

An Analytical Study of the Performance of Mutual Funds

A Thesis Submitted to the University of Hyderabad in Partial Fulfillment of the
Requirements for the Award of the Degree of

Doctor of Philosophy

By

Anima Rani Si



**DEPARTMENT OF ECONOMICS
SCHOOL OF SOCIAL SCIENCES
UNIVERSITY OF HYDERABAD
HYDERABAD – 500046**

June

2010

DECLARATION

Date:
Hyderabad

I hereby declare that the work embodied in this thesis entitled “*An Analytical Study of the Performance of Mutual Funds*” carried out under the supervision of **Dr Naresh Kumar Sharma** is an original work of mine and has not been submitted for the award of any research degree or diploma of any university.

Anima Rani Si

Redg No. 05SEPH09

**Department of Economics
School of Social Sciences
UNIVERSITY OF HYDERABAD
Hyderabad-500046**

**Date:
Hyderabad**

CERTIFICATE

This is to certify that **Ms. Anima Rani Si** has carried out the research embodied in the present thesis entitled “**An Analytical Study of the Performance of Mutual Funds**” under my supervision in accordance with the PhD ordinances of the University of Hyderabad. This thesis is an independent work and does not constitute part of any material submitted for any research degree or diploma here or elsewhere.

**(DR NARESH KUMAR SHARMA)
Research Supervisor**

**Dean
School of Social Sciences**

**Head
Department of Economics**

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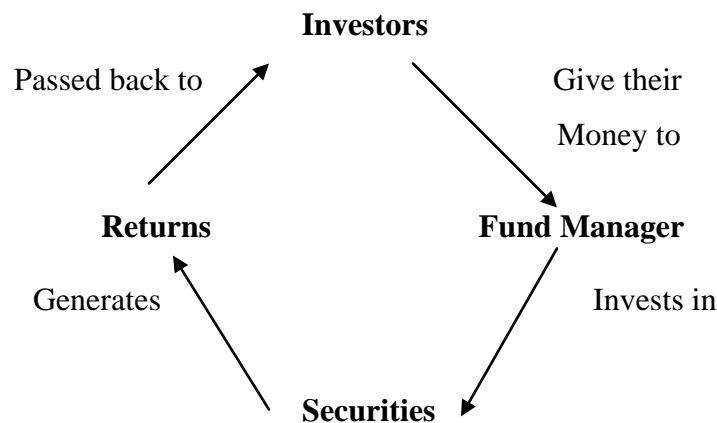
CHAPTER – I

INTRODUCTION

1.1 Introduction

Mutual Fund has been considered as an instrument for investing money in a reasonable and profitable way. Mutual Fund is an investment company¹ that pools savings and resources of the investors sharing a common goal. The money thus amassed is invested in various portfolios like stocks, bonds, debentures, short term money market instruments and other securities. The income earned through these investments and capital appreciation is shared by the unit holders in proportion to the number of units held by them. The flow chart below will give a bird eye view of the functioning of mutual fund:

Figure 1.1
Flow Chart



Source: www.amfiindia.com

¹ An investment company is a financial intermediary that collects money from the investors and invests in various securities on their behalf.

The fund manager of an investment company takes the responsibility of investing the resources collected from the investors. The returns earned from the investment are distributed among the unit holders either periodically or at the end of specific time period. The value of the share of the mutual fund known as the Net Asset Value (NAV)² is calculated daily based on the total value of the fund divided by the number of shares currently issued and outstanding. In lieu of this service, the investment company charges a certain amount referred to as management fee.

This form of investment is considered to be desirable as it offers to invest in a diversified, personally managed portfolio at a relatively low cost.

Internationally mutual funds in United States are synonymous with unit trust in United Kingdom. The Encyclopedia Britannica explains the concept of mutual fund and unit trust as:

*“Mutual fund, also called unit trust, or open end trust, company that invests the funds of subscribers in diversified securities and in return issues units representing shares in those holdings. It differs from the investment trust, which issues shares in its own capital. In contrast to close end investment companies, which have a fixed capitalization and whose shares are brought and sold by the investors in the market, mutual funds make a continuous offering of new shares at new asset value, determined daily by the market value of securities they hold.”*³

² Net Asset Value (NAV) is the current price of a unit of the fund.

³ The New Encyclopedia Britannica, 1994 Chicago, vol. 8, p 459

1.2 History

1.2.1 GLOBAL

The first investment company was The Scottish – American Investment Company, set up in London in 1860. Most of the companies established at that time were mostly close-ended and invested mainly in the stock markets. The stock markets booms and crashed had a great deal of effect on its performance. A few investment companies came up in US but could not grow unlike UK due to the lack of investor interest in stock markets.

A flourishing stock market during 1920s revived investment companies and their growth was stupendous in US compared to UK. This gave a boost to open ended schemes as these are allowed to invest in securities. 1924 witnessed the first mutual fund company which was established in Boston and called as Massachusetts Investors Trust. It primarily invested in stock markets.

A doom in the stock market during 1929 slowed down the growth of the mutual funds. To tackle the situation, the Congress came up with Securities Act of 1933 and Securities Exchange Act of 1934. The Acts made it mandatory for the fund to be registered with the Securities and Exchange Commission (SEC) and ought to render sufficient and adequate information about the funds to the investors and a prospectus containing disclosures related to the fund.

Several countries started to make up the loss; stock markets started reviving and so as the lost confidence of the investors on mutual funds. One of the notable developments is the investment of the mutual funds on bonds; though the investment was low. Mutual funds had started gearing up for close-ended funds.

The investment of the mutual funds was predominately on equities and bonds in late 1960s; so the stock market crash of 1970 again adversely affected the market for mutual funds. Both the stock market and mutual funds generated unattractive returns for the investors and the bank rate were held at very low rates by the Government in accordance to Glass-Steagall Act⁴. The only profitable option before the investors was the investment in money markets. So they started switching to money market and so the market came up with money market funds⁵.

The success of the money market funds gave way to innovative schemes like fixed income funds, tax exempt mutual funds, junk bond mutual funds, emerging market mutual funds. Individual Retirement Account (IRA) provisions were the largest contributors of the mutual funds. Mutual funds progressed to be popular in employer sponsored defined contribution retirement plans (401 (k) s).

1.2.2 INDIA

Mutual funds was completely absent in Indian scenario till 1960s. It was in 1964 that mutual funds introduced in India by Unit Trust of India (UTI) by an Act of Parliament. Under this Act, UTI was established as a statutory body and in 1985 UTI became a financial institution. The entry of non UTI players accelerated and quickened the growth of the mutual funds industry in India. The development of mutual fund industry in India can be put into three phases.

⁴ The Banking Act of 1933 was a law that established the Federal Deposit Insurance Corporation (FDIC) in the United States and introduced banking reforms, some of which were designed to control speculation. It is most commonly known as the Glass–Steagall Act, after its legislative sponsors, Carter Glass and Henry B. Steagall.

⁵ Funds that are invested exclusively on money market and money market instruments such as treasury bills, commercial papers etc.

First Phase (1964-87)

This period of the mutual funds was monopolized by UTI. UTI was set up by Reserve Bank of India under the Regulatory and Administrative control of the Reserve Bank of India. It was in 1978 UTI got de-linked from RBI and Industrial Development Bank of India took charge of the administrative and regulatory control of UTI.

The first and foremost product launched by UTI was Unit 64 (US -64); which was basically an open ended scheme. The popularity of US-64 paved the way for introduction of other schemes by UTI like a reinvestment plan in 1966-67; Unit linked Insurance Plan in 1971. UTI gained to have 6 lakh unit holders by the end of June 1974, unit capital was 152 crore and investible funds was Rs 172 crore.

During the period 1984-87 UTI came up several modern schemes like Children's Gift Growth fund (1986) and Master Share (1987). UTI launched the first offshore fund named as Indian Fund and by the end of 1987, the unit capital of UTI was Rs 3,726,11 crore and the investible funds was raised to Rs 4563 crores.

Table 1.1 INVESTIBLE FUNDS OF UTI (Rs in crore)

Year	Total investments in corporate sector					Other Investments		Total
	Equity Preferences Shares	Debentures	Bridge finance	Term loans	others	Money	Govt securities	
1	2	3	4	5	6	7	8	(2 to 8)
1981	145.4	138.1	4.1	0	124.9	110.6	0.1	523.2
	(-27.8)	(-26.4)	(-0.8)	(0)	(-23.9)	(-21.1)	(0)	
1982	165.9	196.3	11.9	0	163.1	141.9	0.1	679.2
	(-24.4)	(-28.8)	(1.8)	0	(-24)	(20.9)	(0)	
1983	192.9	288.9	14.1	0	215.2	129.0	30.1	870.2
	(-22.2)	(33.2)	(-1.6)	(0)	-24.7	(-14.8)	(-3.5)	
1984	226.6	487.9	6.8	0	268.1	221.8	50.1	1261.3
	(-18)	(-38.7)	(-0.5)	(0)	(-21.3)	(17.6)	(-4)	
1985	289.4	830.9	10.4	0	923.7	0.1	155.1	2209.6
	(-13.1)	(-37.6)	(-0.5)	(0)	(-41.8)	(0)	(-7)	
1986	381.1	1314.6	3.8	0	1233.6	0.1	285.1	3218.3

	(-11.8)	(-40.8)	(-0.1)	(0)	(-38.3)	(0)	(-8.9)	
1987	631.0	1804.9	8.6	42.0	1746.9	0.1	330.1	
	(-13.8)	(-39.5)	(-0.2)	(-0.9)	(-38.3)	(0)	(-7.2)	4563.7
1988	1151.6	2786.3	27.4	384.6	1852.0	0	536.9	
	(-17.1)	(-41.3)	(-0.4)	(-5.7)	(-27.5)	(0)	(-8)	6738.8
1989	2544.4	3196.0	48.9	804.0	4005.2	0	1236.2	
	(-21.5)	(-27)	(-0.4)	(-6.8)	(-33.8)	(0)	(-10.4)	11834.7
1990	3508.8	3767.8	18.7	1230.0	1234.0	4572.3	3319.3	
	(-19.9)	(-21.4)	(-0.1)	(-7)	(-7)	(-25.9)	(-18.8)	17650.9
1991	4253.1	4430.9	112.8	1756.9	2198.1	3514.9	5109.8	
	(-19.9)	(-20.7)	(-0.5)	(-8.2)	(-10.3)	(-16.4)	(-23.9)	21376.5
1992	8883.7	6185.5	67.2	2689.7	3549.4	4674.7	5755.5	
	(-27.9)	(-19.4)	(-0.2)	(-8.5)	(-11.2)	(-14.7)	(-18.1)	31805.7
1993	14941.4	8822.0	250.7	3594.2	4126.1	3292.1	3949.6	
	(-38.3)	(-22.6)	(-0.6)	(-9.2)	(-10.6)	(-8.4)	(-10.1)	38976.1
1994	21141.1	11007.3	49.6	4087.4	4336.7	3036.4	8050.5	
	(-40.9)	(-21.3)	(-0.1)	(-7.9)	(-8.3)	(-5.9)	(-15.6)	51709.0
1995	28533.0	11862.9	15.0	4122.2	3219.6	2069.3	9796.7	
	(-47.9)	(-19.9)	(0)	(-6.9)	(-5.4)	(-3.5)	(-16.4)	59618.7
1996	28280.1	13911.8	15.0	3755.8	2296.8	2098.5	6262.1	
	(-49.9)	(-24.6)	(0)	(-6.6)	(-4.1)	(-3.7)	(-11.1)	56620.1
1997	27956.6	16179.2	15.0	3305.4	1430.9	3747.2	4491.1	
	(-48.9)	(-28.3)	(0)	(-5.8)	(-2.5)	(-6.6)	(-7.9)	57125.4
1998	31986.1	18907.8	0	2845.7	666.7	3808.6	2764.0	
	(-52.5)	(-31)	(0)	(-4.7)	(1.1)	(-6.2)	(-4.5)	60978.9
1999	35007.8	19626.9	4.3	1966.1	208.8	1460.3	5273.8	
	(-55.1)	(-30.9)	(0)	(-3.1)	(-0.3)	(-2.3)	(-8.3)	63548.0
2000	42095.5	23209.2	0	1583.9	78.7	2270.9	5052.8	
	(-56.7)	(-31.3)	(0)	(-2.1)	(-0.1)	(-3)	(-6.8)	74291.0
2001	40719.5	22652.7	0	922.9	1143.2	151.4	4611.9	
	(-58)	(-32.6)	(0)	(-1.3)	(-1.6)	(-0.2)	(-6.6)	70201.6
2002	32196.2	17361.5	0	457.5	185.5	2497.4	4930.8	
	(-55.9)	(-30.1)	(0)	(-0.8)	(-0.3)	(-4.3)	(-4.3)	57628.9

Note: Data in parentheses indicate percentage to total

Source: Unit Trust of India

The investment in equities i.e. the amount invested in stocks and shares has seen a constant increase with a marginal fall during the period 1995-97. UTI contribution towards term loans has increased with an initial start of 0% in 1981, it grew up to 6.9% then it fell to 0.8% of the total investment. UTI's role in money market instruments had

seen ups and downs with 21.1% in 1981, it became 0% in 1989 then grew but at a decreasing rate. UTI investment in debentures had been increasing at an increasing rate from 1981 till 2001 but showed a fall in the year 2002.

Second Phase (1987-1993) Entry of Public Sector

1987 marked the entry of many non UTI players in the industry which opened the doors for public sector institutions like banks, financial institutions and insurance companies following the government's order. The first public sector fund was launched by State Bank of India called as SBI Mutual fund in November 1987 followed by introduction of mutual funds by Canbank Mutual Fund Scheme (December 1987), LIC Mutual Fund Scheme (June 1989), Punjab National Bank Mutual Fund (August 1989), Indian Bank Mutual Fund (November 1989), Bank of India (June 1990), Bank of Baroda Mutual Fund (October 1992) and GIC in 1990.

UTI was functioning as a tool for the implementation of the economic policies and developmental activities of the government rather than an investment vehicle for the investors. The collection was Rs 37,480.20 crore during 1991-92 (96% increase between the year 1989-90 and 1991-92). UTI retained its predominance even during this period also but its market share saw a decline from 87.9% in 1988-89 to 84% in 1991-92.

The years 92-93 and 93-94 witnessed a decline in the contribution of public sectors (it got declined from Rs 2567.5 crore in 1991-92 to Rs 1964 crore in 1992-93 and further to Rs 386.7 crore in 1993-94). Two reasons can be mainly cited for the decline of the collections of the public sector banks. First, SEBI had restricted mutual funds from implementing income fund schemes popular among the Indian investors. Secondly, Mutual Funds Regulations, 1993 had made it a point for the Indian mutual funds to form Asset Management Companies (AMC) without which they can not launch any scheme. UTI was not under the purview of the SEBI and was relaxed from the rules and regulations of SEBI and as a result the collections went up from Rs 8685.4 crore in 91-92 to Rs 11,057 crore in 92-93.

Till 1989, mutual funds were free from any restrictions and RBI in October 1989 laid down the guidelines for regulating mutual funds though were applicable to banks only. Government of India in June 1990 made it compulsory for all the mutual funds to be registered with SEBI which covered the rules and regulations for registration, management, investment objectives, disclosure, pricing and valuation of securities. These regulations were revamped with the coming of the Securities and Exchange Board of India (SEBI) Regulations, 1993 on January 20, 1993. This made for the formation of AMC and close ended schemes need to be listed. It was in 1993 that the market was open for the private players which saw the beginning of a new phase in mutual fund industry.

Third Phase (1993-2003) Entry of Private Sector

A new era ushered with the entry of the private players in the mutual fund industry as the government gave finally the nod to the private players. This set a huge competition for the public sector player and at the same time gave a wider choice to the Indian investors. But the entry of the private players in the mutual fund industry offers various advantages operationally:

- Most of the funds were managed by the Indian companies along with experienced foreign asset management companies which helped in introducing modern technological and strategies followed by the foreign companies.
- Private sector attracted the efficient managerial talents from the public sectors.

The first private sector to introduce the fund in the market was Madras based Kothari Pioneer Mutual Fund (now Franklin Templeton) in November 1993 and the scheme launched by it was open ended Prima Fund. During the year 1993-94, five private sector mutual funds came into functioning such as Kothari Pioneer Mutual fund, ICICI Mutual fund, Morgan Stanley Mutual fund and Taurus Mutual fund. These mobilized an amount equivalent to Rs 1559.6 crore and introduced seven schemes during 93-94.

During 94-95, seven more private sector funds came into being such as Apple Mutual Fund, JM Mutual fund, Shriram Mutual fund, CRB Mutual fund, Alliance Mutual fund and Birla Mutual fund and these mutual funds mobilized an amount of Rs 1326.8 crore. The total collection of funds went up to Rs 75,050.21 crore by March 95. The year 95-96 failed to meet the expectations and delivered unsatisfied results as the total collections (by all mutual funds including UTI) went down to Rs 5967.3 crore.

In 1993, new regulations came into vogue as the government made it compulsory for all the mutual funds except UTI to be registered. The mutual fund industry was governed by SEBI (Mutual fund) Regulations, 1996.

Between 1993 and 1995, various other regulatory measures came in vogue⁶:

- The Government of India gave a green signal to NRIs and overseas corporate bodies to invest in UTI and other mutual funds (both primary and secondary markets) on a fully repatriable basis with the existing ceiling.
- Removal of taking prior permission for advertising by mutual funds
- Mutual funds were allowed to invest in money market instruments up to 25% of the resources mobilized.
- Removal of the practice of reissuing of units of the close ended schemes.
- Mutual funds were allowed to buy back their own shares from the secondary markets in case they are traded at a substantial discount to NAV.
- Mutual funds were allowed to launch income based schemes with assured returns for at least one year at a time.
- Mutual funds were allowed to enter into underwriting activities to augment their resources.

⁶ Mutual funds in India: Marketing Strategies and Investment Practices – H. Sadhak, Sage Publication.

The growth of the mutual fund was tremendous during 1998 to 2000. The total net assets of Rs 9722 crore managed by 34 mutual funds through their 259 schemes as on March 31, 1998 increased to 1,02,434.52 crore managed by 39 mutual funds including UTI through their 550 schemes as on February 28, 2001.

The year was a dividing year in the history of the mutual fund industry as UTI in July 2001 blocked any purchase and sale of US-64 for a period of six months which created havoc among the investors. Later US-64 became a market return NAV based mutual fund in January 2002.

A summary table of the resources mobilized by private sector mutual funds is given below:

**Table 1.2 Net Resources mobilized by the Private Sector Mutual Funds
1993-94 to 2006-07 (Rs in crores)**

Mutual Fund (MF)	93-94	94-95	95-96	96-97	97-98	98-99	99-00
Pioneer ITI	92.7	309.5	-10.0	-81.4	-0.9	134.0	1913.8
Zurich India	116.2	51.9	1.8	-3.8	6.5	38.2	0
Prudential ICICI	159.2	90.3	0	0	0	626.1	3434.1
Morgan Stanley	981.8	0	0	0	0	0	0
Taurus	209.6	97.7	0	0	0	0	-60.2
Apple	-	103.6	-20.2	-0.2	-0.5	-	-
CRB	-	229.3	-	-	-	-	-
JM Financial	-	191.9	-78.7	487.8	-6.6	-48.7	1183.3
Alliance Capital	-	71.0	2.8	9.8	138.6	200.7	2506.4
Birla Sun life	-	162.2	25.0	111.6	260.4	473.8	1819.8
Shriram	-	14.5	26.7	1.2	1.1	0	-
Tata	-	-	102.3	100.6	-0.2	63.1	419.8
Reliance	-	-	74.5	-7.8	43.8	-45.3	170.4
HB	-	-	3.5	20.7	0	-	-
Jardline Fleming	-	-	5.3	0	10.9	0.3	167.8
Franklin Templeton	-	-	-	119.8	53.1	242.8	1251.3
ITC Classic Thread	-	-	-	49.5	0	0	0

needle							
DBS Chola	-	-	-	7.3	11.3	0.0	644.4
Sundaram BNP Paribus	-	-	-	21.7	9.6	7.3	210.9
First India	-	-	-	0.7	0	0	0
Escorts	-	-	-	21.0	0	-4.0	11.4
Anargam Wellington	-	-	-	5.1	0	0	0
DSP Merrill Lynch	-	-	-	-	218.0	208.8	637.6
Sun F & C	-	-	-	-	3.5	12.8	598.0
Kotak Mahindra	-	-	-	-	-	146.8	657.3
Dundee	-	-	-	-	-	10.3	386.1
ING Vysya	-	-	-	-	-	-	168.1
IL&FS	-	-	-	-	-	-	817.2
HDFC	-	-	-	-	-	-	-
Standard Chartered	-	-	-	-	-	-	-
Benchmark	-	-	-	-	-	-	-
Deutsche	-	-	-	-	-	-	-
HSBC	-	-	-	-	-	-	-
Principal	-	-	-	-	-	-	-
ABN AMRO	-	-	-	-	-	-	-
Sahara	-	-	-	-	-	-	-
Quantum	-	-	-	-	-	-	-
AIG	-	-	-	-	-	-	-
Fidelity							
JP Morgan Stanley	-	-	-	-	-	-	-
Lotus	-	-	-	-	-	-	-
Total	1559.5	1321.8	133.0	863.6	748.6	2066.9	16937.5

Net Resources mobilized by the Private Sector Mutual Funds
1993-94 to 2006-07 (Rs in crores) (contd)

Mutual Fund (MF)	00-01	01-02	02-03	03-04	04-05	05-06	06-07
Pioneer ITI	1461.7	1228.3	0	0	0	0	0
Zurich India	429.5	1111.4	2000.6	-	-	-	-
Prudential ICICI	1189.9	1404.8	-27.9	4385.0	170.3	5634.6	13785.0
Morgan Stanley	0	-24.1	-14.2	-14.9	-	-	-
Taurus	-38.7	-6.7	--	-3.2	-45.2	-43.4	31.3
Apple	-	-	-	-	-	-	-
CRB	-	-	-	-	-	-	-
JM Financial	695.6	1177.3	1290.4	965.9	386.2	-1464.7	453.3
Alliance Capital	705.2	-174.9	-901.7	-842.1	-1064.6		
Birla Sun life	268.5	608.3	976.2	3108.1	1115.3	2067.2	4202.7
Shriram	-	-	-	-	-	-	-
Tata	7.3	-17.4	89.4	2772.4	2387.5	1379.0	2290.8
Reliance	166.1	710.5	1305.2	3967.4	1849.7	15033.9	22581.0
HB	-	-	-	-	-	-	-
Jardline Fleming	59.2	57.6					
Franklin Templeton	839.5	2301.8	1146.7	4719.0	-966.5	-1828.3	4333.5
ITC Classic Thread needle	-	-	-	-	-	-	-
DBS Chola	154.1	177.2	-13.2	339.2	-138.7	876.7	148.8
Sundaram BNP Paribus	237.8	150.6	458.0	1456.1	-180.1	587.8	4417.6
First India	0	67.7	67.2	227.5	-151.8	-	-
Escorts	45.3	-1.7	-35.0	46.8	-4.2	11.2	
Anargam Wellington	0	0	0	0	0	-	-
DSP Merrill Lynch	-28.7	607.2	160.0	2522.3	104.7	4409.2	1424.8
Sun F & C	691.5	-137.5	-22.6	-392.0	-	-	-
Kotak Mahindra	321.2	854.9	943.7	1914.7	1066.1	2432.0	1238.0
Dundee	46.7	-95.9	-21.7	-	-	-	-
ING Vysya	92.1	46.0	168.1	880.4	-391.8	665.9	761.6

IL&FS	-36.7	326.1	516.2	1298.0	-	-	-
HDFC	1248.0	3716.8	2122.4	4657.7	-54.9	3334.7	7140.4
Standard Chartered	737.0	2039.9	861.9	2358.6	-256.5	1646.3	1547.2
Benchmark	-	5.8	4.1	54.3	377.4	236.8	2565.5
Deutsche	-	-	312.5	1670.2	-293.7	648.5	3184.7
HSBC	-	0	735.9	3576.8	1281.5	1800.4	1953.7
Principal	-	-	-	1841.1	1894.6	143.8	-
ABN AMRO	-	-	-	-	847.8	1552.5	2029.1
Sahara	-	-	-	-	-	6.9	-110.7
Quantum	-	-	-	-	-	11.3	45.7
AIG	-	-	-	-	-	0	0
Fidelity	-	-	-	-	-	2438.7	1495.8
JP Morgan Stanley	-	-	-	-	-	0	0
Lotus	-	-	-		-	0	1167.2
Total	9292.1	16134.0	12122.2	41509.8	7933.1	41581.0	76687.0

Source: www.amfi.com

Reliance and ICICI contribute 29.5% (approx 30%) and 17.9% (approx 18%) respectively to the total resource mobilization in 2006-07. Reliance started with a negative growth in the first few initial years but then it has registered an increase in its contribution to mutual funds. They are being followed by HDFC, Franklin Templeton and Birla Sunlife (contributions stand at 9.31%, 5.7% and 5.5% respectively). These are the top five performers of the private players in the mutual fund. Sahara Mutual fund entered the market in 2005-06 and registered a negative resource mobilization – 110.7 crore. Taurus Mutual fund, Quantum Mutual fund and DBS Chola are the worst performers among the private players in the market.

In February 2003, UTI was bifurcated into two separate entities such as UTI I and UTI II. UTI I was managed by a public administrator and the management of UTI II was handed over to State Bank of India, Punjab National Bank, Bank of Baroda and the Life Insurance Corporation (each of them has an equal share). UTI I was registered with SEBI

and governed by the Mutual Fund Regulations. It was renamed as UTI Mutual Fund in February 2003.

As on March 31 2003, UTI AMC had under its management 42 SEBI compliant schemes and 4 offshore funds, aggregating to a corpus of above Rs 15000 crore from about 10 million investor accounts.

Table 1.3 Mutual Funds – Milestones

1964	India's first mutual fund, US-64 launched by Unit Trust of India
1987	End of monopoly – UTI's stranglehold ends as the public sector banks join the mutual funds bandwagon
1988	Other financial institutions jump into the fray with the launch of LIC Mutual Fund
1993	Threat of competition – the industry is thrown open to the private sector.
1994	Foreign Mutual Funds arrive
1997	Mutual funds in troubled waters. CRB Mutual funds closes shop
2000	Shakeout imminent
2001	UTI crisis
2003	UTI split up in to UTI I and UTI II

Source: www.amfi.com

Table 1.4 Gross Resource Mobilization by Mutual Funds⁷ (Rs in crore)

Year	UTI	Public Sector Mutual Funds	Private Sector Mutual Funds	Total
1987-88	1763.00	258.00	N/A	2021.00
1988-89	3483.00	301.00	N/A	3784.00
1989-90	5504.00	1204.00	N/A	6708.00
1990-91	3182.00	2967.00	N/A	6149.00
1991-92	8686.00	2580.00	N/A	11266.00
1992-93	11051.00	1978.00	N/A	13029.00
1993-94	51000.00	9527.00	1549.00	62076.00
1994-95	9500.00	2143.00	2084.00	13727.00
1995-96	5900.00	296.00	312.00	6508.00
1996-97	4280.00	151.00	346.00	4777.00
1997-98	9100.00	332.00	1974.00	11406.00
1998-99	13193.00	1671.00	7847.00	22711.00
1999-00	13698.00	3817.00	43726.00	61241.00
2000-01	12413.00	5535.00	75009.00	92957.00
2001-02	4643.00	12082.00	147798.00	164523.00
2002-03	7096.00	23513.00	284095.00	314706.00
2003-04	23992.00	31548.00	534649.00	590190.00
2004-05	3099.00	5308.00	51801.00	60207.00
2005-06	12572	19962	139596	172102
2006-07	38531	27655	310690	376877
2007-08	38417	69135	326041	427593
2008-09	56452	95627	467420	619499

Source: SEBI Bulletin

⁷ Detailed explanation of net and gross mobilization of UTI and private sector has been given in Appendix III

1.3 STRUCTURE OF INDIAN MUTUAL FUNDS

In developed countries like US and UK, the mutual funds were governed by a proper mechanism with a view to retain investors' confidence on the funds and to have an operational transparency. There was a clear distinction between close ended schemes and open ended schemes and hence separate management approaches were followed for that. Open ended funds (unit trusts) in UK followed trust approach while close ended schemes (investment approach) governed by corporate approach.

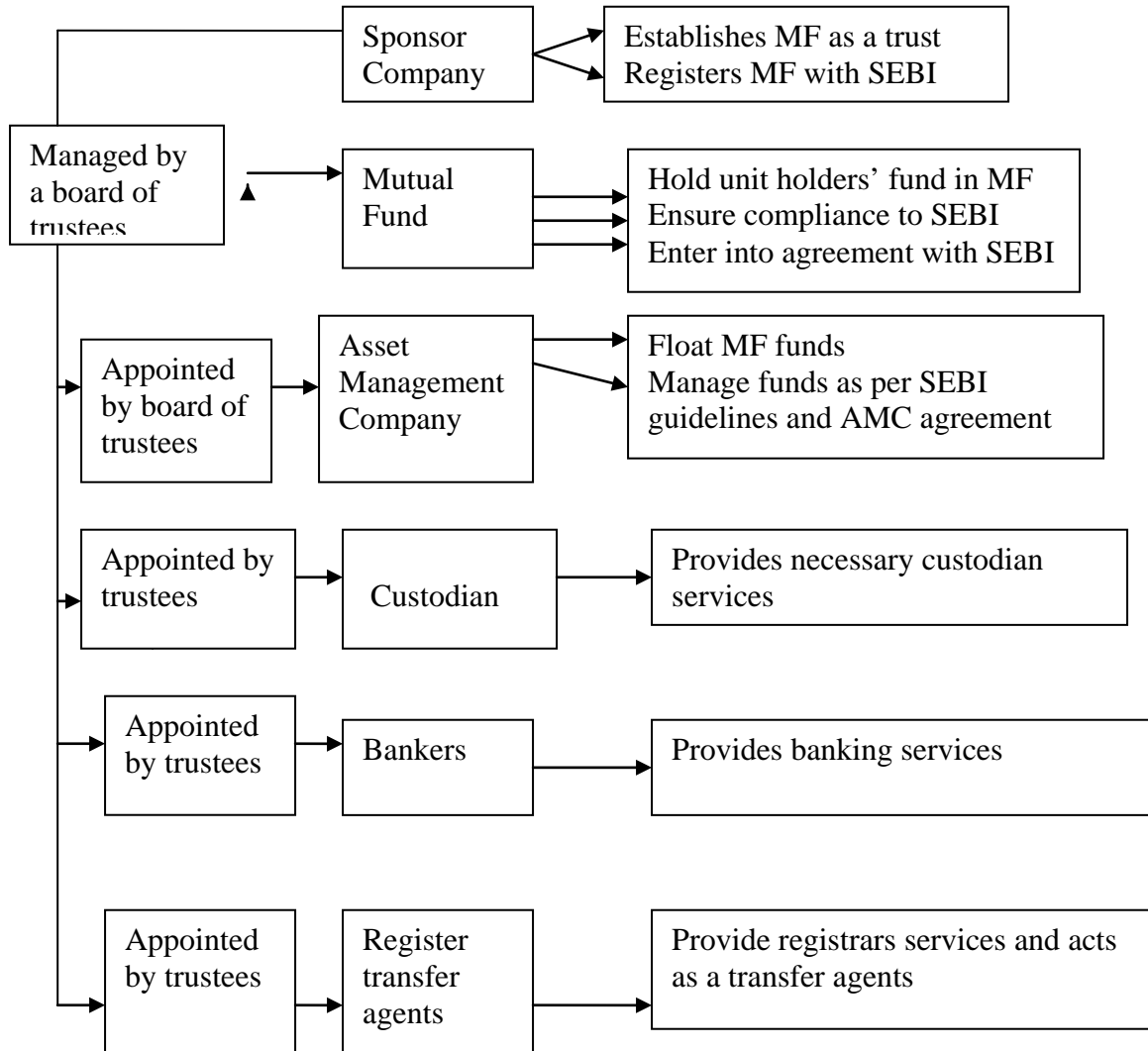
This distinction is non existent in India and all the regulatory measures were laid down by SEBI and hence the mutual fund industry is primarily managed and governed by SEBI in India. SEBI regulations ask the funds to be launched in the form of a trust under the Indian Trusts Act, 1882.

These trusts are entrusted with the task of raising money from the public for investing in securities. The money can be raised from the sale of securities. The structure of the mutual funds mainly includes:

- Sponsor
- Trustee of Mutual fund
- Asset Management Company
- Custodian

Figure below gives a clear picture of the structure of the Mutual Fund industry in India:

Figure 1.2 Structure of Indian Mutual Funds



Source: Mutual funds in India: Marketing Strategies and Investment Practices – H. Sadhak, Sage Publication

1.3.1 The Sponsor

The Sponsor is basically an entity who owns an investment company either on its own or in collaboration with another corporate body and gets itself registered with SEBI. This entity can be a private limited or public limited as per the SEBI (Mutual fund) regulation, 1996. The sponsor is required under the law to contribute to 40% of the net worth of the AMC. The sponsor should have a sound track record and general reputation of fairness and integrity in all the business transactions.

A sound track record of the Sponsor should have the following points:

- The net worth of the sponsor ought to have positive in the preceding five years
- The net worth of the sponsor should be more than the capital contribution of the AMC in the preceding year.
- The sponsor should have earned profits after deducting depreciation, interest and tax in immediately preceding three years.

SEBI regulations read that the mutual fund has to be established by the sponsors. The regulations clearly state that “ A mutual fund shall be constituted in the form of a trust and instrument of trust shall be in the form of a deed, duly registered under the provisions of the Indian Registration Act, 1908 (16 of 1908), executed by the sponsor in favor of trustees named in such an instrument”.

1.3.2 The Asset Management Company

To carry out the administrative and investment functions of the company, Asset Management Company gets appointed by the Sponsor which mainly manages the principal of the fund. Main functions include launching various schemes of the fund, managing them and liquidating it at the end of the tenure. AMC has to be registered with SEBI. AMC receives an annual management fee from the fund for its services rendered.

Some examples of the asset management companies existing in India are given below. These include bank sponsored, institutions and private sector (Indian and foreign).

Table 1.5 Asset Companies in India

Bank Sponsored	<ul style="list-style-type: none"> • BOB Asset Management Co Ltd • Canbank Investment Management Services Ltd • PNB Asset Management Co. Ltd • SBI Funds Management Ltd • UTI Asset Management Company Ltd
Institutions	<ul style="list-style-type: none"> • GIC Asset Management Co. Ltd • IL&FS Asset Management Co. Ltd • Jeevan Bima Sahayog Asset Management Co.
Private Sector (Indian)	<ul style="list-style-type: none"> • Benchmark Asset Management Co. Pvt Ltd • Chola mandalam Asset Management Co. Ltd • Escorts Asset Management Ltd • Sahara Asset Management Co. Pvt Ltd • J.M Capital Management Pvt Ltd • Kotak Mahindra Asset Management Co. Ltd • Reliance Capital Asset Management Ltd • Sundaram Asset Management Company Ltd
Private Sector (Foreign)	<ul style="list-style-type: none"> • Principal Asset Management Co. Pvt Ltd

Source: www.amfiindia.com

The net worth of the AMC should be in the form of cash and all assets should be in the name of AMC. AMC has to satisfy the following conditions:

- Asset Management Companies have to be registered under the Companies Act, 1956 and needs to be approved by SEBI.
- The board of trustees appointed by the sponsors should give an approval for AMC.
- AMC's minimum net worth should be Rs 100 million.

- The directors, officers or any employees of AMC are not permitted to act as a trustee or hold post of same stature in another AMC.
- The 50% of board of directors of AMC should not be related to any of the sponsors or trustees.
- AMC is prohibited from sanctioning of loans.
- The AMC can disclose the scheme particulars and base of calculation of NAV.

The director of AMC has to be a person of high repute having five years of experience in the respective field. The termination of the director of AMC can happen with the majority of trustees voting against it or vote of 75% of unit holders.

In its tenure, AMC has certain obligations to fulfill such as:

- The AMC is required to float schemes for the funds and supervise the money collected under various schemes as per the trust deed, SEBI regulations and investment objectives stated in the document.
- The transactions conducted by AMC have to be submitted in the form of report on a half yearly basis. This is just to maintain a record of the transactions of the AMC.
- To safeguard investors' interest, any securities transactions with any of the associates have to be reported on a quarterly basis to the Trustees.
- AMC has to inform SEBI about the interest of its directors in other companies in every six months. This is to ensure that amount collected is not used for the benefits of the sponsors or the directors for AMC but for the interest of the unit holders.
- AMC also appoints registrars and transfer agents and register with SEBI.
- AMC has to submit of the functioning of various schemes on a quarterly basis or as decided by the trustees.
- AMC can purchase and issue closed ended schemes and can covert into open ended schemes.

1.3.3 Board of Trustees

Trustees are mainly appointed for the benefit of the unit holders and to keep their interest intact. Under the SEBI (Mutual Fund) Regulation means “a person who holds the property of the mutual fund in trust for the benefit of the unit holders”.

Half of the trustees should be independent individuals and so AMC and any of its employees can not act as trustees. Trustees of a fund can not be a trustee for another mutual fund unless that trustee is an independent one and has to take prior permission from the fund of which he is a trustee. The trustee has certain functionalities and obligations such as:

- The trustees enter into an investment agreement with Asset Management Company appointed by Sponsor with a prior permission from SEBI.
- Trustees make sure that AMC has all the required personnel like registrars, transfer agents to make a smooth functioning of a scheme.
- Trustees look after all the agreements that AMC enter with others and check that those agreements pertain to SEBI Regulations and particulars of the scheme.
- To check that AMC does not serve the purpose of any of the associates⁸ at the cost of the interest of the unit holders.
- Trustees submit the details of the transactions in securities on a quarterly basis to the Sponsor.
- Trustees review the net worth of AMC quarterly and make sure that if there is a shortfall then has to be covered up by AMC.
- Trustees review the contracts entered with custodians and transfer agents and make sure that they are in conformity with the interest of the unit holders.
- Trustees keep a close look on AMC and checks that they address investors' complaints effectively.
- Trustees at any point of time can acquire any relevant information from AMC.

⁸ An associate means a person who exerts control over AMC either alone or combinedly, whom AMC can control and shares a common director with AMC.

1.3.4 Custodians

The custodians are also get appointed by the sponsor to look after the transfer and storage of securities. Custodians get themselves registered with SEBI and include various functions which include like safe keeping of securities, bid settlement, corporate function and transfer agents; alongside include various administrative functions like fund accounting, cash management. Custodians need to have a sound track record and adequate experience. The custodians need not be attached with any of the sponsors or trustees at the time of appointment.

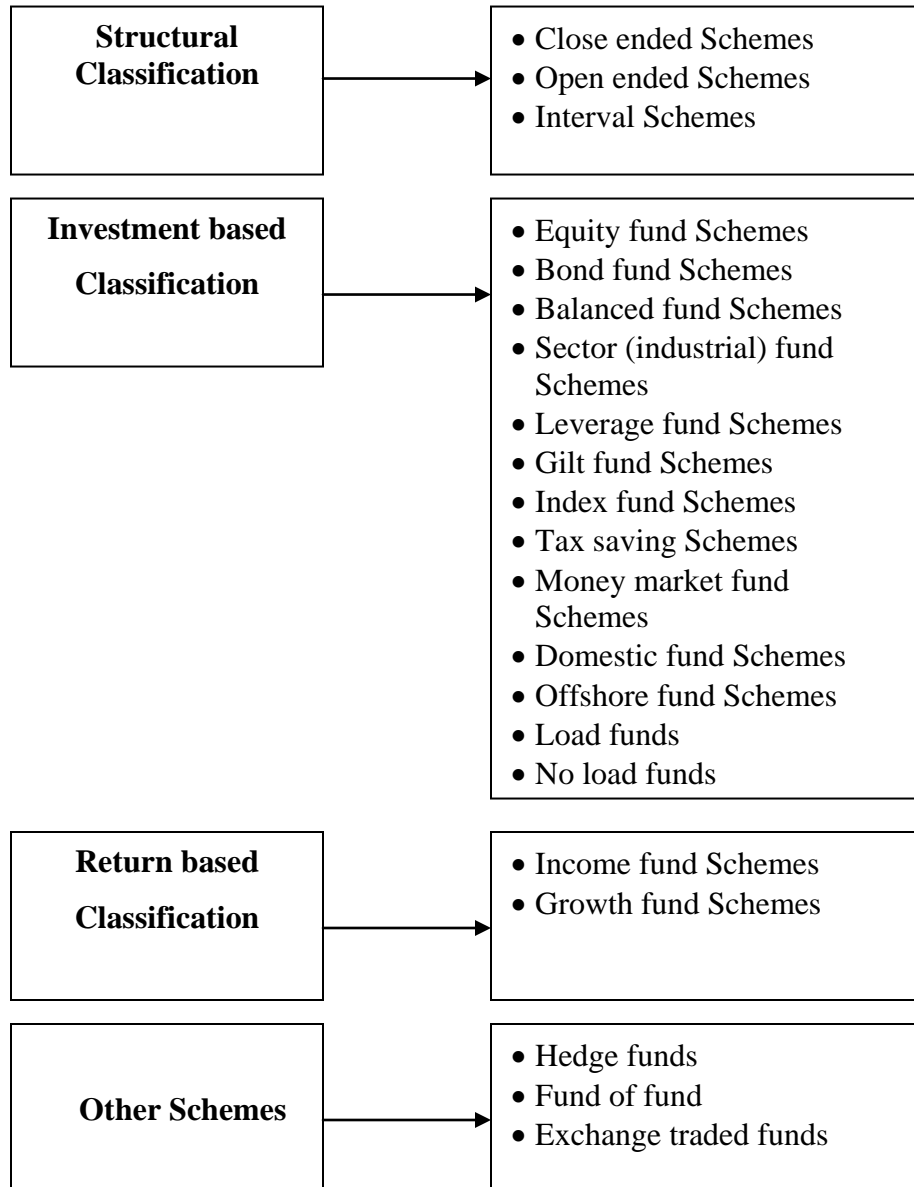
1.4 CLASSIFICATION OF MUTUAL FUNDS⁹

Every mutual fund has a definite objective and investment strategy. So mutual funds provide a huge variety of choices to the investors who can pick up and invest in the fund of their choice and according to the investment strategy. Basically the mutual funds are categorized on the basis of structure and investment. Mutual funds can be put to various compartments according to the objectives and the categorization is as follows:

- Structural Classification
- Investment based Classification
- Return based Classification
- Other Schemes

⁹ An elaborate explanation of the funds has been given in Appendix I

Figure 1.3 Classification of mutual funds



1.5 Regulatory measures

Mutual fund has generated a lot of interest by generating profits for the investors. Now this has also increased the volatility of the market and so the investors have to be assured so they retain the faith in the market. These conditions call for the proper and sound regulations. Regulation is mandatory to safeguard the interest of the investors in an imperfect market.

Mutual fund market is a well organized institution but it can jeopardize in fraction of time if faced with market failures. Market failure arises when prices and incentives do not fully reflect the costs and benefits of good and services provided. So the regulatory measure framed with mainly two objectives: one to rectify the market failures and second to secure the investors from impending loss.

So the regulatory measures are formulated to preserve the confidence and faith of the investors and to shelter them in case of imminent loss. The investors of various bank deposits are protected by the capital adequacy norms. The various debenture holders of the corporate sector are protected by the mortgage of the assets. The equity shareholders are also protected by asset structure of the company capital adequacy¹⁰.

