CHAPTER 3

REVIEW OF LITERATURE

CHAPTER 3
REVIEW OF LITERATURE

INTRODUCTION

The investment performance of managed portfolio has received significant attention from researchers and practitioners' world over during the past four and a half decades. With the setting up of more and more number of funds every year, offering a wide range of schemes to their investors, it becomes difficult for the investors to choose a particular fund suiting best to their needs and preferences. The mutual funds have made every possible attempt to cater to their investors and keep them informed about their investments through the company's offer documents. So that the investors get a good idea of the prospects of the fund performance, the offer documents provides with valuable in sight on: How risky is the investment? Whether the company is investing in large, small or medium companies? What is the amount of costs (fees) likely to be incurred? What are the investment strategies adopted by the fund managers while they are investing in different securities?

The area of interest focuses on the performance of the mutual fund schemes and the investment behavior of the retail investors. An attempt has been made by the research scholar to collect various kinds of information and data from the available books, research journals, business newspapers, and reports published by various States and the Central Government of India as well as by Agencies. The research scholar has downloaded reading material from e-libraries, e-books, and e-journals which are accessed through resource material using websites and search engines.

This chapter is divided into four sections. Section 3.1 deals with review of various theories of Performance Measures, the empirical studies testing performance measures theories in India and abroad and concluding remarks on the same. Section 3.2 deals with review of theories of Market Timing, the empirical studies testing market timing theories in India and abroad and concluding remarks thereon. Section 3.3 deals with review of various theories of Behavioral Finance, the empirical studies on investment behavior of retail investors in India and abroad and concluding remark on the same. Section 3.4 presents review of General Studies on mutual funds in India and abroad and concluding remark on the same.

3.1 REVIEW OF PERFORMANACE MEASURES

3.1.1 REVIEW OF PERFORMANCE MEASURES THEORIES

Jack L. Treynor (1965)[1] developed a methodology for performance evaluation of a mutual fund that is referred to as *'reward to volatility ratio'*. This ratio has been normally used both by researcher and practitioners for measuring the performance of mutual fund schemes. This is defined as average excess return on the portfolio.

William F. Sharpe (1966)[2] developed a methodology to measure the performance of the mutual fund better known as *'reward to variability ratio'*. The study used 34 open-ended schemes for the period 1954-63. The average reward to variability ratio of 34 schemes was considerably smaller than the benchmark portfolio and it was concluded that overall performance of the sample schemes was inferior to a benchmark portfolio.

Michael C. Jensen (1968)[3] developed a measure of performance based upon the Capital Asset Pricing Model. He examined the performance of 115 open-ended mutual schemes over the period of 10 year, 1945-1964. The study reported that 76 out of 115 schemes realized negative risk-adjusted returns after accounting for management fees and transaction cost. He concluded that the evidence on mutual fund performance indicated not only that these 115 mutual fund were on average not able to predict security prices well enough to outperform a buy-the-market-and-hold policy, but also that there were very little evidence that any individual fund was able to significantly better than that which expected from mere random chance.

Eugene F. Fama (1972)[4] suggested that the over all performance could be broken down into several components. He developed a comprehensive mechanism for segregating the observed investment return due to the managers' ability to pick up the best securities at a given level of risk (selectivity) from that resulting from the prediction of general market price movement (timing). This model combined concepts from modern theories of portfolio selection and capital market equilibrium with those of traditional concepts of what constituted good portfolio management.

Treynor and Black (1973)[5] contributed to the debate regarding ownership of the index or seeking active mutual fund management. Their question was whether or not a manager should balance under priced long securities positions and under priced short securities positions or should the portfolio be diversified until only market risk remains. In their model, they assumed that security analysis can improve the

performance of the portfolio. They conclude that it is useful to rebalance a portfolio. A portfolio consists of three parts: a riskless part, a diversified part, and an active part. The active part will depend upon security analysis and be independent of the active index.

E. Fama and K. French (1993)[6] developed a measure which lies at the heart of style investing. Most of the studies employed Fama and French (1993) three-factor model in order to evaluate mutual fund performance. They built six distinct portfolios on the basis of size and book-to-market ratios. (S/L, S/M, S/H, B/L, B/M and B/H) For instance, S/L refers to small-cap stocks with low book to market ratios, whereas B/H is defined as large-cap stocks with high book to market ratios. Next, they adopted Jensen's time series approaches and performed regressions of monthly returns of stocks & bonds on the returns to a market portfolio of stocks and mimicking portfolios for size, book to market equity and term structure risk factors in returns. The main findings in their study suggested that stock portfolios built to mimic risk factors linked with size and B/M ratio capture the variation in returns. In this respect, size and book to market ratio represented common risk factors in stock returns. With regard to the bond portfolios, it was found that mimicking factors related to terms structures (term premium and default premium) captured virtually all the variation in the returns on bond portfolios. Moreover, common variation in stock returns was captured by overall market factor, size and B/M ratio. On the other hand, common variation in bond returns was captured by term structure factors.

F. Modigliani and L. Modigliani (1997)[7] developed a measure to evaluate the annualized Risk Adjusted Performance (RAP) of a portfolio in relation to the market benchmark, expressed in percentage terms. According to them the portfolio and its benchmark must have the same risk to be compared in terms of basis points of risk-adjusted performance. So they proposed that the portfolio be leveraged or deleveraged using the risk-free asset. They also reported that for a fund with any given risk and return, this measure was equivalent to the return the fund would have achieved if it had the same risk as the market index. The relationship therefore allowed situating the performance of the fund in relation to that of the market.

Mishra and Rahman (2001)[8] developed measures of evaluating portfolio-performance based on LPM (Lower-Partial-Moment). They used quarterly data for two sets of six-year periods: 1994-1999 and 1996-2001. For testing robustness of their model, they had two approaches for the risk-free rate: for 1994-1999, they chosen the

borrowing-rate as measured by the call-money-rate and the lending-rate as measured by the actual return on the 90- day treasury-bill to match with their quarterly returns, while for 1996-2001, they chosen only the 90-day treasury rate. S&P-500 was chosen as the market-portfolio and again two approaches were followed: for 1994-1999, actual quarterly-return on it was used, while, for 1996-2001, one used the percentage change in price. For return on portfolios, they had two sets: US Mutual Funds and Non-US MFs. For US funds, they made use of the 3x3 matrix that was used to breakdown the funds by their market-capitalization and by their potential for growth. For non-US funds, one chose some Japanese, Korean, Indian, Chinese, Thai and Malaysian funds; the criterion was that they must have the data for the required quarters. They then rejected those funds where the average return over the 24 quarters was less than the average risk-free rate for the corresponding period. They thus ended up with 24 firms for the 1994-1999 period and 22 for the 1996-2001 period. Risk from the LPM perspective was measured by taking into account only those states in which return was below a pre-specified "target rate", like risk free rate, and capturing the extent to which it was below. This study also provided a new way to evaluate the performance of a portfolio, which was similar to the M^2 approach, but differs from it in an important way.

3.1.2 EMPIRICAL STUDIES TESTING PERFORMANCE MEASURES THEORIES : A REVIEW

There has been an excellent study conducted on evaluation of the mutual fund performance using the risk-adjusted performance measures. This section, therefore, reviewed major studies relating to performance evaluation of mutual fund schemes carried out both in foreign countries and in India.

3.1.2.1: FOREIGN STUDIES

Performance evaluation of mutual funds has been widely carried out for the US funds and to a lesser extent for other foreign countries.

The Wharton School of Finance and Commerce (1962)[9] carried out the first comprehensive study covering various aspects of U.S. mutual fund industry for the period of 5 years (i.e. from 1953 to 1958). The study reported that mutual funds diversified their investment among many industries and the smallest funds had the highest turnover rate in the five year period of the study. The study found that the average performance by mutual funds was not appreciable better than what would

have been achieved by a completely unmanaged portfolio with same distribution between common stocks and other assets. An analysis also showed that the funds would usually buy them in two months just before their cyclical rise and would usually sell them in the two months just before similar downswings. However, the study did not make a distinction between the actual impact of fund activities and their forecasting ability.

Irwin Friend et al. (1962)[10] did extensive and systematic study of mutual funds. The study considered 152 mutual funds with annual data from 1953 to 1958. They found that the performance of mutual fund was not significantly different from that of an unmanaged portfolio of similar assets. They also found that about half the funds outperformed Standard & Poor's indexes, but the other half underperformed these aggregate measures of the market. The results also reported that there was no evidence of superior performance by a particular fund over a number of years.

Irwin Friend and Douglas Vickers (1965)[11] evaluated the performance of mutual funds against the randomly constructed portfolios. The study concluded that mutual funds on the whole had not performed superior to random portfolio.

Kaith V. Smith and Dennis A. Tito (1969)[12] evaluated three widely used composite measures of investment performance and examined their inter-relationships and proposed another alternative measure which was then compared empirically. The alternative measure produced little difference in performance, while ranking the funds on the basis of ex-post performance. And when performance comparisons were made with the market, their conclusions differed significantly. So the alternative measure suggested by them was referred to as the modified Jensen measure.

Robert S. Carlson (1970)[13] examined the performance of mutual funds during the period 1948-1967. He used different indices as a proxy for the market over different time periods. It was found that fund performance relative to the market varied depending upon which index was used for the market. The study concluded that there was consistency over time when risk and return were taken in isolation but there was no consistency in the risk adjusted performance measures. The study also examined performance relative to size, expense ratio and a new funds factor and the results indicated that there was no relationship with size or expense ratio, but there was a relationship between performance and a measure of new funds factors.

Robert C. Klemosky (1973)[14] examined the performance of 40 mutual fund schemes using quarterly return during the period 1966-1971. The study found some bias in

Sharpe, Treynor and Jensen measures. He suggested that these could be removed by using mean absolute deviation and semi-standard deviation as risk surrogates. In his analysis, the resulting performance measure was found to be a better measure of risk adjusted performance measure than the composite measures derived from the capital asset pricing model.

John G. McDonald (1974)[15] analyzed the performance of 123 mutual funds in relation to the stated objectives of each fund. He found that there was a positive relationship between fund objectives and risk measures and a positive relationship between return and risk. The relationship between fund objective and risk-adjusted performance indicated that funds that are more aggressive experienced better returns, while only one third of the funds did better than the aggregate market.

Manak C. Gupta (1974)[16] evaluated the performance of open ended mutual funds which had completed at least one full calendar year of operating on a publicly available basis and had asset of $5 ml. or more at the start of 1962 for the ten year period 1962-71. He had classified the funds into various subgroups in terms of their broad investment objectives. The study used performance measures suggested by Sharpe, Treynor and Jensen. As a proxy for the market portfolio two indices i.e. DJIA and S& P 500 were used. It was also shown that return per unit of risk varied with the level of volatility assumed and that funds having higher volatility showed superior performance than the others. It was also reported that all fund types outperformed the market irrespective of choice of market index and performance measures.

Burton G. Malkiel (1977)[17] evaluated the performance of 24 close ended mutual funds during the period of 1967-1974 in U.S. The study reported that structure of discounts was related to unrealized appreciation and to distribution policy with respect to capital gains, as well as to portfolio investment policies. It was found that the behaviour of discount widened when market rose and narrowed when market fell. The co-variance of fund premium with market movement suggested that close ended funds were attractive investments when their betas were less than one. The study concluded that pricing of close ended investment company shares did provide an example of a market imperfection in the valuation of capital assets.

Stanley J. Kon and Frank C. Jen (1978)[18] examined the performance and systematic risk of 49 mutual funds over the period from 1960 to 1971 using monthly data. They found a very significant fraction of mutual funds had two levels of systematic risk during each of three sub-periods. They also examined the performance

bias and reported similar results as were found by Klemkosky (1973) and McDonald (1974). The study reported that the switching regression estimates were found to be unbiased risk-adjusted measures of performance.

James R.F. Guy (1978)[19] examined the performance of 47 investment trusts by grouping them into equal-and-value-weighted portfolios with monthly price and investment returns during the period 1960 to 1970. He used Jensen, Sharpe and Treynor measures and reported that no investment trust in any time intervals indicated superior performance.

James S. Ang and Jess H. Chau (1979)[20] examined the mean variance measures in evaluation investment performance in view of the systematic bias and found them unsatisfactory. The study attributed it to the asymmetry of return distributions at small intervals and failure to identify appropriate holding period influencing systematic bias. The study showed the superiority of performance measures that considered asymmetry of return distributions along with mean and variance. They argued that the systematic bias could be removed through changing the length of holding period for the excess return index whereas it could not be removed mean variance composite measures.

T. Miller and N. Gressis (1980)[21] explained that estimates of fund alpha and beta might provide misleading information if nonstationarity was present in the risk-return relationship and was ignored. They presented a partition regression and a selection rule to estimate the traditional Capital Asset Pricing Model (CAPM) in which they examined the relationship between the excess rates of return for 28 no load funds and the excess rate of return for the market. The results suggested only one fund had stationary betas, and the number of betas for any given fund over various periods range upwards through ten. They reported that their findings indicated some weak, positive relationships and some weak, negative relationships between betas and the market return. They also concluded that no significant statistical relationships of either type were found.

Bruce N. Lehmann and David M. Modest (1987)[22] examined the performance of 130 mutual funds over the period January 1968-December 1982. They attempted to find out whether inferences about the performance of these funds were sensitive to the benchmark chosen to measure normal performance. They employed the standard CAPM benchmarks and a variety of APT benchmarks to investigate this question. They found that there was little similarity between the absolute and relative mutual

fund rankings obtained from alternative benchmarks which suggested the importance of knowing the appropriate model for risk and expected return in this context. They also found that the rankings were quite sensitive to the method used to construct the APT benchmark.

Mark Grinblatt and Sheridan Titman (1989)[23] employed Jensen's measure for measuring abnormal performance of mutual funds. The data consisted of two data sets, each with observations from December 31, 1974, to December 31, 1984. The first data set contained cash-distribution adjusted monthly returns and the second data set contained the compositions of the equity portion of the funds' portfolios. The tests indicated that the risk-adjusted gross returns of some funds were significantly positive particularly among aggressive-growth and growth funds and those funds with the smallest net asset values. These funds also had the highest expenses so that their actual returns, net of all expenses, did not exhibit abnormal performance. This indicated that investors could not take advantage of the superior abilities of these portfolio managers by purchasing shares in their mutual funds.

Robert E. Cumby and Jack D. Glen (1990)[24] evaluated the performance of 15 US based internationally diversified mutual funds during the period 1982 to 1988. They used Jensen and Grinblatt & Titman's measures for evaluating the performance. They did not find any evidence that the funds, either individually or as a whole, provided investors with performance that surpassed that of a broad international equity index over the study period.

C.J. Frohlich (1991)[25] examined the performance of a sample of bond, stock and balanced funds during the period January 1977 through March 1984. He had given close attention to the bond versus equity composition of the mutual funds and how this asset composition affected the performance measure. The results of the analysis showed that none of these mutual funds categories had outperformed the market and the fund managers in this sample were unable to predict security prices consistently to warrant the associated costs.

Craig L. Israelsen and Ivan F. Beutler (1991)[26] presented the potential value of using past performance data in the selection of mutual funds. Empirical results were based on historical returns and information that was readily available in popular press sources. The payoff from obtaining and evaluating past performance data prior to selecting and investing in mutual funds was found to be positive, and in many cases substantial.

M. Grinblatt and S.Titman (1992)[27] examined a sample of 279 funds over the period 1975-1984 using the eight portfolios or P8 benchmark. This benchmark consisted of a composite of passive portfolios which were constructed to take into account size (4 portfolios), dividend yields (three portfolios) and past returns (one portfolio). They used regression to calculate excess returns ('alpha') for each fund. This risk adjusted measure was positive and significant if there was superior performance. They divided the sample into 1975-1979 and 1980-1984 sub-periods and examined whether above-average performance in the earlier period was indicative of above-average performance in the later period. Their results provided weak support for the hypothesis that better than average performance persists over time.

Christipher R. Blake et al. (1993)[28] evaluated two samples of bond funds using linear and non-linear models. They found that bond funds had under performed in comparison to relevant bench mark portfolios. The results were robust across choice of models. On an average, the study noted that a percentage-point increase in expenses led to a percentage point decrease in performance. They also found no evidence of predictability of future performance based on the past.

Grinblatt, Mark and Titman, Sheridan (1994)[29] examined the sensitivity of performance inferences to benchmark choice, compared the Jensen Measure with two new measures that were developed to overcome the timing-related biases of the Jensen Measure and analyzed whether fund performance was related to fund attributes i.e. fund size, expenses, management fee, portfolio turnover, and load. They used monthly cash-distribution-adjusted returns and investment goals for 279 funds that existed from December 31, 1974 to December 31; 1984. They found that the choice of a benchmark could have a large effect on inferences about performance. They also found that the different measures of performance that were examined in the paper, the Jensen Measure, the Treynor-Mazuy Total Performance Measure, and the Positive Period Weighting Measure, displayed high cross-sectional correlations. The study also found that performance was positively related to portfolio turnover, but not to the size of the mutual funds or to the expenses that the funds generate.

R.N.Khan and A.Rudd (1995)[30] used a sample of 300 equity and fixed-income mutual funds within sample periods running from 1983-1987 for equity funds and 1986-90 for fixed income funds. They then tested performance persistence in 1988-93 for equity funds and 1990 to 1993 for fixed income funds. They used a variety of performance metrics based on 'alphas' *(i.e. risk adjusted returns)* plus style analysis.

Their persistence analysis was based on contingency table analysis. They did not find any equity fund performance persistence but did find fixed income fund performance persistence even after controlling for fund style and management fees.

Edwin J. Elton *et al* (1996)[31] examined predictability of return for stock mutual funds using risk adjusted returns. They found that past performance was predictive of future risk-adjusted performance. They also concluded that application of modern portfolio theory techniques to past data improve selection and allow to construct a portfolio of funds that significantly outperforms a rule based on past rank alone. They also formed a combination of actively managed portfolios with the same risk as a portfolio of index funds but with higher mean return. The portfolios selected had small but statistically significant positive risk-adjusted returns during a period where mutual funds in general had negative risk-adjusted returns.

J. Fletcher (1997)[32] examined performance persistence of a sample of 101 UK unit trusts. He considered five portfolios based on a ranking of five-year risk-adjusted performance windows. He then repeated this examining a two-year performance window. Survivorship bias was partly allowed for by the continuation of funds through name changes or changes in management groups, though mergers were treated as terminations. He did not report any evidence of persistence of performance.

David Blake and Allan Timmermann (1998)[33] used a large sample containing the complete return histories of 2300 UK open ended mutual funds over a 23-year period to measure fund performance. They found some evidence of underperformance on a risk-adjusted basis by the average fund manager, persistence of performance and the existence of a substantial survivor bias. Also identified some new patterns in performance related to the funds' distance from their inception and termination dates: underperformance intensified as the fund termination date approaches, while, in contrast, there was some evidence that funds (weakly) outperform during their first year of existence.

Arnold L. Redman *et al.* (2000)[34] examined the risk-adjusted returns using Sharpe's Index, Treynor's Index, and Jensen's Alpha for five portfolios of international mutual funds and for three time periods: 1985 through 1994, 1985-1989, and 1990-1994. The benchmarks for comparison were the U. S. market proxy by the Vanguard Index 500 mutual fund and a portfolio of funds that invest solely in U. S. stocks. The results showed that for 1985 through 1994 the portfolios of international mutual funds outperformed the U. S. market and the portfolio of U. S. mutual funds under Sharpe's

and Treynor's indices. During 1985-1989, the international fund portfolio outperformed both the U. S. market and the domestic fund portfolio, while the portfolio of Pacific Rim funds outperformed both benchmark portfolios. It was also found that returns declined below the stock market and domestic mutual funds during 1990-1994.

Magnus Dahlquist et al. (2000)[35] studied the relation between fund performance and fund attributes in the Swedish market. They have used alpha as the Performance measure in a linear regression of fund returns on several benchmark assets, allowing for time-varying betas. The estimated performance was then used in a cross-sectional analysis of the relation between performance and fund attributes such as past performance, flow, size, turnover, and proxies for expenses and trading activity. They reported that good performance occurred among small equity funds, low fee funds, funds whose trading activity was high and, in some cases, funds with good past performance.

E. Dimson and Minio-Kozerski (2001)[36] examined the closed-end fund discount and performance persistence in the UK. They used a sample of 244 funds for a period from 1987 to 1996 and add back 94 funds that disappeared providing a final sample of 338 funds. They applied Sharpe's style analysis to measure manager performance after adjusting for factor exposure. They found no evidence of performance persistence amongst closed-end funds.

