CHAPTER - I

INTRODUCTION

The return on an investment and the risk of an investment are basic concepts in finance. The risk/return relationship is a fundamental concept in not only financial analysis, but in every aspect of life. If decisions are to lead to benefit maximization, it is necessary that individuals/institutions consider the combined influence on expected (future) return or benefit as well as on risk/cost. Return expresses the amount which an investor actually earned on an investment during a certain period. Return includes the interest, dividend and capital gains; while risk represents the uncertainty associated with a particular task. In financial terms, risk is the chance or probability that a certain investment may or may not deliver the actual/expected returns.

The development of financial markets and a stock market in a country are among the most important factors leading to increased investment and can be effective factors contributing to economic growth. Investors in stock markets consider many risk factors when making their decisions. Risk and return are influenced by certain decision and non-decision variables. The decision variables are those on which investors take decision such as deciding, what the product prices are to be charged, capital structure decision, dividend policy decision, etc. The non-decision variables are those which are imposed on investors and on which they have no control. All macro-economic variables such as Gross Domestic Product (GDP) growth rate, inflation rate, unemployment rate, direct and indirect tax rates are the non-decision variables which are imposed on the investor either by policy makers or by the macro-economic environment.
The treatment of risk is the main element in financial decision making. Therefore the question involves how risk should be measured, and how the required return associated with a given risk level is determined. The risk and return trade off says that the potential return rises with an increase in risk. It is important for an investor to decide on a balance between the desire for the lowest possible risk and the highest possible return. To make effective financial decisions, investors need to understand what causes risk, how it should be measured and the effect of risk on the rate of return required by investors.

Investors attempt to maximize the expected return of their investment portfolio for a given amount of portfolio risk, or to minimize risk for a given level of expected return, which means that an investor who wants higher expected returns must accept more risk. Stock market investors must therefore identify various risk factors and evaluate the influence of these risk factors on the stock returns in the stock market. Identifying and investigating risk factors in the stock market can also be important for improving stock market performance. If investors are assured about the long-term performance of the stock market and the amount of risk is consistent with their expectations, investment in the stock market will increase and lead to economic development.

Risk and return are thus two important factors in stock market investments. The risk-return trade-off in the capital market and the behavior of stocks in response to risk factors have long interested economists. Risk factors that affect stock returns include unsystematic risk (or diversifiable risk) and systematic risk. Unsystematic risk is specific to a portfolio and it is controllable and reducible by diversification, but systematic is due to external factors and is not reducible by diversification. The
systematic risk-return trade-off in the stock market and the reaction of stock returns to a variety of systematic risk factors are very important aspects in the field of finance.

**IMPORTANCE OF THE STUDY**

Risk and return play an important role in making an investment decision. One basic premise regarding risk and return is that investors prefer returns to risk. People invest in riskier assets only if they expect to receive more than average returns. It is an attempt to analyze the opportunities that are available for investors as far as returns are concerned and the involvement of risk thereof while investing in the equity of firms belonging to different sectors of the Indian economy.

An efficient market is best represented by the existence of equilibrium in asset pricing through positive risk-return relationships. The risk of a security is nothing but the likelihood of the return turning out to be more or less than the expected. The total risk of an asset may be perceived as being the sum of several different contributing risk factors, like interest rate fluctuations, market cycles, and purchasing power instability and so on.

Risk management is concerned with three tasks related to risk viz. identification, measurement and control. Identification is the process of mapping the source of risk as well as the variables that are most closely connected with it. Identification is a difficult issue and usually is tough to quantify. Origin of risk can be from inflation, business cycles, government policies, wars, natural calamities and technological innovation. In a highly integrated financial world, what is happening in one centre is liable to have repercussions in other places as well.

Risk as emerging from foreign market and spilling over to other markets is an important part of the identification of risk and therefore the question whether volatility
and return of a foreign market affect the domestic market is an important one in the containment of risk. Therefore, taking all these risk factors as one set and assuming them to be originating in one market and flowing to the others, risk can be thought of as taking the same route and mapped in a similar fashion. Thus, academicians have found spillover of risk from one market to the other as a useful method of quantifying and thereby identifying risk. The second factor in identification of risk is concerned with the variable or proxy that may truly reflect risk. In this regard, volatility has emerged as a standard term to signify risk. It is nothing but the variation of return over a certain period of time. This is amply captured by the variance of return. Hence, combining these two factors may be thought of as a useful way of dealing with identification of risk.

