

Summary

Background

There is no denying the fact that Indian stock market has changed immensely. Earlier than independence, the Indian stock market was underdeveloped because at that time there were very few companies and the number of securities traded in the stock exchange was smaller. But after Independence, the Indian stock market has broadened drastically and the saving and investing are showing on a slow improvement. In the wake of liberalization and globalization of economic policies, the stock markets in the developing countries are undergoing a dramatic change. Firstly, there has been an exponential development in terms of capital raised, number of listed companies. Secondly, the use of technologies is increasing day by day. These changes also effect the investment decisions. After liberalization, there is more suppleness for firms to make their investment decisions. As per as investment decision is concerned, it depends upon different things.

Truly speaking, in the era of modernization, multifarious opportunities are available for investors for investing. The craze of investing is mushrooming. Investing is not an easy game. In simply due to uncertainty, investing is a risky concept. To begin with, there is no denying the fact that risk and return plays a prominent role in investment decision making. As far as theoretical concept of risk-return relationship and the diversification effect is concerned, it is a major ambiguous issue. This issue arouses curiosity in the mind of investors, researchers, academicians and practitioners. A curious investor and researcher may find any information about anything that he/she is interested in.

The concept of risk, return, their relationship and the diversification effect in financial market has broad importance and meaning. These issues have drawn attention of researchers, investors and policy makers that contributes towards the perceptive of the Indian stock market. The attempt of this present research is to analyze the concepts of risk, return and diversification. Various concepts are often considered when making investment decisions. Risk and return relationship is of particular interest of investors especially in the context of portfolio

diversification. Before selecting any security investors should decided about the proportion of asset. The present study is mainly due to the transition economy. During the last few years, many extraordinary and rapid changes have been seen in the Indian capital market. Therefore, due to the changed environment it becomes important to understand the risk-return relationship for Indian equities. The changeable environment offers many opportunities to the investors. Investment has a vital place in today's changing environment.

Statement of the Problem

Significance of the present investigation lies in studying the relationship between risk and return and also studying the diversification effect. The issues of risk, return, diversification are also controversial. It is one that received considerable attention in finance literature. Many researchers have shown positive relationship between risk and return and some have found negative relationship between risk and return. Many studies supported the CAPM model and showed significant relationship between return and systematic risk (Black, Jensen and Scholes 1972). However Manjunatha et al. (2006) in their study showed that CAPM doesn't hold in the Indian context by using a short period and small sample of companies data and it was based on the intercept and slope test. The study of Mahaeshwari and Vanjara (1989) showed that the relationship between systematic risk and actual return were negatively related in a bearish market. There are few studies in India related to risk and return relationship. This study also relates to the risk and return relationship.

The relationship among risk and return in the stock markets has been one of the most investigated topic in financial economics. Although the risk-return relationship is of fundamental importance in economy, the empirical asset pricing literature has not yet reached an agreement on the existence of such a positive risk-return trade off for stock market indices (Balios, 2008). Moreover, every investor wants maximum return and minimum risk. But the main problem is that how investor can make a well diversified portfolio and which type of stocks to be select for constructing a well diversified portfolio.

It is not surprising that this problem has received a great deal of attention. It has major implications for the structure and very existence of financial intermediaries, as well as for the behavior of all investors (Elton and Gruber, 1977). There have been so many securities available for investors for investing and due to the uncertainty most of the securities are risky. Moreover, a portfolio selection is a big problem and diversified portfolio how it makes also a debatable issue. Therefore, the present study also checked the effect of diversification in India. In addition, Bodie (2006) also explains that investor should also keep in mind the macroeconomic variables. As stock market return also effects from large number of factors. It is implant for a researcher to study these factors and examining them the relationship among these factors and stock market returns in depth view. Therefore the present study also examined the relationship among macroeconomic variables and stock market returns in India. Macro economic variables include Industrial Production, Consumer Price Index, Exchange Rate, Money Supply, Call Money Rates etc.