S. Heffernan (2001)[37] examined the relative performance of eight categories of UK investment trusts comprising 273 trusts for the period 1994-99. Two benchmarks were used - the average annual performance of a given fund category and a relevant market index. No relationship between fees and performance was evident but there was some ambiguous evidence of persistence in performance, particularly for short horizons.

Gaurav S. Amin and Harry M. Kat (2003)[38] investigated the claim that hedge funds offer investors a superior risk-return tradeoff. They used a continuous-time version of Dybvig's (1988a), (1988b) payoff distribution pricing model and it was applied to the monthly returns of 77 hedge funds and 13 hedge fund indices from May 1990-April 2000. The results showed that, as a stand-alone investment, hedge funds did not offer a superior risk-return profile.

Gabriel Asebedo and John Grable (2004)[39] examined the performance of the 275 mutual funds during the period January 1, 1995 through December 31, 2003. The purpose of this paper was to determine, by using historical data, was it possible to use

a buy-and-hold strategy that resulted in a selection of funds that consistently outperformed other mutual funds? They attempted to address several methodological issues commonly found in mutual fund performance research such as fund mergers, fund liquidations, name changes, and survivorship bias. They found that returns were most persistent over one, two, three, four, five, six, and seven year annualized return periods. Funds that outperformed during these periods tended to had lower overall expense ratios and larger market capitalizations. Persistence became less stable at the eight and nine year annualized periods. Expense ratios remained consistent as a predictor of over performance, while other factors, such as portfolio turnover and P/E ratio, showed varying effects. Results supported the hypothesis that low cost mutual funds tend to outperform higher cost funds over multiple time periods, and that short-term performance showed persistence of returns.

Ravi Jagannathan and Dmitry Novikov (2005)[40] studied the U.S. hedge fund returns during the period from 1994 to 2002 by using monthly return. They empirically demonstrated that both hot and cold hands among hedge fund managers tend to persist. While measuring performance they used statistical model selection methods for identifying style benchmarks for a given hedge fund and allow for the possibility that hedge fund net asset values might be based on stale prices for illiquid assets. They developed a method for taking into account the backfill bias in the hedge fund database as well as the selection bias introduced by the fact that hedge funds might leave the database. They found that a hedge fund that outperformed its style benchmark by 100 basis point in one year will on average to outperform its style benchmark by 70 basis points the next year.

Magdy Abdel-Kadar and Kuang Yuan Qing (2007)[41] examined the performance of 30 Hong Kong mutual funds during the period from August 1995 to July 2005. They employed the weekly returns to examine the risk-adjusted performance of these mutual funds from August 1995 to July 2005 with 518 observations. They employed the Jensen's alpha and Fama and French's three-factor model and Treynor ratio to evaluate the weekly returns on a sample funds relative to performance of the Hong Kong market benchmark. Treynor and Mazuy (1966)'s quadratic model was used for assessing the selectivity and timing abilities of fund managers. Performance persistent of Hong Kong mutual funds was assessed as successive two year intervals based on their ranking according to both Jensen measure and Treynor measure. They found evidence of underperformance of Hong Kong mutual funds relative to the market and

no significant selectivity and timing ability were shown in the results of the actively managed mutual funds. Persistence was identified for the performance of both winners and losers in the short run.

Luis Muga *et al.* **(2007)**[42] examined the persistence in mutual funds in Latin American emerging markets with 420 mutual funds schemes during the period January 1992 to December 2002. They found persistence in mutual fund performance both over consecutive time periods and in a multi period setting. There was significant spread persisting for at least two or three years, between the portfolio with funds from top past return quintile and those from the bottom past return quintile. This spread remained unexplained by conventional risk factors. They also concluded that, investors are observed to use information on persistence, since a significant positive relationship was shown to exist between fund flows and past returns, though this was a convex relationship, which was weaker in the region of bad returns.

Timotej Jagric *et al.* **(2007)**[43] studied the mutual fund industry in Slovenia, Europe and applied Sharpe ratio, Treynor ratio and Jensen measure to evaluate the performance of mutual funds. The study used weekly returns of the nine schemes for the period of January 1997 to December 2003. The Ljubljana Stock Exchange - SBI20 index was used as a market benchmark and as a risk-free rate benchmark, they used three-month Treasury bills. The study found the rankings obtained by performing the Sharpe and Treynor rules to be almost the same, implying that funds were well diversified. The rankings revealed that all analyzed funds outperformed the market on a risk-adjusted basis.

Zakri Bello (2007)[44] investigated the degree to which the domestic (New Britain) equity mutual fund was diversified, and attempted to determine the extent to which any undiversified idiosyncratic risk, i.e. unsystematic or company specific risk was associated with the average fund returns. The sample consisted of monthly mutual funds return from six investment objective categories, including aggressive growth, small company, growth, growth and income, equity income, and index funds for the period April 1986 to March 2006. He found that, except for the index funds category, the average domestic fund was substantially undiversified. The average idiosyncratic volatility as a percentage of the fund's total volatility ranged from 0.82% for the index funds to 34.28% for the small company category. The explanatory power of the Fama-French-Carhart model declined during the 1986 to 2001 sub period, and then went back up from April 2001 to March 2006. The major implication of this study

was that just because a mutual fund holds a large number of stocks, it did not necessarily mean that its portfolio was completely diversified.

Stuart Michelson *et al.*(2008)[45] investigated the performance of open-end actively managed emerging market mutual funds during the time period 1999 to 2005. The analysis was cross-sectional and time series across a wide range of emerging markets. Monthly fund returns were compared to three indices (emerging markets, MSCI, and S&P 500 Index), using annualized returns, Sharpe ratio and Treynor ratio. The results showed that the emerging market funds outperform the MSCI Index and the S&P 500 Index, but not the emerging market index. During the study period, an investor would have benefited by either investing in emerging market funds or the emerging market index. There was also a negative relationship between emerging market fund returns and turnover, and a positive relationship between fund returns and size.

Jeffrey A. Busse and Qing Tong (2008)[46] analyzed mutual fund industry selectivity—the ability of funds to skillfully allocate assets across industries between the period January 1980 and December 2006. They estimated that industry selection influenced mutual fund performance about as much as individual stock selection. They found that persistence across the full range of performance was attributable to industry selection. After removing industry effects from gross mutual fund returns, they found that the performance of poorly performing funds strongly reverses. They also found that, unlike individual-stock-selection ability, industry selectivity was not subject to diminishing returns to scale.

George J. Jiang and Kevin X. Zhu (2009)[47] constructed a new measure of fund performance by combining two commonly used measures, the Sharpe ratio and the second-degree stochastic dominance (SSD). They used the SSD criteria to identify an equivalent fund with normal return distribution. The Sharpe ratio of the equivalent fund was referred to as the generalized Sharpe ratio (GSR). The generalized Sharpe ratio not only provided a complete rank of funds but also was consistent with investors' risk aversion. They showed that the generalized Sharpe ratio had an intuitively appealing link to various moments of the fund return distribution. They extended the generalized Sharpe ratio to the left tails of fund return distribution to measure the downside risk of a fund. The results showed that the ranking based on the new measure could be substantially different from that based on the conventional Sharpe ratio.

3.1.2.2: INDIAN STUDIES

There have been very few studies in the context of India in comparison to foreign countries. An attempt has been made by the researcher to cover most of the studies carried out by the Academicians and Practitioners on performance of mutual funds in India.

Samir K Barua and Jayanth R Varma (1991)[48] evaluated empirical evidence of equity mutual fund performance in India. They studied the investment performance of India's first 7-year close-end equity mutual fund, Mastershare. They concluded that the fund had outperformed the market and performed satisfactory for large investor in terms of rate of return.

Ajay Shah and Thomas Susan (1994)[49] evaluated the performance of 11 mutual funds schemes on the basis of market price data. The study computed the weekly returns for these schemes since their commencement to April 1994. Jensen and Sharpe measures were used to evaluate the performance of the schemes. The study concluded that except UGC 2000 of UTI, none of the schemes earned superior return than that of the market, in general.

L.C.Gupta (1994)[50] examined the performance of 83 mutual fund schemes from 30 June 1994 to 31 December 1995. The study revealed that 15 schemes provided negative returns of which 13 were growth schemes. None of the income or income – cum-growth schemes provided returns above 20 per cent. The study also revealed that of the 53 growth schemes, 28 schemes could beat the index even in a bear phase. The study concluded that Indian mutual funds were generally safe avenues for investment.

S. Vaid (1994)[51] looked at the performance in terms of the ability of the mutual fund to attract more investors and higher fund mobilization. It showed the popularity of the mutual fund as it was perceived to pay superior returns to the investors. It was concluded that even for equity-oriented funds, investment was more in fixed income securities rather than in equities, which was a distortion.

J. Sarkar and S. Mazumdar (1995)[52] evaluated the performance of five close-ended growth schemes for the study period from February 1991 to August 1993. They concluded that the performance of the schemes was below average in terms of alpha values (all negative and statistically not significant) and funds possessed high risk.

Mohinder N Kaura and M Jaydev (1995)[53] evaluated the performance of 5 growth-oriented schemes in the year 1993-94 by employing the Sharpe, Treynor and Jenson

98

measures. According to this study the Master Gain 91, Canous and Indsagar had performed well above than market in terms of risk adjusted returns.

M. Jaydev (1996)[54] evaluated performance of two growth oriented mutual fund schemes during the period, June 1992 to March 1994 in terms of returns / benchmark comparison, diversification, selectivity and market timing skills. He concluded that these two schemes were found to be poor in earning better returns either adopting marketing or in selecting under priced securities. And the schemes had not performed better in terms of total risk and were not offering advantages of diversification and professionalism to the investors.

K G Sahadevan and Thiripalraju M. (1996)[55] analyze performance of 32 public sector mutual fund schemes and 10 private sector mutual fund schemes for the study period between March 94 and July 96. The result found that in terms of the rate of return 5 schemes of private sector mutual fund out performed the market and 7 schemes of public sector mutual fund were judged as outperforming the market. The analysis also showed that performance of a fund was not closely associated with its size. Even small size funds had done much better than the market, while relatively bigger size funds had not performed as good as the market.

R.A.Yadav and Biswadeep Mishra (1996)[56] empirically evaluated performance of 14 mutual funds over the period 1992-1995. The study indicated that the funds as a whole performed well in terms of non risk adjusted average return and in terms of risk adjusted performance. Mutual funds in aggregate had a higher Sharpe index, but a lower Treynor index and negative average alpha. The study reported that mutual funds had done well in terms of diversification and total variability of returns.

O.P. Gupta, and S Sehgal, (1997)[57] evaluated the performance of 80 mutual fund schemes over a 4 year period, 1992-96. The performance was evaluated in terms of benchmark comparison, performance from one period to the next and their risk-return characteristics. They concluded that mutual fund industry performed well during the period of study.

Anjan Chakrabarti and Harsha Rungta (2000)[58] attempted to identify and evaluate the performance of mutual funds with focus on private sector equity funds. It studied the risk-return characteristics of selected major equity-based private mutual funds companies. The inference of the study revealed that there is no one-to-one correspondence between performance by return and performance by risk-adjusted returns.

Pritpal Singh and S.K.Singla (2000)[59] evaluated the performance of 12 growth oriented mutual funds using three risk adjusted performance measures namely Treynor, Sharpe and Jensen. They used monthly data during the period October 1992 to September 1996 and compared with the return of the BSE national index during the same period. They concluded that the mutual funds had not performed better than their benchmark indicators except UGS 5000 and Master plus 91 in terms of non-risk adjusted measures of the average returns as well as in terms of risk adjusted performance measures.
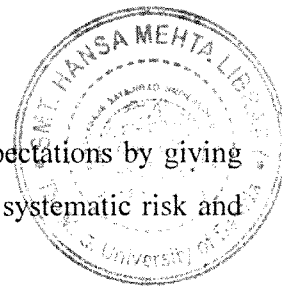
B. Mishra (2001)[60] evaluated performance of 24 public sector sponsored mutual fund schemes over a period, April 1992 to December 1996. The performance was evaluated in terms of rate of return, Treynor, Sharpe and Jensen's measures of performance. The study also addressed beta's instability issues. The study concluded poor performance of PSU mutual funds in India during the study period.

M. S. Narshima and S. Vijaylakhsmi (2001)[61] examined an empirical evaluation of diversification and timing performance. The study analyzed the performance of 46 Mutual fund schemes of various asset management companies. The study revealed that the mutual funds in India compete to each other to show superior performance.

Amitabh Gupta (2003)[62] examined the performance of 73 mutual fund schemes during the period of April 1, 1994 to March 31, 1999.The results indicated a mixed performance of sample schemes. Though the performance of some private sector funds was superior there was no conclusive evidence to suggest that the performance of mutual funds was better than the relevant benchmark. It was also observed that the sample schemes were not adequately diversified. The risk and return characteristics of schemes were not in conformity with their stated objectives.

Gurucharan Singh (2003)[63] evaluated the performance of 10 equity mutual fund schemes for the period of 2 years i.e. from January 2001 to December 2002 and BSE national index has used as a benchmark for comparison. He concluded that investors should opt for diversified mutual funds that had weathered two or three different market cycle, if they did not have time to research. He also concluded that investor should hold their investment for at least three years.

Narayan Rao Sapar and Ravindran Madava (2003)[64] examined the performance of 58 open ended mutual fund schemes for the period of September 98 to April 02 in a bear market through relative performance index, risk-return analysis, Treynor's ratio, Sharp's ratio, Sharp's measure, Jensen's measure, and Fama's measure .They

concluded that all 58 schemes were able to satisfy investor's expectations by giving excess returns over expected returns based on both premium for systematic risk and total risk.

Bijan Roy and Saikat Sovan Deb (2004)[65] measured the performance of Indian mutual funds in the conditional framework advocated by Ferson and Schadt (1996), and Christopherson, Ferson and Glassman (1998). They found that when the beta of the fund was conditioned to lagged economic information variables, the fund performance did not change appreciably. However, when fund alpha was also controlled for these information variables, the fund performance on an average becomes significantly negative. The result showed that on an average the Indian mutual fund managers only captures the opportunities from the available economic information, they did not contribute anything beyond it. They used a sample of 133 open-ended Indian mutual fund schemes, over the period of January 1999 to July 2003 for the study. The broad based S&P CNX 500 was used in the study as benchmark. Both unconditional and conditional measures of performance were used as measure of past fund performance. They used the methodology of Fama and MacBeth (1973) to test the hypothesis. They found the evidence that conditional measures of past fund performance predict the future fund returns significantly. Between the two different conditional measures of past performance, time-varying conditional alpha was found to be a better measure in indicating persistence in performance of Indian mutual funds.

O P Gupta and Amitabh Gupta (2004)[66] evaluate the investment performance of 57 growth schemes, for the period of April 1999 to March 2003. They concluded that there was no conclusive evidence that suggest that performance of sample mutual funds was superior to the market but some funds were performing well.

S.V.D. Nageswara Rao et al. (2004)[67] evaluated the performance of 21 equity funds using data envelopment analysis (DEA), Semi-Standard Deviation, Negative Potential Measure, and Morning Star Methodology. The results were compared with those obtained using conventional performance evaluation methods of Sharpe, Treynor, and Jensen. They used two evaluation windows of 1997 – 2000 and 2001 – 2004 to analyze rank migration, and 5 investment horizons of 1, 3, 6, 12 and 24 months to include preferences of different investors. They observed that the traditional ranking methods, semi-standard deviation, negative potential, and Morning Star methodology gave similar results as evident from high rank correlation coefficients as they

101

analyzed the same input-output relationship. DEA analyzed multiple inputs and outputs related to a fund, and hence the results were different from those obtained from other methods. They also observed that the rank migration was the highest in the case of DEA. Also, rank migration was relatively lower for shorter investment horizons. They found that about 70-80% of the top 10 performing funds during 1997-2000 remain among the top 10 in the subsequent period (2001 – 2004). There were significant changes in the ranking of those funds which were outside the set of top ten performing ones. Sixty to seventy per cent of schemes outperform the Sensex based on Sharpe ratio, and more than 70% of the funds outperform Sensex in the case of Negative Potential. Thus, there was evidence in support of active fund management.

Arjun Raychaudhuri (2005)[68] studied regarding persistence in Mutual Fund performance in India, from 2001-04. He used several tests from the literature to conclude that there was persistence in mutual fund market. It was found that performance measures that were constructed using large lags of data were better predictors of future performance. The predictions of performance for longer future periods were superior to predictions made for short run future periods. And it was also found that auto-regression tests for persistence might fail despite the presence of persistence.

H. J. Sondhi and P.K. Jain (2005)[69] examined the rates of returns generated by mutual funds during the period 1993-2002 with the sample size of 36 equity mutual funds from 21 Asset Management Companies belonging to private and public sectors. This study revealed overall inferior performance by mutual funds compared to risk free return. The study indicated that private sector sponsored mutual funds had been able to earn returns much higher than the market returns and in the case of public sector sponsored mutual funds, the fund managers seem to had followed poor investment strategies that might have resulted in inferior performance by the PSU sponsored equity mutual funds.

Kulbhushan Chandel and O P Verma (2005)[70] evaluated the performance of 25 sector specific mutual fund schemes on the basis of weekly returns during the period from October 2003 to September 2004. They used three performance measures i.e., Sharpe Index, Treynor Index and Jensen's measure. It was observed that the performance of sample schemes during the study period was best. But there were some cases where poor performance had been reflected.

D.N.Rao (2006)[71] analyzed the financial performance of the 21 open-ended equity growth plan and 21 open-ended equity dividend plan schemes for the period of April 2005 to March 2006. The analysis indicated that Growth plans had generated higher returns than that of Dividend plans but at a higher risk. A comparison of the Sharpe ratios highlighting the fact that Growth plans were likely to reward the investors more for the extra risk they were assuming.

H J Sondhi and P K Jain (2006)[72] examined the stock selectivity skills of the fund managers of diversified equity funds in India. An analysis was based on a sample of 36 equity mutual funds and secondary data had been used in the study for the period of 9 years- from 1993-2002. T-test had been performed to assess the significance of the timing parameters. It was found that the equity mutual funds had been able to generate positive alpha values and implying that the fund managers had added value to the portfolio by their stock selection abilities.

Kaushik Bhattacharjee and Bijan Roy (2006)[73] used Performance Change measure (PCM) developed by Grinblatt & Titman (1993) for a sample of 50 Indian mutual funds over a period of December 2001 to February 2004. PCM had been calculated for one month, one quarter, and one year lag .The study found that though in the short term, the mutual funds were unable to generate above-normal return but on the average the combined PCM of all the mutual funds was significantly different from zero, which were in conformity with the original results of Grinblatt & Titman, in this Indian context.

P.K.Muthappan and E. Damodharan (2006)[74] evaluated the performance of 40 mutual fund schemes during the period April 1, 1995 to March 31, 2000. The results indicated that the risk and return of mutual fund schemes were not in conformity with their stated investment objectives and were not adequately diversified. The funds were able to earn higher returns due to selectivity, but the proper balance between selectivity and diversification was not maintained.

Ramesh Chander (2006)[75] measured the performance of 80 mutual fund schemes for the study period of five years i.e. January 1998 to December 2002. The study found evidence supporting parameter stationarity and the identical persistence of investment performance across all the measurement criteria. Superior performance differentiation was determined in relation to the fund characteristics. The results reported were very strong to provide credence to the performance comparability across diverse market

indices and to reverse the myth regarding fund managers' predisposition for a particular index for better performance reporting.

S. Anand and V Murugaiah (2006)[76] examined the components and sources of investment performance of Indian fund managers and the ability to pick up the best securities at given level of risk using Fama's methodology. The study used 113 mutual funds schemes for the period of April 1999 to March 2003. The empirical results reported that the mutual funds were not able to compensate the investors for the additional risk that they had taken by investing in the mutual funds. The study concluded that the influence of market factor was more severe during negative performance of the funds while the impact selectivity skills of fund managers was more than the other factors on the fund performance in times of generating positive return by the funds. The study also observed that selectivity, expected market risk and market return factors had shown closer correlation with the fund return.

