Project Dissertation

PERFORMANCE ANALYSIS OF MUTAL FUNDS IN INDIA: A COMPARATIVE STUDY OF EQUITY BASED SCHEMES

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CERTIFICATE

This is to certify that the Project titled **PERFORMANCE ANALYSIS OF MUTAL FUNDS IN INDIA: A COMPARATIVE STUDY OF EQUITY BASED SCHEMES**, is a bonafide work carried out by **Ms. Nilanshi Chhabra** of MBA 2014-16 and submitted to Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 in partial fulfilment of the requirement for the award of the Degree of Masters of Business Administration.

Signature of Guide

Prof. G.C. Maheshwari

Signature of Head (DSM)

Seal of the Head

Date:

Place: Delhi

DECLARATION

I **Nilanshi Chhabra**, student of MBA 2014-16 of Delhi School of Management, Delhi Technological University, Bawana Road, Delhi-42 declare that Dissertation Report on **PERFORMANCE ANALYSIS OF MUTAL FUNDS IN INDIA: A COMPARATIVE STUDY OF EQUITY BASED SCHEMES,** submitted in partial fulfilment of Degree of Masters of Business Administration is the original work conducted by me.

The information and data given in the report is authentic to the best of my knowledge. This Report is not being submitted to any other University for award of any other Degree, Diploma and Fellowship.

Date:

Place: Delhi Nilanshi Chhabra

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ABSTRACT

The performance evaluation of Mutual Funds is a vital matter of concern to the fund managers, Investors, and the Researchers alike. The core competence of a company is to meet the objectives and need of its investors and to provide optimum return for their risk. This study tries to find out the risk and return allied with the mutual funds.

Mutual fund industry has experienced a tremendous growth in the past two decades. Increase in the number of schemes with increased mobilization of funds in the past few years notes the importance of Indian mutual funds industry. To fulfil the expectations of millions of retail investors, the mutual funds are required to function as successful institutional investors. Proper assessment of various fund performance and their comparison with other funds helps retail investors for making investment decisions.

The present paper investigates the performance of top 20 equity based mutual fund schemes (ranked on the basis of AUM size) for the period from April 2013 to March 2016 (three years). Daily NAV of different schemes have been used to calculate the returns from the fund schemes. BSE-sensex has been used for market portfolio. The analysis has been made using the risk-return relationship and Capital Asset Pricing Model (CAPM). The performance of the selected schemes were evaluated on the basis of Sharpe, Treynor, and Jensen's measure whose results will be useful for investors for taking better investment decisions.

The study revealed that all schemes except one (HDFC Top 200) have outperformed the benchmark market returns. This underperforming scheme had the second largest AUM size, which clearly indicated that size of the asset has no relationship with its performance. Moreover, 14 schemes recorded different ranking under different performance measures which means that the schemes are not equally diversified.

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CHAPTER 1: INTRODUCTION

1.1 Problem of the Study

Mutual Fund Industry recorded Asset under Management (AUM) more than 12 lakh crore in March 2016. Today the Indian market is flooded with more than a thousand mutual fund schemes, promising better returns than others. However for a common man, it becomes a challenge to select the best portfolio to invest. With this, it becomes pertinent to analyze the performance of these schemes. An attempt has been made to study the performance of equity-based mutual funds in India.

The present study aims to answer the a few following questions:

- What is the performance of the mutual fund in context to their risk and return incurred during the study period?
- Whether the mutual funds have outperformed the market or not?
- What is the position of different mutual fund schemes based on the performance?
- Which sector schemes are performing better: Private or Public?
- Whether the schemes are completely diversified?

1.2 Rationale of the Study

India's saving rate is above 23% and is considered to be the highest in the world. In India, household sector's saving rate is the highest amongst all the other sectors. But the rate of conversion of this saving in investment is very low i.e. around 7%. Majority of the Indian investors prefer to invest their funds in to low level of risk with secure returns. There are a lot of investment avenues available today in the financial market for an investor with an investable surplus. He can invest in Bank Deposits, Corporate Debentures, and Bonds where there is low risk but low return. He may invest in Stock of companies where the risk is high and the returns are also proportionately high. The recent trends in the Stock Market have shown that an average retail investor always lost with periodic bearish trends. People began opting for portfolio managers with expertise in stock markets who would invest on their behalf. But however they proved too costly for a small investor. These investors have found a good shelter with the mutual funds.

Mutual funds represent that range of pre packed products that enables implementation of investor's future financial plans. Today it is noticed that a large number of mutual fund schemes have been floated in the market and it is very difficult for an average investor to examine their performance. Thus, it is very important to evaluate the performance of mutual fund schemes over time so that retail investor can make a valued judgment for selecting the mutual fund for the investment purpose.

Return on mutual fund investment directly or indirectly depends on fluctuations coming in the share market. Moreover public sectors and private sectors both offer various mutual fund schemes. Hence it becomes necessary to study sector wise and scheme wise performance of Indian mutual fund companies. Therefore, in the light of above discussion, the present study has been initiated.

1.3 Review of Literature

This attempts to review the work done by other researchers in the field of mutual funds. This is likely to provide an insight into the problems facing the industry and methodologies adopted by earlier researchers to study the various aspects relating to mutual funds. A brief description of such studies has been given as under:

Obaidullah and Sridhar (1991) in their research paper evaluated two major growth oriented funds- the Mastershare (launched by the Unit Trust of India), and the Canshare (launched by a bank subsidiary- Canbank Mutual Fund). Firstly they made comparison of Raw Return with the benchmark indices- Bombay Stock Exchange National Index and the Bombay Stock Exchange Sensitive Index. The results revealed that Mastershare outperformed the market indices by a larger margin than Canshare but when compared against each other without reference to appreciation in indices, the latter outperformed the former.

Sapar & Narayan(2003) examines the performance of Indian mutual funds 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 with a sample of 269 open ended schemes (out of total schemes of 433). The results of performance measures suggest that most of the mutual fund schemes in the sample of 58 were able to satisfy investor's expectations by giving excess returns over expected returns based on both premium for systematic risk and total risk.

Sathya Swaroop Debashish (2009) measured the performance of the equity based mutual funds in India. 23 schemes were studied over a period of April 1996 to March 2009 (13 years). The analysis was done on the basis of mean return, beta risk, co-efficient of determination, sharp ratio and Jensen alpha. The first analysis has been done on the basis of returns, followed by a comparison between market returns and the return on schemes, it was concluded that UTI mutual fund schemes and Franklin Templeton schemes have performed excellently in public sectors respectively. Further, on the basis of the parameters like Sharpe ratio, Deutsche, Franklin Templeton, Prudential ICICI (in private sector) and SBI and UTI (in public sector) mutual funds schemes have out-performed the market portfolio with positive values. However, the overall analysis finds Franklin Templeton and UTI being the best performers, and Birla SunLife, HDFC and LIC mutual funds showing poor below-average performance when measured against the risk-return relationship models and measures.

Selvam et.al (2011) studied the risk and return relationship of Indian mutual fund schemes. The study found out that out of thirty five sample schemes, eleven showed significant t–values and all other twenty four sample schemes did not prove significant relationship

between the risk and return. According to t-alpha values, majority (thirty two) of the sample schemes' returns were not significantly different from their market returns and very few number of sample schemes' returns were significantly different from their market returns during the study period.

Dhume and Ramesh (2011) conducted a study to analyze the performance of the sector funds. The sectors considered were Banking, FMCG, Infrastructure, Pharma and Technology. The study used different approaches of performance measures. Findings of study revealed that all the sector funds have outperformed the market except infrastructure funds.

R. Anitha, et. al., (2011), in their study evaluated the performance of public-sector and private sector mutual funds for the period from 2005 to 2007. Selected funds were analyzed using Statistical tools like Mean, Standard Deviation and Co-efficient of Variation. The performance of all funds has shown volatility during the period of study making it difficult to earmark one particular fund which could outperform the other consistently.

Kalpesh P Prajapati and Mahesh K Patel (2012) evaluated the performance of Indian mutual funds using relative performance index, risk-return analysis, Treynor's ratio, Sharp's ratio, Sharp's measure, Jensen's measure, and Fama's measure. The data used is daily closing NAVs from 1st January 2007 to 31st December, 2011 and concluded that most of the mutual funds have given positive return during the period of study.

1.4 Objectives of the Study

The objective of the study is

- To measure the growth of mutual funds
- To evaluate the performance of mutual fund schemes in terms of risk-return relationship;
- To compare the performance of mutual fund schemes on the basis of benchmark Index;
- To bring out a comparison between the performances of, equity-based mutual funds of public and private sector, in India.
- To see whether the schemes in both the sectors are completely diversified or not.

1.5 Methodology

The present research is an attempt to study the performance evaluation of mutual funds in India. The study limits itself to Equity Schemes of mutual funds and examines growth of mutual funds, regulatory framework governing mutual funds, risk-return analysis, and performance evaluation of mutual funds schemes.

1.5.1 Data Sampling

The period of study is April 2013 to March 2016. A total of 20 Equity based mutual fund schemes have been considered. These 20 schemes consist of top 10 schemes form public sector and top 10 schemes from private sector. For calculation of the risk, this study uses the daily closing Net Asset Values (NAV) of the mutual funds along with daily closing price of the benchmark stock index -SENSEX. The main idea of the study is to calculate the expected return from a scheme (which is commensurate with the risk), and then comparing it with its actual rate of return over the given time period.

1.5.2 Data Collection & Source

For the purpose of the study data has been collected from secondary sources which include the Capital Market, Chartered Financial Analyst, Outlook, SEBI annual reports, RBI Reports on Currency and Finance, RBI Bulletin, Management Accountant, Portfolio Organizer, Economic and Political Weekly, Finance India etc.

