

**A COMPARATIVE ANALYSIS OF SELECT SBI AND HDFC MUTUAL FUND
SCHEMES**

By

VR.KANNAMMAI

Roll No. 0906MBA1858

Reg. No. 68609200186

A PROJECT REPORT



Submitted to the

FACULTY OF MANAGEMENT SCIENCES

in partial fulfillment for the award of the degree

of



MASTER OF BUSINESS ADMINISTRATION

CENTRE FOR DISTANCE EDUCATION


ANNA UNIVERSITY CHENNAI

CHENNAI 600 025

August, 2011

BONAFIDE CERTIFICATE

Certified that the Project report titled **A COMPARATIVE ANALYSIS OF SELECT SBI AND HDFC MUTUAL FUND SCHEMES** is the bonafide work of Ms. VR.KANNAMMAI who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

**Signature of Guide**
Name : VR. KANNAMMAI

Name : KR.AYYASWAMY

Roll No. : 0906MBA1858

Designation : Professor, KCT Business School,

Reg. No. : 68609200186

Address : Kumaraguru College of

Technology, Coimbatore-49.


Signature of Project-in-charge

Name : Dr.V.R.NEDUNCHEZHIAN,

Designation : Professor, KCT Business School,
Kumaraguru College of Technology,
Coimbatore-49.

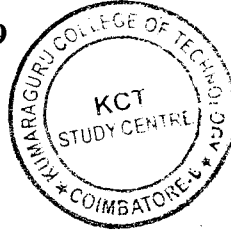
CERTIFICATE OF VIVA-VOCE-EXAMINATION


This is to certify that **Ms.VR KANNAMMAI (Roll No: 0906MBA1858; Register No.**

68609200186) has been Subjected to Viva-voce-Examination on ...10:09:2011..... (Date)

at...11:20 am..... (Time) at the Study centre ...**KUMARAGURU COLEGE OF TECHNOLOGY, COIMBATORE-49**


INTERNAL EXAMINER
EXAMINER




EXTERNAL 10/09/11

Name: Mr. A. Senthil Kumar
Designation: Assistant Professor (Senior Grade)

Name: Dr. Mr. N. Senthil Kumar
Designation: Assistant Professor (Senior grade)

Address: KCT Business School,
Kumaraguru College of Technology,
Coimbatore - 49

Address: Department of
Management Studies
Anna University
Chennai - 600008


STUDY CENTRE COORDINATOR

Name : Dr.VIJILA KENNEDY

Designation : Professor & Director,

Address : KCT Business School,

Kumaraguru College of Technology,

Coimbatore-49.

Date: 10/09/11

ABSTRACT

This study has been undertaken to evaluate “A COMPARATIVE ANALYSIS OF SELECT SBI AND HDFC MUTUAL FUND SCHEMES”. For the purpose of this study, BSE and NSE values were collected and bull phase and bear phase for the period 2007 to 2011 and in the outcome of the study bear phase is identified as December 2007 to February 2008 and bull phase is identified as February 2008 to September 2008. Fund selection is confined to three major areas such as Equity, Fixed Maturity Plan and Debt Funds. It is further confined based on the schemes which were floated during Equity bull and bear phase, Debt funds which were floated during 2007 to 2011 and Fixed Maturity Plan which were floated during bull and bear phase. In the data, 31 schemes were identified. Thirty one funds are classified in to three equity schemes during bear phase, thirteen fixed maturity plan during bull phase and nine fixed maturity plan during bear phase and six debt schemes. Graph is plotted between month end NAV's of each schemes and SENSEX value. Schemes performance with respect to market is analyzed and interpreted. Compounded average returns of the schemes and market percentage year wise from 2007 to 2011 are calculated to compare schemes performance with respect to the market. Using Independent sample t test and ANOVA test comparison is done.

Different statistical tools were used on the data obtained to get the average returns, Standard deviation, Beta, Sharpe, Treynor's Ratio and Jensen's Ratio. These variables of the funds were compared with the same variables of the market to assess how the different funds have performed against the market. It can be easily concluded that most of the fund returns can be attributed to the market that is they were in direct correlation with the market.

*Submitted by
Anammi*

ACKNOWLEDGEMENTS

I am delighted to present this project report to Anna University in partial fulfillment of the requirements for the award of the degree of **MASTER OF BUSINESS ADMINISTRATION**.

I would like to thank my supervisor, **Prof. Mr.KR.AYYASWAMY, Professor, KCT Business School, Coimbatore and Coordinator, KCT Study Centre, Coimbatore-49** for his support throughout my **MASTER OF BUSINESS ADMINISTRATION** candidature. His constructive feedback helped me to select the topic and keep my focus on it. His comments were most helpful in structuring my work.

I wish to thank **Prof. Mr. NEDUNCHEZHIAN, Professor, KCT Business School, Coimbatore and Coordinator, KCT Study Centre, Coimbatore-49** for his expert advice and help.

I extend my gratitude to the **Director, Centre for Distance Education, Anna University-Chennai** and **Prof.Dr.Vijila Kennedy, Director, KCT Business School, Coimbatore and Coordinator, KCT Study Centre, Coimbatore-49**.

I also sincerely thank **Mr.A.Senthil Kumar, Asst Professor (Sr.Grade), KCT Business School, Coimbatore and Counselor MBA programme, KCT Study Centre, Coimbatore-49**.

Finally I would like to thank my Parents, Family, Friends and God almighty for their unending inspiration and encouragement.

TABLE OF CONTENTS

Serial No.	Topic	Page Numbers
1	Introduction	1-3
1.2	Research Background	4
1.3	Identified Problem	4
1.4	Need for Study	5
1.5	Objectives & Scope	5
1.6	Deliverables	5
2	Literature Survey	6
2.1	Review of Literature	6-9
2.2	Research Gap	10
3.1	Methodology	11
3.2	Type of Project	11
3.3	Target respondents	11
3.4	Sampling Methods	11
3.5	Data Processing	12
3.6	Tools for Analysis	12
3.7	Assumptions, Constraints and Limitations	13
4	Data Analysis and interpretation	14
4.1	Analysis	14
4.2	Diagrammatic Representations	15-46
5	Findings and conclusion	47
6	Appendices	49
7	List of References	60

LIST OF TABLES (CONTINUED TO NEXT PAGE)

Serial No.	Topic	Page Numbers
4.2.2	NAV AND SENSEX VALUES FOR EQUITY HDFC SCHEME DURING BEAR PHASE	18-19
4.2.3	NAV AND SENSEX VALUES FOR FMP HDFC SCHEME DURING BULL PHASE	20-21
4.2.4	NAV AND SENSEX VALUES FOR FMP HDFC SCHEME DURING BULL PHASE	23
4.2.5	NAV AND SENSEX VALUES FOR FMP SBI SCHEME DURING BEAR PHASE	25
4.2.6	NAV AND SENSEX VALUES FOR DEBT SCHEME	27
4.3	CAGR(COMPOUND ANNUAL GROWTH RATE)	29-31
4.4	CAGR OF DIFFERENT SCHEMES WITH SENSEX	31-33
4.5.1	GROUP STATISTICS	33
4.5.2	INDEPENDENT SAMPLE T TEST	34
4.6	YEARWISE COMPARISON BETWEEN HDFC AND SBI	34-36
5.1.1	GROUP HDFC :VARAIBLE CAGR	38
5.1.2	ANOVA FOR HDFC	38
5.1.3	GROUP SBI:VARIABLE CAGR	39
5.1.4	ANOVA FOR SBI	39
5.2	BEAR PHASE EQUITY SCHEMES -CALCULATION OF SHARPE, TREYNOR'S AND JENSON'S RATIO.	40

5.3	BULL PHASE FMP SCHEMES-CALCULATION OF SHARPE, TREYNOR'S AND JENSON'S RATIO.	41-43
5.4	BEAR PHASE FMP SCHEMES-CALCULATION OF SHARPE, TREYNOR'S AND JENSON'S RATIO	43-44
5.5	DEBT SCHEMES CALCULATION OF SHARPE, TREYNOR'S AND JENSON'S RATIO	45-46

LIST OF FIGURES

Serial No.	Topic	Page Numbers
4.2.1	GRAPH BETWEEN NAV AND SENSEX FOR SBI ONE INDIA GROWTH FUND	16
4.2.2	GRAPH BETWEEN NAV AND SENSEX FOR HDFC INFRASTRUCTURE GROWTH FUND	19
4.2.3	GRAPH BETWEEN NAV AND SENSEX FOR HDFC FMP 14M MARCH 2008- GROWTH FUND	22
4.2.4	GRAPH BETWEEN NAV AND SENSEX FOR HDFC FMP 22M SEPTEMBER 2008- RETAIL GROWTH FUND	24
4.2.5	GRAPH BETWEEN NAV AND SENSEX FOR SBI DEBT FUND SERIES-13 MONTHS-6(14/12/07) RETAIL-D	26
4.2.6	GRAPH BETWEEN NAV AND SENSEX FOR HDFC MEDIUM TERM OPPORTUNITIES FUND-G	28

LIST OF SYMBOLS, ABBREVIATIONS AND NOMENCLATURE

NAV	Net Asset Value
MF	Mutual Funds
CAGR	Compound Annual Growth Rate
FMP	Fixed Maturity Plan

APPENDICES

Appendix No.	Description	Page Numbers
Appendix 6.1	List of funds selected for study	49-50
Appendix 6.2	Formulas	50-52
Appendix 6.3	Annualised Returns of selected funds	53-55
Appendix 6.4	Standard Deviation of selected funds	56-58
Appendix 6.5	Betas of selected funds	58-59

CHAPTER 1

1. INTRODUCTION

1.1 MUTUAL FUND COMPANIES IN INDIA

The mutual fund industry has been in India for a long time. This came into existence in 1963 with the establishment of Unit Trust of India, a joint effort by the Government of India and the Reserve Bank of India. The next two decades from 1986 to 1993 can be termed as the period of public sector funds with entry of new public sector players into the mutual fund industry namely, Life Insurance Corporation of India and General Insurance Corporation of India.

The year of 1993 marked the beginning of a new era in the Indian mutual fund industry with the entry of private players like Morgan Stanley, J.P Morgan, and Capital International. This was the first time when the mutual fund regulations came into existence. SEBI (Security Exchange Board of India) was established under which all the mutual funds in India were required to be registered. SEBI was set up as a governing body to protect the interest of investor. By the end of 2008, the number of players in the industry grew enormously with 46 fund houses functioning in the country.

With the rise of the mutual fund industry, establishing a mutual fund association became a prerequisite. This is when AMFI (Association of Mutual Funds India) was set up in 1995 as a nonprofit organization. Today AMFI ensures mutual funds function in a professional and healthy manner thereby protecting the interest of the mutual funds as well as its investors.

The mutual fund industry is considered as one of the most dominant players in the world economy and is an important constituent of the financial sector and India is no exception. The industry has witnessed startling growth in terms of the products and services offered, returns churned, volumes generated and the international players who have contributed to this growth. Today the industry offers different schemes ranging from equity and debt to fixed income and money market.

