Chapter-1
Industry Profile

1. INTRODUCTION

1.1 WHAT IS AN INVESTMENT?

In finance, the purchase of a financial product or other item of value with an expectation of favorable future returns. In general terms, investment means the use money in the hope of making more money.

There are three fundamentals of investment: -

- Safety
- Liquidity
- Return

1.1.1 INVESTMENT AVENUES

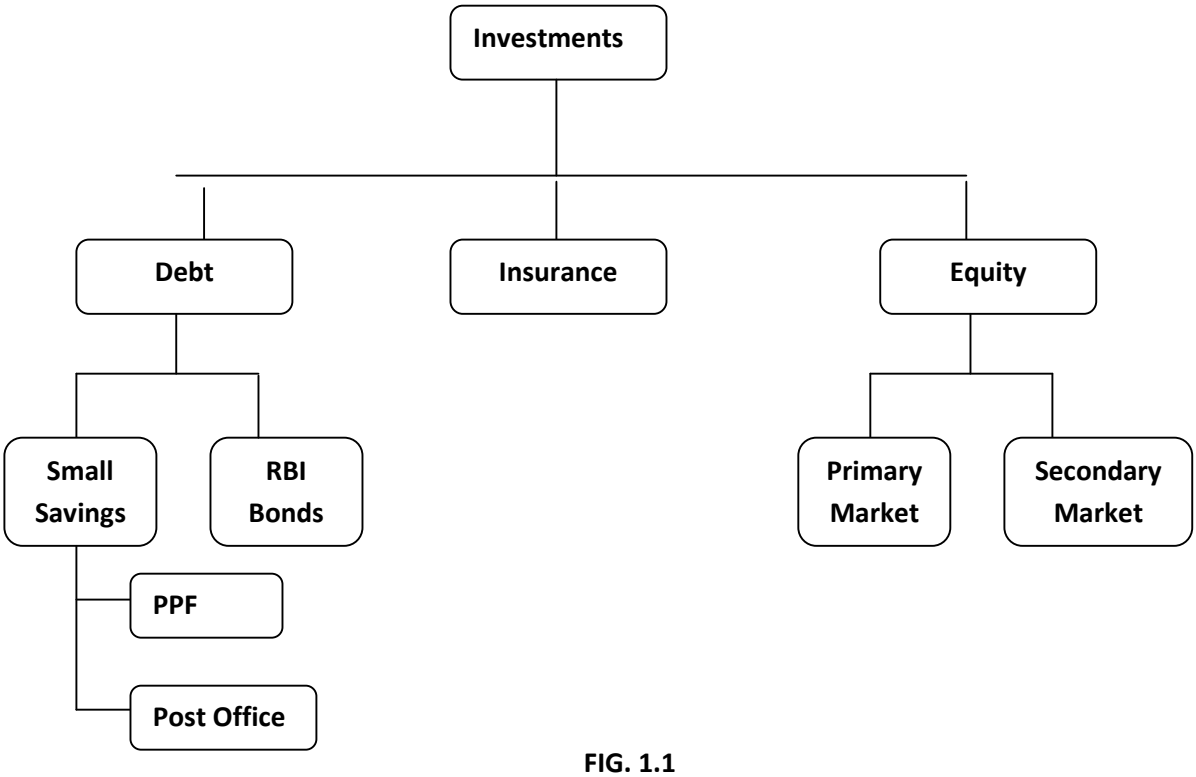


FIG. 1.1

Fixed Return Options	Variable Return Options
1. Post Office 2. Public Provident Fund 3. Bank Fixed Deposits 4. Government Securities or Gilts 5. RBI Taxable Bonds 6. Insurance 7. Company Debentures 8. Company Fixed Deposits **9.** Infrastructure Bonds	1. Mutual Funds 2. Shares and Stock Markets 3. Gold & Silver 4. Property 5. Foreign Exchange

Following diagram gives the structure of Indian financial system:

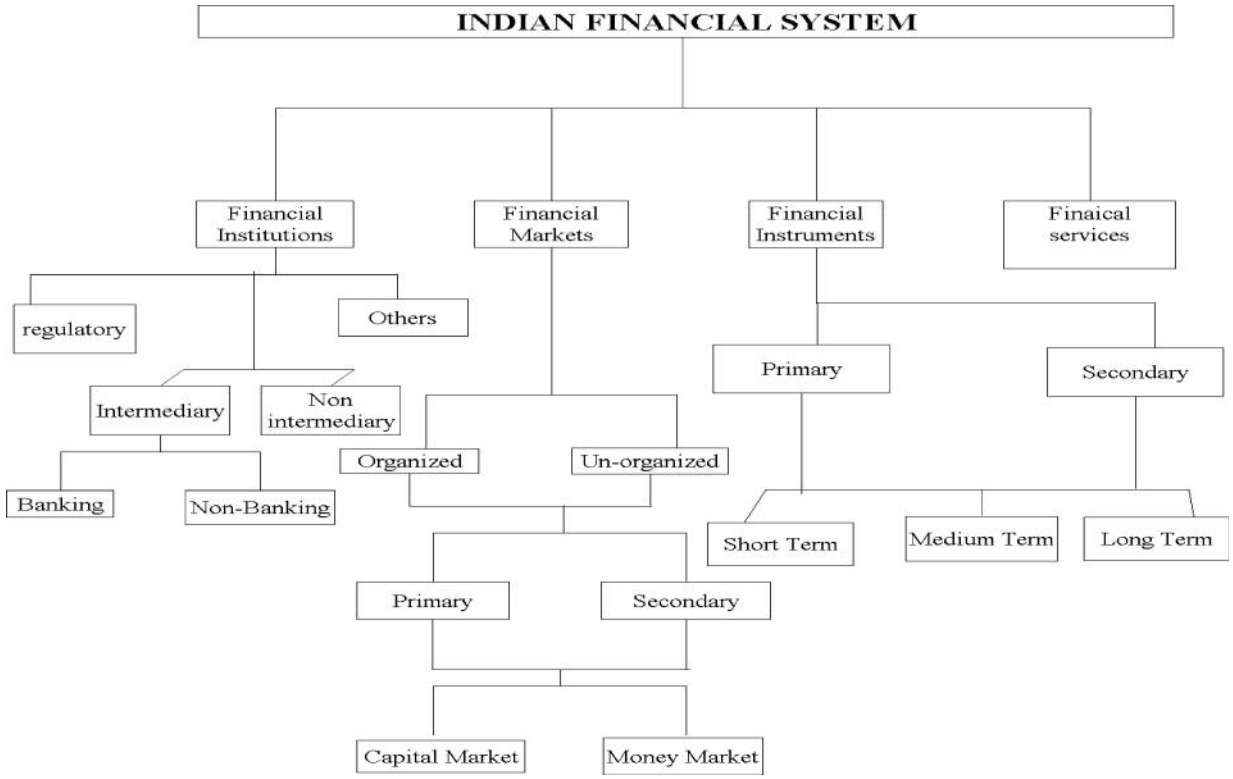


Fig. 1.2

1.2 WHAT IS A MUTUAL FUND?

A mutual fund is a legal vehicle that enables a collective group of individuals to:

i. Pool their surplus funds and collectively invest in instruments / assets for a common investment objective.

ii. Optimize the knowledge and experience of a fund manager, a capacity that individually they may not have.

iii. Benefit from the economies of scale which size enables and is not available on an individual basis. Investing in a mutual fund is like an investment made by a collective.

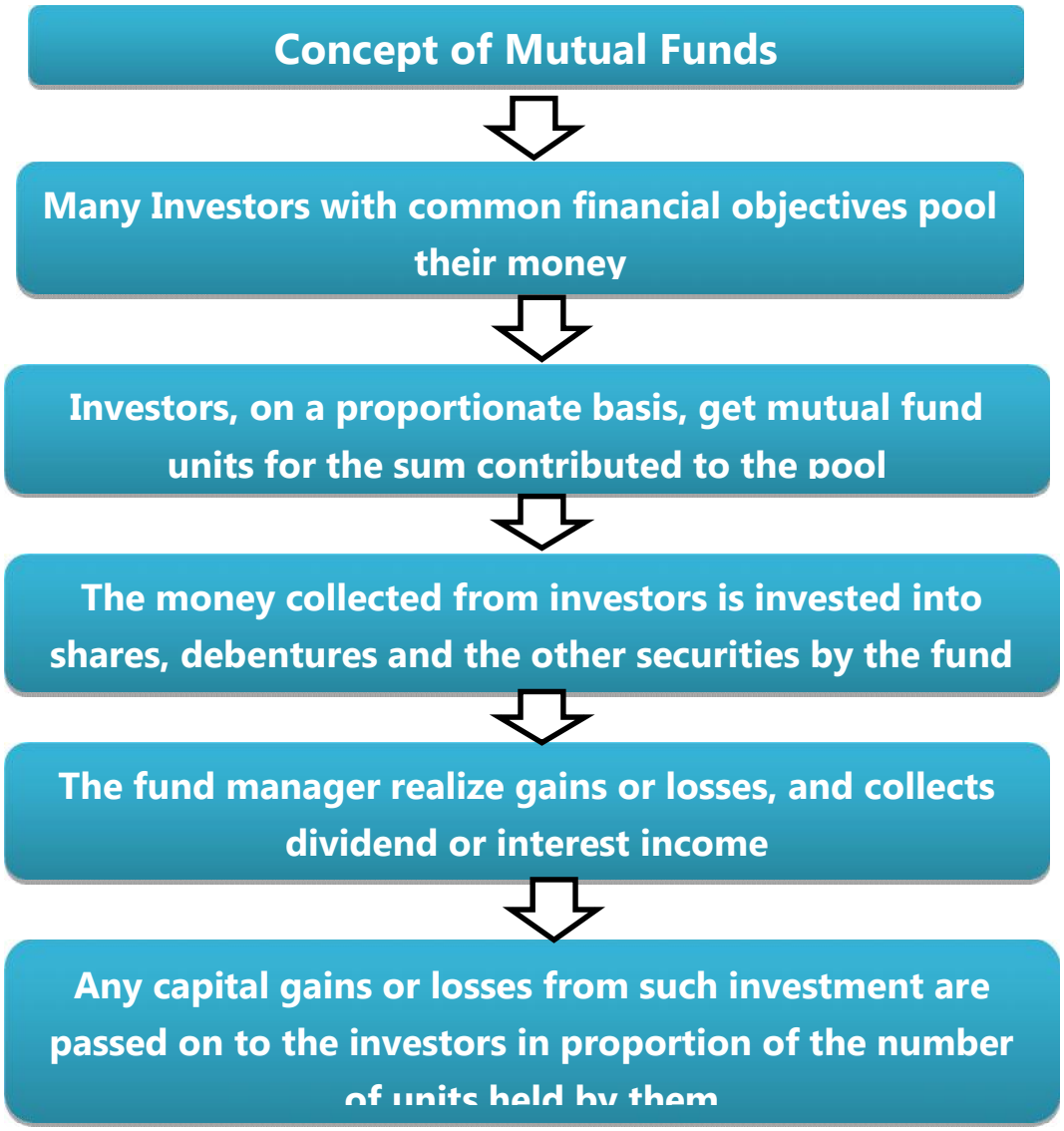


FIG. 1.3

An individual as a single investor is likely to have lesser amount of money at disposal than say, a group of friends put together. Now, let's assume that this group of individuals is a novice in investing and so the group turns over the pooled funds to an expert to make their money work for them. This is what a professional Asset Management Company does for mutual funds. The AMC invests the investors' money on their behalf into various assets towards a common investment objective.

Hence, technically speaking, a mutual fund is an investment vehicle which pools investors' money and invests the same for and on behalf of investors, into stocks, bonds, money market instruments and other assets. The money is received by the AMC with a promise that it will be invested in a particular manner by a professional manager (commonly known as fund managers). The fund managers are expected to honor this promise. The SEBI and the Board of Trustees ensure that this actually happens.

When an investor subscribes for the units of a mutual fund, he becomes part owner of the assets of the fund in the same proportion as his contribution amount put up with the corpus (the total amount of the fund). Mutual Fund investor is also known as a mutual fund shareholder or a unit holder.

Any change in the value of the investments made into capital market instruments (such as shares, debentures etc.) is reflected in the **Net Asset Value (NAV)** of the scheme. **NAV** is defined as the market value of the Mutual Fund scheme's assets net of its liabilities. **NAV** of a scheme is calculated by dividing the market value of scheme's assets by the total number of units issued to the investors.

For example:

A. If the market value of the assets of a fund is Rs. 100,000
B. The total number of units issued to the investors is equal to 10,000.
C. Then the NAV of this scheme = (A)/(B), i.e. 100,000/10,000 or 10.00
D. Now if an investor 'X' owns 5 units of this scheme
E. Then his total contribution to the fund is Rs. 50 (i.e. Number of units held multiplied by the NAV of the scheme).

1.3 INDUSTRY PROFILE: MUTUAL FUNDS:

Mutual funds go back to the times of the Egyptians and Phoenicians when they sold shares in caravans and vessels to spread the risk of these ventures. The foreign and colonial government Trust of London of 1868 is considered to be the fore-runner of the modern concept of mutual funds. The USA is, however, considered to be the Mecca of modern mutual funds. By the early - 1930s quite a large number of close - ended mutual funds were in operation in the U.S.A. Much latter in 1954, the committee on finance for the private sector recommended mobilization of savings of the middle class investors through unit trusts. Finally in July 1964, the concept took root in India when Unit Trust of India was set up.

1.3.1 MUTUAL FUND INDUSTRY

The mutual fund industry in India is one of the emerging industries in India. Today, the Indian mutual fund industry has 44 players. The number of public sector players has reduced from 11 to 5. The public sector has gradually receded into the background, passing on a large chunk of market share to private sector players.

The Association of Mutual Funds in India (AMFI) is the industry body set up to facilitate the growth of the Indian mutual fund industry. It plays a pro-active role in identifying steps that need to be taken to protect investors and promote the mutual fund sector.

It is noteworthy that AMFI is not a Self-Regulatory Organisation (SRO) and its recommendations are not binding on the industry participants. By its very nature, AMFI has an advisor's or a counsellor's role in the mutual fund industry. Its recommendations become mandatory if and only if the Securities and Exchange Board of India (SEBI) incorporates them into the regulatory framework it stipulates for mutual funds.

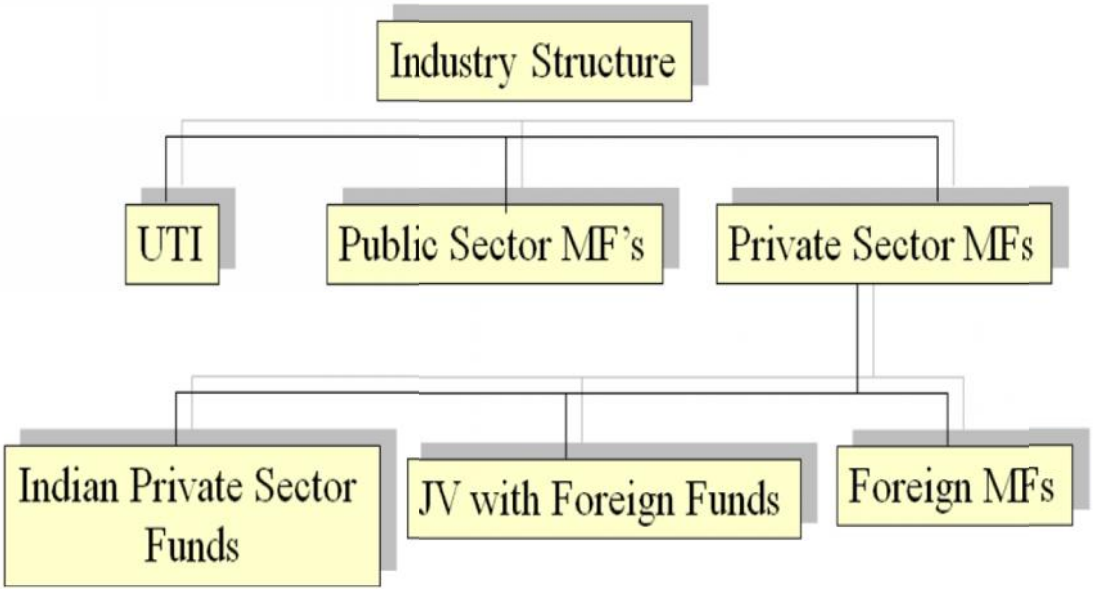


FIG. 1.4

STRUCTURE OF MUTUAL FUNDS IN INDIA

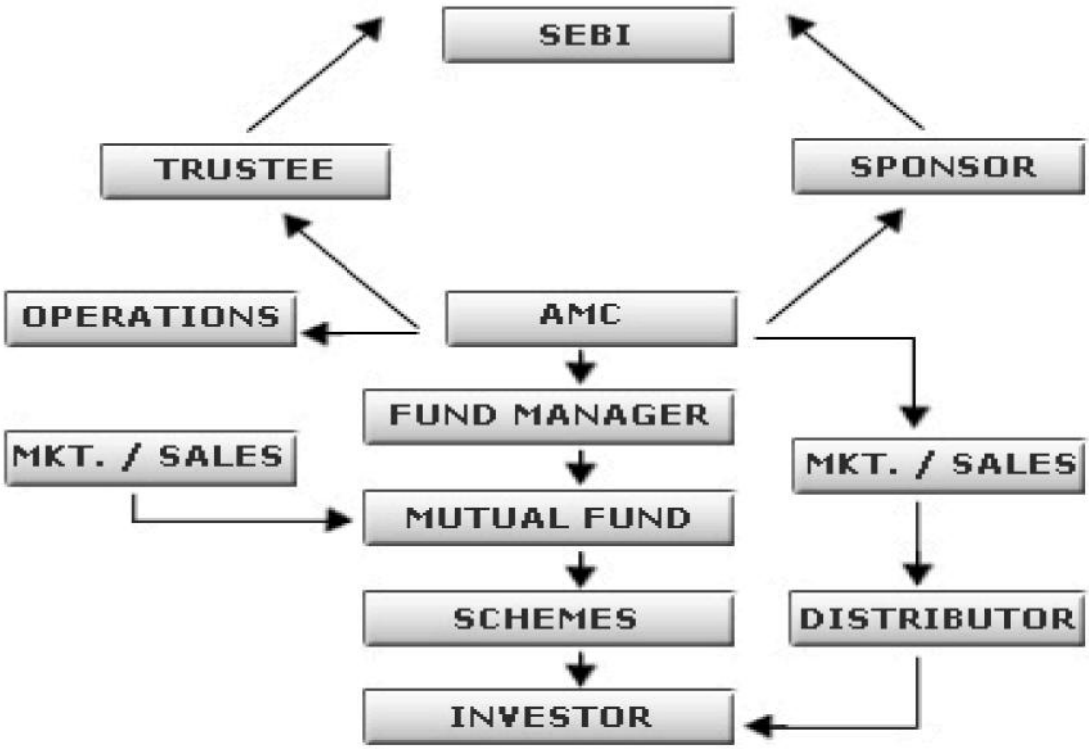


Fig. 1.5

Like other countries, India has a legal framework within which mutual funds must be constituted. In India, open and close – end funds operate under the same regulatory structure, i.e. in India, all mutual funds are constituted along one unique structure – as unit trust. A mutual fund in India is allowed to issue open – end and close – end schemes under a common legal structure. The structure, which is required to be followed by mutual funds in India, laid down under SEBI (Mutual Fund) Regulations, 1996.

THE FUND SPONSOR

'Sponsor' is defined under SEBI Regulations as any person who, acting alone or in combination with another body corporate establishes a mutual fund. The sponsor of a fund is akin to the promoter of companies he gets the fund registered with SEBI. The sponsor will form a Trust and appoint a Board of Trustees. All these appointments are made in accordance with the SEBI Regulations. As per the existing SEBI Regulations, for a person to qualify as a sponsor, must contribute at least 40% of the net worth of the AMC and issues a sound financial track over five years prior to registration.

MUTUAL FUNDS AS TRUSTS

Mutual Fund in India is constituted in the form of a Public Trust under the Indian Trust Act 1882. The fund invites investors to contribute their money in the common pool by subscribing to units issued by various schemes established by the Trust as evidence of their beneficial interest in the fund. The Trust or Fund has no legal capacity itself rather it is the Trustee(s) who have legal capacity and therefore the trustees take all acts in relation to the Trust itself.

TRUSTEES

A Board of Trustees – a body of individuals, or a trust company – a corporate body, may manage the Trust. Board of Trustees manages most of the funds in India. The Trust is created through a document called the Trust Deed that is executed by the Fund Sponsor in favors of the trustees. They are the primary guardian of the unit holder's funds and assets. They ensure that AMC's operations are along professional lines.

RIGHT OF TRUSTEES

a) Appoint the AMC with the prior approval of SEBI
b) Approve each of the schemes floated by the AMC
c) Have the right to request any necessary information from the AMC concerning the operations of various schemes managed by the AMC

OBLIGATIONS OF THE AMC AND ITS DIRECTORS

They must ensure that:

a) Investment of funds is in accordance with SEBI Regulations and the Trust Deed
b) Take responsibility for the act of its employees and others whose services it has procured
c) Do not undertake any other activity conflicting with managing the fund

ASSET MANAGEMENT COMPANY

The role of an Asset Management Company (AMC) is to act as the investment manager of the trust under the Board supervision.

TRANSFER AGENTS

Transfer Agents are responsible for issuing and redeeming units of the mutual fund and provide other related services such as preparation of transfer documents updating investor's records. A fund may choose to opt this activity in-house or by an outside transfer agent.

DISTRIBUTORS

AMCs usually appoint distributors or brokers, who sell units on behalf of the fund. Some funds require that all transactions to be routed through such brokers.

BANKERS

A fund's activities involved dealing with the money on a continuous basis primarily with respect to buying and selling units, paying for investment made, receiving the proceeds from sale of investment and discharging its obligations towards operative expenses. A fund's banker therefore plays a crucial role with respect to its financial dealings.

CUSTODIAN AND DEPOSITORY

The custodian is appointed by the Board of Trustees for safekeeping of securities in terms of physical delivery and eventual safe keeping or participating in the clearing system through approved depository companies.

1.3.2 ASSOCIATION OF MUTUAL FUNDS IN INDIA

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 organisation. Association of Mutual Funds in India (AMFI) was incorporated on 22nd August, 1995.

AMFI is a 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 holder.

THE OBJECTIVES OF ASSOCIATION OF MUTUAL FUNDS IN INDIA.

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 high professional and ethical standards 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 in 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 programmed for investor's 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

1.3.3 HISTORY OF MUTUAL FUND INDUSTRY

The mutual fund industry in India started in 1963 with the formation of Unit Trust of India, at the initiative of the Government of India and Reserve Bank of India. The history of mutual funds in India can be broadly divided into four distinct phases

FIRST PHASE - 1964-1987

Unit Trust of India (UTI) was established in 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.

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. 1,21,805 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 graph indicates the growth of assets over the years.

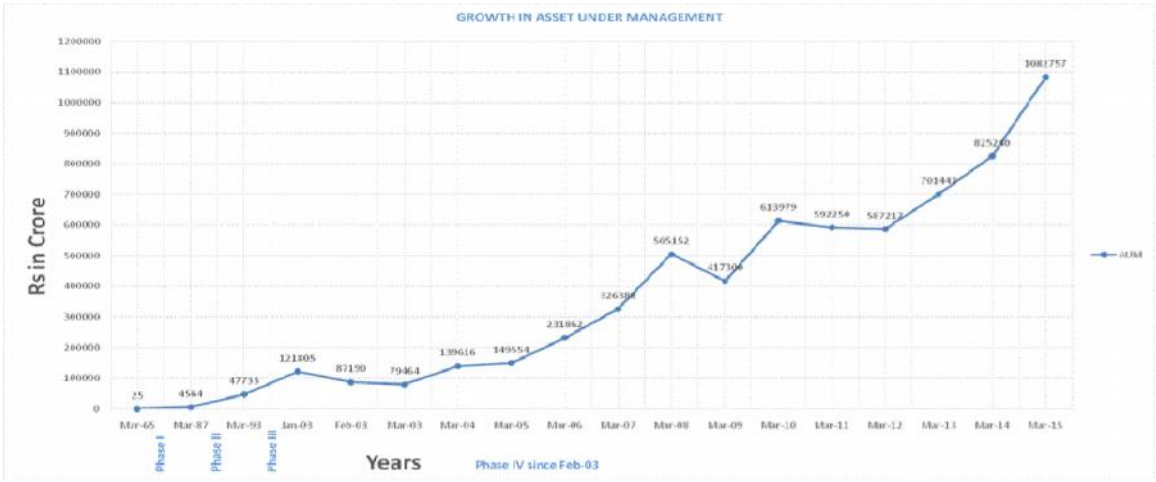


Fig. 1.6

Note:

Erstwhile UTI was bifurcated into UTI Mutual Fund and the Specified Undertaking of the Unit Trust of India effective from February 2003. The Assets under management of the Specified Undertaking of the Unit Trust of India has therefore been excluded from the total assets of the industry as a whole from February 2003 onwards.

1.3.4 PLAYER PROFILE

More than 40 Asset Management Companies [AMC] have set up their operations since the liberalization of the Indian economy in 1993. Currently, 44 AMCs are operating in India and these comprise private sector companies, joint ventures (including those with foreign entities), bank-sponsored, etc. The industry has a tiered structure with the top 7 AMCs having 70% of the industry Asset under Management [AUM].

AUM analysis across AMCs (March 2015)				
	AMC AUM as % of industry AUM	Nos of AMCs	AMC AUM range (Rs cr)	Group AUM as % of industry AUM
Group I	10% - 14%	4	110,000 - 150,000	49%
Group II	5% - 10%	3	60,000 - 80,000	20%
Group III	2% - 5%	6	20,000 - 50,000	18%
Group IV	1% - 2%	6	10,000 - 20,000	6%
Group V	<1%	25	30 - 8,000	7%

Table 1.1 **Source: AMFI, ICRON analysis**

1.3.5 CUSTOMER SEGMENTS

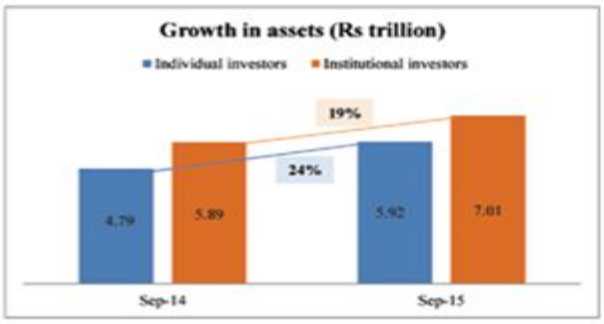
Institutional investors currently hold 54% of assets with individual investors increasing their share from 45% to 46% in the last one year (source: AMFI). The institutional investor group comprises corporates (85%) as well as Indian and foreign institutions and banks.

The number of investor accounts had hit a low of 39.5 mn in March 2014 compared to levels of 48 mn witnessed in 2009. There has been a recovery in the last one year, and the figure increased to 42.8 mn by June 2015. 99% of such accounts are individual investor accounts, which include both retail and High Net worth Individual [HNI] investors (ticket size greater than Rs 5 lakh).

Composition of investor accounts *(as on June 30, 2015)*	
	Nos of accounts (million)
Retail investors	40.88
HNI investors	1.52
Institutional investors	0.37

Table 1.2 **Source: AMFI, ICRON analysis**

1.3.6 BUYING BEHAVIOUR



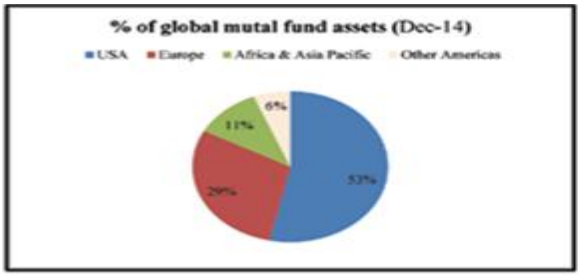
- 58% of individual investor assets are held in equity oriented schemes;
- 88% of institution assets are held in liquid / money market and debt-oriented schemes.

Fig. 1.7 Source : AMFI, ICRON analysis

Fig. 1.8 Source : AMFI, ICRON analysis

1.3.7 Growth in global AUM

AUM of world-wide mutual funds and exchange-traded funds [ETF] stood at $33.4 trillion at year-end 2014, with more than 80% of the assets held across USA and Europe.



- Dec 31, 2014 - AUM of Indian AMCs at Rs 10.5 trillion;
- Equivalent to 0.5% of global AUM.

Fig. 1.9 Source : AMFI, ICRON analysis

Mature markets of USA and Europe have demonstrated lower CAGR for the 5-year period starting from the beginning of this decade. Higher growth in India represents the latent potential of the Indian market which can be tapped to improve the penetration of the mutual fund industry in India.

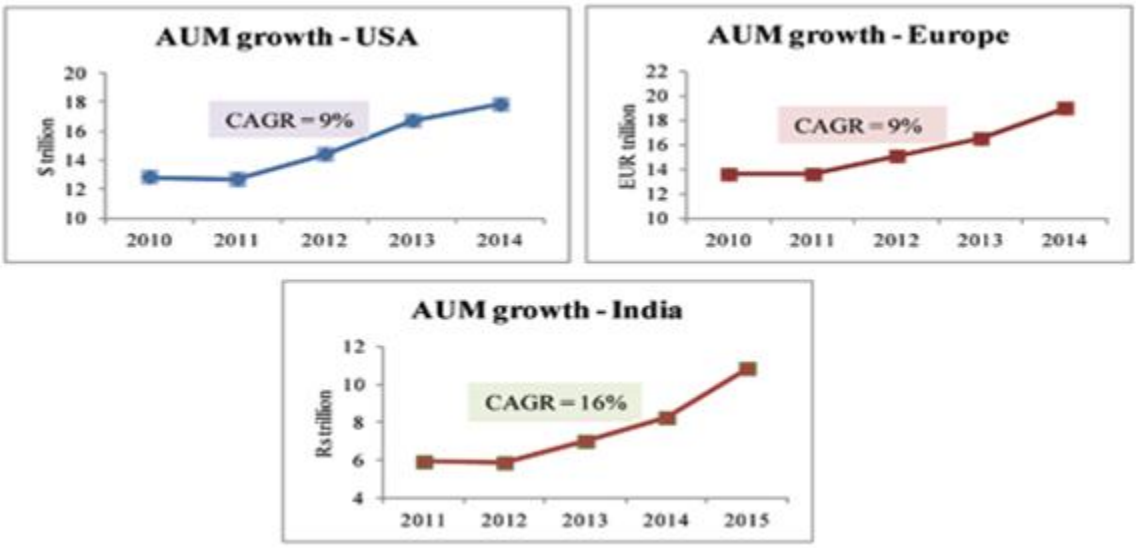


Fig. 1.10 **Source : ICF 2015, EFAMA 2015, AMFI, ICRON analysis**

1.3.8 DEMAND DRIVERS IN GLOBAL MARKETS

Asset allocation (% of regional AUM)					
US *December 2014*		**Europe** *December 2013*		**India** *September 2015*	
Equity	52%	Bond	43%	Income	46%
Bond	22%	Equity	33%	Equity	33%
Money market	17%	Others	16%	Money market	15%
Hybrid	9%	Money market	8%	Others	6%

Table 1.3 **Source : ICF 2015, EFAMA 2015, AMFI, ICRON analysis**

1.4 PERFORMANCE ANALYSIS

While the popularity of the mutual fund industry can be attributed to growing investor awareness, success of investor education campaigns, and an investorcentric regulatory regime, the most crucial factor that will decide the future course of the industry is its performance.

As of September 2015, the 10-year average return generated by Indian mutual funds across all fund types and asset classes is around 10.2%. Equity-oriented schemes have returned 13.8% and debt schemes, 7.9%.

1.4.1 EQUITY-ORIENTED SCHEMES

The success of this category is crucial for attracting individual investors as 83% of the asset pool for equity funds comes from them (Retail + HNI). As of September 2015, the average ticket size in equity schemes is Rs. 0.12 mn and the main investment objective is to generate superior returns. Mutual funds enjoy an especially important status in channelizing household savings to the capital market, where a lay investor is at a disadvantage in making informed investment decisions. This source of funds from the capital market is essential both from the perspective of meeting the need for funds, as also for efficient price discovery, which a larger pool of funds brings to the secondary market.

From an investor's perspective, over a long term investment horizon, equity funds in India have managed to generate positive real returns, after adjusting for inflation. At the same time, traditional asset classes such as gold and real estate have struggled with generating inflation adjusted returns. The Indian equity space also makes a strong case for active fund managed vis-à-vis the success of more passive forms of equity investment management seen elsewhere in developed markets. The trailing returns over the past 10-years across the average actively managed fund, relative to a broad benchmark such as the CNX Nifty 50 bear this out. The ELSS category is also an essentially actively managed space. Here again, funds have demonstrated positive inflation adjusted returns, as well as returns higher than benchmarks. There have been pockets of underperformance, where the active style of investment management has not justified the expenses charged for such fund management, this has led to some consolidation in the types of schemes managed within an asset management company, albeit at the behest of the regulator. Furthermore, funds which aim to diversify across economies, i.e. global funds have met with limited traction, as performance has been disappointing relative to domestic diversified funds. Currency fluctuations, as well as the better performance of Indian equities have meant that global funds are yet to achieve reasonable share of assets managed.

