Risk and Return Analysis of Commercial Banks of Nepal (with reference to NABIL and NIBL)

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Abstract

This paper analyzes the risk and return on common stock investment of Nepalese stock market and it is focused on common stock of two commercial banks listed in Nepal stock exchange Limited. Investors have varying perception towards risk and enterprising activities. They invest in those opportunities which have certain degree of risk associated with it. This research study found that there is a positive relationship between risk and return. Most of the investors are risk averter. It suggests to construct appropriate portfolio instead of investment in a single security which would be able to reduce unsystematic or diversifiable risk. The secondary data which was collected from NEPSE website (www.nepalstock.com), previous studies, NRB publications and publication of selected commercial banks, website of security board of Nepal (SEBO), Journals and internet. Both quantitative and qualitative analysis has been analyzed by using scientific methods. After the analysis of risk and return of sample bank and based on the past data of their last five fiscal years i.e. (FY-2012/13 to FY-2016/17), it is concluded that all the commercial banks are very much risky with fluctuated rate of return. From the findings of beta coefficient of each sample bank, the C.S. of NABIL is seems very much volatile than NIBL stock. It was also found that both selected bank have a high proportion of unsystematic risk.

Key words: Risks, Common stock, securities market, investors, financial system, bank.

1. INTRODUCTION

The sustainable development of any nation depends on its economic condition. Economy is a backbone for an overall development of a nation. In fact, the growth of economy is only possible when there is well financial development. Economic growth and financial development are closely related. The interaction between them is crucial. Financial institutions basically facilitate the transfer of funds from surplus units to deficit units and provide benefits for both the saving units and deficits units in the societies. Nepalese financial system is composed of deposit taking and contractual saving institutions. The deposit taking financial institution includes commercial banks, development banks, micro-credit development banks, financial companies, financial cooperatives, non-government organization (financial) performing limited banking activities. (NRB, 2005).

Investment decision depends upon two factors, i.e. Risk and Return. They are like two sides of one coin. In the investing world, risk can be defined as the chance that an investment’s actual return will be different than expected. Technically, it is measured in statistics by the standard deviation. Risk is the product of uncertainty whose magnitude is depends upon the degree of variability in uncertain cash flow.
Low levels of uncertainty (low risk) are associated with low potential returns. High level of uncertainty (high risk) is associated with high potential returns. Similarly, the return on the other hand, it is the reward of waiting and compensation for risk bearing. Researchers have shown that the most of investors are risk averter. So it can be concluded that most of people invest their belongings in those opportunities where there is higher returns with lower level of risk. The main problem in investment is to select the security having low risk but having high returns. Even the investor can’t increase the return substantially they can reduce the risk by diversification of the investment funds in different securities making a portfolio. Portfolio analysis is to minimize the risk at the given rate of return.

In the context of Nepal, investors and shareholders are hardly bother to know about risk and return behaviors of the stocks before making investment in securities. Most of the general Nepalese investors invest only in a single security and that too without any analysis of risk-return. Though some of the investors invest their funds in different securities on the basis of expectation and assumptions of individual security rather than on the basis of logic and effect of portfolio, they suffer from great loss. In addition to this, the investors are also afraid to invest in the securities. So it is necessary to make them well acquainted with these tools along with their practical implications on investment decision and evaluation.

1.1. Statement of the Problems

Most of the commercial banks invest their resources in the limited area to achieve the highest amount of profit. Under the prevailing economic situation in the country, the financial investment is insignificant particularly in agriculture, industrial and other productive sectors which is quite unsatisfactory to meet the economic growth of the present period. They hesitate to invest in the long term projects and intend to adopt conservative loan policy. Investors couldn’t get enough informational related to risk return and as well as portfolio analysis of investing sectors.

After the emerged of NEPSE in 1993 A.D., it keeps them in dilemma, whether they should invest in the stock or not and all this conditions make them not to utilize their funds as a result investors have no much more alternatives for investments. Therefore, everyone is making investment in security market. Only few companies are listed in NEPSE, which still limits the opportunities of investment. This trend makes the market imbalance and unfair. If any banks will issue shares there is become huge demand rather than supply but if any manufacturing and processing companies will issue shares very little investors make investment.