Among the various systematic risk factors affecting stock returns, market risk is one of the most important factors and many studies have focused on it. Some studies show that individual asset prices such as stock prices are also sensitive to other systematic risk factors including economic news, and stock returns are influenced by unexpected fluctuations in macroeconomic variables such as oil prices, exchange rates and inflation. Thus, in addition to market risk, the economic risks faced by a country can also be considered as risk factors that affect stock returns. All these risk factors affect corporate profit and can therefore influence stock returns in many ways. Moreover, if the distribution of a stock return is not normal, two additional risk factors, skewness and kurtosis of returns, can affect stock returns as well.

Rational investors as maximizes of their expected profit want greatest return from their investment. But simultaneously, they are constrained in this ambition by their aversion to risk and are restricted in the maximization motive by this factor. It has
been laid down in almost every financial economics text book that risk and return are inversely related i.e. one has to bear additional risk to earn extra return on one’s investment. Because an investor is concerned with the terminal value of his investment and this value depends to a large degree on the variance of return, a large variance puts lot of uncertainty on the expected return as far as the investors are concerned and hence, the obvious justification for the huge importance attached to variance or standard deviation as a measure of risk.

Variation in the return of equities and bonds are laid down as classic examples for this offer of higher rates of returns by less credit worthy corporations as compared to national governments or more solid and financially secure corporations. In this background of risk return relations, stock market assumes a pivotal place as it is one of the most important wealth portfolios dealt with in financial economics as well as in the investment strategies of individuals and institutions alike. Like all opinions in economics, this relation is also marred by controversies and by findings and counter findings. Therefore, the question that the present study has posed is the relation between risk and return within equities. It analyzes whether they are related and if related to what extent they are related as also the kind of relation between them.

The Indian stock market has gained a new life in the post-liberalization era. It has experienced a structural change with the setting up of SEBI, opening up to the foreign investors, establishment of the NSE, initiation of the screen based trading system, dematerialization of securities and introduction of derivative instruments. The activities of the market have increased in all respects. Market capitalization has increased spectacularly. Number of listed companies has gone up. But the most important and amazing phenomena of all is the movement of secondary market share prices which are reflected in either the upward or downward trend in the major share price indices in the country. The stock market reflects the performance of an economy.
When the economy does well and the companies make lucrative profit, people get induced to invest in stocks because they expect higher return from their stockholding.

In the present competitive globalised business scenario, risk is attached with every dimension. Financial markets are not free from imperfections, which make results inconsistent with the expectations. The concept of risk management in case of investment decision assumes greater importance in the modern day financial management. The objective of financial investing is to earn the largest possible profit or return on investment. Investing always involves a certain amount of risk, ie, there is a chance that an investment will yield not only profit but also loss. Thus investing aims at profit maximization and risk minimization.

Stock market research is essential to good financial and investment decision making. It will be able to determine the market price and trading volume for the stock, high and low price for the stock over different periods and the earnings for the company. To ascertain the right choice of a security or portfolio to an investor, it depends on the level of risk that the stock carries. An estimation of the risk return profile of a security or portfolio is an important aspect in investment management.

Business firms commit funds in physical or real assets to earn a return higher than the one earned on financial assets. But as the business environment keeps changing, returns fluctuate; the higher the fluctuation, the higher is the risk. An important concomitant factor or profitability, i.e. the return is the risk associated therewith. Risk-return analysis is used to measure the variations in the return behavior of a security or a portfolio of securities in relation to movements in return of a market portfolio, because such variations in security or portfolio are believed to have been induced by the market movements. Market beta \([\beta]\) is the most widely accepted
measure of the extent to which the return on a security fluctuates with the returns on the market portfolio.

The stock market research will allow one to assess the possible risk of a stock against the possible rewards the stock may offer. The present study in this context is relevant in explaining the parity between risk and return in the Indian equity market. It will definitely help the stakeholders to take appropriate decision regarding the time of investment, horizon of investment, quantum of investment and even portfolio selection.

