mexico relationship being the most significant. Aggarwal and Leal demonstrate that daily correlation between U.S. markets and emerging markets are low but increase during large market movements when longer time intervals are examined and they recently have increased. Though emerging market volatility can be explained to some extent by U.S. and world index returns, Asian markets are more

linked with the United States and within the region than with Latin America . These findings are consistent with others such as Bekaert and Harvey (1997) in finding that foreign volatility only explains a small portion of emerging market volatility .

Tsetsekos does not find cointegration among any of the regions , indicating that correlation and corresponding diversification benefits are independent of time horizon . Buckberg finds that a two-factor model , which includes returns in a developing country market portfolio on addition to the world market portfolio , dominates a one – factor model for more markets the recent period . This indicates that growing institutional investor involvement has increased the sensitivity of these markets toward each other , as these investors treat individual emerging markets as one asset class .

Chapters 5 through 14 analyze derivative market developments and potential uses by investors on emerging markets . The chapter by Claessens and Varangis presents the case successful for governments than widely used approaches such as price stabilization schemes and reserve management . they analyze different mechanisms for risk management and the benefits of using these techniques .They argue that the preconditions for establishment of commodities futures exchanges are not met in emerging markets but recommend the development of regulated forward markets . The lack of development of derivatives markets in emerging markets is claimed to be caused by exchange controls and government regulation through price stabilization and insurance .

Duck discusses the benefits of future contracts for lowering transaction costs and improving price transparency , but he stresses the difficulties of using these contracts in emerging . Asian markets because of high transaction costs , lack of liquidity , and the difficulty of shorting equities . The final chapter shows how the introduction and use of derivatives in emerging markets can alter monetary policy . It is argued that the use of derivatives implies an increased loss of control of

monetary policy , hindering the policymakers' ability to achieve broader economic goals .

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

2.2 REVIEW FROM JOURNALS

Like books , there are no such advanced and research based journals in the field of finance in Nepal . There are vary limited numbers of journals available in the subject of management and it is further hard to find any article in the subject matter of finance . And there is not any article in risk and return analysis in common stock investment . So, some foreign well-known journals are taken into consideration , which are spread out all over the world . Although articles published recently in these journals are based on the foreign stock market , it can gives the sound conceptual framework and recent worldwide development on this research topic .

The Journal of Finance published bimonthly b American Finance Association for many decades is taken into account . In its recent volume of August 1999, an article “Local Return Factors are Turnover in Emerging Stock Markets “ by K.Greet Rouwenjorst has been reviewed here .

“There is growing smpirical evidence that multiple factors are cross-section ally correlated with average returns in the United State Measured over long time periods , small stocks earn higher average returns than large stocks (Bang 1984) . Fama French (1992,1996) and Lakonishock , Shleifer , and Veshny (1994) show that value / stocks with high book-to-market (B/M) , earning to price (E/P): on cash-flow to price (C/P) outperform growth stocks with low B/M, , E/P, or c/p. Moreover , stock with high return over the past three months to one year continue

to outperform stocks with poor prior performance (Jagadeesg and Titman (1993). The evidence that beta is also compensated for in average returns is weaker (Fama and French (1992), Kothari , Shakken and Stoan (1995) .

The interpretation of the evidence is strongly debated. Some believe that the premiums are a compensation for pervasive risk factors , others attribute them to firm characteristics or an inefficiency in the way market incorporate information into prices . Yet others argue that the premiums may be biased by survivorship or data snooping .

This paper examines the sources of return variation in emerging stock markets . From the perspective of collection independent samples , emerging market countries are particularly interesting because of their relative isolation from the capital markets of other countries .Compared to developed markets , the correlation between most emerging markets and other stock markets has historically been low(Harvey (1995), and until recently many emerging countries restricted investment by foreign investor Interestingly , Bekaert and Harvey (1995)find that despite the recent trend toward abolition of these restrictions and the substantial inflows of foreign capital, some emerging equity markets have actually become more segmented from world capital markets . A large portion of the equity capital of emerging economies is held by local investors who are likely to evaluate their portfolios in light of local economic and market condition (Bekaert an Harvey)

On the above background Rouwenhorst attempts to answer two set of questions .”The first set of three questions concern the existence of expected return premiums .(i) Do the factors that explain expected return differences in developed equity markets also describe the cross section of expected returns of emerging market firms ?(ii) Are the returns factors in emerging markets primarily local or they have global components as well ? (iii) How does the emerging market evidence contribute to the international evidence from developed markets that similar return factors are present in markets around the world ?

The second set of questions of the paper include (iv) Is there a cross sectional relationship between liquidity and average returns in emerging markets ? (v) Are return factors in emerging markets cross section ally correlated with liquidity .

About the data Rouwenhorst stated that as of April 1997 the Emerging Markets Database (EMDB) of the IFC contains data on and more than 2200 firms from 31 emerging markets , but not all are included in the sample . Eleven countries are excluded because of insufficient return histories , which leaves 1705 firms in the 20 countries that the IFC tracks for at least seven years . For some firm's monthly closing process and dividends are available dating back to 1975. Starting at various points during 1980s the IFC expanded its reporting to include monthly time series for price-to-book ratios ,price-earning ratios, market capitalization . Trading volume , and the number of days per month that a stock is traded .

Total returns are calculated as the sum of the dividend return and price appreciation , using prices scaled by a capital adjustment factor , which the IFC computes to correct for price effects associated with stock splits , stock dividends, and right issues . Many emerging markets have firms with multiple classes of shares carrying different ownership restrictions . Firms with multiple shares classes are treated as a single value-weighted portfolio of the outstanding equity securities .”

In this paper Rouwenhorst has beeb made detail analysis of the data and he interpret the result in each section Lastly , he has concluded his finding as follows .

“ The first conclusion is that the return factors in emerging markets are qualitatively similar to those in developed markets : small stocks outperform growth stocks and emerging markets stocks exhhaibit momentum . There is no evidence that local market betas are associated with average returns . The low correlation between the country return factor suggests that the premiums have a

strong local character . Furthermore , global exposures can not explain the average factors returns of merging markets . There is little evidence that the correlation between the local factor portfolios have increase, which suggests that the factors responsible for increase of emerging market country correlation are separate markets .A Bayesian analysis of premiums in developed and emerging markets shows that unless one has strong prior beliefs to the contrary , the empirical evidence favors the hypotheses that size momentum , and value strategies are compensated for in expected returns around the world . Finally the paper documents the relationship between expected returns and share turnover and examines the turnover characteristics of the local returns factor portfolios . There is no evidence of a relation between expected returns and turnover , in emerging markets . However , beta , size momentum and value are positively cross section ally correlated with turnover in emerging markets . This suggests that the return premiums do not simply reflect a compensation for illiquidity .”

This study by Rouwenhorst does not consider the analysis of single security . It has been analyzed the return factors in worldwide markets . However , it concentrates in the various emerging stock markets the article contributes in the area if risk and return analysis in common stock investment .

2.3 REVIEW FROM THESES

As already stated , there are no any study performed in this specific topic . However , some studies have been conducted as a thesis for the partial fulfillment of master degree in T.U . whose some section are related to this research topic . In this context two theses are reviewed here. Mohan Khatiwada performs one of them in 1996 , in the title of “A study on securities investment in Nepal .” And Gopal Prasad Bhatta perform the other in 1995 , in the title of “Assessment of the performance of listed companies in Nepal .”

Khatiwada conducted the study on securities investment by using four –year data of 1993 to 1996.”

Among different objectives the one “to analyze the stock market performance “has a little relation with this study . In this aspect he summarize the findings as “interest rate so ascertained by financial institution for the year 1995 ranges from 12 to 12.75 per annum . As it is reviewed on background of commercial rate in 1995.

Although interest rate on fixed deposit in an immediate return generated through saving , the return on securities can not be exactly predicated . Some of the companies have not even declared dividend for two / three years . Whatever the shareholders have yielded on their securities investment is very low (Avoiding exceptional cases of some financial and banking institution) as compared to the immediate return earned through fixed deposit ,”But he had not stated the CS return in any exact figure .

About market price movement of CS , Khatiwada summarized “ Leaving some exceptional cases aside , almost all the companies experienced their some market price going down by less than 50 in 1995. Even the banking group could not spare the share price going down More specifically , the year 1995 was a disheartening period for the stock price . It is because almost all the companies share price during the year were down even in some cases below the face value .” Why this deep declination in prices was held ? Khatiwada did not look in this aspect .

Khatiwada recommend to liberalized the government policy removing capital control and barrier to attract foreign portfolio flows which is essential for the development of stock market .”

Though the study conducted by Khatiwada did not focus the analysis of individual security and the viewpoint of investors , it explores some dimension to further research in this aspect ,

Another study , conducted by Gopal Prasad Bhatta in the title of “Assessment of the performance of listed companies in Nepal ,” is more related than Khatiwada’s study with this topic . Bhatt’s study in performance of listed companies is based in 10 listed companies data from 1990 to 1995” One of the major objective that concern with this research topic is “ to analyze the performance of listed companies in terms of risk and return i.e expected rate of return and company specific risk , required rate of return and internal rate of return , systematic risk and diversification of risk through portfolio context .”

Bhatta addressed the following finding in risk return behavior from the analysis of different stocks .

“A highly significant positive correlation ship has been addressed risk and return character of the company . Investors expect returns from those stock which associates higher risk . Nepalese capital market is not efficient one . So the stock prices does not contain all the information relating to market and company itself . Neither investors analyze the overall relevant information of the stocks nor the member of stock exchange tries to disseminate the information . So the market return and both may not represent reality . However , the analysis based in the available information shows high priced stocks such as BBC,NIB,NIC has higher beta risk than others . These companies this requires higher returns to satisfy the investors for their risk premium .

Investors in Nepal have not yet practiced to invest in portfolio of securities . An analysis of the two securities portfolio shows that the risk can be totally minimizes if the correlation is perfectly negative . In this situation , this risk totally be diversified , but when there is perfectly positive correlation ship between the returns of the two securities , the risk is undiversifiable . The analysis shows some has negative correlation and some has positive one . Negative correlation between securities returns is preferred for diversification of risk .”

Lastly Bhatta recommended the following points to improve the market efficiency :

-) Developed institutions to consult investors for risk minimization
-) Establish an information channel in Nepal stock exchangeand

Make proper amendment on Trading Rules

To some extent Bhatta focused in the analysis of risk and return in common stock investment. But due to so many other aspects of analysis investor can not easily assess the results. Indeed, study did not focus the viewpoint of investors rather it concentrates the companies and stock market. However, this study also explores some dimensions for further research in this subject.

2.4 REVIEW FROM OTHER INDEPENDENT STUDY IN NEPAL

There are very few independence studies available in the topics of finance specifically, it is rare in the case of this research topic, risk and return analysis. However here are two independent studies which are related to the Nepalese stock market and about shareholder democracy. Even though these studies were carried out before more than five years, these can give intellectual ground in our domestic stock market and its dimension. Because such types of study in this subject matter is not available recently.

Firstly, Radha Shyam Pradhan carried out a study in the topic of "Stock Market Behavior on a small capital market: a case in Nepal" in 1993. The study was based on the data collected for seventeen enterprises from 1986 through 1990."

One of the major objective which is related to this study was "To assess the stock market behavior in Nepal."

Pradhan summarized the following findings

-) Dividend per share and market price per share was positively correlated
-) There are positive relationship between dividend payout and liquidity.

-) Higher the earnings on stocks , larger the ratio of dividends per share to market price per share
-) There are positive relationship between dividend payout and liquidity .

Common stock investors are termed as shareholder :Another study was carried out by : Profssor Dr . Manohar Krishana Sharestha in the title of “Shareholder democracy and annual general meeting (AGM) feed back .” This study critically analyzed the situation of common stock investors and the situation is not improve significantly till now .

Though the size of the shareholder population in Nepal has been growing constantly the government seems tp have not taken any initiative in formulating the separate ACT which protects the shareholders’ rights .”

Thus the need of separate act regarding the protection of shareholders rights is questioned

Company and other acts relating to financial and industrial sector have lprovisioned rights of the shareholders as:

1. Voting rights
2. Participation in general meeting
3. Right of getting information
4. Electing as a beard of director
5. Participation in the profit and loss of the company
6. Transferring shares
7. Proxy representation

The collective rights of the shareholders are :

1. Amend the internal bylaws
2. Authorize the sales of assets
3. Enter into merger
4. Change amount of authorized

Some public limited companies have floated the shares to the general public without having shareholders representation in the board .There ate many such companies , which conduct the annual general meetings just to fulfil their desire and do not consider the voice of the majority of the shareholders . Similarly management involvement and government intervention in the board election have brought a greater set back in the voting rights of the shareholders .”

Shrestha argued further to safeguard the investors ‘ interest :”The encouraging and growing confidence of shareholders over their investment seek an independent inquiry of disclosed contents of prospectus . This helps to satisfy a minimum standard of faith on investment in shares through relying on pros and cons of prospectus . It is therefore , important to dispose everything in prospectus , which could reasonably influence the mind of the prudent investors , which could reasonably influence the mind of the prudent investors . Various annual general meeting held by different public limited companies reveal a greater gap between disclosures made in prospectus and the actual results which were reported . In this context the expression of disclosure philosophy and investigation of frauds in prospectus need to be reconciled to check and growing problems in the development of the capital market in Nepal .”

As reviewed above Nepalese stock market is emerging and even in very initial stage . Study conducted previously in Nepal was not in specific issues but in broader sense . To educate and motivate the potential investors several analysis in specific subject matters are needed . This will be helpful to understand several dimension gradually and this will increase the rationality in investors decision and hence the market deficiency as well .

CHAPTER –III

Research Methodology

This chapter refers to the overall approach to the research process , from the theoretical underpinning to the collection and analysis of the data . As most of the data are quantitative the research is based on scientific method . It is composed of both parts of technical aspect and logical aspect . On the basis of historical data , using both financial and statistical tools performs detail analysis methods are described in following headings .

3.1 RESEARCH DESIGN

The research is based on recent historical data . It covers the seven years period from F/Y 2049/50 to 2055.56. Fiscal year is taken as a year period instead of using . Nepali and Gregorian calendar system . It deals with the common stocks of commercial banks on the basis of available information . For the portfolio analysis , other companies ' common stocks are also taken into account . As the title of the study suggests , it is more analytical and empirical , and less descriptive . The research has been completed within about one year period .

3.2 DATA COLLECTION PROCEDURE

The data are collection from secondary source . During the study , opinion survey has also been taken with the individual investors , bank officials , SEBO/N' and NEPSE staffs , and stock brokers . Price of the different stocks , NEPSE indices have been collected from NEPSE . Financial statements of different commercial banks , their annual reports etc have collected from the respective banks NEPSE periodicals , articles and previous research reports etc has also been considered .