- The data relating to growth of mutual fund industry and regulatory framework of mutual fund has been collected from www.sebi.gov.in.
- The required data relating to Net Asset Value (NAV) of various public and private sector mutual fund schemes has been collected on quarterly basis (first date of each quarter) for the study period from the Financial Express, Economic Times, Business Standard and various websites such as www.amfiindia.com, www.mutualfundindia.com.
- In case, first day of any quarter being a holiday, NAV of the next working day was taken as NAV of a fund does not change on a holiday.
- For evaluating market return and risk, BSE Sensex, has been taken as benchmark index. The data for index is collected from www.bseindia.com

1.5.3 Techniques & Concepts

For analysis of data, tools used are percentage, simple growth rate, compound annual growth rate, measurement of return, measurement of risk (Beta), risk adjusted performance measures (Alpha, Sharpe's measure and Treynor's measure). The brief details relating to some of such tools is as under:

1. **Simple Growth Rate**

It simply gives the percentage increase over the previous year and is calculated as

$$g = \frac{Yt - Yt - 1}{Yt - 1} * 100$$

Where,

g = Growth rate

yt = Value of variable y in current year

yt-1= Value of variable y in the previous year

2. Compound Annual Growth Rate

Compound annual growth rate has been calculated as

$$r = \left(\frac{An}{Ao}\right)^{\frac{1}{n}} - 1$$

Where,

An= Amount/Number at the end of 'n' years.

A0= Amount/Number in the base year.

r = Rate of growth.

n= Time period in years.

3. Measurement of Return

Net Asset Value (NAV) is the most widely accepted yardstick for measuring the performance of mutual funds. The NAV is the market value of the assets of the schemes minus its liabilities. The per unit NAV is the net asset value of the scheme divided by the number of units outstanding on the valuation date. Average quarterly returns have been calculated on the basis of change in NAVs

Ri: Daily growth rate of Mutual Fund

$$Ri = \frac{NAVi - NAVi - 1}{NAVi - 1}$$

Where NAVi denotes the net asset value of a scheme at time i.

$\overline{Ri}$: Mean daily growth rate of a scheme

$$\overline{Ri} = \sum_{i=1}^{n} Ri/n$$

For comparison of returns with benchmark index, BSE Sensex their return has been calculated similarly as follows

Rmi: Daily Growth rate of the Market index

$$Rmi = \frac{Ii - Ii - 1}{Ii - 1}$$

$\overline{R}$m: Mean daily growth rate of the market index

$$\overline{Rm} = \sum_{i=1}^{n} Rmi$$

Where Rmi is the growth rate of the market index and n is the number of days for which it has been studied.

4. **Risk free Rate of Return (Rf**)

Risk free rate of return refers to that minimum return on investment that has no risk of losing the investment over which it is earned. For the present study, we have taken Rf as the fixed deposit rate in the nationalized banks.

5. Measurement of Risk (Beta)

Beta reflects the systematic risk, which cannot be reduced. It measures the risk (volatility) of an individual asset relative to the market portfolio. In terms of security market line, beta is a ratio of the covariance of returns of a security Ri and the market portfolio return Rm to the variance of return of the market portfolio.

The beta of an asset is calculated by formula:

$$\beta = \frac{\sigma m, i}{\sigma m^2} = \frac{Cov(Ri, Rm)}{Var(Rm)} = \frac{\sum[(Ri - \overline{Ri})(Rmi - \overline{Rm})]}{\sum[(Rmi - \overline{Rm})^2]}$$

6. Expected Rate of Return (E[Ri])

After calculating the risk parameter (beta) of an asset, and the annual growth rate of the market index, we calculate the expected rate of return of the mutual fund scheme. The formula is derived from the CAPM :

$$E[Ri] = Rf + \beta(E[Rm] - Rf)$$

7. Performance Measures

- **Alpha Measure**

In this study, the performance of mutual fund investment is done using alpha method of risk adjusted performance measurement. It gives the excess return a mutual fund earns over the expected return, which is calculated by using CAPM model above.

$$\alpha = Actual\ Return - ERR$$

- **Sharpe's Measure**

The reward to variability ratio attempted by Sharpe is known as Sharpe ratio. This ratio is simply the ratio of reward, defined as the realized portfolio return (Avg Rp) in excess of the risk-free rates (Avg Rf), to the variability of return as measured by the standard deviation of return (p). The Sharpe ratio is important from small investors' point of view who seek diversification through mutual fund and choose mutual fund that represents the majority of their investments. The ratio is defined as

$$Sp = \frac{Rp - Rf}{\sigma p}$$

Where,

Sp = Sharpe's Measure for the Scheme

Rp = Return on a scheme

Rf = Risk free return

σp = Standard deviation of a scheme

Benchmark comparison

$$Sm = \frac{Rm - Rf}{\sigma m}$$

Sm = Sharpe's measure of market

Rm = Return of market

Rf = Risk free return

σm = Standard deviation of market.

If Sp > Sm a fund's performance is better than market.

- **Treynor's Measure**

According to Treynor's Ratio, the additional return of the portfolio (fund) over the risk free return is expressed in relation to portfolio's systematic risk measured by Beta. This is known as reward to volatility and expressed as

$$Tp = \frac{Rp - Rf}{\beta p}$$

Where,
Tp = Treynor measure
Rp = Annual return on a scheme
Rf = Risk free return

βp = Systematic risk of a portfolio.
Benchmark for comparison

$$Tm = \frac{Rm - Rf}{\sigma m}$$

Tm = Treynor measure of market
Rm = Return of market
Rf = Risk free return
βm = Systematic risk of a market.
As βm = 1
So Tm = Avg Rm - Avg Rf
If the Tp is greater than the benchmark Tm then the portfolio (fund) has outperformed the market; otherwise it has not.

1.6 Plan of the Study

There are six chapters in the thesis. After this first chapter of introduction- stating problem, objective, rationale and the methodology of the study, second chapter is on industry overview. The basic objective behind this chapter is to provide a general aspect and overview of the mutual fund industry in which the study was undertaken. Third chapter contains the evaluation of public sector mutual fund schemes. While the forth chapter contains the evaluation of private sector mutual fund schemes. Fifth chapter represents the findings and conclusion part along with recommendations and suggestions.

CHAPTER 2: MUTUAL FUND INDUSTRY

2.1 Introduction to Mutual Funds

A mutual fund is a professionally managed type of collective investment scheme that pools money from many investors and invests it in stocks, bonds, short-term money market instruments and other securities. In other words, a mutual fund is a type of an investment avenues, which mobilizes saving of individuals and institutions and channelized these saving in corporate securities to provide investors steady stream of return and capital appreciation. For the purpose of achieving the common financial goals a trust of mutual fund collect the fund from small number of investors. The money which has collected from the retail investors is invested in various money market and capital instrument such as equity share, bond, debenture and other liquid securities. The income generated from the investment distributed among the shareholder or unit holders as a return on the investment, so the mutual fund provide to opportunities for the retail investors to invest their money in diversified and well constructed professionally managed portfolio at relatively low cost. The below charts describe the general mechanism of mutual fund operation.

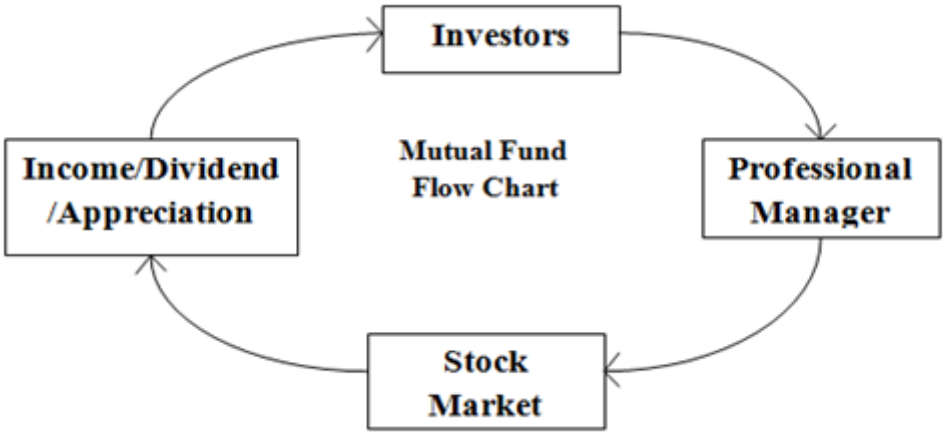


Fig. 2.1: Mechanism of Mutual Fund

SEBI (Mutual Funds) Regulation 1993, defines Mutual Fund as "A fund established in the form of a trust by a sponsor to raise money by the trustee through the sale of units to the public under one or more schemes for investing in securities in accordance with these regulations".

There are many reasons why mutual funds are preferred. Buying shares directly from the market is one way of investing, but this requires spending time to find out the performance of the company whose share is being purchased, understanding the future business prospects of the company, finding out the track record of the promoters and the dividend, etc. An informed investor needs to do research before investing. However, many investors find it cumbersome and time consuming to pore over so much of information, get access to so much of details before investing. Investors therefore prefer the mutual fund route. They invest in a mutual fund scheme which in turn takes the responsibility of investing in stocks and shares

after due analysis and research. The investor need not bother with researching hundreds of stocks. It leaves it to the mutual fund and its professional fund management team.

2.2 History

The history of Mutual Funds in India can be dated back to 1963, when UTI (Unit Trust of India) was established, by an act of Parliament. UTI enjoyed a monopoly in the Indian mutual fund market until 1987, when a host of other government-controlled Indian financial companies established their own funds, including State Bank of India, Canara Bank, and Punjab National Bank. This market was made open to private players in 1993, as a result of the historic constitutional amendments brought forward by the then Congress-led government under the existing regime of Liberalization, Privatization and Globalization (LPG).

The first private sector fund to operate in India was Kothari Pioneer, which later merged with Franklin Templeton. In 1996, SEBI, the regulator of mutual funds in India, formulated the Mutual Fund Regulation which is a comprehensive regulatory framework. Income from MFs could take two forms—dividends and capital gains.