The market has graduated from offering plain vanilla and equity debt products to an array of diverse products such as gold funds, exchange traded funds (ETF's), and capital protection oriented funds and even thematic funds. In addition investments in overseas markets have also been a significant step. Due credit for this evolution can be given to the regulators for building an appropriate framework and to the fund houses for launching such different products. All these reasons have encouraged the traditional conservative investor, from parking fund in fixed deposits and government schemes to investing in other products giving higher returns.

It is interesting to note that the major benefits of investing in a mutual funds is to capitalize on the opportunity of a professionally managed fund by a set of fund managers who apply their expertise in investment. This is beneficial to the investors who may not have the relevant knowledge and skill in investing. Besides investors have an opportunity to invest in a diversified basket of stocks at a relatively low price. Each investor owns a portion of the fund and hence shares the rise and fall in the value of the fund. A mutual fund may invest in stocks, cash, bonds or a combination of these.

Mutual funds are considered as one of the best available investment options as compare to others alternatives. They are very cost efficient and also easy to invest in. The biggest advantage of mutual funds is they provide diversification, by reducing risk & maximizing returns.

India is ranked one of the fastest growing economies in the world. Despite this huge progression in the industry, there still lies huge potential and room for growth. India has a saving rate of more than 35% of GDP, with 80% of the population who save. These savings could be channelized in the mutual funds sector as it offers a wide investment option. In addition, focusing on the rapidly growing tier II and tier III cities within India will provide a huge scope for this sector. Further tapping rural markets in India will benefit mutual fund companies from the growth in agriculture and allied sectors. With subsequent easing of regulations, it is estimated that the mutual fund industry will grow at a rate of 30% - 35% in the next 3 to 5 years and reach US 300 billion by 2015.

As it can be noted, there is huge growth and potential in the mutual fund industry. The development of this sector so far has been commendable and with the above positive factors we are looking at a more evolved industry.

1.1.1 MAJOR MUTUAL FUND COMPANIES IN INDIA

1.1.1.1 Bank Sponsored

- SBI Fund Management Ltd.
- BOB Asset Management Co. Ltd.
- UTI Asset Management Company Pvt. Ltd.

1.1.1.2 Institutions

- GIC Asset Management Co. Ltd.

1.1.1.3 Private Sector Indian:-

- BenchMark Asset Management Co. Pvt. Ltd.
- Cholamandalam Asset Management Co. Ltd.
- Credit Capital Asset Management Co. Ltd.
- Escorts Asset Management Ltd.
- JM Financial Mutual Fund
- Kotak Mahindra Asset Management Co. Ltd.
- Reliance Capital Asset Management Ltd.
- Sahara Asset Management Co. Pvt. Ltd
- Sundaram Asset Management Company Ltd.
- Tata Asset Management Private Ltd.

1.1.1.4 Predominantly India Joint Ventures:-

- Birla Sun Life Asset Management Co. Ltd.
- HDFC Asset Management Company Ltd.

1.1.1.5 Predominantly Foreign Joint Ventures:-

- ABN AMRO Asset Management (I) Ltd.
- Alliance Capital Asset Management (India) Pvt. Ltd.
- Deutsche Asset Management (India) Pvt. Ltd.
- Fidelity Fund Management Private Limited
- Franklin Templeton Asset Mgmt. (India) Pvt. Ltd.
- HSBC Asset Management (India) Private Ltd.
- ING Investment Management (India) Pvt. Ltd.
- Morgan Stanley Investment Management Pvt. Ltd.
- Principal Asset Management Co. Pvt. Ltd.
- Prudential ICICI Asset Management Co. Ltd.
- Standard Chartered Asset Mgmt Co. Pvt. Ltd.

1.2 RESEARCH BACKGROUND.

Every bank tries to offer the best mutual funds for every type of investor .Even if you buy through a bank and the fund carries the bank's name. You can lose money investing in mutual funds. But past performance can help you assess a fund's volatility over time. Being one of the fastest growing asset management company, HDFC has acquired a credible market position over the years and hence the investor chosen to compare with SBI one of the largest mutual funds which has 20 years of experience and knowledge in the Industry.

1.3 PROBLEM IDENTIFICATION

The researcher wanted to analyze the problems related to Indian mutual fund industries under the topic of “A COMPARATIVE ANALYSIS OF SELECT SBI AND HDFC MUTUAL FUND SCHEMES”.

The researcher is interested in assessing the performance of the select mutual funds of SBI and HDFC through two factors via net asset value and returns taking for the year 2007 to 2011 and arrives at a portfolio that gives maximum return with minimum risk.

1.4 NEED FOR THE STUDY

Mutual fund industry reached 7 lakh crores with more than 30 fund houses. It's very difficult for the investor to select good fund from those thousands of fund. Hence to compare the performance of funds a detailed research is needed.

1.5 OBJECTIVES OF THE STUDY

1.5.1 Primary Objective:-

1. To evaluate the performance of mutual fund scheme of HDFC and SBI for the period January 2007 to March 2011.

1.5.2 Secondary Objective:-

1. To compare the performance of funds against market performance.
2. To identify best scheme that gave high return based on
 - a. Sharpe ratio
 - b. Treynor's ratio
 - c. Jenson ratio

1.6 DELIVERABLES

1. Analysis of four years average returns for the select schemes of SBI and HDFC mutual fund from 2007 to 2011.
2. Assessment of risks for the select schemes of SBI and HDFC mutual fund from 2007 to 2011.
3. Comparison of fund return with market return for the select schemes of SBI and HDFC mutual fund from 2007 to 2011

CHAPTER 2

2. LITERATURE SURVEY

2.1 Literature Review

Performance evaluation of mutual funds is one of the preferred areas of research where a good amount of study has been carried out. The area of research provides diverse views of the same.

For instance one paper¹ evaluated the performance of Indian Mutual Fund Schemes in a bear market using relative performance index, risk-return analysis, Treynor's ratio, Sharpe's ratio, Jensen's measure, Fama's measure. The study finds that Medium Term Debt Funds were the best performing funds during the bear period of September 98-April 2002 and 58 of 269 open ended mutual funds provided better returns than the overall market returns.

Another paper² used Return Based Style Analysis (RBSA) to evaluate equity mutual funds in India using quadratic optimization of an asset class factor model proposed by William Sharpe and analysis of the relative performance of the funds with respect to their style benchmarks. Their study found that the mutual funds generated positive monthly returns on the average, during the study period of January 2000 through June 2005. The ELSS funds lagged the Growth funds or all funds taken together, with respect to returns generated. The mean returns of the growth funds or all funds were not only positive but also significant. The ELSS funds also demonstrated marginally higher volatility (standard deviation) than the Growth funds.

One study³ identified differences in characteristics of public-sector sponsored & private-sector sponsored mutual funds find the extent of diversification in the portfolio of securities of public-sector sponsored and private-sector sponsored mutual funds and compare

¹ Dr. Rao, Narayan "Performance Evaluation of Indian Mutual Funds", www.ssrn.com, paper no.433100 and PP.1-24

² Prof. Banerjee, Ashok et. Al (2007),"Performance Evaluation of Indian Mutual Funds vis-à-vis their style benchmarks", www.ssrn.com, paper no.962827 and PP.1-18

³ Panwar,Sharad and Dr. Madhumathi (2006), "Characteristics and performance evaluation of selected mutual funds in India", www.ssrn.com, paper no.876402 and PP. 1-19

the performance of public-sector sponsored and private-sector sponsored mutual funds using traditional investment measures. They primarily use Jensen's alpha, Sharpe information ratio, excess standard deviation adjusted return (eSDAR) and find out that portfolio risk characteristics measured through private-sector Indian sponsored mutual funds seems to have outperformed both Public-sector sponsored and Private-sector foreign sponsored mutual funds and the general linear model of analysis of covariance establishes differences in performance among the three classes of mutual funds in terms of portfolio diversification.

Another study⁴ examined the risk-adjusted performance of open-end mutual funds which invest mainly in German stocks using Jensen's measure and Sharpe's measure. The study finds out that the rates of return of the mutual funds and the rates of return of the chosen benchmark both must include identical return components. Either both must include dividends or exclude them. The performance estimates are not very sensitive with respect to the benchmark choice. When we look at an investment strategy in which the investment in a specific fund has the same risk as the chosen benchmark, the average underperformance is small when we weight the individual fund returns equally. The average performance is neutral, when we weight the individual fund returns according to fund size, measured by assets under management.

One more paper⁵ analyzed whether it was more appropriate to apply a factor-based or a characteristic-based model - both known as benchmarks in portfolio performance measurement using the Linear model, asset pricing model and Fama and French factors. The study showed that if information on returns was used and a linear model was proposed that adjusted return to a set of exogenous variables, then the right side of the equation reported the achieved performance and the passive benchmark that replicated the style or risk of the assessed portfolio. While, a factor model utilizes a replicate benchmark with short positions implicitly symmetrical to the long positions. Performance of Russell indexes was analyzed by applying various factor models, constructed from the indexes themselves, and other models

⁴ Stehle, Richard and Grewe, Olaf (2001), "Long-Run Performance of German Stock Mutual Funds", www.ssrn.com, paper no.271452 and PP. 1-32

⁵ Carlos, Juan (2005), "Portfolio Performance: Factors or Benchmarks?", www.ssrn.com, paper no.760204 and PP. 1-26

that use the indexes directly as benchmarks; the presence of biases was detected. Therefore, according to the empirical findings, selection of exogenous variables that define the replicate benchmark would appear to be more relevant than the type of model applied.

Another study⁶ aimed at analyzing performance of select open-ended equity mutual fund using Sharpe Ratio, Hypothesis testing and return based on yield. The most important finding of the study had been that only four Growth plans and one Dividend plan (5 out of the 42 plans studied) could generate higher returns than that of the market which is contrary to the general opinion prevailing in the Indian mutual fund market. Even the Sharpe ratios of Growth plans and the corresponding Dividend plans stand testimony to the relatively better performance of Growth plans. The statistical tests in terms of F-test and t-Test further corroborate the significant performance differences between the Growth plans and Dividend plans.

Another study⁷ investigated mutual fund performance using a survivorship bias controlled sample of 506 funds from the 5 most important mutual fund countries using Carhart (1997) 4-factor asset-pricing model. The study revealed a preference of European funds for small and high book-to-market stocks (value). Secondly, it showed that small cap mutual funds as an investment style out-performed their benchmark, even after control for common factors in stock returns. Finally 4 out of 5 countries delivered positive aggregate alphas, where only UK funds out-performed significantly.

One more study⁸ looked at some measures of composite performance that combine risk and return levels into a single value using Treynor's ratio, Sharpe's ratio, Jensen's measure. The study analyzed the performance of 80 mutual funds and based on the analysis of these 80 funds, it was found that none of the mutual funds were fully diversified. This implied there is still some degree of unsystematic risk that one cannot get rid of through

⁶ Rao,D.N (2006), "Investment styles and Performance of Equity Mutual Funds in India", www.ssrn.com, paper no. 922595 and PP. 1-30

⁷ Otten,Rog r and Bams,Dennis, "European Mutual Fund Performance", www.ssrn.com, paper no.213808 and PP. 1-42

⁸ Wolasmal,Hewad, "Performance evaluation of mutual funds", published by Econ WPA, paper no. 0509023 and PP. 1-20

diversification. This also led to another conclusion that none of those funds would land on Markowitz's efficient portfolio curve.