Population of the study is all the commercial banks of Nepal . But for hypothesis testing , overall listed stock has been considered as the population and samples are the CCs of listed commercial banks .

3.3 TOOLS FOR ANALYSIS

Market Price of Stock (P): One of the major data of this study is market price of stock . There are three price records are available (i.e high , low and closing price of each of each years). So two approaches either average price (of high and low) or closing price can be used .Main argument of ‘average price ‘ may be , it represents the price of whole year . But to get the real average , volume and price of each transaction in the stock and duration of time of each transaction in the whole year are essential . It is very difficult to obtain and include these all information , and average of high and low price may not be a reliable and representative information . Hence the closing price is used as market price of stock which have a specific time span of one year and the study has focused in annual basis .

Dividend (D): If a company declare only the cash dividend , there are no problem to take the dividend amount . But if company declare stock dividend (bonus share) , it is difficult to obtain the amount that really shareholder has gained . In this case , they get extra number of shares as dividend and simultaneously price of the stock declines as a result of increased number of stocks . To get a real amount of dividend there are no any model (formula).So the models have been developed considering considering practical as well as theoretical aspect .

THE MODEL

1. In the case of stock dividend :

Total div , amount =cash div . + stock div . X next year’s MPS

2. In the case of ‘right issued ‘ at par

total div . amount = cash .+ of right share x (next year’s MPWS-PV)

Return On Common Stock Investment (R) : Return is the income received on an investment plus any change in market price , usually expressed as a percent of the beginning market price of the investment :

Symbolically,

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

R=Actual rate of return on common stock at time t.

D_t = Cash dividend received at time t

P_t = Price of a stock at time t

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

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

Expected Return of Common Stock (R) : One of the main aim of the study is to determine the expected return on the investment in C.S. Generally, This rate is obtained by arithmetic mean of the past year's return :

Symbolically,

$$E(R_j) = \bar{R}_j = \frac{\sum R_j}{n}$$

Where ,

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

n=Number of year's that the return is taken

∑ =Sign of summation

Standard Deviation (s.d):It is a statistical measure of the variability of a distribution of return around its mean.It is the square root of the valance and measures the unsystematic risk on stock investment .

$$J = \sqrt{\frac{\sum (R_j - \bar{R}_j)^2}{n-1}}$$

Where ,

J= Standard deviation of returns of stock j during the time period n

Coefficient of Variation (CV): It is the ratio of standard deviation of returns to the mean of that distribution . It is a measure of relative risk .

Symbolically, $C.V. = \frac{\sigma_j}{\bar{R}_j}$

Beta (B) : It is an index of systematic risk .It measures the sensitivity of a stock's return on the market portfolio .

Symbolically,

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

Where ,

β_j =Beta coefficient of stock j

$\text{Cov}(R_j, \bar{R}_m)$ = Covariance between R_j and \bar{R}_m , and is equal to :

$$\text{Cov}(R_j, \bar{R}_m) = \frac{\sum (R_j - \bar{R}_j)(\bar{R}_m - \bar{R}_m)}{n}$$

σ_m^2 =Variance of market return

Portfolio Return (Rp):

Portfolio is combination of two or more securities or assets and portfolio return is simply a weighted average of individual stock returns .(Analysis is done for two assets portfolio)

Symbolically,

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

Where ,

\bar{R}_p =Expected return on portfolio of stock A and stock B.

W_A = Weight of Stock A

W_B = Weight of Stock Band ,

$W_A + W_B = 1$ (or 100%) always

Portfolio Risk (Q_p) : It measures by the combined standard deviation of the standard deviations of individual stock return .

Symbolically,

$$Q_p = \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B \text{Cov}(R_A, R_B)}$$

Where ,

Symbolically,

$$W_A = \frac{\sigma_B^2 \text{Cov}(R_A, R_B)}{\sigma_A^2 \sigma_B^2 + \text{Cov}(R_A, R_B)^2}$$

W_A = weight (portion) of stock A that minimize the portfolio risk of stock A and Stock B.

$$W_B = 1 - W_A$$

Tools of testing Hypothesis:

Population is all the listed common stocks in NEPSE, which makes market portfolio. Sample is all listed common stocks of commercial banks. If the test is 'test of significance for a single mean', the test statistics (t) is:

$$t = \frac{\bar{x} - \mu}{\frac{s}{\sqrt{n}}}$$

Where,

t = student's test statistics

\bar{x} = arithmetic mean of sample statistics.

μ = Arithmetic mean of population parameter.

S = Estimated standard deviation of population parameter which is given as:

$$S X \sqrt{\frac{(X Z \bar{X})^2}{n Z 1}}, \text{ if deviation is taken from. actual mean.}$$

$$S X \sqrt{\frac{1}{n Z 1} \cdot \left\{ d^2 Z \frac{(d)^2}{n} \right\}}$$

d= X-A, where A= Assumed mean.

n=sample size.

Again, if the test is test of significance of difference of means', the test statistics (t) is

$$t X \frac{\bar{x}_1 Z \bar{x}_2}{\sqrt{s^2 \left(\frac{1}{n_1} \Gamma \frac{1}{n_2} \right)}}$$

Where,

\bar{x}_1 = arithmetic mean of first sample

\bar{x}_2 = arithmetic mean of second sample

n_1 = first sample size

n_2 = second sample size

Test result: If t calculated value \leq t tabulated value₁ accept the null hypothesis or vice versa.

3.4 METHOD OF ANALYSIS AND PRESENTATION

Methods of analysis are applied as simple as possible .Results are presented in tabular form and clear interpretations on it are simultaneously . Detail calculations , which can not be shown in the body part of the report are presented in Appendices at the end of report . To make report more simple and easily understandable charts , diagrams and graphs have been used . Summary conclusions and recommendations are presented finally .

3.5 CHAPTER PLAN

The study is divided into five chapters . Chapter -1 includes the introductory framework of the study that contains general background , statement of problem , objective , need or significance of the study , Hypothesis statements and limitations of the study are also included in the first chapter . Chapter –II, Review of Literature , includes the review of previous research on the same field . Books, journals and unpublished theses are reviewed on this chapter. Chapter III, research methodology, includes the research design, data collection procedure, tools for analysis, method of analysis and presentation.

Chapter IV is the main body part of the research, which includes data presentation, interpretation and analysis. This chapter analyses the risk and return of each bank's common stock and their comparisons are also made industry wise comparison in terms of risk and return and examples of some portfolios of common stocks are also illustrated in this chapter. The last chapter, Chapter V, summarizes the findings of all the analyses and presents the concluding remarks with a suggestive package as recommendation.

Chapter –IV

Data Presentation, Interpretation and Analysis

This chapter is the main body part of the study. Detail data of MPS and dividend of each bank, NEPSE index of each industry (sector) and the market are presented and their interpretation and analysis are included. On the background of various readings and literature review in the preceding chapter, it is tried to analyze and diagnose the recent Nepalese stock market movement, with taking a special reference to banking sector. Different tables and diagrams are used to make the result more simple and understandable even only this section can be beneficial for Nepalese private investors.

4.1 Analysis of individual Companies(Banks)

As the study has taken a special reference to commercial banks, common stock of each listed commercial banks are analyzed here separately. There are 13 commercial banks are in operation up to 1998/1999. But only 9 banks are listed in NEPSE. Among the remaining 4 banks Rastriya Banijya Bank(RBB) is fully owned by HMG/N which is not a public limited company. And Nepal Bank of Ceylon Ltd. (NBC), Lumbini Bank Ltd. (LBL) and Nepal Industrial and Commerical Bank Ltd. (NICB) are not listed in NEPSE yet, even though they are established under company Act. Although, data of some of the listed banks do not cover the study period fully, each banks are introduced and their common stocks' risk and returns and analyzed here.

4.1.1 Nepal Bank Ltd. (NBL)

4.1.1.1 Introduction

NBL, the oldest bank of Nepal, was established in 1937 A.D. The bank with 213¹ branches is providing banking service throughout the country. This is only the bank listed in NEPSE that is free from foreign involvement.

Authorized capital, issued capital and paid up capital of NBL are Rs. 378000000, Rs. 378000000 and Rs. 377674500 respectively. Par value per share is Rs. 100 and number of shareholders is 1265.²

Listing data of NBL's share on stock exchange is Kartik 6, 2041 B.S. (1984 A.D.)

4.1.1.2 Data

MPS and dividend record of the common stock (CS) of NBL are shown in table 4.1 MPS at 2050/51 seems surprisingly very high. Since market price of share represents various informations, year end price movement is shown in diagram

4.1 Price movement is in declining trend. However, MPS at the end of the year F/Y 2055/56 was higher than the MPS of previous year.

Table 4.1 MPS and dividend data of NBL

Fiscal Year	Market Price of Share(P)			Dividend Per Share(D)			Remarks
	High Rs.	Low Rs.	Closing Rs.	Cash Rs.	Stock	Total Rs. (Calculated)	
2049/50	1000	600	1000	-	-	-	
2050/51	3600	3400	3400	25	1:1.5	1937.5#	
2051/52	3600	1060	1275	25	0	25	
2052/53	1950	400	880	15	0	15	
2053/54	1131	477	590	25	0	25	
2054/55	540	300	350	0	1:1.5#	375##	
2055/56	475	260	392	-	-	-	

Date source NEPSE

Model of total dividend calculation is available in page 30-31

$25+1.5 \times 1275=1937.5$, ## $0+(350-100) \times 1.5=375$, # Right issued at part

Diagram 4.1 Year end price movement of the CS of NBL.

If a company declared only the cash dividend there is no problem to take dividend amount . But if a co. declared stocks dividend (bonus share) or right issued at below MPS , it is difficult to obtain the actual Rupees amount that shareholders have gained . In this case shareholder gets extra number of share as dividend ,but consequently , price of the share declines . But using the model prescribed in chapter 3, calculation of actual dividend amount for each year gained by shareholder are shown in the same Table 4.1

Due to the 150% stock dividend , shareholders gained highest amount of dividend in 1994/95. Dividend amount in the year 1997/98 seems high in effect of right issued at par .

4.1.1.3 REALISED RETURNS (R) , ITS STANDAARD DEVATION (O) AND EXPECTED RETURN (R)

Year-end price and dividend amounts are used to calculate realized rate for each year . Table 4.2 shows the calculation of yearly-realized return , expected return and standard deviation of returns .

Table 4.2 Realized rate of returns , expected return and s.d of the CS of NBL

Year	Year end price(P)	Dividend (D)	$R X \frac{D_1 \Gamma (P_1 Z P_{1Zt})}{P_{1Zt}}$	$R - \bar{R}$	$(R - \bar{R})^2$	Remark
2049/50	1000	1937.5	-	-		
2050/51	3400	25	4.3375	3.6676	13.451	
2051/52	1275	15	-0.618	-1.288	1.6579	
2052/53	880	25	-0.298	-0.968	0.9368	
2053/54	590	375	-0.301	-0.971	0.9428	
2054/55	350		0.2288	-0.441	0.1946	
Total			3.3495	17.1834		



We have,

$$\text{Expected rate } \bar{R} = \frac{R}{n} \times 3.3495/5 \times 0.6699 \times 66.99\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R \sum R)^2}{n \sum 1}} \times \sqrt{\frac{17.1834}{5 \sum 1}} \times 2.0726$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\bar{R}} \\ &= 2.0726/0.6699 \\ &= 3.0939 \end{aligned}$$

Result shows that the expected return of CS of NBL is very high. But the returns are not consistent, as its standard deviation is extremely high. This is due to surprising return was observed in the year 2050/51, but the subsequent year's return seems in negative. The return situation is improving in the recent year.

Diagram 4.2 Annual rate of return of the CS of NBL

4.1.2 Nepal Arab Bank Ltd,(NAB)

4.1.2.1 INTRODUCTION

Nepal Arab Bank Ltd . is the first joint – venture commercial bank incorporated in 1984 A.D in Nepal . Initially Dubai Bank Ltd .(DBL) invested 50% of equity share of NAB . The share of NAB . The share owned by DBL were transferred to Emerates Bank International Ltd .(EBIL), Dubai . Later on EBIL sold its entire 50% equity holding to National Bank Ltd . Bangladesh (NBLB) . NBLB

is managing the bank in accordance with the Technical Services Agreement signed between NBLB and the bank (NAB) on June 1995. 12 branches of the bank are in operation in the country .

Authorized capital , issued capital and paid – up capital of NAB are Rs 500000000, Rs 261702400 and Rs 261702400 respectively . Par value per share is Rs 100 and number of shareholders is 5076

Listing date of NAB’s share on stock exchange is Mangsir 9.2042 B.S (1986)

4.1.2.2: DATA

Market price and dividend records of CS of NAB are shown in Table 4.3 MPS in 2050/51 was abnormally very high . Year –end price movement is shown in Diagram

Table 4.3 MPS and dividend data of NAB

Fiscal Year	Market Price of Share(P)			Dividend Per Share(D)			Remarks
	High Rs.	Low Rs.	Closing Rs.	Cash Rs.	Stock	Total Rs. (Calculated)	
2049/50	800	700	700	-	-	-	
2050/51	2450	700	2145	50	1:1	931 [#]	
2051/52	925	875	881	35	0	35	
2052/53	995	780	900	0	1:1	500 ^{##}	
2053/54	925	490	500	0	2:1	215 ^{###}	
2054/55	675	415	430	30	0	30	
2055/56	762	404	700	-	-	-	

Data Source NEPSE

^a Model for total dividend calculation is available in page 30-31

[#] 50+1x881=931, ^{##}0+500x1=500, ^{###}0+0.5x430=215

Diagram 4.3 Year end price movement of the CS of NAB.

4.3 Price is maximum at 2050/51 and it moved downward significantly as NBL

Annual dividend amounts gained by shareholders of NAB are calculated in the same Table 4.3 Year-end price movement is shown in Diagram 4.3 Price is maximum at 2050/51 and it moved downward significantly as NBL

4.1.2.3 REALISED RETURNS (R), ITS STANDARD DEVIATION (σ) AND EXPECTED RETURN (\bar{R})

Year-end price and dividend amounts are used to calculate realized rate for each year . Table 4.4 shows the calculation of yearly-realized return expected return and standard deviation of returns .

Expected return of the CS of NAB is very high , j.e 62.5% . But its recent performance does not seem good . Annual rate of return movement is shown in Diagram 4.4 . Return in 2050/51 was surprisingly very high . Then it declined to negative in following years except 2052/53. So the standard deviation of return is very high .

Table 4.4: Realized rate of returns, expected return and S.D. of the CS of NAB.

