CHAPTER: II

FRAME OF REFERENCE

This chapter will be the guide through the theory associated with the Modern Portfolio Theory and other theories on which these kind of relevant researches are done. This chapter provides different researches outcome which can be used in this thesis.

CHAPTER INDEX

<table>
<thead>
<tr>
<th>Sr no.</th>
<th>Particular</th>
<th>Page No</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Introduction</td>
<td>32</td>
</tr>
<tr>
<td>2.2</td>
<td>Literature review on Portfolio Management</td>
<td>33</td>
</tr>
<tr>
<td>2.2.1</td>
<td>Book Review of Portfolio Management</td>
<td>33</td>
</tr>
<tr>
<td>2.2.2</td>
<td>Article Review of Portfolio Management</td>
<td>35</td>
</tr>
<tr>
<td>2.3</td>
<td>Article Review of practical Application of portfolio management theories</td>
<td>40</td>
</tr>
<tr>
<td>2.4</td>
<td>Literature review on stock Exchange of India[ NSE &amp; BSE ]</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>References</td>
<td>57</td>
</tr>
</tbody>
</table>
2.1 INTRODUCTION

Review of literature is supposed to show that you understand how your project fits into the grand scheme of things in your subject. Here, I go through in literature of portfolio management and performance appraisal in a large context. For this research study, I have read and referred some related researches has been conducted in the past.

The expectation in research study is not that the thesis demonstrates a complete survey of all the literature in the field, but rather that it summarizes the relevant literature to justify the validity of the main ideas of the study in practice. Therefore, the challenge in this chapter is to synthesize the totality of the current literature to the point where only the most relevant aspects from the existing body of knowledge that directly apply to the study are reported on.

This also suggests focusing on the more practical, rather than the theoretical, body of knowledge in the field while still demonstrating a command of the relevant literature. However, each individual section cannot purport to be a complete review of the literature in that discipline, but rather each is a summary of the literature relevant to this study. In this chapter, a wide range of literature on Indian and global economy, especially performance appraisal and portfolio management the relationship between them will be examined based on globalization and sustainability theories are as under.
2.2 LITERATURE REVIEW ON PORTFOLIO MANAGEMENT

2.2.1 Book Review on Portfolio Management

Investment analysis and portfolio management (2000) this book retains its traditional strengths and capitalizes on new developments in the investments areas to make it the most comprehensive investment textbook available. It also includes the latest updates exists in capital market and in currency. This book provides the opportunity to enhance the supplement products offered to instructor and students who use it. It also provides websites for downloadable ancillary and resource materials for instructors and students. It also provides the test bank of questions for evaluation.

Portfolio Management (2003) this book is written to help investment practitioners as well as students. It covers fundamental analysis, technical analysis and modern portfolio theory and show how these can be used to evaluate securities and to design and manage portfolios, it illustrated all the examples from Indian capital market. It kept the use of mathematics to a minimum and whenever necessary it separately disclose in appendices. This book draws upon a large number of books, papers and articles which disclose as bibliography.

Security analysis and Portfolio Management(2003) This book becomes helpful to them who are beginners in the area of portfolio management and security analysis. This book is divided into 12 chapters. The first five chapters gives knowledge about concept and basic principles, techniques and theories of security analysis while remaining gives knowledge regarding portfolio, it’s construction, process, measurement etc. this book is helpful for graduate and post graduate student including researcher scholars. Hence, it
will help the reader to develop skills to understand, analyze and point out analytical techniques of securities for an effective selection of portfolio.

Portfolio Selection and investment (2007) to benefit retail and institutional investors fund managers, researcher and students, the book examines the applicability of Markowitz’s mean-variance theory and Sharpe’s single index model in the Indian Security market. It also presents the explanatory variables affecting the market price of shares. This book is divided into seven chapters. While the first chapter is introductory, the second chapter reviews the relevant literature and describes the research methodology used. The third chapter presents the trends and development in the Indian security market. The fourth chapter is devoted to construction of optimal portfolios using Markowitz’s mean-variance model and their evaluation using risk-adjusted measures. The fifth chapter deals with the construction of optimal portfolios using Sharpe’s model and their evaluation using risk-adjusted measures. The sixth chapter presents the impact of corporate financial variables in the stock prices and the last chapters provides the summary of findings along with conclusion drawn based on them.

Investment analysis and portfolio management (2009) this book contains modern development in investment which helps to improve your skill in managing investment. It helps the student of graduate of post graduate as well as investment practitioners like equity researcher, portfolio managers, investment councilors corporate treasurers. The book can be divided into 7 parts just like introduction, concept and methods, modern portfolio theory, fixed income securities, equity shares derivatives, other investment options and portfolio management also provides spreadsheet analysis which used extensively in practice.

Investment analysis and Portfolio management (2011) The subject of investment analysis is part of the wider subject of portfolio management. This book aims at covering the whole gamut of operations of investment analysis and portfolio management within a short space and in a brief manner. This has resulted in keeping the theory to the minimum
and give greater emphasis in the practical aspects and factual state of affairs. This book covered all the aspects of meaning, measurement, methods of portfolio and investment and equity and debenture valuation through the balance sheet analysis, valuation of securities, growth models, bond valuation and bond instruments, etc.