Another paper⁹ aimed to evaluate if mutual fund managers exhibit persistently superior stock selection skills over a short-horizon of one year using risk-adjusted abnormal returns (RAR), One-factor capital asset pricing model or CAPM three-factor, Fama-French model, Four-factor Carhart model. Their study demonstrated that short-term persistence in equity mutual funds performance does not necessarily imply superior stock selection skills. Common factors in stock returns explained some of the abnormal returns in top ranking mutual fund schemes. Only the winner portfolios sorted on four-factor alphas' provided an annual abnormal return of about 10% on post-formation basis using daily data. The short-term persistence results were much better when daily data was used rather than monthly observations, thus implying that data frequency does affect inferences about fund performance.

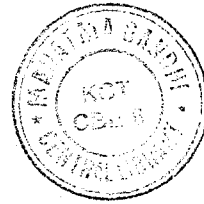
A similar study¹⁰ examined the empirical properties of performance measures for mutual funds using Simulation procedures combined with random and random-stratified samples of NYSE and AMEX securities and other performance measurement tools employed are Sharpe measure, Jensen alpha, Treynor measure, appraisal ratio, and Fama-French three-factor model alpha. The study revealed that standard mutual fund performance was unreliable and could result in false inferences. In particular, it was easy to detect abnormal performance and market-timing ability when none exists. The results also showed that the range of measured performance was quite large even when true performance was ordinary. This provided a benchmark to gauge mutual fund performance. Comparisons of their numerical results with those reported in actual mutual fund studies raised the possibility that reported results were due to misspecification, rather than abnormal performance. Finally, the results indicated that procedures based on the Fama-French 3-factor model were somewhat better than CAPM based measures.

⁹ Prof. Sehgal, Sanjay and Jhanwar, Manoj (2007), "Short-Term Persistence In Mutual Funds Performance: Evidence From India", www.ssrn.com, paper no.962829 and PP. 1-23

¹⁰ Kothari, S.P. and Warner, Jerold (1997), "Evaluating Mutual Fund Performance", www.ssrn.com, paper no.75871 and PP. 1-46

2.2 RESEARCH GAP

Despite extensive disclosure requirements, mutual fund investors do not observe all actions of fund managers. We estimate the impact of unobserved actions on fund returns creates more value to the investor. Hence this study helps the investor to measure the performance of mutual funds based on the risk and return nature.



CHAPTER 3

3.1 METHODOLOGY

To identify sample schemes, SENSEX and NIFTY values for the period 2007 to 2011 is taken from respective websites. From the SENSEX and NIFTY values bull phase and bear phase were identified. Schemes which are floated during bull phase and bear phase are identified. Schemes are grouped under Equity, Fixed Maturity Plan and Debt schemes.

The researcher computed NAV & returns. Graph is drawn between NAV and SENSEX value. CAGR is computed to compare the performance of the scheme with market performance. The researcher used Independent sample test, Sharpe, Trainer and Jensen Ratio for analysis & interpretation.

3.2 RESEARCH DESIGN.

Research Design → Descriptive research and analytical in nature.

3.3 SAMPLING METHODS

SBI and HDFC mutual fund Schemes are selected based on the floating date during bull phase and bear phase for the period 2007 to 2011. Schemes are divided based on the fund type such as Equity, Fixed Maturity Plan and Debt schemes. Total number of schemes identified for research is 31. For this purpose 17 HDFC funds and 14 SBI funds are taken into account

3.4 TARGET RESPONDENTS

Thousands of mutual funds are available in the market. Even if the fund is managed by fund manager, before investing in the selected scheme people has to analyze the performance of schemes based on the past history to make more profit by investing diligently. People who are risk takers can choose the fund which gives higher return with high risk and people who averse risk can choose funds which give less return with low risk based on this study.

3.5 SOURCE OF THE DATA.

The researcher went with the secondary data collection in his study. Relevant data confined to the select mutual funds of SBI and HDFC and have been downloaded from the websites of

www.amfiindia.com

www.bseindia.com

www.nse-india.com

www.sbimf.com

www.hdfcfund.com

www.moneycontrol.com

The Net Asset Values (NAV) for all the 31 funds are the period 2007 to 2011, which is the period of this study.

For calculation of CAGR calculation top funds are mostly invested in SENSEX, the BSE Sensex (Bombay Stock Exchange Sensitive Index) has been considered as the benchmark index. SHARPE, TREYNOR and JENSONS ratio is done by comparing with NIFTY and SENSEX values.

The funds selected for this study can be found in Annexure - appendix 1.

3.6 TOOLS USED FOR THE STUDY

- a. Sharpe's ratio
- b. Treynor's ratio
- c. Jensen's ratio
- d. Independent Sample T Test

3.7 LIMITATIONS

Limitations make the work dissatisfied. Every work has its own limitations. Likely this project also has its own limitations.

1. The study is confined only to the select mutual funds of SBI and HDFC
2. The study is limited to four years 2007 to 2011.

CHAPTER 4

4.1 ANALYSIS & INTERPRETATION

Graph is drawn between NAV and SENSEX for the select schemes. CAGR is computed to compare the performance of SBI and HDFC mutual fund schemes with respect to the market. Independent sample t test is used to compare the variance of SBI and HDFC mutual funds. Other tools used for the study are Sharpe's ratio, Treynor's ratio and Jensen's ratio.

4.2 GRAPHICAL REPRESENTATION OF SBI AND HDFC SELECT SCHEMES

Figure 4.2.1 Graphical representation between NAV and SENSEX for Equity SBI scheme during bear phase

4.2.1 TABLE (CONTINUED TO NEXT PAGE)

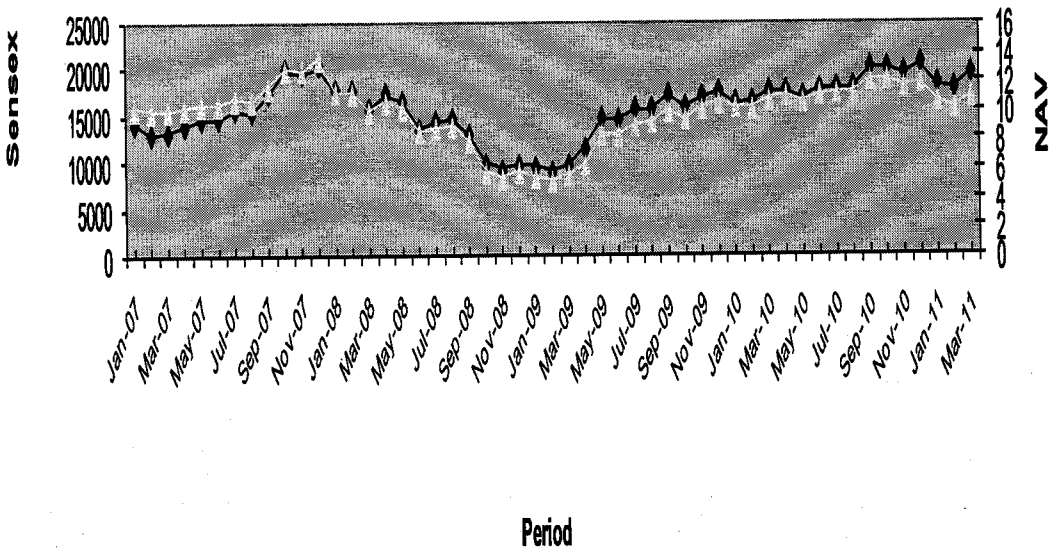
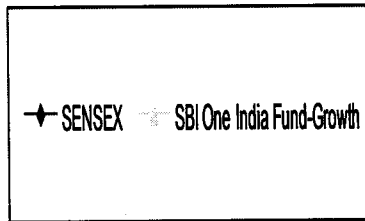
SBI One India Fund – Growth		
PERIOD	NAV	SENSEX
Jan-07	10.07	14090.92
Feb-07	9.89	12938.09
Mar-07	9.94	13072.1
Apr-07	10.09	13872.37
May-07	10.31	14544.46
Jun-07	10.34	14650.51
Jul-07	10.67	15550.99
Aug-07	10.59	15318.6
Sep-07	11.51	17291.1
Oct-07	12.77	19837.99
Nov-07	12.72	19363.19
Dec-07	13.5	20286.99
Jan-08	11.23	17648.71
Feb-08	11.16	17578.72
Mar-08	9.9	15644.44
Apr-08	10.49	17287.31
May-08	10.08	16415.57

Jun-08	8.45	13461.6
Jul-08	8.74	14355.75
Aug-08	8.84	14564.53
Sep-08	7.81	12860.43
Oct-08	5.68	9788.06
Nov-08	5.24	9092.72
Dec-08	5.67	9647.31
Jan-09	5.32	9424.24
Feb-09	5.06	8891.61
Mar-09	5.47	9708.5
Apr-09	6.17	11403.25
May-09	8.29	14625.25
Jun-09	8.22	14493.84
Jul-09	8.85	15670.31
Aug-09	9.16	15666.64
Sep-09	9.85	17126.84
Oct-09	9.37	15896.28
Nov-09	10.02	16926.22
Dec-09	10.46	17464.81
Jan-10	10.13	16357.96
Feb-10	10.09	16429.55
Mar-10	10.66	17527.77
Apr-10	10.93	17558.71
May-10	10.52	16944.63
Jun-10	11.07	17700.9
Jul-10	11.08	17868.29
Aug-10	11.19	17971.12
Sep-10	12.03	20069.12
Oct-10	12.12	20032.34
Nov-10	11.59	19521.25
Dec-10	11.84	20509.09
Jan-11	10.61	18327.76
Feb-11	10.06	17823.4
Mar-11	10.83	19445.22

Equity Fund during bear phase

SBI One India Fund – Growth

Sensex Vs SBI One India Fund -Growth NAV



INTERPRETATION:-

SBI One India Fund – Growth fund NAV decreases with respect to SENSEX value from Jan 2007 till August 2007 and NAV increases with respect to market value from September 2007 to December 2007 and again downward trend started from January 2008 till February 2009 and NAV started increasing from March 2009 to October 2010 with respect to market. NAV value sluggish for the month November 2010 and it again increased for December 2010 and downward phase started from January 2011 to February 2011.

FINDINGS:-

NAV of SBI ONE INDIA GROWTH FUND increases and decreases with respect to market.