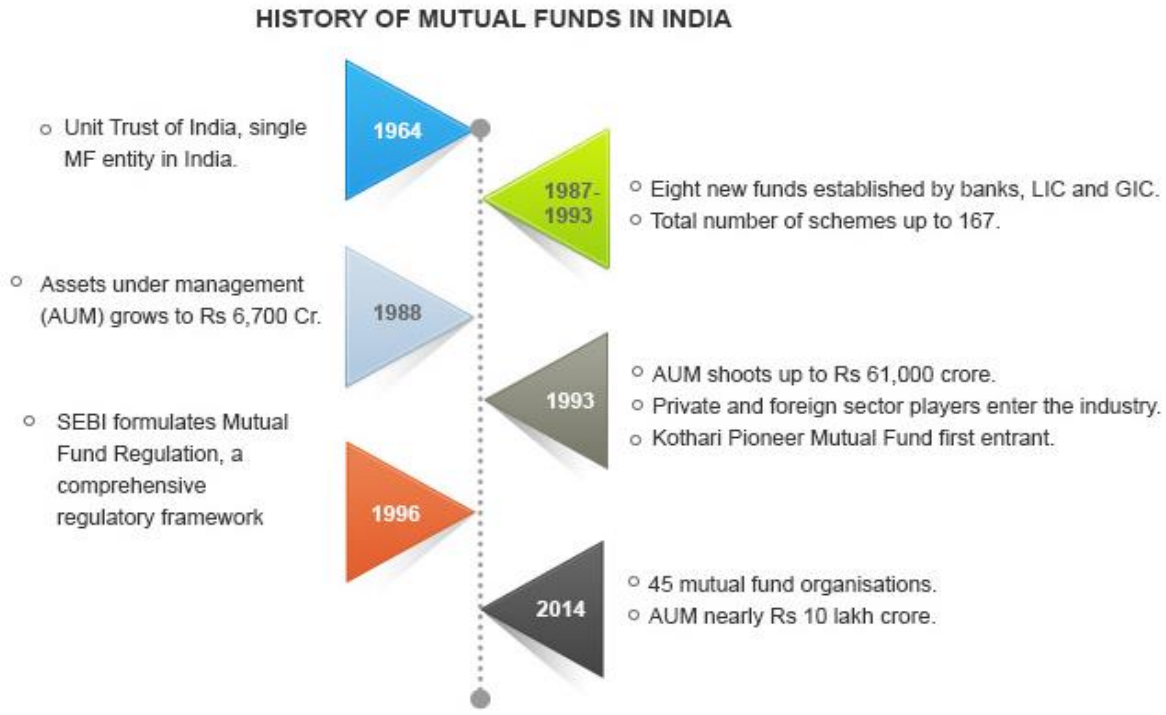


Fig. 2.2: History of Mutual Funds Source: Kotak Securities

The history of mutual funds can be broadly divided into four distinct phases

First Phase – 1964-87 Unit Trust of India (UTI) was established on 1963 by an Act of Parliament. It was set up by the Reserve Bank of India and functioned under the Regulatory and administrative control of the Reserve Bank of India. In 1978 UTI was de-linked from the

RBI and the Industrial Development Bank of India (IDBI) took over the regulatory and administrative control in place of RBI. The first scheme launched by UTI was Unit Scheme 1964. At the end of 1988 UTI had Rs. 6,700 crores of assets under management. 8

Second Phase – 1987-1993 (Entry of Public Sector Funds) 1987 marked the entry of non-UTI, public sector mutual funds set up by public sector banks and Life Insurance Corporation of India (LIC) and General Insurance Corporation of India (GIC). SBI Mutual Fund was the first non- UTI Mutual Fund established in June 1987 followed by Canbank Mutual Fund (Dec 87), Punjab National Bank Mutual Fund (Aug 89), Indian Bank Mutual Fund (Nov 89), Bank of India (Jun 90), Bank of Baroda Mutual Fund (Oct 92). LIC established its mutual fund in June 1989 while GIC had set up its mutual fund in December 1990. At the end of 1993, the mutual fund industry had assets under management of Rs. 47,004 crores.

Third Phase – 1993-2003 (Entry of Private Sector Funds) - With the entry of private sector funds in 1993, a new era started in the Indian mutual fund industry, giving the Indian investors a wider choice of fund families. Also, 1993 was the year in which the first Mutual Fund Regulations came into being, under which all mutual funds, except UTI were to be registered and governed. The erstwhile Kothari Pioneer (now merged with Franklin Templeton) was the first private sector mutual fund registered in July 1993. The 1993 SEBI (Mutual Fund) Regulations were substituted by a more comprehensive and revised Mutual Fund Regulations in 1996. The industry now functions under the SEBI (Mutual Fund) Regulations 1996. The number of mutual fund houses went on increasing, with many foreign mutual funds setting up funds in India and also the industry has witnessed several mergers and acquisitions. As at the end of January 2003, there were 33 mutual funds with total assets of Rs. 121,805 crores. The Unit Trust of India with Rs. 44,541 crores of assets under management was way ahead of other mutual funds.

Fourth Phase – since February 2003 In February 2003, following the repeal of the Unit Trust of India Act 1963 UTI was bifurcated into two separate entities. One is the Specified Undertaking of the Unit Trust of India with assets under management of Rs. 29,835 crores as at the end of January 2003, representing broadly, the assets of US 64 scheme, assured return and certain other schemes. The Specified Undertaking of Unit Trust of India, functioning under an administrator and under the rules framed by Government of India and does not come under the purview of the Mutual Fund Regulations.

The second is the UTI Mutual Fund, sponsored by SBI, PNB, BOB and LIC. It is registered with SEBI and functions under the Mutual Fund Regulations. With the bifurcation of the erstwhile UTI which had in March 2000 more than Rs. 76,000 crores of assets under management and with the setting up of a UTI Mutual Fund, conforming to the SEBI Mutual Fund Regulations, and with recent mergers taking place among different private sector funds, the mutual fund industry has entered its current phase of consolidation and growth.

The following graph indicates the growth of assets over the years

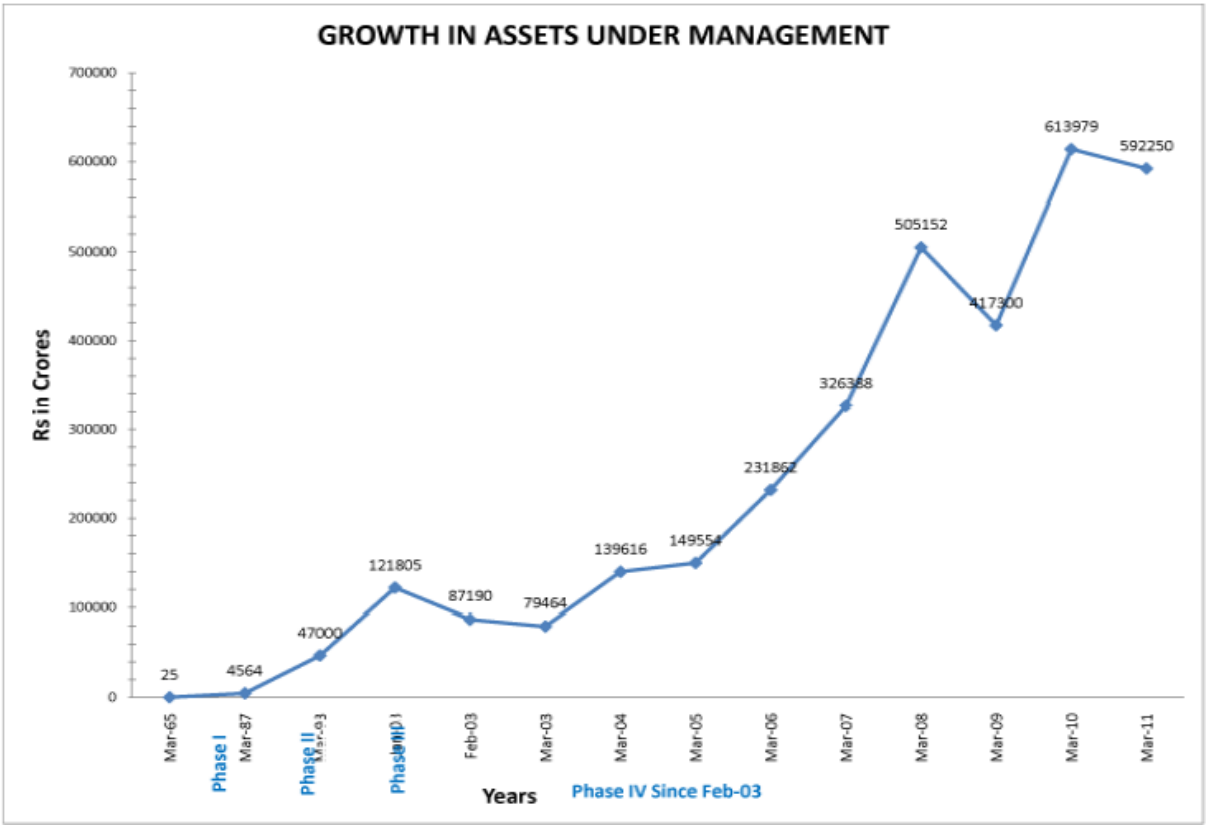
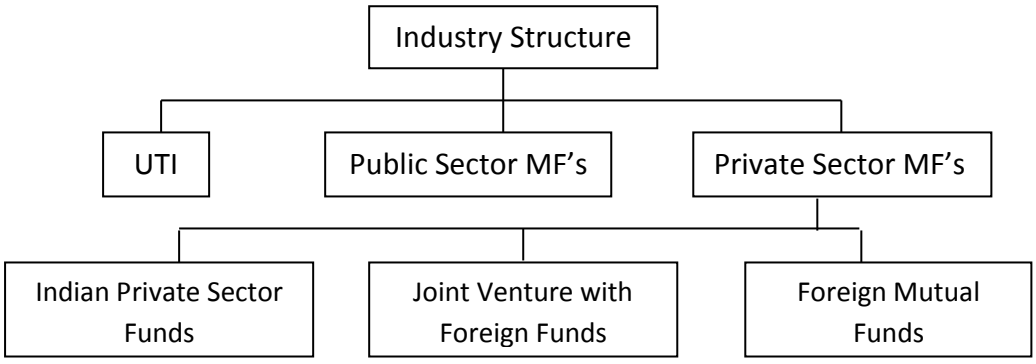


Fig. 2.3: Growth in AUM Source: AMFI India

Assets under management (AUM) is a financial term denoting the market value of all the funds being managed by a financial institution (a mutual fund, hedge fund, private equity firm, venture capital firm, or brokerage house) on behalf of its clients, investors, partners, depositors, etc. The Association of Mutual Funds in India (AMFI) data show that assets of the mutual fund industry have hit Rs 12 lakh crore, as of March 2016. Income funds and liquid funds account for the largest proportion of AUM. Income funds account for Rs 5.22 lakh crore. Meanwhile, equity funds accounted for Rs 3.06 lakh crore. Liquid funds had assets of Rs 2.76 lakh crore.