Security analysis and Portfolio management (2012) This book deals with basic concept of investment in securities such as bonds and stocks, and management of such assets. It is not only discuss various aspect of portfolio management, ranging from analysis, selection, revision to evaluation of portfolio, but also elaborates on financial derivatives, securities market and risk evaluation that help in understanding the trading system better and making quality investment decisions. Besides explaining the theory of portfolio management that comprises fundamental and technical analysis, shares and bond valuation, efficient market theory and the capital asset pricing model, the book provides a detailed analysis of the latest developments in securities trading.

2.2.2 Article Review on Portfolio Management

Albert Mentink(2005) examines whether the ‘optimal ‘bond portfolio are really an improvement by analyzing the characteristics of the individual bonds in the optimal portfolio. Moreover, the composition of such an optimal portfolio is very sensitive to small changes in the mean forward price of its main constituents. As a risk measure we use the conditional value at risk, which at a given percentile equals the expected value of the losses that exceed the value at risk also provides information about the losses larger than the value at risk. Furthermore, the conditional value at risk can be optimized using linear programming.[1]

Rakesh Kumar and Raj s Dhankar(2008) advocates the relationship between risk and return and also examines the possibility of diversification effect on portfolio risk, which is the composite of market and non-market risk. The study based on daily, weekly,
and monthly adjusted opening and closing prices of BSE 100 composite portfolios for the period of June 1996 through May 2005. The findings suggest that the relationship between portfolio return and risk is very weak, based on daily return. However, Portfolio risk and return exhibit a high degree of positive relationship when monthly return is used. Portfolio non-market risk shows a declining tendency with diversification.[45]

Mark Grinblatt and Sheridan Titman (2010) include the problem of identifying proper benchmark portfolio the possibility of overestimating risk because of market-timing ability, and the failure of informed investors to earn positive risk-adjusted returns because of increasing risk aversion. The article argues that these need not be serious problem for getting perfect portfolio and its performance evaluation. [29]

Prof. Y. Rama Krishna(2010) This article includes HPR, Daily and annualized Returns, Unsystematic Risk and correlation among the stocks belongs to similar industry type of S&P CNX 500 was considered as market index. This study consider 244 days of trading of 31 December 2008 to 31st December 2009. Returns are calculated using the continuous compounding method and Correlation analysis used for the movement of stock market. A positive correlation was found among the stock and market index.[60]

S.M. Tariq Zafar, D.S. Chaubey, and Shruti Nagar (2010) Every investor has different thinking to invest in stock which may give them maximum return with lesser or no risk. So, they want a portfolio which provides maximum return. The main objective of this paper is to analyze the relationship between risks, return, and diversification effect on portfolio risk with composite of market and non-market risk. For the purpose 25 stock of S&P nifty have been analyzed on the basis of portfolio beta and portfolio return. The first part of paper gives an insight about the portfolio, risk return and diversification and its various aspects while the second part consists of data and their analysis.[57]
Denis Chaves, Jason Hsu, Feifei Li, and Omid Shakernia Heuristic (2011) undertake most of the strategies use for a portfolio. It finds that the traditional portfolio construction does not consistently outperformed model pension fund portfolio anchored 60/40 equity/bond portfolio structure. Although risk parity performs on par with equal weighting, it does provide better diversification and then we allocate asset. Thus, to execute risk parity successfully, the careful selection of asset classes is critical, which, for the time being, remains an art rather than a formulaic exercise based on theory.[17]

Richard Grinold (2011) provides a general framework for the description of various aspects of a portfolio using a set of factors. The work is cousin to the well-worn topic of performance analysis and attribution, and in that sense, is fairly represented as being old wine in new bottles—the scope is much more general, however. Grinold first provides a theoretical structure with a model that describes various aspects of a portfolio as either the allocation of a portfolio’s variance or as the covariance of two portfolios. Here researcher takes a portfolio-centric approach and explains all of the results in terms of the risk and correlation of portfolios. The expanded framework and portfolio focus opens up a wide range of problems that can be studied with the same framework. The researcher uses examples to illustrate what the methodology can accomplish and as a guide to sense when we are asking too much from the model.[52]

Ashish Garg and Ajay Chauhan (2012) points out the impact of the developed world market on the Indian industrial portfolios’ return by taking returns of Dow Jones index and Morgan Stanly Composite Index (MSCI) as representatives of the developed world markets’ returns, and returns of various sectoral indices, constructed by BSE, as representatives of the Indian industrial portfolios’ return. For the purpose, a set of parametrical and econometric tests are employed on daily data, from January 2000 to December 2009. The findings show that auto, metal, banking, healthcare, technology and real estate are the most affected sectors by the US market and developed world markets. The study also reveals that the Indian markets also influence the developed world markets.[04]
Lourence Wormald and Elmarie van der merwe (2012) deals with the relationship between conventional shrinkage approaches to the construction of the covariance matrix for portfolio optimization. Here, we use Quadratic constraints on each part of the total risk (variance) measure, such as the systematic or specific risk associated with risk factor. For examine the practical value of this approach, using a well documented set of alphas, we set out the result of 13-year simulation exercise over the Russell 3000 Growth U.S. equity universe. And the results shows the effect of constraints on decline on covariance matrix related with span part of alpha will result in different portfolio allocations.[27]