Research Questions

Research questions are therefore, important. No research questions or poorly formulated research questions will lead to poor research. If you do not specify clear research questions, there is a great risk that your research will be unconfused and that you will be unsure about what your research is about and what you are collecting data for (Bryman, 2008). The questions which are usually raised in relation to the risk-return analysis include:

- Is there any relationship between systematic risk and return of individual securities/portfolios?
- Is there a relationship between portfolio size and portfolio risk?
- Is there any effect of diversification on non-market risk?
- How many securities make a well diversified portfolio?
- Is there any significant relationship between macroeconomic variables (Industrial Production, Consumer Price Index, Exchange Rate, Money Supply and Call Money Rates) on stock market returns in India?

Objectives of the Study

The present study relates to the risk and return analysis of some selected securities of BSE-500. It is an attempt to answer the following questions relating to risk and return analysis:

1. To study the relationship between systematic risk (beta) and return of individual securities/portfolios.
 - i. To examine the risk and return of individual selected securities.
 - ii. To examine the risk and return of portfolios.
 - iii. To examine the industry-wise risk and return.
2. To examine the relationship between portfolio size and portfolio risk.
3. To examine the effect of diversification on non-market risk.
4. To study that how many securities make a well diversified portfolio.
5. To examine whether macroeconomic variables (Industrial Production, Consumer Price Index, Exchange Rate, Money Supply and Call Money Rates) have any significant relationship with stock market returns in India.

Explanation of fifth objective is described as below:

Macroeconomic and Industry circumstance might have a greater influence on profits than the firm's relative performance within its industry. In other words, investors need to keep the big picture in mind (Bodie, 2006. p. 581). Inflation affects decisions concerning new investments, investors, working capital, product prices, wages and salaries and even dividend policy (Bedi, 2004. p. 162). On the other hand, (Payne, 2007. p. 297) in their book explained that you have to consider the big picture, or macro conditions. Where is the economy going to be in the next six months to six years? This is important, as you must balance your portfolio. Timing is important, as are anticipation of economic conditions and the direction of interest rates. The stock market return is based on various factors. The defined number of these factors is not well-known so far. There is a lengthy past about the determinants of stock market returns in the empirical capital market literature. The literature suggests that different variables are playing vital

role in the variations in stock market returns. Therefore, the present study also checks the effect of macroeconomic variable on stock market returns in India.

Hypotheses of the Study

On the basis of the above mentioned objectives, the following hypotheses have been framed:

- 1) In order to examine the relationship between risk and return, the following hypothesis has been tested against the alternative hypothesis:

H₁₀ : There is no significant relationship between beta and return (individual securities/portfolios).

H₁₁ : There is a significant relationship between beta and return (individual securities/portfolios).

- 2) To examine the relationship between portfolio size and portfolio risk, the following hypothesis has been tested against the alternative hypothesis:

H₂₀: Portfolio size is positively related to portfolio risk.

H₂₁: Portfolio size is negatively related to portfolio risk.

- 3) To examine the effect of diversification on non-market risk, the following hypothesis has been tested against the alternative hypothesis:

H₃₀: Diversification has no effect on non-market risk.

H₃₁: Diversification has effect on non-market risk.

- 4) In order to examine the relationship between macro economic variables (industrial production, consumer price index, exchange rate, money supply and call money rates) and stock market return, the following hypotheses has been tested against the alternative hypotheses:

H₄₀₁: There is no significant relationship between industrial production and stock market returns in India.

H₄₁₁: There is a significant relationship between industrial production and stock market returns in India.

H₄₀₂: There is no significant relationship between consumer price index and stock market returns in India.

H₄₁₂: There is a significant relationship between consumer price index and stock market returns in India.

H₄₀₃: There is no significant relationship between exchange rate and stock market returns in India.

H₄₁₃: There is a significant relationship between exchange rate and stock market returns in India.

H₄₀₄: There is no significant relationship between money supply and stock market returns in India.

H₄₁₄: There is a significant relationship between money supply and stock market returns in India.

H₄₀₅: There is no significant relationship between call money rate and stock market returns in India.

H₄₁₅: There is a significant relationship between call money rate and stock market returns in India.

All the above mentioned hypotheses, either directly or indirectly, attempts to establish that variation of stock return is only due to variation in stock market index. But in reality, stock return variation may be influenced by many other factors. To test the above hypotheses, we need to estimate different regression models that were based on theoretical models.