Investors of the mutual fund are susceptible to risk of two types: default risk and market risk¹¹.

Default risk: The probability that a borrower may fail to make payments of interest or repayment of principal at the scheduled time.

Market risk: Market risk is the risk that the value of a portfolio, either an investment portfolio or a trading portfolio, will decrease due to the change in value of the market risk factors. The four standard market risk factors are stock prices, interest rates, foreign exchange rates, and commodity prices.

¹⁰ Taken from M.Phil Thesis of Deepti Sahoo submitted at University of Hyderabad.

¹¹ <http://www.defaultrisk.com/>

The following laws regulate the Mutual Fund industry in India:

1. Companies Act, 1956
2. UTI Act, 1963
3. SEBI (Mutual Fund) Regulation Act, 1993
4. SEBI (Mutual Fund) Revised Regulation Act, 1996
5. SEBI various Mutual Fund Regulation Amendments

Companies Act, 1956

There are certain aspects of this Act; they are:

- The private MF has to incorporate as a company
- Trustee can be vested the trusteeship function when there is no board
- The fund manager should be an Asset Management Company

UTI Act, 1963

UTI was set up under UTI Act, 1963 as a statutory body. UTI did not come under the purview of SEBI. In 2000 UTI bifurcated in two entities: UTI –I is looked after by the administrator appointed by Government and a group of advisors. UTI-II is headed by professional chairman and board of trustees.

SEBI (Mutual Fund) Regulation Act

It was in March 1991, Government of India decided to hand over the functioning and principalities of mutual fund to SEBI. SEBI pronounces to guard the interests of the investors “ ...to protect the interest of the investors in securities and to promote the development of, and to regulate the security market and for matters connected there with

or incidental there to SEBI also issued a code of advertisement for public interest requiring mutual funds to mention that....”

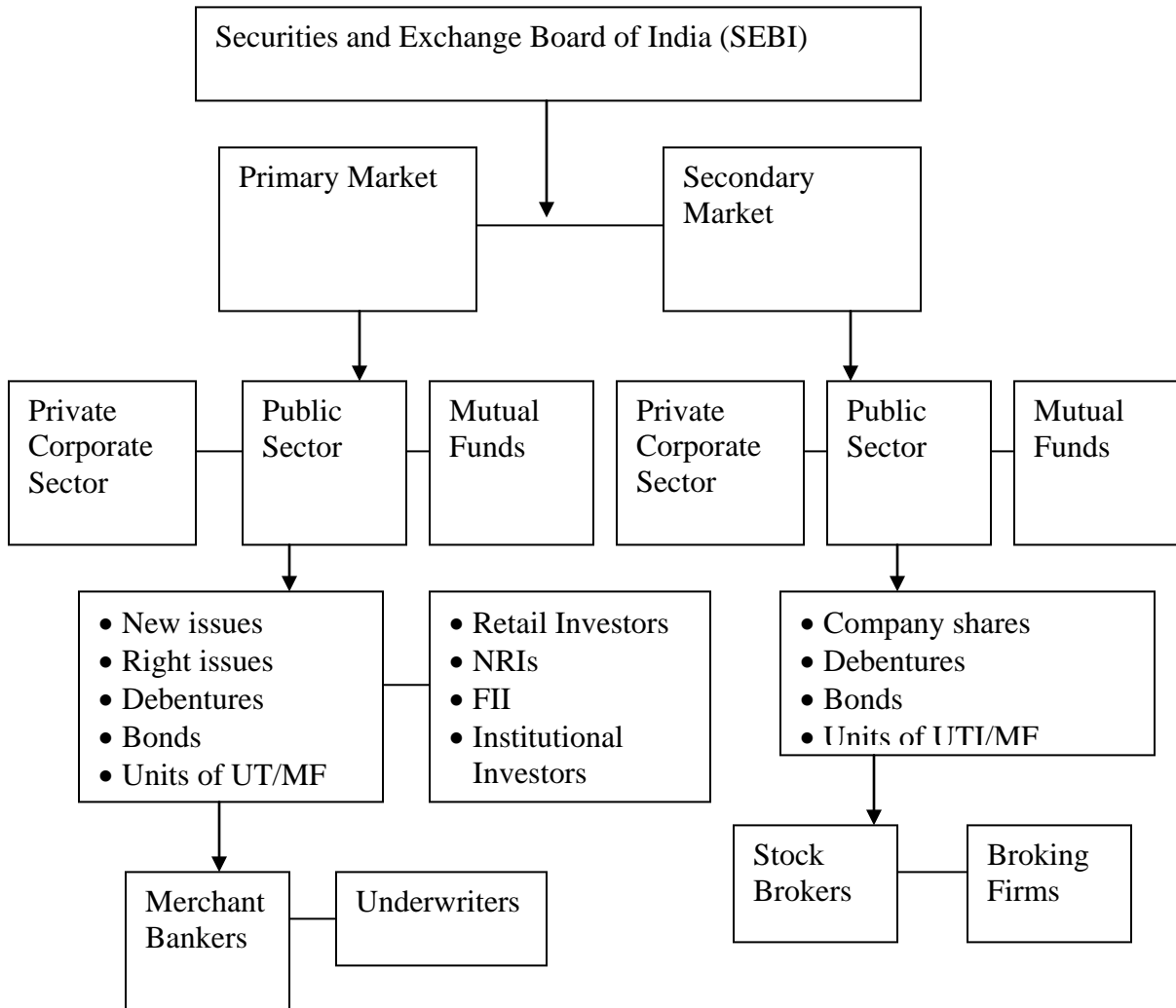
SEBI regulations were originally laid in 1993 and further amended in 1996 covering aspects of structure, investment policy, distribution of surplus, launching of various schemes and its objectives and expenses.

SEBI regulations make the investors’ faith in the mutual funds strong and concrete. The net resource mobilization by mutual funds has increased and Asset Management Companies have also seen an increase. Mutual funds investment has also increased and so as the list of the schemes.

SEBI has made regulations, laws and conditions mandatory for the funds to be registered with SEBI. The funds have to cross through various steps before finally launched in the market. Today all the mutual funds have to be first registered with SEBI and this legalizes the whole process.

Below is a given a bird eye –view of SEBI.

Figure 1.4 Structure of Indian Securities Market



MF = Mutual funds

UTI = Unit Trust of India

FII = Foreign Institutional Investment

NRI = Non Resident of India

So Mutual funds come under the jurisdiction of SEBI. SEBI Act in January 1992 covers the entire gamut of the securities market. The other regulations framed by SEBI are:

- SEBI (Stock brokers and sub brokers) Rules and Regulations, 1992
- SEBI (Merchant Bankers) Rules and Regulations, 1993
- SEBI (Registrars to an Issue and Share Transfer Agents) Rules and Regulations, 1993
- SEBI (Insider Trading) Regulations, 1993
- SEBI (Mutual Funds) Regulation, 1993
- SEBI (Prohibition of Fraudulent and Unfair Trade Practices relating to Securities Market) Regulations, 1995.

1.6 Motivation of the study

Mutual fund industry has seen tremendous growth over the last few years. The investment from overseas in mutual funds has contributed not only towards the growth of the market for mutual funds but also towards the stock market. Large numbers of retail investors are directing their investment to the mutual funds. This growth of the mutual fund draws the attention towards the performance of the industry. Mutual fund has become a pivotal component of the capital market. The study of the performance of the industry becomes important due to its contribution to the capital market.

For every fund and its fund manager, the main aim is to make more returns and to invest in such a way that the funds perform better than the market index. The consistency in the performance of the funds has also been one of the important goals for the fund managers; as it makes the investors to continue investment in the same fund. The performance of the funds depends on the investment decisions taken by the fund managers keeping in view the market conditions.

The analysis of mutual funds deals with the strategy and objectives of the funds, median, market cap, standard deviation. Investors always look at the objectives of the funds and the returns earned by the respective funds in the past. So the performance of the funds needs a careful attention and detailed study.

This study has incorporated these aspects and tried to evaluate the performance of the funds by calculating beta (β), alpha (α) and market timing abilities of the fund managers. Calculation of beta compares the fund's returns with the market returns and alpha gives the variability picture of the funds' actual performance as compared to the risk assumed by the fund manager. The market timing abilities of the fund managers determine the performance of the funds and hence it is important to study this aspect. The performance has also been compared to the market index selected for the study to know whether the performance has been better than the market.

1.7 Objectives of the study

The main focus of the study is to evaluate the performance of the mutual funds in Indian market. Mutual fund has been a phenomenon of recent times and the impact it has created in the short span makes an interesting area to be studied. In this study analysis of the performance has been done for close ended and open ended funds.

The objectives are:

1. To investigate whether the mutual funds offer or do not offer better risk adjusted returns.
2. To investigate the performance of the schemes in comparison to the market by the computation of β .
3. To evaluate the market timing of the fund managers.
4. To check the consistency of the performance of the mutual funds.
5. To check the performance of the equity funds and debt funds

1.8 Data and Methodology

The data for this study comprises of the market prices, NAV and repurchase prices of the funds; annual reports of the mutual funds and information on dividends, bonus and rights. Data on daily market prices of the funds have been collected from various issues of Economic Times and concerned funds' websites. NAVs and repurchase prices of the schemes were collected from AMFI and concerned mutual funds. The market indices selected for the study are ET Index and Natex (BSE National Index).

For the study, the analysis has been done for open ended funds and close ended funds. The analysis has been done only for those schemes for which more than 25 monthly observations are available. The data period has been taken from May 2003 to October 2009. In case of open ended funds, out of the total schemes of 88 NAVs are available for 65 schemes, market prices for 13 schemes and repurchase prices for 10 schemes. In case of close ended funds, NAVs are available for 55 schemes, market prices for 10 schemes and repurchase prices also for 10 schemes.

For the study, adjustments have been carried out for rights, dividends and bonus. These adjustments have been done for NAV, repurchase prices and market prices of the open ended and close ended funds. Jensen's alpha, Sharpe's measure and various models have been used for estimating the market timing abilities of the funds managers. The models which have been used are Treynor and Mazuy (1966), Henriksson and Merton (1981) and Fabozzi and Francis (1979).

1.9 Organization of the study

The study has been organized in six chapters. After the introduction in Chapter I, Chapter II discusses about the studies previously conducted on mutual funds. In Chapter III, the data and methodologies used for the study have been explained in detail. In Chapter IV, the analysis has been done for open ended funds using the data and methodologies discussed in chapter 3. Chapter V gives the analytical results for close ended funds. Chapter VI summarizes the results and gives the concluding remarks.

CHAPTER – II

REVIEW OF LITERATURE

2.1 Introduction

Mutual Funds have attracted ample attention of the corporate, academicians and researchers. Many extensive literature have been penned down and research has been done on mutual funds. Mutual funds is not a recent phenomenon looking from the global point of view¹² but in India mutual funds started functioning from 1964 when Unit Trust of India (UTI) launched its first mutual fund called US – 64 (an open ended scheme)¹³. Since then India had witnessed a surge in mutual funds with the entry of the public funds beside UTI in 1987 and private players were also allowed in 1993 to enter the market for mutual funds which showed a rise in the number of schemes and alternatives available to the investors.

2.2 Performance of mutual funds

Various methodologies and models have been applied to evaluate the performance of the mutual funds in general, to make an effective and healthy comparison between public and private funds and to evaluate the market timing of the fund managers.

Before moving on to the literature surveyed on the performance of the mutual funds, there are certain parameters to be studied for measuring the performance of the funds and need to be known for a clear understanding of the methodologies used. The parameters which have been used in this study are:

- Standard deviation (σ)
- Beta (β)
- Alpha (α)

¹² The first investment company was The Scottish – American Investment Company, set up in London in 1860

¹³ Fund which is available for subscription all through the year and does not have a stipulated period of maturity is called open ended scheme

Standard deviation (σ)

Standard deviation measures the variation in the individual portfolio returns from average expected return for a particular period. Various factors which influence the variation in a fund from its average returns are the components of stocks in the portfolio, diversification of the fund, the competency of the fund managers in timing the market and the extent it pulls the borrowing for the enhancement of the performance of the funds.

Beta (β)

Beta compares the fund returns with the market returns. Beta measurement is put in the form of coefficients and is considered to be a relative measurement of the performance of the funds unlike standard deviation which is defined in absolute returns. Based on the value of beta, the funds can be volatile, less and more volatile. So the value of beta gives us the volatility of the funds.

Alpha (α)

Alpha gives the variability picture of the funds' actual performance as compared to the risk assumed by the manager. The value of alpha turns out to be zero if the fund gives returns at the same level of the risk taken by the manager. A positive value of alpha tells fund's return has been more than expected by the manager and vice versa for the negative value of alpha.

There are certain methods which are used in various literature and survey and have facilitated in studying the performance of the funds.

2.3 Treynor's Performance Index¹⁴

The first measurement for the performance of the mutual funds was conceptualized by Jack Treynor in 1965. Treynor's measure is popularly called Treynor's Performance Index or put as Treynor's Index (T_n). Treynor's index measures the ratio of the funds' returns on the beta coefficient.

The index can be put as:

$$T_n = \frac{\text{Portfolio average return } (R_p) - \text{Risk free rate of interest } (R_f)}{\text{Beta coefficient of portfolio } (B_p)}$$

The numerator gives the risk premium¹⁵ and the value of beta gives the measure of risk. As the value of beta measures the volatility of the funds so Treynor's index gives the remuneration for volatility. If the value of T_n is higher (the ratio is higher) then the fund is considered to be superior.

2.4 Sharpe Ratio

It is in 1966 when Sharpe came up with a measurement index. Sharpe took 34 open ended mutual funds and the period spanned from 1954-1963. The annual rate of return for a fund is based on the sum of dividend payments, capital gains distributions, and changes in net asset value; it is thus a measure of net performance-gross yield less the expenses of management and administration. Sharpe index shows the difference between the risk premium in the portfolio and the total risk associated with the portfolio.

¹⁴ Treynor, Jack L. (1965). "How to Rate Management of Investment Funds", Harvard Business Review 43, pp. 63-75

¹⁵ Treynor had contended that there are two types of risks: one is the risk associated with the market (systematic risk) and risk associated with particular securities

Sharpe Ratio (S_r) can be put as:

$$S_r = \frac{\text{Portfolio average return } (R_p) - \text{risk free rate of return } (R_f)}{\text{Standard deviations of the portfolio return } (\sigma_p)}$$

2.5 Jensen's Measure

M C Jensen ran a regression of the excess returns of the funds on the excess market returns. He took a sample of 115 open ended mutual funds; its net asset and its dividend information were taken. Jensen found that the funds on an average were not able to predict security price. It is in the year 1968 Jensen propounded to measure the performance of the funds using alpha as the intercept and put the index as:

$$R_{pt} - R_f = \alpha + \beta (R_m - R_f) + e_i$$

Here α shows the intercept and β shows the systematic risk¹⁶

R_m = market return

R_{pt} = fund return for time period t

R_f = return on risk free asset¹⁷

¹⁶ Risk inherent to the entire market

¹⁷ A risk free asset has zero variability of returns. If an investor buys an asset with terminal value known such asset can be called as risk free asset.

2.6 Fama's Measure

Eugen F Fama (1972) went ahead and suggested that the fund's performance can be judged by the excess returns over the expected market returns based on premium for total risk. Fama has used Capital Market Line (CML)¹⁸ for excess returns calculation.

Fama's measure indicated as F_p can be put as:

$$F_p = (r_p - r_f) - [\sigma_p / \sigma_m] [r_m - r_f]$$

Where r_p = returns on the portfolio

r_m = return on the market portfolio

r_f = risk free return

σ_p = standard deviation of the portfolio returns

σ_m = standard deviation of the market returns

The major components of Fama's measure are:

Risk free return	r_f
Compensation for systematic risk	$\beta(r_m - r_f)$
Compensation for inadequate diversification	$(r_m - r_f) \{(\sigma_p / \sigma_m) - (\beta)\}$
Net superior returns due to selectivity	$(r_m - r_f) - (\sigma_p / \sigma_m) \times ((r_m - r_f))$

The second and third rows (in the table) indicate the impact of diversification and market risk.

A positive value of F_p gives us a positive return on the portfolio than the returns predicted and hence lies above CML. A negative F_p lies below CML as the portfolio earns returns lesser than the predicted returns.

¹⁸ CML is a line used in the capital asset pricing model to illustrate the rate of returns for efficient portfolios depending on risk free rate of return and standard deviation for a particular portfolio.

2.7 Market Timing and Selection Ability of the portfolio managers and the Models

The market timing skills of the fund managers determine the profitability and performance of the fund. There are models which can be instrumental in determining the performance of the managers' capability in timing the market. Fund managers' knowledge of the market timing is very much decisive in the performance of the funds.

2.7.1 Treynor – Mazuy Model (1966)

The model found out the market timing of the fund managers who select between high volatility zone and low volatility zone. Each zone is portrayed by the characteristic line. The model can be put as:

$$R_{it} - R_f = a_i + b_{1i} (R_{mt} - R_f) + b_{2i} (R_{mt} - R_f)^2 + e_{it}$$

R_{it} = return on the fund i in the period t

R_{mt} = return on the market index in period t

R_f = return on the risk free asset in period t

e_{it} = error term in period t

a_i = constant term

b_{1i} and b_{2i} are the coefficients to be estimated

Treynor and Mazuy has used b_{1i} to measure the timing ability of the schemes

They had argued that “if the fund manager can forecast market returns, he will hold a greater proportion of the market portfolio when the return on the market is high and a smaller proportion when the market return is low”.

Treynor – Mazuy took 57 open ended funds. After using the model, they found that only one out of 57 funds has shown market timing ability of the managers does not exist. The market timing skills of the fund managers determine the profitability and performance of

the fund. The Treynor – Mauzy Model laid the ground for appraising the market timing of the managers.

2.7.2 The Henriksson - Merton Model (1981)

Merton – Henriksson came up with an advanced model to show the timing ability of the fund managers who would focus on the positive and negative returns of the funds of the market. The model is:

$$R_{it} - R_f = a_i + b_{1i} Y(t) + b_{2i} (R_{mt} - R_f) + e_{it}$$

$$Y(t) = \max(0, R_f - R_{mt})$$

R_{it} = return on the fund i in the period t

R_{mt} = return on the market index in period t

R_f = return on the risk free asset in period t

e_{it} = error term in period t

a_i = constant term

b_{2i} = coefficient to be estimated

Merton and Henriksson had explained that the forecasting skills of the fund managers are of two types:

- Microforecasting: “which forecasts price movements of individual stocks relative to stocks generally
- Macroforecasting: “which forecasts price movements of the general stock market relative to the fixed income securities

The former is called security analysis and later is referred to market timing.

Merton and Henriksson used 116 for 1968 to 1980 funds and found out that only three fund managers have been capable in market timing.

2.7.3 Fabozzi and Francis Model (1979)

Fabozzi and Francis in 1979 have found out the stability of beta coefficients over the changing market conditions. This has been ascertained to evaluate the market timing ability of the fund managers and the selection ability of the managers. They have said that the performance of the funds depends on decisions made by the portfolio managers. Suppose the fund managers can anticipate the market conditions and accordingly adjust the beta, then the beta coefficient would be greater than estimated. The model is:

$$R_{it} - R_f = a_{1i} + a_{2i} D_t + b_{1i} D_t (R_{mt} - R_f) + b_{2i} (R_{mt} - R_{ft}) + e_{it}$$

R_{it} = return on the fund i in the period t

R_{mt} = return on the market index in period t

R_f = return on the risk free asset in period t

e_{it} = error term in period t

a_i = constant term

b_{1i} and b_{2i} are the coefficients to be estimated

Fabozzi and Francis had found out that “mutual fund managers did not reduce the fund’s beta in bearish markets and increases it in bullish markets in order to earn higher risk adjusted returns for shareholders”. The fund managers did not shift fund’s beta to take advantage of market fluctuations.

Monthly rates of returns were computed for 85 mutual funds for 73 month period from December 1965 to December 1971. The results showed that mutual fund managers could not outguess the market.

Treynor – Mazuy Model has been used by Irissapane (2000)¹⁹. He used the model for 34 schemes from UTI, LIC and Canbank for the period of 1988 to 1998 and found out that b_{li} to be significant for 7 out of 34 schemes but none of them were having positive values. Gupta (1998) found out that b_{li} is significant only for 2 schemes.

Nanda, Wang and Zheng (2005) said that the portfolio managers adopt tactics at a time when the cash flows increase to enhance the likelihood of developing a star fund to maximize the overall cash flows. Bren and Green (2002) said that the information acquired by the portfolio managers also affect the cash flow which in turn has an effect on the performance of the fund.

Lee and Rahman (1990) examined the market timing and selectivity performance of the sample of the funds. A regression is run to separate stock selection ability from market timing ability. Fama (1972) pointed out that the ability of the portfolio managers can be partitioned in to two: (a) price movement of selected individual stocks (micro forecasting) (b) price movements of the general stocks as a whole (macro forecasting). Micro forecasting is known as security analysis and the macro forecasting is known as market timing. The selection and timing ability of the fund managers significantly determine the returns on the funds.

The monthly returns of 87 months for 93 mutual funds were taken for a period of January 1977-March 1984. A monthly return on 91 day Treasury bills was taken as a proxy for risk free return. All these are computed as compounded rates of returns. Out of 93 funds, 24 funds (25.81%) have α^p significantly different from zero at 0.05 level. 14 funds (15.05%) have positive α^p . They concluded that the funds did not have a degree of specialization in market selection and timing ability. There were four funds that had higher degree of selection with negligible market timing and five funds had higher market timing with low selection ability. These led to relatively lower returns on the funds.

¹⁹ Irissapane, Aravazhi D, Murugesan B, Rao Chandrasekara K.C.S, Portfolio Selection Skill and Timing Abilities of Fund Managers, An Empirical Evidence on Indian Mutual Funds, Fourth Capital Market Proceedings, UTI Institute of Capital Markets, Mumbai, 2000.

Grinblatt and Titman (1994) conducted a study on the performance of the mutual funds and found out that the selection of the portfolio holdings and its management leads to higher adjusted returns. For the study the quarterly holdings of 155 mutual funds were selected for the period of December 31, 1974 to December 31, 1984. They asserted that the portfolio manager who is well informed of the market can help in making the funds to earn more returns than the market.

Tripathy (2004) studied the market timing ability of the fund managers and have taken 31 tax planning schemes in India for a period of December 1995 to January 2004. Equity linked saving schemes (ELSS) from December 1995 to January 2004 with a total of 31 schemes was picked for 8 years. BSE National Index was taken as market index. The returns are computed as follows:

$$R_{pt} = \ln [(NAV_{t+1} - NAV_t) / NAV_t]$$

The average return on the market portfolio is determined as follows:

$$R_p = \sum_{t=1}^n R_{pt} / n$$

R_p = annual average return on the mutual funds

Return on the index is computed as:

$$R_{mt} = \ln [(Index_{t+1} - Index_t) / Index_t]$$

The average return on market index is as follows:

$$R_m = \sum_{t=1}^n R_{mt} / n$$

R_m = average return on the market.

Chang and Lewellen (1984) have also studied the market timing of the fund managers and its effect on the mutual fund performance. The fund managers gain in the investment of the funds by market timing and proper selection of the securities. The fund managers

acquired systematic and adequate knowledge of the market and anticipate the price movements thus able to rearrange the portfolios in accordance with that.

A sample of 67 professionally managed funds was selected for the study for which monthly NAVs were taken from the period of January 1971 to December 1979. Using the data and the model, they found that fund managers were poor market timers. Out of 67 funds studied, 42 showed a non significant β . Using Henriksson –Merton Model, they found α for 41 out of 67 samples was statistically significant

Kon (1983) did a similar study on the market timing and stock selection of the portfolio managers. Stock selection depends on the prices of the securities and market timing shows the returns on the market portfolio in the future. A sample of 37 funds; each having 198 months of total NAV from January 1960 to January 1976 were selected for the study.

To model the timing activity of fund managers, the rate of return on the market portfolio can be expressed as:

$$R_{Mt} = E_t(R_{Mt}) + \pi_{Mt}$$

$E_t(R_{Mt})$ = expected rate of return on the market portfolio

π_{Mt} = unexpected rate of return on the market portfolio, in this context the bull market is defined when $\pi_{Mt} > 0$ and bear market is defined when $\pi_{Mt} < 0$.

Wermers (2000) concentrated on a data set of all US equity funds over a period of January 1, 1975 and December 31, 1994. The measures used by Wermers are the following:

- a. Characteristic Selectivity (CS) Measure
- b. Characteristic Timing (CT) Measure
- c. Average Style (AS) Measure

The results show that the funds selected for the period which held stock portfolios have outperformed a broad market index by 1.3% per year. But on a net return level, the funds under perform the market index by 1% per year. The difference is 2.3% (between the returns on the stock holdings and the returns on the funds); out of that 0.7% per year is created by the lower average returns of the non stock holdings of the funds relative to stocks.

Pinnuck (2003) constructed a study on stock funds and concluded that the returns are abnormal. The performance of the fund manager can be gauged by the stock holdings and its trades. An examination of the performance of stock holdings measures the performance return on each stock held in the fund manager's portfolio at each month-end. Monthly observations on the equity portfolio holdings of 35 Australian active equity fund managers from January 1990 to December 1997 have been taken for the study. Stocks they hold realize economically significant abnormal returns in the month following the holding date. This result is consistent with fund managers possessing some stock selection ability.

2.8 Performance of the funds comparable to the benchmark selected

Friend, Brown, Herman and Vickers (1962) did the first extensive and systematic study of mutual funds. The study considered 152 mutual funds with annual data from 1953 to 1958. While the study did not adjust the benchmark portfolio for the beta, the authors did adjust their market return to make it comparable with the funds.

Rao (2006) took 269 open ended schemes from the period of September 1998 to April 2002. Rao has used monthly closing NAVs from AMFI. NAVs are apt for the schemes as the sale and purchase prices of a fund are linked to NAVs. Dr Rao has used the methodology of Relative Price Index (RPI).

RPI gives the unadjusted % change in NAV growth and % change in BSE Sensex.

$$\text{RPI} = \frac{(\text{Current NAV} - \text{Face Value}) \times \text{Face Value}}{(\text{Current BSE Sensex} - \text{BSE Sensex at issue time}) \times \text{BSE Sensex at issue time}}$$

The formula for RPI has a shortcoming of providing negative returns for the mutual fund schemes against the bear market.

So Rao amended the formula and came up with the adjusted RPI which can be put as:

$$\text{RPI (adjusted)} = \frac{\% \text{ change in NAV of the scheme} + 2\% \text{ change in sensex}}{\text{X \% change in sensex}}$$

Here the denominator represents the actual change in the sensex. He has used RPI for 269 sample schemes. For returns he has taken the logarithmic values

Returns of the fund can be calculated as: $r_p = \ln(\text{ending NAV} / \text{beginning NAV})$

Returns on the market portfolio: $r_m = \ln(\text{ending sensex} / \text{beginning sensex})$

With the RPI, he found out that 49 funds were underperformers, 102 were par performers and 118 were out performers of the market.

Sondhi and Jain (2005) did a study on the rate of returns generated by equity mutual funds²⁰ vis-à-vis 364 days T-bills and BSE -100 National Index during the time frame of 1993-2002. Rate of return on 364 T- Bills was used as risk free asset and BSE -100 as a proxy for the return on market portfolio. The study had taken 36 funds from 21 Asset Management Companies of both public and private.

²⁰ The funds which get invested in securities of the company are called as equity funds and are considered to be risky investments.

The study found out the underperformance of the funds in comparison to 364 T-Bills is only $\frac{1}{4}$ of the funds and had been able to generate returns superior to the treasury bills. The average monthly return on the funds is 0.44% which is lower than the return on risk free assets (T-Bills) i.e. 0.80%. But as a comparison to the market portfolio (BSE -100) who had a mean monthly return of 0.14%, the funds have outperformed with the mean monthly return of 0.44%. Sondhi and Jain propounded that *“funds should be invested when the market is low and financial assets should be liquidated when the market is high”*.

Daniel, Grinblatt, Titman and Wermers (1997) did a study on the performance of the funds with the benchmark based on the stocks held by the portfolios and the benchmarks were created from the returns of 125 passive portfolios. Based on these benchmarks, Market Timing (Characteristic Timing, CT) and Market Selectivity (Characteristic Selectivity, CS) are formed to judge the ability of the portfolio managers in the selection and timing. The data covered 2500 equity mutual funds spanned over 1975 to 1994. The results conclude that aggressive growth funds had some selection ability but no market timing ability. The methods used:

1. Characteristic Timing Measure:
2. Characteristic Selectivity Measure:

In this case the risk free asset is taken as 30 day Treasury bills.

The results found out that the objectives decided were largely related to the systematic risk and total variability of the funds. Aggressive funds have produced better performance results in terms of the ratio of mean return to β and mean return to total variability. Mutual funds in this sample had lower ratio of mean to beta but higher mean total variability of returns than the stock market index.

Brown and Goetzmann (1995) did a study on the performance of the funds based on the relative and absolute benchmarks using data which control survivorship bias. For the study, all those funds were selected which were invested on the stocks for the year 1976

to 1988. The sample varies from 372 funds in 1976 to 829 in 1988. For each of the fund, the net asset value of the fund at the beginning and end of the year and a 12-month % change in NAV per share adjusted for capital gains, income return and expense ratio have been taken. The benchmark in this case is taken as S&P 500. The results show that information of the past can be used to earn return in excess of the benchmark and reasons cited for the survivor bias are poor track record, size, age and expense ratio. These lead to disappearance of the funds. Average returns on the portfolio differ year to year as in 1979 the funds had outperformed the S&P 500 and in most of 1980s, the funds have underperformed the index. However the reason for the variation in the results that some funds have outperformed and some funds have underperformed is due to composition of the portfolio.

Chandel and Verma (2005) took 25 schemes for the period of October 1, 2003 to September 29, 2004. They have confined to the sector specific schemes and the schemes taken for the study are: (i) FMCG fund (ii) Technology fund (iii) Tax Relief fund (iv) Balanced fund (v) Equity fund schemes. They have applied the measures of Shrappe Ratio, Treynor Index and Jensen's measure. 100 shares based on BSE national index had been used to make a proxy to show that whether the funds have been able to outperform the market. They found out that performance of the schemes during the period had been good and so as the performance of the managers.

Lehmann and Modest (1987) focused on to find that conventional measures of abnormal mutual fund performance are quite volatile to the benchmark to measure normal performance. They had applied Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT) and took monthly returns on 130 mutual funds for the period of January 1968 to December 1982. They had taken only those funds which survived over this period (survivorship basis).

Nanda, Whang and Zheng (2004) tried to find out whether cash flow volatility adversely affects the fund performance and ruled out sector funds. They took diversified US equity funds for the period of January 1993 to December 2002 and excluded international funds

and balanced funds. The study confirmed the fact high cash flows create volatility which tend to increase liquidity costs and led to decreasing returns to scale. Thus cash flow volatility adversely affects the fund performance.

Kothari and Warner (2001) studied the impact of trading cost on the performance of the mutual funds. They selected 75 stock mutual funds for the period of December 1994 to January 1996 and 348 simulated funds' portfolio performance were taken over three year periods. They have used beta and alphas for computation. They found out that the fund's performance is a decreasing function of fund's liquidity and its trading costs.

Ippolito (1989) had the notion that when the accrual of information tends to be costly then it would be wise for the investors to trade at prices different from full information price. This was done with a study of mutual funds spread over 20 years time. 143 funds were picked up accounting for 85% of all mutual fund assets from the period of 1965 - 1984. Out of 143 funds, only 106 funds survived over 20 years. Out of 143 funds selected, 123 funds characterized by alphas significantly different from zero, four funds by significantly negative alphas and 12 by significantly positive alphas. Most of the funds in the sample had negative and positive alphas.

Chen, Hong, Huang and Kubik (2004) tried to find out the relation between fund size and performance of the funds. The study was conducted from 1962-1969 with 3439 funds with 27,431 fund years for the analysis. In each month, the sample includes 741 funds. The cross sectional analysis is done to see the variation of the fund performance with the lagged fund size. The study found out that funds which are invested of smaller size are highly illiquid. The liquidity and so as fund size does erode the performance of the fund.

There have been various studies conducted by Berk and Green (2002) and Stein (2003) who found out that volatility of higher cash flow and level have an impact on the performance of the funds as the costs shot up due to liquidity costs and decreasing returns to scale.

2.9 Past performance indicative of future performance of the funds

Grinblatt and Titman (1994) found out that a performance of a fund at the current period is related to the performance at the past. They conducted tests on a multiple portfolio benchmark formed on the basis of securities characteristics. The study was conducted taking 279 funds for a period of December 31, 1974 to December 31, 1984.

The test was run dividing the ten year in to five sub periods and returns for each period was computed. The slope coefficient in a cross sectional regression is estimated for abnormal returns for data of five year period on the returns computed from the initial five year period. The interpretations of the data reaffirm the fact that the past performance is the indicator of the fund performance at the current period. There was a similar study done by Hendricks (1984) who interpreted that only recent data could predict the performance of the fund.

Shah (2005) has found out that the past performance is an indicative of the future performance. He pointed out the unawareness of the investors of the mutual funds procedure and investment strategies and the success and growth of the fund depends on the reliability of the funds on the funds.

In a similar study by Singh and Chander (2004), it was re-emphasized that performance of the fund depends on the investors' confidence, choice and expectations. The investors frame an idea of a fund taking into consideration the past performance figures of the particular fund. The rate of return has been a benchmark for the investors to invest in a fund.

Elton, Gruber and Blake (2003) did a study for stock mutual funds with the risk adjusted returns and got the results showing that past performance is a predicative of future performance. 188 funds were selected for the study from 1977 to 1993 and the sample is of survivorship basis. The NAV was calculated on monthly basis.

The model used to ascertain the risk adjusted performance of the fund based on intercept is:

$$R_{it} = \alpha_i + \beta_{iSP} R_{SPt} + \beta_{iSL} R_{SLt} + \beta_{iGV} R_{GVt} + \beta_{iB} R_{Bt} + \varepsilon_{it}$$

R_{it} = the excess return on fund i in month t

R_{SPt} = the return on the S&P 500 Index in month t

R_{SLt} = the difference in return between a small cap and large cap stock portfolio

R_{GVt} = the difference in return between a growth and value stock portfolio

R_{Bt} = the excess return on a bond index in month t

β_i = the sensitivity of excess return on fund i to excess return on index

ε_{it} = the random error in month t

The study based on the model also found out that past performance is indeed an indicator of future performance as both one and three years' α put the same results.

Carlson (1970) provided a single measure of investment performance to mutual fund portfolio for a period of 20 years ranging between 1948 and 1967. He has examined the relation between the performance of the funds of the past period and performance of the fund at the present. The schemes which were selected for the purpose were diversified common stocks, balanced funds and income funds. He had done a critical review of the market indices and had tried to show whether the funds have outperformed the market index. The Capital Asset Pricing Model (CAPM) was used to draw the results. The out performance of the funds as compared to the market index depends on time period and market proxy. During this period, top funds were characterized by high cash flows.

2.10 Performance analyzed on risk and return

In a paper by Muthappan and Damodharan (2006), the performance of the fund has been analyzed on the basis of risk and return. The study was done for the period from April 1, 1995 to March 31, 2000. The Sharpe Ratio, Treynor Index, Jensen Measure and Fama's Measure were used to analyze the data. 40 mutual fund schemes of both public and private sectors were taken. 20 schemes from 5 public sector and 20 schemes from 5 private sectors were selected.

Balanced funds, income funds, growth funds and tax saving funds constituted the schemes. The month end adjusted NAV data are used and the conclusion was drawn that the return and risk of the funds are not in accordance with the investment objectives. The sample schemes were not adequately diversified and were able to earn higher returns due to selectivity.

Carhart (1997) found out that there are common factors in stock returns and investment expenses which explain the persistence in equity mutual funds and risk adjusted returns. The data set constituted of diversified equity funds from a period of January 1962 to December 1993 (the data are assumed to be free of survivor basis).

The study found out that due to stock returns and investments there is persistence in equity mutual fund returns. The difference between the sale of bottom fund and buying last year top funds gives a yield of 8%. Out of 8%, 4.6% is explained by the stock holdings and market value, 0.7% is explained by expense ratio and transaction costs accrue to 1% difference. These factors determine the funds' yield.

Horst and Verbeek (2000) testing the short run persistence in mutual fund returns said when the data for different funds were collected for return analysis, it is necessary to rectify the cross sectional differences. A sample of open ended equity funds and a sub sample of growth funds were selected for the period of 1987-94. The regression is run to find out the sample funds' returns at the current time on a range of lagged returns. To put

a check on the cross sectional differences, some measures are subtracted from the left hand side of the regression.

Gruber (1996) found out that the mutual funds and especially actively managed mutual funds in US have grown so fast but their performance on an average is inferior to index funds. The reason he cited for this is that the investors prefer actively managed funds as those are brought and sold at their net asset value so exclude management fees.

The supported data for this emphasized that compound annual growth rate in Assets Under Management companies in US over the past twenty years is more than 22% while for 10 years it is more than 19%. In the end of 1994, 2.1\$ trillion dollar is invested in mutual funds making it the one of the largest financial intermediary but short of commercial banks but ahead of life insurance companies. Out of that equity mutual funds accounted for 40.1% of Assets under Management companies. The measures which were used by him for performance are:

- a. a measure of return relative to the market
- b. the excess return from a single index model
- c. the index return from a four index model

The performance is measured from the following equations:

$$R_{it} - R_{mt}$$

$$R_{it} - R_{ft} = \alpha_i^1 + \beta_{mi}^1 (R_{mt} - R_{ft}) + e_t$$

$$R_{it} - R_{ft} = \alpha_i^4 + \beta_{mi}^4 (R_{mt} - R_{ft}) + \beta_{si} (R_{st} - R_{lt}) + \beta_{gi} (R_{gt} - R_{vt}) + \beta_{di} (R_{dt} - R_{ft}) + e_i$$

R_{it} = the return on fund i in month t

R_{ft} = the return on 30 day T-Bills in month t

R_{mt} = the return on S&P 500 index in month t

$R_{st} - R_{lt}$ = the difference in return between a small cap portfolio and a large cap portfolio

$R_{gt} - R_{vt}$ = the difference in return between a high growth portfolio and a value portfolio

$R_{dt} - R_{ft}$ = the excess return on a bond index that represents as estimate of aggregate corporate and government bonds

β = the sensitivity of the excess return on fund i to portfolio in month t

α_i^1, α_i^4 = the risk adjusted excess return measured from one index and four index respectively.

Using the model, he reached conclusion the actively managed mutual funds are more preferable even though the funds on an average offer a negatively risk adjusted return and investors can be profitable if money gets invested in index funds. He also made the point that past performance is an indicative of future performance.

The risk adjusted excess return earned on the funds was 2.4 basis points per month / 28.9 basis points per year. If the money is taken away the investors save 1.87 basis points per month/ 22.4 basis points per year. If the funds get reinvested, the money saved from the negative adjusted risk return and money earned from positive return on reinvestment give a yearly adjusted return of 99 basis points per year.

Cumby and Glen (1990) had examined the performance of international funds. The data set consist of US based internationally equity diversified mutual funds for a period between 1982 and 1988. The methodologies put in use are Jensen Measure and a positive period weighting measure conceptualized by Grinblatt and Titman. Using these methods, they concluded that neither the funds individually nor together make the performances better than broad international equity index. Within this period, the funds had underperformed the international index. Cumby and Glen also found out that funds' performance didn't improve due to it active management but on the contrary a large holdings of the funds contributed to the downfall in the performance.

Gupta (1974) had done a study on the performance of the mutual funds according to the investment and goal objectives. The study had included all open ended mutual funds for a period of 1962-71. Those funds were included only which had completed one full calendar year. The methods used were Sharpe Ratio, Jensen Measure and Treynor Ratio. The study had also included Dow Jones (DJ) and the Standard and Poor (S&P) as market indices. The study found out that funds have outperformed the market using DJ and all

but the income and the balanced groups using the S&P. All fund types have outperformed the market regardless of the market index and performance measure.

Blake, Elton and Gruber (1993) examined the performance of the bond mutual funds. Both linear and non linear models had been applied for eliminating survivor bias and for a large sample of funds. They had justified the study that bond funds constitute comparatively a large part of the mutual fund industry yet there is laggard information in the bonds. Second reason cited was the stock mutual fund performance included only balanced funds and third reason is that there fewer factors affecting mutual funds so the likelihood of understanding and measuring the performance is greater.

For the study two different set of bond funds were selected; the first set consisted of 46 non municipal bond funds which included money market funds. Month end NAV and reinvestment NAV data were taken for the analysis. The period taken is for 10 year period from the initial part of 1979 to the end of 1988. 10 funds out of 46 funds did not survive during the period either due to liquidation, merger or change in investment policy. The second sample consisted of a larger set of funds; this consisted of all the bond funds that existed at the end of 1991. Several indexes were studied to understand the performance of the funds and these include 30 day Treasury Bills.

The model used to ascertain the performance of the fund is:

$$R_{it} = \alpha_i + \beta_i I_t + \varepsilon_{it}$$

Fund's excess return (funds' return minus the risk less return) is linearly associated with the return on the market index.

R_{it} = the compounded excess return on i^{th} fund

α_i = the average risk adjusted excess return for the fund

I_t = compounded excess return on an index

β_i = sensitivity of the excess return on a fund to the excess return on the index

ε_{it} = residual return

The results show that bond funds had underperformed the index. There are fewer bond mutual funds than the stock mutual funds. Introduction of bond mutual funds would be beneficial for the investors.

Hendricks, Patel and Zeckhauser (1993) conducted a study for no-load and growth oriented schemes. If the top performers were selected from the last four quarter, it can significantly outperform the average mutual return i.e. the mean excess returns of the fund increases monotonically. The portfolio of the top performers of the recent times and generate returns higher than mean fund performance.

In a study by Sarkar and Majumdar (1994) applied CAPM and Jensen Measure to growth oriented schemes for a period from February 1991 to August 1993. The performance of the funds during the boom period happened in the first quarter of 1992. The funds' return were not higher than the market returns; however the results put that funds had performed well in the boom period.

Panwar and Madhumati (2005) conducted a comparative study between private and public sponsored funds in order to ascertain assets held, portfolio diversification and its consequential effects of diversification on the performance of the portfolio. The study was confined up to 3 years from May 2002 to May 2005. NAV of selected mutual funds (debt and equity) from the period of May 2002 to 2005 along with the index of S&P CNX NIFTY and CRISIL balanced funds are taken for the study. Three methodologies are used to estimate the performance: Jensen Measure, Sharpe Ratio and Excess Standard deviation adjusted return (SDAR).

$$r_p = \alpha_p + \beta r_{mt}$$

r_{mt} is the excess return on the benchmark index (return minus the return on the risk free asset). The monthly returns on three months 91 T-bills were taken as the risk free asset.

Suppose the difference between the ($r_p - r_{mt}$) is denoted by D so the Sharpe Ratio is written as:

$$S_p = D / \sigma_D$$

D shows the average monthly differences between the returns on the portfolio and the benchmark. σ_D is the standard deviation of the return.

The third method SDAR can be put as:

$$e_{SDAR} = r_f + (r_p - r_f) \times (S_m / S_p) - r_m$$

r_f = return on three month treasury bills

S_m = standard deviation of the returns on the portfolio

S_p = standard deviation of the returns on the index

The results showed that the average return for the public sector funded mutual funds is 0.07% and the private sector sponsored funds is 0.28%. In case of public sector, 33.33% of the total sample found to be performed below the market index. Jensen alpha came to significant and positive for private sponsored funds as 28.57% have performed better than market index.