Edward Qian (2012) argues analytical results regarding portfolio rebalancing and the associated diversification returns for different kinds of portfolios. He analyzes diversification returns of risk parity portfolios. His numerical examples show that diversification return is, in general, positive for leveraged risk parity portfolios when leverage ratio is not too high, in addition, he shows that low correlations between different assets are crucial in achieving positive diversification return and reducing portfolio turnover for risk parity portfolios.[19]

Dhanraj Sharma (2013) reviewed the samples consists 10 growth oriented-open ended-equity mutual fund schemes from 5 public and 2 private mutual fund companies. Results are tested through risk-return analysis, Co-efficient of variation, Treynor’s ratio, Sharp’s ratio, Jensen’s measure, Fama’s measure and regression analysis. The data used is monthly closing for the study period of April 2007 to march 2012. The risk return analysis revealed that out of 10 schemes 3 have underperformed the market, 7 are found to have lower total risk than the market and all the schemes have given returns higher than risk free rates. The regression analysis suggests that benchmark market return index has statistically significant impact on mutual fund return at 5% level of significance. [18]
Kumar Gaurav and Pitabas Mohanty (2013) had studied Traditional portfolio theory assumes that when the returns are not jointly normally distributed then the mean-variance efficient portfolio does not maximize the utility of the investor. In addition to mean-variance, the investors also need to consider skewness, the third moment of return distributions. Using nine years’ monthly returns data for the NSE’s CNX nifty stocks, we attempt to create portfolios which maximize returns, minimize variance and maximize skewness at the same time. Results show substantial improvement in portfolio performance when we consider skewness in addition to mean and variance.[25]

Nicole Branger, Linda Sandris Larsen(2013) had focused in the findings are related that there are pronounced differences between ambiguity aversion with respect to diffusion risk and jump risk. Ignoring uncertainty with respect to jump risk causes larger losses in an incomplete market, whereas ignoring uncertainty with respect to diffusion risk is more severe in a complete market. For a deterministic jump size we show that the loss from market incompleteness is always increasing in the level of uncertainty aversion with respect to one risk factor and decreasing in the level of uncertainty aversion with respect to the other risk factor.[39]

Mark C. Szigety (2013) reviewed framework for evaluating candidate rebalancing strategies within the context of organizational objectives and concerns. It provides acknowledges the usefulness of secondary sales, and of modeling cash flows as stochastic processes. The author finds that simple commitment and sales rules that essentially depend only on distance from the target work reasonably well, but that the precise formulation of these rules depends on specific situation.[30]

Rakesh Gupta and Parikshit K. Basu(2009) conducted study on changing global financial environment and emergence of new economic powers in recent decades, diversification of investment portfolios at country and sector levels assumed additional
significance. Optimum portfolio selection within a capital market is primarily based on the best risk-return trade-off among the industry sectors. Literature suggests that much of market volatility can be attributed to substantial increase in sector specific and sub-sector specific risks. This research has estimated the dynamics of correlations of stock market returns between industry sectors in India using Asymmetric DCC GARCH model and tested efficient portfolios that generates returns above the market average. Analysis of daily and monthly market data for the period April 1997 to April 2007 on a sample of 10 industry sectors selected randomly indicates that investors can substantially improve their reward to risk as compared with the market returns. Major contributions of this research are twofold. It used a computationally efficient model for estimating correlations that can incorporate the changes in correlations over time and it applied the model for the Indian market where research is extremely inadequate.[46]

2.3 ARTICLE REVIEW OF PRACTICAL APPLICATION OF PORTFOLIO MANAGEMENT THEORIES

Saravanan A. and Natarajan P.(2012) attempts to construct an optimal portfolio by using Shapre's Single index model. For this purpose NSE, NIFTY and all the 50 stocks have been used as market index for preparing portfolio. The daily data for all the stocks and index for the period of April 2006 to December 2011 have been considered. The proposed method formulates a unique cut off point (Cut off rate of return) and selects stocks having excess of their expected return over risk free rate of return surpassing this cut-off point. Percentage of investment in each of selected stocks is then decided on the basis of respective weights assigned to each stock depending on respective beta value, stock movement variance unsystematic risk, return on stock and risk free return vis-a-vis the cut off rate of return. The optimal portfolio consists of four stocks selected out of 50 short listed scripts, giving the return of 0.116 %. [54]
Resnik, Bruce L(2010) discussed the possible failure of the modern portfolio theory (MPT), which quantified investment risk and diversified a portfolio by combining investments with different historical performance characteristics, in the credit crisis in 2010. MPT investors reportedly suffered losses in equities, fixed-income securities and hedge funds when the crisis hit. It is stated that MPT failed to consider the real world risk of price and that it hindered tactical or strategic investing and focusing on assets that will likely appreciate in the future.[51]