Figure 4.2.2 Graphical representation between NAV and SENSEX for Equity HDFC scheme during bear phase

TABLE 4.2.2 (CONTINUED TO NEXT PAGE)

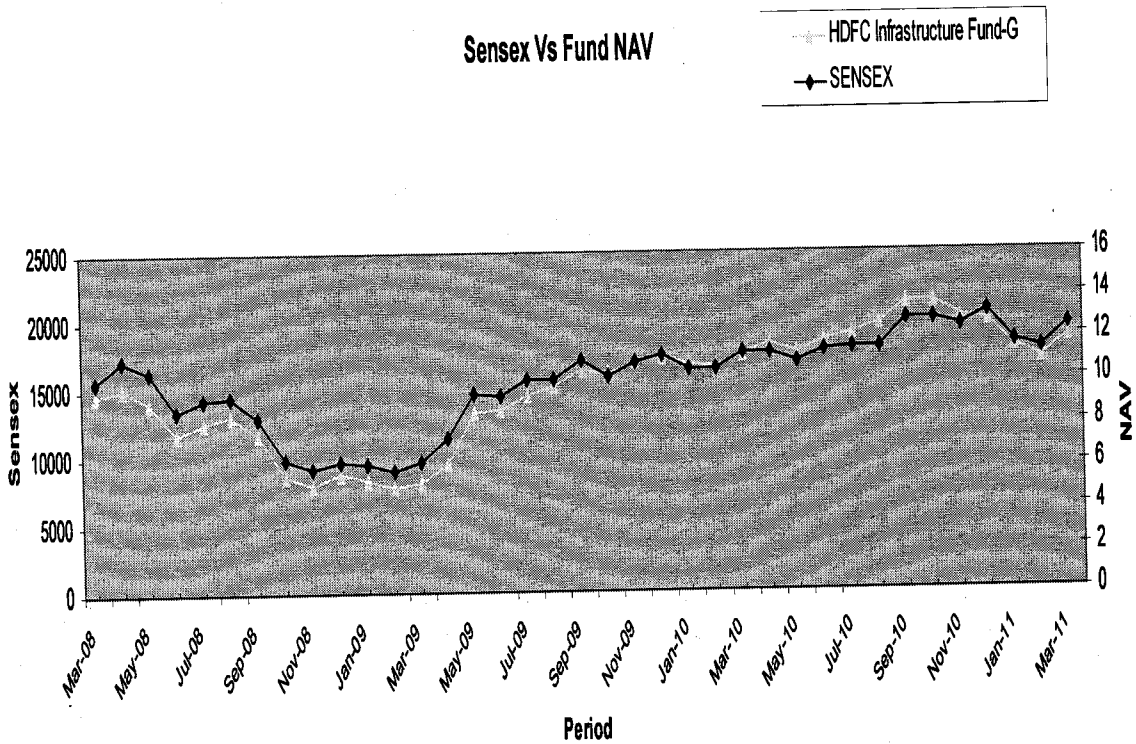
HDFC INFRASTRUCTURE FUND – GROWTH		
PERIOD	NAV	SENSEX
Mar-08	9.35	15644.44
Apr-08	9.76	17287.31
May-08	9.04	16415.57
Jun-08	7.48	13461.6
Jul-08	8.05	14355.75
Aug-08	8.42	14564.53
Sep-08	7.46	12860.43
Oct-08	5.56	9788.06
Nov-08	5.13	9092.72
Dec-08	5.65	9647.31
Jan-09	5.3	9424.24
Feb-09	4.92	8891.61
Mar-09	5.18	9708.5
Apr-09	6.1	11403.25
May-09	8.53	14625.25

Jun-09	8.62	14493.84
Jul-09	9.29	15670.31
Aug-09	9.7	15666.64
Sep-09	10.49	17126.84
Oct-09	10.21	15896.28
Nov-09	10.77	16926.22
Dec-09	11.05	17464.81
Jan-10	10.71	16357.96
Feb-10	10.63	16429.55
Mar-10	11.19	17527.77
Apr-10	11.67	17558.71
May-10	11.29	16944.63
Jun-10	11.79	17700.9
Jul-10	12.19	17868.29
Aug-10	12.58	17971.12
Sep-10	13.57	20069.12
Oct-10	13.56	20032.34
Nov-10	12.88	19521.25
Dec-10	12.73	20509.09
Jan-11	11.49	18327.76
Feb-11	10.89	17823.4
Mar-11	11.9	19445.22

Equity Fund during bear phase

HDFC Infrastructure Fund-G

Sensex Vs Fund NAV



INTERPRETATION:-

HDFC INFRASTRUCTURE GROWTH FUND-G NAV slightly decreases with respect to SENSEX value from March 2008 to September 2009 and NAV growth is equal to the SENSEX value from November 2009 to March 2010 and the growth of NAV slightly increases with respect to SENSEX from May 2010 to Nov 2010 and again it started decreasing with respect to SENSEX from Jan 2011 to March 2011.

FINDINGS:-

Funds performance is low in the beginning phase with respect to market from March 2008 to September 2009 and again it remains constant from Nov 2009 to March 2010 and it increases from May 2010 to Nov 2010 and it decreased from Jan 2011 to Mar 2011

Figure 4.2.3 Graph between NAV and SENSEX for FMP HDFC scheme during bull phase

TABLE 4.2.3(CONTINUED TO NEXT PAGE)

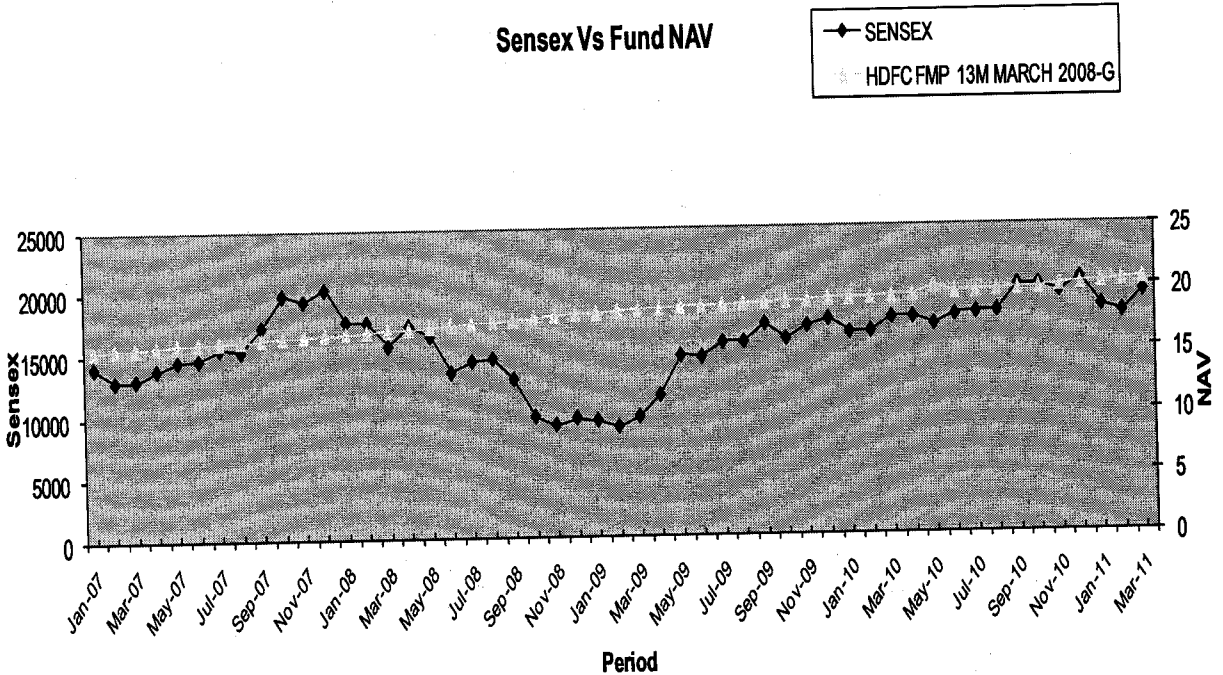
HDFC FMP 13M MARCH 2008 – GROWTH		
PERIOD	NAV	SENSEX
Jan-07	15.42	14090.92
Feb-07	15.51	12938.09
Mar-07	15.63	13072.1
Apr-07	15.75	13872.37
May-07	15.87	14544.46
Jun-07	15.95	14650.51
Jul-07	16.04	15550.99
Aug-07	16.14	15318.6
Sep-07	16.24	17291.1
Oct-07	16.35	19837.99
Nov-07	16.46	19363.19
Dec-07	16.57	20286.99
Jan-08	16.68	17648.71
Feb-08	16.79	17578.72
Mar-08	16.91	15644.44
Apr-08	17.0243	17287.31
May-08	17.1393	16415.57
Jun-08	17.2637	13461.6
Jul-08	17.3927	14355.75
Aug-08	17.5298	14564.53
Sep-08	17.6668	12860.43
Oct-08	17.8076	9788.06
Nov-08	17.9365	9092.72

Dec-08	18.062	9647.31
Jan-09	18.176	9424.24
Feb-09	18.2773	8891.61
Mar-09	18.3844	9708.5
Apr-09	18.4699	11403.25
May-09	18.5511	14625.25
Jun-09	18.6265	14493.84
Jul-09	18.7053	15670.31
Aug-09	18.7795	15666.64
Sep-09	18.8462	17126.84
Oct-09	18.916	15896.28
Nov-09	18.9859	16926.22
Dec-09	19.0563	17464.81
Jan-10	19.1202	16357.96
Feb-10	19.1737	16429.55
Mar-10	19.2475	17527.77
Apr-10	19.3238	17558.71
May-10	19.981	16944.63
Jun-10	19.4767	17700.9
Jul-10	19.5644	17868.29
Aug-10	19.6567	17971.12
Sep-10	19.7493	20069.12
Oct-10	19.8503	20032.34
Nov-10	19.9675	19521.25
Dec-10	20.0875	20509.09
Jan-11	20.2197	18327.76
Feb-11	20.3447	17823.4
Mar-11	20.492	19445.22

Fixed maturity plan during bull phase

HDFC FMP 13M MARCH 2008-G

Sensex Vs Fund NAV



INTERPRETATION:-

Even if there is fluctuations in the market growth of NAV increases from Jan 2007 till March 2011 irrespective of SENSEX Value.

FINDINGS:-

HDFC FMP 13M MARCH 2008-G fund performs well from Jan 2007 till Mar 2011 irrespective of market fluctuations.