2.11 Performance of the Equity funds

Malkiel (1995) pointed a superior performance of the equity mutual funds and persistence in the performance. For the study, all the equity mutual funds across the period of 21 years from 1971-1991 were taken. Those funds which were invested in foreign securities and funds investments in sectors such as gold stocks and pharmaceutical stocks were excluded from the study. Thus the equity diversified funds sold to the public were included in the study.

A positive alpha shows higher risk adjusted performance. The mean alpha is -0.06% and its t-statistic is only -0.21% so the surviving funds do not give excess returns for the investors after expenses were met. But the equity funds gave excess gross returns to the investors to cover up their expenses.

Deb Guha (2005)²¹ did a performance analysis of the equity mutual funds in India using data set for six years spanning from January 2000 to December 2005. Eight measures were used to estimate the performance of the equity mutual funds in India such as Treynor Ratio, Sharpe Ratio, Jensen Alpha, Appraisal Ratio, Information Ratio, excess return over the benchmark, raw return, M² Measure.

Three parametric models: random walk model, moving average model, and the exponentially weighted moving average model; one non parametric model (historical simulation) and a rolling window of past weekly returns of the funds have been used for estimation. The results showed the downside risk of the equity mutual funds and the performance was poor during the bear phase than the bull phase.

Ferreira, Miguel and Ramos (2007) did a cross country study on the performance of the mutual funds taking 10,568 open actively managed mutual funds over 19 countries from a period of 1999 to 2005. They found the influential factors for the performance of the mutual funds are age, size, fees, management structure and management tenure, and country characteristics such as economic development, financial development, familiarity, and investor protection. US funds represent 73% of the sample in terms of size but have only 30% of the total number of funds. Four models: (1) domestic market model (2) international market model (3) Carhart (1997) domestic four-factor model; and (4) Carhart (1997) international four-factor model were applied to ascertain the performance of the funds.

²¹ Taken from the abstract of the PhD Thesis submitted by Deb Guha Soumya, Performance Evaluation of Equity Mutual funds in India: An Empirical Exploration at Indian Institute of Management, Kolkata

The results show that fund size, mutual fund fees and its performance are positively related but fund age is negatively related with the fund performance.

Ferson and Schadt (1996) measured the performance of the funds in the changing economic conditions. 67 open ended mutual funds from a period of January 1968 to December 1990 were picked up for the study. The Jensen's Measure, Treynor-Mauzy and Henriksson and Merton models have been used for the analysis. CAPM model is also used for estimation.

$$r_{it+1} = \beta_{im}(Z_t) r_{mt+1} + u_{i,t+1}$$

$$E(u_{i,t+1}/Z_t) = 0,$$

$$E(u_{i,t+1} r_{mt+1}/Z_t) = 0,$$

r_{it+1} = the rate of return on the asset between t and t+1

Z_t = vector of information available at time period t

r_{mt+1} = excess return

$\beta_{im}(Z_t)$ = the time t conditional market betas of the excess return of asset

m_{t+1} is a stochastic discount factor and R_{t+1} is the vector of the gross returns of the primitive assets available to portfolio managers.

The results show that risk factor of a fund changes in response to public information on the economy. Variation in economic conditions and portfolio managers' knowledge of the market are influential for the performance of the funds.

Jackson and Skomp (1985) did a study on the performance of the registered and non registered funds. The funds have been defined as a function of operating expense ratio and the number of shares outstanding and these factors also provide adequate and relevant information to the investors. The results find out possibility of the registration requirement creating a sheltered market for inefficiently managed mutual funds.

There has been a difference in the returns on registered funds and non registered funds but the study tells that the difference can not persist long. Governments removing the registration requirement would wipe out the return differences due to registration and market penetration costs for currently non-registered funds and by reducing the implicit and explicit transaction costs accruing to local residents from the purchase of non-registered funds. Thus eliminating the institutional constraint could move the mutual fund market toward an efficient markets result.

Pastor and Stambaugh (2000) did a performance analysis of the equity mutual funds. A sample of 2,069 U.S. equity mutual funds and monthly returns on the benchmark and non-benchmark passive assets are constructed for 351/ 2 year period from July 1963 through December 1998 are taken. The study found that pricing models and managerial skill play roles in both performance evaluation and investment decisions. Optimal portfolios are substantially affected by prior beliefs about pricing and skill as well as by the information in non-benchmark assets.

2.12 Conclusion:

There have been varied studies done on the performance of the mutual funds across the globe. Performance analysis of the mutual funds has attracted the attention of the policy makers, financial advisories, researchers and academicians. Mutual funds play a critical role in the financial market and in executing financial decisions. Mutual funds investment off late has been feasible for the medium and small investors unlike the stock market which was accessible for the large investors.

The main issues which have emerged from the literature are

1. Market Timing and Selection Ability of the portfolio managers
2. Performance of the funds comparable to the benchmark selected
3. Past performance indicative of future performance of the funds

4. Performance analyzed on risk and return
5. Performance of the Equity funds

For this study to evaluate the objectives decided upon we have used Treynor- Mazuy Model, Henriksson and Merton Model and Fabozzi and Francis Model to find out the market timing ability of the funds selected. To evaluate the performance of the, Jensen's alpha, Sharpe's Measure and β have been computed. The models and the parameters studied have been discussed in detail in the next chapter.

CHAPTER – III

DATA, METHODOLOGY

AND SUMMARIZED RESULTS

This chapter focuses on the usage of the data, sources of the data and methodology for various adjustments done. In the end, the chapter gives the summarized results of the analysis.

3.1 Data

The data for this study comprises of the market prices, NAVs and repurchase prices of open ended and close ended funds; annual reports of the mutual funds and information on dividends, bonus and rights. Data on the expenses of the funds were collected from various annual reports of the companies. Daily market prices of the funds have been collected from various issues of Economic Times and concerned funds' websites. NAVs and repurchase prices of the schemes were collected from websites of AMFI and concerned mutual funds.

For the study, the analysis has been done only for those schemes for which more than 25 monthly observations are available. The data period has been taken from May 2003 to October 2009. In case of open ended funds, out of the total schemes of 88 NAVs are available for 65 schemes, market prices for 13 schemes and repurchase prices for 10 schemes. In case of close ended funds, NAVs are available for 55 schemes, market prices for 10 schemes and repurchase prices also for 10 schemes.

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The table below shows the distribution of the schemes arranged fund wise and scheme-type wise.

Table 3.1a Fund wise and scheme type distribution of the mutual funds (open ended funds)

Mutual fund	Growth	Gilt	Income	Balanced	Tax	Liquid	Equity	Debt	Total
HDFC	2	4	2	1	2	0	3	0	14
LIC	2	0	0	2	2	2	2	0	10
SBI	0	0	2	2	2	0	0	2	8
UTI	1	0	1	2	0	2	2	0	8
HSBC	0	3	2	0	2	0	2	2	11
ICICI	0	2	1	0	0	0	0	0	3
IDFC	0	0	0	0	3	0	0	0	3
Bank of Baroda	2	0	2	2	0	0	0	0	6
Franklin Templeton	0	0	1	2	2	0	0	0	5
Reliance	1	2	3	0	2	2	0	0	10
Total	8	11	14	11	15	6	9	4	78

As mentioned out of the total schemes of 88, we excluded those schemes for which 25 monthly observations are not available; and so the total sample got reduced to 78 schemes. Out of 78 schemes, NAVs are available for 65 schemes and market prices for 13 schemes. The final analysis has been done for those mutual funds for those schemes having monthly observations more than 25.

3.2 Adjustment²² for returns based on the market prices

Daily market prices of the funds have been taken for the adjusted price series which have been found out after adjusting for bonus, rights and dividends. The information after deduction i.e. the information for ex dividend, ex bonus has been collected from various issues of Economic Times, SEBI and AMFI websites.

3.2.1 Adjustment for bonus

The adjustment is done by

$$(\text{Ex-bonus}^{23}) \times (1 + \text{bonus ratio})$$

For example, the bonus issues are made in the ratio of 1:4 for the holders of ICICI bank growth fund in 2006. The bonus price on January 3, 2006 is Rs 52.45 and ex bonus price on February 1, 2006 is Rs 35.20. The adjustment factor in this case is $(1+1/4) = 1.25$

So after adjustment of the bonus, we get $\text{Rs } 35.20 \times 1.25 = \text{Rs } 44$. In this way bonus has been adjusted for various schemes for the data period taken for the study.

²² Adjustments formulae have been taken from websites of AMFI and from various mutual fund companies

²³ A share is described as Ex Bonus when the buyer is not entitled for the Bonus. The seller remains the beneficiary.

3.2.2 Adjustment for dividends

For dividend adjustment, the following formula has been used.

$$\text{Adjustment factor} = 1 + \text{Dividend}^{24} \text{ per unit} / \text{ex dividend}^{25} \text{ price}$$

For example, a dividend for Rs 2.35 per unit has been declared for a particular scheme. The dividend price on January 31st, 2006 is Rs 24.56 and the ex dividend price on February 1st, 2006 is Rs 20.50.

After applying the adjustment factor, we get

$$1 + 2.35 / 20.50 = 1.115$$

So we get the adjusted prices on 1st February, 2006 = 1.115 X Rs 20.50 = Rs 22.86

3.2.3 Adjustment for rights

Rights issues of the schemes do not affect the wealth of the shareholders. But there are exceptional cases when the share holder neither sells nor subscribes to the rights; in that case rights can affect and change the wealth of the shareholders.

²⁴ that part of the earnings of a corporation that is distributed to its shareholders

²⁵ Refers to a transaction which the new purchaser of a stock is not entitled to the recently declared dividend, this occurs because the new purchaser did not own the security on the record date.

The rights issues are generally made at much below the market price and so an adjustment is made to the rights issues. The adjustment in case of right²⁶ issues is done by 1 + bonus component. For instance, for a particular scheme a right issues is made at Rs 15 each in the ratio of 1:4. The cum rights²⁷ price on the scheme on January 31st 2006 is Rs 23.55 and the ex rights²⁸ price on February 3rd 2006 is Rs 13.25.

So ex rights price on January 31st 2006 is

$$(4 \times 23.55 + 15) / 5 = \text{Rs } 36.4$$

$$\text{Bonus component} = 23.55 / 13.25 - 1 = 0.777$$

$$\text{Adjustment factor} = 1 + \text{bonus component} = 1 + 0.777 = 1.777$$

$$\begin{aligned} \text{So the adjustment price for February 3rd 2006} &= (\text{Adjustment factor}) \times \text{ex right price} \\ &= 1.777 \times 13.25 = \text{Rs } 23.55 \end{aligned}$$

In this way, each adjustment factor is being multiplied by previous day adjustment factor. The adjusted price series is constructed by multiplication of closing price for a day with the adjustment factor. From these adjusted daily price series and returns are computed daily, weekly and monthly.

²⁶ Issue of shares at par or at a premium by an existing company to its shareholders in a certain proportion (and additional shares, if available) to their holdings, as a matter of their right to receive preferential treatment

²⁷ Forthcoming rights issues that companies can declare to qualified shareholders of record that can be transferred with the sale of shares of a stock to a different owner. These are similar to ex-rights, except that they are transferable from one shareholder to another.

²⁸ The purchase of stock without the right to purchase additional shares at a price below the current market price

3.3. Adjustment for returns based on NAVs

The NAVs for the schemes have been collected daily and the returns have been computed monthly unlike in the case of the market prices where daily and weekly returns have also been calculated. Adjusted returns are computed monthly as the returns are calculated at monthly basis. This would make the computation simpler.

In this case, the adjustment has been done as follows:

3.3.1 Adjustment for bonus

$$\text{Adjustment return} = \ln [P_t (1+k) / P_{t-1}]$$

$$1+k = \text{bonus ratio}$$

$$P_{t-1} = \text{Adjusted price at the period } t-1.$$

3.3.2 Adjustment for dividends

$$\text{Adjusted returns} = \ln [(P_t + D) / P_{t-1}]$$

$$D = \text{Dividend}$$

3.3.3 Adjustment for rights

For example, a right was issued in the ratio of 1:5 at Rs 15.

We take the closing price of the period in which unit goes ex right as P_t .

The closing price of the previous period as P_{t-1}

The price of the ex rights at the close of the previous period as P_x

$$P_x = (n P_{t-1} + P_x) / n + 1$$

$$\text{Adjustment factor} = P_{t-1} / P_x$$

$$\begin{aligned} \text{Adjusted return} &= 1 / P_{t-1} [P_t \times P_{t-1} / P_x - P_{t-1}] \\ &= P_t / P_x - 1 \end{aligned}$$

3.4 Adjustment for repurchase prices

The repurchase price is taken to be the price at the starting of the month. This is the case as the repurchase can be cancelled for the rest of the month. In that case comparison with the indices based on average might not be proper way of computation. For most of the funds, repurchase prices have been taken for the calculation of the returns. Here the adjustments have been done in the similar fashion as in the case of NAVs.

3.5 Market indices

For the study, two market indices have been used such as All India All industries index (ET) and BSE national index (Natex). ET Index includes ET 100, ET Mid Cap and ET Small Cap; BSE National Index includes BSE 100, BSE Mid Cap and BSE Small Cap²⁹. The index returns have been computed individually for each return series of each scheme. Apart from these, other data which have been used in the study are scheme size, mutual fund size and turnover³⁰.

Scheme size is the net assets of the schemes at the end of a particular year. It is obtained by multiplying the number of units at the end of latest available financial year by NAV per unit at the end of the year.

²⁹ See Appendix V for BSE and ET Constituents

³⁰ www.moneycontrol.com

Mutual fund size is the sum of the series of various schemes of the mutual fund.

Turnover is collected from the concerned companies' websites.

In a year, if there are 200 trading days then percentage of the turnover is calculated as
[1/2 (average daily turnover) /Mutual fund size] x 200 trading days per year x 100

The data on expenses have been collected which include management fee, stamp duty, salaries of the employees, depreciation and amortization charges. The expenses of the mutual funds do not include losses incurred.

Per unit expense is calculated as a percentage of NAV i.e.

Expenses = (Per unit expenses / NAV) x 100

3.6 Objectives and Methodology

3.6.1 To investigate whether the mutual funds (both open ended and close ended) offer or do not offer better risk adjusted returns.

Case 1: funds do not offer superior returns

Case 2: funds offer superior returns (after adjustment)

To find out the superior adjusted returns, following equation has been used

$$R_{it} - R_f = a_i + b_i (R_{mt} - R_f) + e_{it}$$

R_{it} = return on the scheme

R_{mt} = return on the market portfolio.

R_f = return on risk free asset

a_i = constant term (Jensen's alpha).

e_{it} = error term

The equation has been used to calculate Jensen's alpha given by a_i in the above equation. A positive and significant alpha means the scheme provides better adjusted returns.

For this objective, Sharpe's measure has also been computed for each scheme given by

$$R_i - R_f / \sigma$$

σ = standard deviation

3.6.2 To investigate the performance of the schemes (both open ended and close ended) by computation of β and this is calculated by

$$R_{it} = a_i + b_i R_{mt} + e_{it}$$

R_{it} = return on the scheme

R_{mt} = return on the market portfolio and

e_{it} = error term

A positive and significant value of β indicates superior performance of the funds that the particular scheme is more risky and offer better returns than the market returns. A lower beta shows that the scheme is less risky and do not offer better returns than the market.

Case 1: $\beta > 0$

Case 2: $\beta \leq 0$

3.6.3 To check the market timing of the fund managers as this is also an indicator of the performance of the mutual funds. This is calculated by

$$R_{it} - R_f = a_i + b_{1i} (R_{mt} - R_f) + b_{2i} (R_{mt} - R_f)^2 + e_{it}$$

R_{it} = return on the fund i in the period t

R_{mt} = return on the market index in period t

R_f = return on the risk free asset in period t

e_{it} = error term in period t

a_i = constant term

b_{1i} and b_{2i} are the co efficient to be estimated

b_{1i} is used to measure the timing ability of the schemes. There are two cases

- (i) $b_{1i} \neq 0$ when market timing exists
- (ii) $b_{1i} = 0$ when there is no market timing

This method has been used by Treynor and Mazuy (1966).

Second way to measure the funds' market timing is Henriksson and Merton Model (1981):

$$R_{it} - R_f = a_i + b_{1i} Y_t + b_{2i} (R_{mt} - R_f) + e_{it}$$

$$Y_t = 1 \text{ if } R_{mt} > R_f$$

$$Y_t = 0 \text{ if } R_{mt} < R_f$$

R_{it} = return on the fund i in the period t

R_{mt} = return on the market index in period t

R_f = return on the risk free asset in period t

e_{it} = error term in period t

a_i = constant term

b_{2i} is the coefficient to be estimated

Here also b_{1i} is used to measure the funds' market timing.

The third way of measurement is Fabozzi and Francis Model (1979)

$$R_{it} - R_f = a_i + a_2 D_t + b_{1i} D_t (R_{mt} - R_f) + b_{2i} (R_{mt} - R_f) + e_{it}$$

$$D_t = 0 \text{ if } R_{mt} < R_f$$

$$D_t = 1 \text{ if } R_{mt} > R_f$$

3.6.4 To check the consistency of the performance of the mutual funds and the consistency is measured based on the series of the years for which schemes have performed better than the market index, the scheme turns out to be a strong performer in the market and vice-versa.

3.6.5 To check the performance of the equity funds and debt funds

3.7 Risk Free Asset

We need a risk free asset to check the market timing ability of the schemes. In this study, we have taken 91 and 364 day treasury bills as the risk free asset. The data shows the weighted average of 91 day and 364 day treasury bills.

Table 3.2 Implicit Yields of Treasury bills (2003-09)

Amount in Rs crores

Implicit yield at cut off price (%)	2003-04	2004-05	2005-06	2006-07	2007-08	2008-2009
91 day	4.63	4.89	5.51	6.8	7.11	6.96
182 day	-	-	5.65	6.87	7.38	7.41
364 day	4.67	5.15	5.87	7.07	7.5	7.19

The values are in weighted average

Auction of 182 day treasury bills were re-introduced from April 6, 2005. For our study, we have taken 91 day and 364 day treasury bills. The average rate of these treasury bills have been taken i.e. risk free rate was taken as average of 91 day treasury bills from the period 2003-04 to 2008-09. The average rate calculated comes to be 6.1% per annum.

3.8 Summarized Results

The daily market prices of the funds have been collected but the final analysis has been done monthly wise so that the returns are also month wise. The returns are thus calculated from month end market prices, monthly NAVs and repurchase prices for the month and have been adjusted for dividends, bonus and rights. For each return, the analysis is done separately from ET index and BSE National Index (Natex). The significance level has been taken at 5%.

3.8.1 Superior Adjusted Returns

To check the superior adjusted returns, we have

$$R_{it} - R_f = a_i + b_i (R_{mt} - R_f) + e_{it}$$

R_{it} = return on the scheme

R_{mt} = return on the market portfolio.

R_f = return on risk free asset

a_i = constant term (Jensen's alpha)

e_{it} = error term

Jensen's alpha has been used given by a_i in the above equation. A significant alpha indicates the superior returns.

The samples selected for the study found out to be positive and significant (detailed results are given in Chapter 4 and 5). Very few schemes have non -significant alpha i.e. low risk adjusted returns. Taking NAVs, market prices and repurchase prices, most of the funds have found out to have positive and significant alphas indicating the schemes provide better adjusted returns. Number of schemes having positive alphas taking NAVs, market prices and repurchase prices and for the indices that are used are ET index and Natex is given below in the tabular form.

Table 3.3a Number of Schemes having positive alphas (open ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	13	13	13
NAVs	65	65	65
Repurchase prices	10	10	10

Table 3.3b Number of Schemes having positive alphas (close ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	10	10	10
NAVs	53	53	55
Repurchase prices	10	10	10

As we can see from the table 3.3, the schemes have given positive and significant alphas. This means the schemes have performed better for period taken for the study i.e. from may 2003 to October 2009. The performance of the schemes have gauged to be better for all the data used that are when market prices, NAVs and repurchase prices of the schemes have been taken. Below table shows the schemes for which alphas are significant.

Table 3.4a Number of Schemes having significant alphas (open ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	8	10	13
NAVs	40	39	65
Repurchase prices	8	5	10

Table 3.4b Number of Schemes having significant alphas (close ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	7	7	10
NAVs	24	36	55
Repurchase prices	8	5	10

3.8.2 Sharpe's Measure has also been computed for the schemes (open ended and close ended) to find out whether the funds provide better adjusted market returns. The results show that the not much funds have performed better than the market index. Sharpe's measure shows that most of the schemes have not performed better than the market index in case of the NAVs of the funds being taken but when market prices and repurchase prices are taken; most schemes have performed better than the market index.

Most schemes have been found to be underperformer than the market index when NAVs of the funds have been taken; when the market prices of the funds have been taken, most schemes have performed better than the market. Taking repurchase prices of the funds also show the better performance of the funds than the market index. But in case of close ended, not much schemes have performed better than the indices.

Table 3.5a Number of Schemes having Sharpe ratio greater than the market index (open ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	8	9	13
NAVs	30	36	65
Repurchase prices	6	8	10

Table 3.5b Number of Schemes having Sharpe ratio greater than the market index (close ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	4	2	10
NAVs	22	26	55
Repurchase prices	5	6	10

So, from the above results, it can be concluded that funds have performed better than the market index in case of open ended funds when market prices and repurchase prices are taken; but in case of close ended funds, funds have lagged behind the market indices.

3.9 Significance of β

To test the significance of β , following equation has been used

$$R_{it} = a_i + b_i R_{mt} + e_{it}$$

R_{it} = return on the scheme

R_{mt} = return on the market portfolio

e_{it} = error term

In this study, most of the funds have shown a good performance as compared to the market returns by calculating β as most of the schemes have positive and significant β (both ET index and Natex). Schemes have performed better when NAVs and repurchase prices are taken also in case of market prices of the funds, schemes have shown good performance. In case of close ended funds, comparing the funds with the market indices, not much funds have performed well in the market when NAVs are taken but when market prices and repurchase prices are taken, funds have performed better than the market indices.

Table 3.6a Number of Schemes having significant β s (open ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	6	11	13
NAVs	44	43	65
Repurchase prices	6	6	10

Table 3.6 b Number of Schemes having significant β s (close ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	7	7	10
NAVs	29	16	55
Repurchase prices	8	7	10

3.10 Market Timing of the schemes

The market timing of the schemes as decided by the fund managers have a pivotal role in deciding the performance of the funds in the market. To judge this, various models have been used. First the methodology of Treynor and Mazuy (1966) has been used.

$$R_{it} - R_f = a_i + b_{1i} (R_{mt} - R_f) + b_{2i} (R_{mt} - R_f)^2 + e_{it}$$

R_{it} = return on the fund i in the period t

R_{mt} = return on the market index in period t

R_f = return on the risk free asset in period t

e_{it} = error term in period t

a_i = constant term

b_{1i} and b_{2i} are the coefficients to be estimated

b_{li} is used to measure the timing ability of the schemes. There are two cases

- (i) $b_{li} \neq 0$ when market timing exists
- (ii) $b_{li} = 0$ when there is no market timing

Based on this methodology, the performance of the funds is evaluated. Most of the funds in this study found to be performing better than ET Index and have better market timing ability. When market prices, NAVs and repurchase prices of the schemes have been taken, most of the funds have exhibited significant market timing. Few schemes have non significant b_{li} which indicates the non existence of market timing. The values of b_{li} are positive and significant for which is an indicator of the better performance of the funds which also shows fund managers have been able to exhibit better market timing.

Table 3.7a Number of Schemes significant b_{li} (open ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	5	5	13
NAVs	49	42	65
Repurchase prices	8	6	10

Table 3.7b Number of Schemes having significant b_{li} (close ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	9	8	10
NAVs	42	36	55
Repurchase prices	8	9	10

In case of close ended funds, when NAVs are taken funds have underperformed than the market indices. Taking market prices and repurchase prices, funds have performed better than ET and Natex indices.

Another way of measurement of measuring the market timing ability of the funds, we use

$$R_{it} - R_f = a_i + b_{1i} Y_t + b_{2i} (R_{mt} - R_f) + e_{it}$$

R_f = return on the riskless asset in period t

$Y_t = 1$ if $R_{mt} > R_f$

$Y_t = 0$ if $R_{mt} < R_f$

Here also b_{1i} is used to measure the funds' market timing.

This methodology has been used by Henriksson and Merton (1981). Based on this methodology, it is found that funds exhibited a better market timing. Using this methodology, when NAVs of the funds have been taken not many funds have shown positive and significant b_{1i} indicating non existence of market timing ability of the funds and so as the fund managers.

Table 3.8a Number of Schemes having significant b_{1i} (open ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	10	8	13
NAVs	30	32	65
Repurchase prices	9	7	10

Table 3.8b Number of Schemes having significant b_{1i} (close ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	7	7	10
NAVs	35	27	55
Repurchase prices	7	8	10

Similarly calculating a_i also gives the results showing that the funds have no better market timing for most of the funds as values of a_i are having non significant values. The values of b_{1i} and a_i show positive results when market prices, NAVs and repurchase prices are taken. In case of close ended funds, funds have lagged behind when NAVs are taken but not in case of market prices and repurchase prices.

Table 3.9a Number of Schemes having significant a_i (open ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	8	10	13
NAVs	38	36	65
Repurchase prices	6	6	10

Table 3.9b Number of Schemes having significant a_i (close ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	7	9	10
NAVs	24	27	55
Repurchase prices	7	6	10

For the third way of measurement of the market timing ability of the funds, following equation has been used

$$R_{it} - R_f = a_1 i + a_2 i D_t + b_{1i} D_t (R_{mt} - R_f) + b_{2i} (R_{mt} - R_{ft}) + e_{it}$$

$$D_t = 0 \text{ if } R_{mt} < R_f$$

$$D_t = 1 \text{ if } R_{mt} > R_f$$

This methodology has been used by Fabozzi and Francis (1979).

Table 3.10a Number of Schemes having significant b_{1i} (open ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	9	10	13
NAVs	33	41	65
Repurchase prices	6	4	10

Table 3.10b Number of Schemes having significant b_{1i} (close ended funds)

Data	Index		Total Schemes
	Et Index	Natex	
Market prices	8	5	10
NAVs	36	32	55
Repurchase prices	4	6	10

The results do not differ much as we find that funds have not exhibited better market timing. b_{1i} and a_i values are non significant indicating no better market timing for most funds.

Using all these methodologies, we can conclude that not many schemes have better market timing and selection ability of the fund managers.

3.11 Consistency in the performance of the funds

We have two cases either the funds have been in consistent in the performance over the period studied or have been inconsistent.

Case1: Consistency in the performance of the funds

Case 2: Inconsistency in the performance of the funds

The performance of the funds has been compared with the market index. The market indices taken for the study are ET Index and BSE National Index. The performance has been judged for the continuous years taken for the study. Here the funds' annual returns have been taken for comparison with the market index.

To measure the consistency in the performance of the funds, alpha (Jensen) and beta (for superior risk adjusted returns) have been computed for the funds.

3.12 Performance of the equity funds and debt funds

The study computed the debt-equity ratio on a daily and monthly basis. The data have been collected from 2000 to 2008. In beginning of the study period the amount of investment was small. But as the time progress the amount of investment increased significantly. The investment on debt was more than the equity in most of the time period as it is evident from the debt-equity ratio.

CHAPTER - IV

ANALYSIS RESULTS (Open Ended Funds)

4.1 Analysis Results

This chapter discusses in detail the results of the analysis done for open ended funds using the methodologies (described in Chapter 3). Each fund's NAVs, market prices and repurchase prices have been taken for the study and the indices selected for the study are ET Index and Natex. The analysis has been done for monthly returns.

4.2 Returns of the funds

To find out the adjusted returns of the funds, following equation has been used.

$$R_{it} - R_f = a_i + b_i (R_{mt} - R_f) + e_{it}$$

NAVs, market prices and repurchase prices of the funds and ET Index, Natex have been used for the analysis.

Table 4.1 Analysis based on Market prices and ET Index

Name of the Schemes	Regression		b _i		Constant	
	F	R-Sq	b _i	t	a _i	t
HDFC Equity Fund - Dividend Option	29.8	0.49	0.39	3.24	0.018	0.13
HDFC Equity Fund - Growth Option	42.2	0.63	0.24	5.13	0.074	1.73
HDFC Index Fund-Nifty Plan	46.5	0.79	0.45	5.11	0.047	0.55
HSBC Equity Fund – Dividend	53.4	0.19	0.56	9.31	0.044	0.38
HSBC Equity Fund – Growth	76.5	0.53	0.26	4.75	0.053	0.41
HSBC Flexi Debt Fund-Inst. Monthly Dividend	41.6	0.65	0.89	5.76	0.071	1.28
HSBC Flexi Debt Fund-Reg.Growth	92.1	0.82	0.78	5.54	0.059	1.38
LICMF Index Fund-Nifty-Dividend	32.2	0.66	0.57	3.56	0.061	1.51
LICMF Index Fund-Nifty-Growth	86.1	0.19	0.69	4.95	0.026	0.36
SBI Debt Fund Series - 15 Months - 5 DIVIDEND	57.1	0.95	0.84	7.47	0.089	1.69

SBI Debt Fund Series - 15 Months - 5 GROWTH	47.3	0.51	0.46	3.42	0.045	0.49
UTI - Equity Fund-Growth Option	62.6	0.24	0.98	4.11	0.058	0.65
UTI - Equity Fund-Income Option	54.7	0.42	0.62	6.78	0.078	0.38

From table 4.1, we find that HDFC Equity Fund – Growth, HDFC Index Fund-Nifty Plan, HSBC Flexi Debt Fund-Inst. Monthly Dividend, HSBC Flexi Debt Fund-Reg.Growth, LICMF Index Fund-Nifty-Dividend and UTI - Equity Fund-Growth Option are among the top performers. The funds selected for the analysis have performed better in the study period. The analysis has taken in to consideration the market prices of the funds and ET Index.

Table 4.2 Analysis based on Market prices and Natex

Name of the Schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
HDFC Equity Fund - Dividend Option	67.2	0.42	0.44	7.15	0.068	0.53
HDFC Equity Fund - Growth Option	36.4	0.16	0.75	3.75	0.041	0.61
HDFC Index Fund-Nifty Plan	27.6	0.24	0.54	4.98	0.037	0.41
HSBC Equity Fund – Dividend	57.9	0.36	0.62	5.42	0.041	0.67
HSBC Equity Fund – Growth	56.2	0.46	0.48	2.65	0.032	0.47
HSBC Flexi Debt Fund-Inst. Monthly Dividend	25.1	0.71	0.51	4.19	0.059	0.62
HSBC Flexi Debt Fund-Reg.Growth	48.4	0.42	0.53	5.12	0.051	0.89
LICMF Index Fund-Nifty-Dividend	47.9	0.53	0.73	5.96	0.053	0.52
LICMF Index Fund-Nifty-Growth	48.7	0.18	0.41	5.18	0.051	0.54
SBI Debt Fund Series - 15 Months - 5 DIVIDEND	42.1	0.16	0.58	4.95	0.044	0.79
SBI Debt Fund Series - 15 Months - 5 GROWTH	39.1	0.53	0.38	3.98	0.062	0.34
UTI - Equity Fund-Growth Option	33.8	0.48	0.49	4.75	0.033	0.25
UTI - Equity Fund-Income Option	37.2	0.45	0.31	2.59	0.072	0.53

Taking the market prices of the funds and Natex, from table 4.2 we get that HDFC Equity Fund - Dividend Option, HDFC Equity Fund - Growth Option, HSBC Equity Fund – Dividend, HSBC Equity Fund – Growth, HSBC Flexi Debt Fund-Reg.Growth, LICMF Index Fund-Nifty-Dividend, LICMF Index Fund-Nifty-Growth, SBI Debt Fund Series -

15 Months DIVIDEND, HDFC Equity Fund - Growth Option, HSBC Flexi Debt Fund-Inst. Monthly Dividend have performed strongly in the market.

Table 4.3 Analysis based on NAVs and ET Index

Name of the Schemes	Regression		b _i		Constant	
	F	R-Sq	b _i	t	a _i	t
HDFC Balanced Fund - Dividend Option	36.42	0.81	0.9	3.52	0.064	0.57
HDFC Growth Fund - Dividend Option	47.15	0.65	0.85	3.6	0.032	0.22
HDFC Growth Fund - Growth Option	45.22	0.82	0.73	8.25	0.024	0.19
HDFC Income Fund-Dividend	18.23	0.26	0.96	8.53	0.075	0.48
HDFC Income Fund-Growth	62.83	0.77	0.41	5.93	0.052	0.43
HDFC Gilt Fund-Long Term-Dividend	24.13	0.65	0.55	8.45	0.059	0.89
HDFC Gilt Fund-Long Term-Growth	44.87	0.23	0.63	5.66	0.049	0.82
HDFC Gilt Fund-Short Term-Dividend	86.7	0.29	1.23	2.71	0.058	0.78
HDFC Gilt Fund-Short Term-Growth	58.72	0.78	1.59	6.08	0.059	0.33
HDFC TaxSaver-Dividend Plan	27.36	0.76	1.29	9.7	0.046	0.42
HDFC TaxSaver-Growth Plan	16.53	0.24	1.85	8.95	0.053	0.54
LICMF Balanced Fund-Dividend	82.75	0.72	0.34	2.55	0.067	0.91
LICMF Balanced Fund-Growth	70.23	0.34	1.27	5.45	0.038	0.49
LICMF Growth Fund - Dividend Option	25.1	0.81	0.45	2.53	0.046	0.52
LICMF Growth Fund - Growth Option	32.83	0.85	1.55	9.88	0.084	0.70
LICMF Tax plan-Dividend	89.5	0.66	1.92	5.83	0.073	0.75
LICMF Tax plan-Growth	32.16	0.61	0.26	3.55	0.054	0.68
LICMF Liquid Fund-Dividend	64.52	0.22	0.99	6.25	0.026	0.22
LICMF Liquid Fund-Growth	25.73	0.57	0.46	3.62	0.025	0.46
SBI Magnum Balanced Fund – Dividend	63.32	0.33	1.63	4.23	0.059	0.55
SBI Magnum Balanced Fund – Growth	80.29	0.79	1.33	8.21	0.045	0.57
SBI Magnum Income Fund-Dividend	19.07	0.88	1.39	3.41	0.085	0.72
SBI Magnum Income Fund-Growth	29.56	0.51	0.25	6.42	0.045	0.66
SBI TAX ADVANTAGE FUND - SERIES I – DIVIDEND	52.43	0.72	0.27	3.66	0.057	0.78
SBI TAX ADVANTAGE FUND - SERIES I – GROWTH	13.51	0.64	0.15	2.36	0.094	0.43
UTI - Master Share-Income Option	26.5	0.44	0.28	5.82	0.049	0.43
UTI - Master Value Fund-Growth Option	54.15	0.25	0.89	8.42	0.076	0.40
UTI Balanced Fund-Growth	63.52	0.26	0.59	6.59	0.087	0.34

UTI Balanced Fund-Income	78.12	0.96	0.49	5.22	0.067	0.48
UTI- Liquid Fund-Cash Plan-Growth	60.13	0.72	0.72	8.53	0.042	0.96
UTI- Liquid Fund-Cash Plan-Income	12.63	0.82	0.86	9.81	0.031	0.25
HSBC Tax Saver Equity Fund – Dividend	81.0	0.84	0.33	9.69	0.046	0.79
HSBC Tax Saver Equity Fund – Growth	26.23	0.79	0.5	5.23	0.045	0.82
HSBC Gilt Fund – Dividend	45.28	0.60	0.46	3.45	0.032	0.29
HSBC Gilt Fund – Growth	63.92	0.22	1.33	6.56	0.046	0.33
HSBC Gilt Fund - Dividend – Weekly	82.35	0.25	0.21	5.55	0.047	0.72
HSBC Income Fund - Investment - Inst. - Growth	65.48	0.87	0.75	5.63	0.056	0.85
HSBC Income Fund - Investment - Regular – Dividend	33.16	0.57	0.69	2.31	0.057	0.44
ICICI Prudential Gilt Fund Treasury Plan PF Option	23.69	0.17	1.7	8.57	0.082	0.85
ICICI Prudential Gilt Fund-Investment-Dividend	82.27	0.54	0.51	2.65	0.051	0.43
ICICI Prudential Flexible Income Plan Regular-Growth	53.28	0.37	0.63	8.45	0.072	0.63
IDFC Tax Advantage (ELSS) Fund - Growth	82.91	0.22	0.12	3.56	0.049	0.65
IDFC Tax Saver (ELSS) Fund A DIVIDEND	65.32	0.88	1.72	6.93	0.037	0.24
IDFC Tax Saver (ELSS) Fund A GROWTH	85.19	0.64	1.8	8.27	0.056	0.85
BARODA PIONEER BALANCE FUND -Growth Plan	65.49	0.59	1.26	8.07	0.044	0.63
BARODA PIONEER BALANCE FUND-Dividend Plan	53.15	0.91	0.98	6.45	0.021	0.27
BARODA PIONEER GROWTH FUND-Dividend Plan	68.49	0.70	1.46	2.75	0.029	0.35
BARODA PIONEER GROWTH FUND-Growth Plan	82.11	0.69	0.43	3.21	0.019	0.34
BARODA PIONEER INCOME FUND-Dividend Plan	31.72	0.26	1.47	5.26	0.020	0.79
BARODA PIONEER INCOME FUND-Growth Plan	95.65	0.39	1.34	8.55	0.085	0.57
Franklin India Taxshield-Dividend	48.59	0.25	1.75	5.63	0.044	0.64
Franklin India Taxshield-Growth	28.69	0.37	1.54	9.88	0.072	0.66

FT India Balanced Fund-Dividend Plan	51.89	0.28	0.51	6.28	0.027	0.13
FT India Balanced Fund-Growth Plan	49.65	0.71	1.17	5.66	0.036	0.50
FT India Monthly Income Plan-Growth	48.96	0.41	1.42	2.57	0.039	0.43
Reliance Liquid Fund-Cash Plan-Dividend	85.82	0.76	0.35	8.92	0.079	0.97
Reliance Liquid Fund-Cash Plan-Growth	54.23	0.88	0.29	9.63	0.055	0.35
Reliance Monthly Income Plan-Growth Plan	81.72	0.77	0.36	3.26	0.054	0.32
Reliance Monthly Income Plan-Monthly Dividend Plan	39.06	0.72	1.73	2.56	0.059	0.61
Reliance Monthly Income Plan-Quarterly Dividend Plan	25.12	0.54	1.21	8.47	0.053	0.71
Reliance Gilt Securities Fund - Retail Plan-Dividend Option	31.66	0.85	0.26	2.78	0.091	0.71
Reliance Gilt Securities Fund - Retail Plan-Growth Option	51.02	0.23	1.99	5.84	0.027	0.39
Reliance Tax Saver (ELSS) Fund-Dividend Plan-Dividend Option	17.03	0.78	0.46	3.99	0.083	0.76
Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option	41.33	0.43	1.76	6.82	0.073	0.87
Reliance Growth Fund-Dividend Plan-(D)	34.63	0.82	1.51	6.85	0.068	0.34

The analysis has been done on NAVs of the funds and ET Index. The results show that HDFC Balanced Fund - Dividend Option, HDFC Income Fund-Dividend, HDFC Gilt Fund-Long Term-Dividend, HDFC Gilt Fund-Long Term-Growth, HDFC Gilt Fund-Short Term-Dividend, LICMF Balanced Fund-Dividend, LICMF Growth Fund - Growth Option, LICMF Tax plan-Dividend, UTI- Liquid Fund-Cash Plan-Growth, HSBC Tax Saver Equity Fund – Growth, Reliance Liquid Fund-Cash Plan-Dividend and Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option have been the better performers in the market. The results show a positive and significant performance.