Dr. Rachna Agarwal and Jyoti Mangla (2014) argues that Since the birth of the Capital Asset Pricing Model (CAPM), enormous efforts have been devoted to evaluate the validity of this model. No one can deny its unique breakthrough and valuable contribution to the world of financial economics. Some empirical studies conducted, have appeared to be in harmony with the principles of CAPM while others contradict the model. These differences in previously conducted studies serve as a major stimulating factor to researchers’ curiosity verify its practical applicability of the CAPM. The aim of this paper is to study if the CAPM holds in the automobile sector in Indian Stock Market (NSE). The present paper is a sincere attempt to find answers of the questions by applying CAPM - Is higher beta yields higher expected return? Is there exist linearity between the stock beta and the expected return? For the same objectives, the paper is focusing to investigate the under & over valued stock of six firms of automobile sector.[48]

Rajan Bahadur Paudel and Sujan Koirala (2006) conducted research to test whether or not Markowitz and Sharpe models of portfolio selection offer better investment alternatives to Nepalese investors. It has been done by applying those models in a sample of 30 stocks traded in Nepalese stock market. The study finds that the application of these elementary models developed about a half century ago offer better options for making decision in the choice of optimal portfolios in Nepalese stock market.[49]
Radhika Desai and Manisha Surti (2013) focused on wise investors invest their valued money in bunch of securities rather than in single security because they want to take advantage of diversification of risk and they want to earn maximum return. Bunch of securities is known as Portfolio and this portfolio should possess minimum risk and maximum return. In this research they construct Sharpe single index optimum portfolio by using data of fifty companies CNX NSE Nifty index for period of 2010-2012[50]

P.varadharajan (2011) points out an optimal portfolio that maximizes the overall return and minimizes the risk associated with the individual stocks using the Sharpe Single Index Model. The study includes 25 stocks from five different sectors. Only the secondary data for the past five years (2005-2006 to 2009-2010) are used in the study. The final portfolio thus constructed includes stocks from more than one sector. Thus even if some of the sectors do not perform well as expected, it will be compensated by the excess returns from the other sectors that exceed the expectation. This is how risk is diversified .This method of construction of optimal portfolio is very effective and convenient as revision of the optimal portfolio can be an ongoing exercise. The existence of a cut-off rate is also extremely useful because most new stocks that have an excess return-to beta ratio above the cut-off rate can be included in the optimal portfolio. Thus this study helps the investors to minimize risk and maximize the return of their investment.[43]

P.Varadharajan and Dr. P Vikkraman(2011) created a Portfolio to reduce the risk of the investors in the stocks or commodities. To create a portfolio the individual risk and returns are evaluated and selected. From the calculation the better stock s are selected to form the portfolio. In this research, the risk and return involved in a banking sector are found. 15 banks were selected and from the calculation based on the William Sharpe index model. After the analysis based on William Sharpe Index model, four banks were selected to form the portfolio. Out of the four the proportion to be invested was also calculated. This analysis was done not considering short sales option. The portfolio was
also analysed, it’s consideration with the sales. From this the low performing stocks are found and can be sold. The out performing stocks can be held for long.[42]

Mr. Sasikanta Tripathy(2013) provides A model of stock returns that decomposes influences on returns into a systematic factor, as measured by the return on the broad market index, and firm specific factors. The relationship is between a security's performance and the performance of a portfolio containing it. The market model states that the security's performance is related to its portfolio's performance, according to its beta. Financial market forecasting is based on certain principles, theories and models to study the financial markets and predict what their future trend or course will be. Changes in stock prices are largely dependent on human opinions and expectations about the future performance of a stock or share. In this paper the author has tried to give a bird's eye view about the concept of Single Index Model given by William Sharpe for the practical application to find out the returns in public sector banks from Indian context. Also the author has analyzed about the correlation of these banks return and market return (Bankex). At last it is concluded by applying ANOVA, whether return from all banks are equal or not.[55]

Dr. P. Nageswari; Dr. M. Selvam; Dr. P. Bhuvaneswari(2013) studied Portfolio analysis considers the determination of future risk and return in holding various blends of individual securities. In the rapidly developing and changing capital markets an average investor finds himself in a fix to make decisions regarding the purchase of securities. Therefore, the present study highlights the optimal portfolio selection using Sharpe's Single Index model, through which a significant reduction in the riskiness or variability of the return of securities can be obtained. It tries to provide guidance for investor’s rescue from this situation. For the purpose of the study, BSE Sensex index and its securities daily closing prices was collected and analyzed from April 2007 to March 2012. The proposed method formulates a unique cut off point (Cut off rate of return) and selects stocks having excess of their expected return over risk free rate of return
surpassing this cut-off point. Percentage of investment in each of selected stocks is then
decided on the basis of respective weights assigned to each stock depending on respective
beta value, stock movement variance unsystematic risk, return on stock and risk free
return vis- a-vis the cut off rate of return. The optimal portfolio consists of six stocks
selected out of 28 short listed scripts, giving the return of 10.91%.[41]