Year	Year end price(P)	Dividend (D)	$R = \frac{D + P_{1z} - P_z}{P_z}$	\bar{R}	$(R - \bar{R})^2$	Remark
2049/50	700	-	-	-	-	
2050/51	2145	931	3.3943	2.2793	2.2793	
2051/52	881	35	-0.5730	-1.1980	-1.1980	
2052/53	900	500	0.5891	-0.0359	-0.0359	

2053/54	500	215	-0.2056	-0.8306	-0.8306	
2054/55	430	30	-0.0800	-0.7050	-0.7050	
Total			3.1248	10.2092		

We have,

$$\text{Expected rate } \bar{R} = \frac{R}{n} \times 3.1248 / 5 \times 0.6250 \times 62.50\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R Z \bar{R})^2}{n Z 1}} \times \sqrt{\frac{10.2092}{5 Z 1}} \times 1.5976$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\bar{R}} \\ &= 1.5976 / 0.625 \\ &= 2.5562 \end{aligned}$$

4.1.3 Nepal Indosuez Bank Ltd. (NIB)

4.1.3.1 Introduction

NIB, a third joint venture bank, was established on 1985. Under the company act. The bank is managed by Banque Indosuez, Paris in accordance with joint venture and technical services Agreement signed between it and Nepalese promoters. The bank has 4 branches in operation.

Authorized capital of NIB is Rs. 180000000, and issued capital and paid up capital are Rs. 90000000. Par value per share is Rs. 100 and number of shareholders is 2780.

Listing date of NIB's stock on stock exchange is Bhadra 8, 2044 B.S.(1987 A.D.)

4.1.3.2 Data

Market price and dividend data are given in table 4.5 and year end price movement is shown in diagram 4.5 MPS of NIB was also very high at 2050/51. Then it moved downward significantly. Annual dividend amounts gained by shareholders of NIB are calculated in the same table 4.5.

Table 4.5 MPS and dividend data of NIB.

Fiscal Year	Market Price of Share(P)			Dividend Per Share(D)			Remarks
	High Rs.	Low Rs.	Closing Rs.	Cash Rs.	Stock	Total Rs. (Calculated)	
2049/50	1000	750	850	-	-	-	
2050/51	2975	850	2400	20	2:1	425 [#]	
2051/52	2755	710	810	40	0	40	
2052/53	850	499	525	50	0	50	
2053/54	720	525	719	0	2:1	300 ^{##}	
2054/55	760	470	600	50	0	50	
2055/56	980	551	822	-	-	-	

Data Source NEPSE

^a Model for total dividend calculation is available in page 30

[#] $20+0.5 \times 880=425$, ^{##} $0+0.5 \times 600=300$

Diagram 4.5 Year end price movement of the CS of NIB.

4.1.3.3 REALISED RETURNS (R), ITS STANDARD DEVIATION (†) AND EXPECTED RETURN (\bar{R})

Table 4.6 shows that the calculation of annual realized rate of returns, expected return and standard deviation of returns. And diagram 4.6 shows the annual return movement.

Expected return of the CS of NIB is less than the CS of NBL and NAB. Its standard deviation is also comparatively less. But still risk and return in the investment seems high Return record of this bank's stock also had too high in 2050/51 and too low (even in negative) in subsequent years except in 2053/54.

Table 4.6: Realized rate of returns, expected return and S.D. of the CS of NAB.

Year	Year end price(P)	Dividend (D)	$R \times \frac{D_1 \Gamma(P_1 Z P_{1Z_t})}{P_{1Z_t}}$	$R - \bar{R}$	$(R - \bar{R})^2$	Remark
2049/50	850	-	-	-	-	
2050/51	2400	425	2.3235	1.8770	3.5231	
2051/52	810	40	-0.6458	-1.0923	1.1931	
2052/53	525	50	-0.2901	-0.7366	0.5426	
2053/54	719	300	0.9410	0.4945	0.2445	
2054/55	600	50	-0.0960	-0.5425	0.2943	
Total			2.2326	5.7976		

We have,

$$\text{Expected rate } \bar{R} = \frac{R}{n} \times 2.2326 / 5 \times 0.44465 \times 44.65\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R - \bar{R})^2}{n \times 1}} \times \sqrt{\frac{5.7976}{5 \times 1}} \times 1.2039$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\bar{R}} \\ &= 1.2039 / 0.4465 \\ &= 2.6963 \end{aligned}$$

Diagram 4.6 Annual rate of return on the CS of NIB.

4.1.4 Nepal Grindlays Bank Ltd. (NGB)

4.1.4.1 Introduction

Nepal Grindlays Bank Ltd. (NGB) was incorporated in 1985 as a second foreign J.V. bank under the company act. The foreign J.V. partner is ANZ Grindlays Bank PLC that is managing the bank under Joint Venture and technical services agreement signed between it and Nepalese promoters. The bank has six branches.

Authorized capital, issued capital and paid up capital of NGB are equal to Rs. 225571800. Par value per share is Rs. 100 and number of shareholders is 5037. Listing date of NGB's stock on stock exchange is Ashadh 21, 2045 B.S. (1988).

4.1.4.2 DATA

Table 4.7 MPS and dividend data of NGB.

Fiscal Year	Market Price of Share(P)			Dividend Per Share(D)			Remarks
	High Rs.	Low Rs.	Closing Rs.	Cash Rs.	Stock	Total Rs. (Calculated)	
2049/50	1000	875	875	-	-	-	
2050/51	2250	975	1743	25	0	25	
2051/52	1005	961	1000	30	2:1	390 [#]	
2052/53	1400	614	720	100	0	100	
2053/54	1130	605	1050	40	2:1	460 ^{##}	
2054/55	1200	705	840	20	2:1	601 ^{###}	
2055/56	1338	775	1162	-	-	-	

Data Source NEPSE

^a Model for total dividend calculation is available in page 30

[#] $30+0.5 \times 720=390$, ^{##} $40+0.5 \times 840=460$, ^{###} $20+0.5 \times 1162=601$

Diagram 4.7 Year End price movement of the CS of NGB.

MPS and dividend data of NGB are shown in table 4.7. And year end price movement represents by the diagram 4.7. Price was maximum in the year 2050/051 and it declined in following years. Annual dividend amounts gained by shareholders are calculated in the same table 4.7. Dividend amount was high in the year when stock dividend was distributed .

Diagram 4.5 Year end price movement of the CS of NGB.

4.1.4.3 REALISED RETURNS (R), ITS STANDARD DEVIATION (†) AND EXPECTED RETURN (\bar{R})

Table 4.8 shows that the calculation of annual realized rate of returns, expected return and standard deviation of returns. And diagram 4.8 shows the annual return movement.

Expected return of the CS of NGB is less than the CS of NBL and NAB. Its standard deviation is also comparatively less. But still risk and return in the investment seems high. Annual rate of return is also shown in diagram 4.6 with contrast to NBL, NAB and NIB, annual return seems high in the years 2050/51 and also in 2053/54.

Table 4.8: Realized rate of returns, expected return and S.D. of the CS of NGB.

Year	Year end price(P)	Dividend (D)	$R \times \frac{D_1 \Gamma(P_1 Z P_{1Z_t})}{P_{1Z_t}}$	$R - \bar{R}$	$(R - \bar{R})^2$	Remark
2049/50	875	-	-	-	-	
2050/51	1743	25	1.0206	0.5991	0.3589	
2051/52	1000	390	-0.2025	-0.6240	0.3894	
2052/53	720	100	-0.1800	-0.6015	0.3618	
2053/54	1050	460	1.0972	0.6757	0.4566	

2054/55	840	601	0.3724	-0.0491	0.0024	
Total			2.1077	1.5691		

We have,

$$\text{Expected rate } \bar{R} = \frac{R}{n} \times 2.1077 / 5 \times 0.4215 \times 42.15\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R Z \bar{R})^2}{n Z 1}} \times \sqrt{\frac{1.5691}{5 Z 1}} \times 0.6263$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\bar{R}} \\ &= 0.6263/0.4215 \\ &= 1.4859 \end{aligned}$$

4.1.5. Himalayan Bank Ltd. (HBL)

4.1.5.1 Introduction

HBL was established in 1992, under the company act. It is also a foreign joint venture bank and the foreign partner is Habib Bank Ltd. of Pakistan. This is the first J.V. bank managed by Nepalese chief executive. There are seven branches of HBL are in operation.

Authorized capital of HBL is Rs. 240000000, and issued capital and paid up capital are Rs. 120000000. Par value per share is Rs. 100 and number of shareholders is 7210.

Listing data of HBL's stock on stock exchange is Ashadh 21,2050(1993 A.D.)

4.1.5.2 DATA

HBL's data do not cover the year 2049/50. Remaining six year's market price and dividend data with calculation of total dividend amount gained by shareholder are given in table 4.9. And year end price movement is shown in diagram 4.9 price at 2052/53 is lowest and higher in previous and following years.

Table 4.9 MPS and divided data of NGB.

Fiscal Year	Market Price of Share(P)			Dividend Per Share(D)			Remarks
	High Rs.	Low Rs.	Closing Rs.	Cash Rs.	Stock	Total Rs. (Calculated)	
2050/51	1475	350	1250	-	-	-	
2051/52	700	550	670	0	0	0	
2052/53	755	552	600	35	0	35	
2053/54	715	617	640	50	0	50	
2054/55	775	625	755	50	1:0.6	650 [#]	
2055/56	1200	700	1000	-	-	-	

Data Source NEPSE

^a Model for total dividend calculation is available in page 30

[#] $50+0.6 \times 1000=650$

Diagram 4.9 Year End price movement of the CS of HBL.

4.1.4.3 REALISED RETURNS (R), ITS STANDARD DEVIATION (\dagger) AND EXPECTED RETURN (\bar{R})

Table 4.10 shows that the calculation of annual realized rate of returns, expected return and standard deviation of returns. Expected return of the CS of HBL is significantly less than previous bank's CS. Standard deviation is also less but it is higher than NGB's CS. Diagram 4.10 shows the annual return rate situation. In the beginning years returns was in negative . But the situation improves in later years.

Table 4.10: Realized rate of returns, expected return and S.D. of the CS of NGB.

Year	Year end price(P)	Dividend (D)	$R \times \frac{D_1 \Gamma(P_1 Z P_{1Z})}{P_{1Z}}$	$R - \bar{R}$	$(R - \bar{R})^2$	Remark
2050/51	1250	-	-	-	-	
2051/52	670	0	-0.4640	-0.6713	0.4506	
2052/53	600	35	-0.0522	-0.2595	0.0674	
2053/54	640	50	0.1500	-0.0573	0.0033	
2054/55	755	650	1.1953	0.9880	0.9761	
Total			0.8291	1.4974		

We have,

$$\text{Expected rate } \bar{R} = \frac{R}{n} \times 0.8291 / 4 \times 0.2073 \times 20.73\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R Z \bar{R})^2}{n Z 1}} \times \sqrt{\frac{1.4974}{4 Z 1}} \times 0.7065$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\bar{R}} \\ &= 0.7065/0.2073 \\ &= 3.4081 \end{aligned}$$

Diagram 4.10 Annual rate of return of the CS of HBL

4.1.6. Nepal SBI Bank Ltd. (NSB)

4.1.6.1 Introduction

NSB was established in 1993, under the Company Act. It is also a foreign joint venture bank and the foreign partner, State Bank of India holding the 50% of equity share of NSB is managed the bank under the J.V. and technical services agreement signed between it and Nepalese promoters. There are six branches of NSB are in operation.

Authorized capital, issued capital and paid up capital of NSB are Rs. 240000000, Rs. 120000000 and Rs. 119946000 respectively. Par value per share is Rs. 100 and number of shareholders is 20589.

Listing date of NSB's stock on stock exchange is Magh 21,2051(1995 A.D.)

4.1.6.2 DATA

NSB's data do not over the initial two years 2049/50 and 2050/51. Remaining five year's market price and dividend data with calculation of total dividend amount gained by shareholder are given in table 4.11. And year end price movement is shown in diagram 4.11. Price movement seems not so fluctuating as that of others.

Table 4.11 MPS and dividend data of NSB.

Fiscal Year	Market Price of Share(P)			Dividend Per Share(D)			Remarks
	High Rs.	Low Rs.	Closing Rs.	Cash Rs.	Stock	Total Rs. (Calculated)	
2051/52	512	400	512	-	-	-	
2052/53	525	340	412	20	0	20	
2053/54	441	335	412	20	0	20	
2054/55	487	380	440	20	0	20	
2055/56	670	435	562	-	-	-	

Data Source NEPSE

Diagram 4.11 Year End price movement of the CS of NSB.

The bank has not announced stock dividend at all. So the dividend amount gained by shareholders are same as cash dividend.

4.1.4.3 REALISED RETURNS (R), ITS STANDARD DEVIATION (\dagger) AND EXPECTED RETURN (\bar{R})

Table 4.12 shows that the calculation of annual realized rate of returns, expected return and standard deviation of returns. Expected return of the CS of NSB is very low than previous bank's CS. Standard deviation is also lowest of all. Similarly diagram 4.12 shows the annual return rate situation. In the beginning years returns was in negative . But the situation improves in later years.

Table 4.12: Realized rate of returns, expected return and S.D. of the CS of NSB.

Year	Year end price(P)	Dividend (D)	$R \times \frac{D_1 \Gamma (P_1 Z P_{1Z_t})}{P_{1Z_t}}$	$R - \bar{R}$	$(R - \bar{R})^2$	Remark
2051/52	512	-	-	-	-	
2052/53	412	20	-0.1563	-0.1591	0.0253	
2053/54	412	20	0.0485	0.0457	0.0021	
2054/55	440	20	0.1165	0.1137	0.0129	
Total			0.0087	0.0403		

We have,

$$\text{Expected rate } \bar{R} = \frac{R}{n} \times 0.0087 / 3 \times 0.0028 \times 0.28\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R Z \bar{R})^2}{n Z 1}} \times \sqrt{\frac{0.0403}{3 Z 1}} \times 0.1420$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\bar{R}} \\ &= 0.1420/0.0028 \\ &= 50.7143 \end{aligned}$$

Diagram 4.12 Annual rate of return of the CS of NSB.

4.1.7. Nepal Bangladesh Bank Ltd. (NBB)

4.1.7.1 Introduction

NBB was established in 1993, under the Company Act. It is also a foreign joint venture bank and the foreign partner is IFIC Bank Ltd. is managed the bank under the J.V. and technical services agreement signed between it and Nepalese promoters. There are seven branches of NBB are in operation.

Authorized capital, issued capital and paid up capital of NBB are Rs. 240000000, Rs. 120000000 and Rs. 60000000 respectively. Par value per share is Rs. 100 and number of shareholders is 24598.

Listing date of NSB's stock on stock exchange is Poush 9,2052(1995 A.D.)