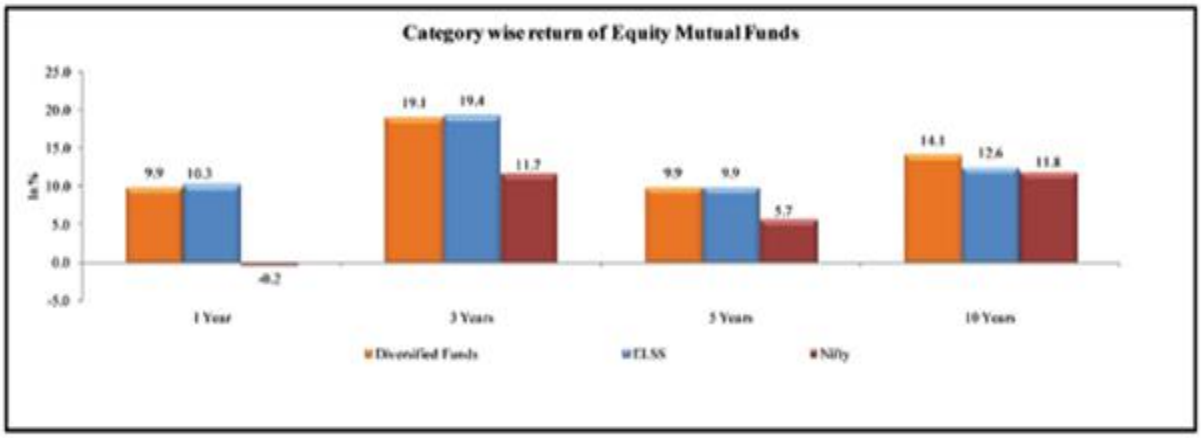


Fig. 1.11

1.4.2 DEBT-ORIENTED SCHEMES

The industry has met with limited success in attracting retail investors to the debt fund category. Institutions looking for liquidity management are the primary investors within this category.
A case for dynamically managed fixed income funds has emerged with the changes in interest rates in the current economic environment. Since the start of 2015, RBI has cut interest rates six times, totaling 125 bps.As a result, in the last one year, dynamic bond funds have fetched 10%-12% returns, higher than conventional long-term or short-term bond funds. However, there is a large range of returns delivered by dynamic bond funds and the volatility in interest rates has been both, an opportunity and a challenge for fund managers. This performance trend is evident within the Gilt fund category as well, and there has been a revival of investor interest in such funds, with a wide range of underperformance and high performance.

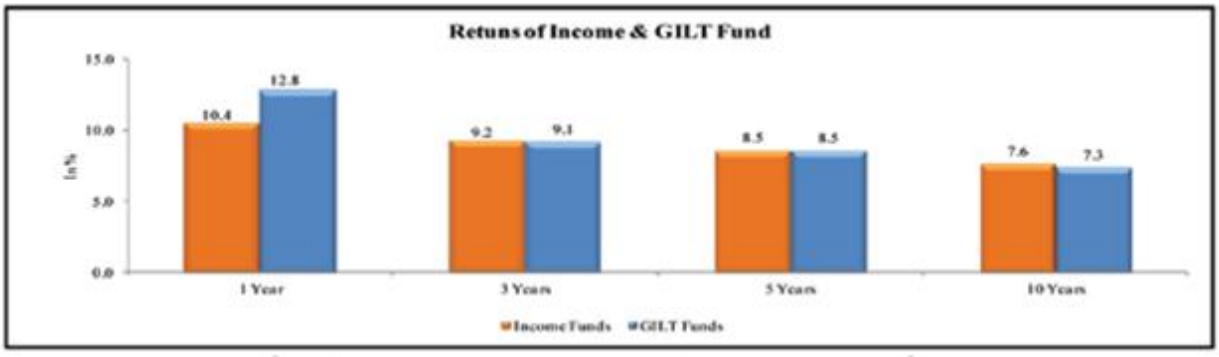


Fig. 1.12 Source : ICRON analysis

Liquid and other short-term funds have served their purpose of liquidity management in the last 10 years.The category sees the lowest participation from individual investors, at just 8% of AUM as of September 2015, as retail investors continue to prefer bank deposits. There is considerable fund flow across these categories within the short-term, in line with the dynamic shifts of the yield curve at the shorter-end. In the recent past there has been significant alpha generated by fixed income plans, however, given the close-ended nature of these funds, the price of higher performance comes with a price of illiquidity.

At the short and medium end of the yield curve there have emerged a few new products such as credit opportunity funds. The success of such funds is entirely dependent on a deepening bond market, as investors and fund managers look for newer sources of generating alpha.

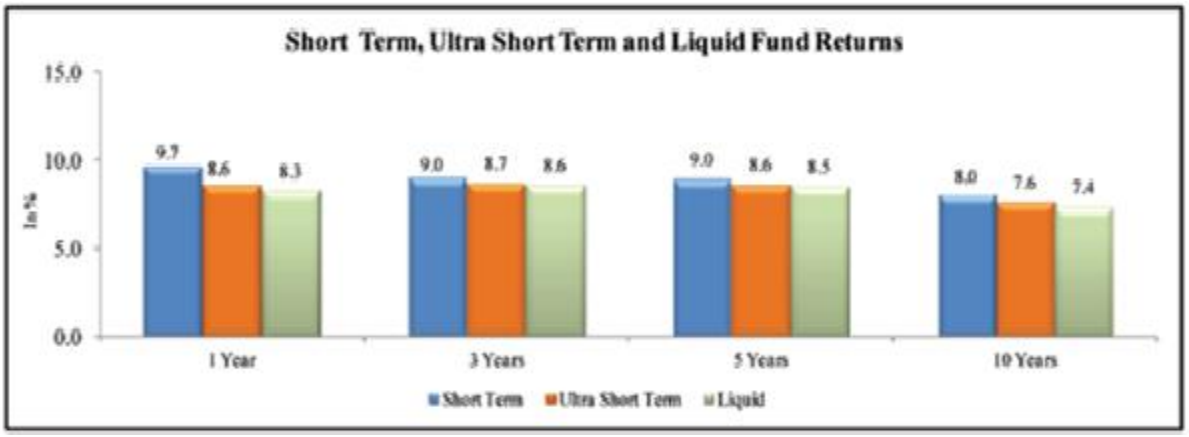


FIG. 1.13 Source : ICRON analysis

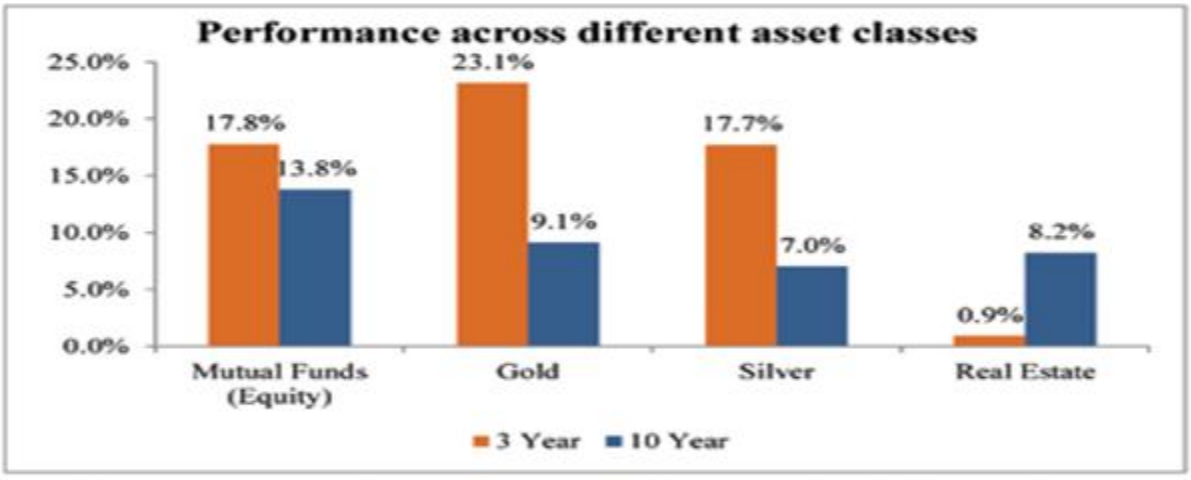


FIG. 1.14 Source : ICRON analysis

1.5 MUTUAL FUNDS STRUCTURE

The SEBI (Mutual Funds) Regulations 1993 define a mutual fund (MF) as a fund established in the form of a trust by a sponsor to raise monies by the Trustees through the sale of units to the public under one or more schemes for investing in securities in accordance with these regulations.

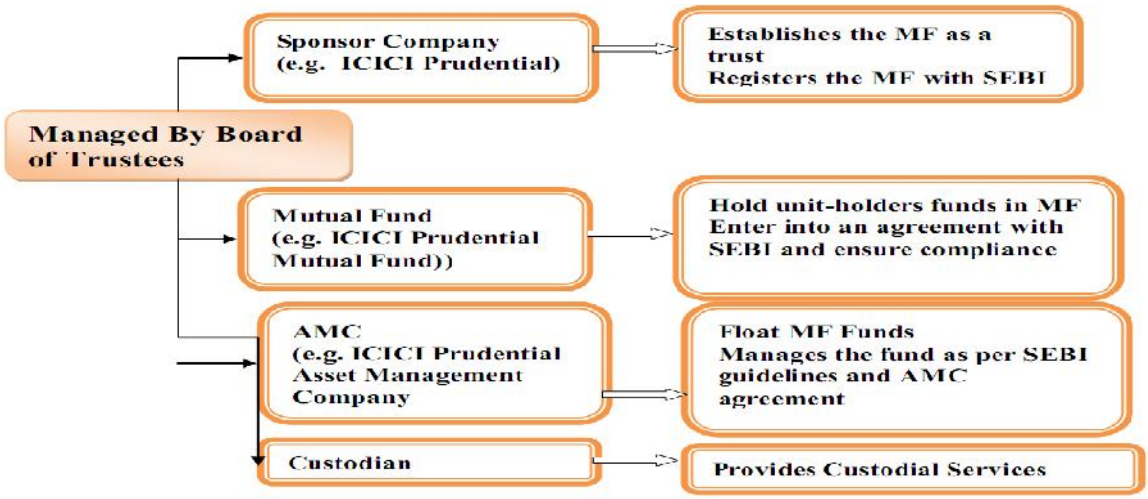


FIG. 1.15

These regulations have since been replaced by the SEBI (Mutual Funds) Regulations, 1996. The structure indicated by the new regulations is indicated as under. A mutual fund comprises four separate entities, namely sponsor, mutual fund trust, AMC and custodian. The sponsor establishes the mutual fund and gets it registered with SEBI.

The mutual fund needs to be constituted in the form of a trust and the instrument of the trust should be in the form of a deed registered under the provisions of the Indian Registration Act, 1908.

The **Custodian** maintains the custody of the securities in which the scheme invests. It also keeps a tab on corporate actions such as rights, bonus and dividends declared by the companies in which the fund has invested. The Custodian is appointed by the Board of Trustees. The Custodian also participates in a clearing and settlement system through approved depository companies on behalf of mutual funds, in case of dematerialized securities.

The **sponsor** is required to contribute at least 40% of the minimum net worth (Rs. 10 crore) of the asset management company. The board of trustees manages the MF and the sponsor executes the trust deeds in favour of the trustees. It is the job of the MF trustees to see that schemes floated and managed by the AMC appointed by the trustees are in accordance with the trust deed and SEBI guidelines

1.6 TYPES OF RETURN

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

1. 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.
2. 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.
3. If fund holdings increase in price but are not sold by the fund manager, the fund's shares increase in price. You can then sell your mutual fund shares for a profit. Funds will also usually give you a choice either to receive a check for distributions or to reinvest the earnings and get more shares.

1.7 INDICATORS OF INVESTMENT RISK

There are five main indicators of investment risk that apply to the analysis of stocks, bonds and 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).

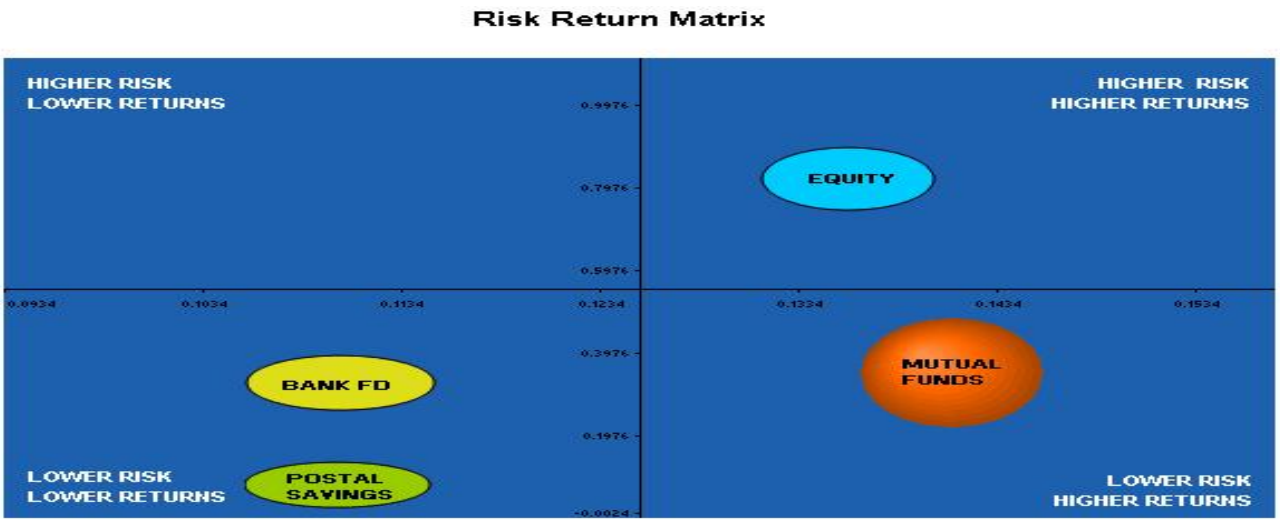


Fig. 1.16

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.

1.8 UNDERSTANDING AND MANAGING RISK

All investments whether in shares, debentures or deposits involve risk: share value may go down depending upon the performance of the company, the industry, state of capital markets and the economy; generally, however, longer the term, lesser the risk; companies may default in payment of interest/principal on their debentures/bonds/deposits; the rate of interest on an investment may fall short of the rate of inflation reducing the purchasing power.

While risk cannot be eliminated, skillful management can minimize risk. Mutual Funds help to reduce risk through diversification and professional management. The experience and expertise of Mutual Fund managers in selecting fundamentally sound securities and timing their purchases and sales help them to build a diversified portfolio that minimize risk and maximizes returns.

The risk return trade-off indicates that if investor is willing to take higher risk then correspondingly he can expect higher returns and vice versa if he pertains to lower risk instruments, which would be satisfied by lower returns. For example, if an investors opt for bank FD, which provide moderate return with minimal risk. But as he moves ahead to invest in capital protected funds and the profit-bonds that give out more return which is slightly higher as compared to the bank deposits but the risk involved also increases in the same proportion.

Thus investors choose mutual funds as their primary means of investing, as Mutual funds provide professional management, diversification, convenience and liquidity. That doesn't mean mutual fund investments risk free. This is because the money that is pooled in are not invested only in debts funds which are less riskier but are also invested in the stock markets which involves a higher risk but can expect higher returns.

1.8.1 RISKS ASSOCIATED WITH MUTUAL FUNDS

At the cornerstone of investing is the basic principle that the greater the risk you take, the greater the potential reward. Remember that the value of all financial investments will fluctuate.

Individual tolerance for risk varies, creating a distinct "investment personality" for each investor. Some investors can accept short-term volatility with ease, others with near panic. So whether you consider your investment temperament to be conservative, moderate or aggressive, you need to focus on how comfortable or uncomfortable you will be as the value of your investment moves up or down.

1.8.2 TYPES OF RISKS

All investments involve some form of risk. Even an insured bank account is subject to the possibility that inflation will rise faster than your earnings, leaving you with less real purchasing power than when you started (Rs. 1000 gets you less than it got your father when he was your age).

Consider these common types of risk and evaluate them against potential rewards when you select an investment.

FIG. 1.17

- **Market Risk**

At times the prices or yields of all the securities in a particular market rise or fall due to broad outside influences. When this happens, the stock prices of both an outstanding, highly profitable company and a fledgling corporation may be affected. This change in price is due to "market risk".

- **Inflation Risk**

Sometimes referred to as "loss of purchasing power." Whenever inflation sprints forward faster than the earnings on your investment, you run the risk that you'll actually be able to buy less, not more. Inflation risk also occurs when prices rise faster than your returns.

- **Credit Risk**

In short, how stable is the company or entity to which you lend your money when you invest? How certain are you that it will be able to pay the interest you are promised, or repay your principal when the investment matures?

- **Interest Rate Risk**

Changing interest rates affect both equities and bonds in many ways. Investors are reminded that "predicting" which way rates will go is rarely successful. A diversified portfolio can help in offseting these changes.

- **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.

- **Investment Risk**

The sectoral fund schemes, investments will be predominantly in equities of select companies in the particular sectors. Accordingly, the NAV of the schemes are linked to the equity performance of such companies and may be more volatile than a more diversified portfolio of equities.

- **Changes In Government Policy**

Changes in Government policy especially in regard to the tax benefits may impact the business prospects of the companies leading to an impact on the investments made by the fund.

1.8.3 MANAGING RISKS

Mutual funds offer incredible flexibility in managing investment risk. Diversification and Automatic Investing (SIP) are two key techniques you can use to reduce your investment risk considerably and reach your long-term financial goals.

- **Diversification**

When you invest in one mutual fund, you instantly spread your risk over a number of different companies. You can also diversify over several different kinds of securities by investing in different mutual funds, further reducing your potential risk.

Diversification is a basic risk management tool that you will want to use throughout your lifetime as you rebalance your portfolio to meet your changing needs and goals. Investors, who are willing to maintain a mix of equity shares, bonds and money market securities have a greater chance of earning significantly higher returns over time than those who invest in only the most conservative investments.

Additionally, a diversified approach to investing -- combining the growth potential of equities with the higher income of bonds and the stability of money markets -- helps moderate your risk and enhance your potential return.

1.9 MUTUAL FUND INVESTING STRATEGIES

Systematic investment plan (SIP's):

These are best suited for young people who have started there careers and needs to built there wealth. Sips entail the investor to invest a fixed sum of money at regular intervals in the mutual fund schemes the investor as chosen, an investor opting for sip in xyz mutual fund scheme will need to invest certain sum on money every month/quarter/half yearly in the scheme. By investing through sip, one ends up buying more units when the price is low and fewer units when the price is high. However, over a period of time these market fluctuations are generally averaged. And the average cost of the investment is often reduced. It is far better to invest small amount of money regularly, rather than save up to make a large investment. This is because while saving is in the lump sum, it may not earn much interest. The Unitholders of the Scheme can benefit by investing specific Rupee amounts periodically, for a continuous period. Mutual fund SIP allows the investors to invest a fixed amount of Rupees every month or quarter for purchasing additional units of the Scheme at NAV based prices.

Here is an illustration using hypothetical figures indicating how the SIP can work for investors:

Suppose an investor would like to invest Rs.1,000 under the Systematic Investment Plan on a quarterly basis.

	Amount Invested (Rs.)	Purchase Price (Rs.)	No. of Units Purchased
Initial Investment	1000	10	100
1	1000	8.20	121.95
2	1000	7.40	135.14
3	1000	6.10	163.93
4	1000	5.40	185.19
5	1000	6.00	166.67
6	1000	8.20	121.95
7	1000	9.25	108.11
8	1000	10.00	100.00
9	1000	11.25	88.89
10	1000	13.40	74.63
11	1000	14.40	69.44
TOTAL	12,000	-	1,435.90

Average unit cost Rs 12,000/1,435.9 = Rs 8.36

Average unit price 109.6/12 = Rs 9.13

Unit price at beginning of next quarter Rs 14.90

Market value of investment 1435.9 * 14.90= Rs 21,395/-

The investor liquidates his units and gets back Rs 21,395/-

Using the SIP strategy the investor can reduce his average cost per unit. The investor gets the advantage of getting more units when the market is turned down.

Systematic withdrawal plan (swp's):

These plans are suited for people nearing retirement .In these plans, an investor invest in a mutual fund scheme and is allowed to withdraw a fixed sum of money at regular intervals to take care of its expenses.

Systematic transfer plan (stp's):

They allows investor to transfer on a periodic basis a specified amount from one scheme to another within the same fund family- meaning two schemes belonging to the same mutual fund. A transfer will be treated as redemption of units from the scheme from which the transfer is made. Such redemption or investment will be at the applicable NAV. This service allows the investor to manage his investments actively to achieve his objectives. Many funds do not even charge any transaction fees for his service- an added advantage for the active investor.

1.10 REGULATORY AUTHORITIES

To protect the interest of the investors, SEBI formulates policies and regulates the mutual funds. It notified regulations in 1993 (fully revised in 1996) and issues guidelines from time to time. MF either promoted by public or by private sector entities including one promoted by foreign entities is governed by these Regulations. SEBI approved Asset Management Company (AMC) manages the funds by making investments in various types of securities. Custodian, registered with SEBI, holds the securities of various schemes of the fund in its custody.

According to SEBI Regulations, two thirds of the directors of Trustee Company or board of trustees must be independent. The Association of Mutual Funds in India (AMFI) reassures the investors in units of mutual funds that the mutual funds function within the strict regulatory

framework. Its objective is to increase public awareness of the mutual fund industry. AMFI also is engaged in upgrading professional standards and in promoting best industry practices in diverse areas such as valuation, disclosure, transparency etc.

1.11 MUTUAL FUNDS IN INDIA

1) ABN AMRO Mutual Fund
2) Benchmark Mutual Fund
3) Birla Sun Life Mutual Fund
4) Bharti AXA Mutual Fund
5) BOB Mutual Fund
6) Canara Robero Mutual Fund
7) DBS Chola Mutual Fund
8) Deutsche Mutual Fund
9) DSP BlackRock Mutual Fund
10) Escorts Mutual Fund
11) Fidelity Mutual Fund
12) Fortis (ABN) Mutual Fund
13) Franklin Templeton Mutual Fund
14) HDFC Mutual Fund
15) HSBC Mutual Fund
16) ING Vysya Mutual Fund
17) JM Financial Mutual Fund
18) Kotak Mahindra Mutual Fund
19) LIC Mutual Fund
20) Principal Mutual Fund
21) ICICI Prudential Mutual Fund
22) Reliance Mutual Fund
23) Sahara Mutual Fund
24) SBI Mutual Fund
25) Standard Chartered Mutual Fund
26) Sundaram Mutual Fund

27) Tata Mutual Fund

28) Taurus Mutual Fund

29) UTI Mutual Fund

1.12 TYPES OF MUTUAL FUNDS

There are wide variety of Mutual Fund schemes that cater to investor needs, whatever the age, financial position, risk tolerance and return expectations. The mutual fund schemes can be classified according to both their investment objective (like income, growth, tax saving) as well as the number of units (if these are unlimited then the fund is an open-ended one while if there are limited units then the fund is close-ended).

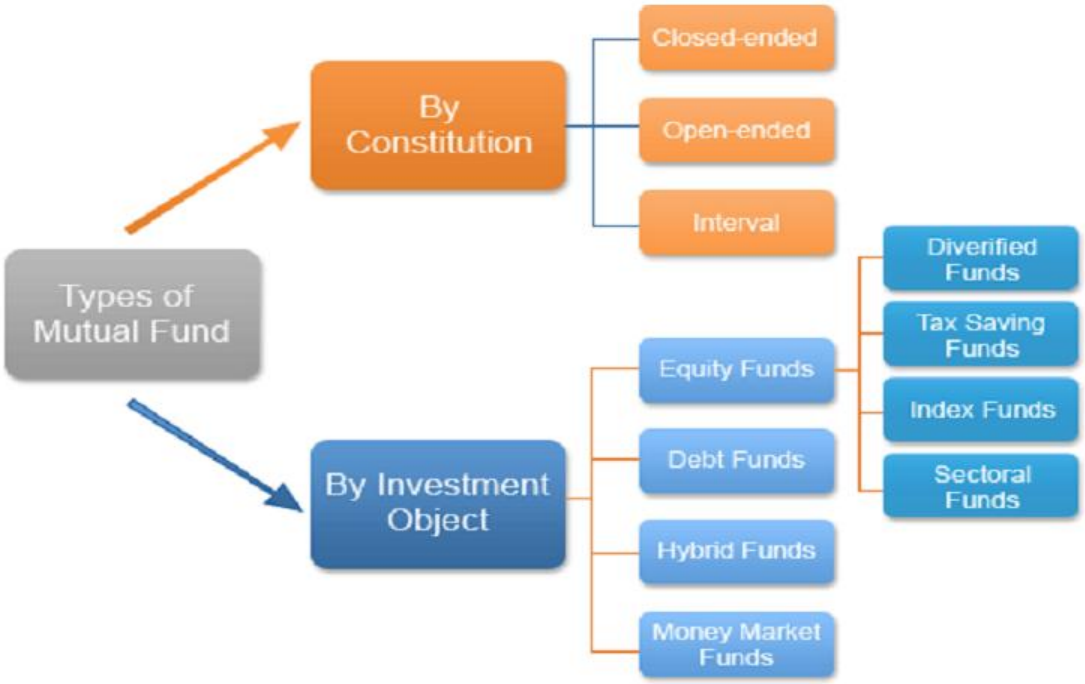


Fig. 1.18

1.12.1 BY CONSTITUTION

1.12.1.1 Open-Ended Schemes

These funds are sold at the NAV based prices, generally calculated on every business day. These schemes have unlimited capitalization, open-ended schemes do not have a fixed maturity - i.e. there is no cap on the amount you can buy from the fund and the unit capital can keep growing. These funds are not generally listed on any exchange.

Open-ended funds are bringing in a revival of the mutual fund industry owing to increased liquidity, transparency and performance in the new open-ended funds promoted by the private sector and foreign players. Open-ended funds score over close-ended ones on several counts. Some of these are listed below:

a) Any time exit option : The issuing company directly takes the responsibility of providing an entry and an exit. This provides ready liquidity to the investors and avoids reliance on transfer deeds, signature verifications and bad deliveries.

b) Tax advantage : Though Budget 2004 proposals envisage a tax rate of 20.91%(Corporate investors) and 13.06875% (Non-Corporate investors) on dividend distribution made by the Debt funds, the funds continue to remain attractive investment vehicles. In equity plans there is no distribution tax.

c) Any time entry option : An open-ended fund allows one to enter the fund at any time and even to invest at regular intervals (a systematic investment plan).

The open ended funds offered by **ICICI Prudential Mutual Fund** are

- Liquid Plan Income Plan
- Gilt-Treasury
- Gilt-Investment
- Balanced Fund
- Growth Fund

- Tax Plan
- FMCG Fund
- Technology Fund
- Monthly Income Plan
- Child Care Plan
- Power and Short Term Plan

1.12.1.2 Close Ended Schemes

Schemes that have a stipulated maturity period, limited capitalization and the units are listed on the stock exchange are called close-ended schemes.

These schemes have historically seen a lot of subscription. This popularity is estimated to be on account of firstly, public sector MFs having floated a lot of close-ended income schemes with guaranteed returns and secondly easy liquidity on account of listing on the stock exchanges.

The closed-ended fund managed by **ICICI Prudential Mutual Fund** is ICICI Premier.

1.12.2 CLASSIFICATION ACCORDING TO INVESTMENT OBJECTIVES

Objectives

Mutual funds have specific investment objectives such as growth of capital, safety of principal, current income or tax-exempt income. In general mutual funds fall into three general categories:

- Equity Funds invest in shares or equity of companies.
- Fixed-Income funds invest in government or corporate securities that offer fixed rates of return.
- Balanced Funds invest in a combination of both stocks and bonds.

1.12.2.1 Growth Funds

These funds seek to provide growth of capital with secondary emphasis on dividend. They invest in shares with a potential for growth and capital appreciation. Because they invest in well-established companies where the company itself and the industry in which it operates are thought to have good long-term growth potential, growth funds provide low current income. Growth funds generally incur higher risks than income funds in an effort to secure more pronounced growth.

These funds may invest in a broad range of industries or concentrate on one or more industry sectors. Growth funds are suitable for investors who can afford to assume the risk of potential loss in value of their investment in the hope of achieving substantial and rapid gains.

They are not suitable for investors who must conserve their principal or who must maximize current income.

1.12.2.2 Growth And Income Funds

Growth and income funds seek long-term growth of capital as well as current income. The investment strategies used to reach these goals vary among funds. Some invest in a dual portfolio consisting of growth stocks and income stocks, or a combination of growth stocks, stocks paying high dividends, preferred stocks, convertible securities or fixed-income securities such as corporate bonds and money market instruments. Others may invest in growth stocks and earn current income by selling covered call options on their portfolio stocks. Growth and income funds have low to moderate stability of principal and moderate potential for current income and growth. They are suitable for investors who can assume some risk to achieve growth of capital but who also want to maintain a moderate level of current income.

1.12.2.3 Fixed-Income Funds

The goal of fixed income funds is to provide current income consistent with the preservation of capital. These funds invest in corporate bonds or government-backed mortgage securities that have a fixed rate of return. Within the fixed-income category, funds vary greatly in their stability of principal and in their dividend yields. High-yield funds, which seek to maximize yield by investing in lower-rated bonds of longer maturities, entail less stability of principal than fixed-income funds that invest in higher-rated but lower-yielding securities.

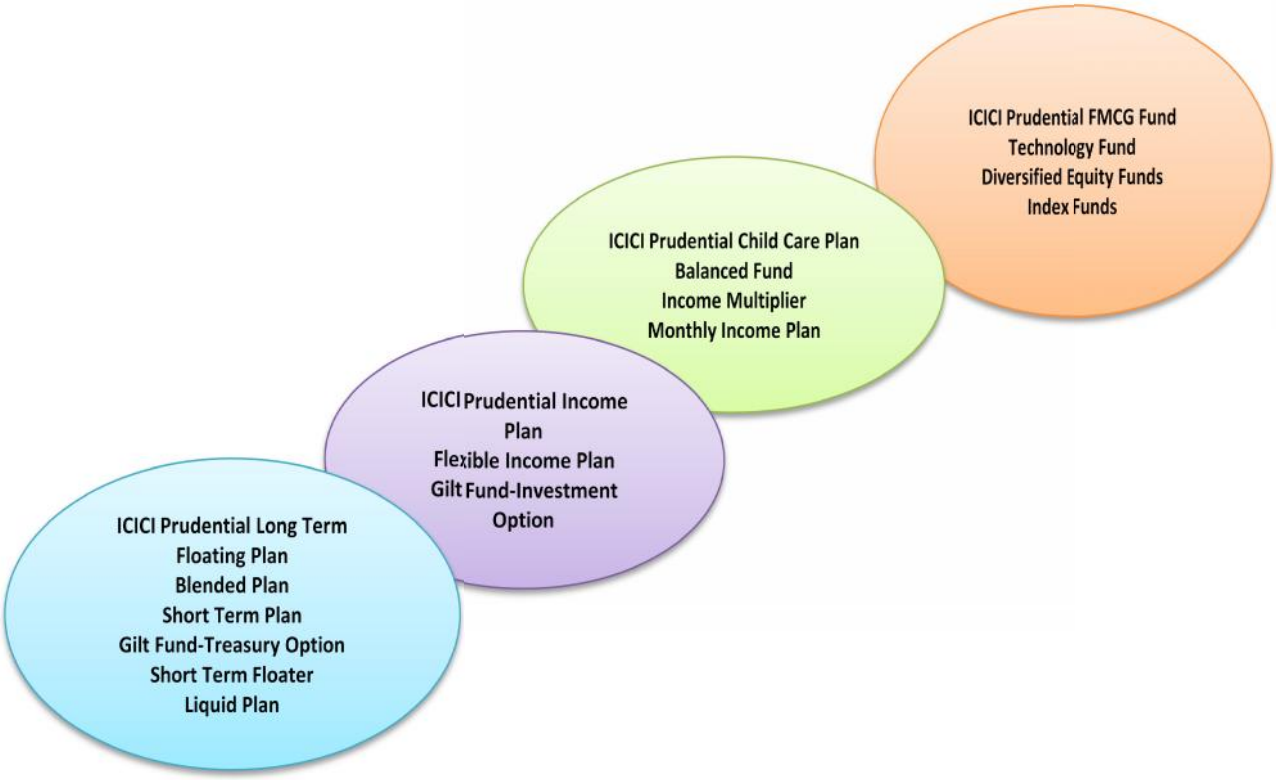


FIG. 1.19

Some fixed-income funds seek to minimize risk by investing exclusively in securities whose timely payment of interest and principal is backed by the full faith and credit of the Indian

Government. Fixed-income funds are suitable for investors who want to maximize current income and who can assume a degree of capital risk in order to do so.