Figure 4.2.4 Graph between NAV and SENSEX for FMP HDFC scheme during bull phase

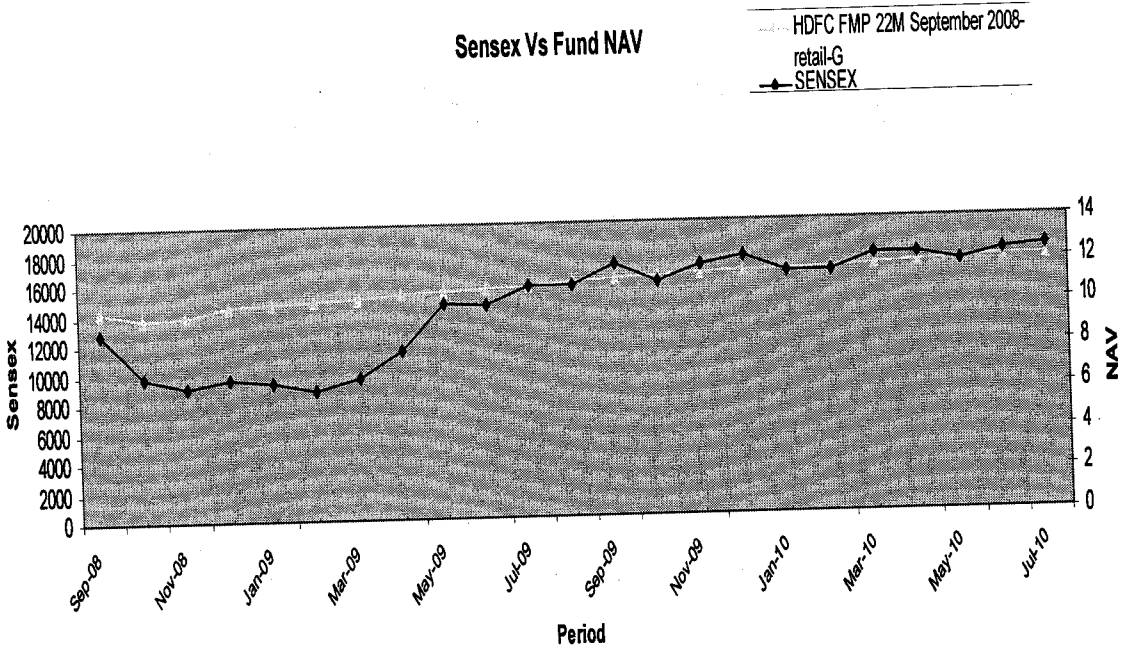
TABLE 4.2.4

HDFC FMP 22M SEPTEMBER 2008 – RETAIL-GROWTH		
PERIOD	NAV	SENSEX
Sep-08	10.0191	12860.43
Oct-08	9.6975	9788.06
Nov-08	9.7952	9092.72
Dec-08	10.2518	9647.31
Jan-09	10.3381	9424.24
Feb-09	10.46469	8891.61
Mar-09	10.5238	9708.5
Apr-09	10.7403	11403.25
May-09	10.7893	14625.25
Jun-09	10.891	14493.84
Jul-09	11.0212	15670.31
Aug-09	11.2126	15666.64
Sep-09	11.3001	17126.84
Oct-09	11.3846	15896.28
Nov-09	11.4923	16926.22
Dec-09	11.5417	17464.81
Jan-10	11.6075	16357.96
Feb-10	11.6444	16429.55
Mar-10	11.8007	17527.77
Apr-10	11.8711	17558.71
May-10	11.9412	16944.63
Jun-10	12.0314	17700.9
Jul-10	12.0659	17868.29

Fixed maturity plan during bull phase

HDFC FMP 22M September 2008-retail-G

Sensex Vs Fund NAV



INTERPRETATION:-

SENSEX value is down from september 2008 to March 2009, HDFC FMP 22M SEPTEMBER 2008-retail-G funds performance is good irrespective of market fluctuations and again it keeps in phase with market growth from SEP 2009 to JUL 2010.

FINDINGS:-

HDFC FMP 22M SEPTEMBER 2008-retail-G funds performance is good irrespective of market fluctuations during the period Sep 2008 to Mar 2009 and again it keeps in phase with respect to market till Jul 2010.

Figure 4.2.5 Graph between NAV and SENSEX for FMP SBI scheme during bear phase

TABLE 4.2.5

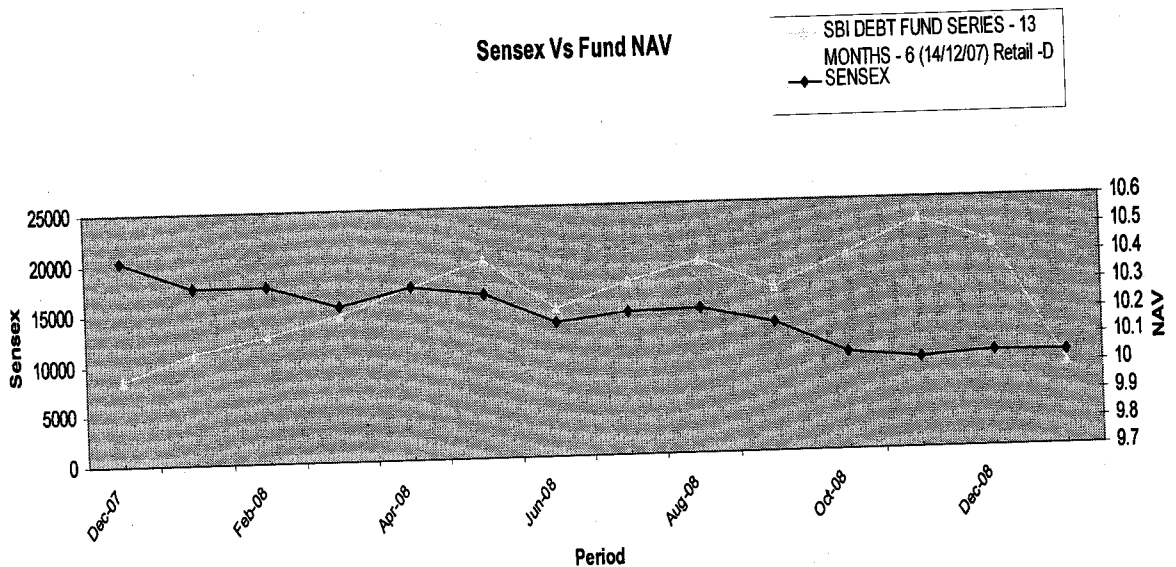
SBI DEBT FUND SERIES - 13 MONTHS - 6		
(14/12/07) Retail -D		
PERIOD	NAV	SENSEX
Dec-07	10.0089	20286.99
Jan-08	10.1054	17648.71
Feb-08	10.1565	17578.72
Mar-08	10.2261	15644.44
Apr-08	10.326	17287.31
May-08	10.414	16415.57
Jun-08	10.2353	13461.6
Jul-08	10.3214	14355.75
Aug-08	10.3931	14564.53
Sep-08	10.2941	12860.43
Oct-08	10.4066	9788.06
Nov-08	10.5223	9092.72
Dec-08	10.4381	9647.31
Jan-09	10	9424.24

Fixed maturity plan during bear phase

SBI DEBT FUND SERIES - 13 MONTHS - 6

(14/12/07) Retail -D

Sensex Vs Fund NAV



INTERPRETATION:-

Market is up for the period December 2007 to March 2008, but funds performance is low as compared to the market. Funds performance fluctuates and the NAV value increases from June 2008 till December 2008 irrespective of SENSEX value. Funds NAV value decreases with respect to Market value for the month of Jan 2009.

FINDINGS:-

Funds performance is low irrespective of SENSEX value from December 2007 till March 2008 and again it fluctuates and increases till December 2008 and it came down in the month of January 2009.

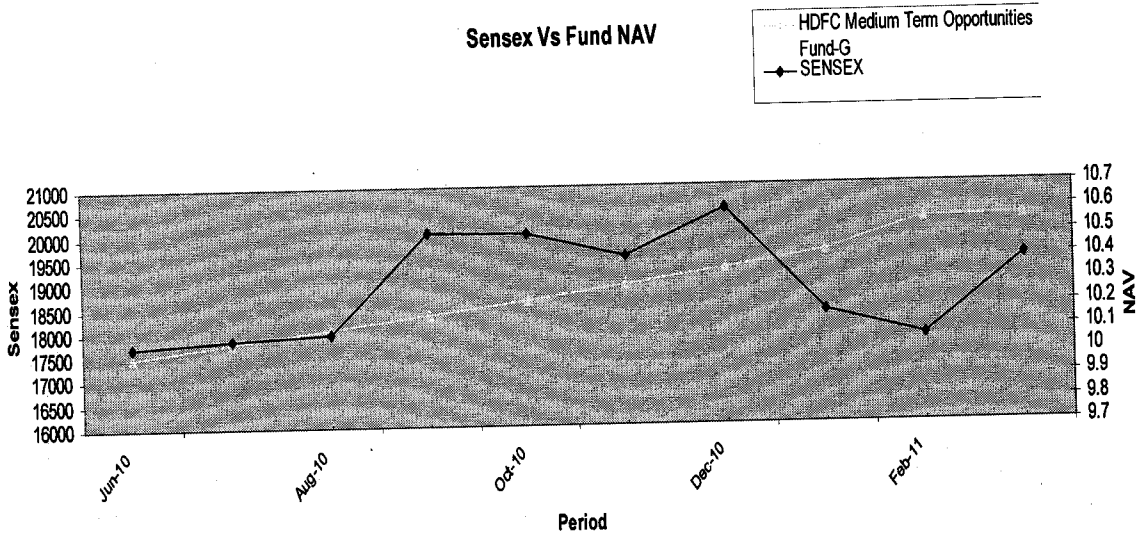
Figure 4.2.6 Graph between NAV and SENSEX for Debt scheme.

TABLE 4.2.6

HDFC Medium Term Opportunities Fund-G		
PERIOD	NAV	SENSEX
Jun-10	10.0027	17700.9
Jul-10	10.0573	17868.29
Aug-10	10.1113	17971.12
Sep-10	10.1654	20069.12
Oct-10	10.2247	20032.34
Nov-10	10.2878	19521.25
Dec-10	10.3523	20509.09
Jan-11	10.4224	18327.76
Feb-11	10.5553	17823.4
Mar-11	10.5628	19445.22

Debt schemes

HDFC Medium Term Opportunities Fund-G



INTERPRETATION:-

HDFC MEDIUM TERM OPPORTUNITIES FUND-G performance constantly increased from Jun 2010 till March 2011 irrespective of market fluctuations.

FINDINGS:-

HDFC MEDIUM TERM OPPORTUNITIES FUND-G performance constantly increased from 2010 to 2011 irrespective of market fluctuations.

TABLE 4.3 CAGR (Compound Annual Growth Rate)

Fund house	Name of the Index/Fund	Start date	Months	Yr	Months	Years	CAGR
HDFC	HDFC Infrastructure Fund-G	08-Jan-08	37	3	1	3.08	8.14%
	HDFC Infrastructure Fund-D	08-Jan-08	37	3	1	3.08	8.14%
SBI	SBI One India Fund – Growth	01-Dec-06	51	4	3	4.25	1.73%
	HDFC FMP 13M MARCH 2008-G	05-Mar-08	51	4	3	4.25	6.92%
HDFC	HDFC FMP 14M February 2008	26-Feb-08	15	1	3	1.25	8.46%
	HDFC FMP 15M February 2008	18-Feb-08	15	1	3	1.25	8.05%
	HDFC FMP 181D APRIL 2008 Retail-G	16-Apr-08	6	0	6	0.50	7.04%
	HDFC FMP 181D August 2008 (1)-Retail-G	29-Aug-08	7	0	7	0.58	8.36%
	HDFC FMP 20M August 2008-retail-G	07-Aug-08	20	1	8	1.67	10.17%
	HDFC FMP 22M September 2008-retail-G	09-Sep-08	23	1	11	1.92	10.18%
	SBI DEBT FUND SERIES - 13 MONTHS - 8 - (21/08/2008) - RETAIL - G	11-Aug-08	13	1	1	1.08	9.90%
	SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08) - DIVIDEND	26-Mar-08	1	0	1	0.08	11.64%
	SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08)- GROWTH	26-Mar-08	1	0	1	0.08	8.62%