4.1.7.2 DATA

NBB's data do not over the initial three years 2049/50 to 2051/52. Remaining four year's market price and dividend data with calculation of total dividend amount gained by shareholder are given in table 4.13. And year end price movement is

shown in diagram 4.13. Price movement seems not so fluctuating as that of others. The bank has not announced stock dividend at all.

Table 4.13 MPS and dividend data of NBB.

Fiscal Year	Market Price of Share(P)			Dividend Per Share(D)			Remarks
	High Rs.	Low Rs.	Closing Rs.	Cash Rs.	Stock	Total Rs. (Calculated)	
2052/53	227	123	139	-	-	-	
2053/54	154	111	153	15	0	15	
2054/55	255	120	252	15	0	15	
2055/56	682	251	616	-	-	-	

Data Source NEPSE

Diagram 4.13 Year End price movement of the CS of NBB.

4.1.7.3 REALISED RETURNS (R), ITS STANDARD DEVIATION (\dagger) AND EXPECTED RETURN (\bar{R})

Table 4.14 shows that the calculation of annual realized rate of returns, expected return and standard deviation of returns. Expected return of the CS of NBB is high. Standard deviation is low with comparison to its expected return.

Table 4.14: Realized rate of returns, expected return and S.D. of the CS of NBB.

Year	Year end price(P)	Dividend (D)	$R \times \frac{D_1 \Gamma(P_1 Z P_{1Z_t})}{P_{1Z_t}}$	$R - \bar{R}$	$(R - \bar{R})^2$	Remark
2052/53	139	-	-	-	-	
2053/54	153	15	0.2086	-0.2683	0.0720	
2054/55	252	15	0.7451	0.2682	0.0719	
Total			0.9537	0.1439		

We have,

$$\text{Expected rate } \bar{R} = \frac{R}{n} \times 0.9537 / 2 \times 0.4769 \times 47.69\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R - \bar{R})^2}{n \times 2}} \times \sqrt{\frac{0.1439}{2 \times 2}} \times 0.3794$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\bar{R}} \\ &= 0.3794 / 0.4769 \\ &= 0.7956 \end{aligned}$$

Diagram 4.14 Annual rate of return of the CS of NBB.

Diagram 4.14 shows the annual return rate situation. Returns on the CS of NBB are not in negative in any year. But the bank does not have long history.

4.1.8. Everest Bank Ltd. (EBL)

4.1.8.1 Introduction

EBL was established in 1992, under the Company Act. It is also a foreign joint venture bank and the foreign partner is United Bank of India and is managed from the very beginning till November 1996. Later on it handed over the management to

the Punjab National Bank Ltd., India that holds 20% equity on teh banks' share capital. There are six branches of EBL are in operation.

Authorized capital, issued capital and paid up capital of EBL are Rs. 240000000, Rs. 120000000 and Rs. 117564500 respectively. Par value per share is Rs. 100 and number of shareholders is 24222.

Listing date of EBL's stock on stock exchange is Chaitra 25, 2052 (1995 A.D.)

4.1.8.2 DATA

EBL's data also do not cover the initial three years period 2049/50 to 2051/52. Remaining four year's market price and dividend data with calculation of total dividend amount gained by shareholder are given in table 4.15. And year end price movement is shown in diagram 4.15. Price movement seems to be increasing trend. The bank had not announced any type of dividend till now.

Table 4.15 MPS and dividend data of EBL.

Fiscal Year	Market Price of Share(P)			Dividend Per Share(D)			Remarks
	High Rs.	Low Rs.	Closing Rs.	Cash Rs.	Stock	Total Rs. (Calculated)	
2052/53	130	81	122	-	-	-	
2053/54	155	66	127	0	0	0	
2054/55	201	66	184	0	0	0	
2055/56	440	184	407	-	-	-	

Data Source NEPSE

Diagram 4.15 Year End price movement of the CS of EBL.

4.1.8.3 REALISED RETURNS (R), ITS STANDARD DEVIATION (\dagger) AND EXPECTED RETURN (\bar{R})

Table 4.16 shows that the calculation of annual realized rate of returns, expected return and standard deviation of returns. Expected return of the CS of EBL is high. Standard deviation is low with comparison to its expected return.

Table 4.16: Realized rate of returns, expected return and S.D. of the CS of EBL.

Year	Year end price(P)	Dividend (D)	$R \times \frac{D_1 \Gamma(P_1 Z P_{1Z})}{P_{1Z}}$	$R - \bar{R}$	$(R - \bar{R})^2$	Remark
2052/53	122	-	-	-	-	
2053/54	127	0	0.0410	-0.2039	0.0416	
2054/55	184	0	0.4488	0.2039	0.0416	
Total			0.4898	0.0832		

We have,

$$\text{Expected rate } \bar{R} = \frac{R}{n} \times 0.4898 / 2 \times 0.2449 \times 24.49\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R Z \bar{R})^2}{n Z 1}} \times \sqrt{\frac{0.0832}{2 Z 1}} \times 0.2884$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\bar{R}} \\ &= 0.2884 / 0.2449 \\ &= 1.1776 \end{aligned}$$

Diagram 4.16 Annual rate of return of the CS of EBL.

Diagram 4.16 shows the annual return rate situation. Returns are positive from the very beginning but in the early stage it is very low. Next then, return seems to be in increasing trend.

4.1.9. Bank of Kathmandu. (BOK)

4.1.9.1 Introduction

BOK is the latest joint venture bank listed in NEPSE. It was established in 2050 B.S. in collaboration with the SIAM commercial bank PCC, Thailand under the company act. The SIAM commercial bank out of 50% holding diluted its 25% holdings to the Nepalese citizen in 1998. The bank has two branches in operation.

Authorized capital, issued capital and paid up capital of EBL are Rs. 240000000, Rs. 120000000 and Rs. 6750000 respectively. Par value per share is Rs. 100 and number of shareholders is 23316.

Listing date of EBL's stock on stock exchange is Shrawn 2, 2054. This date is very recent for analysis. So, it is very difficult to include the bank's CS performance in the study. Although the transaction record of the bank's CS in NEPSE in recent years is very good, it is very good, it is not comparable with the early listed companies in the aspect of risk and return.

As per different aspects of securities transaction in NEPSE, BOK comes within top ten position. So, the comparison with other banks in some comparable aspects are presented in subsequent headings.

4

4.1.8.2 DATA

EBL's data also do not cover the initial three years period 2049/50 to 2051/52. Remaining four year's market price and dividend data with calculation of total dividend amount gained by shareholder are given in table 4.15. And year end price movement is shown in diagram 4.15. Price movement seems to be increasing trend. The bank had not announced any type of dividend till now.

³ "Trading Report" Vol. 5,(1999), NEPSE

4.2 Inter firm Comparison

Based on the market capitalization at the end of 2055/56 size of each bank are presented in diagram 4.17. Market capitalization is the total market value at specific time point of company, industry and market as well.

Diagram 4.17 market capitalization of listed banks at July 16, 1999

On the basis of market capitalization NGB is the biggest and EBL is the smallest bank.

Similarly a comparison is made on the movement of market capitalization. Here only four banks are taken into consideration whose data can cover entire the study period. Diagram 4.18 shows the comparative movement of market capitalization the four banks, NBL, NAB, NIB and NGB. Diagram shows NGB has better performance than others do.

According to the result from the section 4.1 a comparative analysis of return unsystematic risk is performed here. Expected return, standard deviation of return coefficient of variation of each bank are given in table 4.17

Table 4.17 Expected return S.D. and C.V. of each bank.

S.N.	Banks	Expected return (\bar{R})	Standard deviation (\dagger)	Coefficient of variation (C.V.)	Remarks
1	NBL	0.6699	2.0726	3.0939	Best as per \bar{R}
2	NAB	0.6250	1.5976	2.5562	
3	NIB	0.4465	1.2039	2.6936	
4	NGB	0.4215	0.6263	1.4859	
5	HBL	0.2073	0.7065	3.4081	
6	NSB	0.0028	0.1420	50.714	

7	NBB	0.4769	0.3794	0.7956	Best as per C.V.
8	EBL	0.2449	0.2884	1.1776	

Investor can expect maximum return in the investment of the CS of NBL, and minimum return in the CS of NSB. For easy to comparison of expected return, diagram 4.19 is presented .

Diagram 4.18 comparative movement of market capitalization.

Diagram 4.19 Expected return in CS of each commercial bank.

Unsystematic risk (measured by standard deviation) of NBL's stock observed maximum and minimum of the stock of NSB. These results indicate that thee be higher risk for higher return.

To taking decision on the investment in single security coefficient of variation (C.V.) is the more appropriate basis. Because it consider both the return and standard deviation. On the basis of C.V. NBB's common stock is the best security investment because of its minimum C.V.

4.3 Inter industry comparison

First of all, a comparison is made for size of industries. For this purpose diagram 4.20 shows the market capitalization of each industries at July 16, 1999 It studies the banking industry has majority value of total market share.

Similarly, annual movement of market capitalization of different industry presented in Diagram 4.21. Six years data are taken into account and first year's data are taken at January, because data at July of that year are available.

Diagram 4.20 Industry -wise market capitalization at July 16, 1999.

Diagram 4.21 Industry wise movement of market capitalization

Table 4.18 Sector wise NEPSE index (at closing date of F/Y)

Industry	050/10/30	050/51	051/52	052/53	053/54	054/55	055/56
Banking	100	254.95	187.80	155.63	167.20	194.95	219.44
Man & Pro	100	236.44	212.51	198.41	217.05	226.65	229.83
Fin & Pro.	100	682.83	203.17	194.53	172.18	176.32	19568
Hotels	100	615.60	369.14	371.16	277.47	244.49	242.52
Trading	100	136.5	172.52	206.08	156.95	160.58	123.99
Others	100	304.33	249.12	216.15	228.26	221.59	376.10
Market	100	226.03	195.48	185.61	176.31	163.35	216.92

Table 4.19 realized erturns, its S.D and Expected return of banking industry

Year	Banking Index (BI)	$R X \frac{(BI_1 Z BI_{1z})}{BI_{1z}}$	$R - \bar{R}$	$(R - \bar{R})^2$	Remark
2050-10-30*	100	-	-	-	*NEPSE
2050/51	254.95	3.7188**	3.1105	9.6752	** Adjusted 5 month's return with annual return
2051/52	187.80	-0.2634	-0.8717	0.7599	
2052/53	155.63	-0.1713	-0.7796	0.6078	
2053/54	167.20	0.0743	-0.5340	0.2852	
2054/55	194.95	0.1660	-0.4423	0.1956	
2055/56	219.44	0.1256	-0.4827	0.2330	
Total		3.6500		11.7567	

We have,

$$\text{Expected rate } \bar{R} = \frac{R}{n} \times 3.65 / 6 \times 0.6083 \times 60.83\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R Z \bar{R})^2}{n Z 1}} \times \sqrt{\frac{11.7567}{6 Z 1}} \times 1.5334$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\bar{R}} \\ &= 1.5534 / 0.6083 \\ &= 2.5208 \end{aligned}$$

In the main concern of the study risk and return, a comparison is made here. Return of each industry is calculated on the basis of industry wise NEPSE index. Eventhough industry wise index is not available in NEPSE, it is calculated on the basis of data provided by and the model applied as per NEPSE. Details of index calculation are not included in the report. Year end industry wise index is given in Table 4.18 Annual realized return, expected return and standard deviation of return of the banking sector is presented in Table 4.19. Similarly, table 4.20 shows these variables of each industry. Details of the calculation of these variables of each industry (besides banking sector) are shown in appendix table AT-2(a-e).

Table 4.20 expected return S.D. of return ad C.V. of different industry

S.N.	Industries	Expected return (\bar{R})	Standard deviation (\dagger)	Coefficient of variation (C.V.)	Remarks
1	Banking	0.6083	1.5334	2.5208	
2	Man & Pro	0.5432	1.7957	3.3058	
3	Fin & Pro.	2.2103	5.7764	2.6134	Best as per \bar{R}
4	Hotels	1.9334	5.1174	2.6468	
5	Trading	0.1487	0.4132	2.7788	
6	Others	0.8856	1.9938	2.2514	Best as per C.V

Diagram 4.22 Industry wise expected return for the year 2056/57.

Expected return of the portfolio of CS of banking industry is less than the Finance and Insurance, Hotels, and 'Others'⁴, but more than trading, and manufacturing and processing industries. However, banking sector's return rate seems very high. 60.83% is really a high rate, but the rate is not so consistent. It's return is too high in 2050/51 and too low (even in negative) in some other years. So standard deviation of return is also very large. Standard deviation of return this industry is more than only trading industry (whose return is also lowest of all) and less than other remaining industries. It's coefficient of variation also less than other industries besides the "others".

4.4 Comparison with market

4.4.1 Market risk and return

In Nepal there are only one stock market, NEPSE. Overall market movement represented by market index(i.e. NEPSE index). Market portfolio return . Its standard deviation and coefficient of variation is shown in Table 4.21 NEPSE index movement and market return movement is shown in diagram 4.23 and diagram 4.24., but more than trading, and manufacturing and processing industries. However banking sector's return rate seems very high. 60.83% is really a high rate, but the rate is not consistent. It's return is too high in 2050/51 and too low (even in negative) in some other years. So standard deviation of return is also very large. Standard deviation of return this industry is more remaining industries. It's coefficient of variation also less than other industries besides the "Others".

⁴ Represents set of companies except those in specified industries

⁵ Degrees of freedom= $n1+n2-2=6+6-2=10$

4.4. Comparison with market

4.4.1 Market risk and return

In Nepal there are only one stock market, NEPSE. Overall market movement represented by market index (i.e. NEPSE Index) Market portfolio return standard deviation and coefficient of variation is shown in table 4.21 NEPSE index movement and market return movement is shown in diagram 4.23 and diagram 4.24.

Table 4.21 Market returns, its standard deviation and C.V.

Year	NEPSE Index (NI)	$R_m \times \frac{(NI_1 - NI_{12t})}{NI_{12t}}$	$R_m - \bar{R}_m$	$(R - \bar{R}_m)^2$	Remark
2050-10-30*	100	-	-	-	*NEPSE
2050/51	226.03	3.0247**	2.5175	6.3378	** Adjusted 5 month's return with annual return (By multiplying the adjusting factor 12/5)
2051/52	195.48	-0.1352	-0.6424	0.4127	
2052/53	185.61	-0.0505	-0.5577	0.3110	
2053/54	176.31	0.0501	-0.5573	0.3106	
2054/55	163.35	0.0735	-0.5807	0.3372	
2055/56	216.92	0.3279	-0.1793	0.0321	
Total		3.0433		7.7414	

We have,

$$\text{Expected rate } \bar{R} = \frac{R}{n} \times 3.0433 / 6 \times 0.5072 \times 50.72\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R - \bar{R})^2}{n \times 1}} \times \sqrt{\frac{7.7414}{6 \times 1}} \times 1.2443$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\bar{R}} \\ &= 1.2443 / 0.5072 \\ &= 0.5072 \end{aligned}$$

Diagram 4.23 NEPSE Index Movement

Market return in 2050/51 was surprisingly very high. Then after it was in negative continuously till 2054/55. Abnormal return at 2050/51 is the main cause of the negative trend of market movement.