Period of the Study

Keeping in view of present study, the main data used in the study is secondary in nature. The present study is for eleven years starting from 1 January, 2001 to 31 December 2011. As discussed in chapter I, this period has been chosen because of huge transition in economy. During this period many

developments took place in the Indian Capital Market. So, a need has been felt to examine the risk and return of Indian equities. In the study, the eleven years data have been used to examine the effect of macroeconomic variables on stock market returns in India.

Sample of the Study

Before going on the sample of the study we should know about the population of the study. In this study, the population includes all the securities that were the part of Bombay Stock Exchange-500 at the time of data collection (May 2012) which was comprised of the different sectors.

The sample size includes a total number of 225 securities and sample population consists of all stocks listed on BSE-500. The study used daily adjusted closing prices of listed 225 securities (see annexure-I) of BSE-500. The selection of stock varies on the basis of the listing in BSE-500, market capitalization, trading volume and the availability of data. This provides us with a sample size of 225 securities. The securities were selected from different industry groups. The studies done in the past used monthly, weekly, quarterly, annual data for the analysis of risk and return. But this study used daily data for the analysis as suggested by Brown and Warner's (1985) who suggests that daily prices are better as compared to the quarterly, monthly and weekly prices. Another reason is that Barua, Raghunathan & Varma (1992) have also favoured the daily data and therefore daily prices data were used in the study. The study also used the monthly data to examine the risk and return of selected securities during the study period. The BSE Sensex is taken as the market proxy. The choice of BSE index securities for because it is a most popular stock exchange and widely used for participants. BSE represents nearly 93 percent of total of market capitalization. Some securities with missing data were also removed from the sample.

In the study, macroeconomic variables effect has also been checked. In order to check the effect of macroeconomic variables on stock market returns, the following variables have been used (Industrial Production, Consumer Price Index, Exchange Rate, Money Supply, Call Money Rates). For the purpose of checking the effect of macroeconomic variables on stock market returns, the

monthly data has been used because there were some difficulties for undertaking the daily data and most of the studies used monthly data for the purpose of checking the effects of macroeconomic variables on stock market returns.

Tools and Techniques for Analysis

The data collected through different sources have been processed and the results are tested with the help of different techniques and models. In the study, for the purpose of checking the relationship between systematic risk and return, the beta for each security was calculated by regressing individually the daily return and monthly return of the securities on the corresponding returns of market index (first-pass regression) during the eleven years period. On the second stage tried to investigate the linear relationship between risk and return by applying the cross-sectional (second-pass) regression of individual security returns of its beta estimates calculated as of the first pass regression. After that, in the study 15 portfolios of 15 securities each are made after arranging the securities in ascending order of their beta values during the study period. After that the test of risk-return relationship is checked by employing the cross-sectional regression equation by using portfolio return as dependent variable and portfolio betas as independent variable. In the study, the diversification effect has been checked with the help of the applications of Markowitz model. For the purpose of testing the relationship between portfolio size and portfolio risk, the regression equation suggested by Al Suqaier and Al Ziyud (2011) has been used in the study. For the purpose of testing the effect of macroeconomic variables on stock market returns in India, the following techniques econometric techniques (Unit Root Test, Cointegration Test and Vector Error Correction Model) has been applied in the study.

Data Collection Sources

The study is based on the secondary data and the data relevant for this study has been collected from various websites such as www.bseindia.com, www.yahoofinanceindia.com and the Centre for Monitoring of Indian Economy (CMIE) prowess database software. In this study, term deposit rates were used as risk-free rate.

The present study also checked the effect of macroeconomic variables on stock market returns. In the study for the purpose of checking the effect of macroeconomic variables on stock market returns, the monthly closing prices of BSE-Sensex has been used. Data for macroeconomic variables has been collected from the website of Reserve Bank of India.