	SBI DEBT FUND SERIES - 90 DAYS - 26 (29/07/08) - DIVIDEND	25-Jul-08	4	0	4	0.33	0.00%
	SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - DIVIDEND	28-May-08	6	0	6	0.50	-1.18%
	SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - GROWTH	28-May-08	6	0	6	0.50	8.10%
HDFC	HDFC FMP 181D December 2007	14-Dec-07	6	0	6	0.50	7.25%
	HDFC FMP 18M December 2007	12-Dec-07	19	1	7	1.58	8.01%
	HDFC FMP 18M January 2008	23-Jan-08	19	1	7	1.58	8.55%
	HDFC FMP 90D December 2007	12-Dec-07	4	0	4	0.33	5.79%
SBI	SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) INSTITUTIONAL -D	07-Dec-07	14	1	2	1.17	-0.08%
	SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) Retail -D	06-Dec-07	14	1	2	1.17	-0.08%
	SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) RETAIL -G	07-Dec-07	14	1	2	1.17	8.21%
	SBI DEBT FUND SERIES-90D-(26/02/08)- DIVIDEND	21-Feb-08	4	0	4	0.33	0.00%
	SBI DEBT FUND SERIES-90D-20-(26/02/08)- Growth	21-Feb-08	4	0	4	0.33	7.69%
HDFC	HDFC Debt Fund for Cancer Cure	18-Feb-11	1	0	1	0.08	0.00%

HDFC Medium Term Opportunities Fund-G	25-Jun-10	10	0	10	0.83	6.76%
HDFC Short Term Opportunities Fund	25-Jun-10	10	0	10	0.83	6.60%
SBI Debt fund series -60 days	08-Jan-07	3	0	3	0.25	4.05%

FINDINGS:-

From the above table it is found that the CAGR (Compounded Annual Growth Rate) is very high for HDFC FMP 22M September 2008-retail-G with 10.18% and the lowest for SBI DEBT FUND SERIES - 13 MONTHS - 8 - (21/08/2008) - RETAIL - G with minimum one year as the fund in operation. However, many of the funds are of short term duration. So the complete nature of those funds cannot be evaluated as considered with long term funds.

TABLE 4.4 Comparison of CAGR of different schemes with CAGR of SENSEX

Fund house	Name of the Index/Fund	CAGR	CAGR of SENSEX	% deviation over CAGR
HDFC	HDFC Infrastructure Fund-G	8.14%	7.87%	3.43%
	HDFC Infrastructure Fund-D	8.14%	7.87%	3.43%
SBI	SBI One India Fund – Growth	1.73%	7.87%	-78.02%
	HDFC FMP 13M MARCH 2008-G	6.92%	7.87%	-12.07%
HDFC	HDFC FMP 14M February 2008	8.46%	7.87%	7.50%
	HDFC FMP 15M February 2008	8.05%	7.87%	2.29%
	HDFC FMP 181D APRIL 2008 Retail-G	7.04%	7.87%	-10.55%
	HDFC FMP181DAugust2008(1)-Retail-G	8.36%	7.87%	6.23%

	HDFC FMP 20M August 2008-retail-G	10.17%	7.87%	29.22%
	HDFC FMP 22M September 2008-retail-G	10.18%	7.87%	29.35%
	SBI DEBT FUND SERIES - 13 MONTHS - 8 - (21/08/2008) - RETAIL - G	9.90%	7.87%	25.79%
	SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08) -DIVIDEND	100.00%	7.87%	-
	SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08)-GROWTH	100.00%	7.87%	-
	SBI DEBT FUND SERIES - 90 DAYS - 26 (29/07/08) - DIVIDEND	0.00%	7.87%	-
	SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - DIVIDEND	-1.18%	7.87%	-114.99%
	SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - GROWTH	8.10%	7.87%	2.92%
	HDFC FMP 181D December 2007	7.25%	7.87%	-7.88%
	HDFC FMP 18M December 2007	8.01%	7.87%	1.78%
	HDFC FMP 18M January 2008	8.55%	7.87%	8.64%
	HDFC FMP 90D December 2007	5.79%	7.87%	-26.43%
	SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) INSTITUTIONAL -D	-0.08%	7.87%	-101.02%
	SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) Retail -D	-0.08%	7.87%	-101.02%
	SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) RETAIL -G	8.21%	7.87%	4.32%
	SBI DEBT FUND SERIES-90D-20-(26/02/08)-DIVIDEND	0.00%	7.87%	-100.00%
	SBI DEBT FUND SERIES-90D-20-(26/02/08)-Growth	7.69%	7.87%	-2.29%
SBI				
HDFC				
SBI				

HDFC	HDFC Debt Fund for Cancer Cure	0.00%	7.87%	-100.00%
	HDFC Medium Term Opportunities Fund-G	6.76%	7.87%	-14.10%
	HDFC Short Term Opportunities Fund	6.60%	7.87%	-16.14%
	HDFC Debt fund series -370 days-12	-	7.87%	-
SBI	SBI Debt fund series -90 days-42	-	7.87%	-
	SBI Debt fund series -60 days	4.05%	7.87%	-48.54%

FINDINGS:-

The percentage deviation of the fund HDFC FMP 22M September 2008-retail-G is far better than other funds whereas the fund SBI One India Fund – Growth performed the worst among all considering its period. Some other funds even though they are having far significant difference cannot be taken into account due to their short term nature.

4.5 Comparison of CAGR between HDFC funds and SBI funds using Independent t-test

For this purpose 17 HDFC funds and 14 SBI funds are taken into account and the details are presented in the following table.

4.5.1 Group Statistics

SBI_HDFC	n	Mean	SD	Standard Error (mean)
HDFC	17	7.37%	2.23%	0.54
SBI	14	3.19%	4.01%	1.07

4.5.2 Independent Samples T Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
CAGR	Equal variances not assumed	14.527	0.001	3.48	19.46	0.002	4.18	1.2

FINDINGS:

It is interpreted that there exists a significant (probability 0.002) at 5% level and 1% levels in the mean CAGR between the HDFC funds and SBI funds and moreover, the variances also show a great difference with probability 0.001. Hence it is interpreted that the HDFC funds are performing significantly better than SBI funds. So there is a lot of improvements needed in SBI funds to beat the market over other Private Banks' funds.

4.6 Yearwise comparison between HDFC and SBI Variable: CAGR Year: 2007

	Group	n	Mean	SD	SE
CAGR	HDFC	2	7.460	.00000	.00000
	SBI	3	15.023	16.55	9.555

4.6.1 Independent Samples T Test Year: 2007

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
CAGR	Equal variances assumed	8.971	0.058	-0.613	3	0.583	-7.563	12.334

4.7 Yearwise comparison between HDFC and SBI Variable: CAGR Year: 2008

	Group	n	Mean	SD	SE
CAGR	HDFC	14	-0.4171	19.07426	5.09781
	SBI	9	-0.2178	18.81150	6.27050

4.7.1 Independent Samples T Test Year: 2008

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
CAGR	Equal variances assumed	0.078	0.783	-0.025	21	0.981	-0.19937	8.10683

4.8 Yearwise comparison between HDFC and SBI Variable: CAGR Year: 2009

	Group	N	Mean	SD	SE
CAGR	HDFC	11	26.0036	40.86136	12.32016
	SBI	2	52.7850	61.99205	43.83500

4.8.1 Independent Samples T Test Year: 2009

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
CAGR	Equal variances assumed	0.524	0.484	-0.806	11	0.437	-26.78136	33.21690

4.9 Yearwise comparison between HDFC and SBI Variable: CAGR Year: 2010

	Group	N	Mean	SD	SE
CAGR	HDFC	8	8.9838	6.12478	2.16544
	SBI	3	8.7267	7.07532	4.08494

4.9.1 Independent Samples T Test Year: 2010

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
CAGR	Equal variances assumed	0.062	0.810	0.060	9	0.954	0.25708	4.29784

5.0 Yearwise comparison between HDFC and SBI Variable: CAGR Year: 2011

	Group	n	Mean	SD	SE
CAGR	HDFC	6	8.7283	4.90544	2.00264
	SBI	2	5.0500	4.96389	3.51000

5.0.1 Independent Samples T Test Year: 2011

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
CAGR	Equal variances assumed	0.339	0.581	0.917	6	0.395	3.67833	4.01327

INTERPRETATION:-

Prenote: For comparison purposes, CAGR with only one value (with 0% as CAGR) and 100% are neglected as they would affect the study. So the rest of CAGR were taken into account.

In the year 2007, the average CAGR of HDFC was 7.46% whereas the average CAGR of SBI was 15.025% and there exists no significant difference in the CAGR between the HDFC and SBI (probability = 0.583).

In the year 2008, the average CAGR of HDFC was -0.417% whereas the average CAGR of SBI was -0.218% and there exists no significant difference in the CAGR between the HDFC and SBI (probability = 0.583).

In the year 2009, the average CAGR of HDFC was 26% whereas the average CAGR of SBI was 52.79% and there exists no significant difference in the CAGR between the HDFC and SBI (probability = 0.437).

In the year 2010, the average CAGR of HDFC was 8.98% whereas the average CAGR of SBI was 8.73% and there exists no significant difference in the CAGR between the HDFC and SBI (probability = 0.954).

In the year 2011, the average CAGR of HDFC was 8.73% whereas the average CAGR of SBI was 5.05% and there exists no significant difference in the CAGR between the HDFC and SBI (probability = 0.395).

5.1 ANALYSIS OF VARIANCE

Analysis of Variance is a technique of comparing different group means (above 2 groups) by splitting up the total variance into two components 1. Between group variance, 2. Within group variance.

5.1.1 HDFC: Variable CAGR

Year	n	Mean	SD	SE
2007	2	7.4600	0.000	0.000
2008	14	-0.4171	19.07426	5.09781
2009	11	26.0036	40.86136	12.32016
2010	8	8.9838	6.12478	2.16544
2011	6	8.7283	4.90544	2.00264
Total	41	10.2283	25.58047	3.99500

5.1 2 ANOVA for HDFC

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4365.248	4	1091.312	1.801	0.150
Within Groups	21809.172	36	605.810		
Total	26174.420	40			

INTERPRETATION:-

From the ANOVA table, it is interpreted that there is no significant difference in CAGR % between various years (from 2007 to 2011) with probability 0.15 for the HDFC bank.

5.1.3 Group: SBI Variable: CAGR

Year	N	Mean	SD	SE
2007	3	15.0233	16.55032	9.55533
2008	9	-0.2178	18.81150	6.27050
2009	2	52.7850	61.99205	43.83500
2010	3	8.7267	7.07532	4.08494
2011	2	5.0500	4.96389	3.51000
Total	19	9.7347	25.90104	5.94211

5.1.4 ANOVA for SBI

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4728.973	4	1182.243	2.253	0.115
Within Groups	7346.581	14	524.756		
Total	12075.554	18			

INTERPRETATION:-

From the ANOVA table, it is interpreted that there is no significant difference in CAGR % between various years (from 2007 to 2011) with probability 0.115 for SBI.

5.2 BEAR PHASE EQUITY SCHEMES - CALCULATION OF SHARPE, TREYNOR'S AND JENSON'S RATIO.

	Sharpe ratio	Ranking	Treydor ratio based on beta		JENSON Ratio based on Beta	
			SENSEX Ranking	NIFTY Ranking	SENSEX Ranking	NIFTY Ranking
HDFC Infrastructure Fund-G	0.39	1	0.17	1	0.10	1
HDFC Infrastructure Fund-D	0.39	1	0.17	1	0.10	1
SBI One India Fund - Growth	0.09	2	0.06	2	-0.02	2

INFERENCE:-

On the selected equity funds during bear phase, HDFC infrastructure fund's sharper ratio is greater than the SBI One India Fund. Similarly the Treynor ratio & Jenson ratio is also greater for HDFC funds.