Diagram 4.24 Market return movement

Expected market return and its standard deviation of market are higher than that of the trading industry but less than those of the other industries are C.V. of all the industries is higher than the C.V. of the market but that of "others", which is slightly less.

Similarly expected return and standard deviation of market are less than those of the CSs of NBL and NAB, but higher than those of the CSs of the others banks. Market C.V. is less than the C.V. of NSB, NBL, HBL and NIB but higher than others.

Testing of Hypothesis -1

This first hypothesis is based on the test of significance for difference of mean (student's t-test)

Null Hypothesis (H_0): $\bar{x}_1 = \bar{x}_2$, i.e. there is no significant difference between the portfolio return of the CS of commercial banks (banking industry) and overall return of the market portfolio. In other words, average return on the shares of commercial banks is equal to the market portfolio return.

Under the H_0 test statistics, (t) is:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{S^2 \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

where ,

\bar{x}_1 = Average return of the portfolio of Banking industry (\bar{R}_b) = 0.6083

\bar{x}_2 = Average return of market portfolio (\bar{R}_m) = 0.5072

$n_1 = n_2$ = number of observations = 6

S^2 = Estimated standard deviation of population, and

$$S^2 = \frac{n_1 s_1^2 \Gamma n_2 s_2^2}{n_1 \Gamma n_2 Z^2} \times \frac{6 | 1.5334 \Gamma 6 | 1.2443}{6 \Gamma 6 Z^2} \times 16.6662/10 \times 1.6666 (app)$$

s_1 = S.D. of the returns of banking industry = 1.5334

s_2 = S.D. of the market returns = 1.2443

Hence,

$$t \times \frac{0.6083 - 0.5072}{\sqrt{1.6666 \left(\frac{1}{6} \Gamma \frac{1}{6} \right)}} \times 0.1011 / 0.5773503 \times 0.1356$$

The tabulated value of t for 10 degree of freedom (d.f.)⁵ at 10%, 5%, 2% and 1% levels of significance are 1.812, 2.228, 2.764 and 3.169 respectively

Decision

Since the calculated value of t is less than the tabulated value, the null hypothesis may be accepted. In other words, average return of CS of commercial banks and average return of market portfolio are equal.

4.4.2 Analysis of market sensitivity

Market sensitivity of stock is explained by its beta coefficient. Higher the beta means greater the reaction takes place with market movement. Beta is systematic risk, which cannot be reduced by diversification.

Beta coefficient of market is always 1. This statement can be proved as follows.

We have,

$$s_j \times \frac{Cov(R_j, R_m)}{s_m^2} \times \frac{s_m \cdot r_{jm}}{s_m \cdot s_m} \times \frac{s_m r_{jm}}{s_m}$$

Where,

r_{jm} = correlation between market return and stock (say stock-j) return.

Hence Beta (S_m)

$$S_m = \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2} = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{\sum (R_m - \bar{R}_m)^2} = \frac{11.3973}{7.6493} = 1.4796$$

Hence beta (S) coefficient of market is always equal to 1.

Here, calculation of beta co-efficient of the shares of NBL is shown in table 4.22

Table 4.22 beta (S) coefficient of the CS of NBL

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) \cdot (R_m - \bar{R}_m)$	Remarks
2050/51	3.6676	2.4816	9.1015	
2051/52	-1.2876	-0.6783	0.8734	
2052/53	-0.9676	-0.5936	0.5744	
2053/54	-0.9710	-0.5932	0.5760	
2054/55	-0.4411	-0.6166	0.2720	
Total		11.3973		

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n} = \frac{11.3973}{5} = 2.2795$$

$$S_j = \frac{\text{Cov}(R_j, R_m)}{\sigma_m^2} = \frac{2.2795}{1.5204} = 1.4796$$

Where,

n=Number of observation =5

σ_m^2 = Variance of market return = 1.5204 (see appendix table AT-1)

Since the beta is 1.4796, which is greater than 1, NBL's stock is highly sensitive with market. Similarly, as the beta is positive it moves with the market, which means if the market return rise NBL's stock return will also rise. If the market return rises by 1%, then the NBL's stock return will rise by about 1.5% and vice-versa.

Beta coefficients of each bank are shown in table 4.23 Detail calculations are shown in appendix table AT-3(a-g).

Table 4.23 Beta coefficient of Nepalese commercial banks

S.N.	Banks	Beta(s)
1	NBL	1.4796
2	NAB	1.1208
3	NIB	0.7630
4	NGB	0.2462
5	HBL	0.0058
6	NSB	-0.0012
7	NBB	-0.0032
8	EBL	-0.0026

Table 4.24 RRR, ERR and Price Evaluation

S.N.	Banks	Beta (s)	$RRR(K_j)=R_t+(\bar{R}_m \Gamma R_t) s$	$ERR(\bar{R})$	Price situation
1	NBL	1.4796	0.7738	0.6699	Overpriced
2	NAB	1.1208	0.6013	0.6250	Underpriced
3	NIB	0.7630	0.4291	0.4465	Underpriced
4	NGB	0.2462	0.1805	0.4215	Underpriced
5	HBL	0.0058	0.0648	0.2073	Underpriced
6	NSB	-0.0012	0.0614	0.0028	Overpriced
7	NBB	-0.0032	0.0605	0.4769	Underpriced
8	EBL	-0.0026	0.0608	0.2449	Underpriced

Where,

R_t = Risk free rate of return =0.062(or 6.2%)

\bar{R}_m =Market rate of return =0.5431 (as per appendix table AT-1)

Where,

\bar{x}_1 =0.5573=weighed average of the beta of banks, (weight is taken on the basis of market capitalization of the banks at July 16, 1998. And calculations are shown in the Appendix Table AT-4).

S=0.6453= Estimated population standard deviation (Calculation of S is given in Appendix table AT-5)

n=8=Number of samples (i.e. banks)

Hence,

$$t = \frac{0.5573 - 1}{\frac{0.6453}{\sqrt{8}}} = \frac{-0.4427}{0.228148} = -1.9404, \text{ or } /t/ = 1.9404$$

The tabulated value of t statistics at 7(or n-1) degree of freedom at 10%, 5%, 2% and 1% level of significance are 1.895, 2.365, 2.998 and 3.499 respectively.

Decision

Since the calculated value is less than the tabulated value at 5%, 2% and 1% level of significance Null hypothesis is accepted. Which means that the beta coefficient of the banking industry is equal to the market beta (or 1). On the contrary, if the level of significance is 10%, the case is in opposite.

4.5 Portfolio analysis

So far, we have focused on the risk and return of single investments held in isolation. Previous researches have shown that many Nepalese private investors placed their entire wealth in a single asset or investment. If they construct a portfolio or group of investments, they can reduce unsystematic risk dramatically without losing considerable return. Therefore, a brief analysis of risk and return is extended to portfolio context.

The expected return of a portfolio is simply a weighted average of the expected returns of the securities comprising that portfolio. The weights are equal to the proportion of total funds invested in each security (the weight must sum to 100%)

"While the portfolio expected return is a straight forward weighted average of returns on the individual securities, the portfolio standard deviation is not the weighted average of individual security's standard deviations. To take a weighted average of individual security standard deviations would be to ignore the relationship, or correlation between the returns of the two securities. This correlation, however, has no effect on the portfolio's expected return. Correlation

between securities returns complicates our calculation of portfolio standard deviation by forcing us to calculate the covariance between returns for every possible pair wise combination of securities in the portfolio. But this dark cloud of mathematical complication contains a silver lining- correlation between securities provides for the possibilities of eliminating some risk without reducing potential returns."

4.5.1 Analysis of risk diversification -some examples.

The analysis is based on two aspects portfolio and the tools(formula) for analysis are presented in the chapter- III, research methodology. Here, the portfolio of the CS of NBL(say stock A) and CS of NGB (say stock B) is analyzed. Table 4.25 shows the calculation of covariance of the returns of the given two stock $Cov(R_A R_B)$, and the proportion of stock A(W_A) that minimizes the risk, standard deviation.

Since the proportion of stock A in the portfolio is in negative, the portfolio is not beneficial. It is better to invest in stock -B (NGB) rather than the portfolio. The main aim of the portfolio construction is to reduce the risk. But the portfolio between the CS of NBL and CS of NGB cannot reduce risk significantly with comparison to reduction in return.

Table 4.25 Cov ($R_A R_B$) AND (W_A) of stock A and stock B.

Year	$(R_A - \bar{R}_A)$	$(R_B - \bar{R}_B)$	$(R_A - \bar{R}_A) (R_B - \bar{R}_B)$	Remarks
2050/51	3.6676	0.5991	2.1973	
2051/52	-1.2876	-0.6240	0.8035	
2052/53	-0.9676	-0.6015	0.5822	
2053/54	-0.9710	0.6757	-0.6561	
2054/55	-0.4411	-0.0491	0.0216	
Total			2.9485	

We have,

$$Cov(R_A R_B) = \frac{(R_A - \bar{R}_A) \cdot (R_B - \bar{R}_B)}{n - 1} = \frac{2.9485}{(5 - 1)} = 0.7371$$

And to minimize the risk the weight (portion) of stock -A in the portfolio is given as:

$$W_A = \frac{\sigma_B^2 \text{Cov}(R_A, R_B)}{\sigma_A^2 \sigma_B^2 + \text{Cov}(R_A, R_B)} \times \frac{0.3923 \times 0.7371}{4.295 \times 0.393 + 0.7371} \times 0.11$$

As discussed above, correlation between the returns of the two securities plays a significant role in risk reduction, by portfolio construction. If the correlation is perfectly positive (or 1) then the portfolio cannot reduce any level of risk. On the contrary, if the correlation is perfectly negative (or -1), then the proper combination of the two securities can reduce unsystematic risk (or σ) even upto zero. So, the positive correlation between securities return is no so beneficial and vice versa. In the case of portfolio of NBL's stock and NGB's stock, the correlation of the securities return is in positive. The actual figure of the correlation between stock -A and stock -B (r_{AB}) can be calculated as follows:

We have,

$$r_{AB} = \frac{\text{Cov}(R_A, R_B)}{\sigma_A \sigma_B} \times \frac{0.7371}{2.0726 \times 0.6263} \times 0.57 (\text{APROX})$$

The correlation is highly positive, that's why the portfolio construction between these two stocks is not beneficial.

In general, securities return of the same industry moves in the same direction. So correlation between the securities return of the same industry may be highly positive. Hence, the portfolio between the securities of different industry can be more efficient.

To analyze the portfolio between the stock of different industry, trading industry taken to construct a portfolio with banking industry. From banking industry, CS, NGB and from trading industry, CS of Bishal Bazar Company Ltd (BBC) are taken to construct a two assets portfolio. Analysis of CS of NGB has already been presented in the section 4.1.4. So, a detailed analysis of risk and return of the CS of BBC is presented before analyzing the portfolio.

Table 4.26 shows the market price and dividend data and the table 4.27 shows annual realized return, expected return and standard deviation of returns.

Table 4.26 : MPS and dividend data of BBC

Fiscal Year	Market Price of Share(P)			Dividend Per Share(D)			Remarks
	High Rs.	Low Rs.	Closing Rs.	Cash Rs.	Stock	Total Rs. (Calculated)	
2049/50	2000	2000	2000	-	-	-	
2050/51	2025	2001	2001	30	0	30	
2051/52	2500	1800	2210	23.08	0	23.08	
2052/53	3700	2220	3450	20	0	20	
2053/54	3650	2450	2700	0	1:0.25	462.5*	
2054/55	3000	1700	1850	20	0	20	
2055/56	1950	1700	1800	-	-	-	

Data source NEPSE

^a Model for total dividend calculation is available in page 30

* $0+0.25 \times 1850=462.5$

Diagram 4.25: Year end price movement of the CS of BBC

Table 4.27: Realized rate of return, expected return and S.D. of the C.S. of BBC

Year	Year end price(P)	Dividend (D)	$\frac{R \times D_1 \Gamma (P_1 Z P_{1Z_t})}{P_{1Z_t}}$	$R - \bar{R}$	$(R - \bar{R})^2$	Remark
2049/50	2000	-	-	-	-	
2050/51	2001	30	0.0155	-0.0467	0.0022	
2051/52	2210	23.08	0.1160	0.0538	0.0029	
2052/53	3450	20	0.5701	0.5079	0.2580	
2053/54	2700	462.5	-0.0833	-0.1455	0.0212	
2054/55	1850	20	-0.3696	-0.3696	0.1366	
Total			0.3109		0.2842	

We have,

$$\text{Expected rate } \bar{R} = \frac{R}{n} \times 0.3109 / 5 \times 0.0622 \times 6.22\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R \bar{Z} \bar{R})^2}{n \bar{Z} 1}} \times \sqrt{\frac{0.2842}{5 \bar{Z} 1}} \times 0.2666$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\bar{R}} \\ &= 0.2666 / 0.0622 \\ &= 4.286 \end{aligned}$$

Expected return of this stock is very low (6.22%). This return rate is even low than the interest rate of saving accounts of any bank. So, the security selection for investment may not be appropriate. But, the study is to show the benefit of portfolio construction in risk reduction. So, the CS of BBC is taken only as an example, as the return movement of CS of NGB and that of BBC are negative. It can be guessed that the correlation between these returns is negative which is favorable for portfolio construction.

Calculated covariance between the returns of CS of NGB (say stock -A) and CS of BBC (say stock -B), proportion of the amount to be invested in each security portfolio expected return and standard deviation are shown in table 4.28.