Scope/Usefulness of the Study

- The present research work aims to study the Risk and Return analysis of some selected securities of BSE-500. This study would be useful for investors to take rational decisions and for showing that applicability of CAPM helps an investor to take better quality decision.
- The study is immensely valuable to investors in this sense it provides the details of the relationship between risk and return and also provides the details of the effect of macroeconomic variables on stock market return. The use of different tools to examine the relationship between macroeconomic variables provides econometric holds.
- This study would be useful for portfolio managers, financial analysts and policy makers because financial analysts provide guidance to business and individuals making investment decisions.
- The effect of macroeconomic variables (industrial production, consumer price index, exchange rate, money supply, call money rates) on stock market return provides implications for monetary policy and portfolio management practices.
- The study covers a longer period and large number of securities than the existing studies. Its findings may be more useful as compared to earlier studies.

Delimitations of the Study

The present study based on the secondary data as mentioned above. As every study have some limitations. The following important limitations have been noted while conducting the present study:

- The present study is restricted only to eleven years that is from 1 January 2001 to 31 December 2011. What happened thereafter is outside the scope of the study.
- The study is based on the secondary data which has been taken from different websites in India under study, therefore its findings depends entirely on the accuracy of such data.
- The study has used only daily data and monthly data. It ignored weekly data.
- It is limited to the BSE-500 selected stocks. It could have been better if we had used BSE-100, BSE-200 and NIFTY etc.
- The study has used macroeconomic variables namely, industrial production, consumer price index, exchange rate, money supply, call money rates. It ignored other different financial and macroeconomic variables.
- The present study is largely based on different statistical and econometric techniques and they have their own limitations which also apply to the study.

Findings and Conclusion of the Study

The present study concerned with the risk-return analysis of Indian equities. To summarize, the overall results are divided into three parts:

Part I

In order to find out whether there is any significant relationship between return and systematic risk of selected securities, the first-pass regression model has been used. The significance of beta has been checked through the p-values. If p-value is less 0.05 and 0.01 in that case the null hypothesis would be rejected and alternative would be accepted. Therefore, in the present study, in case of daily data, it is founded that out of 225 securities, 146 coefficients are positive and significant at 1 percent level of significance and another 26 are positive and significant at 5 percent level of significance. It also found that 53 beta coefficients are positive but showing insignificant results. Out of two hundred twenty five securities, one hundred seventy two securities beta is statistically

significant which means the null hypothesis of the relationship between beta and return (Hypothesis 1) in case of individual securities is rejected and the alternative (Hypothesis 1) is accepted. That showed there is a significant relationship between beta and return in the case of individual securities. In case of daily data, the overall results of the first-pass regression model showed that 76.44 percent indication of positive risk-return relationship exists during the study period.

The significance of beta has also been checked by using the monthly data. In case of monthly data, in order to find out whether there is any significant relationship between return and systematic risk of selected securities, the first-pass regression model has been used. The significance of beta has been checked through the p-values. If p-value is less 0.05 and 0.01 in that case the null hypothesis would be rejected and alternative would be accepted. Therefore, in the present study, in case of monthly data, it is founded that out of 225 securities, 96 coefficients are positive and significant at 1 percent level of significance and another 17 are positive and significant at 5 percent level of significance. It also found that 112 beta coefficients are positive but showing insignificant results. Out of two hundred twenty five securities, one hundred thirteen securities beta is statistically significant which means the null hypothesis of the relationship beta and return (Hypothesis 1) in case of individual securities is rejected and the alternative (Hypothesis 1) is accepted. That showed there is a significant relationship between beta and return in the case of individual securities.

In case of monthly data, the overall results of the first-pass regression model showed that 50.22 percent indication of positive risk-return relationship exists during the study period. To sum up the results of first-pass regression model, it may conclude that 76.44 percent (daily data) and 50.22 percent (monthly data) indicate the positive risk-return relationship. The overall results of the first-pass regression model showed that the daily data provides the higher indication of the positive risk-return relationship as compared to the results of first-pass regression model on the basis of the monthly data.