Based on above discussion on the research problems, this study will deal with following issues.

a. Would portfolio constructions between different banks be profitable?
b. To what extend the systematic risk is related to total risk?
c. How do people know about the magnitude of risk inherent in individual stock and its relationship with market?
d. Does the effect exist on the investment decision in total earnings of commercial banks?
e. How can investors create optimum risky portfolio?
1.2. Objectives of the study

This study has undertaken to focus on risk and return analysis of financial securities like common stock of two commercial banks of Nepal, NABIL and NIBL. So, the major objectives of this study are as listed below:

a. To examine the risk and return of common stock investment.
b. To identify the covariance, correlation between the returns of two commercial banks.
c. To examine the optimal portfolio risk and return of selected banks.
d. To identity the proportion of systematic risk and unsystematic risk of a common stock.

2. REVIEW OF LITERATURE

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

2.1. Common Stock

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

2.2. Portfolio Theory

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

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

2.3. Risk

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

Beta measures a stock’s volatility - The degree to which its price fluctuates in relation to the overall market. Beta is derived mathematically so that high beta indicates a high level of risk whereas a low beta represents a low level of risk. Mathematically, $\beta_j$ denotes it.

II. Standard Deviation

This is a measurement of the dispersion of forecast returns when such returns approximate a normal probability distribution. A high standard deviation represents a large dispersion of return and is a high risk and vice versa. Mathematically, it is denoted by $\sigma_j$

III. Subjected Estimates

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

IV. Sources of Risk

Every investment involves uncertainty that contribute to investment risk. These risks may be interest Rate Risk, purchasing Power Risk, Bull-Bear Market Risk, Management Risk, Default Risk, Liquidity Risk, Call – Ability Risk, Convertibility Risk, Political Risk, Industry Risk (Clark, 1997).

2.4. Relationship between Risk and Return

The expected return from any investment proposal will be linked in fundamental relationship to the degree of risk in the proposal. In order to be acceptable a higher risk proposal must offer a higher forecast return than lower risk proposal (Hampton, 1996). "The observe difference in both the levels and variability of the rate of return across securities are indicative of the underlying risk and relation in the market" (Loric, Dodd and Kempton, 1985). An element of high risk is involved in common stock investment because of its low priority of claims at liquidation. When investors buy common stock they receive certificate of ownership as a proof to being a part of the company. The certificate states the number of shares purchased and their value per share (Bhalla, 1997). Edwin J. Elton (1999) conducted an article entitled "Expected Return, Realized Returns and Assets Pricing Tests". In this paper he points out the fundamental issues in finance like that what the factors are that affect expected return on assets, the sensitivity of expected return to those factors, and the reward for bearing this sensitivity. There is a long history of testing in this area and it is clearly one of the most investigated areas in finance.

Almost all of the testing being aware of using realized returns as a process for expected returns. The use of a average realized relies on a belief that information surprises tent to out over the period of a study and realized returns are therefore an unbiased estimate of expected returns. However, he believes that there is ample evidence that there is ample evidence that this belief is misplaced. There are period's longer than 10 years during which stock market realized returns are one average less than the risk free rate (1973 to 1984). There are periods longer than 50 years in
which risk long term bonds on average underperform the risk free rate (1927 to 1981). Having a risky asset with expected return above the risk less rate is an extremely weak condition for realized returns to be an appropriate process for expected return, and 11 and 50 years is an awful longtime for such a weak condition not to be satisfied. In the recent past, the United States has had stock market returns of higher than 30% per year while Asian Markets have had negative returns (Elton, 1999:26).

Md. Zobaer et al., (2012) conducted a study on “Relationship between Risk and Expected Returns: Evidence from the Dhaka Stock Exchange”. They presented the evidence that from the CAPM empirical analysis for the individual stocks, it is observed that intercept term is significantly different from zero and slope is not equal to the excess return on the market portfolio. But, the CAMP’s prediction for the intercept is that it should equal zero and the slope should equal the excess return on the market portfolio. So, the results of the study refute the above hypothesis and offer evidence against the CAPM is not a suitable indicator of asset prices in Bangladesh over the chosen sample period.

Kolani et al., (2014) conducted the journal entitled “An Analysis of the Relationship between Risk and Expected Return in the BRVM Stock Exchange” is taken into the account. Very few independent studies can be found in the topic of finance. However, the available independent studies which are related to the Nepalese stock market and about shareholders democracy, views expressed by different person in their articles regarding risk and return of common stock of commercial banks are presented of reviewed here in the topic.