Table 4.4 Analysis based on NAVs and Natex

Name of the Schemes	Regression		b _i		Constant	
	F	R-Sq	b _i	t	a _i	t
HDFC Balanced Fund - Dividend Option	17.15	0.43	0.43	2.61	0.062	0.89
HDFC Growth Fund - Dividend Option	13.09	0.64	0.22	7.11	0.047	0.65
HDFC Growth Fund - Growth Option	47.17	0.81	0.17	8.52	0.076	0.86
HDFC Income Fund-Dividend	21.34	0.34	0.27	6.23	0.092	0.75
HDFC Income Fund-Growth	82.5	0.43	0.55	5.26	0.025	0.41
HDFC Gilt Fund-Long Term-Dividend	21.51	0.24	0.92	8.45	0.052	0.31
HDFC Gilt Fund-Long Term-Growth	56.96	0.79	1.39	6.32	0.078	0.85
HDFC Gilt Fund-Short Term-Dividend	68.15	0.65	1.42	2.16	0.074	0.63
HDFC Gilt Fund-Short Term-Growth	42.1	0.21	0.88	8.72	0.066	0.71
HDFC TaxSaver-Dividend Plan	34.06	0.55	0.68	9.33	0.053	0.87
HDFC TaxSaver-Growth Plan	39.45	0.68	1.76	6.47	0.055	0.84
LICMF Balanced Fund-Dividend	40.99	0.63	0.92	5.42	0.039	0.59
LICMF Balanced Fund-Growth	72.32	0.90	1.49	9.56	0.087	0.76
LICMF Growth Fund - Dividend Option	59.68	0.29	1.53	3.24	0.044	0.92
LICMF Growth Fund - Growth Option	34.67	0.67	1.26	5.86	0.063	0.47
LICMF Tax plan-Dividend	41.56	0.25	0.41	9.84	0.051	0.41
LICMF Tax plan-Growth	61.23	0.85	0.53	4.56	0.039	0.43
LICMF Liquid Fund-Dividend	81.96	0.44	0.55	7.25	0.057	0.77
LICMF Liquid Fund-Growth	62.11	0.41	1.27	9.14	0.089	0.79
SBI Magnum Balanced Fund – Dividend	51.2	0.93	0.78	6.14	0.042	0.78
SBI Magnum Balanced Fund – Growth	30.59	0.49	0.64	1.03	0.066	0.69
SBI Magnum Income Fund-Dividend	55.42	0.39	0.85	8.52	0.058	0.37
SBI Magnum Income Fund-Growth	31.05	0.35	0.47	5.45	0.026	0.20
SBI TAX ADVANTAGE FUND - SERIES I – DIVIDEND	17.13	0.61	0.55	8.21	0.039	0.25
SBI TAX ADVANTAGE FUND - SERIES I – GROWTH	71.28	0.91	1.74	6.57	0.056	0.32
UTI - Master Share-Income Option	57.83	0.69	1.56	6.98	0.063	0.96
UTI - Master Value Fund-Growth Option	84.04	0.76	0.49	3.48	0.084	0.85
UTI Balanced Fund-Growth	52.55	0.85	1.14	7.89	0.081	0.63
UTI Balanced Fund-Income	55.43	0.51	0.92	8.91	0.034	0.44
UTI- Liquid Fund-Cash Plan-Growth	17.05	0.75	0.7	2.9	0.041	0.51
UTI- Liquid Fund-Cash Plan-Income	67.52	0.54	1.69	6.75	0.083	0.96
HSBC Tax Saver Equity Fund – Dividend	35.68	0.34	1.36	8.97	0.029	0.37

HSBC Tax Saver Equity Fund – Growth	12.23	0.78	0.21	3.62	0.042	0.44
HSBC Gilt Fund – Dividend	61.21	0.48	1.32	8.45	0.096	0.43
HSBC Gilt Fund – Growth	69.68	0.26	1.54	6.52	0.052	0.48
HSBC Gilt Fund - Dividend – Weekly	50.01	0.46	0.97	2.33	0.056	0.92
HSBC Income Fund - Investment - Inst. - Growth	58.4	0.75	1.11	9.71	0.051	0.82
HSBC Income Fund - Investment - Regular – Dividend	60.93	0.99	1.55	2.63	0.09	0.12
ICICI Prudential Gilt Fund Treasury Plan PF Option	71.29	0.45	1.14	3.44	0.044	0.72
ICICI Prudential Gilt Fund-Investment-Dividend	58.3	0.54	0.49	2.87	0.031	0.47
ICICI Prudential Flexible Income Plan Regular-Growth	56.53	0.38	0.55	5.64	0.079	0.33
IDFC Tax Advantage (ELSS) Fund - Growth	21.3	0.76	0.3	3.32	0.034	0.92
IDFC Tax Saver (ELSS) Fund A DIVIDEND	56.31	0.34	1.31	6.34	0.048	0.42
IDFC Tax Saver (ELSS) Fund A GROWTH	63.78	0.59	1.47	2.36	0.058	0.87
BARODA PIONEER BALANCE FUND -Growth Plan	84.52	0.22	0.28	5.62	0.037	0.22
BARODA PIONEER BALANCE FUND-Dividend Plan	83.6	0.29	1.94	8.25	0.045	0.27
BARODA PIONEER GROWTH FUND-Dividend Plan	17.22	0.69	1.55	5.46	0.097	0.85
BARODA PIONEER GROWTH FUND-Growth Plan	63.21	0.83	1.26	4.1	0.052	0.77
BARODA PIONEER INCOME FUND-Dividend Plan	31.74	0.17	1.68	3.81	0.059	0.55
BARODA PIONEER INCOME FUND-Growth Plan	25.45	0.98	0.59	2.58	0.021	0.25
Franklin India Taxshield-Dividend	56.93	0.36	0.61	8.63	0.041	0.60
Franklin India Taxshield-Growth	28.54	0.54	0.15	5.12	0.054	0.36
FT India Balanced Fund-Dividend Plan	52.54	0.37	0.31	6.92	0.051	0.35
FT India Balanced Fund-Growth Plan	46.99	0.12	0.39	8.14	0.028	0.19
FT India Monthly Income Plan-Growth	65.21	0.27	0.22	5.36	0.033	0.32
Reliance Liquid Fund-Cash Plan-Dividend	53.77	0.34	0.26	8.95	0.032	0.46
Reliance Liquid Fund-Cash Plan-Growth	55.83	0.28	1.56	2.56	0.045	0.25
Reliance Monthly Income Plan-Growth Plan	60.22	0.24	0.28	7.22	0.085	0.73
Reliance Monthly Income Plan-Monthly Dividend Plan	51.4	0.61	0.55	3.93	0.076	0.93

Reliance Monthly Income Plan-Quarterly Dividend Plan	36.28	0.39	0.29	7.28	0.048	0.28
Reliance Gilt Securities Fund - Retail Plan-Dividend Option	32.22	0.83	0.97	5.54	0.077	0.46
Reliance Gilt Securities Fund - Retail Plan-Growth Option	18.52	0.27	0.36	2.85	0.033	0.72
Reliance Tax Saver (ELSS) Fund-Dividend Plan-Dividend Option	32.56	0.26	0.45	3.38	0.026	0.39
Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option	56.98	0.76	0.29	8.68	0.087	0.85

Taking the NAVs of the funds and Natex, we find that HDFC Balanced Fund - Dividend Option, HDFC Growth Fund - Growth Option, HDFC TaxSaver-Dividend Plan, HDFC TaxSaver-Growth Plan, LICMF Growth Fund - Dividend Option, UTI - Master Share-Income Option, UTI - Master Value Fund-Growth Option, UTI- Liquid Fund-Cash Plan-Income, HSBC Gilt Fund - Dividend – Weekly, IDFC Tax Advantage (ELSS) Fund – Growth and Reliance Monthly Income Plan-Monthly Dividend Plan have shown high t statistic. The results have shown a significant performance in the market.

Table 4.5 Analysis based on Repurchase prices and ET Index

Name of the Schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
HDFC Income Fund-Dividend	43.1	0.39	0.21	2.36	0.011	0.14
HDFC Income Fund-Growth	64.5	0.21	0.73	5.87	0.043	1.27
LICMF Growth Fund - Dividend Option	48.8	0.25	0.41	8.65	0.031	0.46
LICMF Growth Fund - Growth Option	59.6	0.28	0.33	7.32	0.071	0.54
SBI Magnum Income Fund-Dividend	66.2	0.54	0.56	5.93	0.064	1.49
SBI Magnum Income Fund-Growth	74.1	0.48	0.34	4.79	0.065	1.81
HSBC Income Fund - Investment - Inst. – Growth	88.9	0.36	0.85	4.59	0.076	1.22

HSBC Income Fund - Investment - Regular - Dividend	23.6	0.41	0.27	4.38	0.026	0.14
BARODA PIONEER INCOME FUND-Dividend Plan	66.8	0.53	0.33	6.86	0.084	1.73
BARODA PIONEER INCOME FUND-Growth Plan	45.2	0.38	0.47	5.81	0.048	0.75

Table 4.5 has taken repurchase prices of the funds and ET Index. t -statistic shows that the better performers in the market are HDFC Income Fund-Growth, LICMF Growth Fund - Dividend Option, LICMF Growth Fund - Growth Option, SBI Magnum Income Fund-Dividend, SBI Magnum Income Fund-Growth, HSBC Income Fund - Investment - Inst. – Growth and BARODA PIONEER INCOME FUND-Dividend Plan.

Table 4.6 Analysis based on Repurchase prices and Natex

Name of the Schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
HDFC Income Fund-Dividend	54.9	0.46	0.21	3.12	0.045	2.31
HDFC Income Fund-Growth	33.8	0.35	0.3	3.85	0.030	2.29
LICMF Growth Fund - Dividend Option	36.1	0.19	0.19	4.35	0.054	0.28
LICMF Growth Fund - Growth Option	44.3	0.38	0.33	6.85	0.047	0.56
SBI Magnum Income Fund-Dividend	43.1	0.32	0.27	6.33	0.056	0.89
SBI Magnum Income Fund-Growth	47.2	0.29	0.49	4.12	0.058	0.71
HSBC Income Fund - Investment - Inst. - Growth	37.1	0.47	0.36	2.99	0.031	0.22
HSBC Income Fund - Investment - Regular - Dividend	22.9	0.31	0.42	4.74	0.039	0.18
BARODA PIONEER INCOME FUND-Dividend Plan	55.1	0.56	0.63	3.49	0.033	0.35
BARODA PIONEER INCOME FUND-Growth Plan	35.7	0.33	0.34	8.26	0.029	0.32

Table 4.6 focuses on the repurchase prices and Natex. The funds performing better in the market are HDFC Income Fund-Dividend, HDFC Income Fund-Growth, SBI Magnum Income Fund-Dividend and SBI Magnum Income Fund-Growth.

4.3 Performance of the funds

The second objective investigates the performance of the funds by computation of β and for this market model has been used. Following equation has been applied for the analysis.

$$R_{it} = a_i + b_i R_{mt} + e_{it}$$

The analysis has taken again NAVs, market prices and repurchase prices of the funds and the indices have been used are ET Index and Natex. Here the funds offering positive and significant values of beta are considered to be risky but offer better returns than the market returns and vice-versa.

Table 4.7 Analysis based on market prices and ET Index

Name of the Schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
HDFC Equity Fund - Dividend Option	53.2	0.19	0.22	3.15	0.044	0.56
HDFC Equity Fund - Growth Option	33.9	0.18	0.41	1.21	0.045	1.22
HDFC Index Fund-Nifty Plan	32.2	0.15	0.44	1.32	0.015	0.29
HSBC Equity Fund – Dividend	56.5	0.60	1.32	6.52	0.035	1.02
HSBC Equity Fund – Growth	54.2	0.53	1.25	6.57	0.046	1.34
HSBC Flexi Debt Fund-Inst. Monthly Dividend	73.4	0.61	1.45	8.41	0.062	1.71
HSBC Flexi Debt Fund-Reg.Growth	61.2	0.44	1.15	7.11	0.024	0.32
LICMF Index Fund-Nifty-Dividend	74.5	0.25	1.26	3.21	0.017	0.15
LICMF Index Fund-Nifty-Growth	71.2	0.69	1.32	1.33	0.029	0.15
SBI Debt Fund Series - 15 Months - 5 DIVIDEND	34.5	0.11	0.13	1.26	0.031	1.33
SBI Debt Fund Series - 15 Months - 5 – GROWTH	41.3	0.62	1.22	5.55	0.059	1.18
UTI - Equity Fund-Growth Option	62.4	0.22	1.05	4.31	0.018	0.18
UTI - Equity Fund-Income Option	61.5	0.49	1.52	7.4	0.047	1.36

Table 4.7 using the market prices and ET Index show that better performers in the market are HSBC Flexi Debt Fund-Institutional Monthly Dividend, LICMF Index Fund-Nifty-Dividend, UTI - Equity Fund-Growth Option, HSBC Flexi Debt Fund-Inst. Monthly Dividend, HSBC Equity Fund – Growth, UTI - Equity Fund-Income Option and HDFC Equity Fund - Growth Option. All these funds have shown positive and significant value t statistics.

Table 4.8 Analysis based on market prices and Natex

Name of the Schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
HDFC Equity Fund - Dividend Option	19.69	0.26	1.11	4.45	0.011	0.21
HDFC Equity Fund - Growth Option	20.34	0.23	1.15	4.65	0.019	0.39
HDFC Index Fund-Nifty Plan	58.71	0.61	1.29	6.54	0.041	1.21
HSBC Equity Fund – Dividend	66.25	0.41	1.35	7.49	0.056	1.44
HSBC Equity Fund – Growth	15.28	0.21	1.15	4.4	0.041	0.51
HSBC Flexi Debt Fund-Inst. Monthly Dividend	22.31	0.31	1.16	4.69	0.026	1.14
HSBC Flexi Debt Fund-Reg.Growth	18.91	0.22	1.14	4.21	0.019	0.26
LICMF Index Fund-Nifty-Dividend	26.35	0.36	1.22	4.88	0.022	0.11
LICMF Index Fund-Nifty-Growth	77.84	0.59	1.41	8.87	0.069	1.42
SBI Debt Fund Series - 15 Months - 5-DIVIDEND	59.02	0.45	1.29	6.53	0.054	1.23
SBI Debt Fund Series - 15 Months - 5-GROWTH	25.36	0.22	1.22	4.99	0.058	1.18
UTI - Equity Fund-Growth Option	45.08	0.35	1.2	5.56	0.077	1.28
UTI - Equity Fund-Income Option	55.32	0.68	1.31	4.46	0.062	1.44

Table 4.8 uses market prices of the funds and Natex. The results show that HSBC Equity Fund –Dividend, LICMF Index Fund-Nifty-Growth, HDFC Index Fund-Nifty Plan, HDFC Index Fund-Nifty Plan and UTI - Equity Fund-Income Option have performed comparatively well in the market

Table 4.9 Analysis based on NAVs and ET index

Name of the Schemes	Regression		b _i		Constant	
	F	R-Sq	b _i	t	a _i	t
HDFC Balanced Fund - Dividend Option	81.79	0.68	1.2 4	6.72	0.088	0.92
HDFC Growth Fund - Dividend Option	25.63	0.36	0.1 5	5.51	0.068	0.37
HDFC Growth Fund - Growth Option	91.05	0.22	0.7	2.62	0.077	0.42
HDFC Income Fund-Dividend	45.24	0.54	0.3 6	3.65	0.064	0.76
HDFC Income Fund-Growth	46.45	0.34	0.6 9	5.78	0.043	0.88
HDFC Gilt Fund-Long Term-Dividend	58.32	0.86	0.3 2	6.61	0.044	0.63
HDFC Gilt Fund-Long Term-Growth	50.23	0.70	0.5 1	7.55	0.063	0.53
HDFC Gilt Fund-Short Term-Dividend	36.96	0.43	0.2 9	4.87	0.022	0.37
HDFC Gilt Fund-Short Term-Growth	21.9	0.29	0.7	3.25	0.055	0.51
HDFC TaxSaver-Dividend Plan	18.25	0.91	0.7	9.23	0.079	0.81
HDFC TaxSaver-Growth Plan	52.98	0.34	0.8 7	5.58	0.045	0.65
LICMF Balanced Fund-Dividend	50.63	0.29	0.3 4	2.45	0.033	0.31
LICMF Balanced Fund-Growth	41.7	0.36	0.2 1	6.53	0.025	0.33
LICMF Growth Fund - Dividend Option	89.46	0.54	0.3 9	5.79	0.046	0.61
LICMF Growth Fund - Growth Option	27.31	0.37	1.4 5	5.38	0.043	0.69
LICMF Tax plan-Dividend	41.55	0.16	0.5 3	7.39	0.087	0.53
LICMF Tax plan-Growth	31.22	0.41	0.3 8	8.62	0.055	0.92
LICMF Liquid Fund-Dividend	85.74	0.62	1.4 3	3.99	0.021	0.34
LICMF Liquid Fund-Growth	81.69	0.23	1.6	5.4	0.036	0.48
SBI Magnum Balanced Fund – Dividend	63.21	0.34	0.8 6	2.69	0.049	0.87
SBI Magnum Balanced Fund – Growth	23.18	0.37	0.4 9	6.43	0.054	0.48
SBI Magnum Income Fund-Dividend	74.22	0.26	1.3 8	5.36	0.031	0.44
SBI Magnum Income Fund-Growth	83.72	0.34	1.6 5	7.4	0.051	0.42
SBI TAX ADVANTAGE FUND - SERIES I – DIVIDEND	21.43	0.69	0.3 2	6.63	0.064	0.95

SBI TAX ADVANTAGE FUND - SERIES I – GROWTH	10.22	0.86	0.35	8.1	0.076	0.74
UTI - Master Share-Income Option	87.15	0.34	1.49	5.62	0.039	0.40
UTI - Master Value Fund-Growth Option	45.23	0.12	1.66	7.58	0.061	0.66
UTI Balanced Fund-Growth	39.16	0.32	0.56	5.69	0.069	0.49
UTI Balanced Fund-Income	28.22	0.24	0.68	2.65	0.034	0.72
UTI- Liquid Fund-Cash Plan-Growth	72.32	0.36	0.29	5.68	0.070	0.31
UTI- Liquid Fund-Cash Plan-Income	38.95	0.34	0.94	4.35	0.068	0.48
HSBC Tax Saver Equity Fund – Dividend	21.99	0.16	0.54	7.82	0.053	0.63
HSBC Tax Saver Equity Fund – Growth	23.75	0.46	1.18	4.67	0.094	0.85
HSBC Gilt Fund – Dividend	21.85	0.97	0.24	8.21	0.098	0.97
HSBC Gilt Fund – Growth	46.23	0.93	0.62	3.90	0.026	0.23
HSBC Gilt Fund - Dividend – Weekly	71.54	0.75	0.35	7.22	0.035	0.52
HSBC Income Fund - Investment - Inst. - Growth	25.42	0.73	0.18	2.58	0.082	0.61
HSBC Income Fund - Investment - Regular – Dividend	28.31	0.28	0.26	5.07	0.067	0.88
ICICI Prudential Gilt Fund Treasury Plan PF Option	82.36	0.62	0.83	3.26	0.087	0.41
ICICI Prudential Gilt Fund-Investment-Dividend	41.32	0.51	0.39	2.62	0.033	0.13
ICICI Prudential Flexible Income Plan Regular-Growth	84.78	0.71	0.52	7.92	0.054	0.78
IDFC Tax Advantage (ELSS) Fund - Growth	67.8	0.87	0.54	3.51	0.048	0.84
IDFC Tax Saver (ELSS) Fund A DIVIDEND	27.85	0.73	0.61	8.10	0.078	0.31
IDFC Tax Saver (ELSS) Fund A GROWTH	73.62	0.52	0.52	3.78	0.058	0.59
BARODA PIONEER BALANCE FUND -Growth Plan	56.48	0.24	0.7	4.37	0.068	0.51
BARODA PIONEER BALANCE FUND-Dividend Plan	72.85	0.78	0.62	4.21	0.054	0.64

BARODA PIONEER GROWTH FUND-Dividend Plan	30.27	0.44	0.54	7.45	0.054	0.82
BARODA PIONEER GROWTH FUND-Growth Plan	51.2	0.39	0.33	6.45	0.061	0.45
BARODA PIONEER INCOME FUND-Dividend Plan	82.33	0.59	0.91	8.78	0.052	0.93
BARODA PIONEER INCOME FUND-Growth Plan	59.8	0.51	0.79	6.28	0.066	0.95
Franklin India Taxshield-Dividend	21.63	0.63	0.5	3.10	0.089	0.94
Franklin India Taxshield-Growth	54.26	0.40	0.71	7.18	0.043	0.57
FT India Balanced Fund-Dividend Plan	57.32	0.57	0.26	8.29	0.087	0.59
FT India Balanced Fund-Growth Plan	33.26	0.64	0.17	7.65	0.063	0.75
FT India Monthly Income Plan-Growth	20.98	0.51	0.83	2.84	0.039	0.83
Reliance Liquid Fund-Cash Plan-Dividend	91.7	0.26	0.78	5.63	0.073	0.67
Reliance Liquid Fund-Cash Plan-Growth	59.62	0.33	0.39	5.49	0.046	0.91
Reliance Monthly Income Plan-Growth Plan	34.45	0.60	0.49	2.41	0.038	0.48
Reliance Monthly Income Plan-Monthly Dividend Plan	51.31	0.97	0.65	5.62	0.046	0.79
Reliance Monthly Income Plan-Quarterly Dividend Plan	56.2	0.75	0.64	4.91	0.033	0.58
Reliance Gilt Securities Fund - Retail Plan-Dividend Option	41.55	0.74	0.3	8.83	0.043	0.61
Reliance Gilt Securities Fund - Retail Plan-Growth Option	36.52	0.90	0.73	6.42	0.046	0.52
Reliance Tax Saver (ELSS) Fund-Dividend Plan-Dividend Option	28.17	0.49	0.45	6.24	0.054	0.64
Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option	31.66	0.81	0.39	9.45	0.082	0.41
Reliance Growth Fund-Dividend Plan-(D)	36.58	0.38	0.12	4.23	0.019	0.21

Table 4.9 uses NAVs and ET Index and shows that better performers in the market are HDFC Balanced Fund - Dividend Option, LICMF Growth Fund - Dividend Option, LICMF Liquid Fund-Growth, HDFC Growth Fund - Growth Option, SBI Magnum

Income Fund-Growth, UTI - Master Share-Income Option, ICICI Prudential Flexible Income Plan Regular- Growth, HDFC Gilt Fund-Long Term-Growth, HDFC Tax Saver-Dividend Plan, LICMF Tax plan-Growth, SBI TAX ADVANTAGE FUND - SERIES I – GROWTH, HSBC Gilt Fund – Dividend, HDFC Income Fund-Growth, SBI Magnum Balanced Fund – Dividend, SBI TAX ADVANTAGE FUND - SERIES I – DIVIDEND, HSBC Gilt Fund – Dividend.

Table 4.10 Analysis based on NAVs and Natex

Name of the Schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
HDFC Balanced Fund - Dividend Option	75.32	0.49	0.27	5.59	0.025	0.25
HDFC Growth Fund - Dividend Option	62.33	0.82	0.48	2.26	0.049	0.69
HDFC Growth Fund - Growth Option	52.48	0.60	0.85	6.4	0.061	0.81
HDFC Income Fund-Dividend	39.46	0.15	0.79	2.56	0.048	0.38
HDFC Income Fund-Growth	35.58	0.31	0.21	7.41	0.059	0.39
HDFC Gilt Fund-Long Term-Dividend	45.86	0.63	0.75	6.43	0.035	0.12
HDFC Gilt Fund-Long Term-Growth	61.22	0.61	0.69	8.29	0.095	0.48
HDFC Gilt Fund-Short Term-Dividend	63.89	0.52	1.7	3.31	0.055	0.65
HDFC Gilt Fund-Short Term-Growth	22.58	0.39	0.51	8.39	0.039	0.46
HDFC TaxSaver-Dividend Plan	23.56	0.84	0.63	5.09	0.066	0.85
HDFC TaxSaver-Growth Plan	29.41	0.39	0.12	6.4	0.091	0.43
LICMF Balanced Fund-Dividend	25.63	0.56	1.72	3.56	0.037	0.52
LICMF Balanced Fund-Growth	58.99	0.23	1.8	6.52	0.051	0.26
LICMF Growth Fund - Dividend Option	45.69	0.73	1.26	4.64	0.058	0.61
LICMF Growth Fund - Growth Option	31.66	0.62	0.98	6.1	0.044	0.45
LICMF Tax plan-Dividend	54.69	0.56	1.46	3.26	0.086	0.42
LICMF Tax plan-Growth	21.18	0.70	0.43	3.48	0.044	0.73
LICMF Liquid Fund-Dividend	71.23	0.21	1.47	9.43	0.089	0.69
LICMF Liquid Fund-Growth	56.69	0.40	1.34	8.42	0.054	0.59
SBI Magnum Balanced Fund - Dividend	58.23	0.71	1.75	3.77	0.048	0.62
SBI Magnum Balanced Fund - Growth	62.98	0.82	1.54	6.51	0.099	0.79
SBI Magnum Income Fund-Dividend	18.65	0.79	0.51	9.56	0.031	0.34
SBI Magnum Income Fund-Growth	59.64	0.84	1.17	9.4	0.075	0.95

SBI TAX ADVANTAGE FUND - SERIES I - DIVIDEND	89.64	0.43	1.42	4.91	0.068	0.91
SBI TAX ADVANTAGE FUND - SERIES I - GROWTH	58.28	0.88	0.35	2.85	0.071	0.78
UTI - Master Share-Income Option	42.23	0.87	0.29	6.52	0.085	0.79
UTI - Master Value Fund-Growth Option	71.23	0.42	0.36	8.25	0.087	0.91
UTI Balanced Fund-Growth	63.09	0.28	1.73	7.63	0.085	0.64
UTI Balanced Fund-Income	51.21	0.51	1.21	7.14	0.031	0.37
UTI- Liquid Fund-Cash Plan-Growth	61.33	0.43	0.26	4.15	0.061	0.89
UTI- Liquid Fund-Cash Plan-Income	10.25	0.87	1.99	3.5	0.037	0.51
HSBC Tax Saver Equity Fund - Dividend	37.44	0.48	0.46	6.31	0.029	0.54
HSBC Tax Saver Equity Fund - Growth	31.45	0.90	1.76	6.33	0.096	0.43
HSBC Gilt Fund - Dividend	46.56	0.63	1.51	8.24	0.035	0.48
HSBC Gilt Fund - Growth	17.23	0.70	1.66	3.74	0.037	0.47
HSBC Gilt Fund - Dividend - Weekly	51.24	0.42	0.43	2.93	0.019	0.23
HSBC Income Fund - Investment - Inst. - Growth	90.31	0.22	0.22	4.72	0.041	0.84
HSBC Income Fund - Investment - Regular - Dividend	77.41	0.37	0.17	6.73	0.087	0.86
ICICI Prudential Gilt Fund Treasury Plan PF Option	41.23	0.90	0.27	3.25	0.022	0.29
ICICI Prudential Gilt Fund-Investment-Dividend	25.82	0.35	0.55	2.56	0.033	0.35
ICICI Prudential Flexible Income Plan Regular-Growth	15.21	0.45	0.92	6.42	0.079	0.91
IDFC Tax Advantage (ELSS) Fund - Growth	69.56	0.25	1.39	8.56	0.054	0.52
IDFC Tax Saver (ELSS) Fund A DIVIDEND	81.56	0.91	1.42	4.02	0.054	0.45
IDFC Tax Saver (ELSS) Fund A GROWTH	52.1	0.87	0.88	4.42	0.043	0.56
BARODA PIONEER BALANCE FUND -Growth Plan	43.6	0.32	0.68	6.3	0.039	0.39
BARODA PIONEER BALANCE FUND-Dividend Plan	49.53	0.82	1.76	7.36	0.026	0.51

BARODA PIONEER GROWTH FUND-Dividend Plan	94.4	0.73	0.92	5.59	0.038	0.27
BARODA PIONEER GROWTH FUND-Growth Plan	23.72	0.62	1.49	8.49	0.021	0.36
BARODA PIONEER INCOME FUND-Dividend Plan	96.55	0.85	1.53	4.65	0.061	0.67
BARODA PIONEER INCOME FUND-Growth Plan	64.73	0.49	1.26	2.89	0.069	0.72
Franklin India Taxshield-Dividend	51.64	0.32	0.41	3.29	0.021	0.23
Franklin India Taxshield-Growth	16.52	0.32	0.53	2.14	0.029	0.41
FT India Balanced Fund-Dividend Plan	61.89	0.17	0.55	9.38	0.033	0.18
FT India Balanced Fund-Growth Plan	21.66	0.82	1.27	8.12	0.049	0.39
FT India Monthly Income Plan-Growth	21.23	0.97	0.78	2.11	0.045	0.31
Reliance Liquid Fund-Cash Plan-Dividend	50.93	0.79	0.64	7.92	0.038	0.28
Reliance Liquid Fund-Cash Plan-Growth	45.58	0.23	0.85	2.43	0.096	0.55
Reliance Monthly Income Plan-Growth Plan	51.26	0.63	0.47	7.79	0.066	0.87
Reliance Monthly Income Plan-Monthly Dividend Plan	31.17	0.15	0.55	4.87	0.048	0.21
Reliance Monthly Income Plan-Quarterly Dividend Plan	17.85	0.82	1.74	7.99	0.021	0.35
Reliance Gilt Securities Fund - Retail Plan-Dividend Option	73.85	0.90	1.56	3.1	0.019	0.36
Reliance Gilt Securities Fund - Retail Plan-Growth Option	41.48	0.81	0.49	9.06	0.018	0.41
Reliance Tax Saver (ELSS) Fund-Dividend Plan-Dividend Option	52.23	0.56	1.14	5.81	0.069	0.55
Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option	45.56	0.51	0.92	6.85	0.071	0.73
Reliance Growth Fund-Dividend Plan-(D)	51.75	0.48	0.7	8.31	0.067	0.71

The funds' NAVs and Natex have been used for judging the performance of the funds. HDFC Balanced Fund - Dividend Option, LICMF Liquid Fund-Dividend, UTI - Master Value Fund-Growth Option, HSBC Income Fund - Investment - Inst. – Growth, HDFC Gilt Fund-Long Term-Growth, HDFC Gilt Fund-Short Term-Growth, LICMF Liquid Fund-Dividend, SBI Magnum Income Fund-Growth, SBI Magnum Income Fund-

Dividend, HDFC Tax Saver-Dividend Plan, HSBC Income Fund - Investment - Regular – Dividend have been the top performers of the lot.

Table 4.11 Analysis based on Repurchase prices and ET Index

Name of the Schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
HDFC Income Fund-Dividend	42.1	0.33	0.22	3.27	0.021	4.28
HDFC Income Fund-Growth	31.2	0.32	0.36	4.99	0.088	6.21
LICMF Growth Fund - Dividend Option	40.8	0.98	0.29	7.26	0.029	4.96
LICMF Growth Fund - Growth Option	26.5	0.26	0.51	4.33	0.053	3.26
SBI Magnum Income Fund-Dividend	23.5	0.19	0.71	3.25	0.055	5.87
SBI Magnum Income Fund-Growth	84.6	0.25	0.45	6.95	0.035	6.41
HSBC Income Fund - Investment - Inst. - Growth	31.3	0.28	0.58	2.35	0.048	2.31
HSBC Income Fund - Investment - Regular - Dividend	43.2	0.43	0.39	4.88	0.025	4.44
BARODA PIONEER INCOME FUND-Dividend Plan	16.4	0.15	0.31	6.51	0.028	4.84
BARODA PIONEER INCOME FUND-Growth Plan	47.8	0.43	0.33	7.82	0.032	7.61

Table 4.12 Analysis based on Repurchase prices and Natex

Name of the Schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
HDFC Income Fund-Dividend	57.5	0.23	0.32	3.25	0.022	4.48
HDFC Income Fund-Growth	62.3	0.54	0.47	4.45	0.028	4.15
LICMF Growth Fund - Dividend Option	87.5	0.61	0.81	5.12	0.061	3.36
LICMF Growth Fund - Growth Option	66.3	0.87	0.71	6.52	0.080	3.32
SBI Magnum Income Fund-Dividend	55.8	0.33	0.28	5.51	0.063	3.16
SBI Magnum Income Fund-Growth	65.4	0.38	0.41	2.75	0.033	6.86

HSBC Income Fund - Investment - Inst. - Growth	38.8	0.41	0.53	4.13	0.034	7.51
HSBC Income Fund - Investment - Regular - Dividend	45.8	0.55	0.62	3.31	0.079	5.12
BARODA PIONEER INCOME FUND-Dividend Plan	55.6	0.63	0.23	5.14	0.053	6.53
BARODA PIONEER INCOME FUND-Growth Plan	78.9	0.78	0.51	6.49	0.043	6.27

Tables 4.11 and 4.12 have used the repurchase prices of the funds and ET Index, Natex respectively.

Table 4.11 shows that SBI Magnum Income Fund-Growth, BARODA PIONEER INCOME FUND-Dividend Plan, LICMF Growth Fund - Dividend Option, BARODA PIONEER INCOME FUND-Growth Plan and HDFC Income Fund-Growth has shown high t statistic.

Table 4.12 uses Natex and repurchase prices of the funds and shows that LICMF Growth Fund - Dividend Option, BARODA PIONEER INCOME FUND-Growth Plan, LICMF Growth Fund - Growth Option, BARODA PIONEER INCOME FUND-Dividend Plan and HSBC Income Fund - Investment - Inst. – Growth have been the better performers in the market showing high values of t-statistic.

4.4 Sharpe's Measure

Sharpe measure has been used to judge the open funds' adjusted returns. Sharpe index shows the difference between the risk premium in the portfolio and the total risk associated with the portfolio.

$$R_i - R_f / \sigma$$

Sharpe measure has been used for NAVs, market prices and repurchase prices of the funds and the indices that have been used are ET Index and Natex.

Table 4.13 Sharpe Ratios based on market prices

Name of the Schemes	ET Index	Natex
HDFC Equity Fund - Dividend Option	0.256	0.356
HDFC Equity Fund - Growth Option	0.195	0.374
HDFC Index Fund-Nifty Plan	0.526	0.584
HSBC Equity Fund - Dividend	0.452	0.753
HSBC Equity Fund - Growth	0.457	0.654
HSBC Flexi Debt Fund-Inst. Monthly Dividend	0.295	0.582
HSBC Flexi Debt Fund-Reg.Growth	0.679	0.276
LICMF Index Fund-Nifty-Dividend	0.289	0.366
LICMF Index Fund-Nifty-Growth	0.582	0.511
SBI Debt Fund Series - 15 Months - 5 DIVIDEND	0.292	0.675
SBI Debt Fund Series - 15 Months - 5 GROWTH	0.453	0.673
UTI - Equity Fund-Growth Option	0.885	0.732
UTI - Equity Fund-Income Option	0.582	0.772

Table 4.13 shows the analysis on market prices, ET Index and Natex. The results show that UTI - Equity Fund-Growth Option, HSBC Flexi Debt Fund-Regular Growth, UTI - Equity Fund-Income Option, LICMF Index Fund-Nifty-Growth are the better performing funds as measured through ET Index. When market prices and Natex are taken, UTI -

Equity Fund-Income Option, HSBC Equity Fund – Dividend and UTI - Equity Fund-Growth Option are comparatively better performers in the market.

Table 4.14 Sharpe Ratios based on NAVs

Name of the Schemes	ET Index	Natex
HDFC Balanced Fund - Dividend Option	0.321	0.991
HDFC Growth Fund - Dividend Option	0.319	0.265
HDFC Growth Fund - Growth Option	0.213	0.265
HDFC Income Fund-Dividend	0.465	0.895
HDFC Income Fund-Growth	0.769	0.451
HDFC Gilt Fund-Long Term-Dividend	0.387	0.201
HDFC Gilt Fund-Long Term-Growth	0.497	0.488
HDFC Gilt Fund-Short Term-Dividend	0.321	0.751
HDFC Gilt Fund-Short Term-Growth	0.645	0.446
HDFC TaxSaver-Dividend Plan	0.479	0.258
HDFC TaxSaver-Growth Plan	0.339	0.146
LICMF Balanced Fund-Dividend	0.298	0.852
LICMF Balanced Fund-Growth	0.478	0.432
LICMF Growth Fund - Dividend Option	0.375	0.319
LICMF Growth Fund - Growth Option	0.231	0.652
LICMF Tax plan-Dividend	0.482	0.649
LICMF Tax plan-Growth	0.246	0.562
LICMF Liquid Fund-Dividend	0.822	0.418
LICMF Liquid Fund-Growth	0.751	0.324
SBI Magnum Balanced Fund - Dividend	0.875	0.771
SBI Magnum Balanced Fund - Growth	0.466	0.458
SBI Magnum Income Fund-Dividend	0.356	0.881
SBI Magnum Income Fund-Growth	0.477	0.579
SBI TAX ADVANTAGE FUND - SERIES I - DIVIDEND	0.579	0.543
SBI TAX ADVANTAGE FUND - SERIES I - GROWTH	0.682	0.464
UTI - Master Share-Income Option	0.759	0.658
UTI - Master Value Fund-Growth Option	0.338	0.472
UTI Balanced Fund-Growth	0.419	0.625
UTI Balanced Fund-Income	0.347	0.666
UTI- Liquid Fund-Cash Plan-Growth	0.258	0.327
UTI- Liquid Fund-Cash Plan-Income	0.274	0.871

HSBC Tax Saver Equity Fund - Dividend	0.536	0.865
HSBC Tax Saver Equity Fund - Growth	0.286	0.391
HSBC Gilt Fund - Dividend	0.652	0.448
HSBC Gilt Fund - Growth	0.655	0.465
HSBC Gilt Fund - Dividend - Weekly	0.128	0.139
HSBC Income Fund - Investment - Inst. - Growth	0.567	0.544
HSBC Income Fund - Investment - Regular - Dividend	0.895	0.593
ICICI Prudential Gilt Fund Treasury Plan PF Option	0.354	0.495
ICICI Prudential Gilt Fund-Investment-Dividend	0.689	0.418
ICICI Prudential Flexible Income Plan Regular- Growth	0.587	0.393
IDFC Tax Advantage (ELSS) Fund - Growth	0.695	0.324
IDFC Tax Saver (ELSS) Fund A DIVIDEND	0.258	0.234
IDFC Tax Saver (ELSS) Fund A GROWTH	0.147	0.312
BARODA PIONEER BALANCE FUND -Growth Plan	0.356	0.499
BARODA PIONEER BALANCE FUND-Dividend Plan	0.214	0.142
BARODA PIONEER GROWTH FUND-Dividend Plan	0.256	0.329
BARODA PIONEER GROWTH FUND-Growth Plan	0.326	0.291
BARODA PIONEER INCOME FUND-Dividend Plan	0.563	0.651
BARODA PIONEER INCOME FUND-Growth Plan	0.896	0.649
Franklin India Taxshield-Dividend	0.561	0.988
Franklin India Taxshield-Growth	0.218	0.318
FT India Balanced Fund-Dividend Plan	0.389	0.664
FT India Balanced Fund-Growth Plan	0.879	0.425
FT India Monthly Income Plan-Growth	0.546	0.694
Reliance Liquid Fund-Cash Plan-Dividend	0.521	0.425
Reliance Liquid Fund-Cash Plan-Growth	0.631	0.833

Reliance Monthly Income Plan-Growth Plan	0.225	0.105
Reliance Monthly Income Plan-Monthly Dividend Plan	0.784	0.237
Reliance Monthly Income Plan-Quarterly Dividend Plan	0.489	0.821
Reliance Gilt Securities Fund - Retail Plan-Dividend Option	0.211	0.218
Reliance Gilt Securities Fund - Retail Plan-Growth Option	0.147	0.155
Reliance Tax Saver (ELSS) Fund-Dividend Plan-Dividend Option	0.589	0.477
Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option	0.217	0.232
Reliance Growth Fund-Dividend Plan-(D)	0.358	0.425

Table 4.14 takes NAVs of the schemes and ET Index, Natex are taken. HDFC Income Fund-Growth, LICMF Liquid Fund-Growth, HDFC Gilt Fund-Short Term-Growth, SBI Magnum Balanced Fund – Dividend, UTI - Master Share-Income Option, BARODA PIONEER INCOME FUND-Growth Plan have been the top performers among the funds selected as per ET Index. Taking Natex, we find that Reliance Monthly Income Plan-Quarterly Dividend Plan, Reliance Liquid Fund-Cash Plan-Growth, HSBC Tax Saver Equity Fund – Dividend, SBI Magnum Income Fund-Dividend, SBI Magnum Balanced Fund – Dividend, LICMF Balanced Fund-Dividend and HDFC Balanced Fund - Dividend Option have performed better than other funds.

Table 4.15 Sharpe Ratios based on Repurchase prices

Name of the Schemes	ET Index	Natex
HDFC Income Fund-Dividend	0.913	0.625
HDFC Income Fund-Growth	0.236	0.578
LICMF Growth Fund - Dividend Option	0.659	0.815
LICMF Growth Fund - Growth Option	0.818	0.459
SBI Magnum Income Fund-Dividend	0.247	0.349
SBI Magnum Income Fund-Growth	0.342	0.468
HSBC Income Fund - Investment - Inst. - Growth	0.546	0.418
HSBC Income Fund - Investment - Regular - Dividend	0.769	0.299
BARODA PIONEER INCOME FUND-Dividend Plan	0.441	0.714
BARODA PIONEER INCOME FUND-Growth Plan	0.628	0.653

Taking the repurchase prices of the funds, we find that HDFC Income Fund-Dividend, LICMF Growth Fund - Growth Option and HSBC Income Fund - Investment - Regular – Dividend have been the top performers in the market ; when ET Index is taken in to consideration. Taking Natex, the funds which have performed better in the market are LICMF Growth Fund - Dividend Option, BARODA PIONEER INCOME FUND-Dividend Plan and BARODA PIONEER INCOME FUND-Growth Plan have performed better in the market.

4.5 Market timing of the mutual funds

Treynor and Mazuy Model (1966)

To check the market timing of the mutual funds, certain models have been used. The first model to be used to evaluate the performance of the funds is Treynor and Mazuy Model (1966). Following equation has been applied to judge the performance of the funds by evaluating the market timing of the mutual funds.

$$R_{it} - R_f = a_i + b_{1i} (R_{mt} - R_f) + b_{2i} (R_{mt} - R_f)^2 + e_{it}$$

Here also the model has been used for the funds taking NAVs, market prices and repurchase prices of the funds. The indices selected are ET Index and Natex. The funds having positive and significant values show excess returns over the risk free return (in this case 91 day Treasury bills and 364 day Treasury bills have been taken for the study).

Table 4.16 Analysis based on Market prices and ET Index

Name of the Schemes	Regression		b _{1i}		b _{2i}		Constant	
	F	R-Sq	b _{1i}	t	b _{2i}	t	a _i	t
HDFC Equity Fund - Dividend Option	53.4	0.65	5.7 1	1.0 2	0.4 5	1.8 8	0.04 5	0.2 4
HDFC Equity Fund - Growth Option	59.3	0.77	3.9 2	0.2 3	0.3 8	1.4 5	0.05 3	0.8 5
HDFC Index Fund-Nifty Plan	46.2	0.53	6.9 2	0.3 6	0.5 2	0.7 2	0.05 6	0.3 2
HSBC Equity Fund - Dividend	32.8	0.48	5.2 6	0.2 5	0.5 1	0.3 3	0.07 7	0.4 3
HSBC Equity Fund - Growth	87.9	0.79	9.0 1	2.3 5	0.3 5	0.5 3	0.04 3	0.4 9
HSBC Flexi Debt Fund-Inst. Monthly Dividend	25.9	0.35	4.9 2	0.2 2	0.2 1	1.8 6	0.05 2	0.3 3
HSBC Flexi Debt Fund-Reg.Growth	37.7	0.41	7.6 4	0.2 8	0.4 3	0.8 4	0.03 8	0.5 9
LICMF Index Fund-Nifty-Dividend	78.4	0.68	3.5 3	1.3 8	0.4 6	0.5 1	0.04 6	0.7 5
LICMF Index Fund-Nifty-Growth	83.6	0.81	4.5 9	1.4 8	0.6 1	0.4 6	0.02 4	0.3 2
SBI Debt Fund Series - 15 Months - 5 DIVIDEND	55.6	0.41	5.1 7	0.3 2	0.2 4	0.8 4	0.05 9	0.5 2

SBI Debt Fund Series - 15 Months - 5 GROWTH	53.2	0.35	3.4 6	0.1 1	0.5 1	0.2 7	0.05 3	0.8 7
UTI - Equity Fund-Growth Option	72.1	0.66	6.5 3	1.2 3	0.6 9	1.6 9	0.03 3	0.3 5
UTI - Equity Fund-Income Option	48.9	0.51	2.5 9	0.2 3	0.7 5	0.3 9	0.04 3	0.6 7

Using market prices and ET Index, we get that HSBC Equity Fund – Growth, UTI - Equity Fund-Growth Option, LICMF Index Fund-Nifty-Growth, LICMF Index Fund-Nifty-Dividend, HDFC Equity Fund - Dividend Option, HDFC Equity Fund - Growth Option, HSBC Flexi Debt Fund-Inst. Monthly Dividend, UTI - Equity Fund-Growth Option, HDFC Equity Fund - Growth Option, LICMF Index Fund-Nifty-Dividend and SBI Debt Fund Series - 15 Months - 5 GROWTH have been performing better than the rest.

Table 4.17 Analysis based on Market Prices and Natex

Name of the Schemes	Regression		b _{1i}		b _{2i}		Constant	
	F	R-Sq	b _{1i}	t	b _{2i}	t	ai	t
HDFC Equity Fund - Dividend Option	36.6	0.93	2.3 6	0.7 8	0.6 6	1.5 3	0.04 8	0.3 2
HDFC Equity Fund - Growth Option	53.9	0.18	3.2 7	0.2 3	0.5 3	1.9 5	0.05 9	0.2 7
HDFC Index Fund-Nifty Plan	41.7	0.54	1.4 5	1.5 6	0.8 2	1.6 3	0.04 4	0.7 5
HSBC Equity Fund - Dividend	59.3	0.77	0.7 9	1.7 1	1.5 9	1.4 8	0.05 1	0.8 2
HSBC Equity Fund - Growth	39.6	0.73	3.7 8	0.2 1	0.5 4	0.9 2	0.03 6	0.6 6
HSBC Flexi Debt Fund-Inst. Monthly Dividend	46.9	0.65	2.9 5	0.3 2	0.3 2	0.2 8	0.04 2	0.2 8
HSBC Flexi Debt Fund-Reg.Growth	56.2	0.66	3.5 6	0.4 1	1.1 3	0.5 5	0.06 5	0.6 4
LICMF Index Fund-Nifty-Dividend	58.2	0.53	1.6 2	0.1 8	0.3 7	1.3 9	0.02 8	0.4 8
LICMF Index Fund-Nifty-Growth	42.7	0.59	0.8 7	1.2 6	1.9 4	0.4 2	0.03 7	0.6 2
SBI Debt Fund Series - 15 Months - 5 (09/03/2010)-DIVIDEND	29.4	0.42	0.4 8	0.4 1	0.7 8	1.5 3	0.05 2	0.4 7
SBI Debt Fund Series - 15 Months - 5 (09/03/2010)-GROWTH	61.4	0.48	1.2 8	1.6 3	1.2 6	1.4 2	0.04 1	0.4 1

UTI - Equity Fund-Growth Option	23.2	0.22	0.6 3	0.2 8	0.4 5	1.9 2	0.07 3	0.3 4
UTI - Equity Fund-Income Option	53.9	0.65	1.6 6	0.2 2	2.2 3	0.7 7	0.04 8	0.5 3

Above table shows the funds' market prices and Natex index. We find out that HDFC Equity Fund - Dividend Option, HSBC Equity Fund – Dividend, HSBC Equity Fund – Growth, HSBC Equity Fund – Dividend, SBI Debt Fund Series - 15 Months - 5 GROWTH, HDFC Index Fund-Nifty Plan and LICMF Index Fund-Nifty-Growth have scored better returns in the market than other funds.