The risk-return relationship has been tested with the help of cross-sectional regression model (individual securities). By using the

cross-sectional regression equation (daily data), it found that there exists a positive relationship between the risk and return. In that case the slope coefficient was positive and significant at 5 percent level of significance that holds positive risk-return relationship. On the basis of the p-value, we found that the slope coefficient is significant. In this case the value of p is less than 0.05, so we reject the null hypothesis and accept the alternative hypothesis. That showed positive relationship exists between risk and return. But we can't ignore here the value of the R-square. Here the value of the R-square is 0.027 that showed a poor explanatory power of beta for the excess returns. Therefore, the results of the cross-sectional regression equation (individual securities) concluded positive but weak relationship exists between return and systematic risk. By using the cross-sectional regression equation (monthly data), we also found that the value of R-square is 0.075 that also showed poor explanatory power of beta for the excess return. Therefore, the results showed positive but weak relationship between return and systematic risk. It also found that the value of R-square is higher in case of monthly data as comparison to daily data. Positive risk and return relationship also showed by the study of Fama and Macbeth (1973), Harrison and Zhang (1999), Dhankar and Kumar (2006), Mittal and Mittal (2006), Leon et al. (2007) etc.

The test of risk-return relationship is also checked by employing the cross-sectional regression equation by using portfolio return as dependent variable and portfolio betas as independent variable. Portfolios expected return is linear to its beta that implies by the Capital Asset Pricing Model (CAPM). So, Capital Asset Pricing Model (CAPM) generates expected return, but test of the model use realized returns. In order to find out whether there is any significant relationship between portfolio beta and portfolio return is tested with the help of cross sectional (second-pass) regression model. The significance of beta has been checked through the p-values. If p-value is less 0.05 in that case the null hypothesis would be rejected and alternative would be accepted. It is observed that there exists a positive relationship between the portfolio risk and portfolio return. Here the slope coefficient is positive and significant at 5 percent level of significance that holds positive risk-return relationship. On the basis of the p-value, we found that slope coefficient is significant. In this case the value of p

is less than 0.05, so we reject the null hypothesis and accept the alternative hypothesis. That showed positive relationship exists between risk and return. But we can't ignore here the value of the R-square. Here the value of the R-square is 0.09 (daily data) that showed a poor explanatory power of beta for the excess returns. Therefore, the results of the cross-sectional regression equation (portfolios) also concluded positive but weak relationship exists between portfolio return and portfolio risk. In case of monthly data, the study found that the slope coefficient is also positive and significant at five percent level of significance that holds positive risk-return relationship. In case of monthly data, we found that the value of R-square is higher as comparison to daily data R-square value. The monthly R-square value is 0.47 that showed 47 percent explanatory power of beta for the excess returns. The overall results of the cross-sectional regression equation found that the monthly data provides good results in the context of portfolio risk and portfolio return relationship.

Part II

Using data for 225 securities over the period of 1 January 2001 to 31 December 2011, the study showed that as more and more securities increase in the portfolio, the securities risk declines. In the current study to examine the relationship between portfolio size and risk, securities are randomly selected assuming equally weighted portfolios. The results of the diversification effect have been measured by using the Markowitz model. In case of daily data, it is interesting to note that for a single portfolio the portfolio risk was observed to be 12.13 percent and for a two security portfolio, the portfolio risk was observed to be 10.10 percent. The present study also tested the hypothesized relationship between portfolio size and portfolio risk and it is noticed that our results are significant that means we reject the null hypothesis (Hypothesis 2) and alternative hypothesis (Hypothesis 2) is accepted. The results showed that there is a negative relationship between portfolio size and portfolio risk. It revealed that the value of beta is (-0.03) indicated inverse relationship exists between portfolio size and portfolio risk and the coefficients are also significant at 1 percent level of significance. The results of the present study supported the theoretical concept of diversification. The results of the relationship between portfolio size and portfolio

risk also supported the study of Al Suqaier and Al Ziyud (2011). It also showed that as the number of securities in portfolio increases, the portfolios risk as measured by the standard deviation decreases, which indicates the existence of a negative relationship between portfolio size and portfolio risk. The study also concluded that a well diversified portfolio should include 10 to 15 (daily data) securities. The results are also supported the study of Evan and Archer (1968) and Irala and Patil (2007) but in contrast to the study of Gupta and Khoon (2001). The present study concluded that portfolio diversification is applicable in the Indian stock exchange. It revealed that as the number of securities in portfolio increases, the portfolios risk as measured by the standard deviation decreases, which indicates the existence of a negative relationship between portfolio size and portfolio risk. The overall risk reduces from 12.13 percent to 4.12 percent. It shows the reduction of 66.03 percent.