Table 4.28 Cov ($R_A R_B$) and (W_A) of stock A and stock B

Year	$(R_A \bar{Z} \bar{R}_A)$	$(R_B \bar{Z} \bar{R}_B)$	$(R_A \bar{Z} \bar{R}_A) (R_B \bar{Z} \bar{R}_B)$	Remarks
2050/51	0.5991	-0.0467	-0.0280	
2051/52	-0.6240	0.0538	-0.0336	
2052/53	-0.6015	0.5079	-0.3055	
2053/54	0.6757	-0.1455	-0.0983	
2054/55	-0.0491	-0.3696	0.0181	
	Total		-0.4472	

We have,

$$\text{Cov}(R_A R_B) = \frac{(R_A \bar{Z} \bar{R}_A) \cdot (R_B \bar{Z} \bar{R}_B)}{n \bar{Z} 1} \times 0.4472 / (5 \bar{Z} 1) \times 0.1118$$

And to minimize the risk the weight (portion) of stock -A in the portfolio is given as:

$$W_A = \frac{\sigma_B^2 \text{Cov}(R_A, R_B)}{\sigma_A^2 \sigma_B^2 + 2\text{Cov}(R_A, R_B)} \times \frac{0.0711 - 0.1118}{0.3923 - 0.0711 - 0.1118} \times 0.23$$

and,

$$W_B = 1 - W_A = 1 - 0.27 = 0.73$$

Hence, the portfolio return is given as

$$\begin{aligned} \bar{R}_P &= W_A \bar{R}_A + W_B \bar{R}_B \\ &= 0.27 \times 0.4215 + 0.73 \times 0.0622 = 0.1592 = 15.92\% \end{aligned}$$

and, the portfolio risk is given as:

$$\begin{aligned} \sigma_P &= \sqrt{W_A^2 \sigma_A^2 + W_B^2 \sigma_B^2 + 2W_A W_B \text{Cov}(R_A, R_B)} \\ &= \sqrt{0.27^2 \times 0.3923 + 0.73^2 \times 0.0711 + 2 \times 0.27 \times 0.73 \times (-0.1118)} \\ &= 0.1497 \end{aligned}$$

As the $\text{Cov}(R_A, R_B)$ is negative correlation is also negative The correlation between above two stocks return r_{AB} is calculated as:

$$r_{AB} = \frac{\text{Cov}(R_A, R_B)}{\sigma_A \sigma_B} = \frac{-0.1118}{0.6263 \times 0.2666} = -0.6696 \text{ (APPROX)}$$

Since, the correlation is highly negative the unsystematic risk (i.e. σ_P) of the portfolio is very low as compared to the standard deviation of individual stock σ_P is equal to 0.1497, which is less than both σ_A (i.e. 0.6263) and σ_B (i.e. 0.2666) but the expected return is increased to 15.92%. In comparison with expected return of BBC's stock (i.e. $R_B = 6.22\%$). Although R_P is less than R_A , this reduction in return is not so significant when contrasted against reduction in risk.

4.5.2 Analysis of risk diversification -Theoretical overview.

Portfolio management is a major broad topic in financial management. Only the portfolio of two types of common stocks is illustrated in previous section 4.5.1 But there are so many opportunities set of portfolios in the market. Among them selection of an efficient set of portfolio need a deep knowledge and experience. Besides CS, there are other different kinds of securities having different

characteristics. Preference share, corporate bonds, government bonds, treasury bills etc. are available in Nepalese capital market. Moreover, convertibles, warrants etc. also enter in the market occasionally. Construction of portfolio with considering all available securities is essential to get a maximum return with minimum risk from stock market investment.

It is already discussed that there are two kinds of risk, diversifiable and non diversifiable. Market forces like changes in political, legal, economical, socio cultural and so many national and international factors, which can affect business in many ways, explain non diversifiable risk, which is measured by beta. Here, the main concern is diversifiable risk, which is also known as specific firm risk and can be eliminated by proper construction of portfolio.

Diversifiable risk is unique to a particular company or industry it is independent of economic, political and other factors that affect all securities in a systematic manner. What are the major factors, which affect the diversifiable risk? These factors can be listed as follows:

- Internal Management:

Management plays a vital role in the success of any business. If management is not efficient and dynamic, company can not run properly. One of the major reasons of low level of this diversifiable risk in foreign J.V. companies is foreigners involvement in internal management which is comparatively more efficient. Otherwise, both the Nepalese and foreign companies run in the same business environment. Moreover, Nepalese companies enjoy more facilities than foreign ones.

- Employee Moral:

Internal risk is inversely proportional to employee moral. Employees are the life blood of any company without which they can not survive. High employee moral minimizes the employee protest and workers strike.

- Functional level management:

Each firm has different functional divisions, such as production and operation, marketing and distribution, finance and accounting, personnel and public relations,

and research and development. No firm is equally strong in all its functional areas. But these are the internal factors, which can be control and manged by management. Those firms, which have more strength in these factors, may have low level of firm -specific risk

-Management Attitude towards risk: Risk is manageable variable risk run bothways- Positive or negative. If management can see, analyze and manage risk properly, firm can achieve its goal easily. If management is risk averter firm may not bear heavy loss but hey can not earn handsome return. Risk neutral investors may not have far slightness. They enjoy in present, but their future is almost uncertain. Risk seeker management may be the rational one, if they perceive risk manage it properly. Management attitude towards risk is therefore a key factor of firm specific risk.

As a private investor one has no control even in these internal factors,if so, what can they do? They can easily diversify their fund, so that risk caused by internal factors, is avoided by making a suitable portfolio. There are so many opportunities set of portfolios available in market. Among these, which is the best one for investment? This is a key question. No one set of portfolio is best for all. Selection of optimal(efficient) portfolio and attitude of investor, investment time horizon etc. Optimum portfolio can offer maximum expected return for minimum level of risk. To choose the efficient set of portfolio it should be considered various factors. Although, deep knowledge and continuous experience is essential for it, some of the major pits are discussed below in brief:

- Correlation coefficient between possible returns of each pair of securities:

It is already cleared that highly negative correlated stocks are more suitable for diversification.

- Individual stock's return

Diversification can only reduce risk but can not increase return. Portfolio return is simply the average return of individual security's returns. Hence, the average of higher returns is also high.

- Investor's risk perception:

Investor must be aware about his own risk attitude and perception. One's risk should be matched with his investment portfolio.

- Size of fund

If available fund for investment is low, it is not suitable to diversify the fund in many securities. Transaction cost should be considered. Generally rate of transaction cost for low amount is high.

- Liquidity:

Liquidity means how easily and quickly transaction of securities can be done. Liquidity of different security may differ significantly in emerging market. Highly liquid security is always preferable. But if the return rate is very high, less liquid security can also attract investors.

- Time horizon:

Generally, common stock investment is assumed for long time period. But each investor has own views and requirements. Best portfolio for short time horizon may not be the same for long time horizon too. Small but rapidly growing firms' stock are better for short time horizon and well performing big corporations' stocks are better for long time horizon.

Chapter – V

Summary, Conclusion and Recommendation

5.1 SUMMARY AND CONCLUSION

Central focus of finance is trade off between risk and return . And its major part stock market has greatest glamour , not for the professional or institutional investors , but for the individual or private too . Although, stock market investment is assumed as the least understood , is widely discussed in society , and many people consider as a game of wining . Having said this stock market investment can be both rewarding and fun so long as sufficient time is given to appreciate its many facets and characteristics .

Lasted banks are taken as reference to analyze the risk and return in common stick investment . While analyzing the risk and return , a brief review of literature has been conducted . Scientific methods are used in data analysis . And tables , graphs and diagrams are used to present the data and results . Both quantitative and qualitative analysis have been performed by using statistical tools as well as personal judgment and intuition . Secondary data are collected from the NEPSE, NRB and other related banks . Other subjective types of information are collected through personal interviews with private investors , executives of the companies and official of NRB SEBO/N and NEPSE .Findings of analysis are summarized and conclusions are drawn as follows ,In general, most people see stock market investment as a black art that they know little about . Many people have unrealistically optimistic or pessimistic expectations about stock market investment or perhaps just a fear of the unknown . This study enables investor to put the returns they can expect and the risks they may take into better perspective .

Common stock is the most risky security and lifeblood of stock market . Because of higher expected return , CS attracts more investors . Private CS

holders are the passive owners of the company . But private investor plays a vital role in economic development of the nation by mobilizing the dispersed capital remained in different form in the society .

As overall economy , Nepalese stock market is in emerging state . Its development is accelerating since the political change in 1993 in effect of openness and liberalization in national economy . But , due to the lack of information and poor knowledge , Nepalese private investors can not analyze the securities as well as market properly .

Even though the main objective of the study is to analyze the risk and return of the common stocks in Nepalese stock market : the study is focused on the common stock of commercial banks . Nepal Bank limited is the first commercial bank . Besides this orther eight foreign J.V. banks ' share are listed in NEPSE Banking industry is the biggest one in terms of capitalization and turnover .

The return is income received on a stock investment , which is usually expressed in percentage . Expected return on the common stock of Nepal Bank Ltd is maximum (i.e. 66.99%). This is very high rate of return . In reality this rate is existed due to the effect of unrealistic annual return rate in 2050/51. Similarly expected return of the CS of Nepal SBI Bank Ltd. Is found minimum . Other CS having higher return is the CS of Nepal SBI , NBB, BIB and are more than 40%. Expected return of HBL and EBL are more than 20%. In the context of industries (or sector), expected return is the highest (i.e. 221.03%) of finance and insurance industry . Return of Hotel industry is about 20%. Trading industry is the least performer . Expected return of banking industry is 60.83%. Over market expected return is 50.72%. Return rate seems very high in beginning years and it is declining in recent (successive) years . As per the opinion of experts , NEPSE staff and individual investors , the reason for the unrealistically high return at 2050/51 is : from that year NEPSE has opened its

trading floor through its licensed members . In effect , this brought a big rumor about stock market and dramatic movement was developed in it . At that time having shares of any company had been a matter of prestige in public .

Risk is the variability of returns from those that are expected which is measured by the standard deviation of returns . In this regard CS of NBL is most risky and CS of NSB is least risky . This proves the proverb “high risk – high return “This fact shows by the coefficient of variation (CV), also known as relative measure of risk C.V of all the other stocks have more than 1 and even upto 50(NSB),except NBB’s CS whose C.V. is good one for investment in both viewpoints of risk and return . In the context of comparison of Banking industry with others , its standard deviation is (1.5334) less than Manufacturing and Processing , Finance and Insurance , Hotels and ‘Others” industries and greater than that of Trading industry .C.V is the more rational basis of investment decision and Banking industry’s C.V. is (2.52.8) less that of all the other industries except the “others”.

To compare with market portfolio , banking return is not so significantly differ .So , the first hypothesis of the study is accepted in different level of significance (i.e.10%,5%and1%).

Standard deviation is only the measure of unsystematic risk , which is not defined by market . Another major aspect of the risk is systematic risk which is defined by market and measured by beta(B)coefficient . Beta explains the sensitivity or volatility of the stock with market . Higher the beta greater the volatile is said to be . In this context NBL’s CS is most volatile (i.e.B = 1.4796) and NSB’s CS is least volatile (i.e.b=0.0012).NSB,NBB and EBL’s CD move opposite with market as their beta is negative .

In the testing of hypothesis –II , result comes in mixed form . If the level of sigbificance is 5%, 2%, null hypothesis is accepted which means that the

portfolio beta of the CS of commercial banks (banking industry) is equal to 1. Whereas if the level of significance is 10% , null hypothesis is not accepted , which means that the portfolio beta of the CS of commercial banks is not equal to 1. Return from the CS of banking sector , however , move parallelly with market return .

One of the main significance of beta is in Capital Asset Pricing Model (CAPM). CAPM is a model that describes the relationship between risk and required return . In this model , risk – free plus a premium on the systematic risk of the security is required rate of return (RRR) of that stock.

Comparison between RRR and expected rate of return (ERR) can be identified whether the stock is overpriced or under priced . If ERR is greater than RRR, stock is known as under priced and investor tends to buy this stock . In the contrary . If the ERR is less than RRR, stock, In market equilibrium, ERR and RRR are equal . Study shows that the NBL and NSB's stock are over priced and remaining other banks' sticks are under priced . The difference between ERR and RRR is maximum of the stocks of NBB (i.e. $0.04769 - 0.0605 = 0.4164$) and its ERR is greater than RRR , Hence CS of NBB is the best one for investment .

Still most of the Nepalese private investors invest in single security . Some of the investors use their fund in two or more securities but they do not make any analysis of portfolio . They invest their fund in different securities on the basis of expectation and assumption of individual security rather than analysis of the effect of portfolio . Diversification of fund by making a portfolio can reduce unsystematic risk of the individual security significantly. If investor select the appropriate securities for investment , which have highly negative correlation of returns , they can eliminate the unsystematic risk totally , if the correlation between the returns of two stocks is highly positive , risk reduction is not so significant . So the portfolio between the CS of same industry can not reduce

risk properly . Analysis has found that the portfolio of NBL and NGB's CS cannot reduce the standard deviation in greater extent . The portfolio of these securities is not advantageous . In other hand , portfolio between the CS of NGB and NNC is very advantageous in risk reduction . Because standard deviation of NGB IS 0.6263 and that of BBC is 0.2666, but portfolio standard deviation is only 0.1497, which is less than each individual stock's standard deviation . Hence the portfolio approach of investment is better way to win the stock market investment .

5.2 RECOMMENDATION AND SUGGESTION

Basically this study has focused on the viewpoint of private investors. Moreover , other components of stock market are also considered to some extent . Based on the analysis of data and major findings of the research following recommendation and suggestions are prescribed .

To Private Investors:

1. It is possible to beat the stock market . But proper analysis of individual security industry and overall marker is always demanded . General knowledge about economic political and technological trend is advantageous . To win the market hold shares when the market is rising and to hold safer investment when it is falling . And hold shares , which will perform better the market .
2. Stock market investment is a risky job. Although there is a chance of more return than that of expected , there is also a chance of heavy loss .So it should really only investment money in the stock market that it need not for other commitments . The stock market is undoubtedly risky in the short tern and investor needs to be prepared for it .
3. Private investors should try and work out their attitude towards the riskiness of various investment strategies .

4. Coefficient of Variation (C.V) suggest the 'Other ' industry is the best one for investment . But Banking industry may be the best , if other subjective analysis are also be considered . Its C.V. is also not so more . Similarly , while analyzing individual security , NBB seems undoubtedly the best for investment . This bank has not the previous three years' data , which is the major limitation of it . With considering the full time horizon of the study . C.S of NGB is the best investment opportunity for investors whose beta is also very low . Hence , it is prescribed to select the CS of NGB or the CS of 'other ' industry for individual stock investment .
5. Investor need to diversify their fund to reduce risk . Proper construction of portfolio never takes any considerable loss . But portfolio construction is a dynamic job . Because efficient portfolio depends on market movement or sociopolitical change . For the portfolio construction select the stocks that have higher return with not correlated or negatively correlated stocks . Similar stocks can not diversity risk properly industry .
6. Before making an investment decision in stock market analyze your own risk attitude , and your needs and requirements . Make several discussion with stockbroker and make your decision on the basis of reliable information rather than rumor and imagination .
7. Investment clubs are a good way to exchange investment ideas . In Nepal there are no any such type of club . Collective investment is worthwhile for people with little interest in investment . In addition it allows investors with limited resources to obtain reasonable diversification . So develop investment clubs and share experience , ideas and expertise to each other .