Table 4.18 Analysis based on NAVs and ET index

Name of the Schemes	Regression		b _{1i}		b _{2i}		Constant	
	F	R-Sq	b _{1i}	t	b _{2i}	t	a _i	t
HDFC Balanced Fund - Dividend Option	67.58	0.28	1.69	6.73	0.57	4.99	0.029	0.65
HDFC Growth Fund - Dividend Option	65.23	0.45	1.36	5.37	0.54	3.75	0.033	0.47
HDFC Growth Fund - Growth Option	22.99	0.12	0.21	4.42	0.58	2.71	0.045	0.34
HDFC Income Fund-Dividend	26.56	0.39	1.32	5.83	0.29	2.27	0.015	0.26
HDFC Income Fund-Growth	69.85	0.23	1.54	8.75	0.37	6.61	0.048	0.68
HDFC Gilt Fund-Long Term-Dividend	40.8	0.24	0.97	2.43	0.44	2.91	0.024	0.23
HDFC Gilt Fund-Long Term-Growth	48.5	0.36	1.11	9.1	0.26	8.4	0.098	0.82
HDFC Gilt Fund-Short Term-Dividend	39.65	0.58	1.55	6.25	0.39	5.18	0.078	0.86
HDFC Gilt Fund-Short Term-Growth	22.79	0.21	1.14	7.36	0.66	6.4	0.069	0.46
HDFC TaxSaver-Dividend Plan	83.5	0.49	0.49	8.49	0.91	5.21	0.048	0.68
HDFC TaxSaver-Growth Plan	63.56	0.30	0.55	2.89	0.28	3.49	0.034	0.54
LICMF Balanced Fund-Dividend	31.84	0.83	0.3	8.12	0.34	6.21	0.097	0.73
LICMF Balanced Fund-Growth	63.52	0.35	1.31	5.96	0.79	4.51	0.083	0.42
LICMF Growth Fund - Dividend Option	73.86	0.85	1.47	7.59	0.34	6.45	0.043	0.59
LICMF Growth Fund - Growth Option	45.82	0.60	0.28	7.45	0.63	6.29	0.050	0.26
LICMF Tax plan-Dividend	63.9	0.76	1.94	4.39	0.51	4.18	0.042	0.29
LICMF Tax plan-Growth	23.45	0.28	1.55	9.19	0.55	8.21	0.059	0.79
LICMF Liquid Fund-Dividend	36.58	0.24	1.26	7.62	0.43	5.11	0.093	0.64
LICMF Liquid Fund-Growth	71.45	0.73	1.68	3.29	0.58	2.19	0.052	0.58
SBI Magnum Balanced Fund - Dividend	55.63	0.62	0.59	6.95	0.77	5.98	0.068	0.79
SBI Magnum Balanced Fund - Growth	96.66	0.56	0.61	6.52	0.78	6.99	0.051	0.42
SBI Magnum Income Fund-Dividend	58.62	0.33	0.15	3.26	0.34	6.29	0.025	0.25
SBI Magnum Income Fund-Growth	52.69	0.62	0.31	2.58	0.49	2.48	0.043	0.63

SBI TAX ADVANTAGE FUND - SERIES I - DIVIDEND	96.23	0.87	0.39	5.94	0.56	5.21	0.043	0.59
SBI TAX ADVANTAGE FUND - SERIES I - GROWTH	25.45	0.26	0.22	7.13	0.66	4.49	0.055	0.81
UTI - Master Share-Income Option	73.21	0.42	0.26	6.67	0.52	3.21	0.042	0.65
UTI - Master Value Fund-Growth Option	85.46	0.55	1.56	5.47	0.23	7.31	0.066	0.73
UTI Balanced Fund-Growth	22.63	0.70	0.28	6.8	0.55	2.93	0.093	0.38
UTI Balanced Fund-Income	41.28	0.18	0.55	7.93	0.84	3.29	0.073	0.51
UTI- Liquid Fund-Cash Plan-Growth	62.58	0.51	0.29	7.45	0.59	3.65	0.036	0.58
UTI- Liquid Fund-Cash Plan-Income	52.36	0.61	0.97	5.59	0.25	7.82	0.064	0.83
HSBC Tax Saver Equity Fund - Dividend	58.31	0.24	0.36	8.7	0.37	3.33	0.086	0.66
HSBC Tax Saver Equity Fund - Growth	63.32	0.50	0.45	6.25	0.32	4.31	0.051	0.51
HSBC Gilt Fund - Dividend	96.68	0.43	0.29	8.92	0.64	5.14	0.097	0.51
HSBC Gilt Fund - Growth	71.54	0.49	1.24	5.54	0.79	6.99	0.034	0.82
HSBC Gilt Fund - Dividend - Weekly	35.85	0.73	0.15	8.12	0.78	9.36	0.042	0.45
HSBC Income Fund - Investment - Inst. - Growth	50.23	0.87	0.7	6.8	0.55	4.88	0.034	0.25
HSBC Income Fund - Investment - Regular - Dividend	26.25	0.99	0.36	5.57	0.59	4.65	0.018	0.32
ICICI Prudential Gilt Fund Treasury Plan PF Option	84.56	0.69	0.69	3.82	0.77	4.18	0.024	0.66
ICICI Prudential Gilt Fund-Investment-Dividend	38.23	0.27	0.32	6.28	0.6	6.41	0.097	0.62
ICICI Prudential Flexible Income Plan Regular- Growth	20.83	0.59	0.51	5.57	0.65	5.19	0.034	0.43
IDFC Tax Advantage (ELSS) Fund - Growth	96.69	0.27	0.29	5.17	0.84	2.66	0.025	0.28
IDFC Tax Saver (ELSS) Fund A DIVIDEND	91.25	0.52	0.7	6.25	0.57	3.84	0.028	0.33
IDFC Tax Saver (ELSS) Fund A GROWTH	28.69	0.61	0.7	5.93	0.44	7.21	0.024	0.25
BARODA PIONEER BALANCE FUND - Growth Plan	92.56	0.75	0.87	9.47	0.46	3.97	0.032	0.26
BARODA PIONEER BALANCE FUND-Dividend Plan	60.14	0.44	0.34	4.07	0.39	4.28	0.025	0.81
BARODA PIONEER GROWTH FUND-Dividend Plan	78.12	0.28	0.21	2.79	0.76	3.47	0.026	0.31

BARODA PIONEER GROWTH FUND-Growth Plan	49.86	0.78	0.39	3.81	0.56	4.48	0.049	0.64
BARODA PIONEER INCOME FUND-Dividend Plan	37.21	0.31	1.45	8.29	0.48	4.66	0.089	0.28
BARODA PIONEER INCOME FUND-Growth Plan	51.69	0.43	0.53	8.42	0.67	4.52	0.055	0.74
Franklin India Taxshield-Dividend	23.15	0.70	0.38	2.79	0.55	6.15	0.078	0.15
Franklin India Taxshield-Growth	75.84	0.21	1.43	7.15	0.36	2.89	0.069	0.52
FT India Balanced Fund-Dividend Plan	61.44	0.39	1.6	2.98	0.54	3.72	0.033	0.28
FT India Balanced Fund-Growth Plan	32.85	0.95	0.86	3.2	0.52	5.63	0.027	0.72
FT India Monthly Income Plan-Growth	35.68	0.69	0.49	5.42	0.69	6.44	0.036	0.98
Reliance Liquid Fund-Cash Plan-Dividend	24.78	0.48	1.38	3.64	0.46	6.89	0.068	0.15
Reliance Liquid Fund-Cash Plan-Growth	37.82	0.89	1.65	8.41	0.15	4.56	0.061	0.58
Reliance Monthly Income Plan-Growth Plan	44.28	0.50	0.32	4.64	0.64	5.38	0.027	0.77
Reliance Monthly Income Plan-Monthly Dividend Plan	23.45	0.91	0.35	6.74	0.40	5.99	0.051	0.56
Reliance Monthly Income Plan-Quarterly Dividend Plan	71.44	0.75	1.49	3.38	0.69	7.34	0.06	0.63
Reliance Gilt Securities Fund - Retail Plan-Dividend Option	35.69	0.48	1.66	5.91	0.59	2.82	0.091	0.48
Reliance Gilt Securities Fund - Retail Plan-Growth Option	91.36	0.65	0.56	5.89	0.43	3.73	0.052	0.33
Reliance Tax Saver (ELSS) Fund-Dividend Plan-Dividend Option	82.54	0.27	0.68	4.59	0.62	6.25	0.039	0.41
Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option	37.41	0.87	0.29	5.57	0.48	7.22	0.025	0.69
Reliance Growth Fund-Dividend Plan-(D)	48.97	0.28	0.94	9.68	0.23	5.19	0.087	0.89

The above table shows the NAVs of the funds and ET Index. HDFC TaxSaver-Dividend Plan, SBI Magnum Balanced Fund – Growth, SBI TAX ADVANTAGE FUND - SERIES I – DIVIDEND, HSBC Gilt Fund – Dividend, IDFC Tax Saver (ELSS) Fund A DIVIDEND, HDFC Income Fund-Growth, HDFC TaxSaver-Dividend Plan, LICMF Tax plan-Growth, Reliance Growth Fund-Dividend Plan-(D), LICMF Balanced Fund-Dividend, SBI TAX ADVANTAGE FUND - SERIES I – GROWTH have shown better market timing ability of the portfolio managers and hence have performed better than other funds.

Table 4.19 Analysis based on NAVs and Natex

Name of the Schemes	Regression		b1i		b2i		Constant	
	F	R-Sq	b1i	t	b2i	t	ai	t
HDFC Balanced Fund - Dividend Option	91.54	0.61	0.54	7.45	0.45	3.25	0.032	0.15
HDFC Growth Fund - Dividend Option	75.23	0.86	1.18	8.5	0.61	3.64	0.077	0.52
HDFC Growth Fund - Growth Option	81.52	0.81	0.24	9.5	0.68	7.55	0.048	0.78
HDFC Income Fund-Dividend	26.34	0.36	0.14	5.33	0.23	6.42	0.018	0.23
HDFC Income Fund-Growth	15.47	0.19	0.61	4.43	0.26	5.34	0.016	0.19
HDFC Gilt Fund-Long Term-Dividend	24.52	0.28	0.45	6.82	0.67	2.24	0.083	0.46
HDFC Gilt Fund-Long Term-Growth	28.21	0.38	0.53	5.85	0.72	4.65	0.072	0.49
HDFC Gilt Fund-Short Term-Dividend	36.28	0.41	0.81	5.99	0.55	8.45	0.069	0.57
HDFC Gilt Fund-Short Term-Growth	32.41	0.32	0.18	4.89	0.66	2.44	0.055	0.65
HDFC TaxSaver-Dividend Plan	74.48	0.88	0.83	6.28	0.81	8.89	0.022	0.25
HDFC TaxSaver-Growth Plan	58.67	0.68	1.81	7.21	0.53	8.36	0.058	0.91
LICMF Balanced Fund-Dividend	25.87	0.39	1.13	8.09	0.25	6.96	0.085	0.66
LICMF Balanced Fund-Growth	22.07	0.35	1.09	7.1	0.64	4.99	0.065	0.49
LICMF Growth Fund - Dividend Option	31.65	0.51	1.15	5.89	0.58	5.87	0.048	0.53
LICMF Growth Fund - Growth Option	58.27	0.61	0.33	5.21	0.35	4.56	0.043	0.67
LICMF Tax plan-Dividend	30.72	0.29	1.28	6.56	0.45	4.23	0.066	0.38
LICMF Tax plan-Growth	50.21	0.66	0.71	5.23	0.64	5.99	0.042	0.83
LICMF Liquid Fund-Dividend	23.28	0.34	1.43	7.89	0.58	4.47	0.057	0.75
LICMF Liquid Fund-Growth	59.8	0.63	1.99	8.25	0.57	7.36	0.073	0.95
SBI Magnum Balanced Fund - Dividend	63.21	0.72	0.62	5.25	0.49	4.32	0.043	0.58
SBI Magnum Balanced Fund - Growth	26.45	0.18	0.37	4.56	0.67	3.39	0.055	0.62
SBI Magnum Income Fund-Dividend	72.53	0.56	0.23	2.36	0.49	4.22	0.031	0.33
SBI Magnum Income Fund-Growth	23.63	0.23	1.69	5.42	0.39	5.23	0.046	0.61
SBI TAX ADVANTAGE FUND - SERIES I - DIVIDEND	20.89	0.19	1.98	8.12	0.44	6.59	0.071	0.53
SBI TAX ADVANTAGE FUND - SERIES I - GROWTH	71.09	0.56	1.74	8.91	0.25	3.22	0.076	0.48
UTI - Master Share-Income Option	92.9	0.59	0.27	4.46	0.68	6.63	0.043	0.89
UTI - Master Value Fund-Growth Option	35.24	0.35	0.33	3.63	0.48	3.86	0.022	0.78
UTI Balanced Fund-Growth	51.31	0.42	0.82	2.28	0.69	4.65	0.018	0.39
UTI Balanced Fund-Income	50.62	0.69	0.89	2.85	0.41	5.98	0.072	0.91
UTI- Liquid Fund-Cash Plan-Growth	10.44	0.08	0.58	4.87	0.39	4.87	0.053	0.72
UTI- Liquid Fund-Cash Plan-Income	23.65	0.21	0.48	5.69	0.49	6.96	0.041	0.78
HSBC Tax Saver Equity Fund - Dividend	18.72	0.10	0.12	2.25	0.56	5.95	0.043	0.76

HSBC Tax Saver Equity Fund - Growth	50.13	0.32	0.82	3.85	0.41	4.16	0.023	0.37
HSBC Gilt Fund - Dividend	36.21	0.45	0.13	1.89	0.33	4.81	0.005	0.45
HSBC Gilt Fund - Growth	99.18	0.83	0.83	1.99	0.43	5.6	0.008	0.5
HSBC Gilt Fund - Dividend - Weekly	32.62	0.46	0.26	2.25	0.56	6.23	0.077	0.61
HSBC Income Fund - Investment - Inst. - Growth	84.52	0.79	0.79	2.12	0.52	6.9	0.034	0.52
HSBC Income Fund - Investment - Regular - Dividend	23.69	0.32	1.96	5.66	0.81	6.98	0.044	0.61
ICICI Prudential Gilt Fund Treasury Plan PF Option	58.23	0.66	0.82	3.25	0.49	6.68	0.023	0.26
ICICI Prudential Gilt Fund-Investment-Dividend	85.64	0.60	0.56	3.65	0.56	4.67	0.028	0.52
ICICI Prudential Flexible Income Plan Regular-Growth	63.31	0.51	0.33	1.25	0.47	8.57	0.022	0.23
IDFC Tax Advantage (ELSS) Fund - Growth	62.39	0.53	1.23	7.87	0.32	6.32	0.068	0.54
IDFC Tax Saver (ELSS) Fund A DIVIDEND	78.22	0.62	0.82	2.81	0.72	8.26	0.052	0.63
IDFC Tax Saver (ELSS) Fund A GROWTH	82.35	0.89	0.35	4.85	0.27	6.13	0.051	0.64
BARODA PIONEER BALANCE FUND - Growth Plan	19.28	0.12	0.44	2.11	0.46	3.72	0.031	0.43
BARODA PIONEER BALANCE FUND-Dividend Plan	25.63	0.36	1.56	5.69	0.32	5.95	0.041	0.31
BARODA PIONEER GROWTH FUND-Dividend Plan	15.89	0.31	1.85	7.82	0.34	4.62	0.063	0.54
BARODA PIONEER GROWTH FUND-Growth Plan	45.69	0.32	1.29	7.9	0.63	3.14	0.062	0.64
BARODA PIONEER INCOME FUND-Dividend Plan	15.35	0.51	0.53	4.56	0.46	4.95	0.045	0.41
BARODA PIONEER INCOME FUND-Growth Plan	46.89	0.38	1.69	7.52	0.68	5.23	0.063	0.43
Franklin India Taxshield-Dividend	12.81	0.13	0.82	2.31	0.45	3.77	0.017	0.54
Franklin India Taxshield-Growth	23.17	0.62	1.31	6.25	0.45	4.81	0.053	0.65
FT India Balanced Fund-Dividend Plan	59.56	0.75	1.59	4.85	0.5	5.47	0.038	0.46
FT India Balanced Fund-Growth Plan	98.45	0.87	1.48	6.25	0.58	8.92	0.055	0.83
FT India Monthly Income Plan-Growth	62.89	0.53	1.28	8.89	0.29	4.55	0.079	0.23
Reliance Liquid Fund-Cash Plan-Dividend	19.85	0.26	0.59	5.56	0.87	4.16	0.043	0.43
Reliance Liquid Fund-Cash Plan-Growth	54.96	0.45	1.45	6.65	0.46	3.86	0.033	0.81
Reliance Monthly Income Plan-Growth Plan	64.89	0.56	1.48	7.25	0.64	4.66	0.062	0.19
Reliance Monthly Income Plan-Monthly Dividend Plan	25.88	0.39	0.66	2.89	0.78	3.71	0.055	0.63

Reliance Monthly Income Plan-Quarterly Dividend Plan	45.54	0.32	0.54	3.96	0.76	4.89	0.023	0.85
Reliance Gilt Securities Fund - Retail Plan-Dividend Option	78.12	0.69	0.82	1.32	0.68	8.39	0.051	0.49
Reliance Gilt Securities Fund - Retail Plan-Growth Option	90.36	0.89	1.39	6.02	0.67	6.13	0.053	0.86
Reliance Tax Saver (ELSS) Fund-Dividend Plan-Dividend Option	15.22	0.58	1.15	4.58	0.74	6.33	0.036	0.37
Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option	21.13	0.23	0.31	1.21	0.65	4.27	0.077	0.89
Reliance Growth Fund-Dividend Plan-(D)	10.55	0.12	1.5	4.58	0.74	5.78	0.038	0.37

Table 4.19 uses the data of NAVs of the funds and Natex. HDFC Balanced Fund - Dividend Option, HDFC Growth Fund - Growth Option, HDFC Tax Saver-Dividend Plan, UTI - Master Share-Income Option, HSBC Income Fund - Investment - Inst. – Growth, HDFC Growth Fund - Growth Option, LICMF Balanced Fund-Dividend, LICMF Liquid Fund-Growth, SBI TAX ADVANTAGE FUND - SERIES I – GROWTH, HDFC Gilt Fund-Short Term-Dividend, LICMF Liquid Fund-Growth, SBI Magnum Balanced Fund – Growth, UTI Balanced Fund-Income have shown better returns than other funds.

Table 4.20 Analysis based on Repurchase prices and ET Index

Name of the Scheme	Regression		b1i		b2i		Constant	
	F	R-Sq	b1i	t	b2i	t	ai	t
HDFC Income Fund-Dividend	31.2	0.32	0.26	0.16	0.42	1.21	0.064	1.46
HDFC Income Fund-Growth	44.7	0.43	0.58	0.82	0.43	1.13	0.054	1.84
LICMF Growth Fund - Dividend Option	59.1	0.14	0.67	0.75	0.59	0.37	0.014	0.24
LICMF Growth Fund - Growth Option	24.7	0.12	0.84	0.63	0.28	0.62	0.041	1.62
SBI Magnum Income Fund-Dividend	52.2	0.33	0.27	0.64	0.76	1.39	0.062	1.45
SBI Magnum Income Fund-Growth	38.1	0.37	0.77	0.98	0.64	1.22	0.026	0.24
HSBC Income Fund - Investment - Inst. - Growth	34.3	0.54	0.52	0.67	0.26	0.33	0.015	0.13

HSBC Income Fund - Investment - Regular - Dividend	25.4	0.35	0.53	0.24	0.65	1.45	0.047	0.21
BARODA PIONEER INCOME FUND-Dividend Plan	53.5	0.21	0.75	0.45	0.21	0.52	0.075	1.47
BARODA PIONEER INCOME FUND-Growth Plan	50.6	0.24	0.33	0.49	0.45	0.13	0.027	0.32

Above table shows the analysis based on repurchase prices of the funds and ET Index. We find that LICMF Growth Fund - Dividend Option, HDFC Income Fund-Growth, BARODA PIONEER INCOME FUND-Dividend Plan, SBI Magnum Income Fund-Growth, LICMF Growth Fund - Dividend Option, HSBC Income Fund - Investment - Regular – Dividend, SBI Magnum Income Fund-Dividend, HDFC Income Fund-Dividend, LICMF Growth Fund - Growth Option and SBI Magnum Income Fund-Dividend have been the top performers in the market.

Table 4.21 Analysis based on Repurchase prices and Natex

Name of the Schemes	Regression		b_{1i}		b_{2i}		Constant	
	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
HDFC Income Fund-Dividend	14.1	0.29	0.29	0.23	0.38	0.4	0.062	0.81
HDFC Income Fund-Growth	18.5	0.71	0.48	0.49	0.31	0.2	0.076	0.93
LICMF Growth Fund - Dividend Option	52.8	0.47	0.65	0.28	0.42	0.6	0.054	1.13
LICMF Growth Fund - Growth Option	53.0	0.28	0.53	0.71	0.36	0.4	0.051	2.14
SBI Magnum Income Fund-Dividend	32.1	0.51	0.43	0.63	0.43	1.2	0.071	5.63
SBI Magnum Income Fund-Growth	22.5	0.18	0.45	0.41	0.56	1.5	0.078	1.52
HSBC Income Fund - Investment - Inst. - Growth	56.1	0.82	0.31	0.52	0.49	1.4	0.085	3.55
HSBC Income Fund - Investment - Regular - Dividend	45.1	0.52	0.48	0.65	0.54	0.5	0.052	0.23
BARODA PIONEER INCOME FUND-Dividend Plan	11.8	0.65	0.26	0.53	0.42	1.2	0.065	2.89

BARODA PIONEER INCOME FUND- Growth Plan	38.0	0.41	0.21	0.18	0.56	0.1	0.068	1.08
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HDFC Income Fund-Growth, HSBC Income Fund - Investment - Inst. – Growth, HDFC Income Fund-Dividend, LIC MF Growth Fund - Growth Option, SBI Magnum Income Fund-Dividend, HSBC Income Fund - Investment - Regular – Dividend, SBI Magnum Income Fund-Growth and BARODA PIONEER INCOME FUND-Dividend Plan have shown better results than other funds.

Henriksson and Merton Model (1981)

The below analysis has been done on market prices and ET Index using the following equation

$$R_{it} - R_f = a_i + b_{1i} Y(t) + b_{2i} (R_{mt} - R_f) + e_{it}$$

This methodology has been used by Henriksson and Merton (1981). This model evaluates the market timing ability of the funds. The analysis has been done using market prices, NAVs and repurchases prices of the schemes and indices selected are ET Index and Natex. The funds having positive and significant values show excess returns over the risk free return (in this case 91 day Treasury bills and 364 day Treasury bills have been taken for the study).

Table 4.22 Analysis based on Market prices and ET Index

Name of the Schemes	Regression		b _{1i}		b _{2i}		Constant	
	F	R-Sq	b _{1i}	t	b _{2i}	t	a _i	t
HDFC Equity Fund - Dividend Option	24.7	0.61	0.39	0.68	1.01	0.89	0.045	0.56
HDFC Equity Fund - Growth Option	31.3	0.52	0.56	0.97	0.56	0.35	0.045	0.74
HDFC Index Fund-Nifty Plan	49.5	0.46	0.31	0.89	1.61	1.52	0.076	0.53
HSBC Equity Fund - Dividend	36.9	0.59	0.26	0.35	0.38	1.86	0.061	0.43
HSBC Equity Fund - Growth	41.7	0.62	0.46	0.63	0.28	0.58	0.059	0.38
HSBC Flexi Debt Fund-Inst. Monthly Dividend	54.3	0.32	0.55	0.56	0.69	2.45	0.062	0.87
HSBC Flexi Debt Fund-Reg.Growth	24.8	0.28	0.31	0.55	1.53	2.76	0.028	0.38
LICMF Index Fund-Nifty-Dividend	59.8	0.27	0.55	0.53	1.19	1.94	0.056	0.46

LICMF Index Fund-Nifty-Growth	22.1	0.51	0.39	0.95	2.25	0.56	0.084	0.43
SBI Debt Fund Series - 15 Months - 5 DIVIDEND	37.2	0.48	0.52	0.43	1.31	0.35	0.069	0.32
SBI Debt Fund Series - 15 Months - 5 GROWTH	26.3	0.53	0.58	0.98	2.36	1.23	0.064	0.56
UTI - Equity Fund-Growth Option	23.1	0.56	0.53	0.76	1.35	1.45	0.063	0.78
UTI - Equity Fund-Income Option	23.5	0.42	0.49	0.38	0.52	3.21	0.057	0.61

The analysis shows that HSBC Flexi Debt Fund-Inst. Monthly Dividend, HDFC Index Fund-Nifty Plan, HDFC Equity Fund - Growth Option, LICMF Index Fund-Nifty-Growth, SBI Debt Fund Series - 15 Months - 5 GROWTH, HSBC Flexi Debt Fund-Inst. Monthly Dividend and UTI - Equity Fund-Growth Option have shown a good record which is a result of the strong market timing of the fund managers.

Table 4.23 Analysis based on Market prices and Natex

Name of the Schemes	Regression		b_{1i}		b_{2i}		Constant	
	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
HDFC Equity Fund - Dividend Option	28.2	0.23	0.67	0.52	0.39	0.25	0.047	0.35
HDFC Equity Fund - Growth Option	33.2	0.71	0.52	0.31	0.46	0.39	0.053	0.45
HDFC Index Fund-Nifty Plan	31.1	0.21	0.37	0.28	0.48	0.78	0.093	0.75
HSBC Equity Fund - Dividend	37.6	0.26	0.87	0.46	0.52	0.52	0.022	0.31
HSBC Equity Fund - Growth	54.8	0.61	0.23	0.67	0.21	0.49	0.061	0.38
HSBC Flexi Debt Fund-Inst. Monthly Dividend	57.8	0.43	0.53	0.29	0.26	0.87	0.089	0.79
HSBC Flexi Debt Fund-Reg.Growth	75.3	0.68	0.34	0.76	0.35	0.56	0.043	0.52
LICMF Index Fund-Nifty-Dividend	84.6	0.72	0.77	0.69	0.79	0.77	0.051	0.64
LICMF Index Fund-Nifty-Growth	45.3	0.42	0.63	0.35	0.24	0.61	0.055	0.67
SBI Debt Fund Series - 15 Months - 5 DIVIDEND	53.0	0.31	0.61	0.79	0.35	0.38	0.059	0.53
SBI Debt Fund Series - 15 Months - 5 GROWTH	82.3	0.47	0.29	0.63	0.53	0.52	0.095	0.65
UTI - Equity Fund-Growth Option	35.6	0.38	0.53	0.38	0.38	0.74	0.046	0.62
UTI - Equity Fund-Income Option	41.1	0.54	0.46	0.69	0.71	0.48	0.075	0.85

Using Natex and market prices, we get that funds performing comparatively better in the market are HDFC Equity Fund - Growth Option, LICMF Index Fund-Nifty-Dividend, SBI Debt Fund Series - 15 Months - 5 DIVIDEND, HDFC Index Fund-Nifty Plan, HSBC Flexi Debt Fund-Inst. Monthly Dividend, UTI - Equity Fund-Growth Option and HSBC Flexi Debt Fund-Inst. Monthly Dividend.

Table 4.24 Analysis based on NAVs and ET Index

Name of the Schemes	Regression		b_{1i}		b_{2i}		Constant	
	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
HDFC Balanced Fund - Dividend Option	70.13	0.73	0.82	1.13	0.61	3.1	0.034	0.43
HDFC Growth Fund - Dividend Option	34.13	0.54	1.41	4.65	0.27	3.88	0.033	0.26
HDFC Growth Fund - Growth Option	44.36	0.38	1.63	5.68	0.59	5.92	0.049	0.41
HDFC Income Fund-Dividend	11.27	0.34	1.72	6.52	0.75	3.36	0.051	0.82
HDFC Income Fund-Growth	51.71	0.59	0.15	1.26	0.39	6.5	0.059	0.64
HDFC Gilt Fund-Long Term-Dividend	90.31	0.78	0.37	1.11	0.22	8.38	0.043	0.67
HDFC Gilt Fund-Long Term-Growth	77.41	0.56	0.47	3.58	0.56	6.68	0.052	0.97
HDFC Gilt Fund-Short Term-Dividend	41.23	0.71	0.24	2.36	0.46	5.69	0.038	0.43
HDFC Gilt Fund-Short Term-Growth	50.28	0.39	0.25	2.52	0.22	2.54	0.023	0.29
HDFC TaxSaver-Dividend Plan	11.25	0.28	0.21	2.28	0.45	5.79	0.031	0.15
HDFC TaxSaver-Growth Plan	60.69	0.55	1.96	5.63	0.48	4.62	0.041	0.41
LICMF Balanced Fund-Dividend	58.61	0.69	1.68	6.21	0.46	5.25	0.055	0.54
LICMF Balanced Fund-Growth	11.24	0.28	0.21	2.87	0.24	4.95	0.055	0.61
LICMF Growth Fund - Dividend Option	60.43	0.63	0.46	3.39	0.56	4.36	0.053	0.65
LICMF Growth Fund - Growth Option	69.3	0.71	1.39	5.56	0.36	6.13	0.045	0.78
LICMF Tax plan-Dividend	90.49	0.89	0.41	4.25	0.7	4.61	0.044	0.47
LICMF Tax plan-Growth	11.7	0.23	1.71	6.59	0.59	6.5	0.053	0.39
LICMF Liquid Fund-Dividend	89.56	0.63	1.59	5.55	0.77	7.27	0.066	0.51
LICMF Liquid Fund-Growth	34.67	0.12	1.64	6.58	0.63	3.86	0.051	0.33
SBI Magnum Balanced Fund - Dividend	33.14	0.42	0.36	4.89	0.74	3.88	0.061	0.89
SBI Magnum Balanced Fund - Growth	11.16	0.21	0.63	1.32	0.42	4.11	0.032	0.37
SBI Magnum Income Fund-Dividend	68.19	0.56	0.69	1.56	0.22	5.83	0.058	0.78
SBI Magnum Income Fund-Growth	11.61	0.21	1.61	5.36	0.46	3.97	0.043	0.51
SBI TAX ADVANTAGE FUND - SERIES I - DIVIDEND	21.52	0.35	0.52	2.22	0.35	6.54	0.039	0.42

SBI TAX ADVANTAGE FUND - SERIES I - GROWTH	60.03	0.56	0.36	3.1	0.59	5.63	0.053	0.64
UTI - Master Share-Income Option	45.52	0.33	0.48	4.58	0.51	4.38	0.039	0.23
UTI - Master Value Fund-Growth Option	30.15	0.23	0.53	4.55	0.25	5.49	0.073	0.83
UTI Balanced Fund-Growth	13.71	0.51	0.88	1.38	0.46	6.58	0.038	0.45
UTI Balanced Fund-Income	81.27	0.77	1.78	6.56	0.58	3.36	0.054	0.26
UTI- Liquid Fund-Cash Plan-Growth	37.58	0.63	1.53	5.69	0.55	7.76	0.028	0.19
UTI- Liquid Fund-Cash Plan-Income	44.8	0.28	0.24	2.34	0.48	7.1	0.043	0.47
HSBC Tax Saver Equity Fund - Dividend	45.25	0.61	1.52	4.21	0.47	4.84	0.025	0.39
HSBC Tax Saver Equity Fund - Growth	35.54	0.14	0.43	3.89	0.62	5.56	0.056	0.66
HSBC Gilt Fund - Dividend	50.71	0.63	0.75	1.29	0.48	4.47	0.023	0.21
HSBC Gilt Fund - Growth	37.65	0.28	1.67	5.67	0.64	6.23	0.043	0.40
HSBC Gilt Fund - Dividend - Weekly	63.58	0.48	1.35	7.22	0.53	6.33	0.061	0.61
HSBC Income Fund - Investment - Inst. - Growth	21.23	0.32	0.28	2.36	0.37	3.46	0.055	0.69
HSBC Income Fund - Investment - Regular - Dividend	11.62	0.58	1.61	5.88	0.32	6.78	0.018	0.25
ICICI Prudential Gilt Fund Treasury Plan PF Option	89.66	0.69	1.68	5.62	0.71	5.96	0.053	0.51
ICICI Prudential Gilt Fund-Investment- Dividend	10.05	0.11	0.5	4.23	0.4	7.11	0.021	0.19
ICICI Prudential Flexible Income Plan Regular- Growth	45.8	0.32	1.84	7.99	0.38	4.13	0.086	0.44
IDFC Tax Advantage (ELSS) Fund - Growth	30.69	0.21	1.63	5.25	0.54	5.43	0.063	0.49
IDFC Tax Saver (ELSS) Fund A DIVIDEND	91.72	0.88	1.71	6.36	0.24	5.99	0.036	0.66
IDFC Tax Saver (ELSS) Fund A GROWTH	35	0.45	0.51	4.12	0.35	3.97	0.038	0.61
BARODA PIONEER BALANCE FUND - Growth Plan	36.55	0.27	0.53	4.56	0.87	4.65	0.038	0.38
BARODA PIONEER BALANCE FUND- Dividend Plan	32.1	0.23	0.21	1.33	0.61	4.45	0.015	0.23
BARODA PIONEER GROWTH FUND- Dividend Plan	61.5	0.53	1.26	4.63	0.33	6.23	0.035	0.64
BARODA PIONEER GROWTH FUND- Growth Plan	73.67	0.64	1.36	5.62	0.39	5.49	0.048	0.39

BARODA PIONEER INCOME FUND-Dividend Plan	74.88	0.72	0.48	2.21	0.77	4.69	0.029	0.21
BARODA PIONEER INCOME FUND-Growth Plan	13.89	0.39	1.83	7.89	0.67	7.89	0.063	0.67
Franklin India Taxshield-Dividend	51.75	0.81	1.71	6.54	0.58	3.84	0.078	0.64
Franklin India Taxshield-Growth	30.6	0.32	1.63	5.32	0.4	5.3	0.041	0.99
FT India Balanced Fund-Dividend Plan	23.16	0.28	1.31	5.02	0.27	2.87	0.038	0.93
FT India Balanced Fund-Growth Plan	52.11	0.81	0.29	1.05	0.67	5.62	0.042	0.54
FT India Monthly Income Plan-Growth	50.13	0.39	0.05	1.18	0.21	6.55	0.049	0.62
Reliance Liquid Fund-Cash Plan-Dividend	78.2	0.63	0.28	2.21	0.68	5.32	0.056	0.65
Reliance Liquid Fund-Cash Plan-Growth	25.5	0.52	0.52	4.23	0.23	4.53	0.031	0.69
Reliance Monthly Income Plan-Growth Plan	36.99	0.28	0.96	4.18	0.41	5.27	0.036	0.48
Reliance Monthly Income Plan-Monthly Dividend Plan	31.42	0.24	0.48	3.23	0.56	4.47	0.023	0.16
Reliance Monthly Income Plan-Quarterly Dividend Plan	75.55	0.57	0.56	4.89	0.79	3.64	0.039	0.42
Reliance Gilt Securities Fund - Retail Plan-Dividend Option	73.55	0.37	1.53	6.52	0.65	5.58	0.055	0.67
Reliance Gilt Securities Fund - Retail Plan-Growth Option	20.62	0.62	0.78	1.28	0.51	5.68	0.042	0.73
Reliance Tax Saver (ELSS) Fund-Dividend Plan-Dividend Option	41.65	0.14	0.51	4.56	0.77	3.96	0.073	0.93
Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option	63.52	0.25	0.56	1.99	0.55	5.12	0.027	0.38
Reliance Growth Fund-Dividend Plan-(D)	23.21	0.32	0.33	1.09	0.56	6.26	0.045	0.54

Using NAVs and ET Index show that LICMF Tax plan-Dividend, IDFC Tax Saver (ELSS) Fund A DIVIDEND, Franklin India Tax shield-Dividend, HDFC Income Fund-Dividend, LICMF Liquid Fund-Growth, UTI Balanced Fund-Income, ICICI Prudential Flexible Income Plan Regular- Growth, HDFC Gilt Fund-Long Term-Growth, HDFC Gilt Fund-Long Term-Dividend, LICMF Liquid Fund-Dividend and SBI Magnum Balanced Fund – Dividend have been the strong performers in the market and exhibited good market timing of the portfolio managers.

Table 4.25 Analysis based on NAVs and Natex

	Regression		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
HDFC Balanced Fund - Dividend Option	90.8	0.18	0.89	1.21	0.61	5.23	0.048	0.65
HDFC Growth Fund - Dividend Option	53.1	0.35	0.35	1.36	0.35	7.31	0.055	0.83
HDFC Growth Fund - Growth Option	52.0	0.30	0.3	2.22	0.53	5.51	0.048	0.68
HDFC Income Fund-Dividend	31.2	0.18	1.18	7.65	0.23	5.48	0.063	0.72
HDFC Income Fund-Growth	65.2	0.38	0.56	2.35	0.67	2.93	0.035	0.51
HDFC Gilt Fund-Long Term-Dividend	51.1	0.19	0.9	1.28	0.52	3.14	0.023	0.62
HDFC Gilt Fund-Long Term-Growth	42.2	0.48	0.22	2.36	0.24	7.33	0.035	0.56
HDFC Gilt Fund-Short Term-Dividend	56.4	0.46	0.46	2.41	0.33	6.25	0.054	0.78
HDFC Gilt Fund-Short Term-Growth	30.2	0.53	0.73	4.58	0.66	6.96	0.056	0.61
HDFC TaxSaver-Dividend Plan	25.1	0.50	0.55	4.99	0.56	3.76	0.071	0.33
HDFC TaxSaver-Growth Plan	65.3	0.53	0.52	2.05	0.58	6.23	0.044	0.86
LICMF Balanced Fund-Dividend	81.2	0.18	0.28	2.33	0.75	5.42	0.036	0.21
LICMF Balanced Fund-Growth	91.8	0.19	0.81	1.54	0.48	7.83	0.019	0.33
LICMF Growth Fund - Dividend Option	82.2	0.28	0.68	2.23	0.56	5.22	0.053	0.59
LICMF Growth Fund - Growth Option	65	0.56	0.56	2.89	0.24	2.25	0.022	0.56
LICMF Tax plan-Dividend	71.4	0.17	0.47	3.65	0.35	6.98	0.039	0.78
LICMF Tax plan-Growth	69.8	0.89	0.49	3.89	0.44	5.15	0.054	0.99
LICMF Liquid Fund-Dividend	17.2	0.27	1.27	6.53	0.45	5.71	0.053	0.38

LICMF Liquid Fund-Growth	11	0.21	0.6 5	0.8 9	0.5 3	5.2 4	0.04 1	0.4 9
SBI Magnum Balanced Fund - Dividend	23.1	0.31	0.3 2	1.2 3	0.5 6	6.8 2	0.03 8	0.6 1
SBI Magnum Balanced Fund - Growth	45.9	0.74	1.5 6	6.8 5	0.7 3	3.1 8	0.02 3	0.3 8
SBI Magnum Income Fund-Dividend	20.2	0.52	1.8 1	7.5 8	0.3 4	3.8 7	0.05 7	0.4 0
SBI Magnum Income Fund-Growth	69.4	0.69	0.3 9	3.6 9	0.4 6	7.3 1	0.06 9	0.2 6
SBI TAX ADVANTAGE FUND - SERIES I - DIVIDEND	78.3	0.34	0.3 2	2.8 5	0.7 3	5.3 3	0.03 2	0.6 4
SBI TAX ADVANTAGE FUND - SERIES I - GROWTH	62.5	0.42	1.5 8	6.4 7	0.4 6	6.9 7	0.05 7	0.2 3
UTI - Master Share-Income Option	63.9	0.83	1.8 3	7.9 9	0.3 9	6.2 1	0.02 7	0.3 9
UTI - Master Value Fund-Growth Option	51.2	0.23	0.1 3	3.6 6	0.4 6	8.6 9	0.06 3	0.6 1
UTI Balanced Fund-Growth	20.1	0.22	0.2 2	1.2 8	0.3 6	4.6 9	0.05 8	0.7 3
UTI Balanced Fund-Income	19.8	0.65	1.7 9	1.9 9	0.4 2	6.1 3	0.05 6	0.6 2
UTI- Liquid Fund-Cash Plan-Growth	65.4	0.42	1.5 6	5.6 5	0.4 9	4.3 4	0.07 4	0.4 5
UTI- Liquid Fund-Cash Plan-Income	69.3	0.39	0.9 3	2.5 6	0.7 3	3.2 9	0.05 6	0.5 1
HSBC Tax Saver Equity Fund - Dividend	82.1	0.78	0.2 8	1.6 9	0.7 5	5.5 3	0.02 3	0.1 9
HSBC Tax Saver Equity Fund - Growth	16.4	0.26	0.6 3	0.2 3	0.4 1	6.2 3	0.05 4	0.3 9
HSBC Gilt Fund - Dividend	58.9	0.53	0.3 8	2.1 4	0.3 1	3.8 4	0.04 3	0.6 4
HSBC Gilt Fund - Growth	91.2	0.83	0.2 9	1.6 5	0.4 3	4.9 3	0.05 5	0.5 2
HSBC Gilt Fund - Dividend - Weekly	52.4	0.32	1.3 2	6.8 5	0.5 5	7.3 6	0.04 4	0.6 7
HSBC Income Fund - Investment - Inst. - Growth	11.3	0.40	0.0 5	0.8 5	0.6 5	4.7 8	0.02 3	0.1 2

HSBC Income Fund - Investment - Regular - Dividend	16.5	0.46	0.2 1	3.5 5	0.6 1	2.9 1	0.02 5	0.2 8
ICICI Prudential Gilt Fund Treasury Plan PF Option	18.5	0.43	0.3 6	4.4 3	0.4 5	7.2 1	0.03 1	0.2 1
ICICI Prudential Gilt Fund-Investment-Dividend	41.5	0.18	0.5 5	6.8 2	0.4 7	2.9 6	0.03 8	0.4 1
ICICI Prudential Flexible Income Plan Regular- Growth	22.3	0.45	0.2 5	5.8 5	0.7 5	3.9 2	0.04 1	0.5 2
IDFC Tax Advantage (ELSS) Fund - Growth	28.4	0.46	0.1 8	5.9 9	0.3 8	6.8 4	0.02 8	0.1 2
IDFC Tax Saver (ELSS) Fund A DIVIDEND	22.1	0.57	0.2 1	4.8 9	0.4 8	8.4 5	0.02 1	0.1 8
IDFC Tax Saver (ELSS) Fund A GROWTH	47.8	0.48	0.5 8	6.2 8	0.5 8	5.4 2	0.03 2	0.1 7
BARODA PIONEER BALANCE FUND - Growth Plan	67.9	0.87	1.5 8	7.2 1	0.7 3	7.8 9	0.05 4	0.3 5
BARODA PIONEER BALANCE FUND-Dividend Plan	87.3	0.64	1.7 1	8.0 9	0.5 3	6.2 3	0.06 5	0.4 8
BARODA PIONEER GROWTH FUND-Dividend Plan	77	0.81	1.1 9	7.1	0.7 8	4.3 7	0.06 1	0.5 5
BARODA PIONEER GROWTH FUND-Growth Plan	65.3	0.67	1.0 8	5.8 9	0.8 4	3.4 2	0.05 8	0.4 8
BARODA PIONEER INCOME FUND-Dividend Plan	27.9	0.98	0.2 4	5.2 1	0.2 1	6.7 3	0.02 1	0.3 2
BARODA PIONEER INCOME FUND-Growth Plan	72	0.58	1.5 5	6.5 6	0.5 2	6.6 2	0.05 8	0.4 8
Franklin India Taxshield-Dividend	21.1	0.11	0.2 1	5.2 3	0.2 3	2.1 5	0.01 8	0.1 1
Franklin India Taxshield-Growth	82.2	0.34	1.5 4	7.8 9	0.2 7	3.3 8	0.06 9	0.6 3
FT India Balanced Fund-Dividend Plan	89.5	0.28	1.8 9	8.2 5	0.4 3	5.3 4	0.07 1	0.8 7

FT India Balanced Fund-Growth Plan	21.4	0.98	0.2 6	5.2 5	0.3 4	2.3 1	0.01 5	0.1 1
FT India Monthly Income Plan-Growth	54.6	0.99	0.4 5	4.5 6	0.6 6	3.5 3	0.04 8	0.3 8
Reliance Liquid Fund-Cash Plan-Dividend	35.3	0.56	0.2 2	2.3 6	0.4 6	4.6 6	0.03 8	0.5 6
Reliance Liquid Fund-Cash Plan-Growth	63.2	0.28	1.3 6	5.4 2	0.5 5	3.1 9	0.05 6	0.4 9
Reliance Monthly Income Plan-Growth Plan	89.2	0.65	1.8 9	8.1 2	0.6 8	4.6 5	0.07 8	0.6 5
Reliance Monthly Income Plan-Monthly Dividend Plan	99	0.92	1.9	8.9 1	0.3 7	3.6 6	0.08 5	0.6 7
Reliance Monthly Income Plan-Quarterly Dividend Plan	19.9	0.32	0.1 1	4.4 6	0.9 6	5.6 9	0.01 6	0.1 2
Reliance Gilt Securities Fund - Retail Plan-Dividend Option	42.5	0.25	0.2 3	3.6 3	0.5 3	3.4 4	0.03 8	0.3 2
Reliance Gilt Securities Fund - Retail Plan-Growth Option	31.5	0.42	0.1 8	2.2 8	0.2 4	2.5 1	0.02 9	0.2 2
Reliance Tax Saver (ELSS) Fund-Dividend Plan-Dividend Option	26.1	0.53	0.1 9	2.8 5	0.2 9	5.5 4	0.02 1	0.1 9
Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option	44	0.40	0.2 9	4.8 7	0.5 6	3.7 2	0.03 6	0.2 9
Reliance Growth Fund-Dividend Plan-(D)	56.3	0.51	0.8 4	5.6 9	0.4 2	2.3 5	0.02 1	0.2 2

Natex and NAVs data give us that HDFC Balanced Fund - Dividend Option, LICMF Balanced Fund-Growth, HSBC Gilt Fund – Growth, HDFC Income Fund-Dividend, SBI Magnum Income Fund-Dividend, UTI - Master Share-Income Option, HDFC Gilt Fund-Long Term-Growth, SBI Magnum Income Fund-Growth, UTI - Master Value Fund-Growth Option, HDFC Growth Fund - Dividend Option, HDFC Tax Saver-Growth Plan and LICMF Tax plan-Growth have been the strong performers than other funds in the market.