M.Muthu Gopalakrishnan (2014) aims to test whether single index model offers
an appropriate explanation of stock returns on IT stocks. The sample in the present study
consists of 13 actively traded scrips listed in the National Stock Exchange Limited,
Bombay (NSE). The scrips in the sample are selected from NSE IT index. Having tested
using regression on the excess return of S&P CNX Nifty and IT Index it is found that
there is a significant relationship and a good explanation of IT index over S&P CNX
Nifty. In addition to that the study investigated that there are four aggressive stocks
having beta co-efficient of more than 1 such as Moser Baer India Ltd, Oracle Financial
Services Software Ltd, Polaris Software Lab Ltd, Rolta India Ltd. Ultimately it is
recommended that among the sample companies all the stocks are undervalued except
one stock (G T L Ltd.) thus the investors can pick these stocks to revise their
portfolio.[32]

is made here to get an insight into the idea embedded in Sharpe’s single index model and
to construct an optimal portfolio empirically using this model. Taking BSE SENSEX as
market performance index and considering daily indices along with the daily prices of
sampled securities for the period of April 2001 to March 2011, the proposed method
formulates a unique cut-off rate and selects those securities to construct an optimal
portfolio whose excess return to beta ratio is greater than the cut-off rate. Then,
proportion of investment in each of the selected securities is computed on the basis of
beta value, unsystematic risk, excess return to beta ratio and cut-off rate of each of the
securities concerned.[36]
A R Dani, Nusarat Ali, Suresh Simhadri and Dakshina Murthy (2012) had discussed assets include real as well as financial assets. However, in the context of this paper, the discussion is restricted to financial assets or securities. It is better than the returns of the five best performing mutual funds for the period 2006-2009 as well as portfolios constructed using CAPM approach. The Min-Max approach ensures high level of returns, which are better than index, equal allocation, best performing mutual funds, and a managed fund. Future work would include incorporating transaction cost in the model.[03]

Aalberts, Robert J., Poon, Percy S (2011) arrives at the conclusion that In the 1990s, due to the efforts of the influential American Law Institute and the National Conference of Commissioners on Uniform State Laws, a number of new investment strategies have been submitted for reforming the Prudent Investor Rule, including the very notable modern portfolio theory. By 1995, four large states, New York, Illinois, Florida, and Virginia had adopted statutes incorporating the theory and other general investment philosophies contained in these model laws.

The result of this new direction, which is likely to be repeated in other states, will be positive for both fiduciaries and beneficiaries. Income will, in all probability, increase without undue risk to the principal. In addition, according to Richard V. Wellman, the drafting chairman of the Uniform Prudent Investor Act, there may be a reduction of litigation when conflicting court rulings on what constitutes a prudent investor's duties are eliminated.[01]

Lubatkin, Michael, Chatterjee, Sayan, , (1994) arrives at the conclusion that Executives frequently justify a diversification move by claiming that it reduces a firm’s exposure to cyclical and secular uncertainties, or risk. The accuracy of that claim is not, however, well documented. In fact, very little is known about the relationship between
corporate diversification and risk. Much of what is known is borrowed from modern portfolio theory. Although that theory can provide guidance to a securities manager trying to predict the risk outcomes of stock diversification, it may not be an appropriate guide for predicting the risk outcomes of corporate diversification. This study offers evidence that the evolving theory of strategic management better explains the risk outcomes of corporate diversification.[28]

Edwin J. Elton a, Martin J. Gruber (1997) they have reviewed "Modern Portfolio Analysis" and outlined some important topics for further research. Issues discussed include the history and future of portfolio theory, the key inputs necessary to perform portfolio optimization, specific problems in applying portfolio theory to financial institutions, and the methods for evaluating how well portfolios are managed. Emphasis is placed on both the history of major concepts and where further research is needed in each of these areas.[20]

Neeta banthia(2011) in her Thesis Advocates Construction of portfolio is only part of the battle. Once it is built, the portfolio needs to be maintained. The market values, needs of the beneficiary, and relative merits of the portfolio components can change over time. The portfolio manager must react to these changes. Portfolio management usually requires periodic revision of the portfolio in accordance with a predetermined strategy. The Sample consists of 50 retail investors from various backgrounds. The target customers were only the retail investors who invest in various avenues so as to know about their knowledge and concern regarding the economy, principal invested, investment options, market conditions etc.[37]

One article written by Cowles (1933), examined the outcome from passive versus active managed portfolios. The result from this research was that the managed portfolio underperformed the passive benchmark. Cowles examined return but did not take into
consideration risk, but the Modern Portfolio Theory (MPT) states that risk as well as return must be considered according to Elton and Gruber (1997). This makes the use of risk as an important factor when constructing a portfolio. Markowitz (1959) argues that risk can be minimized but not eliminated, and this without changing a portfolios’ return.[13]