Sharad Panwar and Dr. R. Madhumathi (2006)[77] used sample of public-sector sponsored & private-sector sponsored mutual funds of varied net assets to investigate the differences in characteristics of assets held, portfolio diversification, and variable effects of diversification on investment performance during the period May, 2002 to May, 2005. The study found that public-sector sponsored funds did not differ significantly from private-sector sponsored funds in terms of mean returns percentage. But there was a significant difference between public-sector sponsored mutual funds and private-sector sponsored mutual funds in terms of average standard deviation, average variance and average coefficient of variation(COV).The study also found that there was a statistical difference between sponsorship classes in terms of e SDAR(excess Standard Deviation Adjusted Returns)as a performance measure. They also found that when Residual Variance (RV) was used as the measure of mutual fund portfolio diversification characteristic, there was a statistical difference between public-sector sponsored mutual funds and private-sector sponsored mutual funds for the study period. And residual variance had a direct impact on Sharpe fund performance measure.

Navdeep Aggarwal and Mohit Gupta (2007)[78] tested quarterly returns performance of 55 equity-diversified mutual fund schemes during the period from January 2002 to December 2006 with the help of Capital Asset Pricing Model (CAPM) and Fama-French Model. This study found contrasting findings from the application of the two models.

Ramesh Chander (2007)[79] found that investment managers consider both variability and volatility as risk surrogates. Sample portfolios had experienced identical risk performance for measurement criteria but performance variability was noticed for fund characteristics. He found a strong positive relationship for 35% high risk-return portfolios and 15% low risk-return portfolios and such condition emerged when managers fail to read the directional change in the market movement.

Sanjay Sehgal and Manoj Jhanwar (2007)[80] examined short-term persistence in mutual funds performance for 59 mutual fund schemes from January 2000 to December 2004 in the Indian context. They found no evidence that confirms persistence using monthly data. Using daily data, it was observed that for fund schemes sorted on prior period four-factor abnormal returns, the winners' portfolio did provide gross abnormal returns of 10% per annum on post-formation basis. The empirical findings were consistent with the efficient market hypothesis and had implications for hedge funds and other managed portfolios that rely on innovative investment styles, including the "fund of funds" trading strategies that implicitly assume short-term persistence.

Sathya Swaroop Debasish (2007)[81] studied the performance of 23 schemes of mutual funds based on risk-relationship models and measures for the time period of April 1996 to March 2005. The analysis had been made on the basis of mean return, beta risk, co-efficient of determination, Sharpe Ratio, Treynor ratio and Jensen Alpha. The overall analysis found Franklin Templeton and UTI were the best performers, and Birla Sun Life, HDFC and LIC mutual funds showed poor –below average performance when measured against the risk-return relationship models.

Subbiah Somasundaram (2007)[82] examined the relative performance of actively managed equity funds and the passively managed index funds. They also evaluated stock picking and market timing ability in the Indian context. He utilized the unconditional and conditional variants to evaluate the performance on a sample of 91 funds during the period April 2003 to July 2007. The broad based S&P CNX 500 was used as benchmark in this study. The study used multi beta (Style-Size), lagged vector variables (T-Bills, Term Structure Yield Spread). The results showed active funds with positive risk adjusted excess returns post fees (excludes loads) but not significantly large enough at 1% and 5%. Results also showed fund Managers positive stock selection ability but negative market timing skill. Study found the market co-efficient and alpha negatively correlated. Passive funds were affected by cost rather

than tracking error. They also found that the use of lagged vector variables in the dynamic conditional model had a great impact on the performance results compared to the traditional techniques.

B. Phaniswara Raju and K. Mallikarjuna Rao (2008)[83] evaluated the performance of 60 mutual fund schemes in the framework of risk and return during the period April, 2000 to March 2005. The results indicated failure of many selected schemes in outperforming the market, low average beta, disproportionate unsystematic risk, miss-match of the risk return relationship in some schemes, failure of some schemes in operating mandated return and negative net selectivity in more number of schemes. It was concluded that these could be mainly attributed to the lack of professional management skills in surety analysis and consequent poor stock selection, inadequate diversification on the one hand and highly conservative approach in constructing portfolio when market conditions demanded aggressive portfolio on the other hand.

Deb, Banerjee and Chakrabarti (2008)[84] focused on return-based style analysis of 96 mutual fund schemes in India using quadratic optimization of an asset class factor model proposed by William Sharpe for the study period of January 2000 to June 2005. The study found the 'Style-Benchmarks' of each of its sample of equity funds as optimum exposure to 11 passive asset class indexes. The study also analyzed the relative performance of the funds with respect to their style benchmarks. The results of the study showed that the funds had not been able to beat their style benchmarks on the average.

D.N. Rao and S.B.Rao (2009)[85] evaluated the performance of 22 equity mutual fund schemes for the period of April 2006 to April 2009 based on fund size. From the Hypothesis testing, it was clear that the correlation coefficients of fund size and performance variables were not significant and also the Null Hypotheses were not rejected. They found that the fund size did not affect the performance of equity/growth funds, be it micro-, small-, medium – and large sized funds. It was also found that small sized funds had performed better than Micro-, Medium- and Large sized funds in terms of Return per Risk and Risk Adjusted Return. The Weighted Average Momentum of the Small sized Funds was the second best after that of Micro sized Funds whose fund size which was only 2.02 percent of the total fund size of Equity/Growth Funds. They concluded that the Small sized funds may not necessarily under perform than medium- and large sized funds.

106

G. Prabakaran *et al* (2010)[86] evaluated the performance of 23 mutual fund schemes (equity fund and income fund only) for five years during the period from April 2002 to March 2007. They found that the risk and return of mutual fund schemes were not in conformity with their stated investment objectives. Also sample schemes were not found to be adequately diversified. It is also found that 13 schemes out of 23 schemes selected had superior performance than the benchmark portfolio in terms of Sharpe Ratio, 13 schemes had superior performance in terms of Treynor Ratio, and 14 schemes had superior performance according to Jensen measure. 12 schemes reflected positive differential returns, thereby indicating superior performance in respect of Sharpe differential return measure and 12 schemes appeared to have superior stock selection ability as the selectivity measure was found to be positive in respect of Fama's components of investment performance. And the funds were able to earn higher returns due to selectivity. They also found that the proper balance between selectivity and diversification was not maintained. Thus, they concluded that the Indian mutual funds are not properly diversified.

3.1.3 CONCLUDING REMARKS

The question of whether mutual fund performance is associated with Past returns, Performance Measures, Fund Size, Fund Sponsorship and Selection of Benchmark has been investigated in numerous studies, mostly in the foreign countries, especially in US and up to some extent in India. After reviewing the empirical studies both in foreign countries and in India, following major findings can be concluded.

- Some assert that there is no evidence of persistence in fund performance, both in the long term and in the short term. [10, 19, 24, 25, 27, 32, 33, 36, 37, 41, 44, 49, 52, 54, 59, 65, 66, 68, 75, 76, 80, 81, 83, 84] *etc*. Conversely, some argue in favour of persistence in mutual fund returns.[35, 39, 40, 48, 50, 56, 57, 63, 64, 70] *etc*. and there was a single evidence to indicate a mixed performance of sample schemes.[62]

- About the association of fund size with performance some [29] argue that the performance of the schemes is not positively related with fund size, while some [45] argue that the performance of the schemes is positively related with fund size. Others [55, 85] concluded that the performance of a fund was not closely associated with its size.

- Regarding relationship between sponsorship and performance some [60, 69] argue that private sector sponsored mutual funds had been able to earn returns much

higher than the public sector sponsored mutual funds. While some [77] argue that public-sector sponsored funds did not differ significantly from private-sector sponsored funds in terms of mean returns percentage.

- Regarding consistency between different performance measures some [16, 43] argue that the results obtained from using different performance models were more or less identical. While some [47, 78] argue that the ranking based on the different performance measures were substantially different.

- About the conformity between risk and return and investment objectives some [15] argues that the risk and return of mutual fund schemes were in conformity with their stated investment objectives. While some [74, 86] argue that the risk and return of mutual fund schemes were not in conformity with their stated investment objectives.

3.2 REVIEW OF MARKET TIMING

3.2.1: REVIEW OF MARKET TIMING THEORIES

Treynor and Mazuy (1966)[87] developed a model for testing the market timing abilities of the fund managers. They examined the performance of 57 open-ended mutual fund schemes during the 10 year period from 1953 to 1962. The study noted the absence of statistical evidence that investment managers had successfully outguessed the market. For the 57 funds examined by them, only one fund revealed a positive and significant value.

Roy D. Henriksson and Robert C. Merton (1981)[88] developed the statistical framework for both parametric and nonparametric tests of market-timing ability. If the manager's forecasts were observable, then the nonparametric test could be used without further assumptions about the distribution of security returns. If the manager's forecasts were not observable, then the parametric test could be used under the assumption of either a capital asset pricing model or a multifactor return structure. This specification permitted identification and separation of the gains of market-timing skills from the gains of micro stock-selection skills.

Stanley J. Kon (1983)[89] developed a methodology for measuring the market-timing performance of investment managers and generated empirical evidence by using the data consisted of monthly returns for 37 mutual funds from January 1960 to June 1976. It was noted some evidence of significant superior timing ability and performance at individual fund level. The multivariate tests used in the study

produced no consistency with efficient market hypothesis. Kon concluded that the inferences of the results of the study for the investment managers were that most could improve overall investment performance significantly by re-allocating resources to their more productive activity.

Grinblatt and Titman (1989b)[90] presented a decomposition of the Jensen measure in three terms: a term measuring the bias in the beta evaluation, a timing term and a selectivity term. They developed this model to overcome the criticisms of the Jensen measure, the main one being that a negative performance could be attributed to a manager who practices market timing. In order to establish this decomposition, they assumed that there were **n** risky assets traded on a frictionless market, i.e. no transaction costs, no taxes and no restrictions on short selling. They also assumed that there are risk-free assets. The assumptions were therefore those of the CAPM.

Ferson and Schadt (1996)[91] advocated conditional performance evaluation in which the relevant expectations were conditioned on public information variables. They had used the monthly returns for 67 open-end mutual funds from January 1968 to December 1990. They reported that use of conditioning information in performance measurement was both statistically and economically significant. Traditional measures of average performance (Jensen's alpha) were negative more often than positive, which had been interpreted as inferior performance. The study also found that both a simple CAPM and a four-factor model produced the same result. Unconditional versions of the Treynor- F. Mazuy (1966) and Merton-Henriksson (1981) market timing models were misspecified when applied to naive strategies. They also reported that the relatively pessimistic results of the traditional measures were attributed to common time-variation in the conditional betas and the expected market return. When this predictability was ignored, fund managers as a group show spurious inferior performance. This "inferior" performance is primarily due to a negative covariance between mutual fund betas and the conditional expected market return.

3.2.2: EMPIRICAL STUDIES TESTING MARKET TIMING THEORIES: A REVIEW

There has been an excellence study conducted on the market timing abilities of the fund manager. This section, therefore, reviewed major studies relating to market timing abilities of the fund manager carried out both in foreign countries and in India.

3.2.2.1 FOREIGN STUDIES

Market Timing abilities of the fund manager has been widely carried out for the US funds and to a lesser extent for other foreign countries.

Stanley J. Kon and Frank C. Jen (1979)[92] evaluated mutual fund stock selectivity performance and the implications for the Efficient Markets Hypothesis (EMH) when management was simultaneously engaged in market timing activities. They employed both the Sharp- Lintner-Mossin and Black models of market equilibrium. The data in the study consisted of monthly returns pertaining to 48 mutual funds during the study period from January 1960 to December 1971. For the SLM benchmark model, the 30-day Treasury bill rate and monthly returns on the Center for Research in Security Prices at the University of Chicago equally weighted market index (adjusted for dividends) are the proxies for the risk less and market rates of return, respectively. The empirical evidence indicated that many of the funds in the sample significantly change their risk levels during the measurement interval. This resulted in significantly different stock selectivity performance and portfolio diversification. The evidence on selectivity performance pertinent to the EMH was mixed. They also found that the mutual fund managers individually and on average were unable to consistently forecast the future prices on individual securities well enough to recover their research expenses, management fees, and commission expenses.

Eric C. Chang; Wilbur G. Lewellen (1984)[93] examined the investment performance of 67 mutual funds with varied investment objectives by using monthly rates of return for the period January 1971 to December 1979. The proxy for the market portfolio was CRSP Index and as the risk free rate, the yield on U.S. treasury bills having a maturity of one month was taken. They employed the parametric statistical procedure developed by Henriksson and Merton (1981). They concluded that there was little evidence of any market timing ability on the part of the fund managers. They also found that mutual fund managers were generally poor market timers and they tend to underestimate the concurrent contribution of their security selection activities to observed overall investment performance.

Roy D. Henriksson (1984)[94] examined the performance of the investment managers by using both the parametric and non-parametric tests for the evaluation of forecasting ability presented by Henriksson and Merton. The study used 116 open-end U.S. mutual funds for the period 1968-80. The empirical result did not support the hypothesis that mutual fund managers were able to follow an investment strategy that

110

successfully times the return on the market portfolio. The study found that only three funds had significantly positive estimates of market timing ability in terms of parametric tests for the period from 1968-1972 to 1980-1986 and only one fund had significant estimates in both sub periods when the sample was split in half. All three had negative overall estimates of performance in the nonparametric tests and total returns for the period very close to the average of all funds in the sample. Of the four funds that exhibited superior performance in the non- parametric tests, only one did so in both sub periods, and all four had positive estimates of a and negative estimates of β_2 in the parametric tests. Strong evidence of non-stationarity in the performance parameters was found in both the parametric and nonparametric tests.

Cheng-Few Lee and Shafiqur Rahman (1990)[95] examined the market timing and selectivity performance of 93 mutual funds during January 1977 to March 1984. They used a very simple regression technique to separate stock selection ability from timing ability. This technique, first suggested by Treynor and Mazuy and later refined by Bhattacharya and Pfleiderer, used a modified security-market line approach to produce individual measures of timing and stock selection ability. The inputs to the model were only the returns earned on the fund and those earned on the market portfolio. The empirical results indicated that at the individual fund level there was some evidence of superior micro- and macro forecasting ability on the part of the fund manager.

J. Fletcher (1995)[96] examined the selectivity and timing abilities of 120 UK trusts with Growth, General or Income Objectives as detailed in the Unit Trust Year Book for 1980. He applied a variety of indices and methods including Chen and Stockum and Hendriksson and Merton's measures of timing ability. He reported that the selectivity skills on average are positive but the timing performance was negative in his sample period from 1980 to 1989.

Jeffrey A. Busse (1999)[97] used daily returns for the first time in a mutual fund context, of 230 domestic equity funds during the period from January 2, 1985 through December 29, 1995, to study how managers reacted to changes in market volatility. He examined how managers respond to publicly available information. He focused on volatility timing rather than returns timing and examined the timing problem from a new perspective. He showed that funds decrease market exposure when market volatility was high. The systematic risk of surviving funds was especially sensitive to market volatility, whereas that of non survivors was not significantly different from

111

randomly formed portfolios of stocks. He found that volatility timing had paid off in the form of higher Sharpe ratios without exposing fund investors to additional interest rate risk and conditional alphas indicated that fund performance was especially enhanced during periods of high conditional volatility, suggesting that actively managed funds could potentially provide investors with a valuable volatility hedge. His approach in this study illustrated the advantages of analyzing mutual funds in a conditional framework. Conditional analysis allowed for richer explanations of the dynamics of mutual fund risk not only by indicating how risk changed, but also by suggesting why it changed. By differentiating between passive effects, effects produced by using public information, and effects from using better than public information, a conditional approach could more clearly differentiate among active managers of varying ability. Finally, he reported that, this could lead to better asset allocation decisions and more equitable compensation schemes.

Bollen and Busse (2001)[98] studied the market timing ability of mutual fund managers by using daily and monthly returns of 230 mutual fund schemes during the period January 2, 1985, to December 29, 1995. They found that daily returns increase the number of significant estimates of timing ability. To test whether this result was spurious, they constructed a set of synthetic funds that match the characteristics of the actual funds but had no timing ability. Using one model of market timing and monthly data, 11.9 percent of the funds exhibited significantly more timing ability than the corresponding synthetic fund. Using daily data, 34.2 percent of the funds exhibited significantly more ability. These results indicated that the measured timing ability could not be explained as a spurious statistical phenomenon. And they reported that observation frequency matters when judging fund performance.

Wilfred L. Dellva et al. (2001)[99] tested the selectivity and timing performance of the Fidelity sector mutual funds during the 1989-1998 time periods. They used the S&P 500, the Dow Jones Industry Group Total Return Indexes, and the Dow Jones Subgroup Total Return Indexes as benchmarks. When they used the Dow Jones Industry benchmark, results indicated that many sector fund managers had positive selectivity but negative timing ability. Also found that the results were sensitive to choice of benchmark and timing model.

Nicolas P. B. Bollen et al. (2005)[100] estimated parameters of standard stock selection and market timing models using daily returns of 230 mutual funds during the period from January 2, 1985 through December 29, 1995 and quarterly measurement

periods. They ranked funds quarterly by abnormal return and measure the performance of each fund the following quarter. They found the average abnormal return of the top fund in the post-ranking quarter was 39 basis points. The post-ranking abnormal return disappeared when funds were evaluated over longer periods. These results suggested that superior performance was a short-lived phenomenon that was observable only when funds were evaluated several times a year.

Joao Carlos Romacho and Maria C´eu Cortez (2006)[101] used the Henriksson and Merton model to Portuguese based mutual funds investing in local, European and International equity to get the evidence on timing and selectivity skills of fund managers. The results showed that managers did not exhibit selectivity and timing abilities, and there was even some evidence of negative timing. They also observed a distance effect on stock selection performance, since fund managers that invest locally seem to perform better that those who invest in foreign markets. This effect was reverted with respect to market timing skills of fund managers, suggesting that International fund managers were more focused in market timing strategies.

Huson Joher Ali Ahmed (2007)[102] examined the performance of unit funds for different investment objective with the view to focus on Jensen Alpha measure using both single and multi index model. He also analyzed timing ability of fund manager using quadratic regressions of Treynor & Mauzy. The analysis was based on a sample of 50 funds over a period of 6 years, from January 1999 to January 2004 by using monthly data. As a benchmark portfolio, the study used Bursa Saham Malaysia Composite Index from the corresponding period. The monthly Bursa Saham Malaysia Composite Index (CI) for the period was used for single index model. The yield on the 3-month Treasury bills was used as a proxy for risk free rate. While Month ends closing of Dow Jones Industrial Average, Nikkei 225 Index and Hang Seng Index was used for multi index model. The finding showed some evidence of difference in the performance (selectivity) by using single and multi-index model. He also found that fund managers in general performed poorly in security analysis and market timing. However, they performed fairly in maintaining well-diversified portfolios that might attract many individual risk-averse investors to use mutual fund as an investment vehicle. Though findings showed that choice of benchmark was not a great matter of concern but multi-index model served a better proxy benchmark for investment valuation particularly on the security analysis.

113

D. Giamouridis and K. Sakellariou (2008)[103] investigated the impacts of timing and selection abilities of fund managers on fund performance and compare the returns attributable to these two abilities. Adopting both parametric and non-parametric tests, they found weak evidence of persistence in poor performing funds in the short-term (monthly and quarterly). Furthermore, they suggested that returns obtained from stock-picking models were superior to those of market-timing models. Their finding highlighted the presence of persistence in the stock-picking model rather than in the market-timing model. As a consequence, fund managers in this case were considered to possess stock-selection ability rather than timing ability. They argued that timing model misspecifications might result in violations of regression assumptions in potential time-varying methods. In this respect, as in this study, only correcting heteroskedasticity and autocorrelation might not entirely capture the impacts of violations on the regression coefficients.

3.2.2.2 INDIAN STUDIES

There have been very few studies compare to foreign countries, which examined the market timing ability of Indian fund managers. An attempt has been made by the researcher to cover most of the studies carried out by the Academicians and Practitioners on market timing abilities of Indian fund manager.

Amitabh Gupta (2000)[104] had examined the market timing abilities of Indian fund managers using weekly NAV data for 73 mutual fund schemes during the period of 1994 to 1999. He found that managers of closed ended schemes can time the market easily.

Biswadeep Mishra (2002)[105] attempted to evaluate the timing and selectivity skills of mutual funds and also tried to test the non-stationarity of mutual fund betas and found out the causes of non-stationarity beta. The study utilized the Chen and Stockum (1986) model that used a generalized varying parameters regression procedure to examine mutual fund's selectivity, beta instability, and timing skills simultaneously. It was concluded that the selected mutual fund schemes had no timing ability, even though at individual level some of the schemes had timing skills. The generalized varying parameter (GVP) estimates also revealed that the systematic risk of Indian mutual funds did not remain stable over time.