1.12.2.4 Balanced Fund

The Balanced fund aims to provide both growth and income. These funds invest in both shares and fixed income securities in the proportion indicated in their offer documents. Ideal for investors who are looking for a combination of income and moderate growth.

1.12.2.5 Money Market Funds/Liquid Funds

For the cautious investor, these funds provide a very high stability of principal while seeking a moderate to high current income. They invest in highly liquid, virtually risk-free, short-term debt securities of agencies of the Indian Government, banks and corporations and Treasury Bills. Because of their short-term investments, money market mutual funds are able to keep a virtually constant unit price; only the yield fluctuates.

Therefore, they are an attractive alternative to bank accounts. With yields that are generally competitive with - and usually higher than -- yields on bank savings account, they offer several advantages. Money can be withdrawn any time without penalty. Although not insured, money market funds invest only in highly liquid, short-term, top-rated money market instruments.

Money market funds are suitable for investors who want high stability of principal and current income with immediate liquidity.

1.12.2.6 Specialty/Sector Funds

These funds invest in securities of a specific industry or sector of the economy such as health care, technology, leisure, utilities or precious metals. The funds enable investors to diversify holdings among many companies within an industry, a more conservative approach than investing directly in one particular company.

Sector funds offer the opportunity for sharp capital gains in cases where the fund's industry is "in favor" but also entail the risk of capital losses when the industry is out of favor. While sector

funds restrict holdings to a particular industry, other specialty funds such as index funds give investors a broadly diversified portfolio and attempt to mirror the performance of various market averages.

Index funds generally buy shares in all the companies composing the BSE Sensex or NSE Nifty or other broad stock market indices. They are not suitable for investors who must conserve their principal or maximize current income.

A summary is presented in the table below of the various funds and their investment objectives.

	Scheme type		Time Horizon	Risk Profile	Typical Investment Pattern		
Objective	Open	Close			Equity (%)	Debt (%)	Money Market Inst./Others (%)
Money Market	Yes	No	Short-Term	Low	0	0-20	80-100
Income	Yes	Yes	Medium - Long Term	Low to Medium	0	80-100	0-20
Growth	Yes	Yes	Long Term	High	80-100	0-20	0-20
Balanced	Yes	Yes	Long term	Medium to high	0-60	0-40	0-20
Tax Saving	Yes	Yes	Long term	High	80-100	80-100	0-20

TABLE 1.4

Comparison with Other Investment Avenues

Investment Avenues	Liquidity	Safety	Returns	Volatility	TAX BENEFIT	CONVENIENCE
Fixed Deposits	Low	Low	Moderate	Low	No	Moderate
Equity shares	Moderate to high	Low	Uncertain	High	No	Moderate
Co.Debenture	Low	Moderate	Moderate	Moderate	No	Low
Co. Deposit	Low	Moderate	Low	Low	No	Low
Life Insurance	Low	High	Low	Low	Yes	Moderate
Mutual Funds (Open ended)	High	Moderate	Moderate	High	No	High
Mutual Funds (close ended)	High	Moderate	Moderate	High	Yes	High
RBI Bonds	Moderate	High	Moderate	Low	Yes	Moderate
Bank Fixed Deposit	High	High	Low	Low	No	High
PPF	Low	High	Moderate	Low	Yes	Moderate
Post Office	High	High	Good	Low	Yes	Moderate
NSC	Low	High	Moderate	Low	Yes	Moderate
Gold	High	High	Moderate	Moderate	No	High
Infrastructure Bonds	Moderate	High	Moderate	Low	No	Low
Real Estate	Low	Moderate	Variable	High	Yes	High
Public sec. & FII Bonds	Moderate	High	Moderate	Moderate	No	High
National Savings Certificate	Low	High	Moderate	Low	Yes	Moderate

TABLE 1.5

COMPARISON BETWEEN FD, BONDS AND MUTUAL FUND – FEATURES

Characteristics	FD's	Bonds	Mutual Funds
Accessibility	Low	Low	High
Tenor	Fixed(medium)	Fixed(Long)	No Lock-in
Min. Investment	Rs.1000	Rs.5000	Rs.5000
Tax Benefits	None	80L, 88	Dividend Tax-Free
Liquidity	Low	Very Low	Very High
Convenience	Medium	Tedious	Very High
Transparency	None	None	Very High

Table 1.6

Funds Differ In Terms Of Their Risk Profile.

Equity Funds	High Level of Return, but has a high level of risk too
Debt Funds	Returns comparatively less risky than equity funds
Liquid and Money Market Funds	Provide stable but low level of return

1.13 BENEFITS OF INVESTING THROUGH A MUTUAL FUND

A mutual fund is an entity that pools the money of many investors -- its unit-holders -- to invest in different securities. Investments may be in shares, debt securities, money market securities or a combination of these. Those securities are professionally managed on behalf of the unit-holders, and each investor holds a pro-rata share of the portfolio i.e. entitled to any profits when the securities are sold, but subject to any losses in value as well.

PROFESSIONAL INVESTMENT MANAGEMENT

Mutual funds hire full-time, high-level investment professionals. Funds can afford to do so as they manage large pools of money. The managers have real-time access to crucial market information and are able to execute trades on the largest and most cost-effective scale.

DIVERSIFICATION

Mutual funds invest in a broad range of securities. This limits investment risk by reducing the effect of a possible decline in the value of any one security. Mutual fund unit-holders can benefit from diversification techniques usually available only to investors wealthy enough to buy significant positions in a wide variety of securities.

LOW COST

A mutual fund let's you participate in a diversified portfolio for as little as Rs.5,000/-, and sometimes less. And with a no-load fund, you pay little or no sales charges to own them.

CONVENIENCE AND FLEXIBILITY

You own just one security rather than many, yet enjoy the benefits of a diversified portfolio and a wide range of services. Fund managers decide what securities to trade, collect the interest payments and see that your dividends on portfolio securities are received and your rights exercised. It also uses the services of a high quality custodian and registrar in order to make sure that your convenience remains at the top of our mind.

PERSONAL SERVICE

One call puts you in touch with a specialist who can provide you with information you can use to make your own investment choices. They will provide you personal assistance in buying and selling your fund units, provide fund information and answer questions about your account status.

LIQUIDITY

In open-ended schemes, you can get your money back promptly at net asset value related prices from the mutual fund itself.

TRANSPARENCY

You get regular information on the value of your investment in addition to disclosure on the specific investments made by the mutual fund scheme.

1.14 DISADVANTAGES OF MUTUAL FUND

Costs Control Not in the Hands of an Investor: Investor has to pay investment management fees and fund distribution costs as a percentage of the value of his investments, irrespective of the performance of the fund.

No Customized Portfolios: The portfolio of securities in which a fund invests is a decision taken by the fund manager. Investors have no right to interfere in the decision making process of a fund manager, which some investors find as a constraint in achieving their financial objectives.

Difficulty in Selecting a Suitable Fund Scheme: Many investors find it difficult to select one option from the plethora of funds/schemes/plans available.

CHAPTER-2

COMPARATIVE ANALYSIS OF MUTUAL FUNDS

2.1 SCOPE OF STUDY:

The study was carried out for a period of 60 days, in which the main focus was to follow the performance of the different-different mutual fund companies and assent management companies. Since different companies come out with similar themes in the same season, it becomes crucial for the company to constantly perform well so as to survive the competition and provide maximum capital appreciation or return as the case may be. Other than the market the performance of the fund depends on the kind of stock chosen by the fund managers of the company.

The analysis is done on the performance of funds with the same theme or sector and reason out why a fund performs better than the others in the lot.

2.2 NEED FOR THE STUDY:

The study first tries to understand the composition of the selected funds which determines the scope of performance for the funds, followed by use of ratios that are relevant in quantifying and understanding the risk and return relationships for each mutual fund scheme under consideration. Then a comparative analysis of the mutual fund schemes is done to see which fund has performed the best.

This study is significant to the company as it looks into the minute details that differentiate the performances of funds of different companies with same theme or sector under similar market conditions. This would help the company to develop.

2.3 OBJECTIVES OF THE STUDY:

i. To understand the Functions of an Asset Management Company
ii. To understand the performances of various schemes using various tools to measure the performances.
iii. To measure and compare the performance of selected mutual fund schemes of different mutual fund companies and other Asset Management Companies.

iv. To apply the models given by Treynor and Mazuy and Henriksson and Metron that can identified whether fund managers have the ability to time the market. In other words, can fund managers predict the future directions of the market and change β of the fund accordingly.

2.4 LITERATURE REVIEW.

To understand the concept of evaluation of mutual fund performance and fund manager's ability to time the market, a note written by professor S.K. Mitra, published in Richard ivey school of business, has been consulted and incorporated here.

Evaluation of mutual funds performance is an important topic for investors and financial analysts. At one level, a comparison of mutual fund performance would seem to be an easy task. One can calculate the performance of individual funds for a chosen period and rank the funds in descending order of returns: the fund that has given the highest return can be judged as the best performing fund. However, this method has a major drawback, as the variability in the returns during the period is not considered. A fund might provide a good performance in periods of stock market boom by investing in risky equities, but it may not perform in the market's downturn. A fund performing well on a consistent basis is rare.

Variability in returns is a major concern for investors. The higher the variability, the higher are the risks associated in the investment of that fund. Whenever the risk is high, the expected rate of return from the fund also goes up in compensation. Investors may remain satisfied with low returns in funds that solely invest in government securities since the returns are considered safe and risk-free. But investors will seek higher returns when investment is made in risky equities. It is also observed that over a period of time stock funds outperform government bond funds because they offer more risks. Unless there is a higher expected return from the risky fund, there would be no benefit in taking the risk. On the other hand, no equity fund can generate high returns in every time period; its performance can also be negative during downward movements of the market.

The preceding paragraph makes two aspects clear: first, the period of analysis should be reasonably long in order to capture both up-trends and down-trends in the market; and second, the concept of risk must be incorporated when evaluating the performance of a fund. Consideration of risk in performance measurement is an active area of academic research, which also focuses on funds that generate a higher risk-adjusted return. Risk-adjusted measures are also needed to judge the performance of fund managers and to fix their compensation. On the other hand, inclusion of risk in return evaluation presents a problem since there is no standard definition of risk and therefore the methods used for measuring fund performance give different results. In this note, several methods of computing the performance of funds based on different measures of risk will be discussed.

2.4.1 Measuring Return

The return of investment from a mutual fund includes both income in the form of dividends and capital gains arising out of increase in the net asset value (*NAV*) of the fund. *NAV* is computed on a daily basis and is based on the market value of securities held in a fund divided by the number of shares (or units) issued by the fund. When returns are measured on the basis of the *NAV*, operating expenses, transaction costs and other costs incurred by the fund are automatically included.

Arithmetic Return for a certain holding period can be estimated using the following formula

$$r_t = \frac{NAV_t - NAV_{t-1} + D_t}{NAV_{t-1}}$$

where r_t is the estimated return of the fund during the period, NAV_t is the closing net asset value on the last trading day, NAV_{t-1} is the closing net asset value on the last day of the previous period, and D_t is dividend distributions made during the period. It may be noted that this formula gives arithmetic returns that ignore compounding.

The Geometric Rate of Return compounds the return after each period and is calculated as follows:

r (geometric) = Π(1+r)^1/n -1

where n is the number of periods. When a period is counted in years, it measures annualized return.

The **Continuously Compounded Return** from a mutual fund for a certain period can be calculated as follow:

R=In (NAVt+Dt/NAVt-1)

2.4.2 Excess returns:

Instead of computing returns in isolation, investors generally compare returns against some alternative investment or a benchmark, such as risk-free rates of return. Investors can easily earn a risk-free rate of return by investing in government securities; therefore, funds must returns higher than the risk-free rate. The return over the risk-free is known as the excess return of the fund.

2.4.3 Measuring Risk

Performance of a fund cannot be judged simply by reference to its raw returns. Even a very good fund yields negative returns during periods when the overall market goes down by a significant percentage. Similarly, even bad managers may experience high returns during boom periods of the market. A fund manager can increase the fund's return in an upward journey of the market simply by investing in risky equities or by levering the investment by borrowing

money. Such a fund will give superior performance solely on account of higher risks, but it will also be one of the worst performers during a market crash.

The easiest way to capture risk in a return series is to measure the standard deviation (σ) of returns, which calculates the total variability of the returns from the fund by measuring the dispersion of the return around the mean return. Hence, (σ) is an appropriate measure of risk when the whole investment is made in a single fund. However, the total variability of a fund's return can be reduced by diversification. As per Markowitz,[1] including more securities in a diversified portfolio can reduce its standard deviation. Nevertheless, the reduction of standard deviation tapers off as more and more funds are included. Beyond a certain point, addition of another fund may not reduce risk in the portfolio.

When investment is made on a diversified portfolio, standard deviations are not sufficient measures of the risk. Another measure of risk that accounts for an asset's correlation with other assets in a larger portfolio is presented in the classic Capital Asset Pricing Model (CAPM) developed by Sharpe.[2] The expected return from the fund as per the CAPM model is:

$$E(r_i) = R_f + \beta_i(E(r_m) - R_f)$$

where(E(rm)-Rf) is the risk premium that is expected from excess return from the market and B is a measure of the risky asset's sensitivity of return in comparison to the market risk premium. The beta coefficient B used in the CAPM model is a measure of the non-diversifiable risk and is a relevant measure of risk in a diversified portfolio. According to the model, a fund with a higher B is expected to earn a higher rate of return when the market is moving up. On the contrary, such a fund might experience negative return when market return is less than a risk-free rate.

From a single investor's perspective, which measure is more relevant: sigma (σ) or beta (B)? When an investor decides to invest his whole savings in asingle mutual fund, then the appropriate risk measure is σ as there is no diversification. But when investment in a particular mutual fund forms part of a well-diversified investment portfolio, then becomes the suitable risk measure.

2.4.4 Valuing Measures Of Fund Performance

A number of methods to evaluate performance of a fund are available. The following performance measures are discussed below:

- Sharpe Ratio
- Treynor Ratio
- Jensen's Measure
- Modigliani's Measure

2.4.4.1 Sharpe Ratio

A common measures of the risk-adjusted performance of a fund is the Sharp Ratio. It measures the fund's excess return per unit of its total. The Sharpe Ratio (SR) is computed as follows:

$$SR = \frac{r_{fund} - r_{risk\ free}}{\sigma_{fund}}$$

2.4.4.2 Treynor Ratio

Measurement of fund performance using the Treynor Ratio is similar to the Sharpe Ratio, but risk is measured in terms of β. Similar to the Sharpe Ratio, a high Treynor Ratio reflects a high risk-adjusted return of the fund. The Treynor Ratio (*TR*) is estimated as follows:

$$TR = \frac{r_{fund} - r_{risk\ free}}{\beta_{fund}}$$

Where β_{fund} is a measure of the non-diverted risk of the fund, which is computed as the covariance of the returns from the fund and market returns divided by the variance of the market rate of return.

$$\beta\ fund = COV(r_{market}, r_{fund})/(\sigma_{market})\ ^\wedge\ 2$$

The coefficient β can also be calculated by regressing the historical excess return of the fund one the market risk premium (market return in excess of risk-free rate). The slope of the regression line is the β value of the fund.

2.4.4.3 Comparison Of Sharpe And Treynor

Sharpe and Treynor measures are similar in a way, since they both divide the risk premium by a numerical risk measure. The total risk is appropriate when we are evaluating the risk return relationship for well-diversified portfolios. On the other hand, the systematic risk is the relevant measure of risk when we are evaluating less than fully diversified portfolios or individual stocks. For a well-diversified portfolio the total risk is equal to systematic risk. Rankings based on total risk (Sharpe measure) and systematic risk (Treynor measure) should be identical for a well-diversified portfolio, as the total risk is reduced to systematic risk. Therefore, a poorly diversified fund that ranks higher on Treynor measure, compared with another fund that is highly diversified, will rank lower on Sharpe Measure.

2.4.4.4 Jensen's Measure

Jensen's proposed a procedure to determine the performance of a fund by estimating the amount by which the fund has outperformed or underperformed its investment benchmark. The benchmark represents investments with a similar level of risk as the fund. In the context of CAPM specification, the Jensen Measure is the value of alpha (α), which represents the excess return of the fund in comparison to the return expected from the model.

$$r_{fund,t} - r_{risk\ free} = \alpha_{fund} + \beta_{fund}\,(r_{market,t} - r_{risk\ free}) + \varepsilon$$

Where $r_{fund,\ t}$ is the return generated by the fund in period *t*, $r_{market,\ t}$ is the return from a market portfolio, $r_{risk\ free}$ is the risk-free rate and β is a measure of risk. In this regression equation, a positive and statistically significant value of α is indicative of superior risk-adjusted performance of the fund manager. It can be inferred that a fund with a positive α has performed better in comparison to the risks taken by the fund. In the same way, a statistically significant negative value of α is indicative of inferior risk-adjusted performance of the fund. The value of α is also used as a measure of the stock selection abilities of the fund manager. A positive α indicates that the manager could select stocks that have given higher risk-adjusted return. Though theoretical justification for use of α is quite convincing, very few funds report a positive and statistically significant α, and therefore this measure is often avoided by practitioners.

2.4.4.5 Modigliani's Measure

The measure proposed by Leah Modigliani and Franco Modigliani is also known as the M^2 Measure. Similar to the Sharpe Ratio, it focuses on the total variability of the fund as a measure of risk but uses a different way to compute risk-adjusted return. It takes the view that a new portfolio can be created by mixing a fund and a risk-free asset so as to maintain a desired level of risk. A fund whose standard deviation is higher than the standard deviation of the market can be mixed with a risk-free asset in such a proportion that the mixed portfolio exhibits a standard deviation that is equal to the standard deviation of the market.

Similarly, when the standard deviation of the fund is found to be lower than the standard deviation of the market, the investment in the fund can be leveraged by borrowing money from

the market at the risk-free rate. The idea is to create a combination of the fund and a risk-free asset so that the standard deviation of the combined portfolio becomes equal to the standard deviation of the market portfolio. The M^2 Measure is estimated as follows:

$$M^2 = r_{\text{adjusted portfolio}} - r_{\text{market}}$$

The risk of the adjusted portfolio is set equal to the market risk, and hence the differential return is a measure of risk-adjusted return. A fund with higher M^2 value has given a higher risk-adjusted return. M^2 values can be expressed in percentage terms and are better understood by the investors. As the M^2 value is assessed by creating a new portfolio combining the fund and a risk-free asset, it can be obtained as follows:

$$M^2 = \frac{\sigma_{market}\, r_{fund}}{\sigma_{fund}} + \left(1 - \frac{\sigma_{market}}{\sigma_{fund}}\right) r_{risk\ free} - r_{market}$$

The value of the M^2 measures can also be derived from the Sharpe Ratio of the fund:

$$M^2 = r_{\text{risk free}}\, M + \sigma_{\text{market}}\, SRR_{\text{fund}}$$

2.4.4.6 Fama Model

The Eugene Fama model is an extension of Jenson model. This model compares the performance, measured in terms of returns, of a fund with the required return commensurate with the total risk associated with it. The difference between these two is taken as a measure of the performance of the fund and is called net selectivity.

The net selectivity represents the stock selection skill of the fund manager, as it is the excess return over and above the return required to compensate for the total risk taken by the fund manager. Higher value of which indicates that fund manager has earned returns well above the return commensurate with the level of risk taken by him.

Required return can be calculated as: **Ri = Rf + Si/Sm*(Rm - Rf)**

Where, **S_m** is standard deviation of market returns. The net selectivity is then calculated by subtracting this required return from the actual return of the fund.

Among the above performance measures, two models namely, Treynor measure and Jenson model use systematic risk based on the premise that the unsystematic risk is diversifiable. These models are suitable for large investors like institutional investors with high risk taking capacities as they do not face paucity of funds and can invest in a number of options to dilute some risks. For them, a portfolio can be spread across a number of stocks and sectors.

However, Sharpe measure and Fama model that consider the entire risk associated with fund are suitable for small investors, as the ordinary investor lacks the necessary skill and resources to diversified. Moreover, the selection of the fund on the basis of superior stock selection ability of the fund manager will also help in safeguarding the money invested to a great extent.

2.4.5 Ratings Given By Rating Agencies

To make the performance ranking of mutual funds easily understood by an average investor, several rating agencies calculate their own measures of risk-adjusted performance and express it in terms of a number or symbols. Star ratings given by Morningstar are well-accepted by individual investors in the U.S. Similar to Morningstar's method, rating agencies in other countries give ratings based on some kind of risk-adjusted performance. However, these rating agencies do not fully disclose their methodology and preferences. Further, their measures of risk may not be suitable for all types of investors. Nevertheless, investors not familiar with complex mathematical measures of risk-adjusted return may find the ratings given by these agencies useful. It was observed by Antypas, et al (2009) that higher Morningstar ratings were associated with higher returns on the portfolios and that the Morningstar ranking system is most effective in identifying the worst performing funds (STAR1 or STAR2) rather than the best performing ones.

2.4.6 Market Timing Models

In addition to the performance measures of mutual funds mentioned above, there are models that can identify whether fund managers have the ability to time the market. In other words, can fund managers predict the future direction of the market and change β of the fund accordingly? Treynor and Mazuy and Henriksson and Merton are two popular market timing models that are usually consulted in order to value the market timing abilities of fund managers.

2.4.6.1 Treynor And Mazuy Model

If the mutual fund manager can time the market, he or she will hold a market portfolio of high β stocks when expecting a market rise and vice versa. The fund manager will alter the portfolio β according to the expected return on the market portfolio. Treynor and Mazuy proposed the following equation to measure market timing abilities:

$$r_{fund,t} - r_{risk\ free} = \alpha_{fund} + \beta_{fund}\,(r_{market,t} - r_{risk\ free}) + \gamma\,(r_{market,t} - r_{risk\ free})^2 + \varepsilon$$

where α, β and γ are parameters of the model. When a fund manager is able to successfully assess the direction of market movement and change the portfolio, the equation would exhibit a higher than normal β in upward trends in the market. Similarly, when the market is expected to decline, the fund should reduce exposures in risky securities and opt for a lower than normal β .

Treynor and Mazuy have suggested that the value of parameter γ in this equation can be used as a measure of the market timing skill of a fund manager. If the fund manager could time the market correctly, the estimated value of γ would be positive and statistically significant. On the contrary, if the estimated value of γ is not found to be significantly different from zero, the fund manager could not time the market movements correctly.

2.4.6.2 Henriksson And Merton Model

Another model to detect market timing abilities was developed by Henriksson and Merton. In place of an unconditional measure of β used in the Treynor and Mazuy frame work, Henrilsson and Merton assumed a model where the β value is switched between two values. When the market is expected to deo well, that is when $r_{market,t} > r_{risk\ free}$, the funds should go for a high β: in a down market, β would have a small value. This relationship can be estimated in the regression by using a dummy variable (D):

$$r_{fund,t} - r_{risk\ free} = \alpha_{fund} + \beta_{fund}\,(r_{market,t} - r_{risk\ free}) + \gamma D.\,(r_{market,t} - r_{risk\ free}) + \varepsilon_t$$

where the value of dummy variable D switches between 1 and 0 based on the sign of $(r_{market,t} - r_{risk\ free})$ D is set equal to 1 when $r_{market,t} > r_{risk\ free}$ and 0 otherwise.

An active fund manager generally would like to time the market and alter the composition of the fund so that the fund has a relatively high beta during an up-trend of the market and relatively low beta during down-trends. Such alteration of portfolio beta will benefit investors both in market rise and market fall situations. During an upward movement of the market, the relevant measure of risk

is β+Ɣ, and during down-trends the risk measure is only β. The parameter Ɣ indicates the difference between the two β where a statistically significant positive value of Ɣ would indicate superior market timing abilities of the fund managers.

2.5 METHODOLOGY:

2.5.1 DATA COLLECTION:

The data required for the study may be collected either from primary sources or from secondary sources. A major portion of the data in this study has been collected through secondary sources of data.

Secondary Data Sources Include:

- Published material and annual reports of mutual fund companies
- Other published material of mutual funds.
- Research based online portals.
- Unpublished sources also.

2.5.2 SAMPLE PROFILE:

The sample required for the study has been selected through random sampling method from the available list of mutual fund schemes in the market. Broadly the sample of 12 mutual fund schemes includes equity funds, debt funds and balanced funds.

The study has taken three broad categories of funds

- Equity Funds
- Debt funds
- Balanced fund

2.5.2.1 Equity Funds:

a. Axis Equity Fund – Growth

b. Birla Sunlife Advantage Fund – Growth

c. Franklin India Bluechip Fund – Growth

d. SBI Magnum fund- Growth

2.5.2.2 Debt funds:

a. SBI Magnum Gilt Fund – Growth

b. UTI Gilt Advantage Fund – Growth

c. Reliance Gilt Securities Fund – Growth

d. SBI Dynamic Bond fund- Growth

2.5.2.3 Balanced Fund (Hybrid Equity)

a. Birla Sunlife Balanced 95 Fund – Growth

b. HDFC Balanced Fund – Growth

c. ICICI Prudential Balanced Fund – Growth

d. TATA balance Fund- Growth

For the purpose of estimating the performance of schemes in terms of returns, NAV of the schemes are taken into consideration. As data relating to NAV is available more frequently than any other data it is taken as the basis for estimation.

2.5.3 PERIOD OF THE STUDY:

The study covered the data pertaining to a period of one years from April 2016 to April 2017 to assess the performance of the schemes in terms of returns.

2.5.4 TOOLS & METHODS:

The performance of the funds was analyzed using the following criteria:

- Sharpe Ratio
- Treynor Ratio
- Jensen's Aplha
- M^2 Measure

2.5.5 COMPUTATION OF RETURNS

At the first step the periodical returns (monthly) were computed for the funds and market index for one year. Since data was made available monthly the returns represented monthly returns.

Assuming that no divided was distributed by the funds, the returns calculated on the continues compounding basis using the following equation:

$$r_t = \text{In} \frac{(NAV_t)}{NAV_{t-1}}$$

The following statistics were also calculated:

- Average return per month
- Annualized Return
- Standard Deviation of Monthly Return
- Annualized Standard Deviation
- Beta Coefficient of the fund $\beta_{fund} = COV(r_{market,} r_{fund})/(\sigma_{market})^2$

2.5.5.1 Performance Measures

All relevant calculations were made in an Excel worksheet, part of which is presented here. The relevant formulas for estimation of the following measures are given below:

$$SR = \frac{r_{fund} - r_{risk\ free}}{\sigma_{fund}}$$

$$TR = \frac{r_{fund} - r_{risk\ free}}{\beta_{fund}}$$

Jensen's Alpha : $r_{fund,t} - r_{risk\ free} = \alpha_{fund} + \beta_{fund}(r_{market,t} - r_{risk\ free}) + \varepsilon$

$M^2 = r_{adjusted\ portfolio} - r_{market}$

2.5.5.2 Market Timing Abilities

Market Timing Ability of the funds was measured by estimating the value of coefficient γ according to the Treynor and Mazuy Method and the Henriksson and Merton Method. Values of the coefficients α, β and γ were found by carrying out regressions from the equations outlined in these models in the Excel worksheet. The procedure to perform regression in an Excel worksheet are located in the "help" menu of the program. The risk-free rate was given as 6 per cent per annum. Since returns were estimated on a monthly basis, the risk-free rate was also

converted to monthly terms. The following formula was used to derive the risk-free rate of return per month:

$= (1+ r\, r_{annual}) 1/12 - 1 = (1.0.06) 1/12 - 1 = 0.4868\%$

For using the Treynor and Mazuy Method the following equation was used:

$r_{fund,t} - r_{risk\ free} = \alpha_{fund} + \beta (r_{market,t} - r_{risk\ free}) + \gamma (r_{market,t} - r_{risk\ free})^{2} + \varepsilon_t$

The required regression variables were estimated and placed in consecutive rows to facilitate the regression procedure.

Columns	Variable
I	$(r_{fund} - r_{risk\ free})$
J	$(r_{market} - r_{risk\ free})$
K	$(r_{market} - r_{risk\ free})$

Similar to the regressing parameters of the Treynor and Mazuy Method, analysis was also carried out using the Henriksson and Merton Method in the following equation:

$r_{market,t} - r_{risk\ free} = \alpha - r_{fund} + \beta_{risk\ free} (R) + \gamma D (r_{market,t} - r_{risk\ free}) + \varepsilon$

The equation used a dummy variable D, whose value switches between 0 and 1 depending on the sign of $(r_{market} - r_{risk\ free})$. Whenever $(r_{mark} - r_{risk\ free})$ was found positive, the value of the dummy variable was set equal to 1: otherwise,. The value of the dummy variable D was set equal to 0.

The following variables were estimated in consecutive rows for facilitating regression using the Henriksson and Merton Method.

Colum	Variable
W	D=IF ($r_{market} > r_{risk\ free}$, 1,0)
X	$(r_{fund} - r_{risk\ free})$
Y	$(r_{market} - r_{risk\ free})$
Z	D $(r_{market} - r_{risk\ free})$

2.5.5.3 Correlation co-efficient (r) :

It measures the nature and the extent of relationship between the stock market index returns and a fund's return in a particular period.

$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{[\, n\Sigma x^2 - (\Sigma x)^2 \,][\, n\Sigma y^2 - (\Sigma y)^2 \,]}}$$

2.5.5.4 Co-efficient of determination (r^2):

The square of correlation of co-efficient is the co-efficient of determination. It gives the percentage variation in the stock's return explained by the variation in the market return.

2.6 DATA ANALYSIS AND INTERPRETATION

Data is processed with the help of Microsoft Excel. The NAVs for twelve months of all the funds and their benchmarks (NIFTY 50 INDEX) were entered into the spreadsheet and the above mentioned tools were used to get the final values for the comparative analysis and interpretations.