David.L.Scott and William Edward (1990) reviewed the important risks of owning common stocks and the ways to minimize these risks. They commented that the severity of financial risk depends on how heavily a business relies on debt. Financial risk is relatively easy to minimize if an investor sticks to the common stocks of companies that employ small amounts of debt.[15]

Gannon, G.L. (2010) studied the relationship between stock market liquidity and volatility and risk. The paper also deals with time series data by applying “Cochrane Orchutt two step procedures”. An effort has been made to establish a relation between liquidity and volatility in their paper. It has been found that there is a statistically significant negative relationship between risk and stock market liquidity. Finally it is concluded that there is no significant relationship between liquidity and trading activity in terms of turnover.[21]

Chuang (2003) examined the price discovery efficiency of TAISEX (Taiwan Stock Exchange Capitalisation Weighted Index Futures) and MSCI (Morgan Stanley Capital International Taiwan Index Futures) during 1998-99 and found strong statistical evidence of market efficiency in its weak form.[11]

Yang (2001) applied different econometric methods in order to find the optimal variance ratio in the Australian Futures Market during the period 1 January 1988 to 12 December 2000. Specifically, he used the OLS Regression, the Bi-variate Vector Autoregressive model (BVAR), the Error Correction model (ECM) and the multivariate diagonal VEC GARCH model. It was generally found that GARCH time varying hedge
ratios provide the greater portfolio risk reduction but they do not produce the greater profit return. So, it is obvious that is a matter of investor to decide in which product to invest, the less risky or the more profitable.[59]

Gupta and Singh (2006) also made an attempt to investigate the price discovery efficiency of the Nifty futures by considering lengthy time frame and their results showed the evidences that futures market has been an efficient price discovery vehicle.[22]

Melwyn Reo (2001) reviewed the various risks to which the Indian corporate are exposed to and also the corporate risk management policies. He opined that the corporate need to focus on their primary business risks and hedge risks arising from commodity price movements. An appropriate level of risk for a corporate is dependent on how much business and financial risk it is exposed to. A corporate with volatile cash flows and high operational risk may find it appropriate to take on less market risks. A corporate which is exposed to a relatively lower business risk may feel more comfortable in taking on more unhedged financial risk. Ultimately, the corporate may decide to fix the total risk appropriate to it as some percentage of its capital base or the expected earnings.

He opined that the corporate, despite their unlimited life span have limited tolerance to price volatility. The commodity price exposure should be fully hedged because corporate face enough business risk and cannot afford to add further risks. Since all corporate are exposed to commodity price risk, they should maintain a Board approved policy and procedures that outline its risk management strategy. He concluded the article by stating that the underlying objective in any risk management policy should meet the aspirations of the equity holders.[33]

Zhang et al (2010) tests the random walk hypothesis and weak form market efficiency in the VIX futures market using a variety of tests. A unit root in the aggregated market price series suggests that the VIX futures market is efficient. For the individual VIX futures price series, 51 of 54 futures contracts meet the sufficient condition for an
efficient market: the prices are found to follow a random walk either because there is a unit root or because the increments are not correlated. Overall, the market for VIX futures has been efficient since the first day of trading.[60]

Hayk Zayimtsyan was conducted research in July 2006 on the topic of “Optimum portfolio structure for Investments in the International Financial Market: The Example of the Central Bank of America”. The major focal point of the study was theoretical and practical aspect of portfolio construction. For constructing the portfolio he use Markowitz’s mean-variance model. [24]

Suresh Chandra Das and Dr. Bishnupriya Mishra did a research in April 2013 on the topic of “Optimal Portfolio- Does Number of scripts matter?” They use Sharpe Optimal Portfolio technique for portfolio construction. They suggest that analysis of security, portfolios selection and proper management of portfolio will aid in enhancement of investor’s awareness regarding trend and changes that present in the market and helps the investor for investment. Also suggest that optimum portfolio aid in minimizing the risk, without compromising return.

Research done by Rachel Campbell, Ronald Huissman and Kees Koedijk in 1999 on the topic of “Optimal portfolio selection in a value-at-risk framework”. In their study thy develop portfolio selection model. They use US stocks and bond both risky assets in their study and result shows that there is influence of length of time horizon for investment and expected return’s non normal characteristics. Daniel Matilla Garcia conducted research in November 2007 on the topic of “Optimal Portfolio Choice: An Integrated Extreme Risk Management Approach”. In his research he constructed portfolio by using five industry index and use integrated model of Extreme Value Theory, GRACH model and Copulas and which permit them to optimize a portfolio minimizing extreme risk.

In year 2013 on the topic of “Diversification and the Optimal Construction of Basis Portfolios” research was conducted by Das S. and Dr. Mishra B. In their research for constructing basis portfolio they offer a comprehensive examination of the merits of different strategy which is correlated the common factors underlying security returns.
And they conclude that increasing number of security will improves basis portfolio performance.[16]

Basudev Sen (1997) disclosed the implications of risk management in the changed environment and the factors constraining the speed of risk management technology up-gradation. He opined that the perception and management of risk is crucial for players and regulators in a market oriented economy. Investment managers have started upgrading their risk management practices and systems. They have strengthened the internal control systems including internal audit and they are increasingly using equity research of better quality.