5.3 BULL PHASE FMP SCHEMES-CALCULATION OF SHARPE, TREYNOR'S AND JENSON'S RATIO(CONTINUED TO NEXT PAGE).

Schemes	Sharpe Ratio	Treydor ratio based on beta			JENSON Ratio based on Beta					
		Ranking	SENSEX	Ranking	NIFTY	Ranking	SENSEX	Ranking	NIFTY	Ranking
HDFC FMP 13M MARCH 2008-G	-0.53	1	1.00	7	1.13	7	-0.34	5	-0.48	5
HDFC FMP 14M February 2008	-0.66	3	-5.22	11	-0.18	11	-0.34	5	-0.48	5
HDFC FMP 15M February 2008	-0.66	3	23.64	4	-0.09	4	-0.33	4	-0.62	6
HDFC FMP 181D APRIL 2008 Retail-G	-0.65	4	121.43	1	48.46	1	-0.08	1	-0.08	1
HDFC FMP 181D APRIL 2008 Retail-G	-0.66	3	37.61	3	76.20	3	-0.33	4	-0.33	4
HDFC FMP 20M August 2008-retail-G	-0.57	2	-3.34	9	-3.08	9	-0.31	3	-0.31	3

HDFC FMP 22M September 2008-retail- G	-0.57	2	-4.20	10	-3.87	10	-0.31	3	-0.31	3
SBI DEBT FUND SERIES - 13 MONTHS - 8 (21/08/2008) - RETAIL - G	-0.86	7	40.03	2	38.50	2	-0.33	4	-0.33	4
SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08) - DIVIDEND	-0.82	5	-10.26	13	-10.23	13	-0.08	1	-0.08	1
SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08)- GROWTH	-0.84	6	-0.67	8	-0.60	8	-0.09	2	-0.09	2
SBI DEBT FUND SERIES - 90 DAYS - 26 (29/07/08) - DIVIDEND	-0.88	9	10.84	5	2.43	5	-0.08	1	-0.08	1

SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - DIVIDEND	8	9.11	6	7.73	6	-0.08	1	-0.08	1
---	---	------	---	------	---	-------	---	-------	---

INFERENCE:-

On the selected FMP funds during bull phase, HDFC FMP 13M MARCH 2008-G fund's sharper ratio is greater than the other selected funds. Whereas the Treynor ratio & Jensen ratio is also greater for HDFC FMP 181D APRIL 2008 Retail-G funds. Similarly SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - GROWTH is in the top ranking on Jensen ratio basis

5.4 BEAR PHASE FMP SCHEMES-CALCULATION OF SHARPE, TREYNOR'S AND JENSON'S RATIO

Schemes	Sharp e Ratio	Ranki ng	Treynor ratio based on beta			JENSON Ratio based on Beta				
			SENSEX	Rankin g	NIFT Y	SENSE X	Rankin g	NIFT Y	Rankin g	
HDFC FMP 181D December 2007	-0.66	2	-19.09	5	-19.30	7	-0.33	4	-0.33	4
HDFC FMP 18M December 2007	-0.60	3	-4.57	4	-4.33	6	-0.32	3	-0.32	3

INFERENCE:-

On the selected FMP during bearish phase, SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) INSTITUTIONAL - D & SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) Retail -D fund's sharper ratio is greater than the other selected funds. Whereas the Treynor ratio & Jensen ratio is also greater for HDFC FMP 18M January 2008 funds. Similarly SBI DEBT FUND SERIES-90D-20-(26/02/08)-Growth & SBI DEBT FUND SERIES-90D-20-(26/02/08)-DIVIDEND is in the top ranking on Jensen ratio basis.

5.5 DEBT SCHEMES CALCULATION OF SHARPE, TREYNOR'S AND JENSON'S RATIO.

Schemes	Sharpe Ratio	Ranking	Treynor ratio based on beta			JENSON Ratio based on Beta		
			SENSEX	Ranking	NIFTY	SENSEX	Ranking	NIFTY
HDFC Debt Fund for Cancer Cure	0.26	1	6.20	4	4.60	4	-0.08	1
HDFC Medium Term Opportunities Fund-G	0.32	2	7.21	3	7.05	3	-0.08	1
HDFC Short Term Opportunities Fund	0.42	4	10.77	1	11.48	1	-0.08	1
SBI Debt fund series -370 days-12	0.46	5	6.20	4	4.6	4	-0.08	1

SBI Debt fund series -90 days-42	-	0.40	3	6.20	4	4.6	4	-0.08	1	-0.08	1
	-	0.66	6	9.23	2	9.35	2	-0.33	2	-0.33	2
SBI Debt fund series -60	-	0.66	6	9.23	2	9.35	2	-0.33	2	-0.33	2

INFERENCE:-

On the selected DEBT schemes, SBI Debt fund series -60 days fund's sharper ratio is greater than the other selected funds. Whereas the Treynor ratio & Jenson ratio is also greater for HDFC Short Term Opportunities Fund. Similarly apart from SBI Debt fund series -60 days, other funds are all in the top ranking on Jenson ratio basis.

5.6 FINDINGS/SUGGESTIONS AND CONCLUSION:-

The study done on "A COMPARATIVE ANALYSIS OF SELECT SBI AND HDFC MUTUAL FUND SCHEMES" was fruitful as all the objectives of the study were successfully achieved. The following are the findings from this study.

- On the selected equity funds during bear phase, HDFC Infrastructure Funds had well performed based on Sharpe ratio. Treynor ratio & Jenson Ration basis.
- On the selected FMP during bearish phase, SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) INSTITUTIONAL -D & SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) Retail -D Funds had well performed based on Sharpe ratio. Whereas HDFC FMP 18M January 2008, SBI DEBT FUND SERIES-90D-20-(26/02/08)-Growth & SBI DEBT FUND SERIES-90D-20-(26/02/08)-DIVIDEND had well performed based on Treynor ratio & Jenson Ration basis
- On the selected FMP funds during bull phase, HDFC FMP 13M MARCH 2008-G Funds had well performed based on Sharpe ratio. Where as HDFC FMP 181D APRIL 2008 Retail-G & SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) – GROWTH had well performed based on Treynor ratio & Jenson Ration basis.
- On the selected DEBT schemes, SBI Debt fund series -60 days Funds had well performed based on Sharpe ratio. Where as HDFC Short Term Opportunities Fund, HDFC Debt Fund for Cancer Cure, HDFC Medium Term Opportunities Fund-G, and HDFC Short Term Opportunities Fund & SBI Debt fund series -370 days-12 had well performed based on Treynor ratio & Jenson Ration basis
- In the year 2007, the average CAGR of HDFC was 7.46% whereas the average CAGR of SBI was 15.025% and there exists no significant difference in the CAGR between the HDFC and SBI (probability = 0.583).
- In the year 2008, the average CAGR of HDFC was -0.417% whereas the average CAGR of SBI was -0.218% and there exists no significant difference in the CAGR between the HDFC and SBI (probability = 0.583).

- In the year 2009, the average CAGR of HDFC was 26% whereas the average CAGR of SBI was 52.79% and there exists no significant difference in the CAGR between the HDFC and SBI (probability = 0.437).
- In the year 2010, the average CAGR of HDFC was 8.98% whereas the average CAGR of SBI was 8.73% and there exists no significant difference in the CAGR between the HDFC and SBI (probability = 0.954).
- In the year 2011, the average CAGR of HDFC was 8.73% whereas the average CAGR of SBI was 5.05% and there exists no significant difference in the CAGR between the HDFC and SBI (probability = 0.395).
- From the ANOVA table, it is interpreted that there is no significant difference in CAGR % between various years (from 2007 to 2011) with probability 0.15 for the HDFC bank and 0.115 for SBI.
- From Independent sample t test evaluation we can conclude, HDFC funds are performing significantly better than SBI funds. So there is a lot of improvements needed in SBI funds to beat the market over other Private Banks' funds.
- It can be easily concluded that most of the fund returns can be attributed to the market that is they were in direct correlation with the market. The performance of this fund can be attributed to both the market and as well as the fund composition and properties.

6 Appendices

Appendix 6.1 List of funds selected for the study

Appendix 6. 1.1 Funds Selected-Equity during bear phase

1. HDFC Infrastructure fund-G
2. HDFC Infrastructure fund-D
3. SBI One India Growth Fund

Appendix 6. 1.2 Funds Selected-FMP during bull phase

1. HDFC FMP 13M MARCH 2008-G
2. HDFC FMP 14M February 2008
3. HDFC FMP 15M February 2008
4. HDFC FMP 181D APRIL 2008 Retail-G
5. HDFC FMP 181D APRIL 2008 Retail-G
6. HDFC FMP 20M August 2008-retail-G
7. HDFC FMP 22M September 2008-retail-G
8. SBI DEBT FUND SERIES - 13 MONTHS - 8 - (21/08/2008) - RETAIL -G
9. SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08) -DIVIDEND
10. SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08)-GROWTH
11. SBI DEBT FUND SERIES - 90 DAYS - 26 (29/07/08) - DIVIDEND
12. SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - DIVIDEND
13. SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - GROWTH

Appendix 6. 1.3 Funds Selected-FMP during bear phase

1. HDFC FMP 181D December 2007
2. HDFC FMP 18M December 2007
3. HDFC FMP 18M January 2008
4. HDFC FMP 90D December 2007
5. SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) INSTITUTIONAL -D
6. SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) Retail -D

7. SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) RETAIL -G
8. SBI DEBT FUND SERIES-90D-20-(26/02/08)-DIVIDEND
9. SBI DEBT FUND SERIES-90D-20-(26/02/08)-Growth

Appendix 6.1.4 Debt scheme

1. HDFC Debt Fund for Cancer Cure
2. HDFC Medium Term Opportunities Fund-G
3. HDFC Short Term Opportunities Fund
4. SBI Debt fund series -370 days-12
5. SBI Debt fund series -90 days-42
6. SBI Debt fund series

Appendix 6.2 Formulas

Appendix 6. 2.1 -RETURNS

The daily returns are calculated from the daily NAVs for each fund.

$$\text{Return} = ((\text{NAV}_t - \text{NAV}_{t-1}) / \text{NAV}_{t-1}) * 100$$

Likewise the monthly returns for each fund can be calculated. The average of all the monthly returns is calculated and multiplied by 12 to get the annualized returns. Sharpe, Treynor, Jensen's for all the select funds are considered and tabulated.

Appendix 6.2.2 Calculation of SHARPE Ratio

SHARPE RATIO

The risk free rate of return is deducted from the average rate of return to find the risk premium. The risk associated with the fund is calculated by finding the standard deviation of monthly returns of the fund. The risk premium divided by this standard deviation will give Sharpe's ratio.

$$\text{Sharpe Ratio} = (\text{AR}_p - \text{AR}_f) / \sigma_p$$

AR_p - Average Annualized Return of the fund

AR_f – Risk free rate of return

σ_p is standard deviation of the fund



The Sharpe ratio is used to measure reward to variability, in terms of total risk taken by the investor. The higher standard deviation in the fund indicates the portfolio is not perfectly diversified.