Using the monthly data for 225 securities over the period of 1 January 2001 to 31 December 2011, the study also showed that as more and more securities increase in the portfolio, the securities risk declines. It is interesting to note that for a single portfolio the portfolio risk was observed to be 49.79 percent and for a two security portfolio, the portfolio risk was observed to be 46.52 percent. The monthly data results of the diversification effect concluded that a well diversified portfolio should include 15 to 25 securities. The overall risk reduces from 49.79 percent to 18.89 percent in case of monthly data. The overall results of the study showed that the monthly data provides that a well diversified portfolio must be including fifteen to twenty-five securities but the daily data showed that a well-diversified portfolio must be including ten to fifteen securities. To better understanding of monthly and daily data results, the study concluded that monthly data provides the better results. The investors should take decisions on the basis of the monthly data.

In the context of diversification effect on non-market risk, Portfolio one which includes fifteen least beta value securities that can be categorized the most defensive portfolio and also showed the slightest reaction to the market and the portfolio fifteen which includes the high beta value securities that can be categorized the most aggressive portfolio and also show the greater reaction to

the market. The value of $1-R^2$ is decreasing in daily as well as monthly data. It showed that the non-market risk decline with diversification. Therefore, the results of the diversification effect on non-market risk in India showed valid results. So, the null hypothesis of diversification effect on non-market risk (Hypothesis 3) is rejected and the alternative hypothesis of diversification effect on non-market risk (Hypothesis 3) is accepted. That showed there is a significant effect of diversification on non-market risk. The results are also consistent with theory and the study of Dhankar and Kumar (2006). On the other hand, the study of Bello and Adedokun (2011) examined the risk-return characteristics of Nigerian quoted firms and revealed that little scope for diversification in this market.

Part III

The study also tested the effect of macroeconomic variables on stock market returns in India. The relationship between macroeconomic variables and stock market returns has been checked with the help of econometric techniques. ADF test is used to see whether all of the variables have unit root or not. For this purpose, two tests namely Augmented Dickey Fuller (ADF) test and Phillip Perron (PP) has been applied. With the help of ADF and PP test, it found that BSE Sensex's returns, Industrial Production, Consumer Price Index, Exchange Rate, Money Supply, Call Money Rates (at first difference), the ADF Calculated Value (-18.44111), (-8.050551), (-8.037024), (-15.99750), (-8.476046), (-10.55269) is less than the critical values at 1%, 5% and 10% level of significance. It means BSE Sensex's returns, Industrial Production, Consumer Price Index, Exchange Rate, Money Supply, Call Money Rates series has no unit root problem. It means the BSE Sensex's returns, Industrial Production, Consumer Price Index, Exchange Rate, Money Supply, Call Money Rates series is stationary. Though the results of ADF and PP test it can be concluded that all of the variables are stationary at first difference.

The next step was in this study is to test for cointegration. If all of the variables are stationary at same order, then cointegration test have been used. The value of λ_{trace} (trace statistics) corresponding to $r = 0$ is 100.0256 which is higher than the corresponding critical value of 94.15 at 5% level of significance. The

value of λ_{trace} (trace statistics) corresponding to $r = 1$ is 69.86768 which is also higher than the corresponding critical value of 68.52 at 5% level of significance. The value of λ_{trace} (trace statistics) corresponding to $r = 2$ is 52.79181 which is higher than the corresponding critical value of 47.21 at 5% level of significance. The value of λ_{trace} (trace statistics) corresponding to $r = 3$ is 30.29271 which is higher than the corresponding critical value of 29.68 at 5% level of significance. The value of λ_{trace} (trace statistics) corresponding to $r = 4$ is 16.813171 which is higher than the corresponding critical value of 15.41 at 5% level of significance. The value of λ_{trace} (trace statistics) corresponding to $r = 5$ is 4.394755 which is higher than the corresponding critical value of 3.76 at 5% level of significance. Hence the conclusion is that the null hypothesis of no cointegration is rejected in favour of the alternative of cointegration including all the variables. That showed long run relationship exists between macroeconomic variables and stock market returns in India. The same conclusion was also obtained on the basis of λ_{max} statistics because in this case computed values for $r = 0, r = 1, r = 2, r = 3, r = 4, r = 5$ i.e., 62.314, 61.231, 35.246, 28.549, 17.8135, 11.35711 also higher than the corresponding critical values of 40.30, 34.40, 28.14, 22.00, 15.67, 9.24. Though λ_{trace} and λ_{max} results, it is clearly found that long run relationship exist between stock market returns and macroeconomic variables.