2.6.1 Asset Allocation Strategies of Various Select Mutual Fund Schemes.

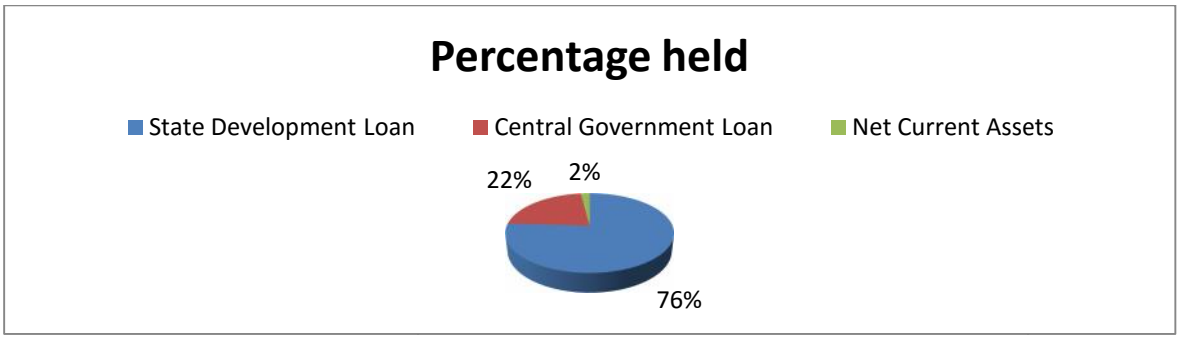
2.6.1.1 Equity Funds:

Axis Equity Growth Fund

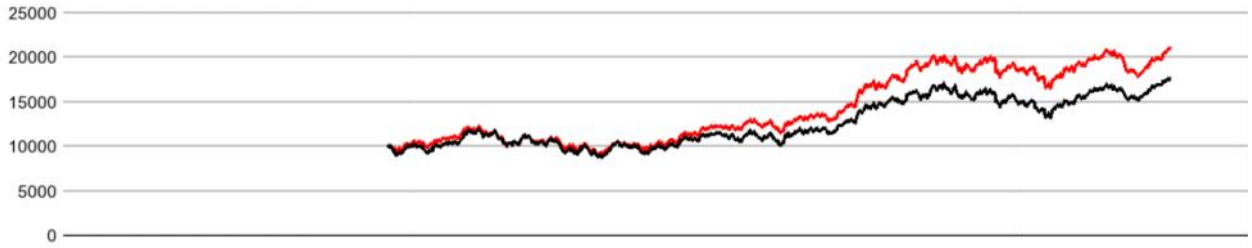
Investment Information	
Rating	* *
Fund type	Open-Ended Equity Multi Cap
Investment Plan	Growth
Net Assets	1928.2 crore as on March 31, 2017
Risk Grade	Below Average
Return Grade	Below Average
NAV	Rs. 21.18 as on April 17, 2017

Source : www.valueresearchonline.com

Asset Alocation	Percentage held
Equity	92.42
Debt	5.51
Cash / Call	2.07



FUND PERFORMANCE VS NIFTY 50



SCHEME PERFORMANCE:

Year	2011	2012	2013	2014	2015	2016	2017
NAV (Rs.)	9.17	12.08	13.71	19.31	19.07	18.38	21.18
Total Return %	-22.55	31.73	13.49	40.85	-1.24	-3.62	15.23
+/- Nifty 50	2.07	4.03	6.73	9.46	2.82	-6.63	3.58
+/- S&P BSE Sensex	2.09	6.03	4.51	10.96	3.79	-5.57	4.76
Rank (Fund/Category)	28/86	13/93	3/89	112/145	142/173	137/143	90/144
52 week High (Rs.)	11.88	12.11	13.71	19.78	20.46	21.13	-
52 week Low (Rs.)	9.00	9.21	11.50	12.96	17.84	16.69	-

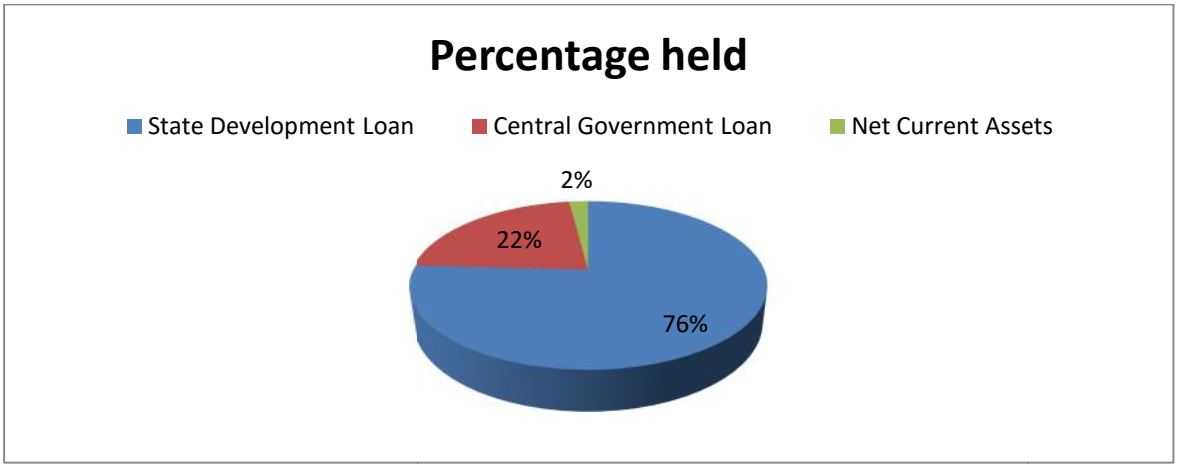
Source : www.valueresearchonline.com

Birla Advantage Fund – Growth

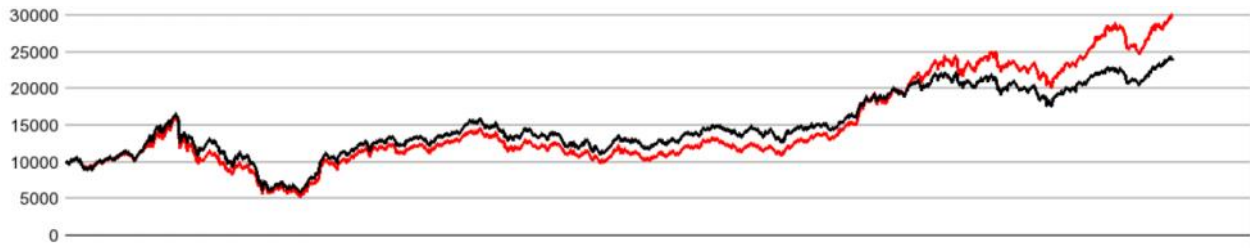
Investment Information	
Rating	* * * *
Fund type	Open-Ended Equity Multi Cap
Investment Plan	Growth
Net Assets	3123.8 crore as on March 31, 2017
Risk Grade	Above Average
Return Grade	High
NAV	Rs. 375.49 as on April 17, 2017

Source : www.valueresearchonline.com

Asset Allocation	Percentage held
Equity	98.61
Debt	2.59
Cash / Call	-1.20



Fund Performance Vs S&P Bse 200



Scheme Performance:

Year	2011	2012	2013	2014	2015	2016	2017
NAV (Rs.)	124.86	161.96	173.66	278.11	292.67	317.48	375.49
Total Return %	-28.04	29.81	7.23	60.14	4.77	8.48	18.27
+/- S&P BSE Sensex	-3.40	4.11	-1.75	30.25	9.80	6.53	7.80
Rank (Fund/Category)	68/83	46/78	27/73	91/145	59/71	31/143	33/144
52 week High (Rs.)	174.45	162.86	173.76	280.58	314.86	362.13	-
52 week Low (Rs.)	123.44	124.51	136.14	164.16	272.70	252.92	-

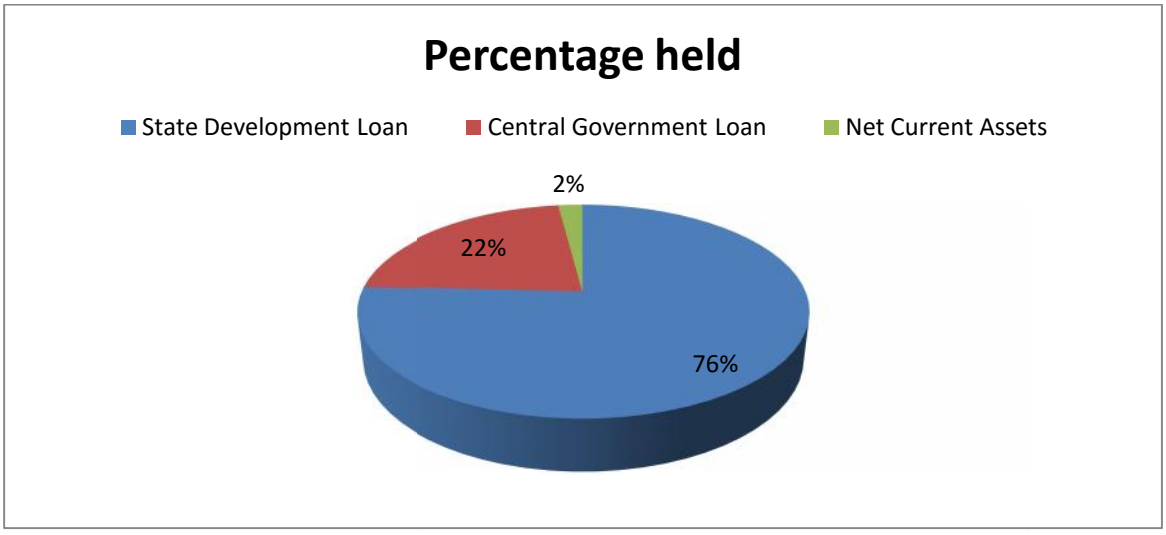
Source : www.valueresearchonline.com

Frankin India Bluechip Fund – Growth

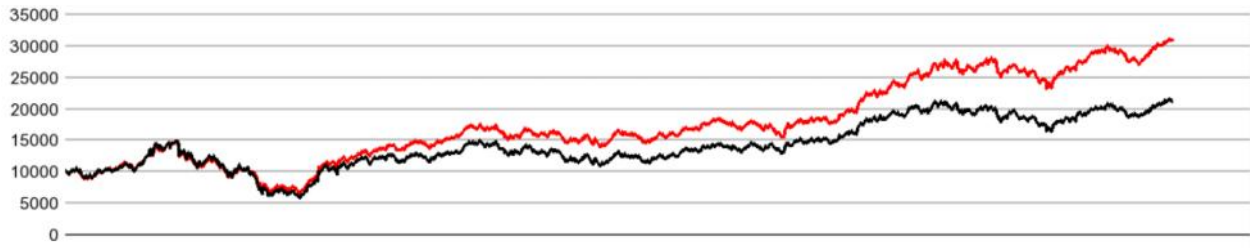
Investment Information	
Rating	* * *
Fund type	Open-Ended Equity Large Cap
Investment Plan	Growth
Net Assets	8362.7 crore as on March 31, 2017
Risk Grade	Average
Return Grade	Average
NAV	Rs. 409.71 as on April 17, 2017

Source : www.valueresearchonline.com

Asset Allocation	Percentage held
Equity	93.01
Debt	0.00
Cash / Call	6.99



Fund Performance Vs S&P Bse Sensex



Scheme performance:

Year	2011	2012	2013	2014	2015	2016	2017
NAV (Rs.)	186.66	236.67	246.32	338.00	344.82	367.05	409.71
Total Return %	-18.25	26.79	4.08	37.22	2.02	6.45	11.62
+/- S&P BSE Sensex	6.39	1.09	-4.90	7.33	7.05	4.50	1.15
Rank (Fund/Category)	9/86	58/93	74/89	56/147	23/121	28/155	111/163
52 week High (Rs.)	229.28	236.67	249.37	346.60	373.04	398.64	-
52 week Low (Rs.)	183.16	186.69	205.01	233.79	330.80	308.36	-

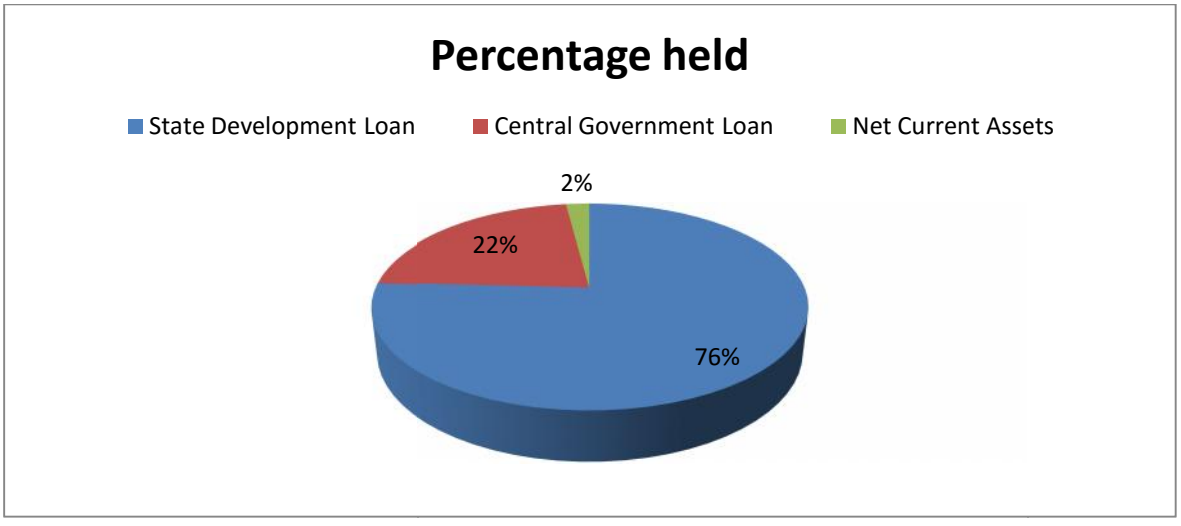
Source : www.valueresearchonline.com

Sbi Magnum Equity Fund – Growth

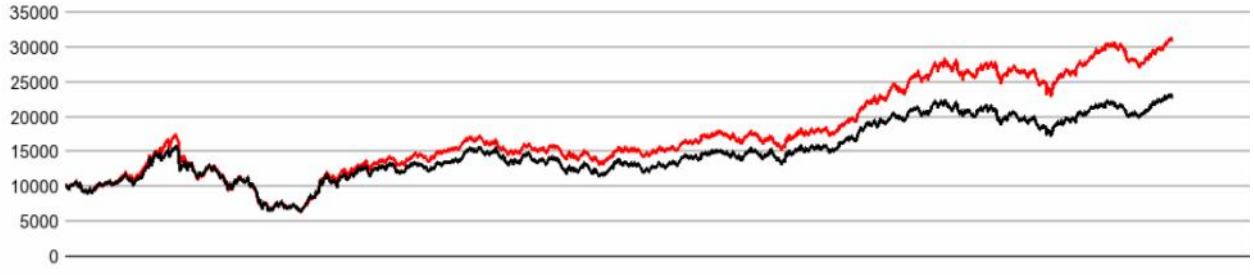
Investment Information	
Rating	* * * *
Fund type	Open-Ended Equity Large Cap
Investment Plan	Growth
Net Assets	1959.2 crore as on March 31, 2017
Risk Grade	Below Average
Return Grade	Above Average
NAV	Rs. 86.25 as on April 17, 2017

Source : www.valueresearchonline.com

Asset Allocation	Percentage held
Equity	97.43
Debt	3.14
Cash / Call	-0.57



Fund Performance Vs Nifty 50



Scheme performance:

Year	2011	2012	2013	2014	2015	2016	2017
NAV (Rs.)	36.87	47.89	50.54	72.10	73.85	77.18	86.25
Total Return %	-19.69	29.89	5.54	42.65	2.43	4.51	11.74
+/- S&P BSE Sensex	4.95	4.19	-3.44	12.76	7.46	2.56	1.27
Rank (Fund/Category)	14/86	23/93	66/89	19/147	20/121	52/155	101/163
52 week High (Rs.)	46.12	48.42	50.74	73.96	78.79	85.55	-
52 week Low (Rs.)	36.44	42.47	42.49	48.50	69.26	64.17	-

Source : www.valueresearchonline.com

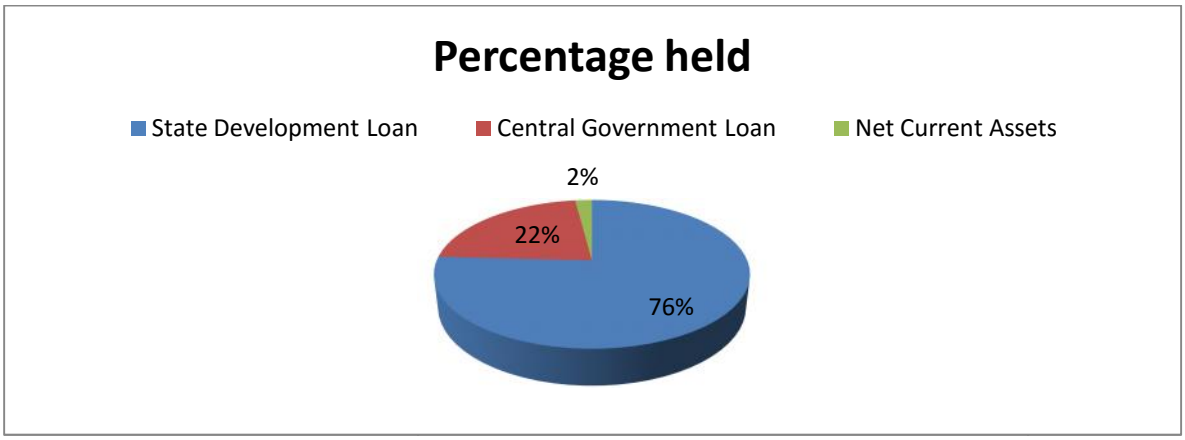
2.6.1.2 DEBT FUNDS

Sbi Magnum Gilt Fund – Growth

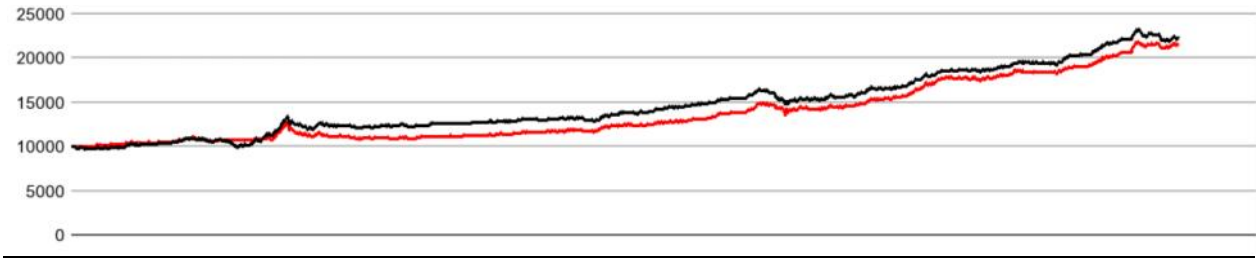
Investment Information	
Rating	* * * * *
Fund type	Open-Ended Gilt Medium & Long Term
Investment Plan	Growth
Net Assets	2174.8 crore as on March 31, 2017
Risk Grade	Below Average
Return Grade	Above Average
NAV	Rs. 36.87 as on April 17, 2017

Source : www.valueresearchonline.com

Asset Allocation	Percentage held
State Development Loan	66.73
Central Government Loan	24.41
GOI Securities	4.92
Net Current Assets	2.82
CBLO	1.06
Cash	0.06



Fund Performance Vs Ccil All Sovereign Bond – Tri



Scheme performance:

Year	2011	2012	2013	2014	2015	2016	2017
NAV (Rs.)	20.69	22.96	24.44	29.30	31.45	36.57	69.87
Total Return %	5.77	10.97	6.43	19.90	7.35	16.28	0.80
+/- CCIL All Sovereign Bond –TRI (%)	2.09	-1.77	4.26	2.41	-0.02	0.71	1.23
Rank (Fund/Category)	21/49	18/47	8/49	15/87	12/79	30/75	13/77
52 week High (Rs.)	21.01	22.96	25.39	29.34	31.69	37.41	-
52 week Low (Rs.)	19.44	20.88	22.96	24.41	29.19	31.09	-

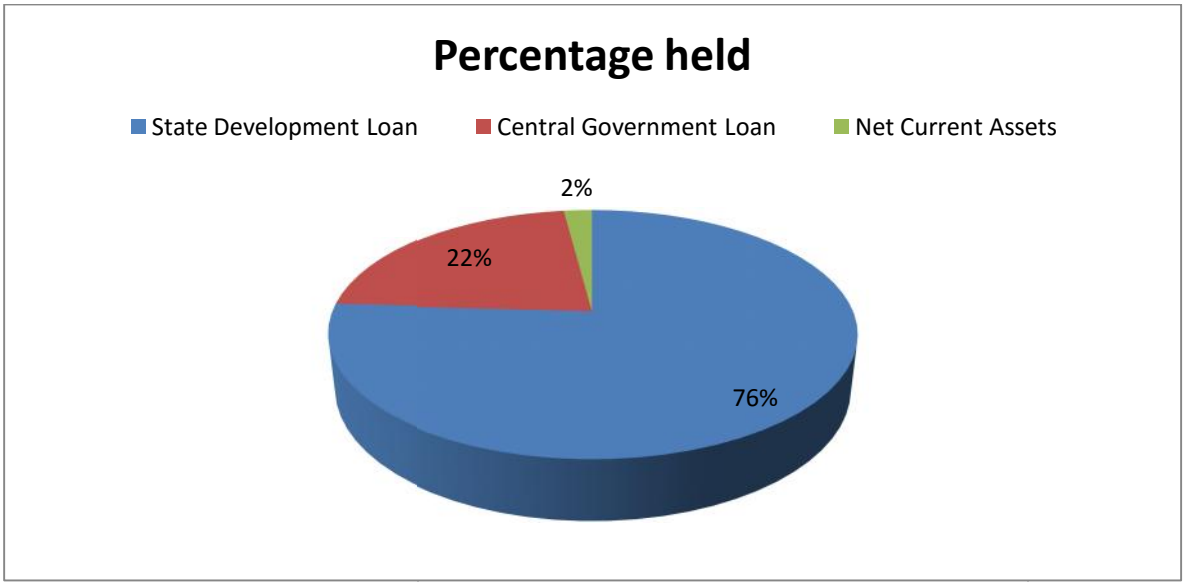
Source : www.valueresearchonline.com

Uti Gilt Advantage Long Term Plan – Growth

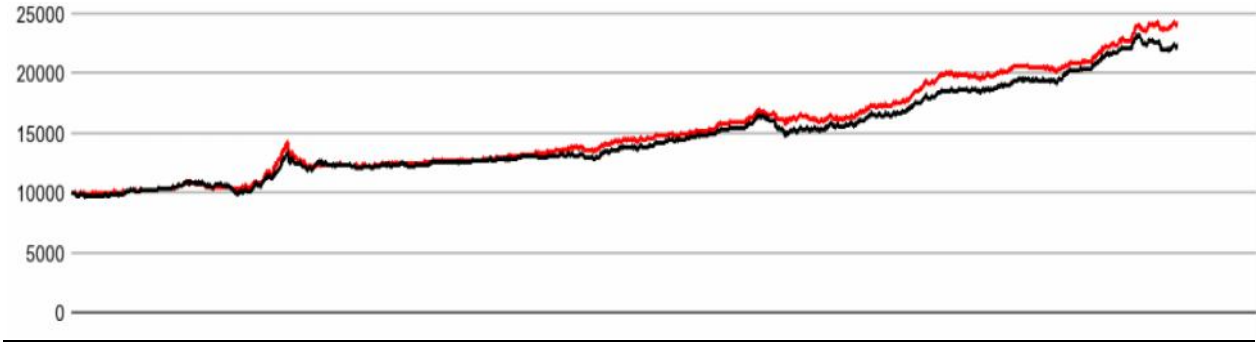
Investment Information	
Rating	* * * *
Fund type	Open-Ended Gilt Medium & Long Term
Investment Plan	Growth
Net Assets	482.3 crore as on March 31, 2017
Risk Grade	Average
Return Grade	Above Average
NAV	Rs. 36.83 as on April 17, 2017

Source : www.valueresearchonline.com

Asset Allocation	Percentage held
State Development Loan	75.84
Central Government Loan	22.11
Net Current Assets	2.05



Fund Performance Vs Ccil All Sovereign Bond – Tri



Scheme Performance:

Year	2011	2012	2013	2014	2015	2016	2017
NAV (Rs.)	21.45	23.66	24.60	29.47	31.27	36.12	36.83
Total Return %	7.79	10.29	3.98	19.80	6.10	15.50	1.98
+/- CCIL All Sovereign Bond –TRI (%)	-	-	-	-	-	-	-
Rank (Fund/Category)	8/49	30/47	20/49	18/87	53/79	40/75	3/77
52 week High (Rs.)	21.63	23.66	25.78	29.65	31.60	36.83	-
52 week Low (Rs.)	19.87	21.49	23.68	24.57	29.29	30.70	-

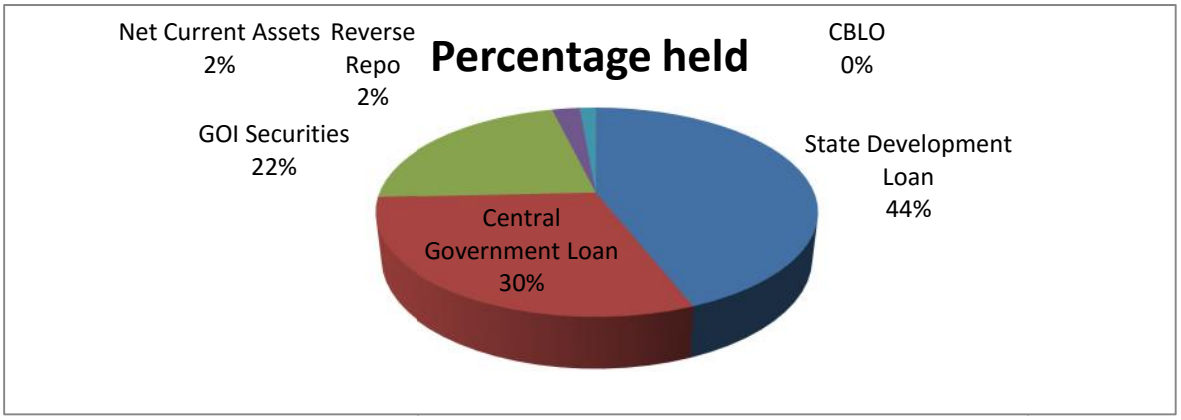
Source : www.valueresearchonline.com

Reliance Gilt Securities Fund – Growth

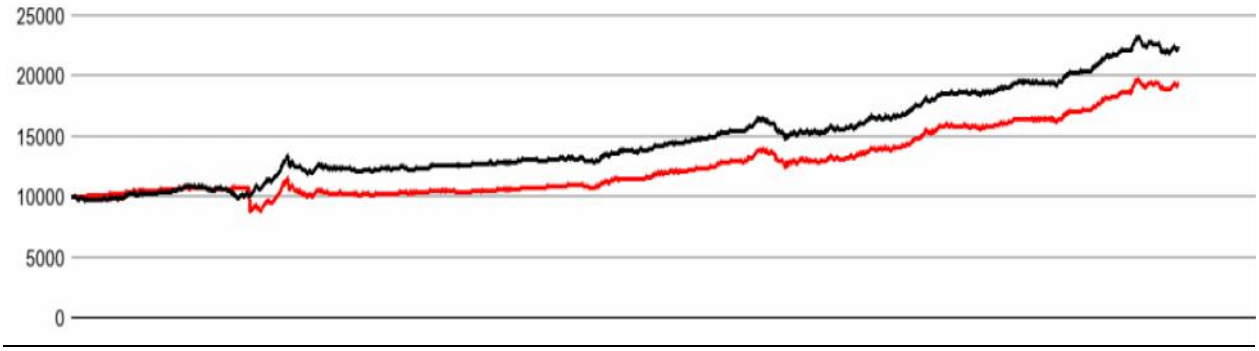
Investment Information	
Rating	* * * *
Fund type	Open-Ended Gilt Medium & Long Term
Investment Plan	Growth
Net Assets	1265.1 crore as on March 31, 2017
Risk Grade	Average
Return Grade	Above Average
NAV	Rs. 21.86 as on April 17, 2017

Source : www.valueresearchonline.com

Asset Allocation	Percentage held
State Development Loan	43.99
Central Government Loan	30.28
GOI Securities	21.93
Net Current Assets	2.39
Reverse Repo	1.39
CBLO	0.02



Fund Performance Vs Ccil All Sovereign Bond – Tri



Scheme performance:

Year	2011	2012	2013	2014	2015	2016	2017
NAV (Rs.)	12.65	14.30	14.77	17.52	18.61	21.77	21.86
Total Return %	4.66	13.03	3.27	18.64	6.24	16.98	0.42
+/- CCIL All Sovereign Bond –TRI (%)	-	-	-	-	-	-	-
Rank (Fund/Category)	36/49	7/47	29/49	25/87	51/79	18/75	26/77
52 week High (Rs.)	12.86	14.30	15.74	17.59	18.77	22.43	-
52 week Low (Rs.)	12.00	12.79	13.87	14.74	17.43	18.35	-

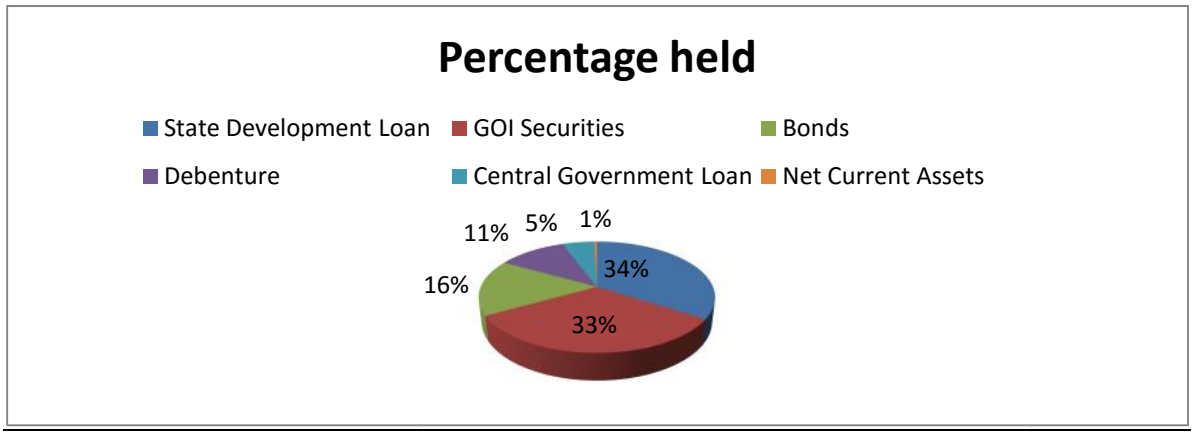
Source : www.valueresearchonline.com

Sbi Dynamic Bond Fund – Growth

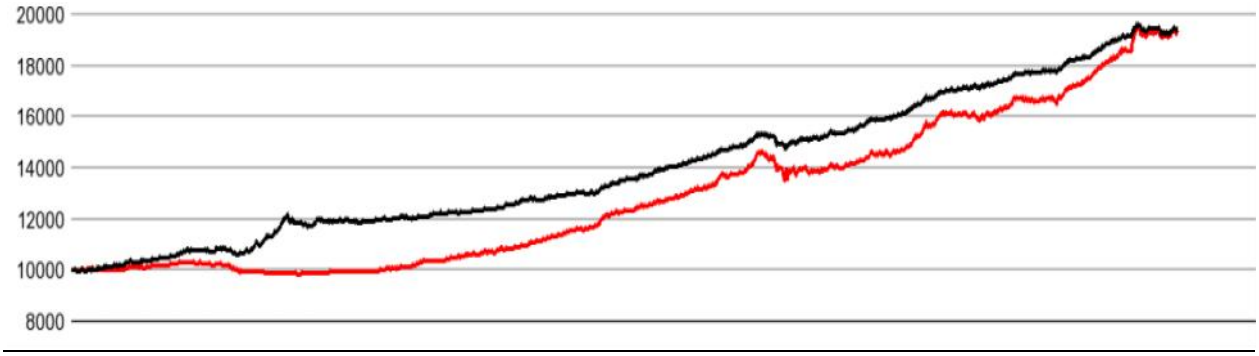
Investment Information	
Rating	* * *
Fund type	Open-Ended and Debt Dynamic Bond
Investment Plan	Growth
Net Assets	3090.4 crore as on March 31, 2017
Risk Grade	Average
Return Grade	Average
NAV	Rs. 20.62 as on April 17, 2017

Source : www.valueresearchonline.com

Asset Allocation	Percentage held
State Development Loan	33.96
GOI Securities	32.63
Bonds	16.28
Debenture	11.10
Central Government Loan	5.20
Net Current Assets	0.46



Fund Performance Vs Vr Bond



Scheme performance:

Year	2011	2012	2013	2014	2015	2016	2017
NAV (Rs.)	12.87	14.28	14.82	16.73	17.70	20.42	20.62
Total Return %	11.58	10.97	3.77	12.84	5.83	15.34	1.01
+/- VR Bond (%)	5.06	1.27	-0.75	2.81	-0.13	6.33	0.66
Rank (Fund/Category)	2/87	17/90	84/97	43/52	38/44	9/45	21/45
52 week High (Rs.)	12.96	14.28	15.54	16.78	17.84	20.76	-
52 week Low (Rs.)	11.50	12.93	14.14	14.82	16.67	17.55	-

Source : www.valueresearchonline.com

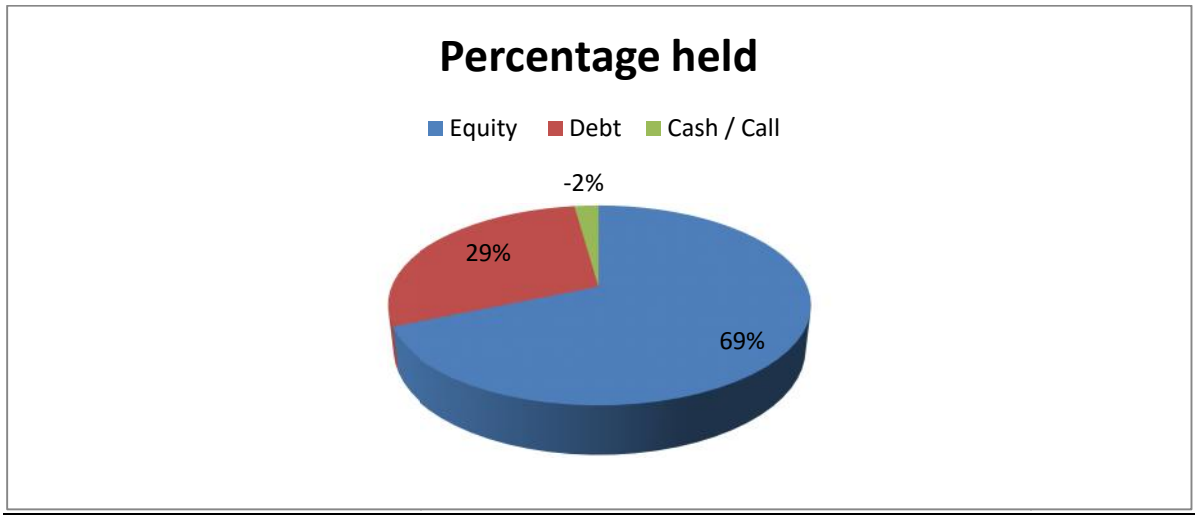
2.6.1.3 BALANCED FUND

Birla Sun Life Balanced'95 Fund – Growth

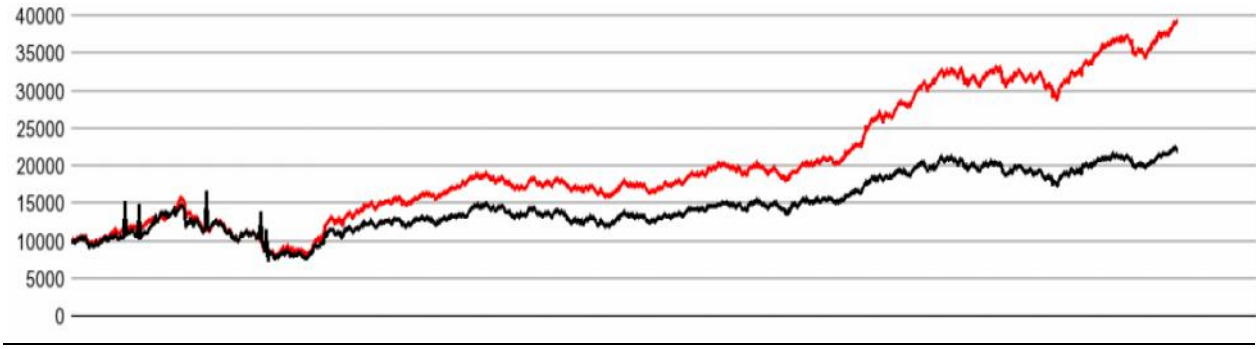
Investment Information	
Rating	* * *
Fund type	Open-Ended and Hybrid: Equity-oriented
Investment Plan	Growth
Net Assets	7419.1 crore as on March 31, 2017
Risk Grade	Average
Return Grade	Average
NAV	Rs. 685.54 as on April 17, 2017