Table 4.26 Analysis based on Repurchase prices and ET Index

Name of the Schemes	Regression		b_{1i}		b_{2i}		Constant	
	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
HDFC Income Fund-Dividend	23.1	0.33	0.34	0.62	0.012	0.31	0.055	1.24
HDFC Income Fund-Growth	26.3	0.52	0.35	0.48	0.039	0.43	0.027	0.38
LICMF Growth Fund - Dividend Option	34.2	0.35	0.71	0.61	0.061	0.38	0.033	0.55
LICMF Growth Fund - Growth Option	26.4	0.42	0.44	0.72	0.067	0.26	0.079	0.71
SBI Magnum Income Fund-Dividend	56.7	0.62	0.42	0.53	0.057	0.58	0.036	0.49
SBI Magnum Income Fund-Growth	21.4	0.68	0.83	0.77	0.041	0.49	0.048	0.23
HSBC Income Fund - Investment - Inst. - Growth	37.2	0.38	0.31	0.44	0.022	0.38	0.023	0.17
HSBC Income Fund - Investment - Regular - Dividend	36.5	0.56	0.34	0.67	0.052	0.26	0.042	0.38
BARODA PIONEER INCOME FUND-Dividend Plan	39.2	0.53	0.62	0.62	0.026	0.79	0.053	0.61
BARODA PIONEER INCOME FUND-Growth Plan	54.2	0.42	0.41	0.45	0.031	0.56	0.035	0.49

Taking repurchase prices and ET Index, we get that SBI Magnum Income Fund-Dividend, BARODA PIONEER INCOME FUND-Growth Plan, SBI Magnum Income Fund-Growth, LIC MF Growth Fund - Growth Option and BARODA PIONEER INCOME FUND-Dividend Plan have been performing better than other funds. These funds have been able to show good returns depicting good market timing ability of the fund managers.

Table 4.27 Analysis based on Repurchase prices and Natex

Name of the Schemes	Regression		b_{1i}		b_{2i}		Constant	
	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
HDFC Income Fund-Dividend	37.9	0.49	0.24	0.49	0.54	2.75	0.029	0.33
HDFC Income Fund-Growth	51.8	0.36	0.53	0.86	0.31	2.35	0.053	0.84
LICMF Growth Fund - Dividend Option	37.5	0.33	0.59	0.36	0.71	5.54	0.045	0.62
LICMF Growth Fund - Growth Option	29.5	0.59	0.55	0.75	0.56	2.34	0.027	0.26
SBI Magnum Income Fund-Dividend	49.2	0.75	0.58	0.49	0.56	1.84	0.069	0.79
SBI Magnum Income Fund-Growth	36.8	0.81	0.46	0.42	0.87	2.57	0.038	0.75
HSBC Income Fund - Investment - Inst. - Growth	33.3	0.41	0.25	0.56	0.25	0.38	0.036	0.79
HSBC Income Fund - Investment - Regular - Dividend	33.9	0.62	0.53	0.48	0.67	1.31	0.025	0.25
BARODA PIONEER INCOME FUND-Dividend Plan	53.1	0.59	0.44	0.75	0.42	0.75	0.062	0.69
BARODA PIONEER INCOME FUND-Growth Plan	35.3	0.41	0.35	0.39	0.37	0.38	0.019	0.36

Repurchase prices of the funds and Natex show that HDFC Income Fund-Growth, HSBC Income Fund - Investment - Regular – Dividend, LICMF Growth Fund - Growth Option, HDFC Income Fund-Growth, LIC MF Growth Fund - Dividend Option, HSBC Income Fund - Investment - Inst. – Growth and SBI Magnum Income Fund-Growth have shown good records and show strong performance in the market.

Fabozzi and Francis Model (1979)

The below analysis has been done using Fabozzi and Francis (1979) methodology. For measurement of the market timing ability of the funds, following equation is used

$$R_{it} - R_{ft} = a_{1i} + a_{2i} D_t + b_{1i} D_t (R_{mt} - R_{ft}) + b_{2i} (R_{mt} - R_{ft}) + e_{it}$$

This analysis has used NAVs, market prices and repurchases prices of the funds and ET and Natex indices. The funds having positive and significant values show excess returns over the risk free return (in this case 91 day Treasury bills and 364 day Treasury bills have been taken for the study).

Table 4.28 Analysis based on Market prices and ET Index

Name of the Schemes	Regression		a _{2i}		b _{1i}		b _{2i}		Constant	
	F	R-Sq	a _{2i}	t	b _{1i}	t	b _{2i}	t	a _{1i}	t
HDFC Equity Fund - Dividend Option	43.4	0.67	0.055	0.23	0.67	0.56	1.23	0.22	0.077	0.69
HDFC Equity Fund - Growth Option	29.9	0.28	0.067	0.79	0.94	0.69	1.12	0.24	0.035	0.78
HDFC Index Fund-Nifty Plan	26.4	0.31	0.044	0.57	0.78	0.78	0.54	0.36	0.024	0.69
HSBC Equity Fund - Dividend	25.1	0.54	0.064	0.84	0.51	0.44	0.73	0.38	0.037	0.38
HSBC Equity Fund - Growth	42.8	0.36	0.038	0.21	0.49	0.65	0.36	0.45	0.052	0.83
HSBC Flexi Debt Fund-Inst. Monthly Dividend	39.4	0.39	0.029	0.37	0.61	0.36	1.35	0.59	0.025	0.37
HSBC Flexi Debt Fund-Reg.Growth	46.6	0.78	0.074	0.43	0.62	0.48	0.57	0.58	0.047	0.47
LICMF Index Fund-Nifty-Dividend	11.3	0.33	0.021	0.65	0.56	0.77	0.66	0.49	0.056	0.37
LICMF Index Fund-Nifty-Growth	15.9	0.36	0.059	0.21	0.72	0.34	0.39	0.36	0.033	0.49
SBI Debt Fund Series - 15 Months - 5 (09/03/2010)-DIVIDEND	46.1	0.63	0.029	0.39	0.52	0.59	1.26	0.75	0.073	0.56
SBI Debt Fund Series - 15 Months - 5 (09/03/2010)-GROWTH	44.3	0.51	0.078	0.57	0.73	0.63	0.37	0.57	0.048	0.63
UTI - Equity Fund-Growth Option	55.1	0.78	0.056	0.41	0.63	0.61	0.65	0.27	0.063	0.44
UTI - Equity Fund-Income Option	33.6	0.33	0.028	0.57	0.54	0.34	0.57	0.34	0.056	0.61

From above table, we get that HDFC Equity Fund - Dividend Option, HSBC Equity Fund Growth, HSBC Flexi Debt Fund-Reg.Growth, LIC MF Index Fund-Nifty-Dividend, HDFC Index Fund-Nifty Plan, SBI Debt Fund Series - 15 Months - 5 DIVIDEND and HDFC Equity Fund - Growth Option have been the strong performers in the market and have given better returns than other funds.

Table 4.29 Analysis based on Market prices and Natex

	Regression		a_{2i}		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	a_{2i}	t	b_{1i}	t	b_{2i}	t	a_{1i}	t
HDFC Equity Fund - Dividend Option	31.9	0.58	0.024	0.16	0.67	0.37	0.57	2.74	0.023	0.29
HDFC Equity Fund - Growth Option	35.4	0.54	0.075	1.73	0.52	0.78	0.28	1.31	0.051	0.35
HDFC Index Fund-Nifty Plan	57.4	0.48	0.057	1.18	0.91	0.51	0.43	2.18	0.038	0.57
HSBC Equity Fund - Dividend	47.3	0.33	0.076	0.78	0.55	0.24	0.21	3.56	0.053	0.76
HSBC Equity Fund - Growth	59.1	0.49	0.058	0.51	0.59	0.66	0.23	2.75	0.032	0.51
HSBC Flexi Debt Fund-Inst. Monthly Dividend	41.8	0.25	0.045	0.36	0.73	0.63	0.13	2.59	0.048	0.67
HSBC Flexi Debt Fund-Reg.Growth	25.8	0.35	0.049	0.73	0.57	0.47	0.59	2.11	0.031	0.77
LICMF Index Fund-Nifty-Dividend	32.9	0.51	0.064	0.55	0.83	1.28	0.32	1.31	0.024	0.87
LICMF Index Fund-Nifty-Growth	36.1	0.75	0.059	0.31	0.42	0.53	0.52	4.37	0.076	0.69
SBI Debt Fund Series - 15 Months - 5 DIVIDEND	38.3	0.38	0.073	1.88	0.37	0.78	0.34	0.57	0.043	0.44
SBI Debt Fund Series - 15 Months - 5 GROWTH	23.5	0.56	0.057	0.45	0.47	0.45	0.64	4.54	0.023	0.21
UTI - Equity Fund-Growth Option	44.6	0.39	0.054	0.39	0.63	1.47	0.53	5.78	0.056	0.52
UTI - Equity Fund-Income Option	38.3	0.44	0.073	1.64	0.59	0.44	0.34	4.61	0.073	0.81

Using market prices and Natex, we find that HSBC Equity Fund – Growth, HDFC Index Fund-Nifty Plan, HDFC Equity Fund - Growth Option, SBI Debt Fund Series - 15 Months - 5 DIVIDEND, UTI - Equity Fund-Income Option, LICMF Index Fund-Nifty-Dividend, UTI - Equity Fund-Growth Option, SBI Debt Fund Series - 15 Months - 5 GROWTH, LICMF Index Fund-Nifty-Growth, LICMF Index Fund-Nifty-Dividend and HSBC Equity Fund – Dividend have performed well in the market.

Table 4.30 Analysis based on NAVs and ET Index

	Regression		a_{2i}		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	a_{2i}	t	b_{1i}	t	b_{2i}	t	a_{1i}	t
HDFC Balanced Fund - Dividend Option	27.81	0.52	0.052	1.74	0.21	2.25	0.75	1.58	0.025	0.23
HDFC Growth Fund - Dividend Option	31.5	0.23	0.023	0.53	0.28	3.85	0.53	1.63	0.029	0.25
HDFC Growth Fund - Growth Option	12.36	0.87	0.053	0.51	0.69	1.89	0.41	0.33	0.012	0.10
HDFC Income Fund-Dividend	18.99	0.87	0.028	1.15	0.71	1.99	0.26	0.38	0.019	0.12
HDFC Income Fund-Growth	26.32	0.64	0.036	0.58	0.55	2.25	0.56	0.67	0.027	0.23
HDFC Gilt Fund-Long Term-Dividend	25.48	0.75	0.051	0.62	0.78	2.12	0.34	0.29	0.019	0.13
HDFC Gilt Fund-Long Term-Growth	69.23	0.66	0.029	0.91	1.58	5.66	0.32	1.97	0.058	0.47
HDFC Gilt Fund-Short Term-Dividend	32.58	0.87	0.048	0.84	0.32	3.25	0.44	0.42	0.038	0.22
HDFC Gilt Fund-Short Term-Growth	46.58	0.92	0.065	1.21	0.59	3.65	0.58	1.57	0.041	0.38
HDFC TaxSaver-Dividend Plan	13.36	0.65	0.065	0.35	0.65	1.25	0.35	3.18	0.011	0.11
HDFC TaxSaver-Growth Plan	93.26	0.21	0.023	1.49	1.78	7.87	0.63	3.66	0.085	0.69
LICMF Balanced Fund-Dividend	26.77	0.35	0.039	0.59	0.35	2.81	0.52	2.66	0.025	0.21
LICMF Balanced Fund-Growth	53.28	0.42	0.036	0.97	0.58	4.85	0.65	0.54	0.051	0.49
LICMF Growth Fund - Dividend Option	29.22	0.55	0.025	0.54	0.24	2.11	0.86	1.61	0.028	0.22
LICMF Growth Fund - Growth Option	63.52	0.56	0.074	1.37	1.32	5.69	0.66	0.94	0.056	0.53
LICMF Tax plan-Dividend	98.51	0.99	0.059	1.88	1.88	7.82	0.31	0.24	0.091	0.89
LICMF Tax plan-Growth	96.54	0.82	0.065	1.49	1.92	7.9	0.84	1.65	0.089	0.78
LICMF Liquid Fund-Dividend	53.21	0.56	0.035	0.84	0.68	4.56	0.42	0.34	0.048	0.43
LICMF Liquid Fund-Growth	98.64	0.54	0.055	1.16	1.85	7.52	0.61	1.23	0.089	0.78
SBI Magnum Balanced Fund - Dividend	18.21	0.32	0.054	0.37	0.88	2.31	0.56	0.56	0.015	0.11
SBI Magnum Balanced Fund - Growth	71.32	0.70	0.046	1.52	1.54	6.25	0.51	0.74	0.062	0.58
SBI Magnum Income Fund-Dividend	65.95	0.61	0.062	0.79	1.32	4.85	0.36	0.35	0.068	0.53
SBI Magnum Income Fund-Growth	54.89	0.54	0.052	1.39	1.28	6.25	0.48	0.81	0.045	0.42
SBI TAX ADVANTAGE FUND - SERIES I - DIVIDEND	93.26	0.77	0.046	1.23	1.87	8.89	0.32	0.32	0.082	0.69
SBI TAX ADVANTAGE FUND - SERIES I - GROWTH	58.91	0.89	0.036	0.74	3.56	5.56	0.21	0.16	0.048	0.41
UTI - Master Share-Income Option	69.45	0.44	0.065	1.68	1.23	6.65	0.34	0.46	0.058	0.56
UTI - Master Value Fund-Growth Option	89.46	0.34	0.051	0.23	1.36	7.25	0.66	1.27	0.078	0.72
UTI Balanced Fund-Growth	36.25	0.22	0.023	0.36	0.25	2.89	0.28	0.13	0.028	0.21

UTI Balanced Fund-Income	45.54	0.12	0.065	0.47	0.36	3.96	0.32	0.23	0.038	0.35
UTI- Liquid Fund-Cash Plan-Growth	13.78	0.18	0.023	0.23	0.28	1.32	0.47	0.64	0.018	0.11
UTI- Liquid Fund-Cash Plan-Income	63.09	0.32	0.053	0.51	1.69	6.02	0.65	1.51	0.042	0.36
HSBC Tax Saver Equity Fund - Dividend	55.12	0.51	0.054	1.46	1.02	4.58	0.76	1.56	0.049	0.38
HSBC Tax Saver Equity Fund - Growth	19.13	0.49	0.025	0.17	0.9	1.21	0.74	1.75	0.021	0.18
HSBC Gilt Fund - Dividend	55.01	0.26	0.053	0.39	1.2	4.58	0.34	0.64	0.049	0.35
HSBC Gilt Fund - Growth	13.07	0.21	0.058	0.31	0.5	1.13	0.25	0.38	0.018	0.15
HSBC Gilt Fund - Dividend - Weekly	51.9	0.74	0.041	0.33	1.3	4.65	0.65	1.23	0.038	0.28
HSBC Income Fund - Investment - Inst. - Growth	63.44	0.57	0.037	1.51	1.44	5.68	0.51	0.74	0.056	0.41
HSBC Income Fund - Investment - Regular - Dividend	72.11	0.43	0.057	1.48	1.58	6.52	0.48	0.46	0.065	0.62
ICICI Prudential Gilt Fund Treasury Plan PF Option	17.5	0.26	0.038	0.25	0.36	1.26	0.48	0.66	0.016	0.18
ICICI Prudential Gilt Fund-Investment-Dividend	13.09	0.87	0.051	0.21	0.9	1.11	0.38	0.84	0.011	0.05
ICICI Prudential Flexible Income Plan Regular- Growth	41.77	0.66	0.064	0.52	0.25	3.58	0.46	0.74	0.038	0.28
IDFC Tax Advantage (ELSS) Fund - Growth	32.41	0.61	0.041	0.61	0.12	0.36	0.64	0.75	0.028	0.22
IDFC Tax Saver (ELSS) Fund A DIVIDEND	28.5	0.54	0.077	1.35	0.32	2.52	0.31	0.28	0.019	0.14
IDFC Tax Saver (ELSS) Fund A GROWTH	25.1	0.36	0.057	0.46	0.36	2.28	0.36	0.25	0.021	0.19
BARODA PIONEER BALANCE FUND -Growth Plan	69	0.37	0.079	1.45	1.67	5.63	0.32	0.63	0.059	0.55
BARODA PIONEER BALANCE FUND-Dividend Plan	68.11	0.23	0.023	1.39	1.23	6.21	0.45	0.73	0.057	0.48
BARODA PIONEER GROWTH FUND-Dividend Plan	24.1	0.25	0.053	0.22	0.13	2.87	0.79	1.47	0.031	0.29
BARODA PIONEER GROWTH FUND-Growth Plan	43.6	0.26	0.065	0.33	0.52	3.39	0.79	0.94	0.069	0.58
BARODA PIONEER INCOME FUND-Dividend Plan	66.9	0.11	0.043	1.56	1.25	5.56	0.53	0.31	0.071	0.69
BARODA PIONEER INCOME FUND-Growth Plan	49.9	0.21	0.046	1.39	0.39	4.25	0.63	0.94	0.023	0.21
Franklin India Taxshield-Dividend	70.11	0.28	0.058	1.63	1.53	6.59	0.28	0.87	0.068	0.55

Franklin India Taxshield-Growth	65.89	0.25	0.068	0.32	1.12	5.55	0.62	1.22	0.057	0.51
FT India Balanced Fund-Dividend Plan	76.34	0.76	0.079	1.29	1.59	6.58	0.35	0.62	0.039	0.29
FT India Balanced Fund-Growth Plan	41.33	0.76	0.022	0.13	0.26	4.89	0.66	0.29	0.043	0.44
FT India Monthly Income Plan-Growth	16.1	0.23	0.048	0.31	0.1	1.32	0.89	1.41	0.037	0.27
Reliance Liquid Fund-Cash Plan-Dividend	19.86	0.24	0.021	0.23	0.03	1.56	0.74	1.12	0.024	0.21
Reliance Liquid Fund-Cash Plan-Growth	61.1	0.92	0.084	1.88	1.23	5.36	0.86	1.44	0.073	0.66
Reliance Monthly Income Plan-Growth Plan	25.12	0.55	0.054	0.95	0.36	2.22	0.52	1.35	0.024	0.22
Reliance Monthly Income Plan-Monthly Dividend Plan	30.06	0.89	0.066	1.38	0.25	3.1	0.54	0.46	0.028	0.18
Reliance Monthly Income Plan-Quarterly Dividend Plan	54.55	0.70	0.013	0.74	0.58	4.58	0.43	0.25	0.025	0.21
Reliance Gilt Securities Fund - Retail Plan-Dividend Option	51.3	0.91	0.051	1.39	0.45	4.55	0.84	0.78	0.066	0.56
Reliance Gilt Securities Fund - Retail Plan-Growth Option	17.31	0.16	0.034	0.36	0.11	1.38	0.35	0.84	0.024	0.19
Reliance Tax Saver (ELSS) Fund-Dividend Plan-Dividend Option	72.18	0.85	0.032	1.74	1.25	6.56	0.31	0.21	0.068	0.58
Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option	65.73	0.63	0.035	0.96	1.32	5.69	0.61	1.35	0.042	0.48
Reliance Growth Fund-Dividend Plan-(D)	30.44	0.44	0.041	0.45	0.28	2.34	0.62	1.31	0.066	0.56

Using NAVs of the funds and ET Index, we find that SBI TAX ADVANTAGE FUND - SERIES I – DIVIDEND, LICMF Liquid Fund-Growth, HDFC TaxSaver-Growth Plan, HDFC Balanced Fund - Dividend Option, HSBC Income Fund - Investment - Regular – Dividend, LICMF Tax plan-Dividend, LICMF Liquid Fund-Growth, UTI - Master Value Fund-Growth Option and HDFC TaxSaver-Dividend Plan have recorded better returns than other funds.

Table 4.31 Analysis based on NAVs and Natex

	Regression		a_{2i}		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	a_{2i}	t	b_{1i}	t	b_{2i}	t	a_{1i}	t
HDFC Balanced Fund - Dividend Option	52.5	0.9	0.024	0.29	0.27	0.31	1.24	4.21	0.039	0.28
HDFC Growth Fund - Dividend Option	43.6	0.41	0.071	1.84	0.39	0.75	0.27	3.89	0.043	0.22
HDFC Growth Fund - Growth Option	17.5	0.70	0.089	1.57	0.36	0.23	0.12	1.29	0.024	0.18
HDFC Income Fund-Dividend	65.7	0.06	0.026	0.23	0.88	1.15	1.39	5.67	0.068	0.59
HDFC Income Fund-Growth	85.4	0.77	0.074	1.21	0.71	1.32	1.65	7.22	0.086	0.77
HDFC Gilt Fund-Long Term-Dividend	32.2	0.84	0.057	0.94	0.34	0.46	0.32	2.36	0.031	0.25
HDFC Gilt Fund-Long Term-Growth	61.1	0.69	0.089	1.24	0.61	1.54	1.46	5.88	0.042	0.36
HDFC Gilt Fund-Short Term-Dividend	66.9	0.14	0.028	0.67	0.32	0.46	1.65	5.62	0.047	0.41
HDFC Gilt Fund-Short Term-Growth	51	0.52	0.037	0.25	0.86	1.32	0.28	4.23	0.066	0.54
HDFC TaxSaver-Dividend Plan	85.4	0.52	0.076	1.55	0.42	0.78	1.69	7.99	0.069	0.58
HDFC TaxSaver-Growth Plan	69.3	0.24	0.036	0.38	0.67	0.46	1.38	5.25	0.058	0.53
LICMF Balanced Fund-Dividend	72.2	0.86	0.064	1.54	0.63	0.39	1.58	6.36	0.069	0.59
LICMF Balanced Fund-Growth	50	0.76	0.057	0.71	0.71	1.72	0.24	4.12	0.042	0.38
LICMF Growth Fund - Dividend Option	55.6	0.90	0.078	1.52	0.76	1.48	0.28	4.56	0.041	0.33
LICMF Growth Fund - Growth Option	23	0.13	0.053	0.61	0.39	0.77	0.18	1.33	0.018	0.15
LICMF Tax plan-Dividend	51.6	0.68	0.083	1.69	0.73	1.37	1.25	4.63	0.038	0.23
LICMF Tax plan-Growth	67.4	0.25	0.032	0.23	0.77	1.25	1.38	5.62	0.058	0.48
LICMF Liquid Fund-Dividend	33.5	0.56	0.048	0.58	0.25	0.34	0.28	2.21	0.061	0.65
LICMF Liquid Fund-Growth	89.3	0.22	0.068	1.45	0.74	1.21	1.56	7.89	0.078	0.69
SBI Magnum Balanced Fund - Dividend	75.1	0.21	0.081	1.23	0.55	0.36	1.58	6.54	0.089	0.75
SBI Magnum Balanced Fund - Growth	60.3	0.44	0.069	0.91	0.57	1.51	1.23	5.32	0.055	0.43
SBI Magnum Income Fund-Dividend	61.3	0.80	0.046	0.64	0.39	0.23	1.18	5.02	0.045	0.41
SBI Magnum Income Fund-Growth	11.3	0.03	0.032	0.62	0.78	1.42	0.08	1.05	0.028	0.19
SBI TAX ADVANTAGE FUND - SERIES I - DIVIDEND	13.5	0.06	0.076	0.45	0.51	0.36	0.11	1.18	0.021	0.16
SBI TAX ADVANTAGE FUND - SERIES I - GROWTH	28.7	0.12	0.078	1.57	0.75	1.42	0.19	2.21	0.033	0.21
UTI - Master Share-Income Option	55.2	0.75	0.083	1.13	0.85	1.23	0.21	4.23	0.048	0.33
UTI - Master Value Fund-Growth Option	55.6	0.39	0.037	0.29	0.41	1.34	0.36	4.18	0.051	0.45
UTI Balanced Fund-Growth	41.3	0.36	0.036	0.65	0.76	1.42	0.41	3.23	0.039	0.35
UTI Balanced Fund-Income	57.6	0.80	0.043	0.68	0.64	0.76	0.48	4.89	0.048	0.36
UTI- Liquid Fund-Cash Plan-Growth	73.6	0.99	0.041	0.49	0.39	0.21	1.62	6.52	0.069	0.52
UTI- Liquid Fund-Cash Plan-Income	26	0.33	0.063	0.63	0.57	0.43	0.23	1.28	0.029	0.18

HSBC Tax Saver Equity Fund - Dividend	56.1	0.09	0.036	0.35	0.44	0.36	0.48	4.56	0.048	0.39
HSBC Tax Saver Equity Fund - Growth	25.4	0.51	0.023	0.24	0.32	0.22	0.32	1.99	0.032	0.29
HSBC Gilt Fund - Dividend	12.3	0.27	0.063	0.78	0.53	0.39	0.13	1.09	0.016	0.11
HSBC Gilt Fund - Growth	18.1	0.26	0.036	0.31	0.39	0.28	0.18	1.21	0.033	0.23
HSBC Gilt Fund - Dividend - Weekly	21.4	0.48	0.061	1.57	0.78	1.35	0.19	1.36	0.029	0.22
HSBC Income Fund - Investment - Inst. - Growth	32.1	0.51	0.057	0.45	0.48	0.25	0.22	2.22	0.026	0.15
HSBC Income Fund - Investment - Regular - Dividend	83.1	0.91	0.046	0.38	0.32	0.44	1.72	7.65	0.089	0.78
ICICI Prudential Gilt Fund Treasury Plan PF Option	25.6	0.38	0.036	0.22	0.49	0.31	0.15	2.35	0.035	0.28
ICICI Prudential Gilt Fund-Investment-Dividend	19.1	0.18	0.078	1.56	0.42	0.43	0.11	1.28	0.021	0.19
ICICI Prudential Flexible Income Plan Regular- Growth	24.0	0.36	0.063	0.98	0.53	0.37	0.18	2.36	0.019	0.13
IDFC Tax Advantage (ELSS) Fund - Growth	44.7	0.52	0.036	0.25	0.57	0.75	0.38	2.41	0.038	0.29
IDFC Tax Saver (ELSS) Fund A DIVIDEND	51.0	0.65	0.084	1.25	0.65	0.61	0.42	4.58	0.065	0.48
IDFC Tax Saver (ELSS) Fund A GROWTH	55	0.66	0.084	1.32	0.78	1.51	0.48	4.99	0.069	0.63
BARODA PIONEER BALANCE FUND - Growth Plan	23.6	0.47	0.037	0.33	0.46	0.24	0.12	2.05	0.014	0.10
BARODA PIONEER BALANCE FUND-Dividend Plan	28.1	0.36	0.023	0.26	0.85	1.54	0.18	2.33	0.023	0.21
BARODA PIONEER GROWTH FUND-Dividend Plan	18.2	0.22	0.061	1.25	0.69	0.51	0.19	1.54	0.022	0.18
BARODA PIONEER GROWTH FUND-Growth Plan	28.2	0.31	0.037	0.21	0.78	1.39	0.23	2.23	0.035	0.29
BARODA PIONEER INCOME FUND-Dividend Plan	35.1	0.41	0.078	1.58	0.73	1.26	0.3	2.89	0.047	0.45
BARODA PIONEER INCOME FUND-Growth Plan	41.1	0.56	0.051	0.65	0.59	0.76	0.35	3.65	0.038	0.26
Franklin India Taxshield-Dividend	49	0.56	0.031	0.21	0.44	0.54	0.39	3.89	0.045	0.39
Franklin India Taxshield-Growth	71.3	0.87	0.023	1.54	0.39	0.23	1.56	6.53	0.069	0.55
FT India Balanced Fund-Dividend Plan	10	0.05	0.045	0.69	0.57	0.45	0.08	0.89	0.005	0.01
FT India Balanced Fund-Growth Plan	12.3	0.27	0.069	0.78	0.71	1.37	0.1	1.23	0.011	0.11
FT India Monthly Income Plan-Growth	78.5	0.81	0.062	1.37	0.69	1.66	1.28	6.85	0.069	0.52

Reliance Liquid Fund-Cash Plan-Dividend	81.0	0.97	0.036	0.61	0.52	0.76	1.39	7.58	0.078	0.64
Reliance Liquid Fund-Cash Plan-Growth	37.0	0.42	0.063	0.75	0.86	1.63	0.32	3.69	0.025	0.21
Reliance Monthly Income Plan-Growth Plan	23.1	0.36	0.042	0.55	0.35	0.22	0.12	2.85	0.022	0.12
Reliance Monthly Income Plan-Monthly Dividend Plan	74.2	0.82	0.026	1.23	0.95	1.25	1.58	6.47	0.061	0.58
Reliance Monthly Income Plan-Quarterly Dividend Plan	87.3	0.98	0.072	1.58	0.39	0.32	1.58	7.99	0.078	0.63
Reliance Gilt Securities Fund - Retail Plan-Dividend Option	42.1	0.54	0.021	0.22	0.81	1.62	0.26	3.66	0.032	0.25
Reliance Gilt Securities Fund - Retail Plan-Growth Option	21	0.32	0.061	0.38	0.51	0.27	0.28	1.28	0.018	0.15
Reliance Tax Saver (ELSS) Fund-Dividend Plan-Dividend Option	78.9	0.88	0.051	0.44	0.21	0.57	1.82	1.99	0.058	0.43
Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option	60.5	0.70	0.072	1.27	0.72	0.41	1.06	5.65	0.059	0.42
Reliance Growth Fund-Dividend Plan-(D)	36.9	0.49	0.069	0.35	0.57	0.87	0.26	2.56	0.052	0.38

Using NAVs and Natex, we get that HDFC Income Fund-Growth, LICMF Liquid Fund-Growth, HDFC Growth Fund - Dividend Option, SBI TAX ADVANTAGE FUND - SERIES I – GROWTH, HSBC Gilt Fund - Dividend – Weekly, LICMF Balanced Fund-Growth, FT India Monthly Income Plan-Growth, HDFC Income Fund-Growth, HDFC TaxSaver-Dividend Plan, HSBC Income Fund - Investment - Regular – Dividend and SBI Magnum Balanced Fund – Dividend have shown good records in the market.

Table 4.32 Analysis based on Repurchase prices and ET Index

Name of the Schemes	Regression		a2i		b1i		b2i		Constant	
	F	R-Sq	a2i	t	b1i	t	b2i	t	a1i	t
HDFC Income Fund-Dividend	47.3	0.57	0.034	0.67	0.25	0.39	0.32	0.94	0.015	0.31
HDFC Income Fund-Growth	41.9	0.45	0.077	0.73	0.49	0.83	0.62	1.32	0.024	0.45
LICMF Growth Fund - Dividend Option	35.1	0.51	0.067	0.93	0.31	0.48	0.54	0.89	0.057	1.26
LICMF Growth Fund - Growth Option	23.9	0.37	0.015	0.54	0.35	0.61	0.35	0.65	0.025	0.38

SBI Magnum Income Fund-Dividend	24.4	0.59	0.042	0.75	0.52	0.33	0.42	0.34	0.044	1.18
SBI Magnum Income Fund-Growth	66.4	0.64	0.038	0.83	0.21	0.29	0.35	0.23	0.031	0.68
HSBC Income Fund - Investment - Inst. - Growth	38.6	0.58	0.076	0.47	0.38	0.54	0.47	0.58	0.064	0.85
HSBC Income Fund - Investment - Regular - Dividend	21.6	0.25	0.031	0.64	0.26	0.42	0.44	0.32	0.084	0.49
BARODA PIONEER INCOME FUND-Dividend Plan	42.5	0.64	0.064	0.61	0.54	0.54	0.56	0.78	0.047	0.61
BARODA PIONEER INCOME FUND-Growth Plan	33.5	0.47	0.063	0.45	0.23	0.57	0.73	1.49	0.035	0.25

Repurchase prices of the funds and ET Index has shown that HDFC Income Fund-Dividend, BARODA PIONEER INCOME FUND-Dividend Plan, SBI Magnum Income Fund-Growth, LICMF Growth Fund - Dividend Option, HDFC Income Fund-Growth, BARODA PIONEER INCOME FUND-Growth Plan, SBI Magnum Income Fund-Dividend and LICMF Growth Fund - Dividend Option have strongly performed in the market.

Table 4.33 Analysis based on Repurchase prices and Natex

Name of the Schemes	Regression		a_{2i}		b_{1i}		b_{2i}		Constant	
	F	R-Sq	a_{2i}	t	b_{1i}	t	b_{2i}	t	a_{1i}	t
HDFC Income Fund-Dividend	26.7	0.63	0.035	0.7	0.51	0.26	0.62	0.23	0.051	0.73
HDFC Income Fund-Growth	23.8	0.38	0.063	0.7	0.32	0.39	0.28	0.46	0.044	0.61
LICMF Growth Fund - Dividend Option	19.7	0.43	0.049	0.9	0.56	0.41	0.38	0.54	0.025	0.55
LICMF Growth Fund - Growth Option	28.7	0.38	0.073	0.6	0.42	0.49	0.68	0.64	0.044	0.62
SBI Magnum Income Fund-Dividend	32.5	0.57	0.067	0.4	0.49	0.56	0.37	0.23	0.059	0.39
SBI Magnum Income Fund-Growth	48.3	0.39	0.039	0.8	0.73	0.63	0.94	0.57	0.045	0.49

HSBC Income Fund - Investment - Inst. - Growth	38.8	0.62	0.055	0.7	0.54	0.51	0.26	0.25	0.069	0.36
HSBC Income Fund - Investment - Regular - Dividend	21.7	0.26	0.064	0.5	0.64	0.39	0.67	0.51	0.047	0.64
BARODA PIONEER INCOME FUND- Dividend Plan	26.2	0.38	0.057	0.4	0.91	0.44	0.56	0.64	0.025	0.35
BARODA PIONEER INCOME FUND- Growth Plan	21.6	0.44	0.027	0.4	0.35	0.23	0.51	0.57	0.038	0.27

Above table shows the analysis based on repurchase prices and Natex and we find that SBI Magnum Income Fund-Growth, LICMF Growth Fund - Dividend Option, HDFC Income Fund-Growth, BARODA PIONEER INCOME FUND-Dividend Plan HSBC Income Fund - Investment - Inst. – Growth and HDFC Income Fund-Dividend have performed better than other funds.

4.6 Consistency of the performance of the funds

From all the above analysis tables, we can say that SBI Magnum, HDFC Growth fund both dividend and growth options, LIC Tax plans and UTI Master share have been consistently performing well over the years taken for the study. α and β of all these funds have been positive and significant for the years studied. The returns of these funds have been better than other funds.

The performance might have dwindled when recession hit the market; still the returns have been better than other funds. As mutual funds have been considered as a safer mode of investment, thus the investment did not decline significantly in this crisis period also.

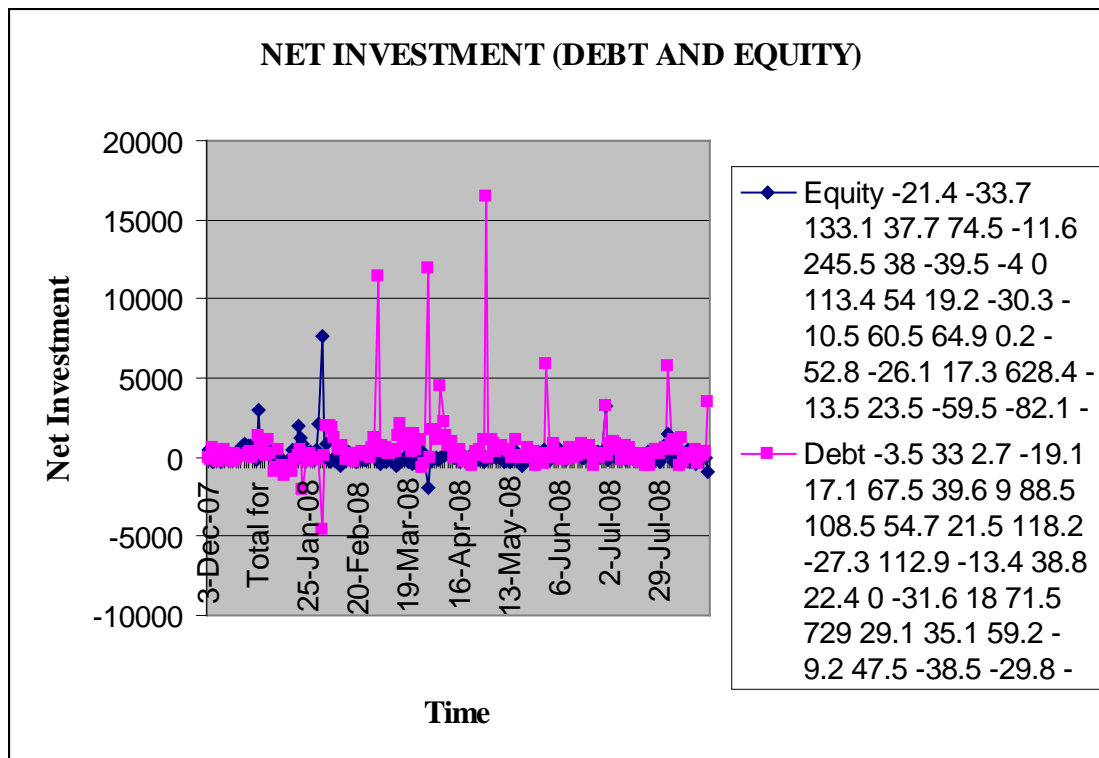
The results show that performance of the funds have been consistent for the years chosen for the study; though the performance has been recording good returns but it fell down as compared to earlier years after recession hit the market.

As the mutual funds have been considered to be a preferred mode of investment due to its less risk factor and steady market, that's the reason it could hold its place when markets started deteriorating. α and β of most of the funds have been found out to be significant

4.7 Performance of the equity funds and debt funds

The performance of the equity funds and debt funds has been analyzed graphically. The data on equity and debt has been collected on daily basis from January 2000 to August 2008. We find that investment in debt is more than equity in almost all the years. The below graphs and analysis show that preferred pattern of investment (either in debt or equity).

Figure 4.1



Y-axis - Values (in crore)

X-axis - 03.01.2000 to 21.05.2008

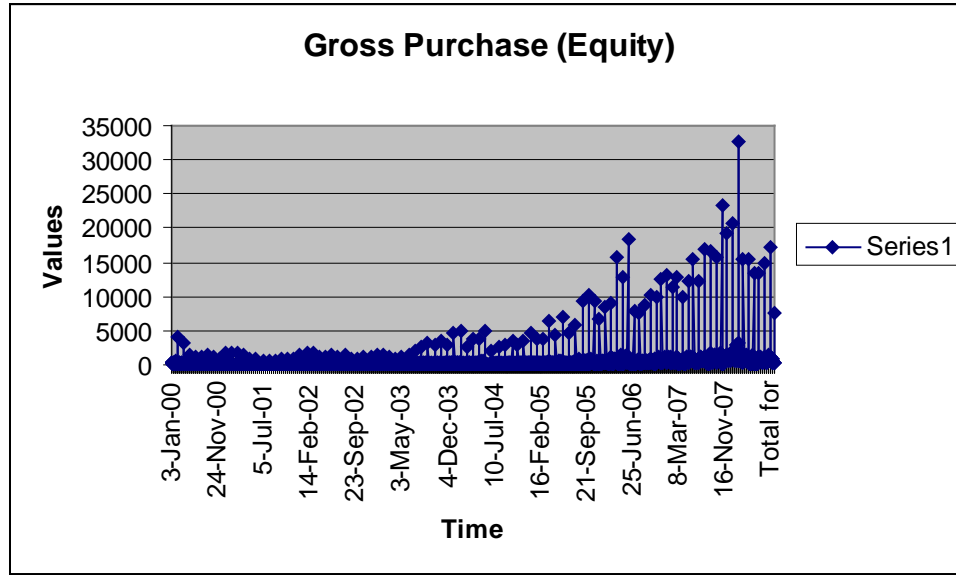
Figure 4.1 shows the net investment (Gross Purchase- Gross Sales) of Equity and debt in mutual fund for the period from 03.01.2000 to 21.08.2008. The graph shows that there is always more investment in debt than equity. The very reason is that as we know mutual fund diversify risk into different sectors and investment in mutual fund represents lesser risk than equity market.