Bijan Roy and Saikat Sovan Deb (2003)[106] conducted an empirical study to measures the performance of 89 Indian mutual fund schemes over the period of Jan, 1999 to July, 2003, with both unconditional and conditional form of CAPM, Treynor-

Mazuy model and Henriksson-Merton model. The effect of incorporating lagged information variables into the evaluation of mutual fund managers' performance was examined in the Indian context. The results suggested that the use of conditioning lagged information variables improves the performance of mutual fund schemes, causing alphas to shift towards right and reducing the number of negative timing coefficients.

Nalini Prava Tripathy (2006)[107] evaluated the market timing abilities of Indian fund managers of thirty-one tax planning schemes in India over the period from December, 1995 to January, 2004 by using Treynor & Mazuy Model and Henriksson and Merton model. The study indicated that the fund manager had not been successful in reaping returns in excess of the market; rather they were timing the market in the wrong direction.

Ramesh Chander (2006)[108] examined the market timing ability of the Indian mutual fund manager. He found that the negative incidence of market timing performance, usually, points to the unsuccessful market timing abilities of investment managers in India. Fund managers were unable to successfully time the markets and this prevailed uniformly across measurement criteria.

Deb, Banerjee and Chakrabarti (2007)[109] attempted to find the stock selection and market timing abilities of the Indian mutual fund managers using unconditional as well as conditional approaches. The study used a sample of 96 Indian mutual fund schemes with monthly as well as weekly data during the period of January 2000 to June 2005. The study results showed strong evidence of lack of market timing and weak evidence of positive stock selection across all categories of fund with monthly data frequency and the weekly data frequency analysis showed strong evidence of positive stock selection and negative market timing.

Raju and Rao (2009)[110] used Treynor and Mazuy & Henriksson and Merton with the BSE Sensex and NSE Nifty as market proxies to measure the market timing ability of the fund managers. The results indicated that a majority of the selected mutual fund scheme managers were not seriously engaged in any market timing activities and were relying mainly on stock selection skills. They also found that fund managers of private sector exhibited better market timing as per Henriksson and Merton model.

3.2.3 CONCLUDING REMARKS

▪ After reviewing the empirical studies testing market timing abilities of the fund managers both in foreign countries and in India, it is found that majority of them argue that Fund managers were unable to successfully time the markets [92, 93, 94, 96, 99, 101, 103, 104, 105, 106, 107, 108, 109, 110] *etc.* While some [95] argues that at the individual fund level there was some evidence of superior micro- and macro forecasting ability on the part of the fund manager. And some [98] argue that the measured timing ability could not be explained as a spurious statistical phenomenon and reported that observation frequency matters when judging fund performance.

3.3 REVIEW OF BEHAVIORAL FINANCE

The "expectations" of investors play a vital role in the financial markets. They influence the price of the securities, the volume traded and various other financial operations in actual practice. These "expectations" of investors are influenced by their "perception" and humans generally relate perception to action.

And because of these, Mutual Funds have attracted a lot of attention and interest of both academicians and practitioners. But most of the existing research available is on either accelerating the return on funds or comparing it with benchmark fund schemes. Very few and very little study has been done in foreign countries as well as India about preferences, perceptions, attitude and behavior of the retail investor.

This section is divided into two parts. In Section 3.3.1, an attempt has been made to throw light on various theories of Behavioral Finance and Section 3.3.2 reviewed the empirical studies on investment behavior of retail investors in India and abroad.

3.3.1 REVIEW OF BEHAVIORAL FINANCE THEORIES

Apart from the studies that evaluate only mutual fund performance, the most recent figures indicate that fund characteristics and behavioral patterns of mutual fund investors are also in the limelight. As regards the behavioral patterns, it is often mentioned that mutual fund flows help identify the investment decisions of individuals and therefore these decisions' impact on the potential constraints of fund managers.

Behavioral Finance is a new paradigm of finance, which seeks to supplement the standard theories of finance by introducing behavioral aspects to the decision making process.

The primary objective of an investment is to make money. In the early period, investment was based on performance, forecasting, market timing and so on. This produced very ordinary results, which meant that investors were showered with very ordinary futures, and little peace of mind. There was also a huge gap between available returns and actually received returns which forced them to search for the reasons. In the examining process, they identified that it is caused by fundamental mistakes in the decision-making process. In other words, they make irrational investment decisions. In recognizing these mistakes and means to avoid them, to transform the quality of investment decisions and results, they realized the impact of psychology in investment decisions. Several years ago, the researchers began to study the field of Behavioral Finance to understand the psychological processes driving these mistakes. Thus, Behavioral finance is not a new subject in the field of finance and is very popular in stock markets across the world for investment decisions.

Table 3.1 presents the developments in Behavioral Finance Theory over a period of time. Here, some of the basic findings and principal theories within behavioral finance are reviewed.

Table 3.1 : Developments in Behavioral Finance Theory		
Behavioral Finance Theory	Year	Author(s)
COGNITIVE DISSONANCE	1957	Erlich, Guttman, Schopenbach and Mills
	1957	Festinger
	1985	Shefrin and Statman
	1993	Goetzmann and Peles
THE IRRELEVANCE OF HISTORY	1969	Florovsky
	1985	Mehra and Prescott
	1998	R.J.Shiller
AVAILABILITY HEURISTICS	1973	Tversky and Kahneman
	1998	R.J.Shiller
	2004	Esgate and Groome
OVER CONFIDENCE	1974	Tversky and Kahneman
	1977	Fischoff, Slovic and Lichtenstein
	1987	L.Ross
	2001	Barber and Odean
	2008	Bodie, Kane and Marcus
REPRESENTATIVE HEURISTICS	1974	Tversky and Kahneman
	1992	Chopra, Lakonishok and Ritter
	1998	R.J.Shiller
	2000	Barber, Odean and Zheng
PROSPECT THEORY	1979	Kahneman and Tversky
	1992	Tversky and Kahneman
	1998	R.J.Shiller
FRAMING	1981	Kahneman and Tversky
STATUS QUO BIAS	2001	Ameriks and Zeldes,
	2003	Agnew, Balduzzi and Sunden
	2004	Engström and Westerberg
	2006	Barber, Odean and Zhu
	2006	Kempf and Ruenzi

REPRESENTATIVE HEURISTICS

According to the theory of Representative Heuristic an individual sees return history as relevant only if the individual observes the circumstances of today as representative for widely remembered past events, like for instance the stock market crashes in 1987 and 1992. In other words, this is a tendency to categorize events as typical within a familiar class (**Shiller(1998)** [111]). According to **Tversky and Kahneman (1974)** [112], people overestimate the importance of this categorization when estimating probabilities and consequently people believe they see patterns in data which in reality is truly random. Implications of representative ness are that people tend to extrapolate apparent trends far out in the future commonly believing that small samples are equally representative for a population as large ones (**Chopra et al. (1992)** [113]). The representative heuristics amongst investors gives rise to the tendency of forming overly optimistic assumptions about future performance based on recent performance resulting in investors buying past winning funds (**Barber et al. (2000)** [114]).

OVER CONFIDENCE

As shown in an experimental study by **Fischoff, Slovic and Lichtenstein (1977)** [115], people are overconfident regarding their own judgments. But is it possible that people are systematically overconfident? The phenomenon might be traced to representative heuristic (Tversky and Kahneman (1974)), discussed above. It might also be associated with a difficulty in making adequate allowance for the uncertainty in one's own view of extensive circumstances (**Ross (1987)** [116]). Overconfidence might explain the dominance of active investment management over passive management despite the typical underperformance of active strategies (**Bodie et al. (2008)** [117]). In an empirical study performed by **Barber and Odean (2001)** [118] it was showed that men trade far more actively than women, indicating greater overconfidence amongst men which is in line with psychology literature.

THE IRRELEVANCE OF HISTORY

The theory of irrelevance of history is closely related to the theory of overconfidence in financial markets. As the heading suggests, an individual does not consider past statistics as relevant when making investment decisions. One cannot learn lessons from history. All that affect our decisions are factors one observes in the present (Shiller (1998)). An explanation for this behavior was presented by **Florovsky (1969)** [119].

"In retrospect we seem to perceive the logic of the events which unfold themselves in a regular order, according to a recognizable pattern, with an alleged inner necessity, so that we get the impression that it really could not have happened otherwise."

This implies that individuals believe that past events could not have taken another turn whatever decisions were made beforehand. Past events are seen as deterministic. Consequently people believe, according to this theory that major events like the world wars and the stock crash of 1929 were events that people were concerned about prior to their occurrence (Shiller (1998)). Referring to the equity premium puzzle coined by **Mehra and Prescott (1985)** [120] – this theory might provide one sensible justification. One explanation to the puzzle might be that people do not believe that history will repeat itself. The theory may also pose clarification on why people systematically violate the principles of financial theory - avoiding diversifying portfolios on a global level and disregarding the correlation between their investment and labor income (Shiller (1998)).

AVAILABILITY HEURISTICS

"A person is said to employ the availability heuristic whenever he estimates frequency or probability by the ease with which instances or associations could be brought to mind" **(Tversky, and Kahneman (1973)[121])**. Altering waves of public attention or inattention seems to affect investor attention towards certain categories of investments such as stock versus bonds, investing domestically versus globally, investing in real estate and so forth. Public interest in financial markets seems to vary by time and is enhanced by phenomenon of attention such as crashes in financial markets (Shiller (1998)). The availability heuristic follows the idea that if you think of it, it must be important **(Esgate and Groome (2004) [122])**.

PROSPECT THEORY

Prospect theory was developed as a sensible alternative to expected utility theory **(Kahneman and Tversky (1979)[123] and Tversky and Kahneman(1992)[124])**. Expected utility theory offers a mathematical representation of truly rational behavior under uncertainty. However, expected utility theory is well known to incorrectly predict human behavior which can be exemplified by experiments with lotteries. When people chose between one lottery offering a 25 percent chance of winning 3,000 and another lottery offering a 20 percent chance of winning 4,000, the second alternative was chosen by 65 percent of the people. When the same group was asked

to choose between one lottery offering a 100 percent chance of winning 3,000 and another lottery offering a 80 percent chance of winning 4,000, the first alternative was instead chosen by 80 percent of the people. (Kahneman and Tversky (1979)). This preference for certain outcomes is a violation of the expected utility theory which would predict the same outcomes in both cases. The utility function under prospect theory, explaining the preference for certainty, is presented below and illustrates that people tend to overreact to small probability events but under-react to large probabilities.
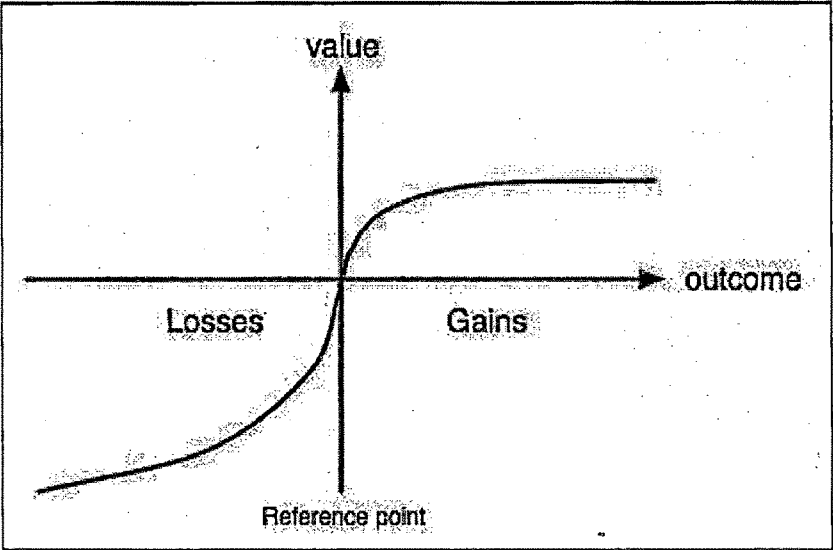

Figure 3.1: Utility Function under Prosepct Theory

(Kahneman And Traversky (1979))

The utility function has a kink at one point, referred to as the reference point, against which alternative scenarios are compared by the individual. Hence, its location is determined by the individual's subjective impressions. Utility does not depend on the level of wealth as in expected utility theory, but on the changes in wealth from current levels. Above the reference point the utility function is concave but below the reference point the utility function is instead convex. This indicates that people are risk lovers when it comes to losses but risk averse when it comes to positive outcomes. Another important implication is that even when the amounts at stake are very small, an individual will be risk averse when choosing between uncertain outcomes. This is in contrast to expected utility theory implying that people are risk neutral for small bets. The location of the reference point is not specified by prospect theory (Shiller (1998)).

FRAMING

Related to prospect theory discussed above is the concept of framing. According to experiments performed by **Kahneman and Tversky (1981)**[125], an individual's choice is affected by decision–frames. Hence, choices are affected by how different alternatives are presented to them. An individual, who made a rational optimal choice when the information presented to them was transparent, made an irrational choice when the same information was presented in a less obvious format.

COGNITIVE DISSONANCE

Cognitive dissonance, closely linked to regret theory, is a mental conflict caused by holding two contradictory cognitions at the same time. These cognitions involve attitudes, beliefs and the awareness of one's behavior. Since cognitive dissonance is an uncomfortable feeling people will try to take actions to reduce dissonance in ways not considered rational under normal circumstances **(Festinger (1957)**[126]**)**. To illustrate, new car buyers avoid reading advertisements for the car models they did not buy but are attracted to advertisements for the car they purchased **(Erlich et al. (1957)**[127]**)**. Regret theory might explain the fact that investors tend to sell winning stocks too early but hold losing stocks too long in order to avoid the feeling of regret **(Shefrin and Statman (1985)**[128]**)**. There are arguments that cognitive dissonance could be an explanation for why there is a rapid inflow of money into funds that have performed very well whereas the outflow of money from funds performing bad is not at all as rapid. Those having made investments in loosing funds are unwilling to confront the evidence of having made bad decisions by realizing their losses **(Goetzmann and Peles (1993)**[129]**)**. This positive convex relationship between mutual fund flows and past performance has been found in a large number of previous studies.

STATUS QUO BIAS

Individuals are subject to the status quo bias if they choose the same option as in earlier decision situations even though this choice is suboptimal. There are several examples indicating that individuals are being subject to status quo bias when forming financial decisions **(Kempf and Ruenzi (2006)** [130]**)**. Portfolio compositions of private households rarely change **(Ameriks and Zeldes, (2001)** [131]**)**, portfolio compositions in U.S. pension accounts rarely change **(Agnew et al. (2003)**[132]**)** and investors tend to buy stocks that they have bought before **(Barber et al.(2006)**[133]**)**. In an empirical

study on the U.S. equity mutual fund market Kempf and Ruenzi (2006) provided strong evidence for a positive dependence between the status quo bias and the number of alternatives offered. Their results show that if there were more than 100 alternatives, the status quo bias was three times as large as if there were 25 alternatives. **Engström and Westerberg (2004)**[134] provide evidence that investors seem to have a strong preference for funds they are familiar with. Funds that are based in Sweden belong to one of the four main banks and funds that have a past track record attract more investors and larger inflows of capital than other funds.

Though the above theories are widely observed, behavioural finance does not claim that all the investors will suffer from the same illusion simultaneously. The vulnerability of an investor to a particular illusion is likely to be a function of several variables. For example, there is suggestive evidence that the experience of the investor has an explanatory role in his regard with less experienced investors being prone to extrapolation (representative ness) while more experienced investors commit gambler fallacy **Shefrin, H (2000)**[135] .Similarly, behavioral factors play a vital role in the decision making process of the investors. Hence the investors has to take necessary steps to minimize or avoid illusions for influencing in their decision making process, investment decisions in particular.

3.3.2 EMPIRICAL STUDIES ON INVESTMENT BEHAVIOUR OF RETAIL INVESTORS: A REVIEW

There have been many studies conducted on investment behavior of retail investors. This section, therefore, reviewed major studies relating to investment behavior of retail investors carried out both in foreign countries and in India. The review of some of such important studies is presented here below.

3.3.2.1 FOREIGN STUDIES

In foreign countries majority of the studies have been carried out based on performance of mutual funds. But there is less number of studies based on investment behavior compared to performance of mutual funds.

Noel Capon et al. (1996)[136] investigated the manner in which consumers made investment decisions for mutual funds. Investors reported that they consider many nonperformance related variables. When investors were grouped by similarity of investment decision process, a single small group appeared to be highly knowledgeable about its investments. However, most investors appeared to be

122

inexperienced, having little knowledge of the investment strategies or financial details of their investments.

Gordon J. Alexander *et al.* **(1997)**[137] surveyed data on a random sample of 2000 mutual fund investors. They classified investors by their level of financial literacy and their place of mutual fund purchase. After using a probit model to separately estimate the determinants of an investor's choice of distribution channel and level of financial literacy, a bivariate probit model that jointly endogenizes an investor's level of financial literacy and choice of distribution channel was estimated. They found strong evidence that an investor's level of financial literacy and choice of distribution channel were jointly determined. Thus, the hypothesis put forth in this paper that investors self-select into different distribution channels based on their overall level of financial literacy was supported by the data.

Gordon J. Alexander *et al.* **(1998)**[138] analyzed the responses from a telephone survey of 2,000 randomly selected mutual fund investors who purchased shares using the services of six different intermediaries, referred to as distribution channels -- brokers, banks, mutual fund companies, insurance companies, employer-sponsored pension plans, and "other" (e.g., financial planners) in U.S. The survey showed that the typical mutual fund investor surveyed was older, wealthier, and better educated than the average American. The results of the survey suggested that investor knowledge of the expenses and risks associated with mutual funds could be improved. Although the average fund shareholder had invested in funds for several years, most fund shareholders did not appear to appreciate the relationship between fund expenses and performance. In addition, a substantial number of fund investors still believed they could not lose money in a bond fund. The survey results also suggested that more could be done to make mutual fund prospectuses on more useful to investors. Moreover, the survey respondents considered the prospectus only the fifth best source of information about the funds they purchased. Although broker and direct fund company purchasers were relatively more knowledgeable about the costs and risks of mutual fund investments than fund company purchasers who did not use brokers and did not purchase directly, it was likely that investors self-select into the various distribution channels.

Franklin L Fant (1999)[139] conducted a study by taking fund flow data for 1984 through 1995 of US equities, classified as aggressive growth, growth, growth and income, and income-equity categories, only. He investigated the aggregate investment

behavior of mutual fund shareholders by analyzing the interaction of their demand for equity securities with stock returns. Aggregate fund flows were broken down into four components (new sales, redemptions, exchange-in and exchange-out). He found that mutual fund investors used new sales/ redemptions differently from exchanges, which resulted in the components reflecting varied information. The findings were not consistent with new sales/redemptions reflecting the same return-related information as exchange with a lag. Investors appeared to use exchanges, to time the market and/or engaged in tactical asset allocation. The study suggested that various components reflected different investor objectives and information.

Zheng, Lu (1999)[140] estimated the aggregate investors' ability in selecting mutual funds and switching among them. He applied a measure of portfolio performance introduced by Grinblatt and Titman (1993) over the period of January 1970 through December 1993. Using a large sample of equity funds, he found evidence that funds that receive more money subsequently perform significantly better than those that lose money. This effect was short-lived and was largely but not completely explained by a strategy of betting on winners. In the aggregate, there was no significant evidence that funds that receive more money subsequently beat the market. However, it was possible to earn positive abnormal returns by using the cash flow information for small funds. Using a conditional method and style variables, he conclude that the smart money effect was not due to macroeconomic information or style effect, but likely was due to fund-specific information. This suggested that investors use fund-specific information in making their mutual fund investment decisions.

Gordon J. Alexander et al. (2001)[141] examined the responses from a survey of investors in U.S. who purchased mutual funds from banks and elsewhere. They found that bank-channel investors were less financially literate than those investors purchasing funds through other distribution channels. Using a treatment-effects econometric model, they also found that purchasing only through banks actually raised the knowledge level of these investors. This result suggested that the increased focus on disclosure at banks had a positive effect on investor financial literacy, and that disclosure requirements in the Gramm-Leach-Bliley Act of 1999 were likely to be beneficial. They suggested that investor financial literacy still needs improvement.