To Public Limited Companies:

1. Risk run both ways. So manage risk rather than repeal from it . Specially, Nepalese companies seem poor in risk management . Be aggressive in management attitude towards risk .
2. Information is also a free advertisement . If private investors even any public ask for any information , welcome them heartily , If you are hiding your facts , you are losing your future and you are reducing your business unseemly .
3. Make your internal management rational . Run your business with business ethics and by management principles . Cope with worldwide change and development .

To Nepal Stock Exchange Ltd .(NEPSE)

1. In this age of internet and e-mail NEPSE is following “open cry system “ of trading . It needs to modernize . It needs to develop efficient and effective information channel and to provide up-to-date.
2. NEPSE needs to initiate to develop different programs for private investors such as investors’ meetings and seminars in different subject matters like “Trading Rules and Regulations “ , “Key Factors That Should be Considered in Stock investment “, etc

To Securities Board Of Nepal (SEBO/N)

1. As a main regulatory body , SEBO/N needs to take quick action in breaking rules and regulations by any company or any other component of stock market . Situation of getting benefit in breaking rules and regulation should be avoided . No punishment for regulation or fraud means reward for it .
2. It needs to develop effective R&D,programs . A long way is to go to meet the worldwide development and a clear vision is essential for it .

To His Majesty’s the Government (HMG):

1. HMG needs to manage the trading of government securities in NEPSE in spite of NRB. Government securities are assumed as risk free security

and trading of these securities in NEPSE provide opportunity of varieties of securities at the same place to investors so that they can diversify their fund properly to construct optimal portfolio . This will also increase the strength of stock market and more specifically , NEPSE as well .

2. Government needs to amendment of rules and regulation regarding stock market in time to time . Without implementation of rules and regulations is meaningless . There are serious problems in implementation . Hence , HMG needs to monitor and to make active to all the components of stock as well as capital market properly.

Bibliography

Books

- Bernstein, P.L (1996),”Against the Gods – The Remarkable Story of Risk,”
John Willy , New York , USA.
- Chandra, Prasanna (1995),”The investment Game.” Bth ed . Tata Mc
Graw Hill , India .
- Francis’ Jack Clark,”Investment :Analysis and Management” ,
McGraw Hill,
New york , USA.
- Graham, B(1997),”The Intelligent Investor”, 3rd revised ed , Harper
Colins ,New
York USA.
- Graham B and Dodd, D (1987) “Security Analysis”, 5th revised ed ,
Mc Graw –
Hill, New York , USA.
- Hamel G and Prahalad , C.K.(1994), “Competing for the Future “,
Harvard
Business School Press , Boston , MA.
- Hussey J and Hussey ,R,(1997),”Business Research,”Macmilan Press
Ltd ,
London ,UK
- James H Lore & Peter Dodd,(1985), “The Stock Market : Theories
and
Evidence “ Richard D. Irwin Inc , USA
- Keasey K, Hudson , R and Littler R (1998), “The intelligent Guide to
Stock
Market Investment “, John Wiley & Sons Ltd , Chichester,
UK
- Latane Henry A , Donald I Tuttel and Charies , P. Jones ,”Securites
Analysis

And portfolio Management “ The Ronald Press Co. New York .

Parik D Rogh (1960),” Financial Development and Economic Growth “ Vikash Publishing Home , Bombay

Pradhan Radhe s (1994) “Fonancial Management Practice in Nepal ,” Vikash Publishing House, New Delhi

Pradhan Radhe s (1994) “Public Corporations of Nepal : A Study of Financial Ratios “ National Book Organization , New Delhi ,

Schwartz D.(1995) . D (1995) “ The Stock Market Handbook “ 2nd ed , Burleigh Publishing . Stroud UK

Sharpe William F Alexender Gordon J. and Bailey Geffery V (1995) Investment 5th Ed , Prentice Hall Inc . USA

Shingh ML (1998), “ Understanding Research Methodology “ T.U Kathmandu

Shrestha K.N & Manandhar , KD, (1994) ,” Statistics and Quantitative Techniques for Management “, 2nd Edition ,Valley Publishers , Kathmandu

Shrestha Manohar Krishna (2037) “ Financial Management “ Curriculm Development Center, T.U Kathmandu

Shrestha Manohar Krishna “ Securities Exchange Center:Problems and Prospects “ United Dynamic Research and Consultancy kathmandu

Shrestha Manohar K “ Shareholders democracy and annual general meeting Feedback “ Ratna Pustak Bhandar , Kathmandu

- Srestha Sunity (1995) , “ Portfolio Behaviour of Commercial Banks in Nepal “,
Mandata Book Point , Kathmandu .
- Tatsuta Misao (1970) “ Securities Regulation in Japan” University of
Tokyo
Press, Japan
- Van Home James C and Wachowicz . Jr john M (1995) “ Fundamentals
of
Financial Management “ 9th edition Prentice Hall Inc , USA.
- Van Home James c (1996) Financial Management and Policy “ 9 th
edition
Prntice Hall of India , New Dehli .
- Weston J Fred and Brirgam Eugene F . “Managerial Finance “ 7 th ed
, Hold
Saunders International Editions
- Weston J.Fred and Thomas E Copland ,” Managerial Finance “, The
Dryden
Press, New York .

JOURNALS

- “Emerging Market Fact Book (1998) “, international Finance Corporation ,
washing D,C USA
- Hargis , Kent (1999) , “ Book Review “ The journal of Finance , Vol , liv(1)
“Mirmire “, Volume 152(27:1. Economic Articles Special) , Bankers Club ,
NRB Kathmandu
- Pradhan , Radhe S (1993) “ Stock market behaviour in a small capital market
case of Nepal “ The Nepalese Management review Vol ix – No .1
- Rouwenhorst, K Greet (1999),” Local Return Factors and turnover in emerging
markets “ The journal of Finance Vol LIV NO 3 Aug 1999
- Shrestha M. K, “ Capital Market in Nepal : Changing Dimension and strategies
“ KOSH , 39 EPF Publication , Kathmandu

“ The Journal of Finance “, Vol Lill- Liv (1998/99) , The Journal of American Finance Association , USA

THESES

Bhatta , Gopal (1995) ,” Assessment of the Performance of Listed Companies in Nepal” M.B.A Thesis , Tribhuvan University , Kathmandu .

Khatiwada Mohan (1996) “ A Study on Securities investment in Nepal “MBA thesis T.U kathmandu

Lohani , Nawaraj (1994) “ Shareholder Rights in Nepal “ MBA thesis T.U kathmandu

Shrestha S.K (1996) “Public Response to Primary issue of Share in Nepal “ MBAR thesis , T.U kathmandu

OTHERS

“Annual Report (1998)”, Vol 5 NEPSE Kathmandu

“Economic Survey (1999) “, HMG/N Ministry of Finance

“Financial Statement of Listed Companies “ Vol iv (1997/98) , NEPSE , Kathmandu

Hornby, A.S (1996),” Oxford Advance Learners Dictionary “ Oxford University Press New York

“ Ninth Five Year Plan “ National Planning Commission , Hmg/N

“Trading Relport” Vol 5 NEPSE , Kathmandu

Appendices

AT -1 Calculation of Market returns, its S.D., Expected return and C.V.

Year	NEPSE Index (NI)	$R_m \times \frac{(NI_1 - NI_{1z})}{NI_{1z}}$	$R_m - \overline{R_m}$	$(R - \overline{R_m})^2$	Remark
2050-10-30*	100	-	-	-	*NEPSE
2050/51	226.03	3.0247**	2.4816	6.1583	** Adjusted 5 month's return with annual return (By multiplying the adjusting factor 12/5)
2051/52	195.48	-0.1352	-0.6783	0.4601	
2052/53	185.61	-0.0505	-0.5936	0.3524	
2053/54	176.31	-0.0501	-0.5932	0.3519	
2054/55	163.35	-0.0735	-0.6166	0.3802	
Total		2.7154		7.7029	

We have,

$$\text{Expected rate } \overline{R} = \frac{R}{n} \times 2.7154 / 5 \times 0.5431 \times 54.31\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R - \overline{R})^2}{n - 1}} \times \sqrt{\frac{7.7029}{5 - 1}} \times 1.3877$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\overline{R}} \\ &= 1.3877 / 0.5431 \\ &= 2.5552 \end{aligned}$$

Where,

R_m = Market Return

AT-2b Calculation of realized returns S.D., expected return and C.V. of Finance and Insurance

Year	NEPSE Index (FI)	$R_{FI} \times \frac{(FI_1 - ZFI_{1Z})}{FI_{1Z}}$	$R_{FI} - \overline{R_{FI}}$	$(R_{FI} - \overline{R_{FI}})^2$	Remark
2050-10-30*	100	-	-	-	*NEPSE
2050/51	226.03				** Adjusted 5 month's return with annual return (By multiplying the adjusting factor 12/5)
2051/52	195.48				
2052/53	185.61				
2053/54	176.31				
2054/55	163.35				
Total		2.7154		7.7029	

Bibliography

Books

- Bernstein, P.L (1996),”Against the Gods – The Remarkable Story of Risk,”
John Willy , New York , USA.
- Chandra, Prasanna (1995),”The investment Game.” Bth ed . Tata Mc
Graw Hill , India .
- Francis’ Jack Clark,”Investment :Analysis and Management” ,
McGraw Hill,
New york , USA.
- Graham, B(1997),”The Intelligent Investor”, 3rd revised ed , Harper
Colins ,New
York USA.
- Graham B and Dodd, D (1987) “Security Analysis”, 5th revised ed ,
Mc Graw –
Hill, New York , USA.
- Hamel G and Prahalad , C.K.(1994), “Competing for the Future “,
Harvard
Business School Press , Boston , MA.
- Hussey J and Hussey ,R,(1997),”Business Research,”Macmilan Press
Ltd ,
London ,UK
- James H Lore & Peter Dodd,(1985), “The Stock Market : Theories
and
Evidence “ Richard D. Irwin Inc , USA
- Keasey K, Hudson , R and Littler R (1998), “The intelligent Guide to
Stock
Market Investment “, John Wiley & Sons Ltd , Chichester,
UK

Latane Henry A , Donald I Tuttel and Charies , P. Jones ,”Securites
Analysis
And portfolio Management “ The Ronald Press Co. New
York .

Parik D Rogh (1960),” Financial Development and Economic
Growth “
Vikash Publishing Home , Bombay

Pradhan Radhe s (1994) “Fonancial Management Practice in Nepal ,”
Vikash
Publishing House, New Delhi

Pradhan Radhe s (1994) “Public Corporations of Nepal : A Study of
Financial
Ratios “ National Book Organization , New Delhi ,

Schwartz D.(1995) . D (1995) “ The Stock Market Handbook “ 2nd ed ,
Burleigh
Publishing . Stroud UK

Sharpe William F Alexender Gordon J. and Bailey Geffery V (1995)
Investment 5th Ed , Prentice Hall Inc . USA

Shingh ML (1998), “ Understanding Research Methodology “ T.U
Kathmandu

Shrestha K.N & Manandhar , KD, (1994) ,” Statistics and Quantitative
Techniques for Management “, 2nd Edition ,Valley Publishers
,
Kathmandu

Shrestha Manohar Krishna (2037) “ Financial Management “
Curriculum
Development Center, T.U Kathmandu

Shrestha Manohar Krishna “ Securities Exchange Center:Problems and
Prospects “ United Dynamic Research and Consultancy
kathmandu

- Shrestha Manohar K “ Shareholders democracy and annual general meeting
meeting
Feedback “ Ratna Pustak Bhandar , Kathmandu
- Srestha Sunity (1995) , “ Portfolio Behaviour of Commercial Banks in Nepal “,
Mandata Book Point , Kathmandu .
- Tatsuta Misao (1970) “ Securities Regulation in Japan” University of
Tokyo
Press, Japan
- Van Home James C and Wachowicz . Jr john M (1995) “ Fundamentals
of
Financial Management “ 9th edition Prentice Hall Inc , USA.
- Van Home James c (1996) Financial Management and Policy “ 9 th
edition
Prntice Hall of India , New Dehli .
- Weston J Fred and Brirgam Eugene F . “Managerial Finance “ 7 th ed
, Hold
Saunders International Editions
- Weston J.Fred and Thomas E Copland ,” Managerial Finance “, The
Dryden
Press, New York .

JOURNALS

- “Emerging Market Fact Book (1998) “, international Finance Corporation ,
washing D,C USA
- Hargis , Kent (1999) , “ Book Review “ The journal of Finance , Vol , liv(1)
“Mirmire “, Volume 152(27:1. Economic Articles Special) , Bankers Club ,
NRB Kathmandu
- Pradhan , Radhe S (1993) “ Stock market behaviour in a small capital market
case of Nepal “ The Nepalese Management review Vol ix – No .1
- Rouwenhorst, K Greet (1999),” Local Return Factors and turnover in emerging
markets “ The journal of Finance Vol LIV NO 3 Aug 1999

Shrestha M. K, “ Capital Market in Nepal : Changing Dimension and strategies
“ KOSH , 39 EPF Publication , Kathmandu
“ The Journal of Finance “, Vol Lill- Liv (1998/99) , The Journal of American
Finance Association , USA

THESES

Bhatta , Gopal (1995) ,” Assessment of the Performance of Listed Companies
in Nepal” M.B.A Thesis , Tribhuvan University , Kathmandu .

Khatiwada Mohan (1996) “ A Study on Securities investment in Nepal “MBA
thesis T.U kathmandu

Lohani , Nawaraj (1994) “ Shareholder Rights in Nepal “ MBA thesis T.U
kathmandu

Shrestha S.K (1996) “Public Response to Primary issue of Share in Nepal “
MBAR thesis , T.U kathmandu

OTHERS

“Annual Report (1998)”, Vol 5 NEPSE Kathmandu

“Economic Survey (1999) “, HMG/N Ministry of Finance

“Financial Statement of Listed Companies “ Vol iv (1997/98) , NEPSE ,
Kathmandu

Hornby, A.S (1996),” Oxford Advance Learners Dictionary “ Oxford
University Press New York

“ Ninth Five Year Plan “ National Planning Commission , Hmg/N

“Trading Relpport” Vol 5 NEPSE , Kathmandu

Appendices

AT -1 Calculation of Market returns, its S.D., Expected return and C.V.

