Chapter 5
SUMMARY AND CONCLUSIONS

5.1 SUMMARY

5.2 CONCLUSIONS
5.1. SUMMARY

Thesis is covered in six chapters- Introduction, Review of Literature, Methodology, Results and Discussion, Summary and Conclusions, and Suggestions and Implications. The Introduction chapter is covered in three sections, the conceptual framework, the rationale, the aims and objectives of the study. In conceptual framework, mutual fund concept, advantages of mutual fund, history of Mutual Fund Industry Worldwide including Indian Mutual Fund Industry and types of mutual funds schemes were covered. Additionally concepts of portfolio, portfolio management and portfolio performance evaluation techniques were extensively covered. In Rationale, current status of mutual fund industry performance, gaps and issues were covered and aims and objectives of the study were given at the end of this chapter.

Under Review of Literature chapter, study and research of over 30 National & International Papers, 12 reference books, number of finance and Investment Journals and number of websites consisting of Harvard Business School and ICFAI University, various mutual fund rating agencies in India / abroad, various fund houses and financial Intermediaries of India, AMFI and SEBI was carried out. Study and research of portfolio evaluation methodologies for portfolio returns (absolute and relative to bench mark), return distribution (symmetrical and asymmetrical), Risk measurement metrics, Risk- Adjusted measurement metrics (Mean Variance and Asymmetrical), Performance Attribution Technique (Famma’s Decomposition Method) and Style Analysis Techniques was done. Additionally study and research of Mutual Fund rating agencies in India and abroad was carried out. Indian agencies researched were CRISIL, Value Research and ICRA. Agencies researched abroad were Standard & Poor’s, Morning star, and Lipper Analytical services of United States and Euro Performance and Edhec of France were studied.

The Methodology chapter is covered in four sections, the study, the design, the sample and the tools. The study section, included review of various types of mutual funds prevalent in India as on April 30,2006, study of various Mutual Fund evaluation methodologies in India and abroad, performance of open-ended (non-dividend) select equity mutual funds in India for a period of five years (1.5.2001- 30.4.2006), comprehensive scientific framework for analysis of the performance of existing equity mutual fund portfolios in the Indian context and qualitative framework (Pre-
commissioning due diligence) for evaluating the performance of New Funds Offerings.

In the design section, details of combination of explorative qualitative and quantitative techniques were covered. For evaluation of existing mutual funds, number of analytical methodologies were considered, which included analysis of absolute fund performance, analysis of distribution of returns of mutual funds and their related benchmarks, analysis of relative fund performance, analysis of risk of funds, stability of metrics across time and future predictability of metrics. Performance metrics considered for analysis was pure return metrics and risk adjusted metrics. Pure return metrics considered were geometric total return, mean daily total return, median daily total return, geometric active return, mean daily active return and median daily active return. Risk metrics considered were beta, standard deviation and semi-standard deviation. Risk Adjusted Metrics considered were Sharpe ratio, Treynor ratio, Information ratio, Sortino ratio and Fund Alpha. Seven hypotheses were developed for testing to sum up the results.

Performance evaluation of the select mutual funds was carried out by calculating various performance metrics as decided in methodology. Framework for evaluation of existing funds was worked out based on results of performance evaluation. Framework for evaluation of N.F.Os, (prescriptive checklist) was prepared after studying the Best International Practices. Recent three domestic N.F.Os were downloaded from SEBI Website and were studied for business practices, transparency and disclosures based on their prospectus against the evolved framework.

Secondary data has been used in this research. List of funds that are domiciled in India and invest in Indian securities was downloaded from Bloomberg web site. Criterion for selection of mutual fund for analysis was decided. After screening and cleaning data, the final sample included a total of 47 mutual funds with a data set consisting of the reported daily NAVs close to 60,000. Using Bloomberg, the primary index benchmarks of the funds were identified and the corresponding time series of their levels were collected. For data analysis, statistical tools used were, t-test for significance, Chi-Square test, Coefficient of Correlation and Rank Correlation.
Financial tools and ratios were used for absolute return measurement and active return of the funds and their related benchmarks. For testing the normality of distribution of the funds and their benchmarks, properties of Kurtosis and Skewness were utilized. For risk measurement, Standard Deviation, Semi-Standard Deviation, Beta and worst monthly draw down in percentage terms were employed. For risk-adjusted performance metrics, Sharpe ratio, Treynor ratio, Information ratio, Fund Alpha and Sortino ratio were utilized.