**STATEMENT OF THE PROBLEM**

Needs of human being are not limited and every day the list of desire becomes longer and longer. So it becomes necessary for all to find different investment alternatives to fulfil the desire of their family. There are a number of investment alternatives available for the investors and they just need to find an option match with his or her risk tolerance level. It is well known, that investment in financial assets such as the stocks of companies listed in organized stock markets is one of the most important issues of finance. Stock index forecasting is important for making informed investment decisions. Events like the global financial crisis show that investing in the stock market can potentially lead to high losses for the holder of common shares. Company specific risk can be reduced by diversification. However, systematic market risk that affects the whole stock market can have a large negative impact on portfolio returns. Moreover the concept of the risk related to the investment on stock markets has widely permeated the financial community so that everyone knows the necessity of analyzing risk in investment analysis and finding ways and methods of dealing with it.

Most investors and portfolio managers seek to optimally construct their stock portfolio in order to satisfy their investment goals. There is an important issue of great concern and observation of the stock market risk involved in the investments. The main problem of the investors and other stake holders is that they are not aware of the
variances between risk and return. They could not make optimum portfolio for their investments. This study is an attempt to analyse the variance of risk and return in CNX Nifty index and also analyses individual performance of securities based on sectoral indices in the National Stock Exchange and informs investors that efficient diversification reduces portfolio risk.

**OBJECTIVES OF THE STUDY**

This study is aimed at achieving the following objectives:

- To gain knowledge of the concept of risk return analysis
- To identify and examine the risk and return relationship of selected companies shares from different sector.
- To analyse the relationship between risk and return of the similar selected stock index at different time period.
- To study the price behaviour of the selected securities so as to have a better portfolio.
- To find out the fluctuations in the total portfolio of the selected stock index to have a better investment opportunities.
- To offer suitable suggestions to create optimum portfolio investment decisions.

**RESEARCH DESIGN**

The research design used for the study is descriptive and analytical in nature. Descriptive research is defined as research that determines the cause of something and/or describes the behaviour of something. Descriptive research is mainly done when a researcher wants to gain a better understanding of a topic.
Analytical Research has to use facts or information already available, and analyze these to make a critical evaluation of the material. Since in the present research, an attempt is made to study the securities of CNX Nifty of portfolio and volatility of selected stock index and it is critically analyzed as well and also sensitivity Index - CNX the study is said to be descriptive and analytical in nature.

**SAMPLE DESIGN**

Judgment sampling technique is used in the study for the sample selection.

CNX Nifty 2011-2015 Constituents have been selected for the analysis. Nifty contains fifty companies which have been operating for more than five years. The dates of the available nifty were not uniform. Stock Index share prices listed in the nifty are on a constant basis and as per the performance of the stock listed in the market, it will change over a period.

Top five sectors have been selected based on the weighted average net profit of the companies and their share value fluctuations. Each sector comprises top five companies, which are selected by using of judgement sampling method.
The sectors and companies selected for the purpose of this study are given below:

<table>
<thead>
<tr>
<th>S. No</th>
<th>Sector</th>
<th>Companies listed in the CNX Nifty</th>
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<tbody>
<tr>
<td>1.</td>
<td>Pharmaceuticals</td>
<td>Cipla</td>
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<tr>
<td>2.</td>
<td>Pharmaceuticals</td>
<td>Dr. Reddy’s Lab</td>
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<td>3.</td>
<td>Pharmaceuticals</td>
<td>Lubin</td>
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<td>4.</td>
<td>Pharmaceuticals</td>
<td>Sun Pharmaceutical</td>
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<td>5.</td>
<td>Pharmaceuticals</td>
<td>Aurobindo Pharma</td>
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<td>6.</td>
<td>Information Technology</td>
<td>HCL Technologies</td>
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<td>7.</td>
<td>Information Technology</td>
<td>Infosys</td>
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<td>8.</td>
<td>Information Technology</td>
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<td>9.</td>
<td>Information Technology</td>
<td>Tech Mahindra</td>
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<td>10.</td>
<td>Information Technology</td>
<td>Wipro</td>
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<td>11.</td>
<td>Automobile</td>
<td>Bajaj Auto</td>
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<td>12.</td>
<td>Automobile</td>
<td>Bosch</td>
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<td>13.</td>
<td>Automobile</td>
<td>Mahindra &amp; Mahindra</td>
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<td>14.</td>
<td>Automobile</td>
<td>Maruti Suzuki</td>
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<td>15.</td>
<td>Automobile</td>
<td>Tata Motors</td>
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<td>16.</td>
<td>Financial Services</td>
<td>Axis Bank</td>
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<td>17.</td>
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<td>HDFC bank</td>
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<td>ICICI bank</td>
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<td>Financial Services</td>
<td>Kotak Mahindra bank</td>
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<td>20.</td>
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<td>State Bank of India</td>
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<td>21.</td>
<td>Energy</td>
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<td>22.</td>
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<td>23.</td>
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<td>24.</td>
<td>Energy</td>
<td>Power Grid</td>
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<td>25.</td>
<td>Energy</td>
<td>Reliance Industries</td>
</tr>
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</table>
PERIOD OF THE STUDY

The published data regarding stock price of equities are collected, for the present study from April 2010 to March 2015.