He observed that risk measurement and estimation problems constrain the speed of up-gradation. Also, inadequate availability of skills in using quantitative risk management models and lack of risk hedging investments for the domestic investors are major constraints. He concluded that with the beginning of a derivative market, new instruments of risk hedging would become available.[09]

2.4 LITERATURE REVIEW ON STOCK EXCHANGE OF INDIA

M. Thenmozhi and Abhijeet Chandra (2013) examines the a symmetric relationship between the India Volatility Index (India VIX)3 and stock market returns, and demonstrates that Nifty returns are negatively related to the changes in the India VIX levels; in the case of high upward movements in the market, the returns on the two indices tend to move independently. When the market takes a sharp downward turn, the relationship is not as significant for higher quantiles. This property of the India VIX makes it ideal as a risk management tool whereby derivative products based on the volatility index can be used for portfolio insurance against bad declines. We also find that the India VIX captures stock market volatility better than traditional measures of volatility, including the ARCH/GARCH class of models. Finally, we test whether
changes in the India VIX can be used as a signal for switching portfolios. Our analysis of timing strategy based on changes in the India VIX exhibits that switching to large-cap (mid-cap) portfolios when the India volatility index increases (decreases) by a certain percentage point can be useful in maintaining positive returns on a portfolio.[35]

Puja Padhi (2011) studied the implied volatility linkages among the Asian, American and European stock markets. For this purpose, the study makes use of implied volatilities calculated from the market prices of stock index options from India (IVIX), Japan (VXJ), Hong Kong (VHSI), South Korea (VKSOP), the US (VIX) and Germany (VDAX). The results of the study suggest that the US implied volatility index has substantial impact over the variations of other international implied volatility indices, thus raising the possibility of it constituting a usable risk-factor for investors trading internationally; another issue here relates to abrupt changes in the VIX giving rise potentially to destabilizing contagion over volatility internationally. The implications of our results for India specifically at the market’s current state of financial development are, at first glance, comforting, since none of the examined volatility indices bears a notable impact over their Indian equivalent, a fact perhaps indicative of the market’s lag in terms of integration with the global financial system. However, as this integration expands with time, it is expected that this will change, as the results from the rest of the markets in this study suggest.[44]

Mitra, Anupam (2014) reviewed the Portfolio is collection of bonds, warrants, future contracts, stocks, ETFs, real estate etc., where an investor wants to invest. In this paper we shall see how an investor should go about selecting the one best portfolio to meet his needs. Or, more explicitly, how should an investor go about selecting securities to purchase and deciding how many dollars to invest in each. For the comparison of Sensex portfolio with Nifty portfolio famous Markowitz”s Modern Portfolio Theory (MPT) has been used. For the performance evaluation of both of these portfolios Sharpe Index has been used. This paper presents a simplified perspective of Markowitz”s
contributions to Modern Portfolio Theory. It is to see the effect of duration of historical data on the risk and return of the portfolio and to see the applicability of risk-reward logic.[34]

Asif Ullah Khan, T. K. Bandopadhyaya, Sudhir Sharma(2009) stated that it is always a difficult task to select stocks that are suitable for a portfolio. The main aim of every investor is to earn maximum possible returns on investment. There are many criteria behind picking stocks like, price-earnings ratio, price book ratio, price sales ratio, price cash flow ratio, and market capitalization. The main issue with any approaches is the proper weighting of criteria to obtain a list of stocks that are suitable for a portfolio. This paper proposes an improved method for stock picking using self-organizing maps. The best of the portfolio constructed by self-organizing maps outperformed the NSE-50 Index by about 14.88% based on one and half month of stock data.[05]

Ram Kumar Kakani, Biswatosh Saha and V. N. Reddy(2002) attempts to provide an empirical validation of the widely held existing theories on the determinants of firm performance in the Indian context. The study uses financial statement and capital market data of 566 large Indian firms over a time frame of eight years divided into two sub-periods (viz., 1992-96, and 1996-2000) to study Indian firms financial performance across various dimensions viz., shareholder value, accounting profitability and its components, growth and risk of the sample firms. It reveals that even on the same data, the determinants of market based performance measures and accounting-based performance measures differ due to influence of Capital Market Conditions’. We found that size, marketing expenditure, and international diversification had a positive relation with a firm’s market valuation. Apart from these firm attributes that reflect either operating parameters of firms or ‘strategic choice’ of firm managers, we also found that a firm’s ownership composition, particularly the level of equity ownership by Domestic Financial Institutions and Dispersed Public Shareholders, and the leverage of the firm
were important factors affecting its financial performance. The different implications of the findings for various stakeholders of a firm are also discussed.[47]

Tejas Mankar(2012) investigated By using the momentum investment strategy, strategy of buying stocks that have performed well in the past and selling stocks that have performed poorly in the past--to generate returns over a 3 to 12-month holding period, this paper provides evidence against the weak form of market efficiency theory which claims that superior returns cannot be produced on the basis of investment strategies based on historical data and if any such returns are earned it may be a mere compensation for the higher risk taken. The trading strategy has been tested using the constituents of CNX 100 for a period between 2003 and 2011. The results of the study are in sync with the findings of Jegadeesh and Titman (1993).[58]