Results and Discussion chapter is covered in three sections, the results, consolidated results and the discussion. Under the results section, review of types of mutual funds, classified inventory of available mutual funds in India and study of Mutual Fund rating methodologies practiced in India was covered and discussed. Study of Mutual Fund rating methodologies practiced – Abroad was also carried out. For all Funds and indices in analysis, returns over daily, weekly and monthly time periods were calculated using the NAV / index pricing time series over the 5 years time frame (1.5.2001- 30.4.2006). Further analysis was done on the various performance metrics—absolute returns, active returns, beta, standard deviation, skew, kurtosis and correlation of fund to respective benchmark. Similar exercise was done on weekly and monthly basis. Test on normality of distribution of funds and their benchmarks were conducted and the results were analyzed. t- test of significance on active returns were carried out. For all funds, risk-adjusted metrics were calculated over the 5 years time frame. Further stability and predictability test were conducted for 11 performance metrics. To improve the predictability of risk-adjusted performance ratio, concept of composite performance metric was evolved.

Under consolidated results, summarization was done of various studies conducted of leading mutual fund rating methodologies practiced in India and abroad. Results of return distribution of indices and mutual fund, active returns, risk adjusted performance ratios, stability and predictability of performance metrics was summarized. Development and construction of quantitative framework for analysis of existing mutual fund was covered.
Discussion section covered the return distribution of Indian Equity Mutual Funds and their related indices, results of their performance in terms of return, results of their risk-adjusted performance ratios. Stability and predictability of various performance metrics in general and risk-adjusted ratios in particular was also covered. Quantitative framework for existing mutual funds and Qualitative framework for domestic New Funds Offerings was discussed.

The chapter on Summary and Conclusions has covered brief details of the chapters and objective wise results.

The chapter on Suggestions and Implications presented the suggestions for further work in the area of Mutual Funds and also the possible applications of the findings of the current study.

The Bibliography has the details of the books, Journals, reports of website referred during the course of study. The thesis has 10 appendices covering various mutual fund rating methodologies, classification of Indian Mutual Funds, classified inventory of Indian Mutual Funds and characteristics of various types of mutual funds.

5.2. CONCLUSIONS

For carrying out the work on Equity Mutual Funds Portfolios in the Indian Context (Evolving a Framework for Analysis), four main aims and objectives of study were set.

First objective was to review various types of mutual funds in India and prepare a classified inventory of available mutual funds. The review and further study of existing Indian mutual funds (as on March 31, 2007) was carried out. Outcome of review resulted into classification of Indian Mutual Funds, Characteristics of various types of Indian Mutual Funds, and a classified inventory of available Mutual Funds.
Second objective was to document various evaluation methodologies prevailing in India and abroad. The study of evaluation methodology of three Indian leading mutual fund rating companies- CRISIL, Value Research and ICRA and four US leading mutual fund rating companies/Agencies- Morningstar, Lipper, S&P, Aptomum and one French agency- Euro Performance and Edhec were covered. Outcome of study resulted into comparison of various leading rating methodologies, and provided inputs in evolving and developing a framework of analysis of existing Indian Mutual Funds.

Third Objective was to evaluate performance of equity mutual funds in India. Evaluation of performance of select equity mutual funds for the 5 years time frame (1.5.2001-30.4.2006) was been carried out on various performance metrics like Pure Return Metrics, Risk and Risk- Adjusted ratios. Under Pure return, Absolute and Relative return were covered. Under Absolute Return performance metrics, Geometric total return, Mean daily total return and Median daily total return were covered and under Relative Return, Geometric active return, Mean daily active return and Median daily active return were covered. Under Risk performance metrics, Beta, Standard Deviation, Semi-standard Deviation and Maximum draw downs were covered. Under Risk- Adjusted Ratios, Sharpe ratio, Treynor ratio, Information ratio, Sortino ratio and Fund Alpha were covered.

Outcome of the various calculations and testing of various hypotheses resulted into certain conclusions on the performance of select mutual funds, which further helped, in development and construction of framework for analysis of Indian equity Mutual Funds.

Fourth objective was to create a comprehensive framework for analysis of the performance of equity mutual fund portfolios in the Indian context on existing funds and New Funds Offerings.

A rigorous quantitative framework was developed to analyze existing mutual funds on their return and risk characteristics and to provide methodology of ranking the various mutual funds. For New Funds Offerings, a prescriptive checklist that has been
prepared based on Best International Practices that can be used to assess mutual funds without a sufficiently long track record. This checklist would serve as the initial impressions of what the Portfolio is intended to look like and accomplish in the future. Based on the checklist three new NFOs were analyzed.