Brad M. Barber et al. (2002)[142] collected the primary data set from a large discount brokerage firm on the investments of 78,000 households from January 1991 through December 1996 to analyze the mutual fund purchase and sale decisions. Out of total

sample households, 42 percent of the sampled households reside in the western part of the United States, 19 percent in the East, 24 percent in the South, and 15 percent in the Midwest. They documented three primary results. First, investors bought funds with strong past performance; over half of all fund purchases occurred in funds ranked in the top quintile of past annual returns. Second, investors sold funds with strong past performance and were reluctant to sell their losing fund investments; they were twice as likely to sell a winning mutual fund rather than a losing mutual fund and, thus, nearly 40 percent of fund sales occur in funds ranked in the *top* quintile of past annual returns. Third, investors were sensitive to the form in which fund expenses were charged; though investors were less likely to buy funds with high transaction fees (e.g., broker commissions or front-end load fees), their purchases were relatively insensitive to a fund's operating expense ratio. Based on the findings they argued that the representative heuristic leads investors to buy past winners, the disposition effect renders investors reluctant to sell their losers, and framing effects cause investors to react differently to various forms of fund expenses.

Peggy D Dwyer *et al.* (2002)[143] conducted a study to examine whether the risk taking behavior of mutual fund investors is correlated with gender by using data from a national survey of nearly 2000 mutual fund investors. The findings revealed that women exhibit less risk taking than men in their most recent, largest and riskiest mutual fund investment decisions. However, it was observed that the impact of gender on risk taking was significantly weakened when investor knowledge of financial markets and investment was controlled in the regression equation for the purpose of the study.

Pei-Gi Shu *et al.* (2002)[144] examined the investment flow of open-end equity mutual funds. They were able to investigate the buy and sell behavior of mutual investors separately with a unique data from Taiwan. They found that most investors invest in large mutual funds were small-amount investors, while those that invest in small funds, invest a much larger amount. Small-amount investors of large funds tend to chased past winners and redeem shares once fund performance improves. They were more likely to avoid actively managed funds with high turnover. On the other hand, large-amount investors of small funds appeared to be dispassionate buyers whose purchases were not remarkably affected by short-term performance. They were more

likely to keep performance-improving funds, redeem the losers, and pay higher management fees.

James J. Choi et al. (2002)[145] analyzed the impact of a Web-based trading channel on the trading activity in two corporate 401(k) plans. Using detailed data on about 100,000 participants, they compared trading growth in these firms to growth for a sample of firms without a Web channel. After 18 months of access, the inferred Web effect was very large: trading frequency doubled, and portfolio turnover rose by over 50 percent. They also documented several patterns of Web-trading behavior. They found that young, male, and wealthy participants were more likely to try the Web channel. Frequent traders (before Web introduction) were less likely to try the Web. Participants who tried the Web tend to stick with it. They also found that Web trades tend to be smaller than phone trades both in dollars and as a fraction of portfolio and short-term' trades made up a higher proportion of phone trades than of Web trades.

Brad M. Barber et al. (2003)[146] used mutual fund flows from 1970 to 1999 and actual mutual fund purchase and sale decision by investors at a large discount broker from 1991 to 1996. They argued that the purchase decisions of mutual fund investors were influenced by salient, attention-grabbing information. Investors were more sensitive to salient in-your-face fees, like front-end loads and commissions, than operating expenses; they were likely to buy funds that attract their attention through exceptional performance, marketing, or advertising. Their empirical analysis of mutual fund flows over the last 30 years yields strong support for their contention. They found consistently negative relations between fund flows and front-end load fees. They also documented a negative relation between fund flows and commissions charged by brokerage firms. In contrast, they found no relation (or a perverse positive relation) between operating expenses and fund flows. Additional analyses indicated that mutual fund marketing and advertising, the costs of which were often embedded in a fund's operating expenses, account for this surprising result.

Nicolas P. B. Bollen (2006)[147] studied the dynamics of investor cash flows in socially responsible mutual funds. He found that consistent with subjective evidence of loyalty, the monthly volatility of investor cash flows was lower in socially responsible funds than conventional funds. He also found a strong evidence that cash flows into socially responsible funds were more sensitive to lagged positive returns than cash flows into conventional funds, and weaker evidence that cash outflows from socially

responsible funds were less sensitive to lagged negative returns. These results indicated that investors get value from the socially responsible attribute, especially when returns were positive.

Jeff Dominitz et al. (2008)[148] designed and administered a pair of mutual fund choice experiments to over 1000 survey respondents who participate in the RAND American Life Panel. They focused on the question of how mutual fund investors respond to variation in fees in a hypothetical scenario in which fees should be obvious to the investor. The results showed that some aspects of individual behavior were consistent with rational wealth-maximization and the majority of the respondents were able to provide estimates of fees that lie within a benchmark range. However, they found that respondents tend not to minimize expected fees and were more averse to backend load fees than to front-end loads. The trade-off between expense ratios and loads was found to be somewhat sensitive to the expected holding period in a manner consistent with expected-wealth maximization, but investors might tend to be too averse to loads. Differences in measured financial literacy predicted differences in behavior, with lower rates of literacy among women accounting for differences in choice behavior by gender. They also found that financial literacy mediates individual responses to the presentation of information intended to enhance decision making.

Zoran Ivkovich and Scott J. Weisbenner (2008)[149] studied the relation between individuals' mutual fund flows and fund characteristics with the primary data set of 78,000 households made in the period from January of 1991 to November of 1996 came from a large discount broker. They found that for getting the tax benefit, individual investors were reluctant to sell mutual funds that had appreciated in value and were willing to sell losing funds. Individuals paid attention to investment costs as redemption decisions were sensitive to both expense ratios and loads. They also found that individuals' fund-level inflows and outflows were sensitive to performance. Inflows were related only to relative" performance, suggesting that new money chased the best performers in an objective and outflows were related only to "absolute" fund performance, the relevant benchmark for taxes.

Warren Bailey et al. (2010)[150] examined the effect of behavioral biases on the mutual fund choices of a large sample of U.S. discount brokerage investors using new measures of attention to news, tax awareness, and fund-level familiarity bias, in addition to behavioral and demographic characteristics of earlier studies. They used primary database of a six-year i.e. from January 1991 to November 1996 panel of

trades and monthly portfolio positions of individual investors with accounts at a major U.S. discount broker. They found that behaviorally-biased investors typically made poor decisions about fund style and expenses, trading frequency, and timing and resulted in poor performance. They also found that trend-chasing appears related to behavioral biases, rather than to rationally inferring managerial skill from past performance. Factor analysis suggested that biased investors often conform to stereotypes that could be characterized as "gambler", "smart", "overconfident", "narrow-framer", and "mature".

3.3.2.2 INDIAN STUDIES

In India, though the Mutual Fund Industry has been in existence since 1964, (with the establishment of UTI); no major study has been carried out regarding the aspect of investor behavior or preferences with reference to Mutual funds.

Madhusudhan V. Jambodekar (1996)[151] conducted a study to assess the awareness of MFs among investors, to identify the information sources influencing the buyer decision and the factors influencing the choice of a particular fund. The study revealed that income schemes and open-ended schemes were preferred over growth schemes and close-ended schemes during the prevalent market conditions. Investors looked for Safety of Principal, Liquidity and Capital Appreciation in order of importance; Newspapers and Magazines were the first source of information through which investors get to know about MFs / Schemes and the investor service was the major differentiating factor in the selection of MFs.

V. Raja Rajan (1998)[152] examined the relationship between the stages in life cycle of individual investors, their investment size and their investment in risky assets, on the basis of primary data collected from 405 individual investors. The study revealed that the size of investment in financial assets and the percentage of risky assets in financial investments decline as the investors moves up through the various stages in life cycle. It was also found that stage in life cycle of individual investors was an important variable in determining the size of investment in financial assets and the percentage of financial assets in risky category.

R. Shanmugham (2000)[153] conducted a survey of 201 individual investors to study the information sourcing by investors, their perceptions of various investment strategy dimensions and the factors motivating share investment decisions. It was found that among the various factors, psychological and sociological factors dominate the economic factors in investment decisions.

A. Chakarabarti and H. Rungta (2000)[154] examined the importance of brand effect in determining the competitive position of the AMCs. Their study revealed that brand image factor, though cannot be easily captured by computable performance measures, influences the investor's perception and fund/scheme selection behavior.

Madhusudan Karmakar (2001)[155] attempted to investigate the investment behavior of household sectors of a rural block in West Bengal with a sample of 50 investors. The objective of the study was to investigate the factors, which play significant role in the choice of investment of households. The study found that LIC was the most popular investment avenue followed by Recurring Deposits in Post Office, Recurring Deposits in Banks and Bank Fixed Deposits. Very few investors who were educated and belong to high-income categories only had invested in shares and debentures. It was concluded that investors in general were risk averse which appeared to decrease with income and education and safety had been given the highest priority in the choice of investment.

Tapan K Panda and Nalini Prava Tripathy (2001)[156] identified important characteristics being considered by the Indian investors in the purchase decision of the mutual funds. They conducted a survey of 350 respondents and used Factor Analysis for identification of the key features preferred by the respondents in a mutual fund product. They found that the buying objective of a mutual fund product by a small investor could be due to multiple reasons depending upon customers risk return trade off.

T. R. Rajeswari and V.E. Rama Moorthy (2001)[157] conducted a survey of 350 mutual fund investors in 10 Urban and Semi Urban centers to study the factors influencing the fund/scheme selection behavior of Retail Investors by conducting Factor Analysis using Principal Component Analysis. The survey revealed that the investors were basically influenced by the intrinsic qualities of the product followed by efficient fund management and general image of the fund/scheme in their selection of fund schemes. It was revealed that the investors were influenced by the infrastructural facilities of the sponsor and the reputation enjoyed by the sponsor, in their selection of the schemes. They also found that investors were influenced by the extent and quality of disclosure of information subsequent to their investment regarding disclosure of NAV, portfolio of investment and disclosure of deviation of investment from the stated objectives and the attached fringe benefits to the scheme in their selection of the scheme. Hence, AMCs should take steps to be as transparent as

possible and follow the disclosure norms spelt out by SEBI and AMFI in this connection. They also suggested that AMCs should design products consciously to meet the investors' needs and should be alert to capture the changing market moods and be innovative. Continuous product development and introduction of innovative products, was a must to attract and retain this market segment.

Y P Singh and Vanita (2002)[158] conducted a study on mutual fund investors' perception and preferences. The objectives were to know purpose and time horizon of mutual funds investment, investors' investment experiences, investors' perceptions as regards risk, returns, safety and diversification of mutual fund and investors' preferences for various types of financial assets and mutual fund schemes. A sample of 150 mutual funds investors based in Delhi was selected for the survey. The results showed that, as against UTI and other public sector mutual funds, the investors were increasingly moving towards private sector mutual funds. Absolute returns from mutual funds and name of promoters had been the basic criteria used for selecting mutual fund scheme. Public sectors mutual fund investors were not satisfied with the performance of their mutual funds. A majority of the investors were not aware of the inherent risk in mutual fund investment. NSCs and PPFs were the most preferred financial assets. Lastly, the investors preferred to invest in the private sectors, open-ended and balanced schemes of mutual funds.

Furqan Qamar (2003)[159] analyzed saving behavior and investment preferences among average urban middle class of Delhi with a sample of 300 households. The study found that regardless of financial sector reforms and entry of private domestic and foreign banks into the country, the nationalized commercial banks seem to be the favorite choice of an average household. It was found that the level of literacy, education achievement, occupational distribution and income profile of the respondents largely determine the saving and investment pattern. The relationship between choice of investment like Bank deposits, PPF, LIC and Stock market instruments on one hand and education level, occupation and income profile of the respondents on the other is found to be statistically significant at 1% level of significance.

Renu Jatana and Josephat Keros. Bosire (2003)[160] attempted to throw light towards better understanding on how the mutual fund industry plays a role in economic development. They used both primary as well as secondary data. The study used structured questionnaire and surveyed 80 investors from the industry to know the

preference towards the various aspects of mutual funds and to assess the factors that influence them to choose various schemes of funds. They found that the growth of the mutual fund industry depend upon participation of small investors in capital market. So variety of instruments and coverage of rural parts of the country was required. Mutual funds were integrating modern technology driven system for better efficiency and also tried to attract the investors through product differentiation. It was also concluded that the mutual fund industry should try to increase the awareness about the product by giving more information and improvement of ethical standards was also required.

L.C. Gupta (2004)[161] conducted a survey of 5908 households during May-October 2004. The sample was dispersed among 24 States/Union Territories and about 90 cities/places in India. The study had been undertaken in order to deepen an understanding of the household investors' problems and needs and to examine the household's investment preferences. They found that investment in mutual fund products enjoy a relatively low preference compared to direct share investment. They found that, there was a stunted growth of the mutual fund industry in India. They suggested that a comprehensive review of all aspects of the mutual fund industry, including its management structure, practices and regulation, was needed in order to work out a long-term role and perspective for this industry.

Jaspal Singh and Subhash Chander (2004)[162] studied the perceptions of investors toward mutual funds and analyzed the reasons for withdrawal and/or not investing any more in mutual funds. The questionnaire was distributed/ mailed to 400 investors in major cities of Punjab, Delhi and Mumbai. The study found that the investors' perceptions regarding day-to-day disclosure of net asset value by the funds and provision for more tax rebates on investment in mutual funds by the government had emerged as important requirements for the investors. The reason of ineffectiveness of controlling bodies like SEBI and others that resulted in investors' disillusionment as regard mutual fund investment had emerged as one of the major reason of withdrawal from mutual funds. It was also found that the funds had under-performed as against expectation and management had been inefficient, so discouraging investors to keep their funds parked in mutual funds.

Kiran D and U.S.Rao (2004)[163] tried to identify investor group segments using the demographic and psychographic characteristics of investors. They conducted a survey with the sample of 96 investors using two statistical techniques, namely - Multinomial

Logistic Regression (MLR) and Factor Analysis (FA). MLR analysis brought out the characteristics of Investors which predominantly decide the risk-taking capacity of Investors. Factor analysis identified four major Investor segments based on their demographic and psychographic characteristics. They found that the risk-bearing capacity of an individual is strongly dependent on the demographic and psychographic variables of the investor.

Jaspal Singh and Subhash Chander (2006)[164] conducted a study to figure out the preference attached to different investment avenues by investors, the preference of mutual funds schemes over others for investment, the source from which the investors gets information about mutual funds and the experience with regard to returns from mutual funds. A sample of 260 mutual funds investors was selected for the survey. The results showed that the investors consider gold to be the most preferred form of investment, followed by NSC and Post Office Schemes. The study also found that the investors belonging to the salaried category and in the age group of 20-35 years showed inclination towards close-ended growth (equity-oriented) schemes over the other scheme types and a majority of the investors based their investment decision on the advice of brokers, professionals and financial advisors. The findings also revealed the varied experiences of respondents regarding their returns received from investments made in mutual funds.

Kavitha Ranganathan (2006)[165] conducted a survey to examine the fund selection behavior of individual investors towards Mutual funds, in the city of Mumbai during September-October 2004 with 100 individual investors. Factor Analysis was applied using Principal Component Analysis to identify investors' underlying Fund/Scheme selection criteria, so as to group them into specific factors, which would further identify Investor types, to enable the designing of appropriate marketing strategies.

Ashok Chaudhary (2008)[166] discussed some general principles of behavioral finance including the following: herd behavior, communal reinforcement, loss aversion, adaptive attitudes, financial cognitive dissonance, the theory of regret, and prospect theory. He concluded, the paper will provide strategies to assist individuals (professionals) to resolve these "mental mistakes and errors" by recommending some important investment strategies for those who invest in stocks and mutual funds.

A. Lalitha and M. Surekha (2008)[167] conducted a survey of 100 retail investors in the city of Hyderabad and found that the retail investor was well educated, belongs to the upper middle class strata of the society and was a relatively new entrant to the

capital market. The study found that majority of the retail investors seem to be well aware of the nuances of the markets and the risk involved. The investors were timing their investment/disinvestment decisions in tune with market movements and the level of involvement of the retail investors in the stock market was high and their participation was demonstrated by greater diversification and trading activity. The study also found that new developments in the markets like online and future trading seem to had found favour with quite a good number of these investors. It was concluded that the sample investors were positive about the stock market and showed a higher degree of satisfaction.

Ch. Paramaiah (2008)[168] examined the demographic determinants of household saving behavior of farm household in coastal Andhra Pradesh. The demographic factors like the size of the household, dependence ratio and age of the head of the household were taken into account to examine their influence on household saving behavior. The existing studies on the estimation of rural savings, saving behavior of rural households dealt mainly with the income, occupation and educational status of the households. The results showed that average household income tended to rise with increases in household saving, resulting in only a moderate increase in saving-income ratio.

D. Muraleedharan (2008)[169] examined the level and pattern of income of the households among different income groups and the pattern of investment preference among the different income groups in physical and financial assets. The study was conducted in the state of Kerala with 360 sample households. The study had graded the households into three major income groups as low, middle and high. The study found that the average and marginal propensity to save and invest differs with the difference in the level of income. The variation in the level and pattern of rural-urban income distribution on household savings also played a decisive influence in the behavior of household savings. The significance of the location factor in the level of savings and investment was also found statistically significant in the study. The study suggested the utmost need to implement economic and social programs to eradicate the rural-urban income disparity through planning process.

K. Senthil Kumar *et al.* (2008)[170] conducted a survey in Tiruchirapalli, historic town of Tamilnadu with the sample size of 120 to identify the ranking preference of the investors over the financial products and their expectations regarding the core characteristics of the financial product they had invested in. They also tried to identify

how they gave rank to these financial products according to various attributes, namely Safety of principal, Liquidity, Stability of income, Capital growth, Tax benefit, Inflation resistance and Concealability. They used six financial investment products namely Post office; Real estate; Equity; Mutual fund; Gold and Bank deposit. It was observed that in selecting a financial product highest importance was given to the security of principle and which was followed by liquidity, stability of income, inflation resistance, conceal ability and tax benefit. They also observed that first financial product preference was given to gold after that post office and bank deposit, then real estate, equity investment and last preference given to mutual fund.

Bhagaban Das et al. (2008)[171] made an attempt to study the factors influencing the behavior of the investors in the selection of mutual fund and life insurance schemes as an investment vehicle in an Indian perspective by making a comparative study with the sample size of 100 investors. They found that, the different investment pattern did not provide the same level of services with respect to age of the retail investors in India, the investment patterns provide more or less the same service, and there exist differences depending on the education level of the investors. It was observed that investors with the graduate and postgraduate level of academic qualification were investing more in life insurance and the professionals were investing more in mutual fund. The investors had a wide difference with respect to their profession and also the different investment patterns vary widely. It was found that on an average; the government servants were investing to the maximum extent, where as the students and other professional groups were investing the least. Male investors were more as compared to females in Indian retail market and majority of the people were investing with the objective of capital growth, followed by Tax saving and only few were investing for the Retirement plan. Maximum investors liked to invest in life insurance followed by mutual fund and Government saving schemes. Majority of the investors ranked LIC as number one, followed by ICICI and HDFC in Indian insurance industry. Majority of the investors were of view that the public sector insurance was better than the private sector. The brand image and the past performance of the Mutual funds were highly positively correlated and majority of the investors like to invest in open-ended Mutual fund schemes. The Government servants invested more in life insurance and the private sector employees in Mutual funds. And investors preferred Newspaper and magazines as the main source of information.

M R Shollapur and A B Kuchanur (2008)[172] attempted to measure the degree of investors' agreeableness with the selected perceptions as well as to trace the gaps between their perceptions and the underlying realities. They found that failure to deal with these gaps tends to lead the investment clientele to a wrong direction and hence, there was a need to help investors develop a realistic perspective of the investment avenues and their attributes.

B. B. S. Parihar et al. (2009)[173] analyzed the impact of different demographic variables on the attitude of investors towards mutual funds. Apart from this, they also focused on the benefits delivered by mutual funds to investors. They surveyed 200 respondents of Agra region, having different demographic profiles. The study revealed that the majority of investors had still not formed any attitude towards mutual fund investments. The main reason behind this had been observed to be the lack of awareness of investors about the concept and working of the mutual funds. They also revealed that in India mutual funds were back in fashion and by the end of August 2006, the assets under management of mutual funds surpassed the figure of Rs. 300,000 Crores. They concluded that there was a lot of scope for the growth of mutual fund companies in India, provided there were funds to satisfy everybody's needs and sharp improvements in service standards and disclosure.