Source : www.valueresearchonline.com

Asset Allocation	Percentage held
Equity	71.81
Debt	30.48
Cash / Call	-2.29



Fund Performance Vs Vr Balanced



Scheme performance:

Year	2011	2012	2013	2014	2015	2016	2017
NAV (Rs.)	277.77	346.09	367.19	545.50	563.81	613.78	685.54
Total Return %	-13.85	24.62	6.13	48.58	3.36	8.92	11.69
Rank (Fund/Category)	10/26	18/30	17/32	14/57	34/62	24/84	35/100
52 week High (Rs.)	323.23	346.09	367.19	547.99	581.68	654.37	-
52 week Low (Rs.)	275.31	377.65	314.56	354.48	534.04	504.22	-

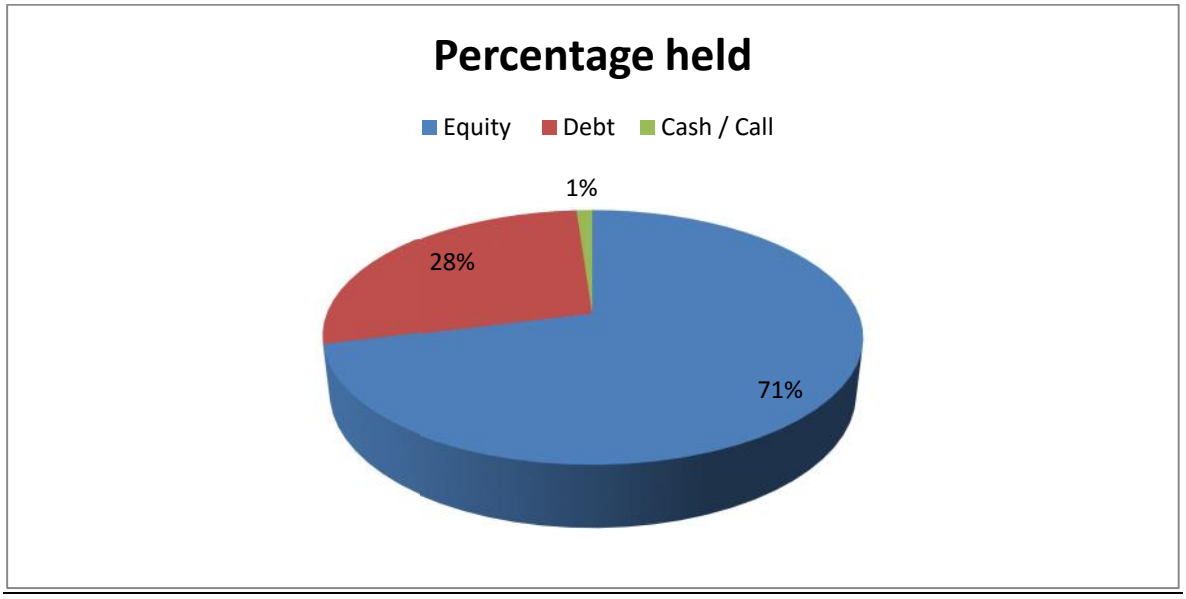
Source : www.valueresearchonline.com

Hdfc Balanced Fund – Growth

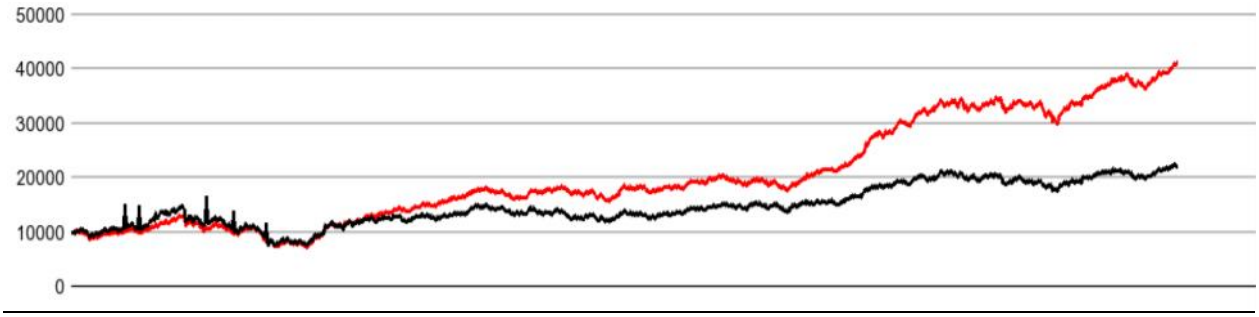
Investment Information	
Rating	* * * *
Fund type	Open-Ended and Hybrid: Equity-oriented
Investment Plan	Growth
Net Assets	10186.0 crore as on March 31, 2017
Risk Grade	Below Average
Return Grade	Above Average
NAV	Rs. 132.31 as on April 17, 2017

Source : www.valueresearchonline.com

Asset Allocation	Percentage held
Equity	71.02
Debt	27.86
Cash / Call	1.12



Fund Performance Vs Vr Balanced



Scheme performance:

Year	2011	2012	2013	2014	2015	2016	2017
NAV (Rs.)	50.50	63.91	69.52	105.30	108.47	119.02	132.31
Total Return %	-10.57	26.56	8.78	51.47	3.01	9.72	11.17
+/- VR Balanced	8.18	3.31	2.52	24.70	5.19	5.49	1.81
Rank (Fund/Category)	6/26	14/30	8/32	10/57	39/62	17/84	40/100
52 week High (Rs.)	58.97	63.91	69.52	105.70	112.41	125.30	-
52 week Low (Rs.)	50.07	50.60	56.59	67.90	103.21	96.14	-

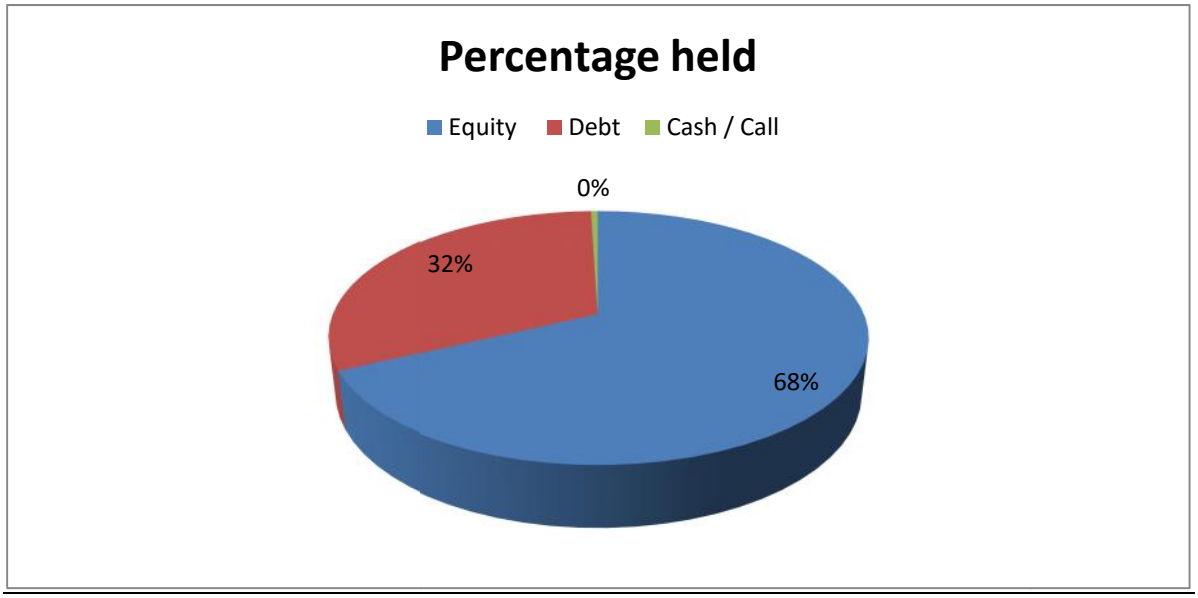
Source : www.valueresearchonline.com

ICICI Prudential Balanced Fund – Growth

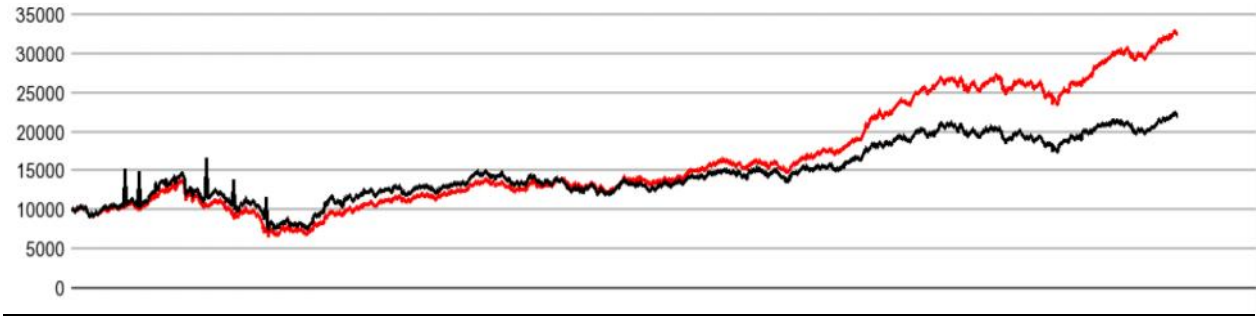
Investment Information	
Rating	* * * *
Fund type	Open-Ended and Hybrid: Equity-oriented
Investment Plan	Growth
Net Assets	9146.7 crore as on March 31, 2017
Risk Grade	Below Average
Return Grade	Above Average
NAV	Rs. 114.10 as on April 17, 2017

Source : www.valueresearchonline.com

Asset Allocation	Percentage held
Equity	67.89
Debt	31.63
Cash / Call	0.48



Fund Performance Vs Vr Balanced



Scheme performance:

Year	2011	2012	2013	2014	2015	2016	2017
NAV (Rs.)	43.06	55.71	61.94	90.16	92.05	104.62	114.10
Total Return %	-9.33	29.38	11.18	45.56	2.10	13.66	9.06
+/- VR Balanced	-	-	-	-	-	-	-
Rank (Fund/Category)	4/26	10/30	4/32	22/57	44/62	4/84	61/100
52 week High (Rs.)	49.11	55.75	61.94	90.61	95.43	107.32	-
52 week Low (Rs.)	42.60	43.01	51.63	59.89	87.14	82.44	-

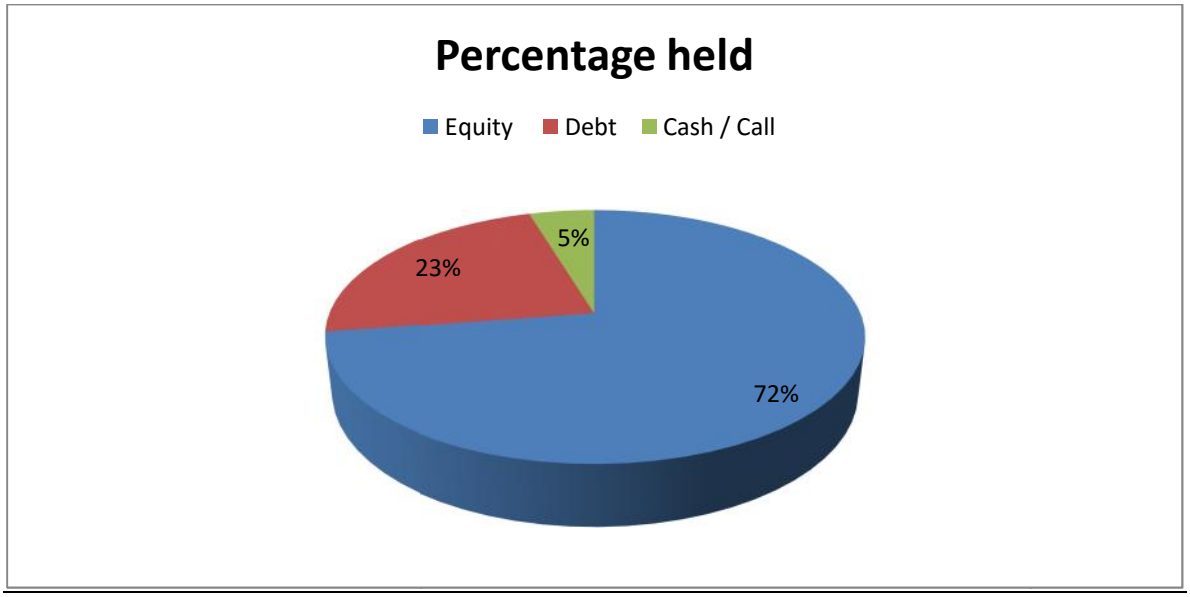
Source : www.valueresearchonline.com

Tata Balanced Fund – Growth

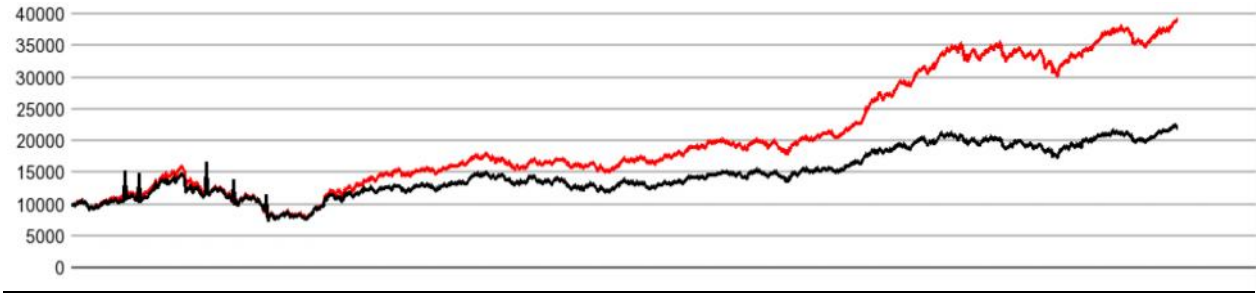
Investment Information	
Rating	* * * *
Fund type	Open-Ended and Hybrid: Equity-oriented
Investment Plan	Growth
Net Assets	6396.0 crore as on March 31, 2017
Risk Grade	Average
Return Grade	Above Average
NAV	Rs. 193.93 as on April 17, 2017

Source : www.valueresearchonline.com

Asset Allocation	Percentage held
Equity	72.55
Debt	22.80
Cash / Call	4.65



Fund Performance Vs Vr Balanced



Scheme performance:

Year	2011	2012	2013	2014	2015	2016	2017
NAV (Rs.)	75.38	98.40	105.82	158.32	169.35	176.19	193.93
Total Return %	-12.02	30.55	7.54	49.61	6.97	4.04	10.07
+/- VR Balanced	6.73	7.30	1.28	22.84	9.15	-0.19	0.71
Rank (Fund/Category)	8/26	7/30	9/32	13/57	12/62	68/84	52/100
52 week High (Rs.)	86.17	98.98	105.82	159.24	176.43	189.41	-
52 week Low (Rs.)	74.67	75.41	88.65	102.02	156.03	151.00	-

Source : www.valueresearchonline.com

2.6.2 PERFORMANCE MEASURES OF MUTUAL FUND

2.6.2.1 Equity Growth Funds

DATE	INDEX (NIFTY 50)	NAV (AXIS EQUITY FUND)	NAV (FRAN-KLIN INDIA BLUE-CHIP)	NAV (BIRLA SUNLIFE ADVA-NTAGE)	NAV (SBI MAG-NUM EQUITY)	RET-URN INDEX	RET-URN AXIX	RETURN FRAN-KLIN	RET-URN BIRLA	RET-URN SBI
1st APRIL 2016	7713.05	18.8	343.02	281.86	72.68					
1st MAY2016	7849.8	18.8	351.71	292.31	73.91	1.76%	0.00%	2.50%	3.64%	1.68%
1st JUNE 2016	8179.95	19.36	363.66	300.2	76.54	4.12%	2.94%	3.34%	2.66%	3.50%
1st JULY 2016	8328.35	19.65	374.48	315.99	78.09	1.80%	1.49%	2.93%	5.13%	2.00%
1st AUG 2016	8636.55	20.16	385.03	340.73	82.59	3.63%	2.56%	2.78%	7.54%	5.60%
1st SEP 2016	8774.65	20.72	390.99	351.52	84.09	1.59%	2.74%	1.54%	3.12%	1.80%
1st OCT 2016	8611.15	20.33	385.28	353.28	83.54	-1.88%	-1.90%	-1.47%	0.50%	-0.66%
1st NOV 2016	8626.25	20.29	387.12	358.3	83.91	0.18%	-0.20%	0.48%	1.41%	0.44%
1st DEC 2016	8192.9	18.76	370.36	325.25	78.76	-5.15%	-7.84%	-4.43%	-9.68%	-6.33%
1st JAN 2017	8179.5	18.38	367.05	317.48	77.18	-0.16%	-2.05%	-0.90%	-2.42%	-2.03%
1st FEB 2017	8716.4	19.73	390.47	351.53	80.86	6.36%	7.09%	6.19%	10.19%	4.66%
1st MAR 2017	8945.8	20.13	401.63	359.21	83.17	2.60%	2.01%	2.82%	2.16%	2.82%
1st APR 2017	9173.75	20.91	408.75	369.44	86	2.52%	3.80%	1.76%	2.81%	3.35%
ASSUME RISK FREE RETURN, Rf					6%	0.49%				
			AV. RETURN PER MONTH			1.45%	0.89%	1.46%	2.25%	1.40%
			ANNUALISED RETURN			17.34%	10.64%	17.53%	27.06%	16.83%
			SD OF MONTHLY RETURN			2.98%	3.74%	2.74%	4.96%	3.24%
			ANNUALISED SD			10.32%	12.94%	9.49%	17.17%	11.24%
			BETA COEFFICIENT				1.10	0.82	1.38	0.93
(Rfund-Rriskfree)/SD of fund			SHARPE RATIO				0.3584	1.2151	1.2264	0.9635
(Rfund-Rriskfree)/beta of fund			TREYNOR RATIO				0.0421	0.1403	0.1527	0.1159
Rf-(Rf+(Rm-Rf)beta)			JENSON' ALPHA				-7.8452%	0.1547%	13.3977 %	-0.4813%
(Sdi/SDf)*Rf+(1-(Sdi/SDf))*rfree-Ri			M^2 MEASURE				-7.6454%	1.1954%	1.3121%	-1.4007%
			R square (coefficient of determination)				0.9164	0.9502	0.8176	0.8760
			TREYNOR & MAZUY METHOD(VALUE OF GAMMA)				-1.77	0.03	-3.96	-4.43
			HENRIKSSON & MERTON METHOD(VALUE OF GAMMA)				-0.24	-0.03	-0.52	-0.4

Table 2.1 Computation Sheet of Equity Growth Funds

TREYNOR & MAZUY METHOD
AXIS EQUITY FUND

rfu-r	ri-r	(ri-r)^2
-0.49%	1.27%	0.000161
2.45%	3.63%	0.00132
1.00%	1.31%	0.000172
2.08%	3.15%	0.00099
2.25%	1.10%	0.000121
-2.39%	-2.37%	0.000561
-0.68%	-0.31%	9.71E-06
-8.33%	-5.64%	0.003182
-2.53%	-0.65%	4.23E-05
6.60%	5.87%	0.003447
1.52%	2.11%	0.000446
3.31%	2.03%	0.000412

AXIS FUND								
Regression Statistics								
Multiple R	0.958955							
R Square	0.919594							
Adjusted R Square	0.901727							
Standard Error	0.01171							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.014115	0.007057	51.46631	1.19E-05			
Residual	9	0.001234	0.000137					
Total	11	0.015349						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.00592	0.004448	-1.33185	0.215652	-0.01599	0.004138	-0.01599	0.004138
ri-r	1.201836	0.118551	10.13776	3.19E-06	0.933656	1.470016	0.933656	1.470016
(ri-r)^2	-1.76645	2.960885	-0.59659	0.565481	-8.46444	4.93154	-8.46444	4.93154

Table 2.1.1

TREYNOR & MAZUY METHOD

FRANKLIN INDIA BLUECHIP FUND

FRANKLIN		
rfu-r	ri-r	(ri-r)^2
2.02%	1.27%	0.000161
2.85%	3.63%	0.00132
2.45%	1.31%	0.000172
2.29%	3.15%	0.00099
1.05%	1.10%	0.000121
-1.96%	-2.37%	0.000561
-0.01%	-0.31%	9.71E-06
-4.91%	-5.64%	0.003182
-1.38%	-0.65%	4.23E-05
5.70%	5.87%	0.003447
2.33%	2.11%	0.000446
1.27%	2.03%	0.000412

FRANKLIN								
Regression Statistics								
Multiple R	0.97477							
R Square	0.950176							
Adjusted R Square	0.939105							
Standard Error	0.00676							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.007844	0.003922	85.81882	1.38E-06			
Residual	9	0.000411	4.57E-05					
Total	11	0.008256						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.001118	0.002568	0.435445	0.673496	-0.00469	0.006927	-0.00469	0.006927
ri-r	0.896447	0.068441	13.09813	3.64E-07	0.741623	1.051271	0.741623	1.051271
(ri-r)^2	0.034524	1.70936	0.020197	0.984327	-3.83232	3.901365	-3.83232	3.901365

Table

2.1.2

TREYNOR & MAZUY METHOD
BIRLA SUNLIFE ADVANTAGE FUND

BIRLA FUND		
rfu-r	ri-r	(ri-r)^2
3.15%	1.27%	0.000161
2.18%	3.63%	0.00132
4.64%	1.31%	0.000172
7.05%	3.15%	0.00099
2.63%	1.10%	0.000121
0.01%	-2.37%	0.000561
0.92%	-0.31%	9.71E-06
-10.16%	-5.64%	0.003182
-2.90%	-0.65%	4.23E-05
9.70%	5.87%	0.003447
1.67%	2.11%	0.000446
2.32%	2.03%	0.000412

BIRLA FUND								
Regression Statistics								
Multiple R	0.909184							
R Square	0.826616							
Adjusted R Square	0.788086							
Standard Error	0.022817							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.022339	0.01117	21.45395	0.000376			
Residual	9	0.004686	0.000521					
Total	11	0.027025						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.006813	0.008667	0.786063	0.452029	-0.01279	0.026418	-0.01279	0.026418
ri-r	1.507622	0.230997	6.526581	0.000108	0.98507	2.030174	0.98507	2.030174
(ri-r)^2	-3.95747	5.769323	-0.68595	0.510026	-17.0086	9.093641	-17.0086	9.093641

Table 2.1.3

TREYNOR & MAZUY METHOD
SBI MAGNUM EQUITY FUND

SBI FUND		
rfu-r	ri-r	(ri-r)^2
1.19%	1.27%	0.000161
3.01%	3.63%	0.00132
1.52%	1.31%	0.000172
5.12%	3.15%	0.00099
1.31%	1.10%	0.000121
-1.14%	-2.37%	0.000561
-0.04%	-0.31%	9.71E-06
-6.82%	-5.64%	0.003182
-2.51%	-0.65%	4.23E-05
4.17%	5.87%	0.003447
2.33%	2.11%	0.000446
2.86%	2.03%	0.000412

SBI FUND								
Regression Statistics								
Multiple R	0.950013							
R Square	0.902524							
Adjusted R Square	0.880863							
Standard Error	0.011198							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.010449	0.005224	41.66518	2.82E-05			
Residual	9	0.001128	0.000125					
Total	11	0.011577						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.003366	0.004253	0.791422	0.449052	-0.00626	0.012987	-0.00626	0.012987
ri-r	1.022768	0.113362	9.022174	8.37E-06	0.766326	1.27921	0.766326	1.27921
(ri-r)^2	-4.43359	2.831288	-1.56593	0.151807	-10.8384	1.97123	-10.8384	1.97123

Table 2.1.4

HARRIKSSON& MERTON METHOD
AXIS EQUITY FUND

	AXIS FUND		
D	Rfu-r	Ri-r	D(Ri-r)
1	-0.49%	1.27%	0.012706354
1	2.45%	3.63%	0.036329984
1	1.00%	1.31%	0.013111319
1	2.08%	3.15%	0.03146984
1	2.25%	1.10%	0.010995685
0	-2.39%	-2.37%	0
0	-0.68%	-0.31%	0
0	-8.33%	-5.64%	0
0	-2.53%	-0.65%	0
1	6.60%	5.87%	0.058707285
1	1.52%	2.11%	0.02110984
1	3.31%	2.03%	0.020293996

AXIS(HARRIKSON)								
Regression Statistics								
Multiple R	0.959105							
R Square	0.919882							
Adjusted R Square	0.902079							
Standard Error	0.011689							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.014119	0.00706	51.66745	1.17E-05			
Residual	9	0.00123	0.000137					
Total	11	0.015349						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.00459	0.005882	-0.77999	0.455417	-0.01789	0.008717	-0.01789	0.008717
Ri-r	1.327355	0.235244	5.642456	0.000317	0.795196	1.859514	0.795196	1.859514
D(Ri-r)	-0.24258	0.388663	-0.62414	0.548028	-1.1218	0.636637	-1.1218	0.636637

Table 2.1.5

HARRIKSSON& MERTON METHOD
FRANKLIN INDIA BLUECHIP FUND

	FRANKLIN FUND		
D	Rfu-r	Ri-r	D(Ri-r)
1	2.02%	1.27%	0.012706354
1	2.85%	3.63%	0.036329984
1	2.45%	1.31%	0.013111319
1	2.29%	3.15%	0.03146984
1	1.05%	1.10%	0.010995685
0	-1.96%	-2.37%	0
0	-0.01%	-0.31%	0
0	-4.91%	-5.64%	0
0	-1.38%	-0.65%	0
1	5.70%	5.87%	0.058707285
1	2.33%	2.11%	0.02110984
1	1.27%	2.03%	0.020293996

FRANKLIN(HARRIKSON)								
Regression Statistics								
Multiple R	0.974817							
R Square	0.950268							
Adjusted R Square	0.939216							
Standard Error	0.006754							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.007845	0.003923	85.98508	1.36E-06			
Residual	9	0.000411	4.56E-05					
Total	11	0.008256						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.001502	0.003398	0.44185	0.669024	-0.00619	0.00919	-0.00619	0.00919
Ri-r	0.911782	0.135928	6.707805	8.78E-05	0.60429	1.219273	0.60429	1.219273
D(Ri-r)	-0.02926	0.224577	-0.13029	0.899201	-0.53729	0.478768	-0.53729	0.478768

Table 2.1.6

HARRIKSSON& MERTON METHOD
BIRLA SUNLIFE ADVANTAGE FUND

	BIRLA FUND		
D	Rfu-r	Ri-r	D(Ri-r)
1	3.15%	1.27%	0.012706354
1	2.18%	3.63%	0.036329984
1	4.64%	1.31%	0.013111319
1	7.05%	3.15%	0.03146984
1	2.63%	1.10%	0.010995685
0	0.01%	-2.37%	0
0	0.92%	-0.31%	0
0	-10.16%	-5.64%	0
0	-2.90%	-0.65%	0
1	9.70%	5.87%	0.058707285
1	1.67%	2.11%	0.02110984
1	2.32%	2.03%	0.020293996

BIRLA(HARIKKSON)								
Regression Statistics								
Multiple R	0.909257							
R Square	0.826748							
Adjusted R Square	0.788248							
Standard Error	0.022809							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.022343	0.011171	21.47372	0.000375			
Residual	9	0.004682	0.00052					
Total	11	0.027025						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.009574	0.011477	0.834251	0.425728	-0.01639	0.035536	-0.01639	0.035536
Ri-r	1.778744	0.459024	3.875053	0.00376	0.740359	2.817129	0.740359	2.817129
D(Ri-r)	-0.52419	0.758386	-0.69119	0.506881	-2.23978	1.191399	-2.23978	1.191399

Table 2.1.7

HARRIKSSON& MERTON METHOD
SBI MAGNUM EQUITY FUND

	SBI FUND		
D	Rfu-r	Ri-r	D(Ri-r)
1	1.19%	1.27%	0.012706354
1	3.01%	3.63%	0.036329984
1	1.52%	1.31%	0.013111319
1	5.12%	3.15%	0.03146984
1	1.31%	1.10%	0.010995685
0	-1.14%	-2.37%	0
0	-0.04%	-0.31%	0
0	-6.82%	-5.64%	0
0	-2.51%	-0.65%	0
1	4.17%	5.87%	0.058707285
1	2.33%	2.11%	0.02110984
1	2.86%	2.03%	0.020293996

SBI(HARRIKSON)

Regression Statistics								
Multiple R	0.942522							
R Square	0.888348							
Adjusted R Square	0.863537							
Standard Error	0.011984							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.010284	0.005142	35.80386	5.19E-05			
Residual	9	0.001293	0.000144					
Total	11	0.011577						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	0.004181	0.00603	0.693429	0.505541	-0.00946	0.017822	-0.00946	0.017822
Ri-r	1.227553	0.241182	5.089744	0.000654	0.681962	1.773144	0.681962	1.773144
D(Ri-r)	-0.3981	0.398473	-0.99906	0.343868	-1.29951	0.50331	-1.29951	0.50331

Table 2.1.8

2.6.2.1.2 Ranking of Equity Growth Funds

Item	Ranking of equity growth funds				Which fund is better
Annualized returns	Birla Sunlife Advantage	Franklin India Bluechip	SBI Magnum Equity	Axis Equity	Birla Sunlife Advantage
Annualized SD	Franklin India Bluechip (lowest SD)	SBI Magnum Equity	Axis Equity	Birla Sunlife Advantage	Franklin India Bluechip (lowest SD)
Sharpe Ratio	Birla Sunlife Advantage	Franklin India Bluechip	SBI Magnum Equity	Axis Equity	Birla Sunlife Advantage
Treynor Ratio	Birla Sunlife Advantage	Franklin India Bluechip	SBI Magnum Equity	Axis Equity	Birla Sunlife Advantage
Alpha	Birla Sunlife Advantage	Axis Equity	Franklin India Bluechip	SBI Magnum Equity	Birla Sunlife Advantage
Beta	Birla Sunlife Advantage (Highest)	Axis Equity	SBI Magnum Equity	Franklin India Bluechip	Birla Sunlife Advantage
R square	Franklin India Bluechip	Axis Equity	SBI Magnum Equity	Birla Sunlife Advantage	Franklin India Bluechip
M^ 2 measure	Axis Equity	Birla Sunlife Advantage	Franklin India Bluechip	SBI Magnum Equity	Axis Equity
Treynor & mazuy Value of gamma	Franklin India Bluechip (+ ve)	Axis Equity (-ve)	Birla Sunlife Advantage (-ve)	SBI Magnum Equity (-ve)	Franklin India Bluechip
Henriksson & Merton Value of gamma	Franklin India Bluechip (-ve)	Axis Equity (-ve)	SBI Magnum Equity (-ve)	Birla Sunlife Advantage (-ve)	Franklin India Bluechip

Table 2.2

2.6.2.1.3 FINDINGS

- Birla sunlife has maximum annualized return (27.06%) but also has maximum annualized SD @ 17.17% whereas Franklin India Bluechip has minimum SD @ 9.49% against 17.53% annualized return.

  Therefore, investors with low risk appetite should go for Frankin India Bluechip Fund and those having high risk appetite should go with Birla Sunlife Fund.
- The above comparison shows Birla Fund has high beta @ 1.38% which is comparatively more volatile than other fund.
- Jenson's alpha value of all funds are positive except SBI Magnum.
- Ranking of funds as per sharpe ratio and treynor ratio are same which shows portfolios are well diversified as total risk is reduced to systematic risk only because when sharpe a ratio and treynor ratio give similar ranking of funds.
- All funds have high positive R square value which tells that funds are significantly influenced by market and thus not taking help of professional management at it optimum.
- With regard to market timing ability of the fund manager, as per Treynor and Mazuy method, valu of gamma is negative for Axis, Birla and SBI Fund which shows funds could not show evidence of any market timing ability. On the other hand, value of gamma for Frankin Fund is positive and for this reason, it is concluded that manager of this fund has superior market timing ability, however the P value of the gamma coefficient is 0.9843 which is higher them 5%, the superior market timing ability of Frankin Fund is not statistically significant. Similarly, as per Henriksson and Merton method, all the fund have negative value of gamma, which could not show evidence of market timing ability.