2.3 Mutual Funds Companies in India



Indian mutual fund industry has evolved over the years. However, Assets Under Management (AUM) as a per cent of GDP for India is about 5 to 6 per cent, significantly lower than some other emerging economies, for example, 40 per cent for Brazil and around 33 per cent for South Africa. This indicates significant headroom for growth.

Mutual fund investments are sourced both from institutions (companies) and individuals. Since January 2013, institutional investors have moved to investing directly with the mutual funds since doing so saves on the expense ratio incurred. Individual investors are, however, served mostly by Investment advisor and banks. Since 2009, online platforms for investing in Mutual funds have also evolved. There are 46 Mutual Funds as of June 2013.

Here is the list of mutual funds given out:

A. Bank Sponsored

1) Joint Ventures – Predominantly Indian

- Canara Robeco Asset Management Company Limited
- SBI Funds Management Private Limited

2) Joint Ventures – Predominantly Foreign

- Baroda Pioneer Asset Management Company Limited

3) Others

- UTI Asset Management Company Ltd

B. Institutions

- LIC Mutual Fund Asset Management Company Limited

C. Private Sector

1) Indian

- Axis Asset Management Company Ltd.
- Benchmark Asset Management Company Pvt. Ltd.
- DBS Cholamandalam Asset Management Ltd.
- Deutsche Asset Management (India) Pvt. Ltd.
- Edelweiss Asset Management Limited
- Escorts Asset Management Limited
- IDFC Asset Management Company Private Limited

- JM Financial Asset Management Private Limited
- Kotak Mahindra Asset Management Company Limited(KMAMCL)
- Quantum Asset Management Co. Private Ltd.
- Reliance Capital Asset Management Ltd.
- Religare Asset Management Company Ltd.
- Sahara Asset Management Company Private Limited
- Tata Asset Management Limited
- Taurus Asset Management Company Limited

2) Foreign

- AIG Global Asset Management Company (India) Pvt. Ltd.
- FIL Fund Management Private Limited
- Fortis Investment Management (India) Pvt. Ltd.
- Franklin Templeton Asset Management (India) Private Limited
- Goldman Sachs Asset Management (India) Private Limited
- Mirae Asset Global Investments (India) Pvt. Ltd.

3) Joint Ventures – Predominantly Indian

- Birla Sun Life Asset Management Company Limited
- DSP BlackRock Investment Managers Private Limited
- HDFC Asset Management Company Limited
- ICICI Prudential Asset Mgmt.Company Limited
- Religare AEGON Asset Management Company Pvt. Ltd.
- Sundaram BNP Paribas Asset Management Company Limited

4) Joint Ventures – Predominantly Foreign

- Bharti AXA Investment Managers Private Limited
- HSBC Asset Management (India) Private Ltd.
- ING Investment Management (India) Pvt. Ltd.

- JPMorgan Asset Management India Pvt. Ltd.
- Morgan Stanley Investment Management Pvt.Ltd.
- Principal Pnb Asset Management Co. Pvt. Ltd.
- Shinsei Asset Management (India) Pvt. Ltd.

2.4 Regulatory Framework in Mutual Funds

Regulatory Jurisdictions of SEBI

SEBI is the apex regulatory of capital markets. SEBI has enacted the SEBI (Mutual Fund) regulation 1996 which provides the scope of regulation of Mutual Fund in India. All mutual funds are required to be mandatory registered with SEBI. The structure and formation of Mutual Funds, appointment of key functionaries, operations of Mutual Funds, accounting and disclosure norms, rights and obligations of functionaries and investors, investment restrictions, compliance and penalties all are defined under the SEBI registration. Mutual Fund has to be sending half yearly compliance reports to SEBI and promote all information about their operations.

Regulatory Jurisdiction of RBI

RBI is the monetary authority of the country and is also the regulatory of banking system. Earlier bank sponsored mutual fund were under the dual regulatory control of RBI and SEBI. These provisions are no longer in vogue. SEBI is the regulator of all mutual funds. The present position is that RBI is involved with the mutual fund industry only to the limited extent of being the regulator of the sponsor of bank sponsored mutual funds.

Role of Ministry of Finance in Mutual Fund:

The finance ministry is the supervisor of both RBI and SEBI. The ministry of finance is also the appellate authority under SEBI Regulation. Aggrieved parties can make appeal to the Ministry of Finance on the SEBI ruling relating the Mutual Fund.

Role of Companies Act in Mutual Fund

The AMC and the Trustee Company may be structured as limited companies, which may come under the regulatory purview of the Company Law Board (CLB).The provisions of the Companies Act 1956, is applicable to these forms of organization. The company law Board is the apex regulatory authority for company. Any grievance agency the AMC or the trustee can be addressed to the company law board for redresses.

Role of Stock Exchange

If a mutual fund is listed its scheme on stock exchange such listing are subject to the listing regulation of Stock Exchange. Mutual Funds have to sign the listing agreement and abide by

its provisions which primarily deal with the periodic notification and disclosure of information that may impart the trading of listed units.

2.5 Legal Structure of Mutual Fund in India

Mutual Fund has a unique structure not shared with other entities such as companies or the firms. It is important for the employees and agents to be aware of the special nature of the structure because it determines the rights and responsibilities of the fund's constitutes. The legal structure also drives the inter relationship between these constituents. Like other countries India has a legal framework within which Mutual Funds must be constituted along one unique structure as Unit Trust. The constituents of the Trust are:

1. **The Fund Sponsor**: Sponsor is defined by the SEBI regulation as any person who acting alone or in combination with another body corporate establishes a mutual fund. The sponsor of a fund is taken as he gets the fund registered with the SEBI. The sponsor will form a trust and appoints the Board of trustee. The sponsor will also generally appoint the AMC as the fund managers. The sponsor, either directly or acting through the trustee will also appoints a custodian to hold the fund asset. All these appointments are made in accordance with the guidelines of SEBI. As per the existing SEBI regulations for a person to quantify as the sponsor he must contribute at least 40% of the net worth of the AMC and possess a second final track over a period of 5 years prior to registration.

2. **Mutual Fund as a Trust**: A mutual fund is constituted in form of a public trust created under the Indian Trust Act, 1882. The fund sponsor act as the settlers of the trust contributing to its initial capital and appoints a Trustee to hold the asset of the trust for the benefits of the unit holders who are the beneficiaries of the trust. The fund then invites investors to contribute their money in a common pool by subscribing to units issued by various schemes established by the trust unit being the evidence of their beneficial interest in the fund.

3. **Asset Management Company**: The role of AMC is to act as the investment manager of the trust. The sponsor, or the trustee, if so authorized by the trust deed appoints the AMC. The AMC so appointed is required to be approved by the SEBI. Once approved, the AMC functions under the supervision of its own directors and also under the direction of the trustee and the SEBI. The trustees are empowered to terminate the appointment of the AMC by majority and appoint a new one with the prior approval of the SEBI and the unit holders. The AMC would, in the name of the trust, float and then manage the direct investment schemes as per regulations of the SEBI and as per Investment Management Agreement it signs with the trustee. Chapter IV of SEBI (MF) Regulations, 1996 describes the issue relevant to appointment, eligibility criteria and the restrictions on the business activities and obligations of the AMC. The AMC of the mutual fund have a net worth of at least Rs. 10 crores at all the time. Directors of the AMC, both independent and non independent should have adequate professional experience in the financial services and should be individuals of

high moral standing, a condition also applicable to other key personnel of the AMC. The AMC cannot act as a trustee of any other mutual fund. Besides its role as advisory services and consulting, provided these activities are run independently of one another rand the AMC resources (such as personnel, system etc.) are properly segregated by activity. The AMC must always act in the interest of the unit holders and report to the trustee with respect to its activities.

4. Other Fund Constituents

- **Trustee**: The trust – the mutual fund may be managed by a board of trustee – a body of individuals or a trust company- a corporate body. Most of the funds in India are managed by the board of trustee while the board is governed by the provisions of the Indian Trust Act where the trustee is a corporate body, it would also be required to comply the provisions of the Companies Act 1956 the board as an independent body act as the protector of the interest of the unit holders. The trustees do not directly manage the portfolio of securities. For this specialist function, they appoint the AMC. They ensure that the fund is managed by the AMC as per the defined objective in accordance with the trust deed and regulations of SEBI. The trust is created through a document called the Trust Deed and is executed by the fund sponsor in favour of the trustee. The trust deed is required to be stamped as registered under the provisions of the Indian Regulatory Act and regulation with SEBI clause in the trust deed, inter alias, deal with the establishment of the trust, the appointment of the trustee , their powers and duties and the obligation of the trustee towards the unit holders and the AMC. These clauses also specify activity that the fund / AMC can't undertake. The third schedule of the SEBI (Mutual Fund) Regulatory Act, 1996 specifies the content of the Trust Deed.

- **Custodian:** A custodian handles the investment back office of a mutual fund. Its responsibilities include receipt and delivery of securities, collection of income, and distribution of dividends and segregation of assets between the schemes. It also track corporate actions like bonus issues, right offers, offer for sale, buy back and open offers for acquisition. The sponsor of a mutual fund cannot act as a custodian to the fund. This condition, formulated in the interest of investors, ensures that the assets of a mutual fund are not in the hands of its sponsor. For example, Deutsche Bank is a custodian, but it cannot service Deutsche Mutual Fund, its mutual fund arm.

- **Brokers:** Role of Brokers in a Mutual Fund is that they enable the investment managers to buy and sell securities. They are the registered members of the stock exchange and charge a commission for their services. In some cases, brokers provide investment managers with research reports and act as an important source of market information.