Hence, the investment in the debt is more than the equity in most of the cases. It's not necessary that investment in debt is always more than the investment in equity. It depends on the market condition, nature and characteristics of the mutual fund. If one investor is investing in more risky mutual funds then in such cases the investment in the equity may be higher than debt because generally the return from the equity is more than debt instruments.

One of the important observations from the graph is that in the initial years the graph is stable i.e. the investment over the periods follow the same pattern but during 2007 onwards net investment on equity and debt is not stable as compared to the earlier period. The reason is that is due the recession in the international market. The fall of housing prices in the international market forces the economic slowdown in the international market. The very reason for the decline in the housing prices was due to sub prime lending.

As a result most on the mutual funds and hedge funds suffer a huge loss in the international market. This forces the FIIs to take back their money which they have invested in the Indian Market. This results in the decline the equity share prices in the Indian market. As result the prices of the mutual funds decline in the recent times, this gives rise to uncertainty in the market and forces the portfolio manager to alter their portfolio to tackle the situation.

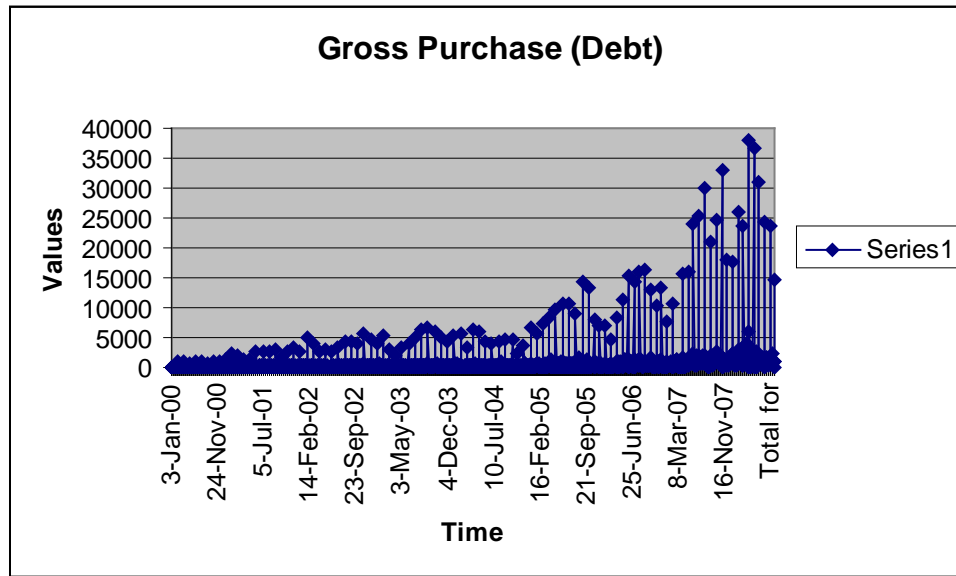
Figure 4.2



Y axis – Values (in crore)

X axis –03.01.2000 to 21.05.2008

Figure 4.3



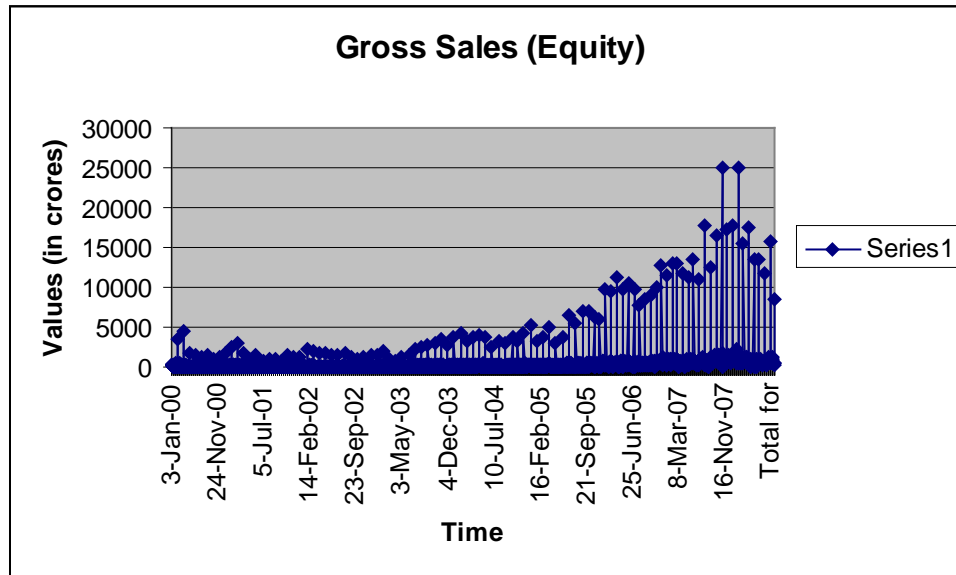
Y axis – Values (in crores)

X axis –03.01.2000 to 21.05.2008

Analysis on Gross Purchase on Equity and Debt

The figures 4.2 and 4.3 show the amount of gross purchase on equity and debt. This graph supported the earlier graph on net investment. Similarly, figures 4.4 and 4.5 show gross sales on equity and debt respectively.

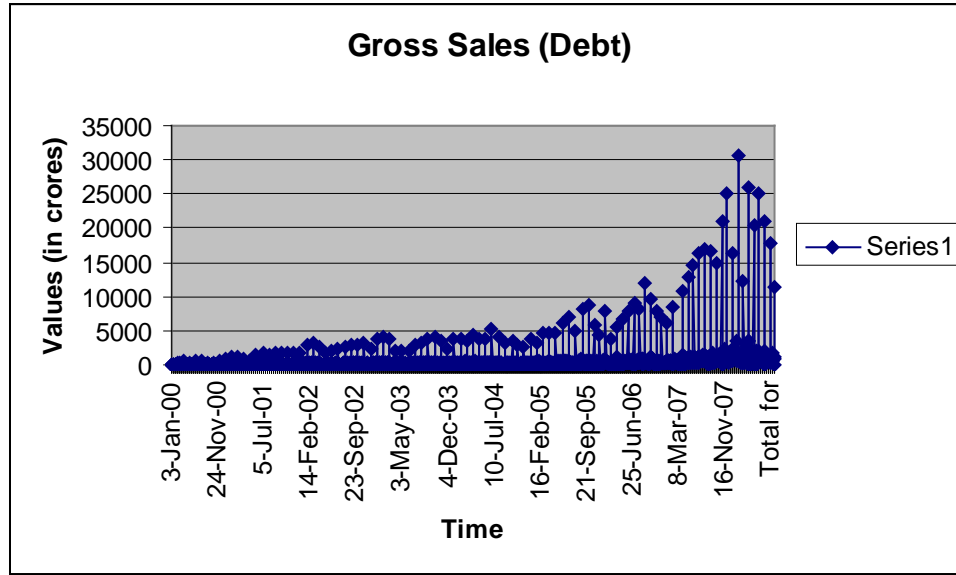
Figure 4.4



Y axis – Values (in crores)

X axis – 03.01.2000 to 21.05.2008

Figure 4.5

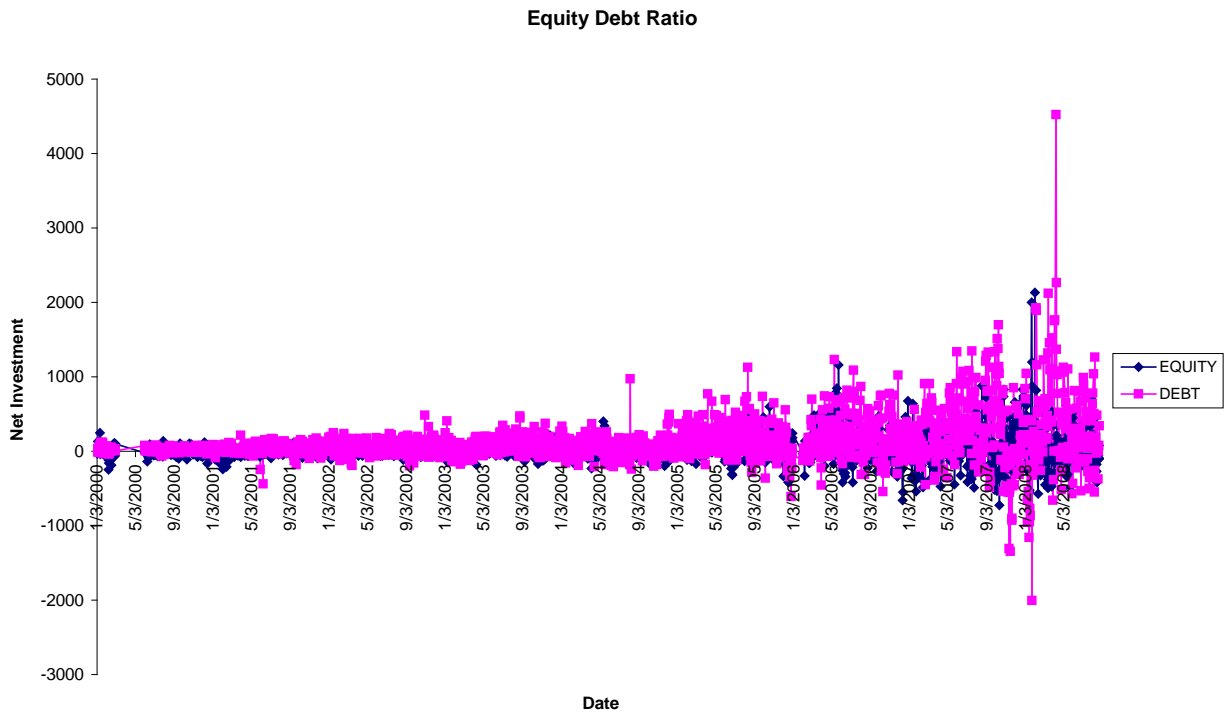


Y axis – Values (in crores)

X axis –03.01.2000 to 21.05.2008

The study computed the debt-equity ratio on a daily and monthly basis. In beginning of the date period the amount of investment was small. But as the time progress the amount of investment increased significantly. The investment on debt was more than the equity in most of the time period. It is clear from the debt-equity ratio (Figure 4.6).

Figure 4.6



Y axis – Values (in crores)

X axis –03.01.2000 to 21.05.2008

4.8 Conclusion

The analysis results tell that not much funds have performed well in the market as the results have come out to be positive but not significant in most cases. Though the returns fall down after economy slow down, overall returns have come out to be positive. SBI Magnum, HDFC Income & Growth funds, LIC MF, UTI Master Share and many times ICICI, Bank of Baroda, FT funds have been consistent in reaping better returns than other funds. The better performance of the funds indicates the quality of the management and the accurate predictions made by the managers at the right time and vice-versa. The schemes which give higher returns involve higher risks also.

CHAPTER – V

ANALYSIS RESULTS (Close Ended Funds)

5.1 Analysis Results

This chapter deals with the analysis results of close ended funds using the methodologies (described in Chapter 3). Each fund's NAVs, market prices and repurchase prices have been taken for the study and the indices selected for the study are ET Index, Natex. The analysis has been done for monthly returns.

5.2 Returns of the funds

The first objective of the thesis is to find out the adjusted returns of the funds and for this following equation has been used:

$$R_{it} - R_f = a_i + b_i (R_{mt} - R_f) + e_{it}$$

The analysis has taken NAVs, market prices and repurchases prices of the close ended funds and has been judged against the market indices ET Index and Natex.

Table 5.1 Analysis based on Market prices and ET Index

Name of the Schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND	51.2	0.47	0.58	1.21	0.021	0.39
SBI CAPITAL PROTECTION ORIENTED FUND - I Growth	42.6	0.73	0.46	2.51	0.042	0.57
HSBC Interval Fund - Plan III - Regular - Dividend	37.3	0.49	0.52	2.22	0.057	0.63
HSBC Interval Fund - Plan III - Regular - Growth	31.8	0.62	0.75	1.65	0.064	0.53
LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION	41.9	0.53	0.67	1.27	0.052	0.61
LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION	54.1	0.62	0.38	0.75	0.056	0.73
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Dividend	25.6	0.39	0.37	0.89	0.045	0.58
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth	37.3	0.35	0.49	0.58	0.019	0.37
LICMF TOP 100 FUND - DIVIDEND OPTION	52.6	0.61	0.73	1.41	0.018	0.19
LICMF TOP 100 FUND - GROWTH OPTION	52.1	0.79	0.53	1.45	0.053	0.47

From table 5.1, we find that the funds which give higher adjusted returns are SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, HSBC Interval Fund - Plan III - Regular – Dividend, LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION and LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION. This shows that these funds are better performing funds in the market using market prices and ET Index.

Table 5.2 Analysis based on Market prices and Natex

	Regression		b_i		Constant	
Name of the schemes	F	R-Sq	b_i	t	a_i	t
SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND	24.9	0.23	0.56	1.25	0.023	0.13
SBI CAPITAL PROTECTION ORIENTED FUND - I Growth	35.4	0.32	0.45	2.63	0.031	0.45
HSBC Interval Fund - Plan III - Regular - Dividend	12.3	0.15	0.49	2.21	0.058	1.35
HSBC Interval Fund - Plan III - Regular - Growth	17.8	0.21	0.51	1.74	0.044	0.68
LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION	22.7	0.28	0.44	1.28	0.066	1.77
LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION	23.0	0.26	0.62	2.12	0.085	1.85
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Dividend	19.11	0.34	0.42	0.67	0.027	0.22
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth	25.6	0.45	0.38	0.41	0.025	0.13
LICMF TOP 100 FUND - DIVIDEND OPTION	26.3	0.72	0.76	1.22	0.072	1.44
LICMF TOP 100 FUND - GROWTH OPTION	52.61	0.66	0.69	1.78	0.068	1.58

Taking market prices of the close ended funds and Natex, from table 5.2 we get the better performers are SBI HSBC Interval Fund - Plan III - Regular – Dividend, HSBC Interval Fund - Plan III - Regular – Growth, LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION, LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION, LICMF TOP 100 FUND - DIVIDEND OPTION and LICMF TOP 100 FUND - GROWTH OPTION which give more adjusted returns than others.

Table 5.3 Analysis based on NAVs and ET Index

Name of the schemes	Regression		b _i		Constant	
	F	R-Sq	b _i	t	a _i	t
DWS Fixed Term Fund-Sr 60 Inst Div	24.63	0.34	0.36	2.45	0.008	-0.34
DWS Fixed Term Fund-Sr 60 Reg Div	17.54	0.31	0.14	2.91	0.004	-0.11
Tata Smart Investment Plan - 1 - Scheme A - Dividend	25.1	0.34	0.41	3.95	0.023	0.44
Tata Smart Investment Plan - 1 - Scheme B - Growth	19.32	0.56	0.17	4.56	0.052	0.72
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class A	15.41	0.44	0.62	5.41	0.025	0.13
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class B	36.44	0.58	0.19	3.46	0.043	0.58
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	15.85	0.66	0.32	7.33	0.041	0.32
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	34.68	0.67	0.15	2.56	0.028	0.22
Birla Tax Plan 98	43.31	0.33	1.64	3.51	0.019	0.34
HDFC LONG TERM EQUITY FUND-Dividend	37.13	0.17	0.31	4.29	0.032	0.21
HDFC LONG TERM EQUITY FUND-Growth	27.49	0.28	0.33	4.63	0.026	0.37
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	34.55	0.39	1.72	6.54	0.067	0.78
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	26.53	0.51	0.44	1.67	0.032	0.22
HSBC Small Cap Fund - Dividend	36.43	0.25	0.76	1.58	0.058	0.75
HSBC Small Cap Fund - Growth	17.44	0.32	0.65	2.58	0.021	0.26
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option	31.98	0.29	1.44	8.74	0.068	1.16
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option	34.86	0.22	1.4	6.48	0.041	0.65
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	51.44	0.43	0.66	6.35	0.048	0.73
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	25.13	0.55	0.12	6.35	0.052	0.25
Sundaram BNP Paribas Select Small Cap Dividend	13.39	0.27	0.47	2.35	0.048	0.88
Sundaram BNP Paribas Select Small Cap Dividend	41.48	0.37	0.25	1.35	0.042	0.67

UTI Wealth Builder Fund - Dividend Option	27.32	0.51	0.39	3.46	0.031	0.29
UTI Wealth Builder Fund - Growth Option	31.26	0.66	0.35	2.25	0.049	0.47
Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option	19.58	0.43	0.21	7.58	0.085	0.92
Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option	34.1	0.26	0.22	6.12	0.044	0.55
Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan	24.9	0.15	0.59	3.21	0.032	0.27
Franklin Templeton Fixed Tenure Fund Series X Plan A - Dividend	28.84	0.61	0.41	3.29	0.043	0.63
UTI-Short Term FMP Sr-II -III (90D) - Growth Option	25.62	0.69	0.65	4.21	0.073	0.64
UTI-Short Term FMP Sr-II -IV (90 D)- Growth Option	38.91	0.32	0.37	3.27	0.027	0.14
UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option	31.54	0.18	1.73	4.64	0.033	0.21
Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan - Growth	22.71	0.22	0.44	5.55	0.044	0.60
Sundaram BNP Paribas FTP 367 days Series P Growth	43.56	0.54	0.23	5.21	0.054	0.59
Sundaram BNP Paribas FTP 367 days Series P Dividend	32.84	0.29	0.24	2.68	0.046	0.77
SBI DEBT FUND SERS-90D-GROWTH	48.55	0.66	1.29	1.51	0.081	1.61
Religare FMP-375 days-Sr-XVI - Institutional Growth	26.34	0.56	1.48	3.61	0.026	0.32
Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment	27.15	0.61	0.61	3.53	0.043	0.53
LICMF Interval Fund Annual Plan - Series 1 Dividend Option	34.52	0.59	0.24	3.98	0.039	0.21
LICMF Interval Fund Annual Plan - Series 1 Growth Option	38.51	0.83	0.41	2.46	0.035	0.54
Kotak FMP 13M Series 6 Dividend	18.94	0.34	0.46	4.12	0.028	0.34
Kotak FMP 13M Series 6 Growth	50.11	0.15	0.75	6.32	0.026	0.19
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND	34.54	0.65	0.48	2.86	0.051	0.32
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL GROWTH	17.58	0.78	0.37	4.45	0.046	0.49
IDFC Fixed Maturity Plan QS 55-Dividend	26.42	0.54	0.32	2.65	0.066	0.44
IDFC Fixed Maturity Plan QS 55-Growth	17.62	0.57	0.28	1.48	0.032	0.45
ICICI Prudential Real Estate Securities Fund - Retail Dividend	37.28	0.49	0.24	2.54	0.068	0.32
ICICI Prudential Real Estate Securities Fund - Retail Growth	38.48	0.31	0.12	4.53	0.044	0.37

HSBC Fixed Term Series-53-Reg-Dividend	21.91	0.48	1.43	5.23	0.068	1.41
HSBC Fixed Term Series-53-Reg-Growth	26.84	0.57	0.43	2.29	0.022	0.37
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Growth Option	14.62	0.32	0.26	3.89	0.045	0.28
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option	37.75	0.39	0.55	2.71	0.032	0.21
LICMF INDIA VISION FUND - DIVIDEND OPTION	34.51	0.54	0.71	3.91	0.034	0.39
LICMF INDIA VISION FUND - GROWTH OPTION	34.11	0.67	0.51	1.11	0.054	0.68
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND	36.77	0.29	0.32	3.62	0.029	0.34
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH	24.62	0.97	0.97	4.48	0.024	0.34
UTI - Infrastructure Advantage Fund - Growth Option	29.91	0.23	0.44	3.52	0.051	0.54

Above table shows the analysis of NAVs and ET Index and we find that Tata Smart Investment Plan - 1 - Scheme B – Growth, HDFC MID-CAP³¹ OPPORTUNITIES FUND - Dividend Option, HSBC Small Cap Fund – Dividend, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option, Sundaram BNP Paribas Select Small Cap Dividend, Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option, Sundaram BNP Paribas FTP 367 days Series P Dividend, SBI DEBT FUND SERS-90D-GROWTH, HSBC Fixed Term Series-53-Reg-Dividend and LICMF INDIA VISION FUND - GROWTH OPTION have been the top performing funds in the market. These funds have given significant returns.

³¹ Mid cap funds are those funds which invest in mid sized companies whose market value is more in the range of \$1 billion to \$ 9 billion.

Small cap funds are a group of stocks chosen to represent a particular segment of the market. Index funds mimic a chosen index, or a group of stocks chosen to represent a particular segment of the market.

Table 5.4 Analysis based on NAVs and Natex

Name of the schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
DWS Fixed Term Fund-Sr 60 Inst Div	26.12	0.21	0.41	2.89	0.0017	0.11
DWS Fixed Term Fund-Sr 60 Reg Div	31.19	0.68	0.64	3.41	0.0016	0.18
Tata Smart Investment Plan - 1 - Scheme A - Dividend						
	35.55	0.73	0.38	6.45	0.091	0.66
Tata Smart Investment Plan - 1 - Scheme B - Growth						
	34.85	0.024	0.77	5.58	0.031	0.23
Benchmark Split Capital Fund - Balanced- Benchmark Split Capital Fund - Balanced- Class A						
	28.76	0.19	0.21	3.81	0.036	0.53
Benchmark Split Capital Fund - Balanced- Benchmark Split Capital Fund - Balanced- Class B						
	32.26	0.32	0.63	2.25	0.035	0.18
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION						
	46.63	0.48	0.31	4.62	0.037	0.15
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION						
	31.45	0.95	0.49	3.48	0.029	0.23
Birla Tax Plan 98						
	26.82	0.62	0.23	7.89	0.043	0.33
HDFC LONG TERM EQUITY FUND- Dividend						
	36.31	0.88	0.63	4.18	0.041	0.67
HDFC LONG TERM EQUITY FUND- Growth						
	45.76	0.72	0.94	5.38	0.022	0.56
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option						
	21.19	0.72	0.62	1.71	0.046	0.73
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option						
	15.38	0.61	0.17	2.45	0.067	0.36

HSBC Small Cap Fund - Dividend						
	34.95	0.76	0.24	2.44	0.078	0.54
HSBC Small Cap Fund - Growth						
	36.63	0.28	0.83	5.76	0.072	0.33
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option						
	47.75	0.23	0.75	6.21	0.037	0.48
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option						
	24.62	0.89	0.32	4.38	0.049	0.46
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND						
	45.38	0.59	0.64	6.65	0.038	0.24
SBI INFRASTRUCTURE FUND - SERIES I GROWTH						
	31.17	0.83	0.55	5.38	0.053	0.75
Sundaram BNP Paribas Select Small Cap Dividend						
	13.89	0.63	0.49	3.49	0.033	0.54
Sundaram BNP Paribas Select Small Cap Dividend						
	21.29	0.94	0.29	1.82	0.066	0.78
UTI Wealth Builder Fund - Dividend Option						
	33.21	0.21	0.64	1.39	0.048	0.44
UTI Wealth Builder Fund - Growth Option						
	34.51	0.58	0.41	7.13	0.039	0.65
Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option						
	45.78	0.36	0.79	4.86	0.039	0.29
Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option						
	26.31	0.13	0.63	5.38	0.048	0.57
Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan						
	15.25	0.27	0.21	5.96	0.063	0.63
Franklin Templeton Fixed Tenure Fund Series X Plan A - Dividend						
	22.15	0.54	0.59	2.81	0.051	0.61

UTI-Short Term FMP Sr-II -III (90D) - Growth Option	18.97	0.45	0.39	1.49	0.061	0.68
UTI-Short Term FMP Sr-II -IV (90 D)- Growth Option	37.69	0.43	0.22	5.19	0.053	0.45
UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option	43.21	0.25	0.71	4.91	0.034	0.32
Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan - Growth	59.35	0.56	0.33	2.89	0.075	0.52
Sundaram BNP Paribas FTP 367 days Series P Growth	31.76	0.61	0.81	3.84	0.061	0.89
Sundaram BNP Paribas FTP 367 days Series P Dividend	34.95	0.42	0.67	5.93	0.095	0.44
SBI DEBT FUND SERS-90D GROWTH	18.59	0.36	0.53	6.43	0.076	0.49
Religare FMP-375 days-Sr-XVI - Institutional Growth	36.23	0.44	0.75	1.91	0.048	0.54
Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment	37.56	0.27	0.45	1.24	0.054	0.77
LICMF Interval Fund Annual Plan - Series 1 Dividend Option	61.93	0.85	0.93	2.55	0.027	0.29
LICMF Interval Fund Annual Plan - Series 1 Growth Option	31.26	0.48	0.34	1.38	0.083	0.69
Kotak FMP 13M Series 6 Dividend	49.39	0.81	0.68	4.22	0.049	0.67

Kotak FMP 13M Series 6 Growth	44.2	0.71	0.64	4.62	0.023	0.12
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND	58.74	0.33	0.28	5.31	0.048	0.73
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL GROWTH	34.95	0.13	0.59	2.25	0.052	0.45
IDFC Fixed Maturity Plan QS 55-Dividend	27.93	0.87	0.66	5.45	0.036	0.61
IDFC Fixed Maturity Plan QS 55-Growth	64.21	0.28	0.71	2.12	0.048	0.21
ICICI Prudential Real Estate Securities Fund - Retail Dividend	22.95	0.44	0.46	4.95	0.031	0.38
ICICI Prudential Real Estate Securities Fund - Retail Growth	32.79	0.45	0.65	4.35	0.045	0.67
HSBC Fixed Term Series-53-Reg-Dividend	33.21	0.65	0.56	3.39	0.081	0.45
HSBC Fixed Term Series-53-Reg-Growth	26.15	0.71	0.41	6.85	0.047	0.64
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Growth Option	15.47	0.49	0.79	3.47	0.071	0.52
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option	49.87	0.52	0.46	4.78	0.039	0.38
LICMF INDIA VISION FUND - DIVIDEND OPTION	36.84	0.77	0.38	2.19	0.045	0.54

LICMF INDIA VISION FUND - GROWTH OPTION	51.59	0.38	0.64	4.58	0.051	0.69
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND	61.54	0.45	0.33	2.47	0.036	0.55
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH	51.14	0.85	0.61	3.81	0.068	0.48
UTI - Infrastructure Advantage Fund - Growth Option	31.45	0.58	0.48	4.21	0.051	0.69

The analysis on market prices and Natex shows that Tata Smart Investment Plan - 1 - Scheme A – Dividend, HDFC LONG TERM EQUITY FUND-Dividend, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, SBI INFRASTRUCTURE FUND - SERIES I GROWTH, Sundaram BNP Paribas Select Small Cap Dividend, UTI Wealth Builder Fund - Growth Option, UTI-Short Term FMP Sr-II -III (90D) - Growth Option, Sundaram BNP Paribas FTP 367 days Series P Growth, Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment, JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND, LICMF INDIA VISION FUND - GROWTH OPTION and UTI - Infrastructure Advantage Fund - Growth Option have shown positive and significant t statistic.

Table 5.5 Analysis based on Repurchase Prices and ET Index

Name of the Schemes	Regression		b _i		Constant	
	F	R-Sq	b _i	t	a _i	t
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	32.6	0.49	0.41	1.21	0.048	1.09
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	35.87	0.74	0.59	2.14	0.036	0.89
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	25.89	0.53	0.77	2.33	0.054	1.14
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	25.99	0.41	0.74	2.46	0.045	0.41
HSBC Small Cap Fund - Dividend	41.58	0.66	0.47	2.74	0.056	1.26
HSBC Small Cap Fund – Growth	35.55	0.78	0.98	1.52	0.049	0.71

SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	35.7	0.51	0.53	1.66	0.038	1.62
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	34.55	0.66	0.72	1.53	0.037	0.82
UTI Wealth Builder Fund - Dividend Option	44.37	0.73	0.55	1.59	0.031	1.46
UTI Wealth Builder Fund - Growth Option	31.82	0.68	0.78	1.78	0.061	1.53

The table above shows the analysis on repurchase prices and ET Index and we find that LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, HSBC Small Cap Fund – Dividend, SBI INFRASTRU UTI Wealth Builder Fund - Growth Option CTURE FUND - SERIES I DIVIDEND, UTI Wealth Builder Fund - Dividend Option and are the funds which give returns more than other funds and have attracted the investors due to its consistent performance.

Table 5.6 Analysis based on Repurchase Prices and Natex

Name of the schemes	Regression		b _i		Constant	
	F	R-Sq	b _i	t	a _i	t
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	26.8	0.69	0.69	1.26	0.079	1.64
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	22.89	0.51	0.46	1.45	0.067	1.19
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	27.56	0.76	0.62	1.58	0.055	1.23
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	35.48	0.89	0.51	0.69	0.032	0.68
HSBC Small Cap Fund - Dividend	27.1	0.44	0.82	1.57	0.054	0.89
HSBC Small Cap Fund - Growth	34.79	0.75	0.78	0.51	0.051	0.69
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	22.64	0.84	0.75	0.58	0.045	1.51
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	35.42	0.56	0.89	0.77	0.072	1.91

UTI Wealth Builder Fund - Dividend Option	39.9	0.81	0.56	0.62	0.078	0.49
UTI Wealth Builder Fund - Growth Option	23.45	0.78	0.77	0.44	0.056	0.44

From above table, we find that LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, HSBC Small Cap Fund – Dividend, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND and SBI INFRASTRUCTURE FUND - SERIES I GROWTH have captured the market due to its strong performance.

5.3 Performance of the funds

The second objective of the thesis is to evaluate the performance of the funds by computation of β and this has been found out by using

$$R_{it} = a_i + b_i R_{mt} + e_{it}$$

The analysis has taken again NAVs, market prices and repurchase prices of the funds and the indices have been used are ET Index and Natex. Here the funds offering positive and significant values of beta are considered to be risky but offer better returns than the market returns and vice-versa.

Table 5.7 Analysis based on Market Prices and ET Index

	Regression		b_i		Constant	
Name of the schemes	F	R-Sq	b_i	t	a_i	t
SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND	35.8	0.56	0.43	0.57	0.045	0.23
SBI CAPITAL PROTECTION ORIENTED FUND - I Growth	45.1	0.47	0.58	0.72	0.084	0.45
HSBC Interval Fund - Plan III - Regular - Dividend	23.9	0.45	0.49	0.33	0.059	0.73
HSBC Interval Fund - Plan III - Regular - Growth	33.8	0.59	0.56	0.51	0.033	0.51
LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION	42.7	0.33	0.45	0.63	0.031	0.62
LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION	33.6	0.51	0.41	0.48	0.069	0.82
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Dividend	10.1	0.36	0.32	0.39	0.038	0.47
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth	15.1	0.22	0.26	0.31	0.021	0.38
LICMF TOP 100 FUND - DIVIDEND OPTION	39.9	0.31	0.54	0.63	0.044	0.64
LICMF TOP 100 FUND - GROWTH OPTION	23.1	0.71	0.42	0.45	0.034	0.67

Taking market prices and ET Index, we find that the better performers in the market are SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION, LICMF TOP 100 FUND - DIVIDEND OPTION, LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION and SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND. All these funds have shown a positive and significant value t statistics.

Table 5.8 Analysis based on Market Prices and Natex

Name of the schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND	34.1	0.52	0.43	2.31	0.042	1.53
SBI CAPITAL PROTECTION ORIENTED FUND - I Growth	41.8	0.41	0.61	3.65	0.037	1.62
HSBC Interval Fund - Plan III - Regular - Dividend	23.8	0.63	0.65	0.35	0.039	0.27
HSBC Interval Fund - Plan III - Regular - Growth	25.3	0.43	0.57	0.39	0.078	1.55
LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION	41.2	0.61	0.52	0.51	0.062	2.56
LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION	39.9	0.47	0.69	2.44	0.045	1.98
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Dividend	27.8	0.19	0.31	0.27	0.033	0.45
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth	18.8	0.25	0.35	0.23	0.024	0.31
LICMF TOP 100 FUND - DIVIDEND OPTION	37.6	0.41	0.79	2.62	0.059	2.71
LICMF TOP 100 FUND - GROWTH OPTION	46.7	0.55	0.51	3.78	0.071	2.48

The above table is based on the analysis on market prices and Natex. The table shows that LICMF TOP 100 FUND - GROWTH OPTION, SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, HSBC Interval Fund - Plan III - Regular – Growth, LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION, LICMF TOP 100 FUND - DIVIDEND OPTION and HSBC Interval Fund - Plan III - Regular – Dividend have performed strongly in the market and have shown positive and significant t statistic.

Table 5.9 Analysis based on NAVs and ET Index

Name of the schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
DWS Fixed Term Fund-Sr 60 Inst Div	4.32	0.16	0.39	0.31	0.016	- 0.89
DWS Fixed Term Fund-Sr 60 Reg Div	6.21	0.22	0.57	0.28	0.032	- 0.36
Tata Smart Investment Plan - 1 - Scheme A - Dividend	34.55	0.52	0.34	4.81	0.024	0.35
Tata Smart Investment Plan - 1 - Scheme B - Growth	91.87	0.65	0.32	3.73	0.066	1.22
Benchmark Split Capital Fund - Balanced- Benchmark Split Capital Fund - Balanced- Class A	61.45	0.83	0.85	4.97	0.022	0.14
Benchmark Split Capital Fund - Balanced- Benchmark Split Capital Fund - Balanced- Class B	81.78	0.74	0.76	6.21	0.079	0.87
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	65.29	0.27	0.48	2.16	0.036	0.56
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	65.51	0.28	0.62	3.84	0.021	0.27
Birla Tax Plan 98	47.85	0.76	0.56	2.85	0.088	1.57
HDFC LONG TERM EQUITY FUND- Dividend	77.34	0.68	0.48	6.41	0.036	1.46
HDFC LONG TERM EQUITY FUND- Growth	32.21	0.45	0.54	8.89	0.056	0.53
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	54.67	0.79	0.49	6.43	0.078	0.62
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	77.56	0.23	0.27	1.74	0.068	0.41
HSBC Small Cap Fund - Dividend	85.41	0.34	0.38	1.64	0.079	0.36
HSBC Small Cap Fund - Growth	46.98	0.36	0.36	1.92	0.041	0.31

ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option	96.81	0.59	0.72	6.61	0.045	0.78
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option	77.45	0.64	0.78	4.45	0.071	0.32
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	73.36	0.43	0.81	5.67	0.042	1.68
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	38.57	0.62	0.48	7.72	0.062	1.96
Sundaram BNP Paribas Select Small Cap Dividend	36.83	0.21	0.31	4.35	0.027	0.29
Sundaram BNP Paribas Select Small Cap Dividend	42.85	0.34	0.28	3.21	0.065	0.45
UTI Wealth Builder Fund - Dividend Option	23.56	0.29	0.29	4.87	0.037	0.55
UTI Wealth Builder Fund - Growth Option	21.85	0.25	0.35	1.56	0.053	0.66
Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option	49.26	0.79	0.58	3.31	0.078	2.79
Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option	61.78	0.56	0.42	2.33	0.041	1.58
Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan	49.63	0.49	0.84	4.83	0.013	0.22
Franklin Templeton Fixed Tenure Fund Series X Plan A - Dividend	37.75	0.61	0.49	3.89	0.031	0.49
UTI-Short Term FMP Sr-II -III (90D) - Growth Option	77.53	0.41	0.49	3.93	0.052	0.73
UTI-Short Term FMP Sr-II -IV (90 D)- Growth Option	42.58	0.54	0.54	7.18	0.029	0.52
UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option	88.16	0.82	0.69	6.55	0.081	0.49
Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan - Growth	84.19	0.73	0.82	2.67	0.074	0.86
Sundaram BNP Paribas FTP 367 days Series P Growth	42.1	0.42	0.57	4.96	0.045	0.69

Sundaram BNP Paribas FTP 367 days Series P Dividend	58.31	0.83	0.45	2.58	0.047	1.91
SBI DEBT FUND SERS-90D-GROWTH	89.32	0.77	0.88	8.52	0.072	2.85
Religare FMP-375 days-Sr-XVI - Institutional Growth	64.92	0.76	0.91	6.45	0.054	3.56
Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment	36.74	0.42	0.24	3.22	0.033	0.27
LICMF Interval Fund Annual Plan - Series 1 Dividend Option	43.87	0.27	0.33	4.71	0.052	0.72
LICMF Interval Fund Annual Plan - Series 1 Growth Option	9.81	0.99	0.37	1.78	0.066	0.71
Kotak FMP 13M Series 6 Dividend	3.22	0.54	0.61	3.93	0.042	0.78
Kotak FMP 13M Series 6 Growth	69.74	0.85	0.82	6.98	0.063	0.65
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND	77.42	0.36	0.77	9.62	0.089	0.98
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL GROWTH	54.21	0.42	0.34	5.99	0.037	0.55
IDFC Fixed Maturity Plan QS 55-Dividend	61.5	0.36	0.52	7.41	0.053	0.81
IDFC Fixed Maturity Plan QS 55-Growth	41.12	0.79	0.59	3.54	0.034	0.22
ICICI Prudential Real Estate Securities Fund - Retail Dividend	31.93	0.53	0.51	3.73	0.065	0.33
ICICI Prudential Real Estate Securities Fund - Retail Growth	64.26	0.38	0.78	5.88	0.077	0.51
HSBC Fixed Term Series-53-Reg-Dividend	67.61	0.52	0.82	6.91	0.049	0.39
HSBC Fixed Term Series-53-Reg-Growth	37.15	0.82	0.25	3.21	0.071	0.81

HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Growth Option	29.97	0.47	0.21	4.41	0.047	0.59
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option	57.16	0.83	0.61	6.74	0.054	1.37
LICMF INDIA VISION FUND - DIVIDEND OPTION	61.88	0.71	0.74	6.09	0.067	1.65
LICMF INDIA VISION FUND - GROWTH OPTION	62.95	0.51	0.67	3.52	0.088	3.51
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND	87.19	0.69	0.82	7.22	0.073	2.27
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH	81.35	0.81	0.61	7.85	0.067	3.22
UTI - Infrastructure Advantage Fund - Growth Option	53.72	0.56	0.46	5.22	0.056	1.89

HDFC LONG TERM EQUITY FUND-Growth, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, SBI INFRASTRUCTURE FUND - SERIES I GROWTH, UTI-Short Term FMP Sr-II -IV (90 D)-Growth Option, SBI DEBT FUND SERS-90D-GROWTH, JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND, and SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH have been the top performers using NAVs and ET Index.

Table 5.10 Analysis based on NAVs and Natex

Name of the schemes	Regression		b _i		Constant	
	F	R-Sq	b _i	t	a _i	t
DWS Fixed Term Fund-Sr 60 Inst Div	2.41	0.28	0.34	0.21	0.0036	0.21
DWS Fixed Term Fund-Sr 60 Reg Div	1.91	0.23	0.27	0.57	0.0039	0.19
Tata Smart Investment Plan - 1 - Scheme A - Dividend	53.6	0.64	0.48	2.58	0.061	0.44
Tata Smart Investment Plan - 1 - Scheme B - Growth	37.6	0.75	0.93	3.43	0.042	0.76
Benchmark Split Capital Fund - Balanced- Benchmark Split Capital Fund - Balanced- Class A	55.2	0.66	0.56	4.36	0.047	0.39
Benchmark Split Capital Fund - Balanced- Benchmark Split Capital Fund - Balanced- Class B	64.1	0.54	0.75	3.71	0.055	0.68
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	56.1	0.39	0.24	1.47	0.023	0.52
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	23.4	0.72	0.44	1.24	0.042	0.44
Birla Tax Plan 98	54.1	0.75	0.51	2.57	0.087	0.79
HDFC LONG TERM EQUITY FUND- Dividend	82.5	0.78	0.97	4.99	0.077	0.53
HDFC LONG TERM EQUITY FUND- Growth	42.9	0.58	0.69	5.41	0.048	0.93
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	77.7	0.96	0.55	6.85	0.063	0.82
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	28.1	0.34	0.55	2.43	0.052	0.51
HSBC Small Cap Fund - Dividend	36.7	0.51	0.27	1.85	0.046	0.33
HSBC Small Cap Fund - Growth	37.6	0.27	0.27	1.92	0.093	0.75
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option	53.4	0.78	0.66	2.76	0.051	0.59
ICICI Prudential Fixed Maturity Plan -	54.4	0.92	0.46	3.24	0.055	0.36

Series 42 - Six Months Plan C - Retail Growth Option						
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	67.8	0.87	0.78	5.85	0.069	0.55
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	72.5	0.61	0.54	3.66	0.037	0.47
Sundaram BNP Paribas Select Small Cap Dividend	27.8	0.41	0.23	1.52	0.066	0.87
Sundaram BNP Paribas Select Small Cap Dividend	43.9	0.29	0.29	1.67	0.029	0.32
UTI Wealth Builder Fund - Dividend Option	23.4	0.59	0.16	0.63	0.031	0.22
UTI Wealth Builder Fund - Growth Option	16.6	0.34	0.24	0.23	0.048	0.51
Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option	73.3	0.83	0.65	5.62	0.035	0.32
Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option	62.4	0.61	0.77	6.85	0.024	0.52
Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan	43.1	0.59	0.43	3.51	0.069	0.93
Franklin Templeton Fixed Tenure Fund Series X Plan A - Dividend	36.2	0.68	0.33	4.46	0.027	0.25
UTI-Short Term FMP Sr-II -III (90D) - Growth Option	55.9	0.87	0.25	2.14	0.067	0.63
UTI-Short Term FMP Sr-II -IV (90 D)- Growth Option	45.2	0.23	0.15	3.77	0.085	0.54
UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option	68.9	0.98	0.59	8.13	0.033	0.81
Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan - Growth	86.6	0.39	0.85	5.63	0.047	0.43
Sundaram BNP Paribas FTP 367 days Series P Growth	75.2	0.57	0.33	3.24	0.055	0.85
Sundaram BNP Paribas FTP 367 days Series P Dividend	35.6	0.44	0.48	2.76	0.076	0.55
SBI DEBT FUND SERS-90DGROWTH	78.5	0.69	0.72	4.13	0.026	0.68

Religare FMP-375 days-Sr-XVI - Institutional Growth	63.3	0.82	0.97	5.33	0.051	0.89
Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment	19.2	0.29	0.31	4.13	0.033	0.63
LICMF Interval Fund Annual Plan - Series 1 Dividend Option	22.8	0.68	0.29	5.61	0.075	0.77
LICMF Interval Fund Annual Plan - Series 1 Growth Option	23.3	0.57	0.28	3.31	0.091	0.32
Kotak FMP 13M Series 6 Dividend	14.8	0.29	0.25	2.34	0.049	0.38
Kotak FMP 13M Series 6 Growth	68.9	0.85	0.55	3.83	0.058	0.78
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND	48.3	0.44	0.63	6.81	0.041	0.51
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL GROWTH	32.9	0.31	0.48	4.11	0.055	0.64
IDFC Fixed Maturity Plan QS 55-Dividend	64.4	0.54	0.51	4.93	0.083	0.42
IDFC Fixed Maturity Plan QS 55-Growth	34.7	0.76	0.41	5.68	0.038	0.67
ICICI Prudential Real Estate Securities Fund - Retail Dividend	22.1	0.68	0.32	3.85	0.076	0.38
ICICI Prudential Real Estate Securities Fund - Retail Growth	67.8	0.97	0.72	7.45	0.054	0.92
HSBC Fixed Term Series-53-Reg-Dividend	61.5	0.45	0.54	5.52	0.072	0.71
HSBC Fixed Term Series-53-Reg-Growth	54.1	0.54	0.81	3.25	0.064	0.66
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Growth Option	65.4	0.51	0.66	3.98	0.056	0.49
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option	77.4	0.46	0.96	6.96	0.058	0.41
LICMF INDIA VISION FUND - DIVIDEND OPTION	82.9	0.55	0.88	4.21	0.067	0.86

LICMF INDIA VISION FUND - GROWTH OPTION	73.4	0.72	0.72	4.34	0.044	0.68
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND	55.2	0.98	0.79	3.68	0.097	0.76
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH	65.2	0.76	0.64	2.59	0.046	0.55
UTI - Infrastructure Advantage Fund - Growth Option	45.6	0.54	0.58	4.38	0.077	0.39

NAVs and Natex of the close ended funds have shown that HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts) - Growth Option, ICICI Prudential Real Estate Securities Fund - Retail Growth, HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Dividend Option, Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option and HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option have positive and significant t-statistic.