To sum up (the relationship between macroeconomic variables and stock market returns in India), found that there is a long run relationship exists between all of the macroeconomic variable and stock market returns in India over the period and with the help of Vector Error Correction Mode (VECM), found that there is no shot term effect between macroeconomic variables and stock market return in India over the period. Therefore we concluded that the null hypothesis of the relationship between the industrial production and stock market returns in India (Hypothesis₄₀₁) is rejected and the alternative hypothesis of the relationship between the industrial production and stock market returns in India (Hypothesis₄₁₁) is accepted. That concluded there is a significant relationship between the industrial production and stock market returns in India. Moreover, it

also concluded that the null hypothesis of the relationship between the consumer price index and stock market returns in India (Hypothesis₄₀₂) is rejected and the alternative hypothesis of the relationship between the consumer price index and stock market returns in India (Hypothesis₄₁₂) is accepted. That concluded there is a significant relationship between the consumer price index and stock market returns in India. In addition, it also concluded that the null hypothesis of the relationship between the exchange rates and stock market returns in India (Hypothesis₄₀₃) is rejected and the alternative hypothesis of the relationship between the exchange rates and stock market returns in India (Hypothesis₄₁₃) is accepted. That concluded there is a significant relationship between the exchange rates and stock market returns in India. Moreover, it also concluded that the null hypothesis of the relationship between the money supply and stock market returns in India (Hypothesis₄₀₄) is rejected and the alternative hypothesis of the relationship between the money supply and stock market returns in India (Hypothesis₄₁₄) is accepted. That concluded there is a significant relationship between the money supply and stock market returns in India. In addition, it also concluded that the null hypothesis of the relationship between the call money rate and stock market returns in India (Hypothesis₄₀₅) is rejected and the alternative hypothesis of the relationship between the call money rates and stock market returns in India (Hypothesis₄₁₅) is accepted. That concluded there is a significant relationship between the call money rates and stock market returns in India. The overall conclusion of the relationship between macroeconomic variables and stock market returns in India found that over the period, the study showed, there is a long run relationship exists between macroeconomic variables and stock market returns in India.

Conclusion of the Study

Different securities of the BSE-500 have been offering different returns at the given level of risk. The study was about the risk and return analysis. This study has its own importance because we know that in the era of modernization, multifarious opportunities are available for investors for investing. The craze of investing is mushrooming. Investing is not an easy game. In simply due to uncertainty, investing is a risky concept. To begin with, there is no denying the

fact that risk and return plays a prominent role in decision making. As far as theoretical concept of risk-return relationship and the diversification effect is concerned, it is a major ambiguous issue. This issue arouses curiosity in the mind of investors, researchers, academicians and practitioners. A curious investor and researcher may find any information about anything that he/she is interested in. The study found positive but weak relationship between risk and return. But one of the important thing is that the study checked the risk-return relationship only one the basis of the slope test. We can also used different other Capital Asset Pricing Models. Therefore, this study could be improved with the help of testing other Capital Asset Pricing Models and the latest econometric techniques. On the other hand, the study found there is an inverse relationship exists between portfolio size and portfolio risk. The results of the relationship between portfolio size and portfolio risk are also consistent with the theory. So, here we can't deny the theory significance. The testing of diversification effect on non-market risk in India during the study period of 1 January 2001 to 31 December 2011 also provided the consistent result of the past studies. That showed during the study period, there is a significant effect of diversification on non-market risk in India.