- **Registrars or Transfer Agent Registrars:** Registrar or transfer agents Registrars, also known as the transfer agents, are responsible for the investor servicing functions. This includes issuing and redeeming units, sending fact sheets and annual reports. Some fund houses handle such functions in-house. Others outsource it to the Registrars (Karvy and CAMS etc). Most mutual funds, in addition to registrars, also have investor service centres of their own in some cities. Some of the investor related services are: - processing investor applications, recording details of the investors, sending information to the investors, processing dividend pay-out and incorporating changes in the investor information.

- **Distributors:** Distributors appoint agents and other mechanisms to mobilize funds from the investor. Banks and post offices also act like distributors. The commission received by the distributor is split into initial commission which is paid on mobilization of funds and trail commission which is paid depending upon the time investor stays with the fund.

Association of Mutual Funds in India (AMFI): With the increase in mutual fund players in India, a need for mutual fund association in India was generated to function as a non-profit organization. Association of Mutual Funds in India (AMFI) was incorporated on 22nd August; 1995.AMFI is an apex body of all Asset Management Companies (AMC) which has been registered with SEBI. Till date all the AMCs are that have launched mutual fund schemes are its members. It functions under the supervision and guidelines of its Board of Directors. Association of Mutual Funds India has brought down the Indian Mutual Fund Industry to a professional and healthy market with ethical lines enhancing and maintaining standards. It follows the principle of both protecting and promoting the interests of mutual funds as well as their unit holders.

The Association of Mutual Funds of India works with 30 registered AMCs of the country. It has certain defined objectives which juxtaposes the guidelines of its Board of Directors. The objectives are as follows: This mutual fund association of India maintains a high professional and ethical standard in all areas of operation of the industry. It also recommends and promotes the top class business practices and code of conduct which is followed by members and related people engaged in the activities of mutual fund and asset management. The agencies who are by any means connected or involved in the field of capital markets and financial services also involved in this code of conduct of the association. AMFI interacts with SEBI and works according to SEBIs guidelines in the mutual fund industry. Association of Mutual Fund of India does represent the Government of India, the Reserve Bank of India and other related bodies on matters relating to the Mutual Fund Industry. It develops a team of well qualified and trained Agent distributors. It implements a program of training and certification for all intermediaries and other engaged in the mutual fund industry. AMFI undertakes all India awareness programme for investors in order to promote proper understanding of the concept and working of mutual funds. At last but not the least

association of mutual fund of India also disseminate information's on Mutual Fund Industry and undertakes studies and research either directly or in association with other bodies.

2.6 Benefits of Investing in Mutual Funds

- **Professional Investment Management**: Investment made in a mutual fund is managed by professional experts. Being full-time, high-level investment professionals, a good investment manager is more resourceful and capable of monitoring the companies the mutual fund has invested in, rather than individual investors. The managers have real-time access to crucial market information and are able to execute trades on the largest and most cost-effective scale.

- **Potential Return**: Mutual Funds have the potential to provide a higher return to an investor than any other option over a reasonable time period.

- **Low Investment Threshold**: A mutual fund enables an investor to participate in a diversified portfolio for as little as Rs 5000, and sometimes even lesser. And with a no-load fund, investor pays little or no sales charges to own them.

- **Convenience**: Investing in mutual funds has its own convenience. Investor saves up on additional paper-work that comes with every transaction, the amount of energy in researching for the stocks, as well as actual market-monitoring and conduction of transactions. Simply an investor can go online or place an order with the broker to buy a mutual fund. Another big advantage is that movement from one fund to another is easy. This allows rebalancing of portfolio to respond to significant fund management or economic changes.

- **Liquidity:** Like in open-ended schemes, investor can get your money back at any point in time at the prevailing NAV (Net Asset Value) from the Mutual Fund itself. This makes mutual fund investments highly liquid. Compare that with a fixed deposit or a bond which may have fixed investment duration.

- **Variety**: Investor have a number of mutual fund schemes to choose from, which may invest in a whole range of industries and sectors, different kinds of assets, and so on. There are funds that focus on blue-chip stocks, technology stocks, bonds, or a mix of stocks and bonds.

- **Transparency**: SEBI regulations for mutual funds have made the industry very transparent. Investor can track the investments that have been made on his behalf to know the sectors and stocks being invested in. In addition to this, he gets regular information on the value of investment. Mutual funds are mandated to publish the details of their portfolio regularly.

- **Well Regulated:** All mutual funds are registered with SEBI, and it acts like a watchdog

2.7 Types of Mutual Funds

A mutual fund is an investment vehicle which pools money from investors and invests on their behalf in multiple assets like stocks and bonds. The profits made from the assets are then distributed to the investors. There are a variety of mutual funds. They can also be classified into different categories on varying factors.

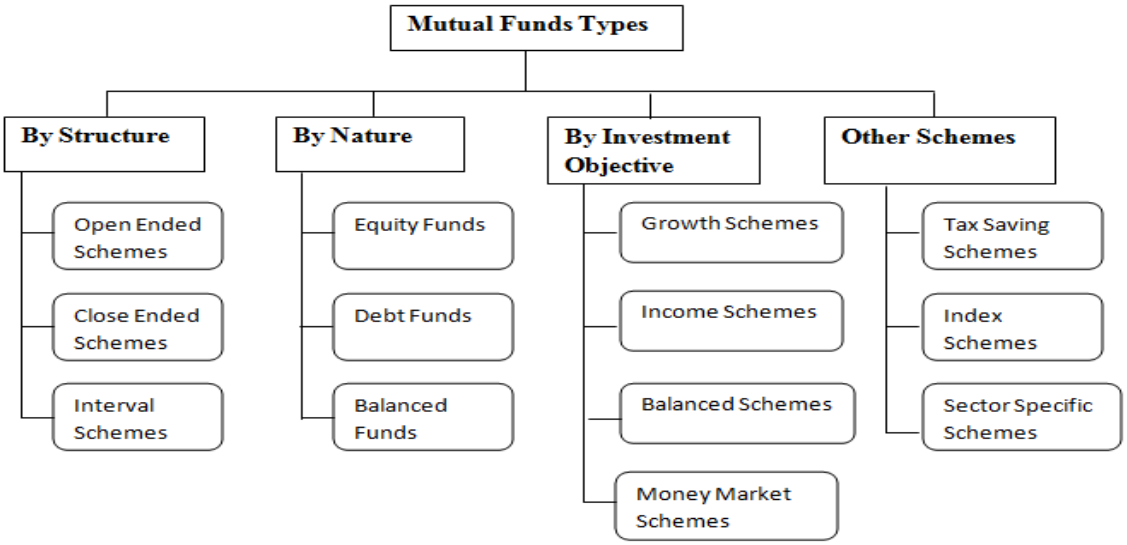


Fig. 2.4: Types of Mutual Funds

Mutual Funds Based on Fund Scheme:

- Close-Ended Schemes:

A closed-end fund has a stipulated maturity period which generally ranging from 3 to 15years. The fund is open for subscription only during a specified period. Investors can invest in the scheme at the time of the initial public issue and thereafter they can buy or sell the units of the scheme on the stock exchanges where they are listed. The market price of the units could vary from the NAV of the scheme due to demand and supply factors, investors' expectations and other market factors. In order to provide an exit route to the investors, some close-ended funds give an option of selling back the units to the Mutual Fund through periodic repurchase at NAV related prices. SEBI Regulations stipulate that at least one of the two exit routes is provided to the investor.

- Open-Ended Schemes:

An open-end fund is one that is available for subscription all through the year. These do not have a fixed maturity. Investors can conveniently buy and sell units at NAV related prices. These schemes have unlimited capitalization, no fixed maturity date, no cap on the amount from the fund and the total capital can keep growing. These funds are not generally listed on any exchange. Open-ended schemes are preferred for their liquidity.

Such funds can issue and redeem units any time during the life of a scheme. Hence, unit capital of open-ended funds can fluctuate on a daily basis.

- Interval Schemes:

They combines the features of the above two schemes. The units are traded on stock exchange or may be open for sale or redemption during pre-determined intervals at NAV related prices

Mutual Funds Based on Asset Invested In:

- Equity Funds:

These are funds that invest only in stocks. As a result, they are usually considered high risk, high return funds. These funds have less tax liability in the long-run as compared to debt funds. Equity funds can be further classified into types based on the investment objective into index funds, sector funds, and tax-saving schemes and so on. The structure of the fund may vary different for different schemes and the fund manager's outlook on different stocks.

- Debt Funds:

These funds invest in debt-market instruments like bonds, government securities, debentures and so on. The interest payments are fixed as well as the return of the principle amount, debt instruments are considered low-risk, low-return financial assets. Thus they are relatively safer. They are usually preferred for the regular interest payments. Debt funds are further classified on the basis of the maturity period of the underlying assets – long-term and short-term.

  - Gilt Funds: Invest their corpus in securities issued by Government, popularly known as Government of India debt papers. These Funds carry zero Default risk but are associated with Interest Rate risk. These schemes are safer as they invest in papers backed by Government.
  - Income Funds: Invest a major portion into various debt instruments such as bonds, corporate debentures and Government securities.
  - MIPs: Invests maximum of their total corpus in debt instruments while they take minimum exposure in equities. It gets benefit of both equity and debt market. These scheme ranks slightly high on the risk-return matrix when compared with other debt schemes.
  - Short Term Plans (STPs): Meant for investment horizon for three to six months. These funds primarily invest in short term papers like Certificate of Deposits (CDs) and Commercial Papers (CPs). Some portion of the corpus is also invested in corporate debentures.
  - Liquid Funds: Also known as Money Market Schemes, These funds provides easy liquidity and preservation of capital. These schemes invest in short-term instruments like Treasury Bills, inter-bank call money market, CPs and CDs. These funds are meant for short-term cash management of corporate houses and are meant for an investment horizon of 1day to 3 months. These schemes rank low on risk-return matrix and are considered to be the safest amongst all categories of mutual funds.

- Hybrid/Balanced Funds:

These are funds which invest in both equities as well as debt instruments. Equity part provides growth and the debt part provides stability in returns. They are less risky than equity funds, but more than debt funds. Similarly, they are likely to give you higher returns than debt funds, but lower than equity funds.