Appendix 6.2.3 Calculation of Treynor Ratio

TREYNOR RATIO

Treynor ratio is a risk-adjusted measure of return based on systematic risk. It is similar to the Sharpe ratio with the difference being that it used beta as the measurement of volatility.

The Treynor ratio is calculated as follows:

$$\text{Treynor Ratio} = (AR_p - AR_f) / \beta_p$$

AR_p – Average Annualized Return of the fund

AR_f – Risk free rate of return

β_p – Systematic Risk of the fund

Treynor Ratio evaluates the performance with respect to the systematic risk. Just like the rule for interpreting the Sharpe ratio, the higher the number the better. Like the Sharpe ratio, the Treynor Ratio (sometimes called reward-to-variability-ratio) also relates excess return to risk but systematic risk instead of total risk is used. The higher the ratio, better the performance under analysis.

Appendix 6.2.4 Calculation of JENSON Ratio

JENSON RATIO

$$\text{Equilibrium Average return of the fund (EAR}_p) = AR_f + (AR_m - AR_f) \beta_p$$

Alpha = $AR_p - EAR_p$ Where AR_m is the average annualized return of the market.

AR_p is the average annualized return of the fund.

AR_f is the average risk free rate of return.

β_p is the beta of the fund.

Higher alpha represents superior performance of the fund and vice versa. Limitation of this model is that it considers only systematic risk not the entire risk associated with the fund and an ordinary investor cannot mitigate unsystematic risk, as his knowledge of market is primitive.

Appendix 6.3

Annualised return of select funds of SBI and HDFC for the period 2007 to 2011

8.00%

Risk free return

Time	Annualized return			
	31-01-08 to 31-01-07	31-01-09 to 31-01-08	31-01-10 to 31-01-09	31-01-11 to 31-01-10
Sample Calculation -SBI One India-G	11.52%	-52.63%	90.41%	4.74%
Market return-SENSEX	25.25%	-46.60%	73.57%	12.04%
Market return-NIFTY	25.85%	-44.05%	69.87%	12.76%

List of Equity during bear phase

HDFC Infrastructure Fund-G	0.00%	0.00%	102.08%	7.28%
HDFC Infrastructure Fund-D	0.00%	0.00%	102.08%	7.28%
SBI One India Fund - Growth	0.1%	0.02%	98%	6.2%

List of Fixed maturity plan during bullish phase

HDFC FMP 13M MARCH 2008-G	8.17%	8.97%	5.19%	5.75%
HDFC FMP 14M February 2008	0.00%	0.00%	100.00%	0.00%
HDFC FMP 15M February 2008	0.00%	0.00%	100.00%	0.00%

HDFC FMP 181D APRIL 2008 Retail-G	0.00%	0.00%	0.00%	0.00%	0.00%
HDFC FMP 181D APRIL 2008 Retail-G	0.00%	0.00%	100.00%	0.00%	0.00%
HDFC FMP 20M August 2008-retail-G	0.00%	0.00%	12.22%	-100.00%	
HDFC FMP 22M September 2008-retail-G	0.00%	0.00%	12.28%	-100.00%	
SBI DEBT FUND SERIES - 13 MONTHS - 8 - (21/08/2008) - RETAIL -G	0.00%	0.00%	100.00%	0.00%	0.00%
SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08) -DIVIDEND	0.00%	0.00%	0.00%	0.00%	0.00%
SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08)-GROWTH	0.00%	0.00%	0.00%	0.00%	0.00%
SBI DEBT FUND SERIES - 90 DAYS - 26 (29/07/08) - DIVIDEND	0.00%	0.00%	0.00%	0.00%	0.00%
SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - DIVIDEND	0.00%	0.00%	0.00%	0.00%	0.00%
SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - GROWTH	0.00%	0.00%	0.00%	0.00%	0.00%

List of Fixed maturity plan during bearish phase

HDFC FMP 181D December 2007	0.00%	100.00%	0.00%	0.00%
HDFC FMP 18M December 2007	0.00%	7.93%	100.00%	0.00%

HDFC FMP 18M January 2008	0.00%	0.00%	-	100.00%	0.00%
HDFC FMP 90D December 2007	0.00%	100.00%	-	0.00%	0.00%
SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) INSTITUTIONAL-D	0.00%	-1.04%	-	100.00%	0.00%
SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) Retail -D	0.00%	-1.04%	-	100.00%	0.00%
SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) RETAIL -G	0.00%	8.61%	-	100.00%	0.00%
SBI DEBT FUND SERIES-90D-20-(26/02/08)-DIVIDEND	0.00%	0.00%	0.08%	0.00%	0.00%
SBI DEBT FUND SERIES-90D-20-(26/02/08)-Growth	0.00%	0.00%	0.01%	0.00%	0.00%

Debt schemes

HDFC Debt Fund for Cancer Cure	0.00%	0.08%	0.00%	0.00%	0.00%
HDFC Medium Term Opportunities Fund-G	0.00%	0.00%	0.10%	0.00%	0.00%
HDFC Short Term Opportunities Fund	0.00%	0.13%	0.00%	0.00%	0.00%
SBI Debt fund series -370 days-12	0.00%	0.21%	0.00%	0.00%	0.00%
SBI Debt fund series -90 days-42	0.00%	0.00%	0.00%	0.00%	0.1%
SBI Debt fund series -60 days	100.00%	0.00%	0.00%	0.00%	0.00%

Appendix 6.4

Standard deviation of select SBI and HDFC mutual fund schemes

Risk free return 8 %

Time	Standard deviation
Sample Calculation -SBI One India-G	0.59
Market return-SENSEX	0.49
Market return-NIFTY	0.47

List of Equity during bear phase

HDFC Infrastructure Fund-G	0.49
HDFC Infrastructure Fund-D	0.49
SBI One India Fund – Growth	0.3

List of Fixed maturity plan during bullish phase

HDFC FMP 13M MARCH 2008-G	0.018
HDFC FMP 14M February 2008	0.5
HDFC FMP 15M February 2008	0.5
HDFC FMP 181D APRIL 2008 Retail-G	0.1
HDFC FMP 181D APRIL 2008 Retail-G	0.5
HDFC FMP 20M August 2008-retail-G	0.52
HDFC FMP 22M September 2008-retail-G	0.52
SBI DEBT FUND SERIES - 13 MONTHS - 8 - (21/08/2008) - RETAIL -G	0.5
SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08) - DIVIDEND	0.01

SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08)-GROWTH	0.03
SBI DEBT FUND SERIES - 90 DAYS - 26 (29/07/08) - DIVIDEND	0.03
SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - DIVIDEND	0.01
SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - GROWTH	0.02

List of Fixed maturity plan during bearish phase

HDFC FMP 181D December 2007	0.5
HDFC FMP 18M December 2007	0.51
HDFC FMP 18M January 2008	0.5
HDFC FMP 90D December 2007	0.5
SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) INSTITUTIONAL -D	0.49
SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) Retail -D	0.49
SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) RETAIL -G	0.51
SBI DEBT FUND SERIES-90D-20-(26/02/08)-DIVIDEND	0.29
SBI DEBT FUND SERIES-90D-20-(26/02/08)-Growth	0.39

Debt funds

HDFC Debt Fund for Cancer Cure	0.01
HDFC Medium Term Opportunities Fund-G	0.1
HDFC Short Term Opportunities Fund	0.10
SBI Debt fund series -370 days-12	0.2
SBI Debt fund series -90 days-42	0.1

SBI Debt fund series -60 days

0.5

Appendix 6.5

Beta of select SBI and HDFC mutual fund schemes

Risk free return 8 %

Time	beta	BETA of funds w.r.to	
		SENSEX	NIFTY
Sample Calculation -SBI One India-G	-	0.93	0.92
Market return-SENSEX	0.99		
Market return-NIFTY	0.99		

List of Equity during bear phase

HDFC Infrastructure Fund-G	-	1.13	1.09
HDFC Infrastructure Fund-D	-	1.13	1.09
SBI One India Fund – Growth	-	0.9	1.1

List of Fixed maturity plan during bullish phase

HDFC FMP 13M MARCH 2008-G	-	-0.01	-0.01
HDFC FMP 14M February 2008	-	0.06	1.81
HDFC FMP 15M February 2008	-	-0.01	3.55
HDFC FMP 181D APRIL 2008 Retail-G	-	0.00	0.00
HDFC FMP 181D APRIL 2008 Retail-G	-	-0.01	0.00
HDFC FMP 20M August 2008-retail-G	-	0.09	0.10
HDFC FMP 22M September 2008-retail-G	-	0.07	0.08
SBI DEBT FUND SERIES - 13 MONTHS - 8 - (21/08/2008) - RETAIL -G	-	-0.01	-0.01
SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08) -DIVIDEND	-	0.00	0.00

SBI DEBT FUND SERIES - 30 DAYS-2 (27/03/08)-GROWTH	-	0.12	0.13
SBI DEBT FUND SERIES - 90 DAYS - 26 (29/07/08) - DIVIDEND	-	-0.01	-0.03
SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - DIVIDEND	-	-0.01	-0.01
SBI DEBT FUND SERIES - 180 DAYS - 8 (30/05/08) - GROWTH	-	0.01	0.01

List of Fixed maturity plan during bearish phase

HDFC FMP 181D December 2007	-	0.02	0.02
HDFC FMP 18M December 2007	-	0.07	0.07
HDFC FMP 18M January 2008	-	0.00	0.00
HDFC FMP 90D December 2007	-	0.01	0.00
SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) INSTITUTIONAL -D	-	-0.08	-0.06
SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) Retail -D	-	0.01	0.00
SBI DEBT FUND SERIES - 13 MONTHS - 6 (14/12/07) RETAIL -G	-	0.00	0.00
SBI DEBT FUND SERIES-90D-20-(26/02/08)-DIVIDEND	-	0.02	0.02
SBI DEBT FUND SERIES-90D-20-(26/02/08)-Growth	-	-0.02	-0.02

Debt schemes

HDFC Debt Fund for Cancer Cure	-	0.00	0.00
HDFC Medium Term Opportunities Fund-G	-	-0.01	-0.01
HDFC Short Term Opportunities Fund	-	0.00	0.00
SBI Debt fund series -370 days-12	-	0.00	0.00
SBI Debt fund series -90 days-42	-	0.00	0.00
SBI Debt fund series -60 days	-	-0.01	-0.01

7.0 References

Books and Papers

Black, Ken "Business Statistics", PP 302-381

Cooper, Donald and Schindler, Pamela "Business Research Methods", PP. 494-526

DeRoon, Frans A et. Al (2000)," **Evaluating Style Analysis**", www.ssrn.com, paper no.1118582 and PP.1-37

Lynch, Anthony W et Al (2002). "**Does Mutual Fund Performance Vary over the Business Cycle?**" ", www.ssrn.com, paper no.470783 and PP.1-21

Websites

www.moneycontrol.com

www.hdfcmf.com

www.sbimf.com

www.bluechip.com