  From above, it is concluded that Axis Fund may be ruled out for investment as it give lowest return, has high SD, lowest in ranking of sharpe and Treynor.

  The fund best suited for investment his Birla Sunlife which give highest return, with highest ranking as per sharpe and Treynor ratio further it has highest alpha of 13.39% which gives more return per unit risk. This high value of alpha is also indicative of superior risk adjusted performance of the fund and it also suggest good selection of stocks by manager that have given higher risk adjusted returns

2.6.2.2 Debt Long Term Plan Funds

DATE	INDEX (NIFTY 50)	SBI MAG-NUM GILT	RELI-ANCE GILT SEC.	SBI DYN-AMIC BOND	UTI GILT ADVAN-TAG	RET. INDEX	RET. SBI	RET. RELI-ANCE	RET. SBI DYNA-MIC	RET. UTI
1st APRIL 2016	7713.05	32.16	19.14	18.13	31.57					
1st MAY2016	7849.8	32.47	19.4	18.28	31.92	1.76%	0.96%	1.35%	0.82%	1.10%
1st JUNE 2016	8179.95	32.58	19.46	18.43	31.98	4.12%	0.34%	0.31%	0.82%	0.19%
1st JULY 2016	8328.35	32.98	19.76	18.8	32.53	1.80%	1.22%	1.53%	1.99%	1.71%
1st AUG 2016	8636.55	34.15	20.48	19.22	33.74	3.63%	3.49%	3.58%	2.21%	3.65%
1st SEP 2016	8774.65	34.51	20.73	19.42	34.1	1.59%	1.05%	1.21%	1.04%	1.06%
1st OCT 2016	8611.15	35.03	21.04	19.65	34.62	-1.88%	1.50%	1.48%	1.18%	1.51%
1st NOV 2016	8626.25	35.25	21.16	19.76	34.72	0.18%	0.63%	0.57%	0.56%	0.29%
1st DEC 2016	8192.9	37.27	22.36	20.7	36.75	-5.15%	5.57%	5.52%	4.65%	5.68%
1st JAN 2017	8179.5	36.57	21.77	20.42	36.12	-0.16%	-1.90%	-2.67%	-1.36%	-1.73%
1st FEB 2017	8716.4	36.94	22.03	20.56	36.87	6.36%	1.01%	1.19%	0.68%	2.06%
1st MAR 2017	8945.8	36.22	21.51	20.39	36.14	2.60%	-1.97%	-2.39%	-0.83%	-2.00%
1st APR 2017	9173.75	36.9	21.88	20.6	36.95	2.52%	1.86%	1.71%	1.02%	2.22%
ASSUME RISK FREE RETURN,Rf					6%					
			AV. RETURN PER MONTH			1.45%	1.15%	1.11%	1.06%	1.31%
			ANNUALISED RETURN			17.34%	13.75%	13.38%	12.77%	15.74%
			SD OF MONTHLY RETURN			2.98%	2.04%	2.21%	1.51%	2.11%
			ANNUALISED SD			10.32%	7.06%	7.66%	5.22%	7.29%
			BETA COEFFICIENT				-23.87%	-21.66%	-20.17%	-19.12%
			SHARPE RATIO				1.0981	0.9637	1.2964	1.3347
			TREYNOR RATIO				-0.32468	-0.3407	-0.3357	-0.50910029
Rf-(Rf+(Rm-Rf)beta)			JENSON' ALPHA				10.4560%	9.8363%	9.0608%	11.9051%
(Sdi/SDf)*Rf+(1-(Sdi/SDf))*rfree-Ri			M^2 MEASURE				-0.0120%	-1.3990%	2.0347%	2.4293%
			R square (Coefficient of determination)				0.1450	0.1014	0.1890	0.0871
			TREYNOR & MAZUY METHOD(VALUE OF GAMMA)				8.95	9.37	6.57	10.45
			HENRIKSSON & MERTON METHOD(VALUE OF GAMMA)				4.76	5.15	2.92	7.39

Table 2.3 Computation Sheet of Debt Long Term Plan Funds

TREYNOR & MAZUY METHOD
SBI MAGNUM GILT

SBI FUND		
rfu-r	ri-r	(ri-r)^2
-5.04%	-4.24%	0.0018
-5.66%	-1.88%	0.000354
-4.78%	-4.20%	0.001766
-2.51%	-2.37%	0.00056
-4.95%	-4.41%	0.001948
-4.50%	-7.88%	0.006211
-5.37%	-5.82%	0.003393
-0.43%	-11.15%	0.012442
-7.90%	-6.16%	0.003799
-4.99%	0.36%	1.28E-05
-7.97%	-3.40%	0.001158
-4.14%	-3.48%	0.001214

SBI DEBT(TREYNOR)								
Regression Statistics								
Multiple R	0.647592							
R Square	0.419375							
Adjusted R Square	0.290348							
Standard Error	0.01716							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.001914	0.000957	3.250275	0.086602			
Residual	9	0.00265	0.000294					
Total	11	0.004565						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.04162	0.01304	-3.19186	0.010974	-0.07112	-0.01212	-0.07112	-0.01212
ri-r	0.719362	0.505789	1.422259	0.18867	-0.42481	1.863535	-0.42481	1.863535
(ri-r)^2	8.948871	4.338961	2.062446	0.069206	-0.86654	18.76428	-0.86654	18.76428

Table 2.3.1

TREYNOR & MAZUY METHOD
RELIANCE GILT

RELIANCE FUND		
rfu-r	ri-r	(ri-r)^2
-4.65%	-4.24%	0.0018
-5.69%	-1.88%	0.000354
-4.47%	-4.20%	0.001766
-2.42%	-2.37%	0.00056
-4.79%	-4.41%	0.001948
-4.52%	-7.88%	0.006211
-5.43%	-5.82%	0.003393
-0.48%	-11.15%	0.012442
-8.67%	-6.16%	0.003799
-4.81%	0.36%	1.28E-05
-8.39%	-3.40%	0.001158
-4.29%	-3.48%	0.001214

RELIANCE DEBT(TREYNOR)								
Regression Statistics								
Multiple R	0.597389							
R Square	0.356874							
Adjusted R Square	0.213957							
Standard Error	0.019598							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.001918	0.000959	2.497072	0.137193			
Residual	9	0.003457	0.000384					
Total	11	0.005375						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.03995	0.014892	-2.68267	0.025096	-0.07364	-0.00626	-0.07364	-0.00626
ri-r	0.789476	0.577636	1.366737	0.204874	-0.51723	2.09618	-0.51723	2.09618
(ri-r)^2	9.369528	4.955312	1.890805	0.091219	-1.84017	20.57922	-1.84017	20.57922

Table 2.3.2

TREYNOR & MAZUY METHOD
SBI DYNAMIC BOND

SBI DYNAMIC		
rfu-r	ri-r	(ri-r)^2
-5.18%	-4.24%	0.0018
-5.18%	-1.88%	0.000354
-4.01%	-4.20%	0.001766
-3.79%	-2.37%	0.00056
-4.96%	-4.41%	0.001948
-4.82%	-7.88%	0.006211
-5.44%	-5.82%	0.003393
-1.35%	-11.15%	0.012442
-7.36%	-6.16%	0.003799
-5.32%	0.36%	1.28E-05
-6.83%	-3.40%	0.001158
-4.98%	-3.48%	0.001214

SBI DYNAMIC DEBT(TREYNOR)								
Regression Statistics								
Multiple R	0.677419							
R Square	0.458896							
Adjusted R Square	0.338651							
Standard Error	0.012263							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.001148	0.000574	3.816334	0.063061			
Residual	9	0.001354	0.00015					
Total	11	0.002501						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.04559	0.009319	-4.89274	0.000856	-0.06667	-0.02451	-0.06667	-0.02451
ri-r	0.499149	0.361452	1.380955	0.200615	-0.31851	1.316811	-0.31851	1.316811
(ri-r)^2	6.569567	3.100757	2.118698	0.063171	-0.44483	13.58397	-0.44483	13.58397

Table 2.3.3

TREYNOR & MAZUY METHOD
UTI GILT ADVANTAG

UTI FUND		
rfu-r	ri-r	(ri-r)^2
-4.90%	-4.24%	0.0018
-5.81%	-1.88%	0.000354
-4.29%	-4.20%	0.001766
-2.35%	-2.37%	0.00056
-4.94%	-4.41%	0.001948
-4.49%	-7.88%	0.006211
-5.71%	-5.82%	0.003393
-0.32%	-11.15%	0.012442
-7.73%	-6.16%	0.003799
-3.94%	0.36%	1.28E-05
-8.00%	-3.40%	0.001158
-3.78%	-3.48%	0.001214

UTI DEBT FUND(TREYNOR)								
Regression Statistics								
Multiple R	0.661201							
R Square	0.437186							
Adjusted R Square	0.312117							
Standard Error	0.017465							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.002132	0.001066	3.49554	0.075273			
Residual	9	0.002745	0.000305					
Total	11	0.004878						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.03446	0.013271	-2.59678	0.02889	-0.06448	-0.00444	-0.06448	-0.00444
ri-r	0.935268	0.514759	1.816904	0.102606	-0.2292	2.099734	-0.2292	2.099734
(ri-r)^2	10.4484	4.415917	2.366076	0.042179	0.458897	20.43789	0.458897	20.43789

Table 2.3.4

HARRIKSSON& MERTON METHOD
SBI MAGNUM GILT

SBI FUND			
D	Rfu-r	Ri-r	D(Ri-r)
0	-5.04%	-4.24%	0
0	-5.66%	-1.88%	0
0	-4.78%	-4.20%	0
0	-2.51%	-2.37%	0
0	-4.95%	-4.41%	0
0	-4.50%	-7.88%	0
0	-5.37%	-5.82%	0
0	-0.43%	-11.15%	0
0	-7.90%	-6.16%	0
1	-4.99%	0.36%	0.003575285
0	-7.97%	-3.40%	0
0	-4.14%	-3.48%	0

SBI DEBT FUND(HARRIKSSON)								
Regression Statistics								
Multiple R	0.432984							
R Square	0.187475							
Adjusted R Square	0.006914							
Standard Error	0.0203							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.000856	0.000428	1.038294	0.392884			
Residual	9	0.003709	0.000412					
Total	11	0.004565						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.06572	0.013493	-4.87089	0.000882	-0.09625	-0.0352	-0.09625	-0.0352
Ri-r	-0.34605	0.240437	-1.43926	0.183934	-0.88996	0.197855	-0.88996	0.197855
D(Ri-r)	4.762495	6.939494	0.686288	0.509824	-10.9357	20.46072	-10.9357	20.46072

Table 2.3.5

HARRIKSSON& MERTON METHOD
RELIANCE GILT

D	Rfu-r	Ri-r	D(Ri-r)
0	-4.65%	-4.24%	0
0	-5.69%	-1.88%	0
0	-4.47%	-4.20%	0
0	-2.42%	-2.37%	0
0	-4.79%	-4.41%	0
0	-4.52%	-7.88%	0
0	-5.43%	-5.82%	0
0	-0.48%	-11.15%	0
0	-8.67%	-6.16%	0
1	-4.81%	0.36%	0.003575285
0	-8.39%	-3.40%	0
0	-4.29%	-3.48%	0

RELIANCE DEBT FUND(HARRIKSSON)								
Regression Statistics								
Multiple R	0.379017							
R Square	0.143654							
Adjusted R Square	-0.04665							
Standard Error	0.022615							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.000772	0.000386	0.754885	0.497647			
Residual	9	0.004603	0.000511					
Total	11	0.005375						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.06537	0.015031	-4.34889	0.001853	-0.09937	-0.03137	-0.09937	-0.03137
Ri-r	-0.32899	0.267851	-1.22827	0.250495	-0.93491	0.276926	-0.93491	0.276926
D(Ri-r)	5.15171	7.730705	0.666396	0.521872	-12.3364	22.63978	-12.3364	22.63978

Table 2.3.6

HARRIKSSON& MERTON METHOD
RELIANCE GILT

D	Rfu-r	Ri-r	D(Ri-r)
0	-5.18%	-4.24%	0
0	-5.18%	-1.88%	0
0	-4.01%	-4.20%	0
0	-3.79%	-2.37%	0
0	-4.96%	-4.41%	0
0	-4.82%	-7.88%	0
0	-5.44%	-5.82%	0
0	-1.35%	-11.15%	0
0	-7.36%	-6.16%	0
1	-5.32%	0.36%	0.003575285
0	-6.83%	-3.40%	0
0	-4.98%	-3.48%	0

RELIANCE DEBT FUND(HARRIKSSON)								
Regression Statistics								
Multiple R	0.379017							
R Square	0.143654							
Adjusted R Square	-0.04665							
Standard Error	0.022615							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.000772	0.000386	0.754885	0.497647			
Residual	9	0.004603	0.000511					
Total	11	0.005375						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.06537	0.015031	-4.34889	0.001853	-0.09937	-0.03137	-0.09937	-0.03137
Ri-r	-0.32899	0.267851	-1.22827	0.250495	-0.93491	0.276926	-0.93491	0.276926
D(Ri-r)	5.15171	7.730705	0.666396	0.521872	-12.3364	22.63978	-12.3364	22.63978

Table 2.3.7

HARRIKSSON& MERTON METHOD
UTI GILT ADVANTAG

D	Rfu-r	Ri-r	D(Ri-r)
0	-4.90%	-4.24%	0
0	-5.81%	-1.88%	0
0	-4.29%	-4.20%	0
0	-2.35%	-2.37%	0
0	-4.94%	-4.41%	0
0	-4.49%	-7.88%	0
0	-5.71%	-5.82%	0
0	-0.32%	-11.15%	0
0	-7.73%	-6.16%	0
1	-3.94%	0.36%	0.003575285
0	-8.00%	-3.40%	0
0	-3.78%	-3.48%	0

UTI DEBT FUND(HARRIKSSON)								
Regression Statistics								
Multiple R	0.427661							
R Square	0.182894							
Adjusted R Square	0.001314							
Standard Error	0.021044							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.000892	0.000446	1.007238	0.402952			
Residual	9	0.003985	0.000443					
Total	11	0.004878						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.06465	0.013987	-4.62181	0.001251	-0.09629	-0.03301	-0.09629	-0.03301
Ri-r	-0.34158	0.249243	-1.37047	0.20375	-0.90541	0.222248	-0.90541	0.222248
D(Ri-r)	7.389376	7.193652	1.027208	0.331137	-8.8838	23.66255	-8.8838	23.66255

Table 2.3.8

2.6.2.2.2 RANKING OF DEBT GROWTH FUNDS

Item	Ranking of equity growth funds				Which fund is better
Annualized returns	UTI Gilt Advantage	SBI Magnum Gilt	Reliance Gilt	SBI Dynamic	UTI Gilt Advantage
Annualized SD	SBI Dynamic (Lowest SD)	SBI Magnum Gilt	UTI Gilt Advantage	Reliance Gilt	SBI Dynamic (Lowest SD)
Sharpe Ratio	UTI Gilt Advantage	SBI Dynamic	SBI Magnum Gilt	Reliance Gilt	UTI Gilt Advantage
Treynor Ratio	UTI Gilt Advantage	SBI Magnum Gilt	SBI Dynamic	Reliance Gilt	UTI Gilt Advantage
Alpha	UTI Gilt Advantage (+ ve)	SBI Magnum Gilt (+ ve)	Reliance Gilt (+ ve)	SBI Dynamic (+ ve)	UTI Gilt Advantage
Beta	UTI Gilt Advantage (- ve)	SBI Dynamic (- ve)	Reliance Gilt (- ve)	SBI Magnum Gilt (- ve)	UTI Gilt Advantage
R square	SBI Dynamic (Highest)	SBI Magnum Gilt	Reliance Gilt	UTI Gilt Advantage	SBI Dynamic
M^ 2 measure	UTI Gilt Advantage	SBI Dynamic	SBI Magnum Gilt	Reliance Gilt	UTI Gilt Advantage
Treynor & mazuy Value of gamma	UTI Gilt Advantage (+ve) P < 0.05	Reliance Gilt (+ve) P> 0.05	SBI Magnum Gilt (+ve) P> 0.05	SBI Dynamic (+ve) P> 0.05	UTI Gilt Advantage
Henriksson & Merton Value of gamma	UTI Gilt Advantage (+ ve) P> 0.05	Reliance Gilt (+ve) P> 0.05	SBI Magnum Gilt (+ve) P> 0.05	SBI Dynamic (+ve) P> 0.05	UTI Gilt Advantage

Table 2.4

2.6.2.2.3 FINDINGS

- UTI Fund has maximum annualized return (15.74%) but also has annualized SD @ 7.29 % whereas SBI Dynamic has minimum SD @ 5.22 % against 1.51 % annualized return.

  Therefore, investors with low risk appetite should go for SBI Dynamic Fund and those having high risk appetite should go with UTI Fund.
- The above comparison shows all Fund have negative beta which shows they are very less influenced by market. Although among these, UTI Fund has more beta.
- Jenson's alpha value of all funds are positive which shows that these funds give excess return above risk free return.
- Ranking of funds as per sharpe ratio and treynor ratio are almost same which shows portfolios are well diversified as total risk is reduced to systematic risk only because when sharpe a ratio and treynor ratio give similar ranking of funds.
- All funds have very low positive R square value which tells that funds are not significantly influenced by market and thus taking help of professional management at it optimum.
- With regard to market timing ability of the fund manager, as per Treynor and Mazuy method, value of gamma is positive for all funds which shows funds could show evidence of market timing ability but out of these UTI Fund has $P< 0.05$ which shows it is statistically significant in comparison to other funds which have $P<0.05$. Similarly, as per Henriksson and Merton method, all the fund have positive value of gamma, which could show evidence of market timing ability but as all are having $P>0.05$, therefore it is statistically insignificant.

  From above, it is concluded that Reliance Fund may be ruled out for investment as it give low return, has high SD, lowest in ranking of sharpe and Treynor.

  The fund best suited for investment is UTI Fund which give highest return, with highest ranking as per sharpe and Treynor ratio further it has highest alpha of 11.91% which gives more return per unit risk. This high value of alpha is also indicative of superior risk adjusted performance of the fund and it also suggest good selection of stocks by manager that have given higher risk adjusted returns.

2.6.2.3 Balanced Fund (Hybrid Equity)

DATE	INDEX (NIFTY 50)	NAV (HDFC BALANCED	NAV (ICICI PRU. BAL.	NAV (TATA BAL. FUND	BIRLA SUNL. BAL. 95	RET. INDEX	RET. HDFC	RET. ICICI	RET. TATA	RET. BIRLA
1st APRIL 2016	7713.05	106.4	10.4	163.44	552.04					
1st MAY2016	7849.8	108.33	10.68	166.15	565.52	1.76%	1.80%	2.66%	1.64%	2.41%
1st JUNE 2016	8179.95	111.24	10.8	170.18	583.05	4.12%	2.65%	1.12%	2.40%	3.05%
1st JULY 2016	8328.35	114.11	11.41	175.22	602.2	1.80%	2.55%	5.49%	2.92%	3.23%
1st AUG 2016	8636.55	118.47	11.78	183.5	630.95	3.63%	3.75%	3.19%	4.62%	4.66%
1st SEP 2016	8774.65	121.3	12.12	186.22	640.11	1.59%	2.36%	2.85%	1.47%	1.44%
1st OCT 2016	8611.15	122.08	12.2	186.3	639.94	-1.88%	0.64%	0.66%	0.04%	-0.03%
1st NOV 2016	8626.25	124.37	12.43	187.27	650.16	0.18%	1.86%	1.87%	0.52%	1.58%
1st DEC 2016	8192.9	120.84	12.19	178.62	621.93	-5.15%	-2.88%	-1.95%	-4.73%	-4.44%
1st JAN 2017	8179.5	119.02	11.9	176.19	613.78	-0.16%	-1.52%	-2.41%	-1.37%	-1.32%
1st FEB 2017	8716.4	125.34	12.52	185.32	650.2	6.36%	5.17%	5.08%	5.05%	5.76%
1st MAR 2017	8945.8	127.33	12.78	187.08	660.08	2.60%	1.58%	2.06%	0.95%	1.51%
1st APR 2017	9173.75	132.31	12.96	191.68	687.9	2.52%	3.84%	1.40%	2.43%	4.13%
ASSUME RISK FREE RETURN,Rf		6%								
		AV. RETURN PER MONTH				1.45%	1.82%	1.83%	1.33%	1.83%
		ANNUALISED RETURN				17.34%	21.79%	22.01%	15.94%	22.00%
		SD OF MONTHLY RETURN				2.98%	2.24%	2.37%	2.63%	2.79%
		ANNUALISED SD				10.32%	7.76%	8.22%	9.11%	9.66%
		BETA COEFFICIENT					0.61	0.51	0.75	0.79
		SHARPE RATIO					2.03	1.95	1.09	1.66
		TREYNOR RATIO					0.26	0.31	0.13	0.20
RfUND-(Rf+(Rm-Rf)beta)		JENSON' ALPHA					8.83%	10.24%	1.48%	7.01%
(Sdi/SDf)*Rf+(1-(Sdi/SDf))*rfree-Ri		M^2 MEASURE					9.65%	8.75%	-0.09%	5.75%
		R square (Coefficient of determination)					0.7930	0.4850	0.8483	0.8536
		TREYNOR & MAZUY METHOD(VALUE OF GAMMA)					-0.48	-0.59	-1.67	-1.76
		HENRIKSSON & MERTON METHOD(VALUE OF GAMMA)					0.28	2.17	-1.13	-1.33

Table 2.5 Computation Sheet of Balanced Fund (Hybrid Equity)

TREYNOR & MAZUY METHOD
HDFC BALANCED

HDFC FUND		
rfu-r	ri-r	(ri-r)^2
-4.20%	-4.24%	0.0018
-3.35%	-1.88%	0.000354
-3.45%	-4.20%	0.001766
-2.25%	-2.37%	0.00056
-3.64%	-4.41%	0.001948
-5.36%	-7.88%	0.006211
-4.14%	-5.82%	0.003393
-8.88%	-11.15%	0.012442
-7.52%	-6.16%	0.003799
-0.83%	0.36%	1.28E-05
-4.42%	-3.40%	0.001158
-2.16%	-3.48%	0.001214

HDFC BAL.(TREYNOR)								
Regression Statistics								
Multiple R	0.890859							
R Square	0.793629							
Adjusted R Square	0.747769							
Standard Error	0.011253							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.004383	0.002191	17.3054	0.000824			
Residual	9	0.00114	0.000127					
Total	11	0.005523						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.01234	0.008551	-1.44291	0.18293	-0.03168	0.007005	-0.03168	0.007005
ri-r	0.617199	0.331676	1.86085	0.095684	-0.1331	1.367502	-0.1331	1.367502
(ri-r)^2	-0.48061	2.845316	-0.16891	0.869599	-6.91717	5.955937	-6.91717	5.955937

Table 2.5.1

TREYNOR & MAZUY METHOD
ICICI PRU. BAL

ICICI FUND		
rfu-r	ri-r	(ri-r)^2
-3.34%	-4.24%	0.0018
-4.88%	-1.88%	0.000354
-0.51%	-4.20%	0.001766
-2.81%	-2.37%	0.00056
-3.15%	-4.41%	0.001948
-5.34%	-7.88%	0.006211
-4.13%	-5.82%	0.003393
-7.95%	-11.15%	0.012442
-8.41%	-6.16%	0.003799
-0.92%	0.36%	1.28E-05
-3.94%	-3.40%	0.001158
-4.60%	-3.48%	0.001214

ICICI BALANCED(TREYNOR)								
Regression Statistics								
Multiple R	0.697013							
R Square	0.485827							
Adjusted R Square	0.371566							
Standard Error	0.018808							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.003008	0.001504	4.251915	0.050118			
Residual	9	0.003184	0.000354					
Total	11	0.006192						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.01763	0.014292	-1.23344	0.248654	-0.04996	0.014702	-0.04996	0.014702
ri-r	0.490547	0.554337	0.884925	0.399222	-0.76345	1.744545	-0.76345	1.744545
(ri-r)^2	-0.58541	4.755443	-0.1231	0.90473	-11.343	10.17215	-11.343	10.17215

Table 2.5.2

TREYNOR & MAZUY METHOD
TATA BAL. FUND

TATA FUND		
rfu-r	ri-r	(ri-r)^2
-4.36%	-4.24%	0.0018
-3.60%	-1.88%	0.000354
-3.08%	-4.20%	0.001766
-1.38%	-2.37%	0.00056
-4.53%	-4.41%	0.001948
-5.96%	-7.88%	0.006211
-5.48%	-5.82%	0.003393
-10.73%	-11.15%	0.012442
-7.37%	-6.16%	0.003799
-0.95%	0.36%	1.28E-05
-5.05%	-3.40%	0.001158
-3.57%	-3.48%	0.001214

TATA BAL. FUND (TREYNOR)								
Regression Statistics								
Multiple R	0.92412							
R Square	0.853997							
Adjusted R Square	0.821552							
Standard Error	0.011112							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.0065	0.00325	26.32134	0.000174			
Residual	9	0.001111	0.000123					
Total	11	0.007611						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.01318	0.008444	-1.56102	0.152953	-0.03228	0.00592	-0.03228	0.00592
ri-r	0.630403	0.32751	1.924836	0.086385	-0.11048	1.371282	-0.11048	1.371282
(ri-r)^2	-1.67051	2.809579	-0.59458	0.566771	-8.02622	4.685196	-8.02622	4.685196

Table 2.5.3

TREYNOR & MAZUY METHOD
BIRLA SUNL. BAL. 95

BIRLA FUND		
rfu-r	ri-r	(ri-r)^2
-3.59%	-4.24%	0.0018
-2.95%	-1.88%	0.000354
-2.77%	-4.20%	0.001766
-1.34%	-2.37%	0.00056
-4.56%	-4.41%	0.001948
-6.03%	-7.88%	0.006211
-4.42%	-5.82%	0.003393
-10.44%	-11.15%	0.012442
-7.32%	-6.16%	0.003799
-0.24%	0.36%	1.28E-05
-4.49%	-3.40%	0.001158
-1.87%	-3.48%	0.001214

BIRLA BAL.(TREYNOR)								
Regression Statistics								
Multiple R	0.926967							
R Square	0.859267							
Adjusted R Square	0.827993							
Standard Error	0.011567							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.007353	0.003676	27.47542	0.000147			
Residual	9	0.001204	0.000134					
Total	11	0.008557						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.00596	0.00879	-0.67795	0.514851	-0.02584	0.013925	-0.02584	0.013925
ri-r	0.672271	0.340941	1.971809	0.080109	-0.09899	1.443533	-0.09899	1.443533
(ri-r)^2	-1.76093	2.924799	-0.60207	0.561988	-8.37728	4.855428	-8.37728	4.855428

Table 2.5.4

HARRIKSSON& MERTON METHOD
HDFC BALANCED

HDFC FUND			
D	Rfu-r	Ri-r	D(Ri-r)
0	-4.20%	-4.24%	0
0	-3.35%	-1.88%	0
0	-3.45%	-4.20%	0
0	-2.25%	-2.37%	0
0	-3.64%	-4.41%	0
0	-5.36%	-7.88%	0
0	-4.14%	-5.82%	0
0	-8.88%	-11.15%	0
0	-7.52%	-6.16%	0
1	-0.83%	0.36%	0.003575285
0	-4.42%	-3.40%	0
0	-2.16%	-3.48%	0

HDFC BAL(HARRIKSSON)								
Regression Statistics								
Multiple R	0.89056							
R Square	0.793098							
Adjusted R Square	0.747119							
Standard Error	0.011268							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.00438	0.00219	17.24938	0.000834			
Residual	9	0.001143	0.000127					
Total	11	0.005523						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.01164	0.007489	-1.55478	0.154419	-0.02859	0.005298	-0.02859	0.005298
Ri-r	0.664753	0.133455	4.981111	0.000758	0.362857	0.966649	0.362857	0.966649
D(Ri-r)	0.281408	3.851773	0.073059	0.943357	-8.43191	8.994723	-8.43191	8.994723

Table 2.5.5

HARRIKSSON& MERTON METHOD
ICICI PRU. BAL

ICICI FUND			
D	Rfu-r	Ri-r	D(Ri-r)
0	-3.34%	-4.24%	0
0	-4.88%	-1.88%	0
0	-0.51%	-4.20%	0
0	-2.81%	-2.37%	0
0	-3.15%	-4.41%	0
0	-5.34%	-7.88%	0
0	-4.13%	-5.82%	0
0	-7.95%	-11.15%	0
0	-8.41%	-6.16%	0
1	-0.92%	0.36%	0.003575285
0	-3.94%	-3.40%	0
0	-4.60%	-3.48%	0

ICICI BAL(HARRIKSSON)								
Regression Statistics								
Multiple R	0.701069							
R Square	0.491498							
Adjusted R Square	0.378497							
Standard Error	0.018704							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.003043	0.001522	4.349519	0.047678			
Residual	9	0.003148	0.00035					
Total	11	0.006192						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.01883	0.012432	-1.51461	0.164171	-0.04695	0.009293	-0.04695	0.009293
Ri-r	0.515507	0.221528	2.327057	0.044963	0.014377	1.016637	0.014377	1.016637
D(Ri-r)	2.174759	6.393728	0.340139	0.741556	-12.2889	16.63838	-12.2889	16.63838

Table 2.5.6

HARRIKSSON& MERTON METHOD
TATA BAL. FUND

TATA BALANCED			
D	Rfu-r	Ri-r	D(Ri-r)
0	-4.36%	-4.24%	0
0	-3.60%	-1.88%	0
0	-3.08%	-4.20%	0
0	-1.38%	-2.37%	0
0	-4.53%	-4.41%	0
0	-5.96%	-7.88%	0
0	-5.48%	-5.82%	0
0	-10.73%	-11.15%	0
0	-7.37%	-6.16%	0
1	-0.95%	0.36%	0.003575285
0	-5.05%	-3.40%	0
0	-3.57%	-3.48%	0

TATA BAL(HARRIKSSON)								
Regression Statistics								
Multiple R	0.921795							
R Square	0.849705							
Adjusted R Square	0.816307							
Standard Error	0.011274							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.006467	0.003234	25.44118	0.000198			
Residual	9	0.001144	0.000127					
Total	11	0.007611						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.00841	0.007494	-1.12217	0.290835	-0.02536	0.008543	-0.02536	0.008543
Ri-r	0.833675	0.13353	6.243373	0.000151	0.53161	1.13574	0.53161	1.13574
D(Ri-r)	-1.13292	3.853933	-0.29396	0.775452	-9.85112	7.585285	-9.85112	7.585285

Table 2.5.7

HARRIKSSON& MERTON METHOD
BIRLA SUNL. BAL. 95

BIRLA FUND			
D	Rfu-r	Ri-r	D(Ri-r)
0	-3.59%	-4.24%	0
0	-2.95%	-1.88%	0
0	-2.77%	-4.20%	0
0	-1.34%	-2.37%	0
0	-4.56%	-4.41%	0
0	-6.03%	-7.88%	0
0	-4.42%	-5.82%	0
0	-10.44%	-11.15%	0
0	-7.32%	-6.16%	0
1	-0.24%	0.36%	0.003575285
0	-4.49%	-3.40%	0
0	-1.87%	-3.48%	0

BIRLA BAL.(HARRIKSSON)								
Regression Statistics								
Multiple R	0.924862							
R Square	0.85537							
Adjusted R Square	0.82323							
Standard Error	0.011726							
Observations	12							
ANOVA								
	df	*SS*	*MS*	*F*	*Significance F*			
Regression	2	0.007319	0.00366	26.61393	0.000166			
Residual	9	0.001238	0.000138					
Total	11	0.008557						
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-0.00078	0.007794	-0.09962	0.922833	-0.01841	0.016856	-0.01841	0.016856
Ri-r	0.889005	0.13889	6.400772	0.000125	0.574813	1.203196	0.574813	1.203196
D(Ri-r)	-1.33096	4.008651	-0.33202	0.747475	-10.3992	7.73724	-10.3992	7.73724

Table 2.5.8

2.6.2.3.2 Ranking of Debt Growth Funds

Item	Ranking of equity growth funds				Which fund is better
Annualized returns	ICICI Pru.	Birla Sunlife 95	HDFC	TATA	ICICI Pru.
Annualized SD	HDFC (Lowest SD)	ICICI Pru.	TATA	Birla Sunlife 95	HDFC (Lowest SD)
Sharpe Ratio	HDFC	ICICI Pru.	Birla Sunlife 95	TATA	HDFC
Treynor Ratio	ICICI Pru.	HDFC	Birla Sunlife 95	TATA	ICICI Pru.
Alpha	ICICI Pru.	HDFC	Birla Sunlife 95	TATA	ICICI Pru.
Beta	Birla Sunlife 95 (Highest)	TATA	HDFC	ICICI Pru.	Birla Sunlife 95
R square	Birla Sunlife 95	TATA	HDFC	ICICI Pru.	Birla Sunlife 95
M^ 2 measure	HDFC	ICICI Pru.	Birla Sunlife 95	TATA	HDFC
Treynor & mazuy Value of gamma	HDFC (-ve)	ICIC Pru. (-ve)	TATA (-ve)	Birla Sunlife (-ve)	HDFC
Henriksson & Merton Value of gamma	ICICI Pru. (+ ve) P> 0.05	HDFC (+ve) P> 0.05	TATA (-ve)	Birla Sunlife (-ve)	ICICI Pru.