Mutual Funds Based on Investment Objectives:

Every investor has a different reason for investing in financial instruments. Some do so for making profits and increasing wealth, while some others do so for a regular secondary source of income.

- Growth Funds:

These are schemes that promise capital returns in the long-term. They usually invest in equities. As a result, growth funds are usually high risk schemes. This is because the values of assets are subject to lot of fluctuations. Also, unlike fixed-income schemes, growth funds usually pay lower dividends. They may also prefer to reinvest the dividend money into increasing the assets under management.

- Balanced Funds:

As the name suggests, these schemes try to strike a balance between risk and return. They do so by investing in both equities and debt instruments. As a result, they are a kind of hybrid fund. Their risk is lower than equity or growth funds, but higher than debt or fixed-income funds.

- Income Funds:

These are schemes that promise regular income for a period of time. Thus they are usually debt funds. This makes fixed-income funds low-risk schemes, which are unlikely to give you a large amount of profit in the long-run. They pay higher dividends than growth funds. Capital appreciation in such schemes may be limited.

- Money Market Schemes:

  These schemes invest in short-term instruments such as commercial paper (CP), certificates of deposit (CD), treasury bills (T-Bill) and overnight money (Call). The schemes aim to provide easy liquidity, preservation of capital and moderate income. These schemes have become popular with institutional investors and high-net worth individuals having short-term surplus funds.

  - Load Funds: It is the one that charges the commission for entry or exit. Each time the investor will buy or sell the fund a commission will be charged ranging from 1% to 2%
  - No- Load Funds: One that does not charge a commission for entry or exit.

Other Schemes

- Tax-Saving Schemes:

  Investors are encouraged to invest in the equity markets through the Equity Linked Savings Scheme (ELSS) by offering them a tax rebate in accordance with Sec 88 of Income Tax Act. Investing in such schemes, makes total taxable income to fall. However, there is a limit of Rs 1 lakh for tax purposes. The crutch is that the units purchased cannot be redeemed, sold or transferred for a period of three years. However, in comparison with other tax-saving financial instruments like Public Provident Funds (PPF) and Employee Provident Funds (EPF), ELSS funds have the lowest lock-in period.

- Index Schemes:

  Indices serve as a benchmark to measure the performance of the market as a whole. Indices are also formed to monitor performance of companies in a specific sector. Every index is formed of stock participants. The value of the index has a direct relation to the value of the stocks. However, you cannot invest in an index directly. It is merely an arbitrary number. So, to earn as much returns as the index, investors prefer to invest in an Index fund. The fund invests in the index stock participants in the same proportion as the index. For example, if a stock had a weightage of 10% in an index, the scheme will also invest 10% of its funds in the stock. Thus, it recreates the index to help the investors earn money. Such schemes are generally passive funds as the managers need not research much for asset allocation. As a result, the fees are lower. They are also a kind of equity fund.

- Sector Funds:

  These are a kind of equity scheme restrict their investing to one or more pre-defined sectors, e.g. technology sector, real estate sector, FMCG, Pharmaceutical, Petroleum Stocks etc. Since they depend upon the performance of select sectors only, these schemes are inherently more risky than general schemes. They are best suited for informed investors, who wish to bet on a single sector.

2.8 Accounting and Valuation of Mutual Funds (Portfolio Analysis Tools)

Every investor investing in mutual funds is driven by the motto of either wealth creation or wealth maximization. Therefore, it is very necessary to continuously evaluate the performance of funds.

Performance Measures

Equity Funds: the performance of equity funds can be measured on the basis of NAV Growth, Total Return, Total Return with Reinvestment at NAV, Annualizes Returns and Distributions, Computing Total Return (Per share income and expenses, Per share Capital

Changes, Ratios, Shares Outstanding), the Expense Ratio, Portfolio Turnover Rate, Fund Size, Transaction Costs, Cash Flow, Leverage.

Debt Funds: Likewise, the performance of debt funds can be measured on the basis of: Peer Group Comparisons, The Income Ratio, Industry Exposures and Concentrations, NPAs, besides NAV Growth, Total Return and Expense Ratio.

Liquid Funds: the performance of highly volatile liquid funds can be measured on the basis of Fund Yield, besides NAV Growth, Total Return and Expense Ratio.

Types of Returns on Mutual Funds

There are three ways, where the total returns provided by mutual funds can be enjoyed by investors:

- Income is earned from dividends on stocks and interest on bonds. A fund pays out nearly all income it receives over the year to fund owners in the form of a distribution.
- If the fund sells securities that have increased in price, the fund has a capital gain. Most funds also pass on these gains to investors in a distribution.
- If fund holdings increase in price but are not sold by the fund manager, the fund's shares increase in price. Investor can then sell its mutual fund shares for a profit.

Risk Factors in Mutual Funds

Any kind of investment is subjected to risk. William Sharpe segregated the total risk faced in any kind of investment into two parts – **Systematic risk and Unsystematic risk.** Systematic risk is that risk which exists in the system like inflation, recession, war, political situation etc. Unsystematic risk, also known as "specific risk," "diversifiable risk" or "residual risk," is the type of uncertainty that comes with the company or industry you invest in. It can be reduced through diversification. The most important relationship to understand is the risk-return trade-off. Higher the risk greater the returns / loss and lower the risk lesser the returns/loss. Hence it is up to the investor to decide how much risk you are willing to take. In order to do this he must first be aware of the different types of risks involved with investment decision.

- Market Risk: Sometimes prices and yields of all securities rise and fall. Broad outside influences affecting the market in general lead to this. This is true, may it be big corporations or smaller mid-sized companies. This is known as Market Risk. A Systematic Investment Plan ("SIP") that works on the concept of Rupee Cost Averaging ("RCA") might help mitigate this risk.
- Credit Risk: The debt servicing ability (May it be interest payments or repayment of principal) of a company through its cash flows determines the Credit Risk faced by you. This credit risk is measured by independent rating agencies like CRISIL who rate companies and their paper. A'AAA' rating is considered the safest whereas a 'D'

rating is considered poor credit quality. A well-diversified portfolio might help mitigate this risk.

- Inflation Risk: Inflation is the loss of purchasing power over time. A lot of times people make conservative investment decisions to protect their capital but end up with a sum of money that can buy less than what the principal could at the time of the investment. This happens when inflation grows faster than the return on your investment. A well-diversified portfolio with some investment in equities might help mitigate this risk.

- Interest Rate Risk: In a free market economy interest rates are difficult if not impossible to predict. Changes in interest rates affect the prices of bonds as well as equities. If interest rates rise the prices of bonds fall and vice versa. Equity might be negatively affected as well in a rising interest rate environment. A well-diversified portfolio might help mitigate this risk.

- Political / Government Policy Risk: Changes in government policy and political decision can change the investment environment. They can create a favourable environment for investment or vice versa.

- Liquidity Risk: Liquidity risk arises when it becomes difficult to sell the securities that one has purchased. Liquidity Risk can be partly mitigated by diversification, staggering of maturities as well as internal risk controls that lean towards purchase of liquid securities

- Exchange Risk**:** A number of companies generate revenues in foreign currencies and may have investments or expenses also denominated in foreign currencies. Changes in exchange rates may, therefore, have a positive or negative impact on companies which in turn would have an effect on the investment of the fund.

Measures of Return

The return on mutual fund investment includes both income (in the form of dividends or investment payments) and capital gains or losses (increase or decrease in the value of a security). Net Asset Value (NAV) helps in calculating the return of the mutual fund. Since each owner is a part owner of a mutual fund, it is necessary to establish the value of his part. In other words, each share or unit that an investor holds needs to be assigned a value. Since the units held by investor evidence the ownership of the fund's assets, the value of the total assets of the fund when divided by the total number of units issued by the mutual fund gives us the value of one unit. This is generally called the Net Asset Value (NAV) of one unit or one share. The value of an investor's part ownership is thus determined by the NAV of the number of units held. Thus, Net Asset Value is the market value of the securities held by the scheme. Since market value of securities changes every day, NAV of a scheme also varies on day to day basis.

$$NAV = \frac{MV\ of\ Securities\ the\ Fund\ holds}{Total\ Number\ of\ units\ of\ the\ Scheme}$$

The detailed methodology for the calculation of the net asset value is given below:

NAV = Market value of investments + Current assets and other assets + Accrued income - Current liabilities and other liabilities - Accrued expense

The return of mutual fund is calculated by taking the change in fund's NAV during given time period and dividing it by the original Net Asset Value. The return is calculated net of management fees and other expenses charged to the fund.

$$Rt = \frac{NAVt - NAVt - 1}{NAVt - 1}$$

Measures of Risk

There are five main indicators of investment risk that apply to the analysis of mutual fund portfolios. They are alpha, beta, r-squared, standard deviation and the Sharpe ratio. These statistical measures are historical predictors of investment risk/volatility and are all major components of modern portfolio theory (MPT). The MPT is a standard financial and academic methodology used for assessing the performance of equity, fixed-income and mutual fund investments by comparing them to market benchmarks. All of these risk measurements are intended to help investors determine the risk-reward parameters of their investments.

- **Alpha:** It is a measure of an investment's performance on a risk-adjusted basis. It takes the volatility (price risk) of a security or fund portfolio and compares its risk-adjusted performance to a benchmark index. The excess return of the investment relative to the return of the benchmark index is its "alpha." Alpha is often considered to represent the value that a portfolio manager adds or subtracts from a fund portfolio's return. A positive alpha of 1.0 means the fund has outperformed its benchmark index by 1%. Correspondingly, a similar negative alpha would indicate an underperformance of 1%. For investors, the more positive an alpha is, the better it is.

- **Beta:** It is a measure of the volatility, or systematic risk, of a mutual fund in comparison to the market as a whole. Beta is calculated using regression analysis, and represents the tendency of an investment's return (NAV) to respond to swings in the market. The more responsive the NAV of a mutual fund is to the changes in the market; higher will be its beta.

  A beta of 1 indicates that the security's price will move with the market. A beta is less than 1 means that the security will be less volatile than the market. A beta greater than 1 indicates that the security's price will be more volatile than the market.