Pradhan, in 1993 carried out a study entitled “Stock market behavior on small capital market; a case study in Nepal”. This study was based on the data collected for seventeen enterprises from 1986 to 1990. One of the major objectives, which are related to this study, was to assess the stock market behavior in Nepal. Similarly, another study was carried out by Narayan Prasad Poudel (2003) in the topic of “Investing in shares in Commercial Banks in Nepal”. The study by Yogendra Timilsina (2007) on “Capital Market Development and stock price behavior in Nepal” has come with the conclusion that the market price of share depends on EPS as well as on DPS, but DPS is more price sensitive and it will have direct and immediate response in the market. However market values of share computed on the basis of EPS are near to the observed values. Therefore the observed market prices of equity shares reveal that the stock market is not inconsistent. A study conducted by Prof. Dr. Radhe Shyam Pradhan and Mr. Surya B. Blampaki (2004) in the topic of “Fundamental of stock returns in Nepal” is taken into consideration. This study is helpful to analyze the stock’s return from different aspects.

Rouwenhast (1999) examines the sources of return variation in emerging stock markets. Compared to the developed markets the correlation between most emerging market and stock market has been historically low and until recently many emerging country restricted investment by foreign investor. Mishra (2002) noticed that there is a positive correlation between risk and return character of the company. Nepalese capital market being inefficient, the price index itself is not sufficient to give the information about the prevailing market.
2.5. Research Gap

Although some previous research have conducted their thesis in the similar topic the present researcher has selected, there is fundamental difference between those and this present one. The previous researchers focused only on the risk and return aspect of selected commercial banks from investors perspectives. This research has further tried to identify the correlation among returns of the commercial banks under study which plays a significant role in risk reduction by portfolio construction and systematic and unsystematic risk has been identified for each bank which is not done by previous researchers.

Some researchers used very few sample size which may not cover the whole population and some researchers used nominal fiscal periods which may not provide the whole scenario of market. Some researchers had drawn their findings and determined the risk-returns of assets or securities based on very limited statistical tools and techniques. Moreover, some researchers have done the comparative study on the joint venture banks. Risk and Return study is the fundamental study for every stake holders. Therefore, it is the major concern of stake holders to know the situation of the bank.

This research work on the topic of “Risk and Return Analysis of Commercial Bank with reference to NABIL & NIBL” has taken the five years of financial data from fiscal year 2011/012 to fiscal year 2016/017. Two banks are taken as a sample and used too many statistical tools and latest data of NABIL & NIBL. Hence, this study is differing from other research works.

3. RESEARCH METHODOLOGY

3.1. Research Design

In this study the analytical as well as descriptive research design has been included in this study. For analytical purpose the annual reports and financial statement of related commercial banks are collected.

3.2. Population and Sample

The population data of this study comprises of all twenty-eight commercial banks which are currently operating in Nepal. The sample consists of two selected banks. The selected sample banks for the analysis are as follows:

- NABIL Bank Ltd
- NIBL Bank Ltd

3.3. Nature and Sources of Data

This study is mainly based on secondary data. The supplementary data and information are obtained from unpublished official records of concerned banks booklets, journals, articles and related website. Financial reports of commercial banks are also collected. Besides, the secondary data are also collected.

3.4. Data Analysis Tools

In this research work, descriptive tools are used to get the meaningful result of the collected data and to meet the research objective. For this purposes the financial
tools like Market Price of Stock (P), Earnings per share (EPS), Dividend (D), Price Earnings Ratio (P/E Ratio), Return on Common Stock Investment (R), Expected Return on Common Stock E(Rj), Standard Deviation (σ), Coefficient of Variance (C.V), Correlation coefficient, Covariance, Beta coefficient (β), Required Rate of Return (Kj), Portfolio Return (Rp), (n) Portfolio Risk (σP), Risk Minimizing Portfolio has been used.

3.5. **Statistical Tools**

Statistical tools are used to analyze the relationship between two or more variables and to find out and to find how these variables are related. In this study, following statistical tools like Arithmetic Mean or Average, Standard Deviation, Tools of Testing Hypothesis, T-Test are used.

4. **DATA PRESENTATION AND ANALYSIS**

The collected data from various sources have been presented and analyzed using various financial and statistics tools.

4.1. **NABIL Bank Limited**

*Inter Bank Comparison*

According to the result from analysis part, a comparative analysis of return, total risk and risk per unit are performed here. The main purpose of such return and risk analysis is to select the good banks for investment. The expected return, standard deviation of return and coefficient of variation of each bank for the year 2012/13 to 2016/17 are given

<table>
<thead>
<tr>
<th>Bank</th>
<th>Expected Return (Ri)</th>
<th>Standard Deviation (σ)</th>
<th>Coefficient of Variation (C.V)</th>
<th>Return</th>
<th>Risk</th>
<th>C.V</th>
</tr>
</thead>
<tbody>
<tr>
<td>NABIL</td>
<td>0.3658</td>
<td>0.4119</td>
<td>1.1260</td>
<td>Lowest</td>
<td>Highest</td>
<td>Highest</td>
</tr>
<tr>
<td>NIBL</td>
<td>0.3798</td>
<td>0.4091</td>
<td>1.0771</td>
<td>Highest</td>
<td>Lowest</td>
<td>Lowest</td>
</tr>
</tbody>
</table>