In addition, after reviewed many articles, we found that many of the researchers explained in their study that if there exist long run relationship among macroeconomic variables and stock market returns, that are also linked with the diversification situation. That showed if long run relationship exists among macro economic variables and stock market returns that showed on that period investors can take the benefits of diversification in long run. In the study, we found long run relationship exists among macroeconomic variables and stock market returns in India during the study period of 1 January 2001 to 31 December 2011. The study concluded that investors can take the benefits of diversification situation in long-run. Thus, it concluded that investors should invest for long-run. The study showed that Indian stock market are having long run relationship with macroeconomic variables which employed that macroeconomic changes can be used to predict the stock prices changes in the Indian stock market. The overall results of the study concluded that all of the variables are playing a vital role in explaining the stock market performance. The Indian stock market is still

showing some dramatic changes. So the policy makers should keep in mind all of these points during the implementation of the policies.

The study is immensely valuable for investors in this sense it provides the details of the relationship between risk and return and also provides the details of the effect of macroeconomic variables on stock market returns. The use of different tools to examine the relationship between macroeconomic variables provides econometric holds. This study would be also useful for portfolio managers, financial analysts and policy makers because financial analysts provide guidance to business and individuals making investment decisions. The effect of macroeconomic variables (industrial production, consumer price index, exchange rate, money supply, call money rates) on stock market return provides implications for monetary policy and portfolio management practices.

Suggestions

In the scenario, the investors is searching for an investment instrument with the help of which, investors can get returns, without taking too much risk. If the following suggestions are followed by investors, they can take a proper decision for investment and also they can earn maximum return with a minimum risk level. The suggestions are:

- (1) If investors want to choose a right company to invest their funds, the investors should analyze the market on a continuous basis.
- (2) Diversification is also important athwart market environments-the longer your investment period, the better it would be.
- (3) Not only increase in number of securities in portfolios diversifies the risk but also investors should select the securities with awareness. An investor can gain through diversification if two securities are less than perfectly correlated.
- (4) Time horizon takes place at superior for investment decision. Theory also suggests that investment decision could be better across longer time-periods of seven years to ten years.

- (5) One more important thing is that some risks such as monsoon, global recession can't be eliminated through diversification. So still the combination of securities in security market can be risky.
- (6) If you want to be successful investor, you should have patience because patience is the key of success.
- (7) Investors should read all the selected securities information carefully.
- (8) The present study also advice to investors that always diversify your portfolio and your investment is in equity, always do investment for long run and also do investment in a systematic way. One of the most important reason is for that there are always fluctuations in the market and the losing money possibility decreases as the time period of investment increases.

Scope for Future Research

In the study the risk-return relationship was checked on the basis of slope test. The study considered beta as the influencing factor on the return. Further research could be made to study the multifactor model on the same description. Moreover, further research could be made to analyzed the risk and return of different securities on the basis of daily, weekly, monthly, quarterly, half yearly data, yearly data and can check that the mean return and risk of different intervals are equal or not. It should be checked with the help of individual securities and with the help of industries data. Moreover, we can also test the applications of CAPM (Capital Asset Pricing Model) with the help of econometric techniques. The effect of diversification on r-square values deserves the further analysis. There is a need to carry out more research regarding this study.

Apart from these, further research should be conducted to study the impact of macroeconomic variables, financial variables on systematic risk in India. Tang and Shum (2003) suggested that further research could be applied to test whether economic variables can work better under the conditional framework based on up and down markets. On the other hand, the study can be further tested

on the conditional and unconditional relationship between beta and return and also the further research could be applied to test the other asset pricing models in the Indian stock market and a comparative study of different asset pricing models should be used for details analysis in the Indian stock market. Further research should be made an attempt to examine the relationship between return and kurtosis, skewness, standard deviation, total risk and covariance.

Further research could be analyzed to study the effect of macroeconomic variables on the various sectors in the stock market of Indian Economy. The relationship between macroeconomic variables and stock prices can be tested for other countries and we can make a comparison of different countries results to see the difference among different countries results and can make a conclusion on the behalf of the results. Moreover, the importance of macroeconomic shocks for sector indices of the Indian stock market also remains future research issue. Further research could be analyzed to study the investor's perception of risk and return in different stocks. These issues remain for our future research.