SOURCE OF DATA

The study is based on the Secondary source of data such as the daily and the monthly data relevant obtained from National Stock Exchange (NSE) website. Relevant Information also has collected from various issues of RBI reports and other websites. Data used in the study consists of the high frequency data on Nifty (S&P CNX Nifty) fifty companies made available to use by the National Stock Exchange. The database provides tick by tick traded information; the index is also updated instantaneously and its value is recorded.

Since the data coverage is satisfactory to make an investment decision, all the stocks are included for the analysis. The companies that are listed and traded but stopped operations during the time frame are excluded.

HYPOTHESES OF THE STUDY

 There is no significant relationship between risk and return of the selected securities
 There is no significant relationship between values of individual stocks over the selected period
 There is no significant relationship between correlation and portfolio creation
1.12 PERFORMANCE MEASURES USED IN THE STUDY

1. Return: The returns for the various stocks selected for the study are used to compute the market performance of the stock on the basis of the following formulae

\[ R_j = \frac{(P_t - P_{t-1})}{P_{t-1}} \]

Where \( R_j \) is the Rate of stock return, \( P_t, P_{t-1} \) is the Share price in the beginning and at the end for the time period t and t-1 respectively.

2. Mean Return: Mean return of securities is used to calculate the overall return for the stock, calculated as

\[ R_j = \frac{\sum_{t=1}^{N} R_t}{N} \]

\( N= \) total number of time period studied
Market Return of index is calculated as \( R_m = \frac{(M_t - M_{t-1})}{M_{t-1}} \)

Where \( R_m \) is the Rate of Market return, \( M_t & M_{t-1} \) are the market index value for the time period t and t-1 respectively.

Market Mean Return is calculated as \( R_m = \frac{\sum_{t=1}^{N} R_t}{N} \)

\( N= \) total number of time period studied

Monthly average rate of return is used to study the equities and also the performance of the stock index.
Risk parameters used for evaluation

3. **Standard Deviation**: Standard Deviation is used to measure the variation in individual return from average return over a certain period of time. Standard deviation is calculated by using the following formula.

\[
\sigma = \frac{\sum (x - \bar{x})^2}{n}
\]

- \(\sigma\): Standard Deviation,
- \(\sum\): Sum of data set
- \(x\): Value in the data set
- \(\bar{x}\): Mean of all values in the data set
- \(n\): Number of values in the data set

4. **Beta**: Beta co-efficient compares the variability of fund’s return to the market as a whole. It is a relative measure. By convention, market will have beta

Beta is used to measure the market risk. If the funds have beta value above the market, then it is said to have high risk than the market. If it has beta value less than the market, then it is said to have risk less than the market. The beta is calculated by using the formula

\[
\beta = \text{corjm} \sigma_j / \sigma_m
\]

- \(\text{corjm}\): Correlation co-efficient between the security returns and the market returns.
- \(\sigma_j\): Standard deviation of security returns
- \(\sigma_m\): Standard deviation of market returns
LIMITATIONS OF THE STUDY

❖ The researcher focused on the market with the historical information
❖ The researcher has taken a limited period only for purpose of this study
❖ While applying the tools transaction cost, impact cost etc. is not taken into consideration. So it will reflect on the return calculated.
❖ Tools used for the analysis have their own limitations which may have an impact on the study.

CHAPTER SCHEME:

This thesis is organised into five chapters.

❖ **Chapter I** : This chapter gives introduction and design of the study. It includes Importance of the study, Statement of the problem, objectives of the study, Selection of the companies, data used for the study, tools used for analysis, limitations and chapter scheme

❖ **Chapter II** : This chapter provides the concept of risk return analysis and review of literature.

❖ **Chapter III** : In this chapter a brief history of the companies selected for the study is explained.

❖ **Chapter IV** : This chapter deals with discussion pertains to analysis and interpretations.

❖ **Chapter V** : This chapter lists out the findings, suggestions and Conclusion.