Table 2.6

2.6.2.3.3 FINDINGS

- ICICI Fund has maximum annualized return (22.01%) and also has low annualized SD @ 8.22% whereas TATA has lowest return 15.94% with SD @ 9.11%.

  Therefore, investors with low risk appetite should go for ICICI Fund with high return.
- The above comparison shows all funds has low beta which shows they are less aggressive i.e. they are less sensitive to the market, therefore whenever stock market will fall arise, fund would all arise less then the market. Since Birla Fund has more beta value among all funds, it is having more risky profile in the category.
- Jenson's alpha value of all funds are positive which shows that these funds give excess return above risk free return.
- Ranking of funds as per sharpe ratio and treynor ratio are vary which shows ICICI Fund having high rank on Treynor ratio, have low rank in shape ratio which signifies that ICICI Fund is not well diversified.
- TATA and Birla funds have high positive R square value which tells that funds are significantly influenced by market and whereas ICICI Fund have low R square value which signifies it is less influence by market.
- With regard to market timing ability of the fund manager, as per Treynor and Mazuy method, value of gamma is negative for all funds which shows funds could not show evidence of market timing ability. As per Henriksson and Merton method, ICICI and HDFC fund have positive value of gamma, which could show evidence of market timing ability but are having P>0.05, therefore it is statistically insignificant. On the other hand TATA and Birla Fund have negative gamma value. which shows funds could not show evidence of market timing ability.

  From above, it is concluded that TATA Fund may be ruled out for investment as it give low return, has high SD, lowest in ranking of sharpe and Treynor.

  The fund best suited for investment is HDFC and ICICI Fund which give high return, with high ranking as per sharpe and Treynor ratio further it has high alpha which gives more return per unit risk. This high value of alpha is also indicative of superior risk adjusted performance of the fund and it also suggest good selection of stocks by manager that have given higher risk adjusted returns.

2.7 CONCLUSION

Several performance measures to evaluate performance of mutual fund have been elaborated above vide various computations. It is a well-known fact that investors can increase expected returns by assuming higher risk, so performance measures must incorporate the concept of risk. The risk measures in both the Sharpe Ratio and Modigliani's Measure are based on standard deviation; hence raking of funds using these two methods would always be identical. However, the results of all performance measures would not always lead to identical ranking of the mutual funds.

The analysis of performance was based on the historical returns of the funds, so one must not forget the usual disclaimer. "past performance of a fund may not be repeated in the future." A number of studies tried to evaluate future performance based on past performances, but the results were mixed. Through the past performance may not be a perfect indicator, investors will certainly be interested in how the funds performed in the past and whether returns given the funds were commensurate to the risks to which they were exposed.

CHAPTER- 3

SURVEY OF INVESTMENT BEHAVIOR OF INVESTORS IN CONTEXT OF MUTUAL FUNDS

3.1 SCOPE OF THE STUDY:

3.1.1 GEOGRAPHICAL SCOPE-

The geographical scope of the study is not limited. This study can be implemented in any part of the country; though the samples taken were from **various Mutual Fund** branch offices in Delhi.

3.1.2 FUNCTIONAL SCOPE-

This study can be used to understand the behavioral aspect of people who invest, what is their investment potential and how much risk can they take.

3.2 DATA COLLECTION METHOD*:*

The data collection for this study was done in the following manner:

- **Through questionnaire*:*-**

Information to find out the investment potential and goal was found out through questionnaires.

3.3 SAMPLING METHOD ADOPTED:

The sampling method chosen is ***Area Sampling***. As the primary sampling unit represents a cluster of units based on geographic area. The geographical area chosen for individual customers was at various Mutual Fund offices in Delhi.

It is basically a non-probability convenience sampling procedure which does not afford any basis for estimating the probability that each item in the population has been included in the sample.

Under non-probability sampling the organizers of the enquiry purposively choose the particular units of the universe for constituting a sample on the basis that the small mass that they so select out of a huge one will be typical or representative of the whole.

3.4 ANALYSIS OF INDIVIDUAL INVESTORS

Data Analysis

POPULATION:- According to the data collection method adopted, the size of the population is 100.
Thus, N=100

After collecting the data, I have discarded the responses of those people who did not invest a mutual funds and kept the total sample of 100 of only those people who invest in mutual funds. During the survey, it was found that mainly people do not invest a mutual fund without any specific reason.

3.4.1 ANALYSIS OF THE PREFERENCES OF THE RESPONDENTS:-

Out of the 100 people the following percentage composition were interested in the following products:-

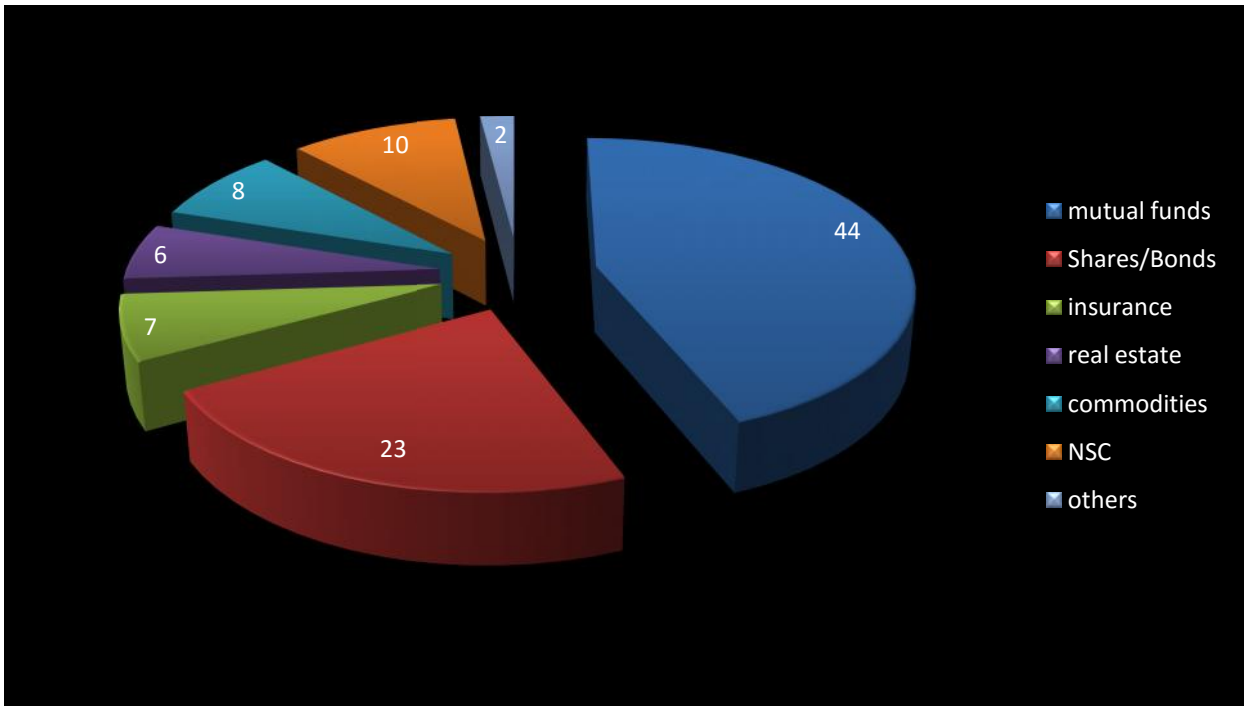


FIG. 3.1

The data collected above shows that approximately 67% of people are aware of the market in general and 44% are aware of Mutual Funds in particular.

3.4.2 DEMOGRAPHIC FACTORS:

3.4.2.1 SEX PROFILE:

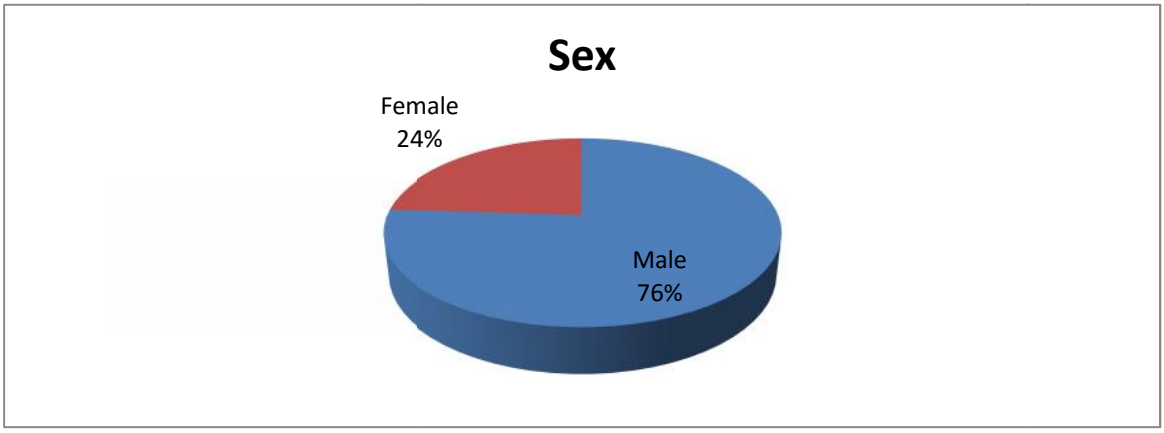


Fig. 3.2

3.4.2.2 AGE PROFILE:

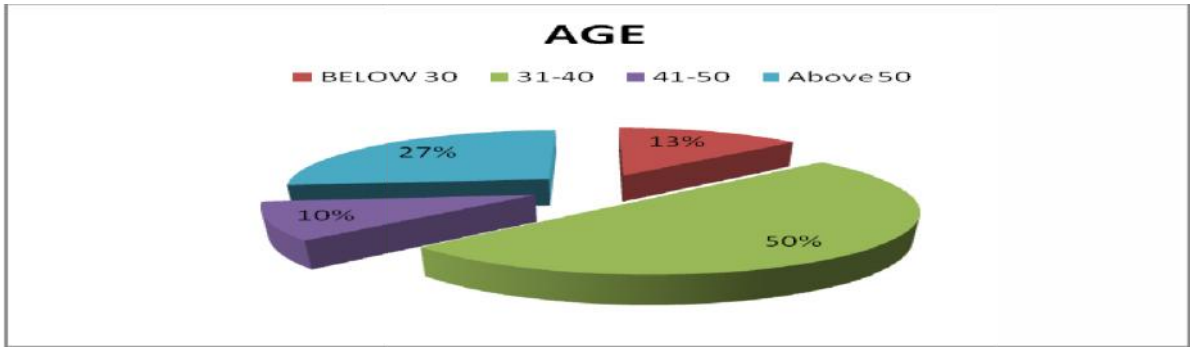


Fig. 3.3

From above charts it can be easily be inferred that people aged between 31-40 preferred mutual funds most because of many factors, but mainly due to stability in their earnings and career, responsibility towards family etc. Also, we found that only 1 respondent is female in pilot study, so we will see to what number it will go because this number will give us a rough idea about mutual fund awareness among women in particular and financial awareness in general.

3.4.2.3 ACADEMIC QUALIFICATION:

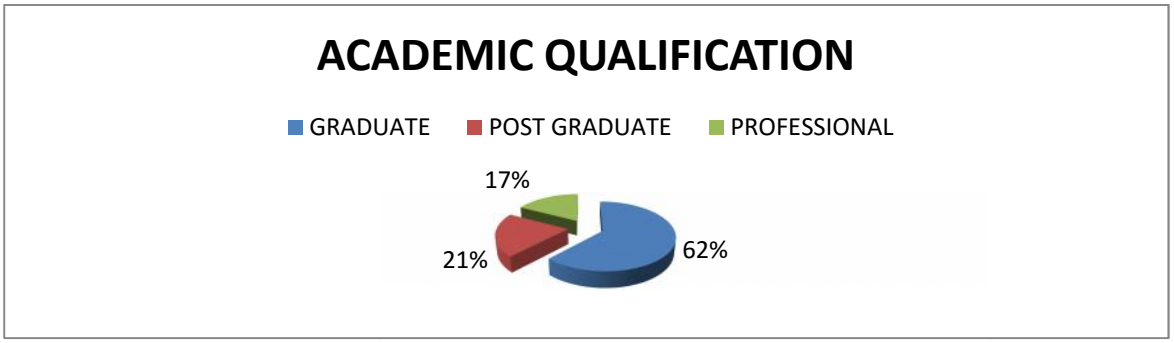


Fig. 3.4

3.4.2.4 MARITAL STATUS:

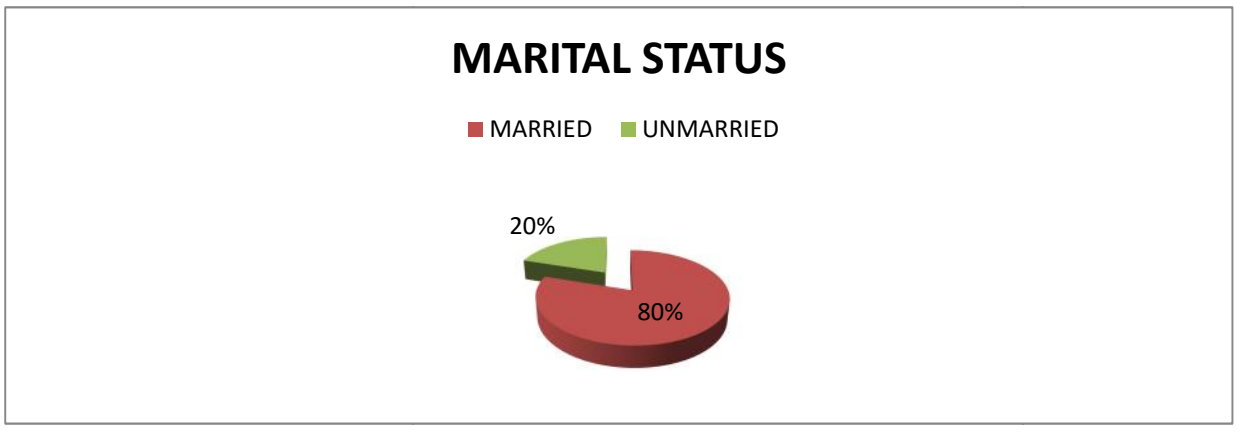


Fig. 3.5

3.4.2.5 OCCUPATION PROFILE:

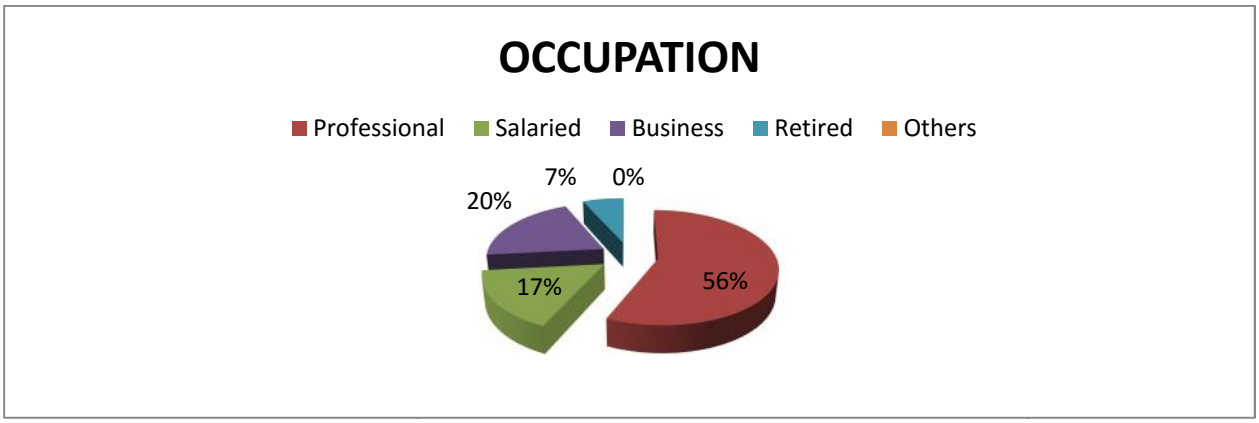


Fig. 3.6

From above charts it can be easily inferred that:

- Majority of respondents are graduates, therefore it remains to be seen that to what extent post graduates and professional have interest in mutual funds.
- Majority of respondents are married (80%), therefore it remains to be seen that how many young and unmarried investors have preference towards mutual funds.
- Majority of respondents have their occupation as a professional be it Relationship Mangers, Insurance agents, Independent Financial Advisors (IFAs), MBAs etc. mainly due to their high level of awareness about financial products.

3.4.2.6 ANNUAL INCOME RANGE:

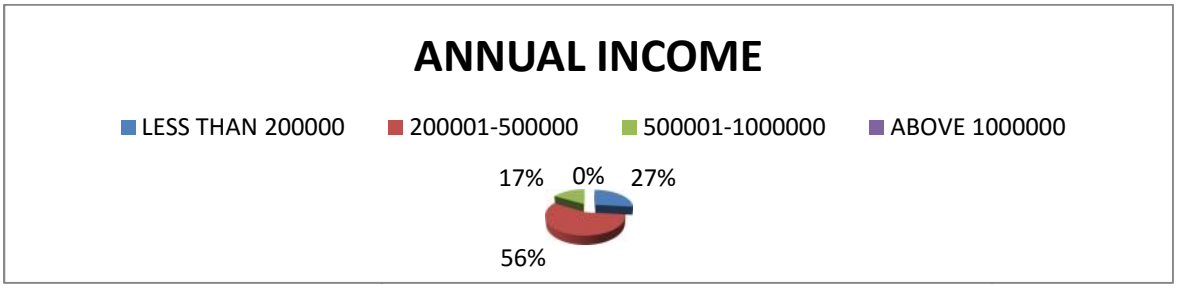


Fig. 3.7

From above chart it can be easily inferred that majority of respondents are from 2,00,000-5,00,000 range, therefore its remain to be seen that how many are from less than two lakh category because here lies the opportunity for AMCs to generate huge volumes by offering innovative funds.

3.4.2.7 AREA.

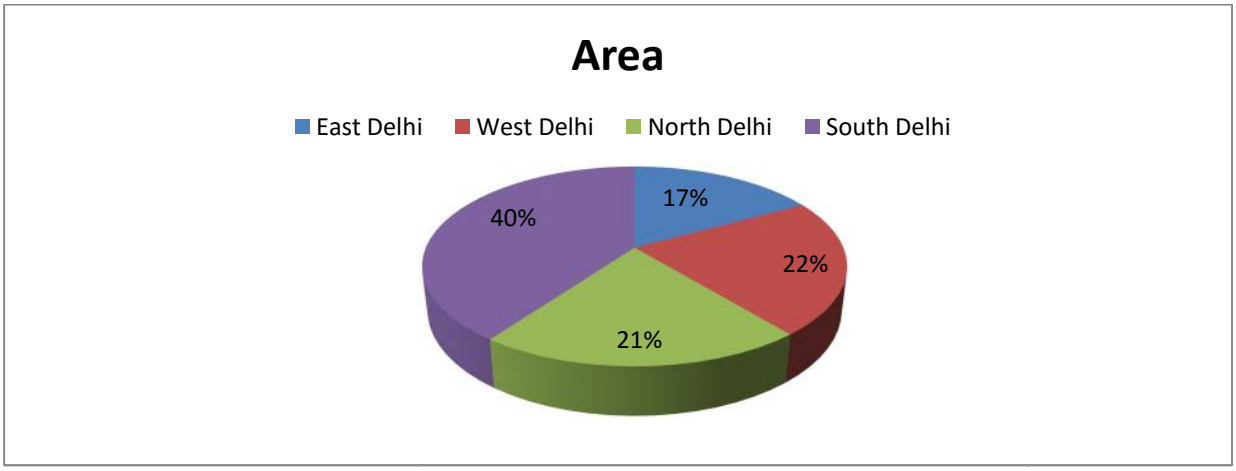


Fig. 3.8

3.4.2 FINANCIAL BEHAVIOUR OF THE RESPONDENTS:

3.4.2.1 INVESTMENT OBJECTIVES: Among given options including "others" category majority of respondents prefer **good return** as their primary objective of investment.

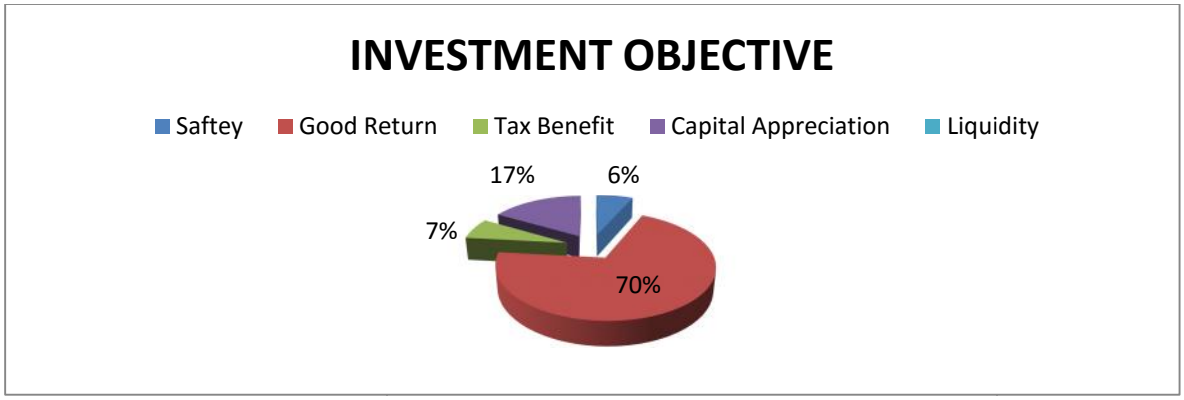


Fig. 3.9

3.4.2.2 CHANNELS USED BY RESPONDENTS FOR INVESTING:

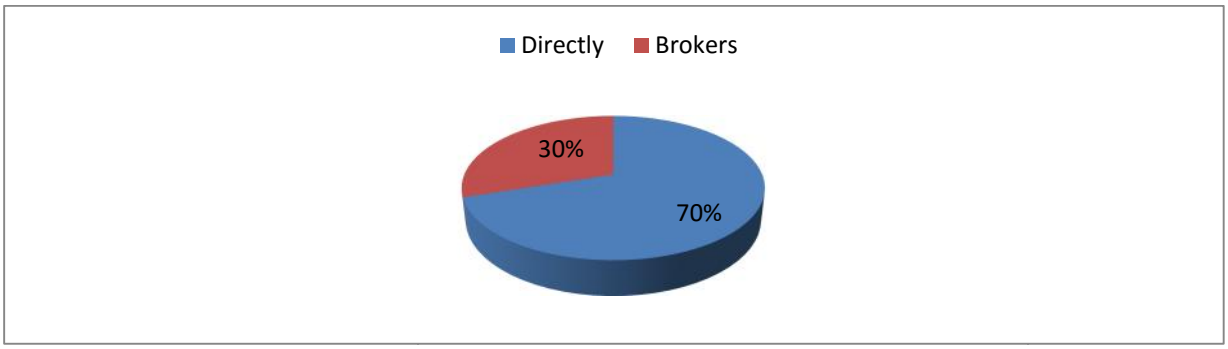


Fig. 3.10

From the study it can easily be inferred that majority of respondents**(70%)** now invest directly in mutual funds especially after SEBI guidelines came recently that says there will not be any ENTRY LOAD for investors investing in mutual fund schemes directly.

3.4.2.3 INVESTMENT HORIZON:

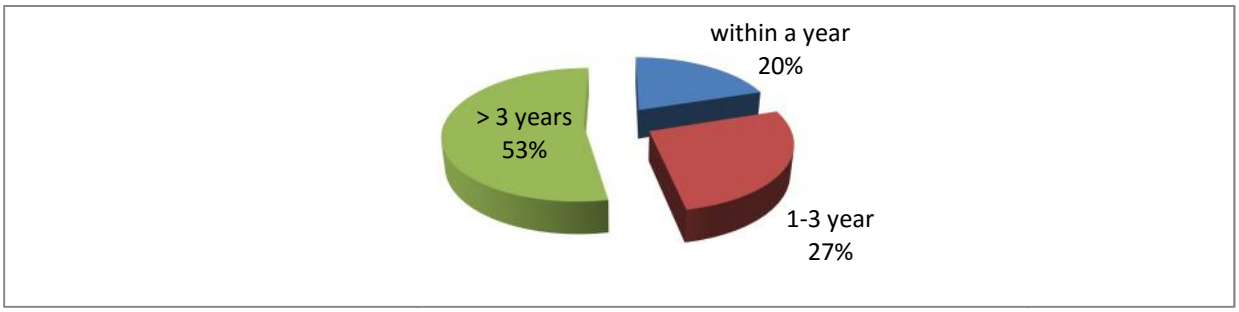


Fig. 3.11

From study it can be concluded that majority of respondents invest in mutual funds from **"More than three year"** perspective (53%), that's means once a investor comes to your service he will be there for at least three years, therefore it is very essential today that AMCs should focused on innovating new ways to serve the customers like giving SMS time to time, giving value added services like free insurance, debit cards etc.

3.4.2.4 INVESTMENT AMOUNT:

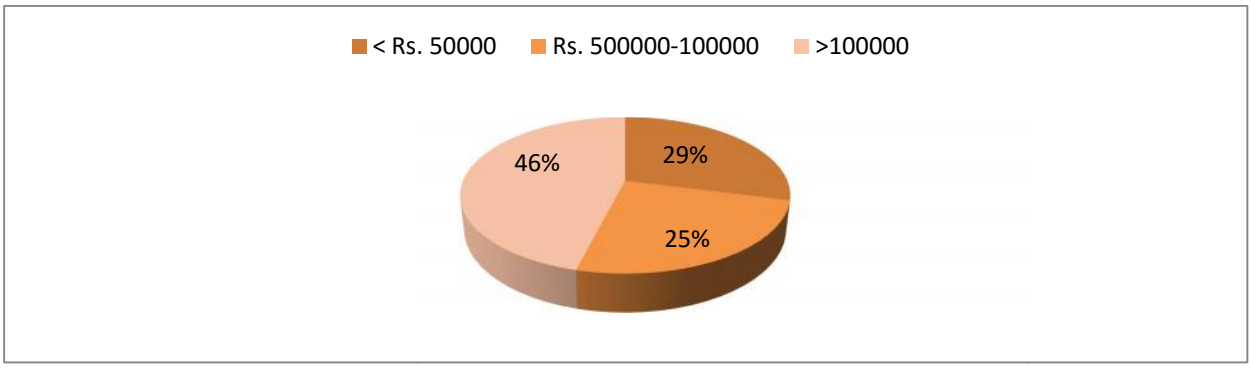


Fig. 3.12

From pilot study it can be concluded that majority of respondents (46%) have investments in mutual funds in a range of "More than 1, 00,000" category which implies that over a period of time if an investor see that his capital is growing than the probability of his subsequent investment becomes very strong.

3.4.2.5 ON THE BASIS OF ASSET CLASS:

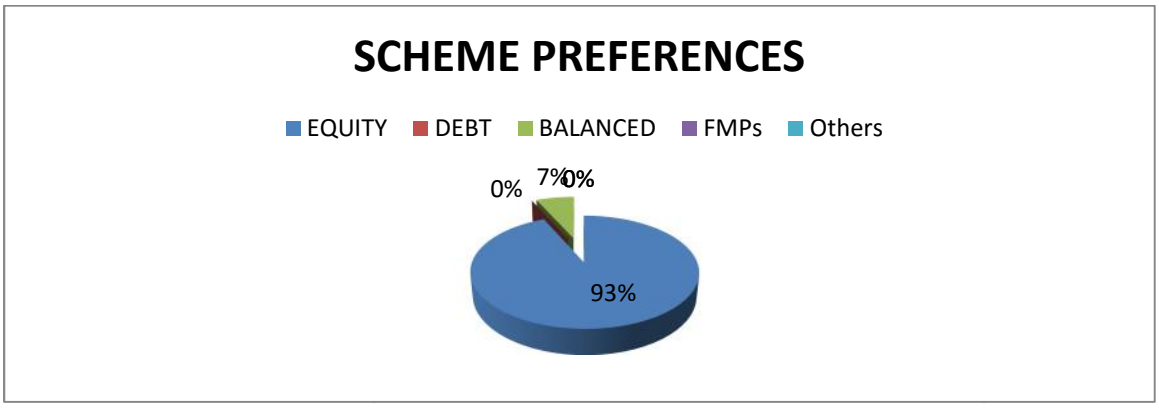


Fig. 3.13

When it comes to scheme preferences majority of retail investors prefer **Equity Schemes (93.33%),** followed by Balanced Schemes (6.66%) with no single retail investor preferring debt or fixed income instruments like Fixed Maturity Plans (FMPs). It shows that there is a huge potential for debt instruments in the market which is unearthed by retail investors due to its complexity, low awareness etc.

3.4.2.6 PREFERABLE ROUTE TO INVESTING IN MUTUAL FUNDS:

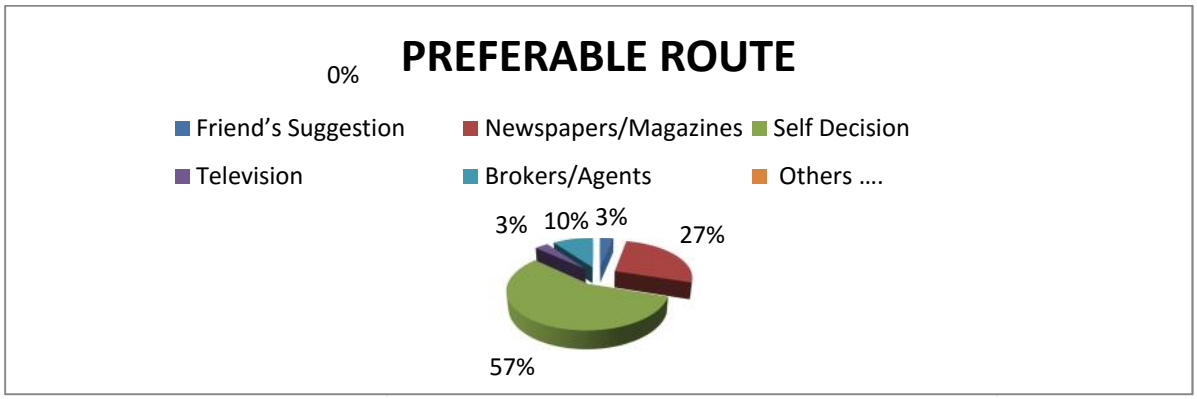


Fig. 3.14

As above chart clearly explains that majority of respondents (57%) take self decision once they start investing in mutual funds. Only 10 % of respondents take help of Brokers/Advisors when it comes to final decision of investing. Therefore, it shows that AMCs in general and SBI in particular have to be more informative so that they can provide best material, service and information to facilitate subsequent investment of retail investors.

3.4.2.7 SCHEME PERFERANCE ON THE BASIS OF STRUCTURE:

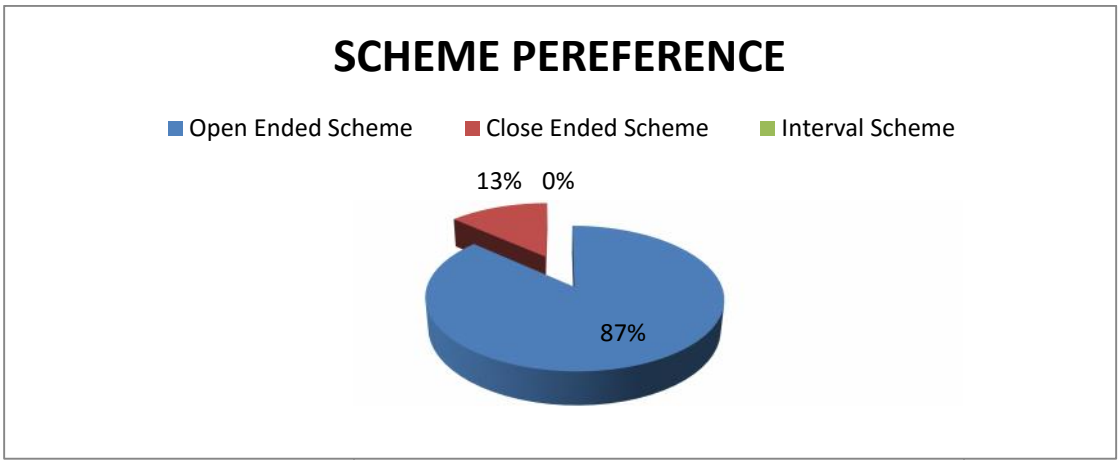


Fig. 3.15

When it come to scheme preference on the basis of its structure, majority of retail investors prefer "Open Ended Scheme " primarily due to flexibility of redemptions, investments, good return and liquidity. None of the investors prefer "Interval Scheme", in fact some of the retail investors were confused about the very name of "Interval Schemes."