- **R-Squared:** It is the square of coefficient of correlation (r). It describes the level of association between the fund's market volatility and market risk. The value of R-

squared ranges from 0 to 1. A high R-squared (more than 0.80) indicates that beta can be used as a reliable measure to analyze the performance of a fund. But if value is low beta should be ignored as it indicates that the fund performance is affected by factors other than the markets.

- **Standard Deviation:** Standard deviation measures the dispersion of data from its mean. It is one of the commonly used statistical parameter to measure risk, which determines the volatility of a fund. With mutual funds, the standard deviation tells us how much the return on a fund is deviating from the expected returns based on its historical performance. High standard deviation of a fund implies high volatility and vice-versa.

  S.D = √1/T x (Rt – AR)^2

  Where, AR is the average periodic return

  Rt is the return in month t

  T is the number of observations in the period

- **The Sharpe's Ratio:** This ratio measures risk-adjusted performance and is calculated by subtracting the risk-free rate of return from the rate of return for an investment and dividing the result by the investment's standard deviation of its return. It is the ratio of returns generated by the fund over and above risk free rate of return and the total risk associated with it. The greater an investment's Sharpe ratio, the better its risk-adjusted performance.

  The Sharpe ratio is used to characterize how well the return of an asset compensates the investor for the risk taken, the higher the Sharpe ratio numbers the better. When comparing two assets each with the expected return E[R] against the same benchmark with return Rf, the asset with the higher Sharpe ratio gives more return for the same risk. Investors are often advised to pick investments with high Sharpe ratios. When examining the investment performance of assets with smoothing of returns (such as with profits funds) the Sharpe ratio should be derived from the performance of the underlying assets rather than the fund returns. Larger funds, however, tend to have lower volatilities than smaller funds and similar Sharpe ratios.

- **The Treynor's Ratio:** A ratio developed by Jack Treynor that measures returns earned in excess of that which could have been earned on a riskless investment per each unit of market risk. It is similar to the Sharpe Ratio, except that it uses Beta as the volatility measurement. The ratio divides the difference of the average return of a fund and the risk free rate by beta (market risk) of the fund. Therefore it tells us the return over the risk free per unit of market risk. Thus, bringing focus to that element of risk, that is unavoidable.

CHAPTER 3: EVALUATION OF PUBLIC SECTOR MF SCHEMES

In the light of above discussion, an attempt has been made to analyse the risk-return relationship of selected mutual fund schemes. A total of 20 Equity based mutual fund schemes have been considered from public as well as private sector Mutual Fund Companies. The selection has been made on the basis of AUM of each scheme. Top 10 schemes on the basis of AUM ranking from have been selected from public sector. The table below shows the list of selected schemes along with their AUM data and NAV growth.

Fund Name	AUM(cr.)	Return (%)						
		1W	1M	3M	6M	1Y	3Y	5Y
SBI Bluechip Fund	5124.42	-0.04	3.17	4.73	1.53	5.09	19.07	14.93
UTI Opportunities Fund	4728.03	-1.5	1.66	4.83	-4.23	-7.3	11.32	10.24
UTI Equity Fund	4704.9	-1.1	2.14	3.77	-2.25	-0.71	16.01	12.51
SBI Magnum Tax Gain Scheme 93	4360.59	-0.75	1.98	5.13	-3.52	-1.67	17.57	12.49
UTI Mid Cap Fund	3117.12	-0.05	4.15	6.51	-0.08	3.28	33.13	20.48
UTI Unit Scheme 1986 (Mastershare)	3008.94	-1.48	1.77	4.6	-2.5	-3.22	13.7	9.75
UTI Dividend Yield Fund	2596.38	-1.99	1.36	4.05	-3.44	-3.92	10.34	6.85
SBI Magnum Global Fund 94	2549.54	-0.58	1.64	4	-0.67	0.36	24.62	18.73
UTI MNC Fund	1862.88	-0.66	1.28	3.15	-4.93	-0.22	25.36	19.54
SBI Contra Fund	1701.14	-2.46	0.82	3.17	-3.54	-1.74	12.45	8.64

Table 3.1: AUM and Growth rate for schemes

3.1 Analysis of returns

The analysis of returns was done on the basis of daily growth of NAV of sample schemes for three years i.e. from April 2013 to March 2016. To see the annualised growth in investments of selected schemes, compound annual growth rate (CAGR) of NAV for each scheme under study has been calculated. Such growth rates are shown separately for each scheme in the table below.

Table presents the compound annual growth rate of the sample schemes. The results suggest that compound annual growth rate (CAGR) of growth schemes varied from 11.24 per cent to 33.32 per cent

Company	Fund Name	CAGR (%)
SBI	SBI Bluechip Fund	19.94
	SBI Magnum Tax Gain Scheme 93	15.46
	SBI Magnum Global Fund 94	25.08
	SBI Contra Fund	13.70

	Average	**18.54**
UTI	UTI Opportunities Fund	12.99
	UTI Equity Fund	17.39
	UTI MidCap Fund	33.32
	UTI Unit Scheme 1986 (Mastershare)	15.12
	UTI Dividend Yield Fund	11.24
	UTI MNC Fund	31.79
	Average	**20.34**

Table 3.2: CAGR Growth rate for public sector schemes

It is evident from the results that all of the 10 schemes have registered growth more than the market i.e. 10.33 (approx). The highest return is generated by UTI Midcap Fund (33.32%) whereas UTI Dividend Yield Fund being the lowest with 11.24%. SBI Blue chip Fund with the highest AUM has performed way lesser than UTI Midcap Fund, whose AUM is almost half of the former one.

3.2 Analysis of Risk

As the analysis in this study is done on the basis of Capital Asset Pricing Model (CAPM), the risk of any asset is measured by calculating its beta (β). It measures how risky a mutual fund scheme is, with respect to the market. If beta of a scheme is greater than unity it implies that it's riskier than the market index and vice-versa.

The schemes with their beta values are shown in the table below:

Company	Fund Name	Covariance with the Market	Beta
SBI	SBI Bluechip Fund	9.07773E-05	0.86
	SBI Magnum Tax Gain Scheme 93	7.13528E-05	0.63
	SBI Magnum Global Fund 94	5.64976E-05	0.53
	SBI Contra Fund	8.69246E-05	0.82
	Average		**0.71**
UTI	UTI Opportunities Fund	9.61113E-05	0.92
	UTI Equity Fund	9.35743E-05	0.89
	UTI MidCap Fund	8.16539E-05	0.78
	UTI Unit Scheme 1986 (Mastershare)	9.47129E-05	0.90
	UTI Dividend Yield Fund	9.28612E-05	0.89
	UTI MNC Fund	8.58492E-05	0.82
	Average		**0.87**

Table 3.3: Beta Measure for the schemes

1st column in the table states the covariance values of the returns of the schemes with respect to the market index returns (SENSEX). As the time period of study for all the schemes is same i.e. April 2013 – Mar 2016, the variance of the market index values is found out to be 0.0001057 (approx.).

In this analysis of 10 schemes, except two schemes all the other have been defensive i.e. they lie above the 0.8 range of Beta. UTI Opportunity Fund has come out to be the riskier one amongst all. While referring to the previous table of returns; its return is amongst the lowest one just 12.99% despite having the second highest AUM in public sector. Whereas, UTI Midcap Fund generating highest return is comparatively less risky than many other funds.

On an average, beta value as per scheme-wise UTI Mutual Fund is having a higher beta value than compare to the other schemes of SBI. As the study suggest, higher the return, higher is the risk. UTI's average return is higher than that of SBI.

3.3 Performance Evaluation of Schemes

Using the formulas stated in previous chapters, Expected Rate of Return, Alpha, Sharpe's and Treynor's Measures of each individual scheme is calculated and is shown in the table below.

Company	Fund Name	ERR	Alpha	Sharpe's Measure	Treynor's Measure
SBI	SBI Bluechip Fund	9.93	10.01	2.53	14.55
	SBI Magnum Tax Gain Scheme 93	9.26	6.19	0.40	12.75
	SBI Magnum Global Fund 94	8.99	16.09	0.06	32.99
	SBI Contra Fund	9.82	3.88	0.02	7.62
UTI	UTI Opportunities Fund	10.09	2.91	0.79	6.07
	UTI Equity Fund	10.02	7.37	0.59	11.16
	UTI MidCap Fund	9.69	23.63	1.33	33.26
	UTI Unit Scheme 1986 (Mastershare)	10.05	5.07	0.55	8.52
	UTI Dividend Yield Fund	10.00	1.24	0.56	4.30
	UTI MNC Fund	9.81	21.98	1.62	29.77

Table 3.4: Performance Measures for different schemes

The difference between the expected and actual rate of returns i.e. **Alpha Measure** would lead us to the conclusion. If the difference is positive i.e. if the actual rate of return is greater than the expected return, the asset lies above the Security market line and vice-versa. Consequently, it means that the mutual fund scheme has over performed, and vice-versa. However if the aforesaid difference is within the range of 2%, it implies that the scheme is very close to the security market line and classified as averagely performed.

Thereby we can see that there is only one scheme which has performed averagely i.e. UTI Dividend Yield Fund, while UTI Midcap has overly performed with the difference of 23.63. UTI Opportunity Fund has been near to the average, the major reason being its high risk.

Sharpe ratio indicates reward to variability ratio. It is an excess returns over risk free return per unit of risk i.e., per unit of standard deviation. Positive values of Sharpe ratio designate better performance. It is obvious from Table SBI Bluechip Fund having higher Sharpe ratio (2.53) followed by UTI MNC Fund (1.62). UTI midcap Fund having highest alpha measure recorded Sharpe ratio of just 1.33. SBI Contra Fund recorded lowest ratio of just 0.02. All the

schemes have recorded positive value indicating that all schemes are favourable option for investment for current and potential investors.

Treynor index indicates risk adjusted return i.e., excess return over risk free rate per unit of systematic risk means beta. In above Table higher Treynor index is shown by UTI Midcap Fund (33.26) followed by SBI Magnum Fund (32.99). UTI Dividend Fund recorded lowest treynor's measure of just 4.30.

CHAPTER 4: EALUATION OF PRIVATE SECTOR MF SCHEMES

Now for the evaluation of Private Sector Mutual Funds, top 10 Mutual Fund Schemes on the basis of AUM ranking is selected for study. Following table shows the schemes along with their AUM and NAV growth data.