G.S. Popli and D.N. Rao (2009)[174] conducted a survey to find out the response of customers towards provision of Mutual Fund products by Banks and to understand the perception of Indian customers. They used questionnaire using convenient sampling method with a sample size of 100 customers of banks located in and around Delhi. The study reported that the "Customer Relationship Management" should be the focus area for the Mutual Fund companies since as high as 90% of the customers said that they would prefer to buy Mutual Fund Products from banks due to existing personal relationship with banks. The study concluded that opportunities exist for banks to cross-sell Mutual Fund Products in India. These opportunities were based on customer's high usage rate of Mutual Fund Products, the low penetration of banks to Mutual Fund schemes and customer's willingness to buy these products from banks.

Nidhi Walia and Ravi Kiran (2009)[175] conducted a survey to understand the investor's risk and return perception towards mutual funds with a sample of 100 individual investors from different regions of Punjab. The study revealed that the preferences of varied investors who desire to invest in mutual funds but also required

135

some innovations and added quality dimensions in existing services. The critical gaps identified in the study also provide the key information input regarding the discrepancies in existing framework of mutual funds which could be extremely beneficial to AMCs in designing more lucrative solutions to suit investor's expectations. The study had got significant managerial implications that could be used by AMCs in restructuring their existing practices and finally innovating new ways of service delivery by acknowledging Investor Oriented Service Quality Arrangements (IOSQA).

Abhijeet Chandra and Dinesh Sharma (2010)[176] identified the major psychological biases that influence the individual investors' behavior and that, in return, may drive a momentum effect in stock returns. The study used a structured questionnaire in which potential investors were asked for their reactions to some specific situations. The study was undertaken within the geographical area of Delhi and National Capital Region (NCR). The results revealed some psychological and cognitive peculiarities. They found that the individual investors' behavior was driven by some psychological factors such as conservatism, under confidence, opportunitism, representative ness and informational inferiority complex.

Syed Tabassum Sultana (2010)[177] discussed the characteristics of the Indian individual investors and made an attempt to discover the relationship between a dependent variable i.e., Risk Tolerance level and independent variables such as Age, Gender of an individual investor on the basis of the survey of 150 investors. It was found that the individual investor still prefers to invest in financial products which gave risk free returns. The investment product designers could design products which could cater to the investors who were low risk tolerant. And Television was the media that was largely influencing the investor's decisions as they seem to spend long time watching TVs.

3.3.3 CONCLUDING REMARKS

After reviewing the empirical studies on investment behavior of retail investors, following conclusions can be drawn:

- Most investors appeared to be inexperienced, having little knowledge of the investment strategies or financial details of their investments [136]. It was revealed[173] that the majority of investors had still not formed any attitude towards mutual

fund investments because of the lack of awareness of investors about the concept and working of the mutual funds.

- Investors use fund-specific information in making their mutual fund investment decisions [140]. Some argued that the purchase decisions of mutual fund investors were influenced by salient, attention-grabbing information, like front-end loads and commissions[146].

- The representative heuristic leads investors to buy past winners, the disposition effect renders investors reluctant to sell their losers, and framing effects cause investors to react differently to various forms of fund expenses[142].

- It is revealed that women exhibit less risk taking than men in their most recent, largest and riskiest mutual fund investment decisions[143]. It was found that young, male, and wealthy participants were more likely to try the Web channel and also found that Web trades tend to be smaller than phone trades both in dollars and as a fraction of portfolio and short-term' trades made up a higher proportion of phone trades than of Web trades[145].

- It was found that investors were more likely to keep performance-improving funds, redeem the losers, and pay higher management fees[144]. For getting the tax benefit, individual investors were reluctant to sell mutual funds that had appreciated in value and were willing to sell losing funds[149]. The funds had under-performed as against expectation and management had been inefficient were the reasons which discouraging investors to keep their funds parked in mutual funds[162].

- Investors get value from the socially responsible attribute, especially when returns were positive[147]. It was found that among the various factors, psychological and sociological and demographic factors dominate the economic factors in investment decisions[153, 159, 163, 164, 171,176]. Behaviorally-biased investors typically made poor decisions about fund style and expenses, trading frequency, and timing and resulted in poor performance [150].

- Income schemes and open-ended schemes were preferred and investors looked for Safety of Principal, Liquidity and Capital Appreciation in order of importance; Newspapers and Magazines were the first source of information[151].

- Brand image factor influences the investor's perception and fund/scheme selection behavior[154]. The investors were basically influenced by the intrinsic qualities of the product followed by efficient fund management and general image of the

fund/scheme in their selection of fund schemes[157]. The preferences of varied investors who desire to invest in mutual funds but also required some innovations and added quality dimensions in existing services[175].

■ Some authors [155, 177] concluded that investors in general were risk averse which appeared to decrease with income and education and safety had been given the highest priority in the choice of investment and Television is the highly influenced media for investment decision as they seem to spend long time watching TVs. It was observed that in selecting a financial product highest importance was given to the security of principle[170]. The buying objective of a mutual fund product by a small investor could be due to multiple reasons depending upon customers risk return trade off[156].

■ Majority of the investors were not aware of the inherent risk in mutual fund investment and the investors preferred to invest in the private sectors, open-ended and balanced schemes of mutual funds[158, 160].

■ New developments in the markets like online and future trading seem to have found favor with quite a good number of investors and also found that the sample investors were positive about the stock market and showed a higher degree of satisfaction[167].

■ Bank customers would prefer to buy Mutual Fund Products from banks due to existing personal relationship with banks[174].

3.4 REVIEW OF GENERAL STUDIES

3.4.1 GENERAL STUDIES ON MUTUAL FUNDS

In the above sections the researcher has reviewed major studies on mutual fund performance, market timing abilities of fund manager and investment behavior of retail investors. This section reviewed general studies on mutual funds carried out both in foreign countries and in India.

3.4.1.1 FOREIGN STUDIES

Robert C. Klemosky (1977)[178] examined consistency in performance of fund managers for the period of 1968-1975 with the sample of 158 mutual funds using monthly data. He studied rank correlation over different two-year and four-year periods and found some consistency in performance between four year periods, and relatively low consistency between two-year periods.

Stephen P. Ferris and Don M. Chance (1987)[179] examined the effect of 12b-1 plans on mutual fund expense ratios. The 12b-1 fee was named after the SEC rule allowing mutual funds to pay marketing and advertising costs directly out of fund assets. The purpose of 12b-1 fees was to increase fund assets. By attracting investors into the fund, 12b-1 fees made scale economies possible, but the fees themselves only added to a fund's expenses. The data were collected for the years 1984 and 1985. They used 306 funds for the year 1984. Their evidence suggested that the plan was only a dead-weight cost. They also found the answer of the question that Why were investors willing to accept this cost? They reported that , one reason was that the plan was still fairly new, and, despite much publicity in the financial press, most investors probably knew very little about it, much less how to evaluate its economic impact. Even though the existence of the plan must be disclosed in the prospectus, it, like many other "fine-print" items, was frequently overlooked. Finally they found that 12b-1 plans raise expense ratios.

Charles M. C. Lee et al. (1991)[180] examined the proposition that fluctuations in discounts of closed-end funds were driven by changes in individual investor sentiment. The theory implied that discounts on various funds move together, that new funds get started when seasoned funds sold at a premium or a small discount, and that discounts were correlated with prices of other securities affected by the same investor sentiment. They reported that the evidence supported these predictions. They found that both closed-end funds and small stocks tend to be held by individual investors, and that the discounts on closed-end funds narrowed when small stocks did well. The basic conclusion of this paper was that closed-end fund discounts were a measure of the sentiment of individual investors. That sentiment was sufficiently widespread to affect the prices of smaller stocks in the same way that it influenced the prices of closed-end funds.

Walton R. L. Taylor and James A. Yoder (1994)[181] examined "Can trading activity by managers of high-risk mutual funds make a positive contribution to investor utility?" They collected annual return and turnover data for the maximum-capital-gains mutual funds listed in Wiesenberger's Investment Companies from 1978 through 1989. They applied stochastic dominance to compare the returns of high-turnover funds with those of low-turnover funds. This approach avoided the limitations of a mean/variance or regression approach and minimized problems of survivorship bias. The results showed that high-turnover groups dominate low-

turnover groups, or at least were equally attractive to risk-averse investors. Active portfolio management could enhance investor utility, even when the costs of obtaining and exploiting costly information were taken into account.

Eric G. Falkenstein (1996)[182] examined the cross-section of mutual fund equity holdings for the years 1991 and 1992. He found that mutual funds had a significant preference towards stocks with high visibility and low transaction costs, and were averse to stocks with low idiosyncratic volatility. He reported that findings were relevant to theories concerning investor recognition, a potential agency problem in mutual funds, tests of trend-following and herd behavior by mutual funds, and corporate finance.

Larry J. Lockwood (1996)[183] developed and tested a model in which fund betas were linearly related to changes in macro-economic factors. He used monthly returns for 171 mutual funds over the period from 1978 to 1991. The results indicated negative relationship between equity fund betas and inflation changes and default risk premium. He also found that bond and fund betas were negatively related to changes in risk free rates, industrial production growth and term structure of interest rates.

William G. Droms and David A. Walker (1996)[184] assessed the long-run relationship between risk-adjusted performance of equity mutual funds and asset size, expense ratios, portfolio turnover, and load/no-load status by using cross-section/time series analysis. The data base consists of investment results of 151 equity mutual funds in continual operation over the 20-year period from 1971 to 1990. Variations of the cross-section/time series model were employed to explore the interactions among the nature of the funds (load or no-load) with asset size and expense ratios. They concluded that Investment performance was not related to asset size, turnover rate, or load/no-load status, and higher expenses were associated with higher returns. The particular goal of a fund (maximum capital gains, growth, or growth and income) did not influence mutual fund performance.

Robert Neal and Simon M. Wheatley (1998)[185] examined the power of three popular measures of investor sentiment to predict returns: the level of discounts on closed-end funds, the ratio of odd-lot sales to purchases, and net mutual fund redemptions using the data from 1933 to 1993. They found that fund discounts and net redemptions predict the size premium, the difference between small and large firm returns, but little evidence that the odd-lot ratio predicts returns.

Stanley M. Atkinson et al. (2001)[186] examined the performance and investment behavior of female fixed-income mutual fund managers compared with male fixed-income mutual fund managers. They found that male and female managed funds did not differ significantly in terms of performance, risk, and other fund characteristics. Their results suggested that differences in investment behavior often attributed to gender might be related to investment knowledge and wealth constraints. Despite the similarities between male and female managers, they found evidence that gender influenced the decision-making of mutual fund investors. They also found that the net asset flows into funds managed by females were lower than for males, especially for the manager's initial year managing the fund.

Ajay Khorana (2001)[187] examined the impact of mutual fund manager replacement on subsequent fund performance using a sample of 393 domestic equity and bond fund managers that were replaced over the 1979-1991 period. For the underperformers, this study documented significant improvements in post-replacement performance relative to the past performance of the fund. On the other hand, the replacement of over performing managers results in deterioration in post-replacement performance. He found evidence supporting the presence of strategic risk shifting in the fund portfolios prior to replacement. Furthermore, consistent with the notion of window dressing, this study documented that the level of portfolio turnover activity decreases significantly in the post-replacement period. The study also found that the replacement of poor performers was preceded by significant decreases in net new inflows in the fund.

Anthony W. Lynch and David K. Musto (2003)[188] documented a convex relation between past returns and fund flows of mutual funds. They used daily returns of 2435 funds during the period 1985 through 1995. They showed this to be consistent with fund incentives, because funds discarded exactly those strategies which under perform. Past returns told less about the future performance of funds which discarded, so flows were less sensitive to them when they were poor. Their model predicted that strategies changed only occur after bad performance, and that bad performer who changed strategy had dollar flow and future performance that were less sensitive to current performance than those that did not. And their empirical tests supported both predictions.

Jeffrey C. Levitt (2005)[189] examined the relationship between different levels of minimum initial purchases and the expense ratio by using 1132 funds for the study.

141

He found evidence to support the claim that minimum initial purchases in mutual funds were indirectly proportional to expense ratios. Funds with large minimum initial purchase levels had smaller expense ratios. As expense ratios went down, net returns to investors were increased as cost savings were passed on to their returns. He also examined whether mutual funds with large minimum investments deliver superior performance, above that saved in lower expense fees. He found there was no evidence to prove that institutional funds with large minimum investments deliver much better net returns than retail funds with very small minimum investments.

Da, Gao and Jaganathan (2008)[190] identified the style orientations in which liquidity provision and informed trading were concentrated. They implemented "return gap, trade component and characteristicbased" performance measures with Carhart (1997) four-factor model in order to evaluate the differences in mutual fund performance and in style orientations. They suggested that growth stocks had closer links with informed trading while income-oriented young mutual funds place more value on liquidity provision. They add that funds managing stocks influenced by information events were more likely to generate greater returns and exhibit persistence. They also found out that liquidity provision tends to create value for stocks affected by fewer information events.

Niessen and Ruenzi (2009)[191] focused on the gender differences in the mutual fund industry. While calculating performance differences in genders, they took into account several risk, trading and style measures in order to explore various aspects of gender differences. Based on the findings, it was evident that small and midcap female managers were more risk-averse than their male counterparts and male managers pursued a more active style investing by taking more active bets, since females did not take additional risk and prefer to move in line with market trends. Hence, they concluded that female managers followed more stable style investing trends than their male counterparts.

3.4.1.2 INDIAN STUDIES

Mihir Dash and Dinesh Kumar G (2008)[192] examined the effect of macroeconomic variables on mutual fund schemes, in terms of returns and volatility. The study used weekly returns and volatilities of different macroeconomic variables, such as market returns (calculated from the BSE-SENSEX), USD/INR and EURO/INR exchange rates, interest rates (Mumbai Inter-Bank Offer rates), inflation rates, and crude oil prices, over the period October 2006 - June 2008. The weekly returns and volatilities

of a sample of major mutual fund schemes over the same period would be considered for the analysis. The study used the Granger causality test to analyze these effects. The results of these causality tests would identify the specific macroeconomic factors which affect the returns and volatility of particular mutual fund schemes, would enable fund managers to manage the risk profiles of their portfolios more effectively and would enable investors to understand the specific risk factors affecting their investments, so that they can take more informed investment decisions pertaining to mutual funds.

T.S.Somashekar (2008)[193] examined the impact of growing fund size on the performance of actively managed finds. It was sought to be studied choosing a sample of diversified equity funds and controlling for various fund characteristics. He found that the beta adjusted fund performance actually improved with size. But on further decomposition of fund performance into bear and bull phases, it was found that both beta and market adjusted returns were negatively correlated with fund size in bear phases , showing that larger funds found it more difficult to be nimble footed in falling markets. And their better performance in bullish markets help them to show overall better results with increases in size.

D.N. Rao and S.B.Rao (2009)[194] evaluated the performance of 14 balanced mutual fund schemes for the period of April 2006 to April 2009 based on fund size. They found the standard deviation of the performance variables to be significantly low. Correlation coefficients were less than the critical value and the ANOVA of performance variables of Balanced Funds indicated that the observed value of F is less than the critical value, implying that the fund size did not significantly impact the performance of balanced funds. Finally they concluded that there was no conclusive evidence by way of statistical significance to suggest that the fund size affects the performance of Balanced Funds.

Rajesh Chakrabarti (2009)[195] examined the Asset Management Industry (AMI) in India. He reported that AMI consists of a vibrant and rapidly growing mutual funds sector, an insurance sector that is dominated by unit-linked insurance plans, and Venture Capital Funds, both domestic and foreign. Also Foreign Institutional Investors form a category that pool foreign retail or institutional funds and invest in Indian debt and equity. Private Equity funds – both domestic and foreign – constitute a booming segment as well. In the last decade or so, this industry had witnessed a wide range of regulatory changes that have brought about increased competition and a

143

very impressive growth rate. Mutual Funds and Insurance sectors had been opened up to private players only 16 and 8 years ago respectively. Venture Funds had been allowed even more recently. The Indian equity market with its remarkable bull run throughout most of this decade right up to the crisis had boosted major growth in the asset management industry. He also reported that India stands poised at the threshold of major regulatory changes that can open up new segments like Real Estates and Pension Funds to retail investors and private and foreign fund managers. The rapid growth of the sector was likely to continue once the dampening effects of the ongoing crisis are behind us.

D.N.Rao (2010)[196] examined the portfolio turnover strategies of selected 9 equity/growth oriented mutual funds, the effect of portfolio turnover ratio on fund performance and the relationship between Portfolio Turnover Ratio and Fund performance for a period of three years during 30th September 2006 to 30th September 2009 in six half-yearly periods. The effect of change of Portfolio Ratios on Absolute Fund Return (AFR) and Performance of Fund relative to Benchmark index (FPB) was analyzed. The findings of the study were of mixed nature and lacks evidence that was statistically significant to suggest that increase in portfolio turnover ratio would result in enhanced performance of the fund which implies that high portfolio turnover ratios did not necessarily improve the fund performance consistently over a long time period. There was no conclusive evidence to suggest that there was significant relationship between portfolio turnover ratio and measures of fund performance used for this study, absolute fund return and fund performance relative to Benchmark index.

D. N. Rao and S. B. Rao (2010)[197] examined the portfolios of the investor groups to identify their propensity for specific fund categories and identify the dominant investor groups in terms of quantum of investment and investor folios. Ten hypotheses had been formulated and tested for statistical significance. The study found that Corporate were the dominant investor group in the Indian Mutual Fund Industry and they were more oriented towards non-equity funds which offer high security & liquidity and hence their propensity towards Liquid/Money Market and Debt-oriented funds; The second dominant group in the industry was the Retail investors' group and the portfolio of this group was highly skewed towards equity oriented schemes which offer high return, capital appreciation coupled with high risk. The volatility in Indian stock markets and mutual funds was attributed to Foreign

144

Institutional investors. The study brought to the fore that the FIIs were not in a position to influence the trading patterns in the industry. The findings of the study had significant implications for AMCs and their fund managers in terms of structuring their product offerings, investment philosophies, asset allocation and marketing strategies.

3.4.3 CONCLUDING REMARKS

After reviewing the general empirical studies on mutual funds, following conclusions can be drawn:

- There exists some consistency in performance of the fund manager between four year periods, and relatively low consistency between two-year periods [178].

- Closed-end fund discounts were a measure of the sentiment of individual investors which influenced the prices of closed-end funds [180].

- High-turnover groups dominate low-turnover groups, or at least were equally attractive to risk-averse investors [181].

- Mutual funds had a significant preference towards stocks with high visibility and low transaction costs, and were averse to stocks with low idiosyncratic volatility [182].

- There exists a negative relationship between equity fund betas and inflation changes and default risk premium [183].

- Investment performance was not related to asset size, turnover rate, or load/no-load status, and higher expenses were associated with higher returns [184].

- Fund discounts and net redemptions predict the size premium, the difference between small and large firm returns, but little evidence that the odd-lot ratio predicts returns [185].

- Some [186] concluded that male and female managed funds did not differ significantly in terms of performance, risk, and other fund characteristics but gender influenced the decision-making of mutual fund investors. While some [191] concluded that female managers followed more stable style investing trends than their male counterparts.

- The replacement of poor performers was preceded by significant decreases in net new inflows in the fund [187].

- There was no evidence to prove that institutional funds with large minimum investments deliver much better net returns than retail funds with very small minimum investments [189].

- Liquidity provision tends to create value for stocks affected by fewer information events [190].

- The beta adjusted fund performance actually improved with size and beta and market adjusted returns were negatively correlated with fund size in bear phases [193]. There was no conclusive evidence by way of statistical significance to suggest that the fund size affects the performance of Balanced Funds [194].

- There was no significant relationship between portfolio turnover ratio & measures of fund performance and absolute fund return & fund performance relative to Benchmark index [196].