Year	NEPSE Index (NI)	$R_m \times \frac{(NI_1 - NI_{1z})}{NI_{1z}}$	$R_m - \bar{R}_m$	$(R - \bar{R}_m)^2$	Remark
2050-10-30*	100	-	-	-	*NEPSE
2050/51	226.03	3.0247**	2.4816	6.1583	** Adjusted 5 month's return with annual return (By multiplying the adjusting factor 12/5)
2051/52	195.48	-0.1352	-0.6783	0.4601	
2052/53	185.61	-0.0505	-0.5936	0.3524	
2053/54	176.31	-0.0501	-0.5932	0.3519	
2054/55	163.35	-0.0735	-0.6166	0.3802	
Total		2.7154		7.7029	

We have,

$$\text{Expected rate } \bar{R} = \frac{R}{n} \times 2.7154 / 5 \times 0.5431 \times 54.31\%$$

$$\text{Standard deviation, } \dagger \times \sqrt{\frac{(R - \bar{R})^2}{n}} \times \sqrt{\frac{7.7029}{5}} \times 1.3877$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\bar{R}} \\ &= 1.3877 / 0.5431 \\ &= 2.5552 \end{aligned}$$

Where,

R_m = Market Return

AT-2b Calculation of realized returns S.D., expected return and C.V. of Finance and Insurance

Year	Finance Index (FI)	$R_{FI} \times \frac{(FI_1 \times Z FI_{1Z})}{FI_{1Z}}$	$R_{FI} - \overline{R}_{FI}$	$(R_{FI} - \overline{R}_{FI})^2$	Remark
2050-10-30*	100	-	-	-	*NEPSE
2050/51	682.83	13.9879	11.7776	138.6742	** Adjusted 5 month's return with annual return (By multiplying the adjusting factor 12/5)
2051/52	203.17	-0.7025	-2.9128	8.4844	
2052/53	194.53	-0.0425	-2.2528	5.0751	
2053/54	172.18	-0.1149	-2.3252	5.4066	
2054/55	176.32	0.0240	-2.1863	4.7799	
2055/56	195.68	0.1098	-2.1005	4.4121	
Total		13.2618		166.8323	

We have,

$$\text{Expected rate } \overline{R}_{FI} = \frac{R_{FI}}{n} \times 13.2618 / 6 \times 2.2103 \times 221.03\%$$

$$\text{Standard deviation, } \dagger_{FI} \times \sqrt{\frac{(R_{FI} - \overline{R}_{FI})^2}{n \times Z1}} \times \sqrt{\frac{221.03}{6 \times Z1}} \times 5.7764$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{R} \\ &= 5.7764 / 2.2103 \\ &= 2.6134 \end{aligned}$$

AT-2c Calculation of realized returns, S.D. Expected return and C.V. of Hotel Industry.

Year	Hotel Index (HI)	$R_H \times \frac{(F_{HT} \sum FI_{tZ})}{FI_{tZ}}$	$R_{FI} - \overline{R_{FI}}$	$(R_H - \overline{R_H})^2$	Remark
2050-10-30*	100	-	-	-	*NEPSE
2050/51	615.60	12.3744	10.4410	109.0145	** Adjusted 5 month's return with annual return (By multiplying the adjusting factor 12/5)
2051/52	369.14	-0.4004	-2.3338	5.4466	
2052/53	371.16	0.0055	-1.9279	3.7168	
2053/54	277.47	-0.2524	-2.1858	4.7777	
2054/55	244.49	-0.1189	-2.023	4.2119	
2055/56	242.52	-0.0081	-1.9415	3.7694	
Total		11.6001		130.9369	

We have,

$$\text{Expected rate } \overline{R_H} = \frac{R_H}{n} \times 11.6001 / 6 \times 1.9334 \times 193.34\%$$

$$\text{Standard deviation, } \dagger_H \times \sqrt{\frac{(R_H - \overline{R_H})^2}{n \times 1}} \times \sqrt{\frac{130.9369}{6 \times 1}} \times 5.1174$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{\overline{R_H}} \\ &= 5.1174 / 1.9334 \\ &= 2.6468 \end{aligned}$$

AT-2D Calculation of realized returns , S.D. Expected return and C.V. of trading

Year	Trading Index (TI)	$R_{TI} \times \frac{(TI_1 \times ZTI_{1Z})}{TI_{1Z}}$	$R_{FI} - \overline{R_{FI}}$	$(R_{TI} - \overline{R_{TI}})^2$	Remark
2050-10-30*	100	-	-	-	*NEPSE
2050/51	136.55	0.8772	0.7285	0.5307	** Adjusted 5 month's return with annual return (By multiplying the adjusting factor 12/5)
2051/52	172.52	0.2634	0.1147	0.0132	
2052/53	206.08	0.1945	0.0458	0.0021	
2053/54	156.95	0.2384	0.3871	0.1499	
2054/55	160.58	0.0231	-0.1256	0.0158	
2055/56	123.99	-0.2279	-0.3766	0.1418	
Total		08919		0.8535	

We have,

$$\text{Expected rate } \overline{R_{TI}} = \frac{R_{TI}}{n} \times 0.8919 / 6 \times 0.1487 \times 14.87\%$$

$$\text{Standard deviation, } \dagger_{FI} \times \sqrt{\frac{(R_{TI} - \overline{R_{TI}})^2}{n \times Z1}} \times \sqrt{\frac{0.8535}{6 \times Z1}} \times 0.4132$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{R} \\ &= 0.4132 / 0.1487 \\ &= 2.7788 \end{aligned}$$

AT-2E Calculation of realized returns , S.D. Expected return and C.V. of "Others" industry

Year	Others Index (OI)	$R_{OI} \times \frac{(OI_1 \times ZOI_{1Z})}{OI_{1Z}}$	$R_{OI} - \overline{R_{OI}}$	$(R_{OI} - \overline{R_{OI}})^2$	Remark
2050-10-30*	100*	-	-	-	*NEPSE
2050/51	304.33	4.9032**	4.0176	16.1411	** Adjusted 5 month's return with annual return (By multiplying the adjusting factor 12/5)
2051/52	249.12	-0.1814	-1.0670	1.1385	
2052/53	216.15	-0.1323	-1.0179	1.0361	
2053/54	228.26	0.0560	-0.8296	0.6882	
2054/55	221.59	-0.0292	-0.9148	0.8369	
2055/56	376.10	0.6976	-0.1883	0.0355	
Total		5.3136		19.8763	

We have,

$$\text{Expected rate } \overline{R_{OI}} = \frac{R_{OI}}{n} \times 0.8919 / 6 \times 0.1487 \times 14.87\%$$

$$\text{Standard deviation, } \dagger_{OI} \times \sqrt{\frac{(R_{OI} - \overline{R_{OI}})^2}{n \times Z1}} \times \sqrt{\frac{19.8763}{6 \times Z1}} \times 0.4132$$

$$\begin{aligned} \text{Coefficient of Variation, C.V.} &= \frac{\dagger}{R} \\ &= 1.9938 / 0.8856 \\ &= 2.2514 \end{aligned}$$

AT-3 a Calculation of Beta coefficient of different banks.

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$	Remarks
2050/51	2.7693	2.4816	6.8723	
2051/52	-1.1980	-0.6783	0.8126	
2052/53	-0.0359	-0.5936	0.0213	
2053/54	-0.8306	-0.5932	0.4927	
2054/55	-0.7050	-0.6166	0.4347	
Total			8.6336	

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} = \frac{8.6336}{5 - 1} = 2.1584$$

$$\beta_j = \frac{\text{cov}(R_j, R_m)}{\sigma_m^2} = 2.1584 / 1.9257 = 1.1208$$

Where,

n = number of observation = 5

σ_m^2 = Variance of market return = 1.9257 (see appendix table AT-1)

R_j = Return on stock (i.e. NAB)

AT-3 b Calculation of Beta coefficient of CS of NIB.

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$	Remarks
2050/51	1.8770	2.4816	4.6580	
2051/52	-1.0923	-0.6783	0.7409	
2052/53	-0.7366	-0.5936	0.4372	
2053/54	0.4945	-0.5932	-0.2933	
2054/55	-0.5425	-0.6166	0.3345	
Total			5.8773	

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} = \frac{5.8773}{5 - 1} = 1.4693$$

$$\beta_j = \frac{\text{cov}(R_j, R_m)}{\sigma_m^2} = 1.4693 / 1.9257 = 0.7630$$

Where,

n=number of observation =5

σ_m^2 = Variance of market return=1.9257 (see appendix table AT-1)

R_j = Return on stock (i.e. NIB)

AT-3 c Calculation of Beta coefficient of CS of NGB.

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$	Remarks
2050/51	0.5991	2.4816	1.4867	
2051/52	-0.6240	-0.6783	0.4233	
2052/53	-0.6015	-0.5936- 0.5932	0.3571	
2053/54	0.6757	-0.6166	-0.4008	
2054/55	-0.0491		0.0303	
Total			1.8966	

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n} = \frac{1.8966}{5} = 0.4741$$

$$\beta_j = \frac{\text{cov}(R_j, R_m)}{\sigma_m^2} = 0.4741 / 1.9257 = 0.2462$$

Where,

n=number of observation =5

σ_m^2 = Variance of market return=1.9257 (see appendix table AT-1)

R_j = Return on stock J (i.e.NGB)

AT-3 d Calculation of Beta coefficient of CS of HBL

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$	Remarks
2050/51		2.4816		
2051/52	-0.6713	-0.6783	0.4553	
2052/53	-0.2595	-0.5936	0.1540	
2053/54	-0.0573	-0.5932	0.0334	
2054/55	0.9880	-0.6166	-0.6090	
Total			0.0342	

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} = \frac{0.0342}{4} = 0.00855$$

$$\beta_j = \frac{\text{cov}(R_j, R_m)}{\sigma_m^2} = \frac{0.00855}{1.9257} = 0.00444$$

Where,

n=number of observation =5

σ_m^2 = Variance of market return=1.9257 (see appendix table AT-1)

R_j = Return on stock J (i.e. HBL)

AT-3 e Calculation of Beta coefficient of CS of NSB.

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$	Remarks
2050/51		2.4816	-	
2051/52		-0.6783	-	
2052/53	-0.1591	-0.5936	0.0944	
2053/54	0.0457	-0.5932	-0.0271	
2054/55	0.1165	-0.6166	-0.0718	
Total			-0.0045	

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} = \frac{-0.0045}{3 - 1} = -0.0023$$

$$\beta_j = \frac{\text{cov}(R_j, R_m)}{\sigma_m^2} = -0.0023 / 1.9257 = -0.0012$$

Where,

n=number of observation =3

σ_m^2 = Variance of market return=1.9257 (see appendix table AT-1)

R_j = Return on stock J (i.e.NSB)

AT-3 f Calculation of Beta coefficient of CS of NBB

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$	Remarks
2050/51		2.4816	-	
2051/52		-0.6783	-	
2052/53		-0.5936	-	
2053/54	-0.2683	-0.5932	0.1592	
2054/55	0.2682	-0.6166	-0.1654	
Total			-0.0062	

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} = \frac{-0.0062}{(2 - 1)} = -0.0062$$

$$\beta_j = \frac{\text{cov}(R_j, R_m)}{\sigma_m^2} = \frac{-0.0032}{1.9257} = -0.2462$$

Where,

n=number of observation =5

σ_m^2 = Variance of market return = 1.9257 (see appendix table AT-1)

R_j = Return on stock J (i.e. NBB)

AT-3 g Calculation of Beta coefficient of CS of EBL.

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$	Remarks
2050/51		2.4816		
2051/52		-0.6783		
2052/53		-0.5936		
2053/54	-0.2039	-0.5932	0.1210	
2054/55	0.2039	-0.6166	-0.1260	
Total			-0.0050	

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} = \frac{-0.0050}{5 - 1} = -0.00125$$

$$\beta_j = \frac{\text{cov}(R_j, R_m)}{\sigma_m^2} = \frac{-0.00125}{1.9257} = -0.000646$$

Where,

n=number of observation =5

σ_m^2 = Variance of market return=1.9257 (see appendix table AT-1)

R_j = Return on stock J (i.e.EBL)

AT-4 Calculation of Weighted beta of commercial banks.

Banks	Beta (s)	Market capitalization (Rs. in Million)	Weight (W_j)	($W_j s_j$)	Remarks
NBL	1.4796	523.86	0.0778	0.1151	
NAB	1.1208	1687.98	0.2506	0.2809	
NIB	0.7630	810.00	0.2806	0.0917	
NGB	0.2462	1890.00	0.1345	0.0691	
HBL	0.0058	906.00	0.0783	0.0008	
NSB	- 0.0012	527.1	0.0449	-0.0001	
NBB	- 0.0032	302.40	0.0031	-0.00014	
EBL	- 0.0026	88.32		-0.000034	
Total		6735.77		0.5573	

The weighted average beta of the shares of commercial banks (\bar{s}_j) is 0.5573, which is the beta coefficient of banking industry.

AT-4 Calculation of estimated population S.D.(S) of beta.

Banks	Beta (s)	$s_j - \bar{s}_j$	$(s_j - \bar{s}_j)^2$	Remarks
NBL	1.4796	0.9223	0.8506	
NAB	1.1208	0.5635	0.3175	
NIB	0.7630	0.2057	0.0423	
NGB	0.2462	-0.3111	0.0968	
HBL	0.0058	-0.5515	0.3042	
NSB	-0.0012	-0.5585	0.3119	
NBB	-0.0032	-0.5605	0.3142	
EBL	-0.0026	-0.5599	0.3135	
Total		2.5510		2.5510

We have

$$\text{Variance of beta} = \frac{(s_j - \bar{s}_j)^2}{n Z_1} \times 2.5510 / (8 Z_1) \times 0.3644.$$

$$\text{Estimated variance of population} = S^2 = \frac{n}{n Z_1} s^2 \times 8 / (8 Z_1) \mid 0.3644 \times 0.4165$$

Therefore, S=0.6453

AT-6 Calculation of Beta coefficient of CS of BBC

Year	$(R_j - \bar{R}_j)$	$(R_m - \bar{R}_m)$	$(R_j - \bar{R}_j) (R_m - \bar{R}_m)$	Remarks
2050/51	-0.0467	2.4816	-0.1159	
2051/52	0.0538	-0.6783	-0.0365	
2052/53	0.5079	-0.5936	-0.3015	
2053/54	0.1455	-0.5932	0.0863	
2054/55	-0.3696	-0.6166	0.2279	
Total			-0.1397	

We have,

$$\text{Cov}(R_j, R_m) = \frac{\sum (R_j - \bar{R}_j)(R_m - \bar{R}_m)}{n - 1} = \frac{-0.1397}{5 - 1} = -0.0350$$

$$\beta_j = \frac{\text{cov}(R_j, R_m)}{\sigma_m^2} = \frac{-0.0350}{1.9257} = -0.0182$$

Where,

n=number of observation =5

σ_m^2 = Variance of market return=1.9257 (see appendix table AT-1)

R_j = Return on stock J (i.e.BBC)