Fund Name	AUM(cr.)	Return (%)						
		1W	1M	3M	6M	1Y	3Y	5Y
HDFC Equity Fund	14375.1	-1.93	2.72	7.39	-5.62	-6.69	14.09	8.61
HDFC Top 200	11717.1	-1.91	2.49	7.01	-4.41	-5.22	11.95	8.29
ICICI Prudential Value Discovery Fund	11224.29	-1.6	3.07	4.9	-2.65	-0.01	25.54	17.86
ICICI Prudential Balanced Advantage Fund	11020.59	-0.92	2.13	3.14	-0.69	3.75	14.7	13.46
Birla Sun Life Frontline Equity Fund	10684.19	-1.35	1.87	4.45	-1.17	-0.13	16	12.54
Reliance Equity Opportunities Fund	10406	-1.88	0.82	-0.08	-9.46	-7.13	15.83	13.21
HDFC Mid-Cap Opportunities Fund	10294.66	-0.54	2.98	4.68	0.52	3.19	27.7	19.28
ICICI Prudential Focused Bluechip Equity Fund	9964.89	-1.66	2.95	3.83	-2.28	-1.2	14.82	11.52
Axis Long Term Equity Fund	7817.96	-0.67	2.21	0.51	-1.54	-0.24	25.09	19.39
Franklin India Prima Plus	7021.08	-1.71	1.66	4.9	-0.37	2.94	21.05	14.83

Table 4.1: AUM and Growth rate for private sector schemes

4.1 Analysis of Return

The analysis of returns is done on the basis of daily growth of NAV of sample schemes for three years i.e. from April 2013 to March 2016. To see the annualised growth in investments of selected schemes, compound annual growth rate (CAGR) of NAV for each scheme has been calculated. Such growth rates are shown separately for each scheme in the table below.

Company	Fund Name	CAGR (%)
HDFC	HDFC Equity Fund	15.93
	HDFC Top 200 Fund	3.69
	HDFC Midcap Fund	27.48
ICICI	ICICI Pru Value Advantange Fund	26.28
	ICICI Pru Balanced Advantage Fund	15.38
	ICICI Pru Focused Bluechip Fund	15.8
Birla Sun Life	BSL Frontline Equity Fund	17.77
Reliance	Rel Equity Opportunities Fund	17.13
Axis Bank	Axis Long Term Equity Fund	27.18
Franklin	Franklin India Prima Plus	21.82

Table 4.2: CAGR Growth rate for schemes

Table presents the compound annual growth rate of the sample schemes. The results suggest that compound annual growth rate (CAGR) of growth schemes varied from 3.69 per cent to 27.48 per cent. The highest return is generated by HDFC Midcap Fund whereas HDFC Top 200 Fund being the lowest with just 3.7% (even less than the market return) despite of having 2nd largest AUM amongst all.

4.2 Analysis of Risk

The schemes with their beta values are shown in the table below:

Company	Fund Name	Covariance with the Market	Beta
HDFC	HDFC Equity Fund	0.000110552	1.05
	HDFC Top 200 Fund	0.000114776	1.09
	HDFC Midcap Fund	2.9943E-05	0.26
ICICI	ICICI Pru Value Advantange Fund	8.91748E-05	0.78
	ICICI Pru Balanced Advantage Fund	6.08897E-05	0.53
	ICICI Pru Focused Bluechip Fund	0.000103681	0.91
Birla Sun Life	BSL Frontline Equity Fund	9.59975E-05	0.91
Reliance	Rel Equity Opportunities Fund	9.17568E-05	0.81
Axis Bank	Axis Long Term Equity Fund	8.19354E-05	0.77
Franklin	Franklin India Prima Plus	1.57205E-05	0.14

Table 4.3: Beta Measure for schemes

Covariance values of the NAV of the schemes are with respect to the market index returns (SENSEX). As the time period of study for all the schemes is same i.e. April 2013 – Mar 2016, the variance of the market index values is found out to be 0.0001057 (approx.).

In this analysis of 10 schemes, two schemes has beta greater than one, which is HDFC Equity Fund and Top 200 Fund. Due to very high risk profile of these funds, returns were not good. HDFC Equity Fund has performed slightly over the expected but Top 200 Fund has underperformed miserably. Moreover, these are the top 2 funds with largest AUM ranking. On the contrary, the fund from this company HDFC Midcap Fund had a very little risk of just 0.26, and has recorded the highest growth amongst all the funds.

While there is one scheme, Franklin India Prima Plus, with beta of 0.14 which means that the returns of the scheme were in high correlation with the market.

4.3 Performance Evaluation of Schemes

Using the formulas stated in previous chapters, Expected Rate of Return, Alpha, Sharpe's and Treynor's Measures of each individual scheme is calculated and is shown in the table below.

Company	Fund Name	ERR	Alpha	Sharpe's Measure	Treynor's Measure
HDFC	HDFC Equity Fund	10.49	5.44	0.103	8.067
	HDFC Top 200 Fund	10.61	-6.92	-0.572	-3.417
	HDFC Midcap Fund	8.19	19.28	2.417	76.09
ICICI	ICICI Pru Value Advantange Fund	9.7	16.58	0.743	24.107
	ICICI Pru Balanced Advantage Fund	8.98	6.39	2.291	14.889
	ICICI Pru Focused Bluechip Fund	10.07	5.73	1.874	9.199
Birla Sun Life	BSL Frontline Equity Fund	10.08	7.67	0.391	11.309
Reliance	Rel Equity Opportunities Fund	9.79	7.34	0.683	11.927
Axis Bank	Axis Long Term Equity Fund	9.66	17.52	3.044	25.691
Franklin	Franklin India Prima Plus	7.82	14	0.173	105.507

Table 4.4: Performance Measures for Private sector schemes

Alpha Measure i.e. the difference between actual return and the expected return of a fund. If the difference is positive, the asset lies above the Security market line and has over performed, and vice-versa. However if the difference is within the range of 2%, it implies that the scheme is very close to the security market line and classified as averagely performed.

Thereby we can see that there is only one scheme which has performed poorly i.e. HDFC Top 200 Fund (-6.92), while HDFC Midcap has overly performed with the difference of 19.28.

Sharpe ratio indicates reward to variability ratio. It is an excess returns over risk free return per unit of risk i.e., per unit of standard deviation. Table shows that Axis Long Term Equity Fund having higher Sharpe ratio (3.044) followed by HDFC Midcap Fund (2.417). HDFC Top 200 Fund recorded lowest Sharpe ratio of -0.572 which means that this fund has failed to beat the market. Rest all the schemes have recorded positive value indicating them as favourable option for investment for current and potential investors.

Treynor index indicates risk adjusted return i.e., excess return over risk free rate per unit of systematic risk means beta. In above Table higher Treynor index is shown by Franklin India Prima plus Fund (105.507) reason being the low beta value of 0.14. This means that the returns of this fund are in high correlation with the market. HDFC Midcap Fund follows with the ratio of 76.09. HDFC Top 200 Fund again records the negative treynor's ratio (-3.417) indicating its poor performance.

CHAPTER 5: CONCLUSION

- The study shows that the growth of private sector funds is more than that of public sector funds. Moreover, public sector funds show less risky profile than the private sector funds.

- While studying the performance measurement of mutual funds, one particular area caught the attention. The fact that Sharpe uses STDV as a measurement of risk which is the total risk and Treynor uses Beta or systematic risk, but yet it is claimed that, if we are examining a well-diversified portfolio, the rankings should be similar for all three methods. The ranking of the funds on the basis of these three measurement tools is shown in the table below:

Company	Fund Name	Rank		
		Alpha	Sharpe's Measure	Treynor's Index
Public				
SBI	SBI Bluechip Fund	4	1	4
	SBI Magnum Tax Gain Scheme 93	6	8	5
	SBI Magnum Global Fund 94	3	9	2
	SBI Contra Fund	8	10	8
UTI	UTI Opportunities Fund	9	4	9
	UTI Equity Fund	5	5	6
	UTI MidCap Fund	1	3	1
	UTI Unit Scheme 1986 (Mastershare)	**7**	**7**	**7**
	UTI Dividend Yield Fund	10	6	10
	UTI MNC Fund	2	2	3
Private				
HDFC	**HDFC Equity Fund**	**9**	**9**	**9**
	HDFC Top 200 Fund	**10**	**10**	**10**
	HDFC Midcap Fund	**1**	**2**	**2**
ICICI	ICICI Pru Value Advantange Fund	3	5	4
	ICICI Pru Balanced Advantage Fund	7	3	5
	ICICI Pru Focused Bluechip Fund	8	4	8
Birla Sun Life	**BSL Frontline Equity Fund**	**5**	**7**	**7**
Reliance	**Rel Equity Opportunities Fund**	**6**	**6**	**6**
Axis Bank	Axis Long Term Equity Fund	2	1	3
Franklin	Franklin India Prima Plus	4	8	1

Table 5.1: Ranking of Schemes w.r.t different performance measures

Both Sharpe ratio and Treynor ratio measure risk adjusted returns. The difference lies in how risk is defined in either case. It is widely found that both ratios usually give similar rankings. This is based on the fact that most of the portfolios are fully

diversified. But we find out that there is no identical ranking of the three measurements for many of the funds. This suggests that these funds are not completely diversified. A poorly diversified portfolio could have a higher ranking under the Treynor measure than for the Sharpe measure.

When one has to evaluate the funds which are sector specific, Sharpe ratio would be more meaningful. This is due to the fact that unsystematic risk would be present in sector specific funds. Hence, a truer measure of evaluation would be to judge the returns based on the total risk. On the contrary, if we consider diversified equity funds, the element of unsystematic risk would be very negligible as these funds are expected to be well diversified by virtue of their nature. Hence, Treynor ratio would me more apt here.

To summarize, we can say that when the fund is not fully diversified, Sharpe ratio would be a better measure of performance and when the portfolio is fully diversified, Treynor ratio would better justify the performance of a fund.

- Another conclusion that we can draw from our results is that size does not matter. The size of a fund does not affect the performance of a fund.

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