This chapter has carried out the review of the academic literature on the "Performance of mutual funds", "Market Timing abilities of Fund Managers", "Investment Behavior of the Retail Investors" and "General Studies on Mutual Fund" carried out by Academicians, Practitioners and Researchers in India and abroad.
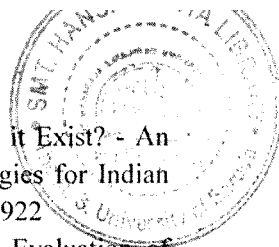
_____****_____

REFERENCES

1. Treynor, J. L. (1965); "How to Rate Management of Investment Funds?"; *Harvard Business Review* ; Vol.43,No. 1; PP. 63-75.
2. Sharpe, William F. (1966); "Mutual Fund Performance"; *Journal of Business*; Vol.39, No.1; PP.119-138.
3. Jensen, Michael C. (1968); "The performance of Mutual Funds in the period 1945-1964"; *Journal of Finance*; 23; PP.389-416.
4. Fama,Eugene F.(1972); "Components of investment performance"; *Journal of Finance*;Vol.27,No.3;PP.551-567.
5. Treynor, J. L., & Black, F. (1973). How to use security analysis to improve portfolio selection. *The Journal of Business, 46*(1), PP. 66-85.
6. Fama, E. & French, K. (1993); "Common Risk Factors in the Returns on Stocks and Bonds"; *Journal of Financial Economics;* Vol.33; PP.3-56.
7. Modigliani F. and Modigliani L. (1997); "Risk-Adjusted Performance", *Journal of Portfolio Management*; PP.45-54.

8. Mishra,Banikanta and Rahman Mahmud(2001); "Measuring Mutual Fund Performance Using Lower Partial Moment" ; *Global Business Trends, Contemporary Readings, 2001 Edition* ;Available at http://www.utiicm.com/Cmc/PDFs/2002/banikant%5E40.pdf.

9. The Wharton School of Finance and Commerce ; U.S. Govt. Printing Office (1962); *Volume 955 of Unión calendar: House report;* PP. 22-74.

10. Friend, I., F.E. Brown, E.S. Herman and D. Vickers (1962); "A Study of Mutual Funds"; *The Wharton Report,* United States Government Printing Office; Washington, D.C.

11. Friend, Irwin and Vickers, Douglas (1965); "Portfolio Selection and Investment Performance"; *Journal of Finance;* Vol. XX, No.3; PP. 391-415.

12. Smith, Kaith V. and Tito , Dennis A. (1969) ; "Risk-return Measures of Post-portfolio performance" ; *Journal of Financial and Quantitative Analysis;* 4; PP. 449-471.

13. Carlson, Robert S. (1970); "Aggregate Performance of mutual funds, 1948-1964"; *Journal of Financial and Quantitative Analysis;* Vol. 5; PP. 1-32.

14. Klemosky, Robert C. (1973); "The Bias in Composite Performance Measures"; *Journal of Financial and Quantitative Analysis;* Vol.8; PP. 505-514.

15. McDonald, John G. (1974); "Objectives and Performance of Mutual Funds, 1960-69"; *Journal of Financial and Quantitative Analysis;* Vol. 9; PP. 311-333.

16. Gupta, Manak C. (1974); "The Mutual Fund Industry and its Comparative Performance"; *Journal of Financial and Quantitative Analysis;* Vol. 9, No.5; PP. 891-912.

17. Malkiel, Burton G. (1977); "The valuation of Close-End Investment Company Shares"; *Journal of Finance;* Vol. 3; PP.847-859.

18. Kon, Stanley J. and Jen, Frank C. (1978); "Estimation of Time-Varying Systematic Risk and Performance for Mutual Fund Portfolio: An Application of Switching Regression"; *Journal of Finance;* Vol. 3; PP.457-475.

19. Guy,James R.F. (1978); "The Performance of British Investment Trust Industry"; *Journal of Finance;* Vol. 33; PP.443-455.

20. Ang, James S. and Chau, Jess H. (1979); "Composite Measures for the Evaluation of Investment Performance"; *The Journal of Financial and Quantitative Analysis;* Vol. 14, No. 2; PP. 361-384.

21. Miller,T. and Gressis, N. (1980); "Nonstationarity and Evaluation of Mutual Fund Performance"; *The Journal of Financial and Quantitative Analysis,* Vol. 15; PP.639-654.

22. Lehmann, Bruce N. and Modest, David M. (1987); "Mutual Fund Performance Evaluation: A Comparison of Benchmarks and Benchmark Comparisons"; *Journal of Finance;* Vol. 42, No. 2; PP. 233-265.

23. Grinblatt, Mark and Titman, Sheridan (1989); "Mutual Fund Performance: An Analysis of Quarterly Portfolio Holdings"; *The Journal of Business;* Vol. 62, No. 3; PP. 393-416.

24. Cumby, Robert E. and Glen, Jack D. (1990); "Evaluating the Performance of International Mutual Funds"; *Journal of Finance;* Vol. 2; PP.496-526.

25. Frohlich, C.J. (1991); "A Performance Measure for Mutual Funds Using the Connor-Korajczyk Methodology: An Empirical Study"; *Review of Quantitative Finance and Accounting; Vol.1;* PP. 427-434.

26. Israelsen, Craig L. and Beutler, Ivan F. (1991); "The Value of Past Performance Data: The Case of Mutual Funds"; *Financial Counseling and Planning;* Vol.2; PP. 123-129.

27. Grinblatt, M. and S. Titman (1992); "The Persistence of Mutual Fund Performance"; *Journal of Finance;* Vol 47,No.5; PP.1977-1984.

28. Blake, Christopher R., Elton, Edwin J. and Grubber, Martin J.(1993) ; "The performance of Bond Mutual Funds" ; *The Journal of Business*; Vol. 3 ; PP. 371-403.

29. Grinblatt, Mark and Titman, Sheridan (1994); "A Study of Monthly Mutual Fund Returns and Performance Evaluation Techniques"; *The Journal of Financial and Quantitative Analysis*; Vol. 29, No. 3 ;PP. 419-444.

30. Khan, R.N. and A. Rudd (1995); "Does Historical Performance Predict Future Performance?"; *Financial Analyst's Journal;*PP.43-52.

31. Elton, Edwin J., Gruber, Martin J. and Blake, Christopher R. (1996); "The Persistence of Risk-Adjusted Mutual Fund Performance"; *The Journal of Business*; Vol. 69, No. 2. ; PP. 133-157.

32. Fletcher, J. (1997); "The Evaluation of the Performance of UK American Unit Trusts"; *International Review of Economics and Finance;* Vol 8; PP.455-466.

33. Blake, David and Timmermann, Allan (1998); "Mutual Fund Performance: Evidence from the UK"; *European Finance Review* Vol. 2; PP. 57–77.

34. Redman, Arnold L., Gullett, N.S and Manakyan , Herman (2000); "The Performance of Global And International Mutual Funds"; *Journal of Financial and Strategic Decisions* Vol. 13, No. 1; PP. 75-85.

35. Dahlquist, Magnus & Engstrom, Stefan & Soderlind, Paul (2000); "Performance and Characteristics of Swedish Mutual Funds"; *Journal of Financial and Quantitative Analysis*; Vol. 35, No.3; PP. 409-423.

36. Dimson, E. and C. Minio-Kozerski, (2001), "The closed-end fund discount and performance persistence", Working Paper, London Business School. Available at : faculty.london.edu/edimson/assets/documents/CEFPP.pdf

37. Heffernan, S. (2001), "All UK investment trusts are not the same", City University Business School Working Paper No 1. Available at: papers.ssrn.com/sol3/papers.cfm?abstract_id=903327.

38. Amin , Gaurav S. and Kat , Harry M. (2003); "Hedge Fund Performance 1990-2000: Do the "Money Machines" Really Add Value?"; *The Journal of Financial and Quantitative Analysis*; Vol. 38, No. 2 ;PP. 251 -274.

39. Asebedo, Gabriel and Grable, John (2004); "Predicting Mutual Fund Over-Performance over a Nine-Year Period"; *Financial Counseling and Planning*; Vol.15, No.1. Available at: 6aa7f5c4a9901a3e1a1682793cd11f5a6b732d29.gripelements.com

40. Jagannathan, Ravi and Novikov, Dmitry (2005); "Do Hot Hands Persist Among Hedge Fund Managers? An Empirical Evaluation" ; Available at http://www.isb.edu/isbweb/isbcms/caf/htmls/Ravi_Jagannathan.pdf

41. Abdel-Kadar, Magdy and Qing, Kuang Yuan (2007) ; " Risk Adjusted Performance, Selectivity, Timing ability and performance persistence of Hong Kong mutual funds"; *Journal of Asia-Pacific Business*; Vol.8,No.2; PP.25-58.

42. Muga,Luis ,Rodriguez, Adriana and Santamaria, Rafael (2007) ; "Persistence in Mutual Funds in Latin American Emerging Markets:The Case of Maxico"; *Journal of Emerging Market Finance;* Vol.6,No.1;PP. 1-37.

43. Jagrica, Timotej; Podobnikb, Boris; Straseka, Sebastjan and Jagrica, Vita (2007); "Risk-Adjusted Performance of Mutual Funds:Some Tests"; *South-Eastern Europe Journal of Economics*; Vol. 2 ; PP. 233-244.

44. Bello, Zakri (2007); "How diversified are equity mutual funds?" ; *North American Journal of Finance and Banking Research;* Vol. 1, No. 1; PP.54-63.

45. Michelson, Stuart; Philipova, Elena and Srotova, Petra (2008); "The Case For Emerging Market Funds"; *Journal of Business & Economics Research*; Vol.6, No.11; PP. 81-88.

46. Busse, Jeffrey A. and Tong, Qing (2008); "Mutual Fund Industry Selection and Persistence"; Available at SSRN: http://ssrn.com/abstract=1065701.

47. Jiang, George J. and Zhu, Kevin X. (2009); "Generalized Sharpe Ratios: Performance Measures Focusing on Downside Risk"; *International Research Journal of Finance and Economics*; ISSN 1450-2887 Issue 30; PP. 132-153.

48. Barua, Samir K. and Verma, Jayanth R., (1991), "Mastershare, A Bonanza for Large Investors", *Vikalpa*, Vol.16, No.1; PP. 29-34.

49. Shah, Ajay and Susan, Thomas (1994); "Performance Evaluation of Professional Portfolio Management in India"; *A paper prepared by CMIE*, 10 April.

50. Gupta, L C (1994): 'Mutual Funds and Assets Preference', *Delhi: Society for Capital Market Research and Development*.

51. Vaid, S., (1994), 'Mutual Funds Operation in India', Rishi Publication, Varanasi, India, PP.101-119.

52. Sarkar, J. and Mazumdar S., (1995), "Weak Form of Efficient Market Hypothesis, A Special Analytical Investigation", Vikalpa, (April-June), PP.25-30.

53. Kaura, Mohinder N and M Jaydev, (1995); "Performance of Growth Oriented Mutual Funds: An Evaluation"; *The ICFAI Journal of Applied Finance*; Vol. 1, No. 1 PP.1-14.

54. Jayadev, M (1996); "Mutual Fund Performance: An Analysis of Monthly Returns"; *Finance India*, Vol. X, No. 1, PP. 73-84.

55. Sahadevan, K G and M Thiripalraju (1996): Mutual Funds-Data Interpretation and Analysis, *Prentice Hall of India Private Limited*, New Delhi

56. Yadav, R A and Mishra, Biswadeep (1996); "Performance Evaluation of Mutual Funds: An Empirical Analysis"; *VISION- The Journal of Business Perspective*, Vol.9; PP. 117-125.

57. Gupta, O.P. and Sehgal, S., (1997); "Investment Performance of Mutual Funds – The Indian Experience"; in Indian Capital Market – Trends and Dimensions, Tata McGraw Hill Publishing Company Ltd. (on behalf of Institute of Capital Market, Navi Mumbai), PP.1-41.

58. Chakrabarti, Anjan and Rungta, Harsha (2000); "Mutual Funds Industry in India: An In-depth Look into the Problems of Credibility, Risk and Brand"; *The ICFAI Journal of Applied Finance*; Vol. 6, No. 2, PP. 26-46.

59. Singh, Pritpal and Singla S.K. (2000); "Evaluation of performance of Mutual Funds using Risk Return relationship Models"; *Indian Journal of Commerce*; Vol.53, No. 3; PP. 54-59.

60. Mishra, B., (2001), 'A Study of Mutual Funds in India', Un-published Research Paper under the aegis of Faculty of Management Studies, University of Delhi.

61. Narasimhan, M S and S Vijayalakshmi (2001): 'Performance Analysis of Mutual Funds in India', *Finance India*, Vol. XV No.1 PP. 155-174.

62. Gupta, Amitabh (2003); "Performance Evaluation of Select Mutual Fund Schemes"; *Indian Journal of Finance and Research*, Vol.13, Issue: 1 and 2; PP.33-66.

63. Singh, Gurucharan (2003); "Mutual Funds-Performance Evaluation of Equity Funds"; *Indian Journal of Commerce*; Vol.56, No. 4; PP. 47-55.

64. Sapar, Narayan Rao and Madava, Ravindran (2003); "Performance Evaluation of Indian Mutual Funds". Available at SSRN: http://ssrn.com/abstract=433100 or doi:10.2139/ssrn.433100

65. Roy, Bijan and Deb, Saikat Sovan (2004); "Conditional Alpha and Performance Persistence for Indian Mutual Funds: Empirical Evidence"; *The ICFAI Journal of Applied Finance*; Vol.1, No.1; PP. 30-48.

66. Gupta, O P and Gupta, Amitabh, (2004), 'Performance Evaluation of Select Indian Mutual Fund Schemes: An Empirical study', *The ICFAI Journal of Applied Finance*, Vol. No.4; PP .81-98.

67. Rao, S. V. D. Nageswara, Shrivastava, Leena and Ramachandra, Vishnu S. (2004); "Single and Multi-Criteria Ranking of Mutual Fund Schemes"; Available at SSRN: http://ssrn.com/abstract=873430.

68. Raychaudhuri Arjun(2005); "Persistence in the Indian Mutual Fund Market";*The ICFAI Journal of Financial Economics*; Vol. III, No. 1;PP.6-25.

69. Sondhi H J and Jain P K (2005); "Financial Management of Private and Public Equity Mutual Funds in India: An Analysis of Profitability"; *The ICFAI Journal of Applied Finance*; Vol 11, No.6; PP.14-27.

70. Chandel, Kulbhushan and Verma, O P (2005); "Managing Mutual fund investment in the era of change"; *The ICFAI Journal of Applied Finance;* Vol.11, No.9; PP.56-67.

71. Rao, D. N. (2006); "Investment Styles and Performance of Equity Mutual Funds in India"; Available at SSRN: http://ssrn.com/abstract=922595.

72. Sondhi H J and Jain P K (2006); "Can Growth Stocks be identified for Investment? A Study of Equity Selectivity ability; *The ICFAI Journal of Applied Finance*; Vol 12, No.2; PP.17-30.

73. Bhattacharjee, Kaushik and Roy, Bijan (2006); "Fund Performance Measurement without Benchmark - A Case of Select Indian Mutual Funds". 10th Capital Markets Conference, Indian Institute of Capital Markets Paper. Available at SSRN: http://ssrn.com/abstract=962035.

74. Muthappan, P. K.; Damodharan, E (2006) ; " Risk-Adjusted Performance Evaluation of Indian Mutual Funds Schemes" ; *Finance India* , Vol. XX, No. 3, PP. 965-983.

75. Chander,Ramesh(2006); "Informational Efficiency, Parameter Stationarity and Benchmark consistency of Investment Performance"; *The ICFAI Journal of Applied Finance*; Vol 12, No.3; PP.29-46.

76. Anand, S. and Murugaiah, V.(2006); "Analysis of Components of Investment Performance - An Empirical Study of Mutual Funds in India"; 10th Indian Institute of Capital Markets Conference. Available at SSRN: http://ssrn.com/abstract=961999

77. Panwar, Sharad and Madhumathi, R.(2006) ; "Characteristics and Performance Evaluation of Selected Mutual Funds in India"; Indian Institute of Capital Markets 9th Capital Markets Conference Paper. Available at SSRN: http://ssrn.com/abstract=876402

78. Aggarwal, Navdeep and Gupta, Mohit (2007); "Performance of Mutual Funds in India: An Empirical Study"; *The ICFAI Journal of Applied Finance*; Vol 13, No.9; PP.5-16.

79. Chander, Ramesh (2007); "Risk-return Stationarity across Measurement criteria and portfolio characteristics: A study"; *The ICFAI Journal of Applied Finance*; Vol 13, No.3; PP.58-81.

80. Sehgal, Sanjay and Jhanwar, Manoj (2007); "Short-Term Persistence in Mutual Funds Performance: Evidence from India". 10th Capital Markets Conference, Indian Institute of Capital Markets. Available at SSRN: http://ssrn.com/abstract=962829.

81. Debasish, Sathya Swaroop(2007); "Performance Evaluation :Choice of Mutual Funds" ; *SCMS Journal of Indian Management* ;Vol. IV,No.1;PP. 82-89.

82. Somasundaram, Subbiah (2007); "The Quest for Alpha: How Far Does it Exist? - An Empirical Analysis of Relative Performance of the Management Strategies for Indian Equity Mutual Funds"; Available at SSRN: http://ssrn.com/abstract=1023922

83. Raju, B. Phaniswara and Rao, K. Mallikarjuna (2008); "Performance Evaluation of selected Indian Mutual Fund Schemes"; *Indian Journal of Commerce*; Vol.61, No. 3; PP. 70-82.

84. Deb, Soumya Guha , Banerjee, Ashok and Chakrabarti B. B. (2008); "Performance of Indian equity Mutual Funds vis-à-vis their Style Benchmarks"; *The ICFAI Journal of Applied Finance*; Vol 14, No.1; PP.49-81.

85. Rao, D. N. and Rao, S. B. (2009); "Does Fund Size Affect the Performance of Equity Mutual Funds? An Empirical Study in the Indian Context"; Available at SSRN: http://ssrn.com/abstract=1420522

86. Prabakaran G. and Jayabal G. (2010); "Performance Evaluation of Mutual Fund Schemes in India: An Empirical study"; *Finance India*, Vol. XXIV; No.4; PP.1347-1364.

87. Treynor, Jack L, and Kay K Mazuy (1966); "Can Mutual Funds outguess the Markets?"; *Harvard Business Review*; Vol.44; PP.131-136.

88. Henriksson, Roy D. and Merton, Robert C. (1981); "On Market Timing and Investment Performance. II. Statistical Procedures for Evaluating Forecasting Skills"; *The Journal of Business*; Vol. 54, No. 4. ; PP. 513-533.

89. Kon,Stanley J (1983); "The market timing performance of Mutual Fund Managers"; *Journal of Business*, Vol. 3; PP. 323-347.

90. Grinblatt, M. and S. Titman (1989b); "Portfolio Performance Evaluation: Old Issues and New Insights"; *Review of Financial Studies;* Vol. 2, No.3; PP.393-421.

91. Ferson, Wayne E. and Schadt, Rudi W. (1996) ;"Measuring Fund Strategy and Performance in Changing Economic Conditions"; *The Journal of Finance*; Vol. 51, No. 2; PP. 425-461.

92. Kon, Stanley J. and Jen, Frank C. (1979); "The Investment Performance of Mutual Funds: An Empirical Investigation of Timing, Selectivity, and Market Efficiency," *Journal of Business* Vol. 52, No.2, PP. 263-289.

93. Chang, Eric C. and Lewellen, Wilbur G. (1984); "Market Timing and Mutual Fund Investment Performance"; *The Journal of Business*; Vol. 57, No. 1; PP. 57-72.

94. Henriksson, Roy D (1984); "Market timing and Mutual fund performance: An empirical investigation"; *The Journal of Business*, Vol. 57, No. 1; PP. 73-96.

95. Lee, Cheng-Few, and Rahman, Shafiqur (1990); "Market timing, selectivity and Mutual fund performance: An empirical investigation"; *The Journal of Business*, Vol. 21; PP. 261-278.

96. Fletcher, J. (1995); "An examination of the selectivity and market timing performance of UK Unit Trusts; *Journal of Business Finance and Accounting ;* Vol 22,No.1; PP. 143-156.

97. Busse, Jeffrey A. (1999); "Volatility Timing in Mutual Funds: Evidence from Daily Returns"; *The Review of Financial Studies*; Vol. 12, No. 5. ; PP. 1009-1041.

98. Bollen, Nicolas P. B. and Busse, Jeffrey A. (2001); "On the Timing Ability of Mutual Fund Managers"; *The Journal of Finance*; Vol. 56, No. 3. ; PP. 1075-1094.

99. Dellva, Wilfred L., DeMaskey, Andrea L., and Smith, Colleen A. (2001); "Selectivity and Market Timing Performance of Fidelity Sector Mutual Funds"; *The Financial Review*; Vol. 36, No. 1; PP. 39-54.

151

100. Bollen, Nicolas P. B. and Busse, Jeffrey A. (2005); "Short-Term Persistence in Mutual Fund Performance"; *The Review of Financial Studies*; Vol. 18, No. 2; PP. 569-597.