Sathya Swaroop Debasish (2011) investigates the change, if any, in the volatility observed in the Indian stock market due to the introduction of futures trading. The change in the volatility is compared in terms of the structure of the volatility. This is done to give insights into the way the futures market is influencing the Indian spot market’s volatility. The main objective of the study is to investigate whether there has been significant change in relative volatility of the underlying spot return and futures return. The period of study is from 1st January 1997 to 31st May 2007 for the spot prices. The study used three stock indices of NSE namely Nifty, CNX IT and CNX Bank. The index futures time series analyzed here uses data on the near month contract as they are most heavily traded. The study has used four measures of volatility. The study reveals that for the three NSE indices, the study rejects the null hypothesis of ‘no significant change in relative inter-day volatility between spot prices and futures prices’ over the entire period 2000-2007, but cannot reject the hypothesis fully for all the individual years. There is significant change in relative intra-day volatility between spot prices and futures prices for all the three NSE indices.[56]
Nalina K.B. and Ambritha H.J. (2014) focuses on diversification which is carried on NSE stocks for the data of three years January 2009 to December 2011; consist of analysis of diversification of the stocks and the diversifiable risk associated with stocks, the returns of the stocks considering the risk free rate. This paper alsoAnalyses the return for the borrowing investors and lending investors. Diversifications of stocks are analyzed using Markowitz model.[38]

Anupam Mitra and Punneet Khanna (2014) stated Introductory investments courses revolve around Harry Markowitz’s modern portfolio theory and William Sharpe’s Index for the performance measurement of those portfolios. This paper presents a simplified perspective of Markowitz’s contributions to Modern Portfolio Theory. It is to see the effect of duration of historical data on the risk and return of the portfolio and to see the applicability of risk-reward logic. The empirical results also show that short selling may increase the risk of the portfolio when the investor is instability preferred.[07]

Prashant Joshi(2011) tries to explore the dynamics of co movement of stock markets of USA, Brazil, Mexico, China and India during the period from January, 1996 to July, 2007 using daily closing price data. It attempts to analyze the speed of adjustment coefficients using daily, weekly and monthly data. It also tries to examine the efficiency of the stock market as a result of initiatives and regulatory measures taken by NSE and SEBI respectively. The long-term relationships among the markets are analyzed using the Johansen and Juselius multivariate co integration approach. Short-run dynamics are captured through vector error correction models. The analysis reveals that there is an evidence of co integration among the markets demonstrating that stock prices in the countries studied here share a common trend. The results reveal that the speed of adjustment of Indian stock market is higher than other stock markets of the world. The analysis of speed of adjustment coefficient reveals that there are significant under reaction and overreaction along with full adjustment are observed at both shorter as well
as longer differencing intervals during first period i.e. 1996-2001 using daily data while the second period i.e. 2002-2007 indicates significant overreactions with higher speed of adjustment coefficient. The results of event methodology reveal that the stock market become efficient at information processing in recent times with regard to few regulatory measures taken by SEBI.[40]

Daan Struyven (2008) conducted Contemporary Concerns Study which concludes The NSE surpassed BSE in one year although the “natural monopoly”-character of the liquid stock market. This study aims to identify the reasons for this shift. For the options & derivatives, NSE & BSE introduced simultaneously index futures, index options and options and futures on individual securities between June 2000 and November 2002. The O&D segment was heavily contested with capricious market share jumps from June 2000 until July 2001. Since July 2001, NSE has always dominated the O&D market with market shares above 90%. [14]

Ms. Anju bala (2013) advocates Stock Market is one of the most vibrant sectors in the financial system, marking an important contribution to economic development. Stock Market is a place where buyers and sellers of securities can enter into transactions to purchase and sell shares, bonds, debentures etc. In other words Stock Market is a plate form for trading various securities and derivatives. Further, it performs an important role of enabling corporate, entrepreneurs to raise resources for their companies and business ventures through public issues. Today long term investors are interested to invest in the Stock market rather than invest anywhere. The Bombay Stock Exchange (BSE), the National Stock Exchange (NSE) and the Calcutta Stock Exchange (CSE) are the three large stock exchanges of Indian Stock Market. The main objective of present study is to present review of literature related to Indian Stock Market to study the Indian Stock Market in depth. The study would facilitate the reader to know the past, current and future trend or prospects of Indian Stock market. This study would provide guidelines to
investor to maximize profit with minimize risks. High degree of volatility in the recent times in the Indian market has led to more development in the future.[08]

Dr Saif Siddiqui (2009) considers a key issue that may interest investors, portfolio managers, corporate executives and policy makers. They are interested in understanding the intensity of stock market integration for diversification motives. Thus, it becomes essential to examine the interdependence between different Asian markets, including S&P CNX Nifty and its relation with other markets.[53]
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