*Source: Annual Report 2012/13 to 2016/17*

The table shows the overall returns and risks of the individual banks. Here the investors can get highest return from NIBL i.e. 0.3798 and lowest return from NABIL i.e. 0.3658. Total risk (measured by standard deviation) is observed maximum of the C.S. of NABIL i.e. 0.4119 and minimum of NIBL i.e. 0.4091. This means that quantitative of total risk is slightly high in NABIL.

4.2 **Market Capitalization of Sample Bank**

On the basis of market capitalization at the end of FY-2016/17, the size of each bank is presented in table 4.6. The NABIL Bank has the highest market capitalization with Rs. 94175.32 million than NIBL at FY-2016/17 as shown in table below.
Table 2

<table>
<thead>
<tr>
<th>Bank</th>
<th>Market capitalization (In Millions in Rs.)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>NABIL</td>
<td>94175.32</td>
<td>58.42%</td>
</tr>
<tr>
<td>NIB</td>
<td>67040.91</td>
<td>41.58%</td>
</tr>
<tr>
<td>Total</td>
<td>161216.23</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: NEPSE and www.nepalipaisa.com

4.3 Calculation of Beta Coefficient of each Bank

Table 3

<table>
<thead>
<tr>
<th>Bank</th>
<th>Beta Coefficient</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>NABIL</td>
<td>0.0897</td>
<td>Least Aggressive i.e. 1&gt;0.0897</td>
</tr>
<tr>
<td>NIBL</td>
<td>0.0567</td>
<td>Least Aggressive i.e. 1 &gt; 0.0567</td>
</tr>
</tbody>
</table>

Source: Annual Report 2012/13 to 2016/17

Here, as shown in the table 4.9 NABIL as well as NIBL, both commercial banks have lower beta coefficient than the beta coefficient of market. Hence, the stocks of both banks are defensive. According to above table, the stock of NIBL has less systematic risk than NABIL because its beta coefficient is slightly lower than the beta coefficient of NABIL. i.e. (0.0567<0.0897)

4.4 Portfolio Analysis

(Diversification of Risk by making Portfolio Investment)

Investing common stock of various banks could do the risk diversification, but due to limitation of data processing and difficulties we can analysis only two assets case and 3 assets case. The tools for analysis have described in research methodology chapter of this study, the portfolio of common stock of NABIL (say Stock A), and the portfolio of common stock of NIBL (say Stock B) is analyzed.

Table 4

<table>
<thead>
<tr>
<th>Years</th>
<th>( (R_A - \bar{R}_A) )</th>
<th>( (R_B - \bar{R}_B) )</th>
<th>( (R_A - \bar{R}_A)(R_B - \bar{R}_B) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012/13</td>
<td>0.4711</td>
<td>0.4290</td>
<td>0.2021</td>
</tr>
<tr>
<td>2013/14</td>
<td>0.2662</td>
<td>0.0495</td>
<td>0.0132</td>
</tr>
<tr>
<td>2014/15</td>
<td>-0.3323</td>
<td>-0.3298</td>
<td>0.1096</td>
</tr>
<tr>
<td>2015/16</td>
<td>0.1085</td>
<td>0.3461</td>
<td>0.0376</td>
</tr>
<tr>
<td>2016/17</td>
<td>-0.5134</td>
<td>-0.5043</td>
<td>0.2589</td>
</tr>
</tbody>
</table>

\[\sum (R_A - \bar{R}_A)(R_B - \bar{R}_B) = 0.6214\]

Source: Annual Report 2012/13 to 2016/17
From referring to the above calculation of output data, it is observed that investing only in the C.S. of NABIL there is the risk of 41.19% and investing only in the C.S. of NIBL there is the risk of 40.91%. But investing in the both securities in the ratio 0.4563:0.5437, the total risk will be reduced to 16.19% which is lower than the risk before diversification.

The portfolio of common stocks of three Assets (Banks) can be analyzed but the analysis becomes very lengthy because the risk minimizing proportion should be found by trial.