101. Romacho, Joao Carlos and Cortez, Maria C'eu (2006); "Timing and selectivity in Portuguese mutual fund performance"; *Research in International Business and Finance;* Issue 20; PP. 348-368.

102. Ahmed, Huson Joher Ali (2007); "Malaysia Unit Trust Performance: Comparative Analysis of Single and Multi Index Model"; *European Journal of Economics, Finance and Administrative Sciences;* ISSN 1450-2887 Issue 7; PP.22-31.

103. Giamouridis, D. & Sakellariou, K. (2008); "Short-term Persistence in Greek Mutual Fund Industry";Working Paper Series; PP.1-26.

104. Gupta, Amitabh (2000); "Market Timing Abilities of Indian Mutual Fund Managers: An Empirical Study"; *The ICFAI Journal of Applied Finance*, Vol 6, No.2; PP.1243-50.

105. Mishra, Biswadeep (2002); "Selectivity and Timing Skills of Mutual Funds in India: An Empirical Analysis"; *The ICFAI Journal of Applied Finance*, Vol. 8, No. 5, PP.5-16.

106. Roy, Bijan and Deb, Saikat Sovan (2003), "The Conditional Performance of Indian Mutual Funds: An Empirical Study". Available at SSRN: http://ssrn.com/abstract=593723.

107. Tripathy, Nalini Prava (2006); "Market Timing Abilities and Mutual Fund Performance – An Empirical Investigation into Equity Linked Saving Schemes"; Vilakshan, XIMB Journal of Management. Available at: www.ximb.ac.in/ximb_journal/Publications/Article-08.pdf

108. Chander,Ramesh(2006); "Investment Managers' Market Timing Abilities: Empirical Evidence from the Indian Capital Market"; *IIMB Management Review*;PP.315-326.

109. Deb, Soumya Guha;Banerjee Ashok and Chakrabarti B B(2007); "Market Timing and Stock Selection Ability of Mutual Funds in India: An Empirical Investigation"; *Vikalpa*; Vol 32, No.2;PP.39-51.

110. Raju, B Phaniswara and Rao, K Mallikarjuna (2009); "Market Timing Ability of Selected Mutual Funds in India: A Comparative Study"; *The ICFAI Journal of Applied Finance*; Vol.15, No.3; PP. 31-46.

111. Shiller, R. J. (1998); "Human behavior and the efficiency of the financial system"; *National Bureau of Economic Research*, Working paper No. 6375.

112. Tversky, A. and D. Kahneman (1974); "Judgement under uncertainty: Heuristic and Biases"; *Science;* Vol. 185; PP.1124-1131.

113. Chopra, N., J. Lakonishok and J. Ritter (1992); "Measuring abnormal performance: do stocks overreact"; *Journal of Financial economics*; Vol. 31; PP. 235-268.

114. Barber, B. M., T. Odean and L. Zheng (2000); "The Behavior of Mutual Fund Investors"; Working paper.

115. Fischhoff, B., P. Slovic and S. Lichtenstein (1977); "Knowing With Uncertainty: The Appropriateness of Extreme Confidence"; *Journal of Experimental Psychology: Human Perception and Performance*; Vol. 3; PP. 552-564.

116. Ross, L. (1987); "The Problem of Construal in Social Inference and Social Psychology", In N. Grunberg, R. E. Nisbett and J. Singer (eds.), A Distinctive Approach to Psychological Research: The Influence of Stanley Schachter. Hillsdale, NJ: Erlbaum.

117. Bodie, Z., A. Kane and A. Marcus (2008); "Investments"; 7th ed, McGraw-Hill: New York, PP. 293-303, 395-400.

118. Barber, B. M. and T. Odean (2001); "Boys Will Be Boys: Gender, Overconfidence and Common Stock Investment"; *Quarterly Journal of Economics*, Vol. 16, PP.262-292.

152

119. Florovsky, G. (1969); "The Study of the Past"; In R. H. Nash (ed.), *Ideas of History*; Vol. 2. NewYork: Dutton, PP.364.

120. Mehra, R. and E. C. Prescott (1985); "The Equity Premium: A Puzzle"; *Journal of Monetary Economics;* Vol. 15, PP.145-162.

121. Tversky, A. and D. Kahneman (1973); "Availability: A heuristic for judging frequency and probability"; *Cognitive Psychology*; Vol. 5; PP.207-232.

122. Esgate, A. and D. Groome (2004); "An Introduction to Applied Cognitive Psychology"; Psychology Press, Hove, England.

123. Kahneman, D. and A. Tversky (1979); "Prospect theory: An analysis of decision Under Risk"; *Econometrica;*Vol. 47; PP.263-291.

124. Tversky, A. and D. Kahneman (1992); "Advances in Prospect Theory: Cumulative Representation of Uncertainty"; *Journal of Risk and Uncertainty*; Vol. 5, PP.297-323.

125. Kahneman, D. and A. Tversky (1981); "The Framing of Decisions and the Psychology of Choice"; *Science*, New Series; Vol. 211, No. 4481;PP.453-458.

126. Festinger, L. (1957); "A Theory of Cognitive Dissonance"; Stanford, CA, Stanford University Press.

127. Erlich, D., P. Guttman, P. Schopenbach, and J. Mills (1957); "Post decision Exposure to Relevant Information" ; *Journal of Abnormal and Social Psychology*; Vol. 54, No. 1; PP. 98-102.

128. Schefrin, H. and M. Statman (1985); "The disposition to sell winners too early and ride looser too long"; *Journal of finance*, Vol. 40; PP.777-790.

129. Goetzmann, W. N. and N. Peles (1993); "Cognitive Dissonance and Mutual Fund Investors"; reproduced, Yale School of Management.

130. Kempf, A. and S. Ruenzi (2006); "Status Quo Bias and the Number of Alternatives: An Empirical Illustration from the Mutual Fund Industry"; *Journal of Behavioral Finance*, Vol. 7, No. 4; PP. 204-213.

131. Ameriks, J. and S. D. Zeldes (2001); "How Do Household Portfolio Shares Vary with Age?" Working paper, TIAA-CREF Institute, New York.

132. Agnew, J., P. Balduzzi and A, Sunden (2003); "Portfolio Choice and Trading in a Large 401(k) Plan"; *American Economic Review*, Vol.93; PP.193–215.

133. Barber, B.M., T. Odean and N. Zhu (2006); "Systematic Noise"; Working paper, UC-Davis, and UC-Berkeley.

134. Engström, S. and A. Westerberg (2004); "Information costs and Mutual Fund Flows"; SSE/EFI, Working paper series in economics and Finance, No. 555.

135. Shefrin, H (2000); "Beyond Greed and Fear: understanding behavioural finance and the psychology of investing" ; Harvard Business School Press, Boston, USA.

136. Capon, Noel , Fitzsimons, Gavan J. and Prince, Russ Alan (1996); "An individual level analysis of the mutual fund investment decision" ; *Journal of Financial Services Research*; Vol. 10, No. 1; PP.59-82.

137. Alexander, Gordon J., Jones, Jonathan D. & Nigro, Peter J. (1997); "Investor self-selection: evidence from a mutual fund survey"; Managerial and Decision Economics; Vol.18, No. 7-8 ; PP. 719 – 729.

138. Alexander, Gordon J., Jones, Jonathan D. & Nigro, Peter J. (1998); "Mutual fund shareholders: characteristics, investor knowledge, and sources of information,"; *Financial Services Review*, Elsevier; Vol. 7,No.4 ; PP. 301-316.

139. Fant, Franklin L. (1999); "Investment Behavior of Mutual Fund Shareholders: The evidence from Aggregate Fund Flows"; *Journal of Financial Markets*; Vol.2; PP. 391-402.

140. Zheng, Lu (1999); "Is Money Smart? A Study of Mutual Fund Investors' Fund Selection Ability"; *The Journal of Finance;* Vol. 54, No. 3; PP. 901-933.

141. Alexander, Gordon J., Jones, Jonathan D. & Nigro, Peter J. (2001); "Does mutual fund disclosure at banks matter? Evidence from a survey of investors"; The Quarterly Review of Economics and Finance; Vol.41, No. 3; PP. 387-403.

142. Barber, Brad M., Odean, Terrance and Zheng, Lu (2002); "The Behavior of Mutual Fund Investors"; Available at: http://faculty.haas.berkeley.edu/odean/papers/MutualFunds/ mfund.pdf.

143. Dwyer, Peggy D., Gilkeson, James H. and List, John A. (2002); "Gender Differences in Revealed Risk Taking: Evidence from Mutual Fund Investors"; *The Economic Letters*; Vol.71; PP. 151-158.

144. Shu, Pei-Gi, Yeh, Yin-Hua and Yamada, Takeshi (2002); "The behavior of Taiwan mutual fund investors—performance and fund flows"; *Pacific-Basin Finance Journal*; Vol. 10, No.5; PP. 583-600.

145. Choi, James J., David Laibson, and Andrew Metrick (2002); "How Does the Internet Affect Trading? Evidence from Investor Behavior in 401(k) Plans"; *Journal of Financial Economics*; Vol. 64; PP. 397-421.

146. Barber, Brad M., Odean, Terrance and Zheng, Lu (2003); "Out of Sight, Out of Mind: The Effects of Expenses on Mutual Fund Flows"; Available at SSRN: http://ssrn.com/abstract=496315.

147. Bollen, Nicolas P. B. (2006); "Mutual Fund Attributes and Investor Behavior"; *Journal of Financial and Quantitative Analysis*; Forthcoming. Available at SSRN: http://ssrn.com/abstract=899382.

148. Dominitz, Jeff, Hung, Angela and Yoong, Joanne (2008); "How do Mutual Fund Fees Affect Investor Choices? Evidence from Survey Experiments"; RAND Working Paper No. WR-653; Available at SSRN: http://ssrn.com/abstract=1335493.

149. Ivkovich, Zoran and Weisbenner, Scott J. (2008); "Individual Investor Mutual-Fund Flows"; NBER Working Paper No. w14583. Available at SSRN: http://ssrn.com/abstract=1320829.

150. Bailey, Warren B., Kumar, Alok and Ng, David (2010); "Behavioral Biases of Mutual Fund Investors"; *Journal of Financial Economics*, Forthcoming; AFA 2009 San Francisco Meetings Paper. Available at SSRN: http://ssrn.com/abstract=1108163.

151. Jambodekar, Madhusudan V. (1996); "Marketing Strategies of Mutual Funds – Current Practices and Future Directions"; Working Paper, UTI – IIMB Centre for Capital Markets Education and Research, Bangalore.

152. Raja Rajan, V (1998); "Stages in life cycle and Investment pattern"; *Indian Journal of Commerce*; Vol.51, Nos. 2 & 3; PP. 27-36.

153. Shanmugham, R. (2000); "Factors Influencing Investment Decisions"; Indian Capital Markets-Trends and Dimensions (ed), New Delhi; Tata McGraw-Hill Publishing Company Limited.

154. Chakrabarti, Anjan and Rungta, Harsha (2000); "Mutual Funds Industry in India: An In-depth Look into the Problems of Credibility, Risk and Brand"; *The ICFAI Journal of Applied Finance*; Vol. 6, No. 2, pp. 26-46.

155. Karmakar ,Madhusudan (2001); " Investment Behavior of Household sectors a study of a rural block in West Bengal"; *Indian Journal of Commerce*; Vol.54, Nos. 1 & 2; PP. 58-65.

156. Panda,Tapan K and Tripathy, Nalini Prava (2001); " Customer Orientation in Designing Mutual Fund Products -An Analytical Approach to Indian Market Preferences"; Available at http://dspace.iimk.ac.in/bitstream/2259/198/1/customer+ orientation.pdf.

157. Rajeswari,T.R. and Moorthy, V.E. Rama (2001); "An Empirical Study on Factors Influencing the Mutual Fund/Scheme Selection by Retail Investors"; available at: http://www.utiicm.com/Cmc/PDFs/2001/rajeswari.pdf.

158. Singh, Y P and Vanita (2002); "Mutual Fund Investors' perceptions and preferences- A survey"; *Indian Journal of Commerce*; Vol.55, No.3; PP. 8-20.

159. Qamar,Furqan (2003); "Saving Behavior and Investment Preferences among average urban households"; *Indian Journal of Commerce*; Vol.56, No.1; PP. 36-49.

160. Jatana, Renu and Bosire, Josephat Keros. (2003);"Mutual Funds and Development-Pricking the Bubbles with Mutual Fund Priorities"; *Indian Journal of Commerce*; Vol.56, No. 4; PP. 92-95.

161. Gupta, L.C. (2004); "Indian Household Investors Survey-2004: The Changing Market Environment Investors' Preferences Problems Policy Issues"; Society for Capital Market Research and Development, Delhi.

162. Singh, Jaspal and Chander, Subhash (2004); "An empirical analysis of perceptions of Investors towards mutual funds"; *Finance India*; Vol. XVIII, No.4; PP. 1673-1692.

163. Kiran, D. and Rao, U.S. (2004); "Identifying Investor Group Segments Based on Demographic and Psychographic Characteristics"; 8th Capital Markets Conference, Indian Institute of Capital Markets Paper. Available at SSRN: http://ssrn.com/abstract=870749.

164. Singh, Jaspal and Chander ,Subhash (2006); "Investors' preference for Investment in Mutual funds" An Empirical Evidence"; *The ICFAI Journal of Behavioral Finance* ; Vol. III, No.1; PP. 7-17.

165. Ranganathan, Kavitha (2006);"A Study of Fund Selection Behaviour of Individual Investors towards Mutual Funds - With Reference To Mumbai City"; *The ICFAI Journal of Behavioral Finance* ; Vol. III, No.2; PP. 63-88.

166. Chaudhary, Ashok (2008); "A Behavioral Finance Study to Analyze the Investment Behavior of Mutual Fund Investors (with Reference to the Professionals)"; Available at SSRN: http://ssrn.com/abstract=1091402.

167. Lalitha, A. and Surekha ,M. (2008); "Retail investor in Indian Capital Market: Profile, Pattern of Investment and Profitability"; *Indian Journal of Commerce*; Vol.61, No. 3; PP. 53-60

168. Paramaiah, Ch. (2008); "Demographic determinants of rural farm household savings: A study of Coastal Andhra Pradesh"; *Indian Journal of Commerce*; Vol.61, No. 2; PP. 51-67.

169. Muraleedharan D. (2008); "Pattern of Household Income, Savings and Investment"; *Finance India*; Vol. XXII, No.2; PP. 545-561.

170. Senthil Kumar K. , Vijaya Banu C., Lakshmana Gomathi Nayagam V. (2008); "Financial product preferences of Tiruchirapalli investors using analytical hierarchy process and fuzzy multi criteria decision making" ; *Investment Management and Financial Innovations*; Vol .5, Issue 1; PP.66-73.

171. Das, Bhagaban , Mohanty, Sangeeta and Shil , Nikhil Chandra (2008); "Mutual fund vs. Life Insurance: Behavioral Analysis of Retail Investors" ; *International Journal of Business and Management*; Vol.3,No.10; PP.89-104.

172. Shollapur, M R and Kuchanur, A B (2008); "Identifying Perceptions and Perceptual Gaps: A Study on Individual Investors in Selected Investment Avenues"; *Journal of Behavioral Finance*; Vol.III, No.2; PP.42-59.

173. Parihar, B. B. S., Sharma, Rajeev and Singh Parihar, Deepika (2009); "Analyzing Investors' Attitude towards Mutual Funds as an Investment Option"; *The IUP Journal of Management Research*; Vol. VIII, No. 7, PP. 56-64.

174. Popli, G.S. and Rao, D.N. (2009); "Marketing of Mutual Fund Products through Retail Banks in India: An Empirical Study of Customers' Perception"; Available at SSRN: http://ssrn.com/abstract=1472156.

175. Walia, Nidhi and Kiran, Ravi (2009); "An Analysis of Investor's Risk Perception towards Mutual Funds Services"; *International Journal of Business and Management*; Vol.4, No.5; PP.106-120.

176. Chandra, Abhijeet and Sharma, Dinesh (2010); "Investment Management by Individual Investors: A Behavioral Approach"; *Journal of Behavioral Finance*; Vol. III, No.1; PP.1-12.

177. Sultana, Syed Tabassum (2010); "An Empirical Study of Indian Individual Investors' Behavior"; *Global Journal of Finance and Management*; Vol.2, No.1; PP. 19-33.

178. Klemosky, Robert C. (1977); "How Consistently Do Managers Manage"; *Journal of Portfolio Managemet*; Vol.3; PP. 11-15.

179. Ferris, Stephen P. and Chance, Don M. (1987) ;"The Effect of 12b-1 Plans on Mutual Fund Expense Ratios A Note"; *The Journal of Finance*; Vol. 42, No. 4 ; PP. 1077-1082.

180. Lee, Charles M.C., Andrei Shleifer and Richard H. Thaler (1991); "Investor Sentiment and the Closed-End Fund Puzzle"; *Journal of Finance;* Vol.46; PP.75-109.

181. Taylor, Walton R. L. and Yoder, James A. (1994); "Mutual Fund Trading Activity and Investor Utility"; *Financial Analysts Journal*; Vol. 50, No. 3 ; PP. 66-69.

182. Falkenstein, Eric G. (1996); "Preferences for Stock Characteristics as Revealed by Mutual Fund Portfolio Holdings"; *The Journal of Finance*; Vol. 51, No. 1; PP. 111-135.

183. Lockwood, Larry J. (1996); "Macroeconomic Forces and Mutual Fund Betas"; *Financial Review*; Vol. 4; PP. 747-763.

184. Droms, William G. and Walker, David A. (1996); "Mutual fund investment performance"; *The Quarterly Review of Economics and Finance*;Vol.36, No.3; PP. 347-363.

185. Neal, Robert and Wheatley, Simon M.(1998) ; "Do Measures of Investor Sentiment Predict Returns?"; *The Journal of Financial and Quantitative Analysis;* Vol. 33, No. 4 ; PP. 523 -547.

186. Atkinson, Stanley M., Baird, Samantha Boyce and Frye, Melissa B. (2001); "Do Female Mutual Fund Managers Manage Differently?" *Journal of Financial Research, Forthcoming*; Available at SSRN: http://ssrn.com/abstract=287672.

187. Khorana, Ajay (2001); "Performance Changes Following Top Management Turnover: Evidence from Open-End Mutual Funds" *The Journal of Financial and Quantitative Analysis*, Vol. 36, No. 3. ; PP. 371-393.

188. Lynch, Anthony W. and Musto, David K. (2003); "How Investors Interpret past Fund Returns" ; *The Journal of Finance*; Vol. 58, No. 5 ; PP. 2033-2058.

189. Levitt, Jeffrey C. (2005); "Do Mutual Fund Performance and Expense Structure Influence Minimum Investment Amounts?" Available at SSRN: http://ssrn.com/abstract=775104.

190. Da, Z. Gao, P. & Jagannathan, R. (2008); "Informed Trading, Liquidity Provision and Stock Selection by Mutual Funds"; Working Paper Series; PP.1-56.

191. Niessen, A. & Ruenzi, S. (2009); "Sex Matters: Gender Differences in the Mutual Fund Industry"; Working Paper Series; PP.1-48.

192. Dash, Mihir and G., Dinesh Kumar (2008); "A Study on the Effect of Macroeconomic Variables on Indian Mutual Funds"; Available at SRN:http://ssrn.com/abstract=1316442.

193. Somashekar, T.S. (2008); "Fund size and its impact on Fund returns: An Empirical study of Indian Mutual Funds"; *The Indian Economic Journal*, Vol. 56, No. 1.PP.102-111.

194. Rao, D. N. and Rao, S. B. (2009); "Does Fund Size Affect the Performance of Equity Mutual Funds? An Empirical Study in the Indian Context"; Available at SSRN: http://ssrn.com/abstract=1420522

195. Chakrabarti, Rajesh (2009); "The Asset Management Industry in India"; Available at SSRN: http://ssrn.com/abstract=1428473.

196. Rao, D. N. (2010); "Portfolio Turnover and its Effect on Performance of Equity-Oriented Mutual Fund Schemes: An Empirical Study in the Indian Context"; Available at SSRN: http://ssrn.com/abstract=1549878.

197. Rao, D. N. and Rao, S. B. (2010); "Investment Patterns and its Strategic Implications for Fund Managers: An Empirical Study of Indian Mutual Funds Industry"; Available at SSRN: http://ssrn.com/abstract=1538491.