3.4.2.8 SAVING HABITS:

When it comes to Saving Habits of retail investors it comes out that majority of respondents saves between 15%-20% p.a. basis followed by "above 25%" category (20%), therefore at this stage it is very difficult to say anything about saving preferences about retail investors. Others categories like 10-15 and 20-25 are equally preferred by respondents but it was a positive clue that only 7% of respondents save below 5%.

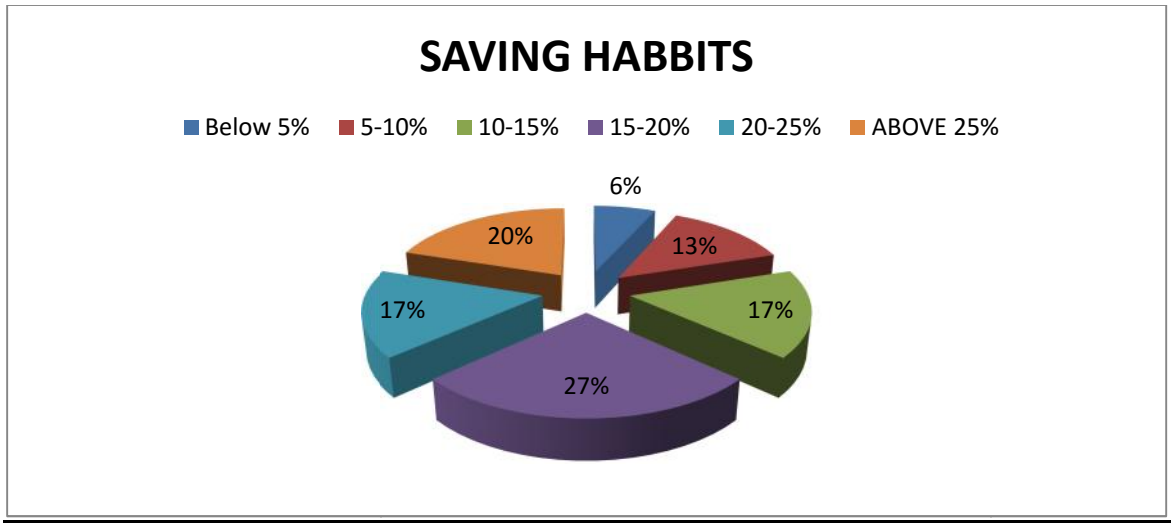


Fig. 3.16

3.4.2.9 MOST POPULAR FUND HOUSE IN TERMS OF HIGHEST INVESTMENT:

When asked about highest investment in an AMC majority of Investors (27%) gave the name of SBI which is followed by Reliance (23%), ICICI (20%), and rest in "others" which is lead by UTI. So there is a stiff competition in the market and it remains to be seen that which fund house take the leads with the completion of the project.

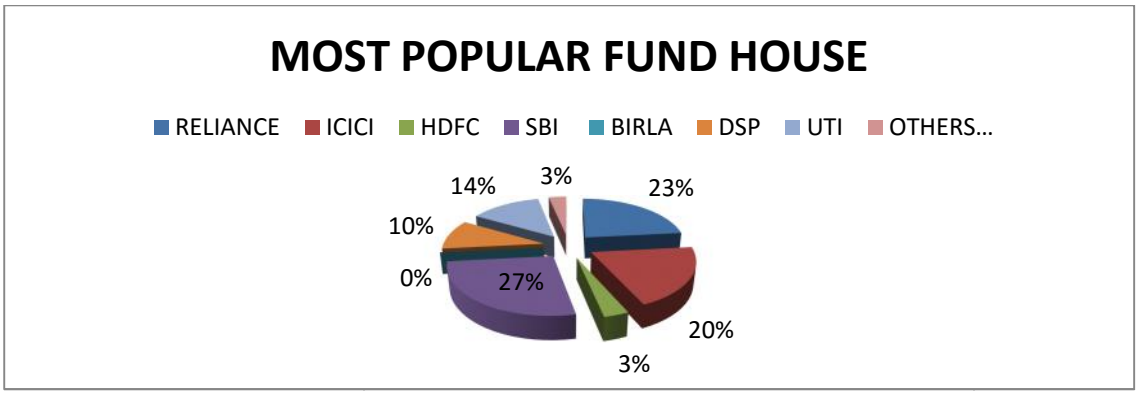


Fig. 3.17

3.4.2.10 CHOICE OF SECTOR OF INVESTMENT IN MUTUAL FUNDS.

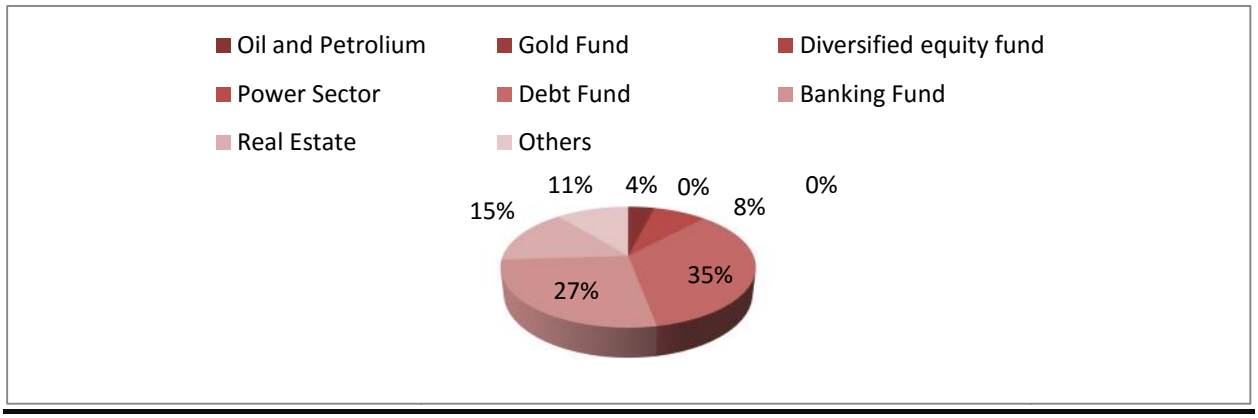


Fig. 3.18

3.4.2.11 CHOICE OF MUTUAL FUND.

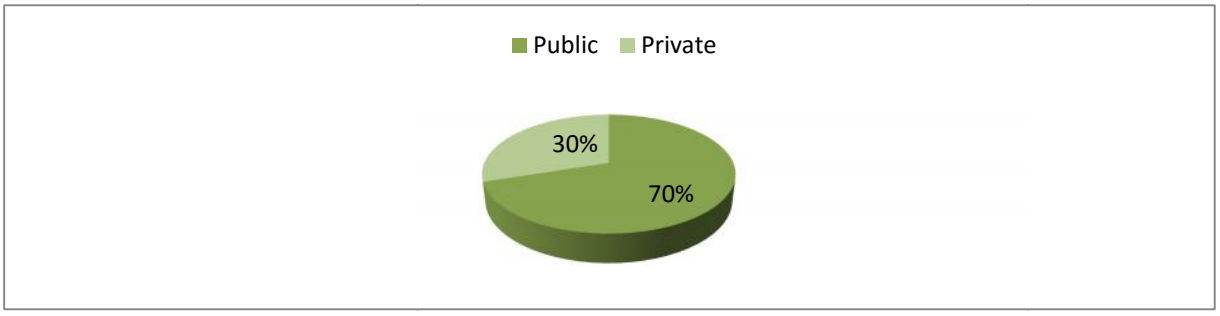


Fig. 3.19

3.4.2.12 AS A MUTUAL FUND INVESTOR.

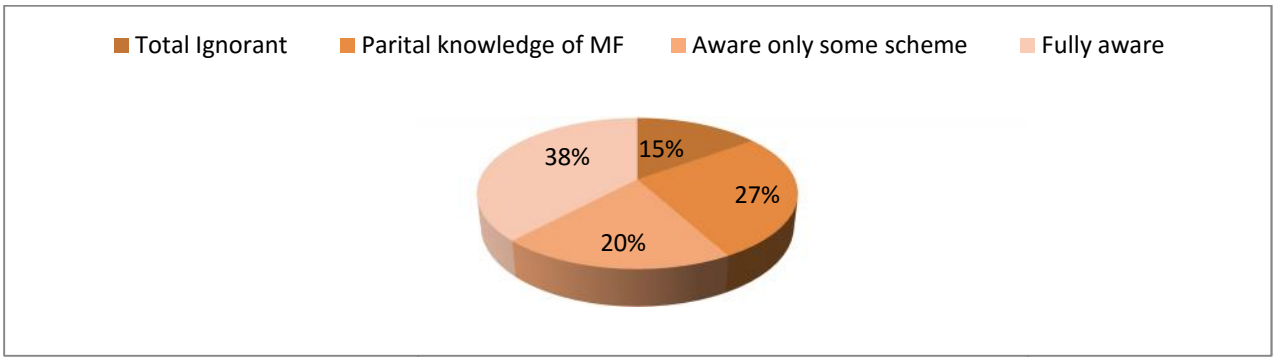


Fig. 3.20

3.4.2.13 MODE OF INVESTMENT

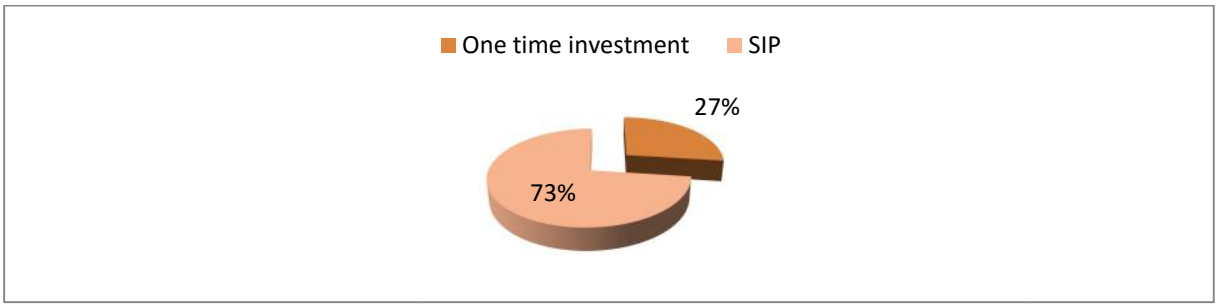


Fig. 3.21

3.4.2.14 CHOICE OF RECEIPT OF RETURN EVERY YEAR.

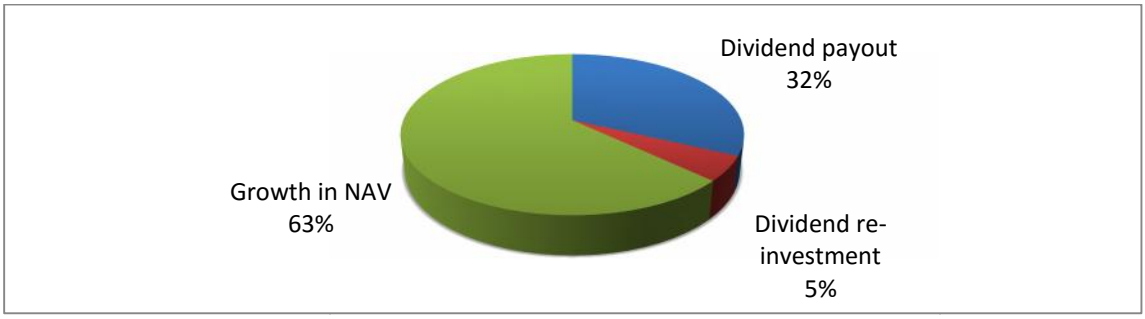


Fig. 3.22

3.5 INVESTMENT BEHAVIOUR OF INVESTORS

The significant outcome of the government policy of liberalization in industrial and financial sector has been the development of new financial instruments. These new instruments are expected to impart greater competitiveness, flexibility and efficiency to the financial sector. Growth and development of various mutual fund products in Indian capital market has proved to be one of the most catalytic instruments in generating momentous investment growth in the capital market. There is a substantial growth in the mutual fund market due to a high level of precision in the design and marketing of variety of mutual fund products by banks and other financial institution providing growth, liquidity and return. In this context, prioritization, preference building and close monitoring of mutual funds are essentials for fund managers to make this the strongest and most preferred instrument in Indian capital market for the coming years. With the decline in the bank interest rates, frequent fluctuations in the secondary market and the inherent attitude of Indian small investors to avoid risk, it is important on the part of fund managers and mutual fund product designers to combine various elements of liquidity, return and security in making mutual fund products the best possible alternative for the small investors in Indian market.

Researchers have attempted to study various need expectations of small investors from different types of mutual funds available in Indian market and identify the risk return perception with the purchase of mutual funds. Various multivariate techniques are applied to identify important characteristics being considered by the Indian investors in the purchase decision.

The liberalization of the financial sector has sent signals to a wave of changes in savings and investment behavior adding a new dimension to the growth of financial sector. The Indian financial system in general and the mutual fund industry in particular continue to take turnaround from early 1990s. During this period mutual funds have pooled huge investments for the corporate sector. The investment habit of the small investors particularly has undergone a sea change. Increasing number of players from public as well as private sectors has entered in to the market with innovative schemes to cater to the requirements of the investors in India and abroad.

For all investors, particularly the small investors, mutual funds have provided a better alternative to obtain benefits of expertise- based equity investments to all types of investors.

3.5.1 OBJECTIVES OF THE STUDY:

The investors do not evaluate all possible product attributes while making a choice, but the marketer's search is for identification of "The key buying criteria" or "The key choice criteria" which are defined as certain features of a product offering that are closely associated with preferences. This study aims at tracking investor's preferences and priorities towards different types of mutual fund products. An attempt has also been made to differentiate between the factors which have been considered by the investors who have been investing for less than a year and the ones who have been investing for more than a year.

3.5.2 LIMITATIONS OF THE STUDY:

1) Sample size is limited to 100 only thus sample size does not adequately represent the national market.
2) Most of the investors were those who came to MF office directly, thus there may be a chance of biasness towards a particular MF's funds.
3) This study has not been conducted over half month period in which most of the time it was upward trend in the market. Thus the responses of the investors are likely to be influenced by the market conditions

3.5.3 METHODOLOGY:

The study is based on a survey of 100 respondents through a questionnaire covering different groups of investors out of which 92 were taken as an effective sample and the data obtained were analyzed by using, Factor analysis and Discriminant analysis. The questionnaire has been attached in the Annexure.

3.5.4 RELIABILITY AND VALIDITY

In order to check the reliability and validity of the data, we had kept some similar kind of variables in the questionnaire like fund performance and fund manager performance as well as security and attitude towards risk. In order to increase the reliability and validity, we have excluded the questionnaires filled by those respondents who had a varied opinion
These analysis methods are used for the following reasons:

1) ***Factor analysis*** is used to classify similar variables under a broad heading, as the numbers of independent variables are very high.

2) ***Discriminant analysis*** is used to highlight variables which effect the decision of people investing for less than a year and people who are investing for more than a year.

We are going to see how these selected factors affect the investment behaviour of the existing & potential investors. Above mentioned statistical tools have been used to analyze this thing. As we use Factor analysis we can reduce the number of factors to draw some clear picture for the investors who are looking to invest irrespective of market conditions. Factor analysis will recognize similar factors & club them into one generalized factor and this will help any researcher to observe the most important factors that contribute most to the investment behaviour of the investors.

3.5.5 DESCRIPTIVE WEIGHTED FACTOR COUNTING METHOD

We have ranked the independent variables affecting the buying behavior of consumers by adding the weighted factors. Firstly, we have counted the responses under each scale. Secondly, we have assigned weights to each of the scale giving least weight to 1 and maximum weight to 5. Finally, we have added all the weighted responses and ranked accordingly i.e. in descending order.

RANK	INDEPENDENT VARIABLES	1	2	3	4	5
1	Historical Performance	2	4	9	42	35
2	Fund Return Over Market Return	3	5	12	31	41
3	Advisor Influence	2	5	25	35	25
4	Tax Benefit	6	11	13	29	33
5	Lock In Period	1	5	31	32	23
5	Reputation	3	5	29	28	27
7	Security	5	5	20	41	21
8	Type Of Scheme	4	6	24	35	23
9	Regular Income	8	10	15	32	27
10	Aum	3	7	29	36	17
11	Convenience	4	6	30	35	17
12	Attitude Towards Risk	3	10	32	30	17
13	Fees	6	12	23	31	20
13	NAV	6	11	25	30	20
15	Fluctuation In Equity Market	4	18	18	34	18
16	Personal Attention	4	10	35	32	11
17	Prior Experience	11	11	25	29	16
18	Prospectus	10	20	24	25	13
19	Family Recommendation	15	20	27	24	6
20	Fund Rating	24	28	13	15	12
21	Internet	15	30	27	11	9
22	Promotional Campaign	22	25	26	14	5
23	Lot Size	20	30	25	10	7
24	Performance Of Fund Manager	25	30	26	6	5
25	Economic &Market Conditions	24	35	21	8	4
26	Transparency	33	34	18	5	2

3.5.6 FACTOR ANALYSIS:

As the numbers of independent variables are very high, we have tried to classify similar variables under a broad heading through factor analysis**.** In KMO adequacy level is 50% with 100% significance which makes the model satisfactory. We can increase the adequacy level by changing factors like fees load and expenses because it has a very low communality. Total variance explained by the model is 64% which means that 64% of the variance has been accounted by the factors. Through rotated component matrix we can classify all the variables into 10 factors. Some of the factors are as follows:

VARIABLES	**FACTORS**
Performance of fund manager	**Technical factors**
AUM	
NAV	
Type of scheme	**Psychological factors**
Personal attention	
Prior experience	
Advisor influence	**Promotion**
Family recommendation	
Promotional campaign	
Economic & Market condition	**Market condition**
Fluctuation in equity market	
Attitude towards risk	

There are other factors also which consists of other variables but they cannot be classified under abroad headings.

We can see in the rotated component matrix in factor analysis table that above factors have been recognised as sub-factors and generalized in 5 broad categories.

5 Broad factors have been described in the following manner:-

- **Financial Factors** -This factor has 3 sub-factors namely performance of the fund manager, AUM, NAV. Thus this factor tells us more of the technical side of any given fund under consideration. Investor who ranks this factor or these sub-factors as the most important is definitely looking for very good returns & going to invest after much research as he will definitely looking for a fund having a good performance and decent returns opportunity.

- **Customer Oriented Factors –** Type of scheme, personal attention and prior experience are the sub-factors that make this broader category together. In this category an investor is looking for the different schemes under any particular fund. Investor is also looking for personal attention being given to his portfolio or investments, he wants personal attention in the sense that new investment opportunities should be informed to him or proper entry & exit points should be recommended to him and the likes.

- **Marketing Factors –** Investors who are going to rate this broad category as the most important for them are more inclined to the factors like advisor influence, family recommendation and promotional campaign. These kinds of investors are not much experienced as far as these investments are concerned.

- **Economic Factors –** This factor includes factors like market condition, fluctuations in the market and attitude towards risk. Investors who are more concerned about these factors are risk averse investors. These investors wait for the right moment to enter or to start investing in funds. For these people risk is at the top most priority and if returns are not that much then also its fine with these investors.

- **Security Factors –** It includes tax benefits, prospectus and security as far as their capital investment is concerned.

3.5.7 DISCRIMINANT ANALYSIS:

Through Discriminate analysis I have tried to highlight variables which effect the decision of a people investing for less than a year and people who are investing for more than a year. The term 1 consists of the people who are investing for less than a year whereas term 2 consists of the people who are investing for 1 to 5 years. I have found that Eigen value is less than 1 and Wilks' Lambda is more than 0.5 as well as the significance level is quite high which shows that the model is not applicable. Therefore, there is no difference in the factors affecting the buying behavior between term 1 and term 2 people.

3.6 COMPARISON OF MUTUAL FUNDS AGAINST OTHER INVESTMENT AVENUES:

PRODUCT	SAFETY/CONVINENCE	LIQUIDITY	RETURN	VOLATILITY
Equity	Low	High/low	High-Mod.	High
FI Bonds	High	Moderate	Mod.-High	Moderate
Debentures	Moderate	Low	Mod.-Low	Moderate
Corp. FD	Low	Low	Moderate	Low
Bank Deposit	High	High	Low-High	Low
PPF	High	Moderate	Moderate	Low
Life Ins.	High	Low	Low-Mod	Low
Gold	High	Moderate	Mod.-Low	Moderate
Real Estate	Moderate	Low	High-Low	High
MF	High	High	High	Moderate

SOURCE:VALUE RESEARCHONLINE.COM **Table-3.1**

FINDINGS:

From above table it can be interpreted that Mutual Funds give high return, are safe in nature, gives high liquidity when compared to other investment avenues. Also, Mutual funds are Moderate in volatility compared to some high volatile avenues like equity and real estate. Therefore, features mentioned here make Mutual Funds an attractive investment instrument for all investors.

3.7 CONCLUSION

The future of primary market is growing at a very high pace. Taking this thing into consideration, there are lots of opportunities for the AMCs to tap the golden opportunities from the Indian market.

There is little awareness about mutual fund in India; people have accepted it as a one of the major investment avenue. Mutual funds will become one of the sought after investment avenues. As far as the other investment products marketed by MFs are concerned, they have a ready market. The only thing, which it needs to focus on, is that they should have a strong network so that prompt services and availability of forms is made available to the investor at a short notice, and if it keeps the traditional base for marketing in India, which is a price sensitive market, we can say that MFs has a great future ahead.

3.8 SUGGESTIONS & RECOMMENDATIONS

A) THE GROUND RULES OF MUTUAL FUND INVESTING

The following are the 10 commandments that were to be followed till eternity. The world of investments too has several ground rules meant for investors who are novices in their own right and wish to enter the myriad world of investments. These come in handy for there is every possibility of losing what one has if due care is not taken.

1. **Assess yourself:** Self-assessment of one's needs; expectations and risk profile is of prime importance failing which; one will make more mistakes in putting money in right places than otherwise. Irrational expectations will only bring pain.
2. **Try to understand where the money is going:** One can lose substantially if one picks the wrong kind of mutual fund. In order to avoid any confusion it is better to go through the literature such as offer document and fact sheets that mutual fund companies provide on their funds.
3. **Don't rush in picking funds, think first:** one first has to decide what he wants the money for and it is this investment goal that should be the guiding light for all investments done. It is thus important to know the risks associated with the fund and align it with the quantum of risk one is willing to take. One should take a look at the portfolio of the funds for the purpose. Excessive exposure to any specific sector should be avoided, as it will only add to the risk of the entire portfolio.
4. **Invest. Don't speculate:** A common investor is limited in the degree of risk that he is willing to take. It is thus of key importance that there is thought given to the process of investment and to the time horizon of the intended investment. One should abstain from speculating which in other words would mean getting out of one fund and investing in another with the intention of making quick money
5. **Don't put all the eggs in one basket:** This old age adage is of utmost importance. No matter what the risk profile of a person is, it is always advisable to diversify the risks associated. So putting one's money in different asset classes is generally the best option as it averages the risks in each category.
6. **Be regular:** Investing should be a habit and not an exercise undertaken at one's wishes, if one has to really benefit from them. As we said earlier, since it is extremely difficult to know when to enter or exit the market, it is important to beat the market by being systematic. The SIPs (Systematic Investment Plans) offered by all funds helps in being systematic. All that one needs to do is to give post-dated cheques to the fund and thereafter one will not be harried later.
7. **Do your homework:** It is important for all investors to research the avenues available to them irrespective of the investor category they belong to. This is important because an informed investor is in a better decision to make right decisions. Having identified the

risks associated with the investment is important and so one should try to know all aspects associated with it. Asking the intermediaries is one of the ways to take care of the problem.

8. **Find the right funds:** Finding funds that do not charge much fees is of importance, as the fee charged ultimately goes from the pocket of the investor. This is even more important for debt funds as the returns from these funds are not much. Funds that charge more will reduce the yield to the investor. Finding the right funds is important and one should also use these funds for tax efficiency.
9. **Keep track of your investments:** Finding the right fund is important but even more important is to keep track of the way they are performing in the market. If the market is beginning to enter a bearish phase, then investors of equity too will benefit by switching to debt funds as the losses can be minimized. One can always switch back to equity if the equity market starts to show some buoyancy.
10. **Know when to sell your mutual funds:** Knowing when to exit a fund too is of utmost importance. One should book profits immediately when enough has been earned i.e. the initial expectation from the fund has been met with. Other factors like non-performance, hike in fee charged and change in any basic attribute of the fund etc. are some of the reasons for to exit.

B) WHEN TO SELL YOUR MUTUAL FUND

While there are many investment consultants, some by profession, some self-professed, who suggest on when to invest in a particular avenue, there is a certain paucity of people who talk of when to exit. Here are some situations when the investor should consider withdrawing their investments from the funds.

- **Fund is not performing**

This reason for selling, although valid in certain conditions, is where most investors make a mistake. When calculating performance one shouldn't look at too short a period and make a mistake by comparing apples to oranges. One should compare the returns posted by his fund with that of the peers across various horizons such as 1-year, 3-year and above. A short-term view can

often lead to committing hara-kiri, as it doesn't present the full picture. If it has underperformed the average of its peers in all cases, then it sure is one of the better reasons to exit from the fund.

- **A change in life stage**

Investments are done with a certain objective in mind and life stages are often a determining factor of what a person needs. A young man can afford to take more risks than a person nearing his retirement can. In such cases, it pays to withdraw money from the equity investments made earlier and put them in safer, more conservative debt funds that offer stable returns without compromising on risk. So a change in life stages would be one such reason to consider switching into a fund that matches with one's needs.

- **A major change in any basic attribute of the fund**

When the fund changes any basic attribute as mentioned by it in its offer documents, the investors have a choice of getting out of it. Even SEBI has provided for an exit route being made available to the investors. Changes like a change in Asset Management Company or in investment style of fund or change of structure say from closed-end to open-end etc. are good enough reasons for an investor to consider switching or exiting from it as they are certainly likely to affect the fund in a major way.

- **Fund doesn't comply with its objective**

One of the important parameters in the selection of the fund is alignment of the risk profiles of the investor and fund. The objective of the fund says a lot about how the fund plans to invest. If the objective is not being complied with, it is one of the exit points worth considering.

- **The Fund's Expense Ratio Rises**

A small rise in an expense ratio is not a big deal, however a significant rise can result in substantial reduction of yields and so it would be better to exit the fund. In the case of bond funds or money market funds, it is highly unlikely that the fund can increase its returns enough to justify an increase in the fund's expenses.

- **The Fund Manager has changed**

a simple change of fund managers, in itself, is not enough reason to sell a fund on a short-term basis. If it is a passively managed fund (index fund), then one has little to no reason to worry. However, if it is an actively managed fund, then has to keep the eyes open on the new manager.

- **Enough has been earned**

However, nothing is as important as to rein the horses in time. The primary principle behind safety of investment is to take risks that can be tolerated. The principle also is specific on the expectations that the investor must have from any investment. Just as it is important to set realistic targets that one hopes to achieve from the investment, it is also important to exit when target as expected has been achieved irrespective of the fact that it might be generating better returns in a short-term. Waiting longer might not prove beneficial, as one need not be lucky all the time.The above list is certainly not exhaustive and individuals will have other better reasons to quit as well. It's just that most don't know when to apply thought and so these would come in handy.

3.9 LIMITATIONS OF THE PROJECT

- As my project involves interaction with both prospective as well as existing clients, lack of any identity proof hinders the assignment as people often suspect the authenticity of the concerned person.
- Limited information through secondary research report is basic hindrance in finding out the true results related to investments in mutual fund schemes by an investor.
- Limited time was another constraint.
- Geographical locations.
- Extreme variability in MARKET.
- Unawareness among investors is next in the line. The investor does not want to invest in Mutual Funds because of the myth that investment in these funds lead to insensitive returns. They think that market is highly volatile and will not be able to give him the secured returns.

- The investor also does not want to invest because of the greater risk attached with equity. Rather, he wants to invest in a fixed instrument from where he may be able to get secured returns instead of having unasserted returns.

3.10 REFERENCES

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APPENDIX

QUESTIONNAIRE

A STUDY OF PREFERENCES OF THE INVESTORS FOR INVESTMENT IN MUTUAL FUNDS.

1. What kind of investments you prefer most? Pl tick ( ) All applicable.

(a) Mutual Funds ☐
(b) Shares/Bonds ☐
(c) Insurance ☐
(d) Real Estate ☐
(e) Commodities ☐
(f) NCSs ☐
(f) Others (Please Specify----------)

2. While investing your money, which factor you prefermost? Any one

a) High risk and high return ☐
b) Moderate risk and Moderate return ☐
c) Low risk and low return ☐

3. Have you ever invested you money in mutual fund?

Yes	NO

If no,

a. If not invested in Mutual Fund then why?

Not aware of MF	Higher risk	Not any specific reason

If yes,

a. Where do you find yourself as a mutual fund investor?

Totally Ignorant [ ]

Partial knowledge of mutual funds [ ]

Aware only of any specific scheme in which you invested [ ]

Fully aware [ ]

b. In which kind of mutual fund you would like to invest?

Public [ ] Private [ ]

c. How do you come to know about Mutual Fund?

(i) Friend's Suggestion

(ii) Newspapers/Magazines

(iii) Self Decision

(iv) Television

(v) Brokers/Agents

(vi) others (Please Specify----------)

d. Why do you invest in mutual funds? (Tick the Option)

i) Safety

ii) Good Return

iii) Tax Benefit

iv) Capital Appreciation

v) Liquidity

vi) Others (Please Specify……)

e. You Prefer.

(i) Open Ended Scheme

(ii) Close Ended Scheme

(iii) Interval Scheme

f. You Prefer .

(i) Equity Schemes.

(ii) Balance Schemes.

(iii) Debt Schemes.

(iv) FMPs.

(v) Others

4 How much is your investment horizon? (Tick the option)

a) Within a year
b) Between 1 – 3years
c) More than 3 years

5. How much amount do you invest in Mutual funds? (Tick the option)

a) < Rs.50000

b) Between Rs.50000- Rs.100000

c)>Rs. 100000

6. In which Mutual Fund you have invested ? Please tick ( ). All applicable.

a. SBIMF	
b. UTI	
c. HDFC	
d. Reliance	
e. ICIC prudential fund	
f. Birla Mutual Fund	
g. DSP	
h. Other, Specify	

7. When you invest in Mutual Funds which mode if investment will you prefer?

a. One Time Investment	b. Systematic Investment Plant (SIP)

8. Where from you purchased mutual fund?

Directly [ ]

Brokers [ ]

9. Which sector are you investing in mutual fund sector?

Oil and petroleum	
Gold fund	
Diversified equity fund	
Power sector	
Debt fund	
Banking fund	
Real estate fund	
Other, Specify	

10. How would you like to receive the returns every year?

a. Dividend payout	b. Dividend re-investment	c. Growth in NAV

11. Rate the following factors which influences your investment in mutual funds on the importance scale where 1 is least important, 3 is neutral, 5 is most important.

Factors	1	2	3	4	5
Historical performance of fund					
Fund's returns over market return					
Performance of Fund manager					
Current Economic and Market conditions					
Type of schemes (growth, income, balanced & others)					
Expected Dividend going to be deliver by the fund					
Advisor or broker or agent influence					
Convenience in investing in the fund					
Transparency maintained by the fund house					
Minimum investment or lot size					
Lock in period in a fund					
Asset under management					
Fund rating					
Fund prospectus or offer document					
Internet i.e. Website influence					
Prior experience with the fund house					
Fluctuation in equity markets					
Fees ,load and expenses					
Reputation of fund house					
Security provided by the fund in terms of return					
Tax benefit deriving from investment in the fund					
NAV or price of fund's unit					
Attitude towards risk					
Friend/family recommendation					
Promotional campaign of the fund					

PERSONAL DETAILS:

NAME: (Optional) TEL.NO: (Optional)

1. **SEX**:M ☐ F ☐
2. **AGE**: Below 30☐ 31-40 ☐ 41-50 ☐ Above 50 ☐
3. **ACADEMIC QUALIFICATION**: Graduate ☐ Post Graduate ☐ Professional ☐ Others(Please Specify----------)
4. **Marital Status**: Married ☐ Unmarried ☐
5. **Occupation**: Professional ☐ Salaried ☐ Business ☐ Retired ☐ Others----------
6. **Annual Income**: Less than 2,00,000 ☐ 2,00,001-5,00,000 ☐ 5,00,001-10,00,000 ☐ Above10lakh ☐
7. **Area:** East Delhi ☐ West Delhi ☐ North Delhi ☐ South Delhi ☐ Others…….