4.5 Systematic and Unsystematic Risk of NABIL with Market
Calculation of proportion of systematic and Unsystematic Risk

Proportion of SR = $\frac{SR}{TR} = \frac{0.0441}{0.4119} = 0.1071 = 10.71\%$

Proportion of USR = $\frac{USR}{TR} = \frac{0.3678}{0.4119} = 0.8929 = 89.29\%$

Out of total risk in stock of NABIL, 10.71% is un-diversifiable risk and created from systematic factor or market factor and the remaining 89.29% is diversifiable risk and created from company related factor. It shows that almost ninety percent of the risk of NABIL Bank is created by unsystematic factor. Hence, NABIL Bank can able to reduce its 89.29% of risk from its total risk.

4.6 Systematic and Unsystematic Risk of NIBL with Market
Calculation of proportion of systematic and Unsystematic Risk

Proportion of SR = $\frac{SR}{TR} = \frac{0.0279}{0.4091} = 0.0682 = 6.82\%$

Proportion of USR = $\frac{USR}{TR} = \frac{0.3812}{0.4091} = 0.9318 = 93.18\%$

Out of total risk in stock of NIBL 6.82% is un-diversifiable risk and created from systematic factor or market factor and the remaining 93.18% is diversifiable risk and created from company related factor.

4.7 Correlation Coefficient between Returns of two Sample Banks
If there is perfect negative correlation between the returns of the stocks, the risk can be easily diversified. But, if there is perfectly positive correlation, risk cannot be diversified.

Table -5
Summary of Correlation Coefficient between C.S. of Sample Bank

<table>
<thead>
<tr>
<th>Banks</th>
<th>NIBL</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>NABIL</td>
<td>0.8993</td>
<td>Positively correlated i.e. $\rho_{AB} &lt; 1$, So there is no possibility of diversifying risk by making portfolio of NABIL and NIBL.</td>
</tr>
</tbody>
</table>

Source: Annual report 2012/13 to 2016/17

In the above summary table, common stock of NABIL & NIBL has the positive
correlation coefficient. Therefore it shows that there is no any beneficiary to make the portfolio combination between the common stock of NABIL & NIBL which means its portfolio investment has zero effect on their systematic risk reduction.

4.8 Testing of Hypothesis

The hypothesis is based on the text of significance difference of mean (t-test). For this expected return of selected banks are calculated. The tabulated value of t at 5% level of significance and 8 degree of freedom is 2.306 for NABIL. Since the calculated value "t" is less than tabulated value. Therefore, the null hypothesis \( H_0 \) is accepted at 5% level of significance i.e. there is no significance difference between the expected return of NABIL and overall market return. Similarly, The tabulated value of t at 5% level of significance and 8 degree of freedom is 2.306 for NIBL. Since the calculated value "t" is less than tabulated value. Therefore, the null hypothesis \( H_0 \) is accepted at 5% level of significance i.e. there is no significance difference between the expected return of NIBL and overall market return.

5. Conclusion

After the analysis of risk and return of sample bank and based on the past data of their last five fiscal years i.e. (FY-2012/13 to FY-2016/17), it is concluded that all the commercial banks, which are under study, are very much risky with fluctuated rate of return. From the findings of beta coefficient of each sample bank, the C.S. of NABIL is seems very much volatile than NIBL stock. The study also shows that the selected commercial banks under study, the required rate of return of both commercial banks i.e. (NABIL & NIBL) is more than expected rate of return, so both stocks are overpriced. Hence it is more profitable to take decision of short selling by investors.

This study also shows that both selected bank have a high proportion of unsystematic risk i.e. NABIL (89.29%) and NIBL (93.18%) which can be minimized from internal management. Hence, it is better to have a low proportion of systematic risk and comparatively a high proportion of unsystematic risk because unsystematic risk can be reduced to zero but systematic risk cannot be even reduced as it is created from market.

5.1 Discussion

On the basis of major finding the researcher thinks appropriate to recommend the concerned institutions to individual authorities as well as others in order to consider the following suggestions.

The proper analysis of the individual stock the industry and whole market is essential to take investment decision. The general knowledge about general economic condition, government tax policy, peace and political situation of nation etc. is necessary which affect the price of share.

At present individual potentials investors due to lack of their education, awareness and confidence, are hesitated to invest in common stock, so their education, awareness and confidence should be uplifted by providing related information.

Government needs to amend the rules and regulation regarding stock market in time to time and to make the policy that protects individual investor’s right. And it
also needs to follow up the implementation of rules and regulation and to make sure the objective is achieved. On that regard Government of Nepal needs to monitor and to make market properly.

The financial institutions and companies should provide the real financial statements. The data provided by NEPSE and the company itself are different in some cases. It creates confusion to the possible investors about the actual financial condition of the company. The value of assets and liabilities should not be manipulated by the company to show the under profitability or over profitability.

References