Table 5.11 Analysis based on Repurchase prices and ET Index

Name of the schemes	Regression		b_i		Constant	
	F	R-Sq	b_i	t	a_i	t
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	24.1	0.49	0.42	1.16	0.047	1.45
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	39.5	0.56	0.65	1.12	0.061	1.74
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	21.57	0.48	0.69	0.32	0.051	0.32
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	25.5	0.53	0.51	0.67	0.034	0.66
HSBC Small Cap Fund - Dividend	31.8	0.38	0.43	0.36	0.025	0.23
HSBC Small Cap Fund - Growth	48.2	0.55	0.52	0.66	0.066	0.46
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	56.3	0.65	0.38	1.49	0.049	1.58
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	32.94	0.47	0.48	1.73	0.054	1.35
UTI Wealth Builder Fund - Dividend Option	41.15	0.55	0.59	0.67	0.053	0.62
UTI Wealth Builder Fund - Growth Option	48.5	0.41	0.45	0.68	0.045	0.58

Taking repurchase prices and ET Index of the close ended funds, the funds performing strongly in the market are SBI INFRASTRUCTURE FUND - SERIES I GROWTH, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION and HDFC MID-CAP OPPORTUNITIES FUND - Growth Option.

Table 5.12 Analysis based on Repurchase prices and Natex

	Regression		b_i		Constant	
Name of the schemes	F	R-Sq	b_i	t	a_i	t
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	43.9	0.43	0.51	1.27	0.028	1.39
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	37.8	0.45	0.49	1.32	0.045	1.57
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	31.69	0.66	0.55	1.39	0.035	0.44
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	41.61	0.41	0.79	0.37	0.076	0.96
HSBC Small Cap Fund - Dividend	27.88	0.61	0.75	0.49	0.048	0.53
HSBC Small Cap Fund - Growth	33.78	0.42	0.52	0.64	0.032	0.41
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	48.39	0.71	0.99	1.21	0.041	1.50
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	58.31	0.57	0.92	1.81	0.073	1.14
UTI Wealth Builder Fund - Dividend Option	28.85	0.35	0.44	0.31	0.047	0.65
UTI Wealth Builder Fund - Growth Option	31.73	0.26	0.48	0.27	0.024	0.23

Repurchase prices and Natex of the close ended funds show that SBI INFRASTRUCTURE FUND - SERIES I GROWTH, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION and HSBC Small Cap Fund – Growth have given high values of t-statistic.

5.4 Sharpe's Measure

Sharpe measure has been used to judge the close ended funds' adjusted returns. Sharpe index shows the difference between the risk premium in the portfolio and the total risk associated with the portfolio.

$$R_i - R_f / \sigma$$

Sharpe measure has been used for NAVs, market prices and repurchase prices of the funds and the indices that have been used are ET Index and Natex.

Table 5.13 Sharpe Ratios based on market prices

Name of the schemes	ET Index	Natex
SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND	0.582	0.376
SBI CAPITAL PROTECTION ORIENTED FUND - I Growth	0.426	0.327
HSBC Interval Fund - Plan III - Regular - Dividend	0.474	0.485
HSBC Interval Fund - Plan III - Regular - Growth	0.355	0.384
LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION	0.389	0.451
LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION	0.392	0.357
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Dividend	0.375	0.257
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth	0.285	0.244
LICMF TOP 100 FUND - DIVIDEND OPTION	0.592	0.266
LICMF TOP 100 FUND - GROWTH OPTION	0.474	0.295

The above table shows the Sharpe ratios based on the market prices and evaluated with the market indices (ET Index and Natex). Among ET Index, we find that LICMF TOP 100 FUND - DIVIDEND OPTION, SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND, HSBC Interval Fund - Plan III - Regular – Dividend and LICMF TOP 100 FUND - GROWTH OPTION have performed better and given higher adjusted returns.

Among Natex, we find that HSBC Interval Fund - Plan III - Regular – Dividend, LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION, SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND and HSBC Interval Fund - Plan III - Regular – Growth are the better performing funds in the market.

Table 5.14 Sharpe Ratios based on NAVs

Name of the schemes	ET Index	Natex
DWS Fixed Term Fund-Sr 60 Inst Div	0.156	0.173
DWS Fixed Term Fund-Sr 60 Reg Div	0.221	0.446
Tata Smart Investment Plan - 1 - Scheme A - Dividend	0.354	0.299
Tata Smart Investment Plan - 1 - Scheme B - Growth	0.659	0.795
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class A	0.273	0.785
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class B	0.595	0.48
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	0.511	0.481
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	0.445	0.397
Birla Tax Plan 98	0.703	0.562
HDFC LONG TERM EQUITY FUND-Dividend	0.607	0.244
HDFC LONG TERM EQUITY FUND-Growth	0.921	0.487
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	0.699	0.561
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	0.285	0.595
HSBC Small Cap Fund - Dividend	0.733	0.297
HSBC Small Cap Fund - Growth	0.521	0.717
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option	0.822	0.492
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option	0.454	0.574
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	0.365	0.319
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	0.394	0.271
Sundaram BNP Paribas Select Small Cap Dividend	0.273	0.186
Sundaram BNP Paribas Select Small Cap Dividend	0.177	0.199
UTI Wealth Builder Fund - Dividend Option	0.247	0.233

UTI Wealth Builder Fund - Growth Option	0.135	0.225
Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option	0.517	0.475
Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option	0.671	0.659
Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan	0.239	0.845
Franklin Templeton Fixed Tenure Fund Series X Plan A - Dividend	0.271	0.241
UTI-Short Term FMP Sr-II -III (90D) - Growth Option	0.239	0.478
UTI-Short Term FMP Sr-II -IV (90 D)-Growth Option	0.138	0.968
UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option	0.761	0.365
Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan - Growth	0.828	0.457
Sundaram BNP Paribas FTP 367 days Series P Growth	0.196	0.468
Sundaram BNP Paribas FTP 367 days Series P Dividend	0.177	0.569
SBI DEBT FUND SERS-90D- GROWTH	0.389	0.665
Religare FMP-375 days-Sr-XVI - Institutional Growth	0.568	0.478
Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment	0.393	0.499
LICMF Interval Fund Annual Plan - Series 1 Dividend Option	0.288	0.633
LICMF Interval Fund Annual Plan - Series 1 Growth Option	0.226	0.221
Kotak FMP 13M Series 6 Dividend	0.158	0.178
Kotak FMP 13M Series 6 Growth	0.285	0.561
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND	0.216	0.784
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL GROWTH	0.359	0.436
IDFC Fixed Maturity Plan QS 55-Dividend	0.334	0.555
IDFC Fixed Maturity Plan QS 55-Growth	0.341	0.658
ICICI Prudential Real Estate Securities Fund - Retail Dividend	0.266	0.632
ICICI Prudential Real Estate Securities Fund - Retail Growth	0.511	0.852
HSBC Fixed Term Series-53-Reg-Dividend	0.774	0.267
HSBC Fixed Term Series-53-Reg-Growth	0.287	0.698

HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Growth Option	0.235	0.453
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option	0.299	0.721
LICMF INDIA VISION FUND - DIVIDEND OPTION	0.579	0.329
LICMF INDIA VISION FUND - GROWTH OPTION	0.383	0.532
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND	0.542	0.247
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH	0.648	0.589
UTI - Infrastructure Advantage Fund - Growth Option	0.721	0.861

Sharpe Ratios based on NAVs and with the market indices show the funds giving higher adjusted returns. Among ET Index HSBC Small Cap Fund – Dividend, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option, UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option, Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan – Growth and SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH are the top performers.

Among Natex, UTI-Short Term FMP Sr-II -IV (90 D)-Growth Option Tata Smart Investment Plan - 1 - Scheme B – Growth, HSBC Small Cap Fund – Growth, Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan, LICMF Interval Fund Annual Plan - Series 1 Dividend Option, JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND and HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option have performed better than others.

Table 5.15 Sharpe Ratios based on Repurchase prices

Name of the schemes	ET Index	Natex
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	0.421	0.456
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	0.356	0.567
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	0.478	0.789
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	0.879	0.542
HSBC Small Cap Fund - Dividend	0.654	0.432
HSBC Small Cap Fund - Growth	0.444	0.541
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	0.546	0.321
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	0.358	0.456
UTI Wealth Builder Fund - Dividend Option	0.899	0.741
UTI Wealth Builder Fund - Growth Option	0.741	0.644

Taking repurchase prices of the close ended funds, Sharpe Ratio show that Among ET index, HDFC MID-CAP OPPORTUNITIES FUND - Growth Option, HSBC Small Cap Fund – Dividend, UTI Wealth Builder Fund - Dividend Option, UTI Wealth Builder Fund - Growth Option and SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND are the strong performing funds in the market.

Among Natex, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, UTI Wealth Builder Fund - Dividend Option, UTI Wealth Builder Fund - Growth Option, HDFC MID-CAP OPPORTUNITIES FUND - Growth Option and HSBC Small Cap Fund – Growth have performed better in the market.

5.5 Market timing of the mutual funds

Treynor and Mazuy Model (1966)

To check the market timing of the mutual funds, certain models have been used. The first model to be used to evaluate the performance of the funds is Treynor and Mazuy Model (1966). To judge the performance of the funds by evaluating the market timing of the mutual funds, following equation has been used under this model

$$R_{it} - R_f = a_i + b_{1i} (R_{mt} - R_f) + b_{2i} (R_{mt} - R_f)^2 + e_{it}$$

Here also the model has been used for the funds taking NAVs, market prices and repurchase prices of the funds. The indices selected are ET Index and Natex. The funds having positive and significant values show excess returns over the risk free return (in this case 91 day Treasury bills and 364 day Treasury bills have been taken for the study).

Table 5.16 Analysis based on Market prices and ET Index

Name of the Schemes	Regression		b _{1i}		b _{2i}		Constant	
	F	R-Sq	b _{1i}	t	b _{2i}	T	a _i	t
SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND	29.9	0.33	0.28	0.31	0.23	2.89	0.041	0.53
SBI CAPITAL PROTECTION ORIENTED FUND - I Growth	34.5	0.45	0.32	1.28	0.36	3.66	0.031	0.23
HSBC Interval Fund - Plan III - Regular - Dividend	31.2	0.41	0.63	1.86	0.31	1.45	0.036	0.52
HSBC Interval Fund - Plan III - Regular - Growth	29.8	0.38	0.75	1.15	0.24	2.49	0.057	0.49
LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION	33.2	0.65	0.89	1.32	0.45	4.36	0.067	0.69
LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION	12.6	0.54	0.53	0.89	0.97	2.63	0.064	0.63

Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Dividend	17.85	0.87	0.48	0.71	0.73	1.61	0.026	0.21
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth	11.8	0.21	0.51	0.53	0.69	1.58	0.025	0.18
LICMF TOP 100 FUND - DIVIDEND OPTION	27.7	0.95	0.62	1.23	0.47	3.24	0.058	0.72
LICMF TOP 100 FUND - GROWTH OPTION	35.2	0.88	0.78	1.25	0.51	3.32	0.045	0.75

Using market prices and ET Index, we find that HSBC Interval Fund - Plan III - Regular – Dividend, SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, LICMF TOP 100 FUND - DIVIDEND OPTION, LICMF TOP 100 FUND - DIVIDEND OPTION, SBI CAPITAL PROTECTION ORIENTED FUND - I Growth and HSBC Interval Fund - Plan III - Regular – Growth have given higher returns and have performed better than other funds.

Table 5.17 Analysis based on Market prices and Natex

	Regression		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND	34.5	0.45	0.54	3.77	0.65	1.32	0.043	1.39
SBI CAPITAL PROTECTION ORIENTED FUND - I Growth	28.7	0.43	0.65	2.58	0.48	0.66	0.056	0.56
HSBC Interval Fund - Plan III - Regular - Dividend	51.6	0.34	0.32	1.56	0.63	1.18	0.035	1.66
HSBC Interval Fund - Plan III - Regular - Growth	44.8	0.63	0.52	1.35	0.55	1.27	0.089	1.44
LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION	28.6	0.52	0.36	2.42	0.46	0.45	0.054	1.65

LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION	45.2	0.65	0.35	2.36	0.69	1.63	0.043	1.28
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Dividend	34.1	0.41	0.38	0.88	0.32	0.56	0.052	0.63
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth	18.1	0.35	0.19	0.65	0.21	0.42	0.036	0.42
LICMF TOP 100 FUND - DIVIDEND OPTION	48.5	0.56	0.69	2.51	0.68	1.99	0.055	1.31
LICMF TOP 100 FUND - GROWTH OPTION	39.5	0.53	0.73	2.33	0.43	1.54	0.048	1.22

Above table shows the close ended funds' market prices and Natex, the funds which have offered higher returns in the market are SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND, SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, LICMF TOP 100 FUND - DIVIDEND OPTION, LICMF TOP 100 FUND - GROWTH OPTION, LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION and LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION.

Table 5.18 Analysis based on NAVs and ET Index

	Regression		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
DWS Fixed Term Fund-Sr 60 Inst Div	2.19	0.55	-	0.84	0.36	0.45	0.0003	0.010
DWS Fixed Term Fund-Sr 60 Reg Div	2.38	0.67	-	0.52	0.13	0.12	0.0011	0.17
Tata Smart Investment Plan - 1 - Scheme A - Dividend	49.3	0.37	0.29	0.36	0.84	2.61	0.059	0.86
Tata Smart Investment Plan - 1 - Scheme B - Growth	63.8	0.28	0.58	0.46	0.92	2.64	0.074	0.66
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class A	42.6	0.76	0.53	0.39	0.44	1.47	0.041	0.21
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class B	26.6	0.47	0.78	0.43	0.35	1.21	0.047	0.47
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	44.8	0.91	0.49	0.56	0.93	1.03	0.072	0.078
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	26.5	0.26	0.35	0.45	0.63	0.41	0.029	0.25
Birla Tax Plan 98	71.4	0.39	0.61	1.85	0.91	5.37	0.055	0.73
HDFC LONG TERM EQUITY FUND-Dividend	88.5	0.52	0.98	0.75	0.96	3.11	0.051	0.47
HDFC LONG TERM EQUITY FUND-Growth	75.4	0.99	0.89	1.46	0.77	2.63	0.039	0.75
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	73.3	0.88	0.25	1.38	0.34	3.17	0.058	0.63
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	14.2	0.56	0.61	0.93	0.41	0.59	0.035	0.21
HSBC Small Cap Fund - Dividend	23	0.73	0.56	0.46	0.61	0.43	0.021	0.13
HSBC Small Cap Fund - Growth	17.6	0.98	0.55	0.39	0.53	0.25	0.025	0.33

ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option	29.6	0.28	0.43	1.72	0.96	4.22	0.074	0.73
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option	47.3	0.38	0.65	1.46	0.59	3.49	0.055	0.91
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	56.2	0.86	0.46	1.48	0.76	5.56	0.085	0.48
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	44.9	0.59	0.75	1.14	0.89	2.82	0.066	0.33
Sundaram BNP Paribas Select Small Cap Dividend	23.8	0.39	0.21	0.58	0.25	5.75	0.084	0.53
Sundaram BNP Paribas Select Small Cap Dividend	26.1	0.73	0.84	0.62	0.34	1.38	0.038	0.27
UTI Wealth Builder Fund - Dividend Option	19.9	0.76	0.64	0.28	0.38	1.13	0.066	0.36
UTI Wealth Builder Fund - Growth Option	28.5	0.22	0.28	0.41	0.31	0.84	0.032	0.23
Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option	71.5	0.44	0.37	0.25	0.53	5.37	0.084	0.96
Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option	48.8	0.53	0.53	1.36	0.96	6.29	0.035	0.47
Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan	43.6	0.66	0.66	0.61	0.73	4.18	0.052	0.78
Franklin Templeton Fixed Tenure Fund Series X Plan A - Dividend	32.5	0.91	0.27	0.53	0.89	1.25	0.031	0.65
UTI-Short Term FMP Sr-II -III (90D) - Growth Option	24.1	0.43	0.61	0.19	0.41	2.31	0.029	0.34
UTI-Short Term FMP Sr-II -IV (90 D)- Growth Option	39.1	0.72	0.58	0.44	0.36	2.82	0.058	0.66
UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option	83.8	0.63	0.93	1.58	0.59	3.56	0.035	0.43
Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan - Growth	72.1	0.58	0.71	1.63	0.61	5.75	0.041	0.21
Sundaram BNP Paribas FTP 367 days Series P Growth	63.3	0.89	0.29	0.47	0.26	1.65	0.087	0.44

Sundaram BNP Paribas FTP 367 days Series P Dividend	38.4	0.41	0.53	0.63	0.21	2.69	0.061	0.41
SBI DEBT FUND SERS-90D- GROWTH	65.6	0.56	0.33	0.75	0.93	7.61	0.055	0.15
Religare FMP-375 days-Sr-XVI - Institutional Growth	82.1	0.47	0.48	0.52	0.74	5.98	0.043	0.69
Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment	26.5	0.19	0.31	0.14	0.73	3.11	0.031	0.33
LICMF Interval Fund Annual Plan - Series 1 Dividend Option	22.5	0.71	0.16	0.33	0.65	2.26	0.078	0.28
LICMF Interval Fund Annual Plan - Series 1 Growth Option	26.9	0.52	0.26	0.32	0.55	0.33	0.051	0.74
Kotak FMP 13M Series 6 Dividend	32.1	0.56	0.29	0.25	0.85	1.28	0.053	0.68
Kotak FMP 13M Series 6 Growth	51.1	0.54	0.57	0.92	0.41	3.63	0.061	0.47
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND	66.9	0.25	0.87	0.55	0.82	3.99	0.071	0.75
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL GROWTH	83.4	0.47	0.77	0.54	0.52	5.49	0.055	0.88
IDFC Fixed Maturity Plan QS 55- Dividend	54.6	0.55	0.69	1.21	0.84	5.26	0.041	0.62
IDFC Fixed Maturity Plan QS 55- Growth	63.6	0.63	0.49	0.58	0.67	2.41	0.021	0.46
ICICI Prudential Real Estate Securities Fund - Retail Dividend	29.1	0.55	0.65	0.75	0.85	2.39	0.075	0.58
ICICI Prudential Real Estate Securities Fund - Retail Growth	57.6	0.41	0.59	1.17	0.58	6.87	0.045	0.75
HSBC Fixed Term Series-53-Reg- Dividend	45.9	0.69	0.63	0.64	0.75	5.66	0.036	0.27
HSBC Fixed Term Series-53-Reg- Growth	58.7	0.25	0.56	0.72	0.69	4.21	0.056	0.35

HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Growth Option	23.1	0.61	0.62	0.67	0.55	4.94	0.073	0.53
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Dividend Option	82.3	0.96	0.57	1.84	0.95	7.14	0.096	0.44
LICMF INDIA VISION FUND - DIVIDEND OPTION	58.3	0.47	0.64	1.45	0.72	3.25	0.054	0.66
LICMF INDIA VISION FUND - GROWTH OPTION	69.3	0.65	56	0.98	0.99	7.33	0.044	0.37
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND	57.8	0.77	0.69	0.74	0.98	4.72	0.062	0.56
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH	79.2	0.41	0.87	0.73	0.59	4.64	0.063	0.53
UTI - Infrastructure Advantage Fund - Growth Option	84.3	0.62	0.94	1.96	0.93	5.88	0.073	0.48

Above table shows that Birla Tax Plan 98, HDFC LONG TERM EQUITY FUND- Growth, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, SBI INFRASTRUCTURE FUND - SERIES I GROWTH, UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option, HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option, LICMF INDIA VISION FUND - DIVIDEND OPTION and UTI - Infrastructure Advantage Fund - Growth Option have performed strongly in the market using NAVs and ET Index. All these funds have shown positive and significant values of t –statistic.

Table 5.19 Analysis based on NAVs and Natex

	Regression		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
DWS Fixed Term Fund-Sr 60 Inst Div	2.75	0.37	0.13	0.21	0.13	0.21	0.0011	0.21
DWS Fixed Term Fund-Sr 60 Reg Div	3.31	0.21	0.22	0.18	0.27	0.39	0.0039	0.36
Tata Smart Investment Plan - 1 - Scheme A - Dividend	61.2	0.58	0.45	1.83	0.67	0.75	0.061	0.52
Tata Smart Investment Plan - 1 - Scheme B - Growth	58.7	0.66	0.39	0.88	0.87	0.69	0.039	0.54
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class A	28.1	0.45	0.28	0.48	0.68	0.48	0.063	0.79
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class B	35.8	0.54	0.24	0.57	0.54	0.21	0.061	0.82
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	28.8	0.34	0.38	0.52	0.37	0.37	0.032	0.65
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	21.5	0.42	0.78	0.61	0.24	0.25	0.087	0.28
Birla Tax Plan 98	67.9	0.41	0.54	0.97	0.38	0.63	0.069	0.36
HDFC LONG TERM EQUITY FUND- Dividend	58.2	0.75	0.73	0.63	0.47	0.77	0.063	0.56
HDFC LONG TERM EQUITY FUND- Growth	51.9	0.49	0.48	1.49	0.58	0.79	0.044	0.75
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	61.6	0.87	0.63	0.36	0.67	0.54	0.057	0.88
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	27.2	0.57	0.46	0.17	0.13	0.21	0.071	0.61
HSBC Small Cap Fund - Dividend	25.5	0.65	0.41	0.22	0.51	0.36	0.047	0.75
HSBC Small Cap Fund - Growth	14.6	0.61	0.66	0.36	0.12	0.26	0.038	0.54
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option	75.8	0.47	0.37	1.77	0.48	0.45	0.069	0.66
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option	41.1	0.52	0.34	0.37	0.54	0.61	0.068	0.59
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	45.7	0.92	0.41	1.63	0.86	0.44	0.089	0.75
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	66.3	0.71	0.36	0.34	0.63	0.69	0.065	0.93

Sundaram BNP Paribas Select Small Cap Dividend	26.1	0.41	0.29	0.31	0.61	0.39	0.037	0.49
Sundaram BNP Paribas Select Small Cap Dividend	19.6	0.61	0.15	0.43	0.82	0.26	0.021	0.29
UTI Wealth Builder Fund - Dividend Option	36.9	0.21	0.21	0.28	0.87	0.27	0.032	0.38
UTI Wealth Builder Fund - Growth Option	31.3	0.17	0.11	0.45	0.61	0.39	0.038	0.39
Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option	65.4	0.91	0.45	1.86	0.46	0.65	0.071	0.66
Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option	73.1	0.64	0.37	1.37	0.56	0.71	0.073	0.58
Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan	41.7	0.68	0.53	0.54	0.49	0.51	0.059	0.76
Franklin Templeton Fixed Tenure Fund Series X Plan A - Dividend	34.9	0.77	0.33	0.67	0.61	0.44	0.058	0.54
UTI-Short Term FMP Sr-II -III (90D) - Growth Option	28.8	0.35	0.45	0.24	0.36	0.42	0.075	0.38
UTI-Short Term FMP Sr-II -IV (90 D)- Growth Option	19.6	0.58	0.37	0.17	0.26	0.29	0.062	0.45
UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option	57.9	0.86	0.64	1.67	0.36	0.89	0.054	0.67
Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan - Growth	93.1	0.58	0.78	0.54	0.75	0.54	0.034	0.79
Sundaram BNP Paribas FTP 367 days Series P Growth	33.4	0.89	0.77	0.56	0.48	0.86	0.056	0.47
Sundaram BNP Paribas FTP 367 days Series P Dividend	63.4	0.58	0.61	0.74	0.37	0.34	0.077	0.58
SBI DEBT FUND SERS-90D-GROWTH	49.2	0.63	0.69	1.75	0.61	0.63	0.081	0.74
Religare FMP-375 days-Sr-XVI - Institutional Growth	53.8	0.75	0.75	1.93	0.72	0.51	0.063	0.61
Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment	31.2	0.99	0.39	0.42	0.48	0.63	0.094	0.49
LICMF Interval Fund Annual Plan - Series 1 Dividend Option	35.4	0.74	0.38	0.33	0.49	0.37	0.047	0.42
LICMF Interval Fund Annual Plan - Series 1 Growth Option	11.4	0.13	0.23	0.13	0.36	0.14	0.044	0.34
Kotak FMP 13M Series 6 Dividend	15.7	0.21	0.47	0.36	0.21	0.32	0.065	0.27
Kotak FMP 13M Series 6 Growth	69.3	0.73	0.67	0.54	0.76	0.79	0.055	0.81
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND	41.7	0.34	0.71	0.63	0.57	0.68	0.045	0.73
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 -	67.1	0.76	0.32	0.91	0.73	0.52	0.076	0.69

INSTITUTIONAL GROWTH								
IDFC Fixed Maturity Plan QS 55-Dividend	63.3	0.87	0.51	0.66	0.74	0.44	0.049	0.43
IDFC Fixed Maturity Plan QS 55-Growth	45.8	0.53	0.68	0.78	0.51	0.46	0.021	0.58
ICICI Prudential Real Estate Securities Fund - Retail Dividend	23.4	0.31	0.44	0.42	0.44	0.52	0.036	0.61
ICICI Prudential Real Estate Securities Fund - Retail Growth	65.4	0.97	0.62	0.67	0.75	0.75	0.078	0.77
HSBC Fixed Term Series-53-Reg-Dividend	54.7	0.55	0.79	0.76	0.83	0.54	0.057	0.63
HSBC Fixed Term Series-53-Reg-Growth	21.8	0.68	0.66	0.34	0.47	0.58	0.038	0.71
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Growth Option	14.8	0.92	0.96	0.47	0.54	0.54	0.068	0.22
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Dividend Option	58.6	0.75	0.68	0.54	0.61	0.85	0.096	0.77
LICMF INDIA VISION FUND - DIVIDEND OPTION	65.4	0.86	0.42	0.92	0.71	0.77	0.045	0.59
LICMF INDIA VISION FUND - GROWTH OPTION	86.2	0.67	0.89	1.75	0.67	0.58	0.078	0.73
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND	66.3	0.91	0.86	1.73	0.63	0.74	0.038	0.66
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH	51.7	0.76	0.71	1.65	0.62	0.64	0.085	0.55
UTI - Infrastructure Advantage Fund - Growth Option	58.7	0.84	0.58	1.88	0.75	0.79	0.081	0.78

Tata Smart Investment Plan - 1 - Scheme A – Dividend, HDFC LONG TERM EQUITY FUND-Growth, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option, UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option, SBI DEBT FUND SERS-90D-GROWTH, LICMF INDIA VISION FUND - GROWTH OPTION and SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND have recorded higher returns than other funds as seen by their high values of t-statistic.

Table 5.20 Repurchase prices and ET Index

	Regression		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	35.81	0.75	0.52	1.35	0.45	1.25	0.043	1.32
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	25.26	0.51	0.61	1.24	0.33	1.07	0.051	1.33
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	27.19	0.58	0.43	1.13	0.43	1.13	0.059	0.93
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	26.56	0.55	0.49	1.29	0.38	0.54	0.038	0.67
HSBC Small Cap Fund - Dividend	24.91	0.67	0.51	0.72	0.59	0.79	0.055	0.41
HSBC Small Cap Fund - Growth	35.6	0.43	0.34	0.56	0.55	0.54	0.042	0.69
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	35.4	0.76	0.79	1.45	0.91	1.59	0.099	1.35
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	38.45	0.64	0.98	1.25	0.79	1.25	0.064	1.25
UTI Wealth Builder Fund - Dividend Option	23.21	0.49	0.56	0.42	0.42	0.42	0.036	0.37
UTI Wealth Builder Fund - Growth Option	23.29	0.58	0.31	0.35	0.56	0.27	0.033	0.25

LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION, HDFC MID-CAP OPPORTUNITIES FUND - Growth Option, HDFC MID-CAP OPPORTUNITIES FUND - Growth Option, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND and SBI INFRASTRUCTURE FUND - SERIES I GROWTH are the funds which have recorded higher returns than other funds as seen by their high values of t-statistic.

Table 5.21 Repurchase prices and Natex

	Regression		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	27.25	0.58	0.59	1.26	0.42	1.16	0.065	1.64
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	31.95	0.76	0.48	1.29	0.32	1.81	0.057	1.13
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	23.39	0.56	0.42	0.34	0.55	0.55	0.067	0.61
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	24.5	0.74	0.56	0.49	0.48	0.41	0.051	0.55
HSBC Small Cap Fund - Dividend	28.75	0.36	0.75	0.46	0.44	0.29	0.033	1.42
HSBC Small Cap Fund - Growth	29.14	0.72	0.54	0.53	0.37	1.36	0.048	0.55
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	35.55	0.79	0.55	1.55	0.76	1.94	0.072	1.42
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	41.6	0.82	0.43	1.43	0.67	1.56	0.075	1.15
UTI Wealth Builder Fund - Dividend Option	23.1	0.43	0.38	0.55	0.58	0.38	0.052	0.42
UTI Wealth Builder Fund - Growth Option	13.67	0.39	0.36	0.48	0.55	0.54	0.039	0.57

Above analysis has been done on repurchase prices and Natex and have found out that SBI INFRASTRUCTURE FUND - SERIES I GROWTH, SBI MAGNUM TAXGAIN SCHEME 1993 – GROWTH, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option and LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION have shown better returns and have performed better than others.

Henriksson and Merton Model (1981)

$$R_{it} - R_f = a_i + b_{1i} Y(t) + b_{2i} (R_{mt} - R_f) + e_{it}$$

This methodology has been used by Henriksson and Merton (1981). This model also evaluates the market timing ability of the funds. The analysis has been done using market prices, NAVs and repurchases prices of the schemes and indexes selected are ET Index and Natex. The funds having positive and significant values show excess returns over the risk free return (in this case 91 day Treasury bills and 364 day Treasury bills have been taken for the study).

Table 5.22 Analysis based on Market Prices and ET Index

	Regression		b _{1i}		b _{2i}		Constant	
Name of the Schemes	F	R-Sq	b _{1i}	t	b _{2i}	t	a _i	t
SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND	42.7	0.65	0.43	1.22	0.56	1.36	0.057	1.89
SBI CAPITAL PROTECTION ORIENTED FUND - I Growth	51.3	0.87	0.39	1.19	0.41	0.78	0.049	0.92
HSBC Interval Fund - Plan III - Regular - Dividend	41.9	0.48	0.47	0.36	0.38	0.26	0.054	1.22
HSBC Interval Fund - Plan III - Regular - Growth	36.1	0.36	0.63	1.28	0.57	1.32	0.034	0.62
LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION	32.6	0.55	0.36	0.62	0.63	1.56	0.076	1.18
LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION	25.8	0.32	0.46	0.77	0.52	1.42	0.081	1.59
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Dividend	25.8	0.19	0.29	0.23	0.32	0.43	0.039	0.39
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth	22.1	0.22	0.36	0.36	0.35	0.28	0.024	0.38
LICMF TOP 100 FUND - DIVIDEND OPTION	35.8	0.51	0.48	1.62	0.58	1.33	0.065	1.41
LICMF TOP 100 FUND - GROWTH OPTION	34.7	0.68	0.65	1.44	0.65	1.36	0.069	1.32

The analysis has shown that LICMF TOP 100 FUND - DIVIDEND OPTION, LICMF TOP 100 FUND - GROWTH OPTION, HSBC Interval Fund - Plan III - Regular – Growth, SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND, HSBC Interval Fund - Plan III - Regular – Growth and LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION have shown a good record registering able market selection capability of the portfolio managers.

Table 5.23 Analysis based on Market Prices and Natex

Name of the Schemes	Regression		b_{1i}		b_{2i}		Constant	
	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND	32.6	0.35	0.86	1.21	0.38	1.24	0.042	1.01
SBI CAPITAL PROTECTION ORIENTED FUND - I Growth	32.8	0.58	0.55	1.42	0.56	0.65	0.069	0.79
HSBC Interval Fund - Plan III - Regular - Dividend	25.8	0.21	0.22	0.36	0.65	1.61	0.058	0.34
HSBC Interval Fund - Plan III - Regular - Growth	45.7	0.53	0.44	1.49	0.85	0.32	0.089	1.67
LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION	29.3	0.65	0.21	0.89	0.66	1.58	0.041	0.76
LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION	33.6	0.67	0.47	0.53	0.39	0.86	0.031	1.57
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Dividend	26.5	0.19	0.32	0.33	0.41	0.37	0.037	1.36
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth	13.6	0.28	0.19	0.21	0.32	0.21	0.057	0.27
LICMF TOP 100 FUND - DIVIDEND OPTION	26.5	0.59	0.41	0.57	0.51	1.57	0.078	1.54
LICMF TOP 100 FUND - GROWTH OPTION	37.7	0.65	0.36	0.63	0.59	1.69	0.068	0.45

Using market prices and Natex, we find that SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND, HSBC Interval Fund - Plan III - Regular – Growth and LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION have been the strong performers in the market. These funds have shown high values of t-statistic.

Table 5.24 Analysis based on NAVs and ET Index

	Regression		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
DWS Fixed Term Fund-Sr 60 Inst Div	14.4	0.14	0.22	-	0.18	0.31	0.0021	-
DWS Fixed Term Fund-Sr 60 Reg Div	23.9	0.25	0.21	-	0.39	1.21	0.0035	0.31
Tata Smart Investment Plan - 1 - Scheme A - Dividend	65.5	0.43	0.45	0.65	0.36	3.56	0.072	0.41
Tata Smart Investment Plan - 1 - Scheme B - Growth	43.2	0.62	0.63	0.61	0.55	3.31	0.032	0.54
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class A	65.1	0.56	0.33	0.47	0.45	2.19	0.047	0.63
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class B	38.7	0.41	0.34	0.58	0.29	2.66	0.026	0.44
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	59.3	0.34	0.35	0.36	0.48	1.47	0.059	0.61
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	52.4	0.39	0.24	0.22	0.48	1.52	0.063	0.78
Birla Tax Plan 98	34.5	0.87	0.51	0.63	0.58	2.31	0.073	0.48
HDFC LONG TERM EQUITY FUND- Dividend	54.2	0.51	0.92	0.71	0.86	3.56	0.052	0.73
HDFC LONG TERM EQUITY FUND- Growth	49.8	0.79	0.58	0.83	0.92	4.13	0.042	0.58
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	77.1	0.76	0.54	0.96	0.81	5.33	0.094	0.44
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	32.4	0.24	0.31	0.38	0.32	1.55	0.056	0.56
HSBC Small Cap Fund - Dividend	39.6	0.13	0.21	0.28	0.24	1.28	0.052	0.46
HSBC Small Cap Fund - Growth	26.2	0.23	0.38	0.18	0.38	1.37	0.034	0.36
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option	85.1	0.53	0.73	0.69	0.86	4.56	0.049	0.82
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option	56.7	0.62	0.78	0.95	0.61	3.24	0.045	0.77
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	73.9	0.53	0.43	0.71	0.53	4.85	0.093	0.43
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	69.9	0.55	0.75	0.73	0.49	3.38	0.055	0.53

Sundaram BNP Paribas Select Small Cap Dividend	48.7	0.13	0.32	0.26	0.35	2.96	0.046	0.21
Sundaram BNP Paribas Select Small Cap Dividend	53.4	0.25	0.38	0.24	0.23	1.45	0.018	0.23
UTI Wealth Builder Fund - Dividend Option	36.1	0.14	0.27	0.33	0.27	1.53	0.059	0.38
UTI Wealth Builder Fund - Growth Option	36.6	0.19	0.34	0.28	0.32	1.82	0.016	0.26
Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option	43.5	0.56	0.71	0.58	0.64	5.19	0.043	0.65
Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option	67.5	0.66	0.41	0.62	0.61	3.73	0.044	0.63
Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan	32.5	0.52	0.53	0.37	0.73	2.81	0.063	0.84
Franklin Templeton Fixed Tenure Fund Series X Plan A - Dividend	38.7	0.33	0.22	0.56	0.62	1.52	0.047	0.62
UTI-Short Term FMP Sr-II -III (90D) - Growth Option	23.5	0.24	0.25	0.29	0.23	1.33	0.023	0.39
UTI-Short Term FMP Sr-II -IV (90 D)- Growth Option	31.8	0.26	0.24	0.26	0.44	1.85	0.032	0.43
UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option	71.6	0.51	0.61	0.73	0.58	5.68	0.033	0.51
Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan - Growth	45.8	0.77	0.71	0.75	0.69	6.52	0.059	0.83
Sundaram BNP Paribas FTP 367 days Series P Growth	39.3	0.26	0.58	0.53	0.38	2.31	0.037	0.71
Sundaram BNP Paribas FTP 367 days Series P Dividend	25.9	0.43	0.53	0.85	0.25	2.55	0.028	0.47
SBI DEBT FUND SERS-90D-GROWTH	92.3	0.51	0.89	0.66	0.91	4.89	0.059	0.55
Religare FMP-375 days-Sr-XVI - Institutional Growth	82.7	0.66	0.73	0.56	0.58	4.82	0.058	0.88
Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment	63.1	0.32	0.66	0.19	0.56	3.56	0.071	0.56
LICMF Interval Fund Annual Plan - Series 1 Dividend Option	51.2	0.23	0.52	0.24	0.38	3.25	0.031	0.53
LICMF Interval Fund Annual Plan - Series 1 Growth Option	36.1	0.17	0.84	0.26	0.29	0.39	0.034	0.27
Kotak FMP 13M Series 6 Dividend	22.2	0.14	0.42	0.37	0.31	0.81	0.023	0.33
Kotak FMP 13M Series 6 Growth	55.6	0.84	0.42	0.75	0.44	1.24	0.021	0.48
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND	49.8	0.66	0.51	0.62	0.62	1.82	0.029	0.39
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL GROWTH	58.9	0.49	0.56	0.45	0.88	2.73	0.042	0.42
IDFC Fixed Maturity Plan QS 55- Dividend	62.3	0.45	0.71	0.43	0.79	3.55	0.036	0.61

IDFC Fixed Maturity Plan QS 55-Growth	42.1	0.51	0.44	0.67	0.22	0.89	0.029	0.39
ICICI Prudential Real Estate Securities Fund - Retail Dividend	54.5	0.45	0.31	0.91	0.25	0.78	0.038	0.29
ICICI Prudential Real Estate Securities Fund - Retail Growth	61.5	0.72	0.63	0.71	0.62	4.85	0.083	0.73
HSBC Fixed Term Series-53-Reg-Dividend	58.6	0.89	0.48	0.86	0.55	3.53	0.069	0.58
HSBC Fixed Term Series-53-Reg-Growth	23.9	0.38	0.68	0.57	0.44	2.12	0.068	0.46
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Growth Option	34.1	0.24	0.44	0.65	0.69	2.35	0.044	0.85
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Dividend Option	63.1	0.75	0.75	0.62	0.53	3.58	0.077	0.68
LICMF INDIA VISION FUND - DIVIDEND OPTION	73.9	0.56	0.69	0.73	0.94	4.82	0.081	0.57
LICMF INDIA VISION FUND - GROWTH OPTION	55.4	0.66	0.85	0.67	0.58	5.54	0.052	0.72
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND	56.3	0.79	0.73	0.41	0.71	4.73	0.065	0.49
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH	66.9	0.75	0.56	0.78	0.69	4.48	0.074	0.75
UTI - Infrastructure Advantage Fund - Growth Option	62.2	0.86	0.78	0.81	0.75	5.69	0.082	0.87

Using NAVs and ET Index has shown that HSBC Fixed Term Series-53-Reg-Dividend, ICICI Prudential Real Estate Securities Fund - Retail Dividend, Kotak FMP 13M Series 6 Growth, Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan – Growth, UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option and HDFC LONG TERM EQUITY FUND-Growth are the funds which have given higher returns showing market timing ability of the portfolio managers.

Table 5.25 Analysis based on NAVs and Natex

	Regression		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
DWS Fixed Term Fund-Sr 60 Inst Div	33.9	0.12	0.22	0.12	0.21	1.29	0.0011	0.16
DWS Fixed Term Fund-Sr 60 Reg Div	17.7	0.22	0.34	0.28	0.33	1.76	0.0027	0.21
Tata Smart Investment Plan - 1 - Scheme A - Dividend	58.9	0.32	0.43	0.53	0.56	2.66	0.043	0.32
Tata Smart Investment Plan - 1 - Scheme B - Growth	75.4	0.44	0.21	0.57	0.66	3.73	0.054	0.49
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class A	29.5	0.75	0.58	0.55	0.79	2.32	0.028	0.34
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class B	46.9	0.24	0.38	0.38	0.45	3.61	0.037	0.58
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	23.4	0.33	0.21	0.36	0.27	1.26	0.023	0.24
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	26.2	0.52	0.36	0.27	0.26	1.65	0.031	0.22
Birla Tax Plan 98	74.1	0.34	0.56	0.73	1.89	5.96	0.051	1.76
HDFC LONG TERM EQUITY FUND-Dividend	64.5	0.45	0.52	0.55	0.83	4.19	0.044	1.81
HDFC LONG TERM EQUITY FUND-Growth	73.4	0.91	0.62	0.79	1.53	4.98	0.073	1.77
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	62.2	0.49	0.44	0.83	1.64	4.52	0.075	1.35
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	33.1	0.47	0.22	0.34	0.28	2.37	0.038	0.21
HSBC Small Cap Fund - Dividend	39.4	0.22	0.26	0.22	0.41	2.65	0.025	0.13
HSBC Small Cap Fund - Growth	29.1	0.25	0.33	0.36	0.33	2.51	0.032	0.33
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option	77.6	0.79	0.48	0.69	0.49	5.53	0.045	1.61
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option	58.9	0.61	0.75	0.76	0.52	3.92	0.056	1.32
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	43.4	0.53	0.66	0.44	0.58	4.81	0.039	0.24
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	45.2	0.83	0.41	0.51	0.68	5.61	0.048	0.27
Sundaram BNP Paribas Select Small Cap Dividend	34.7	0.34	0.52	0.36	0.22	1.92	0.037	0.32

Sundaram BNP Paribas Select Small Cap Dividend	29.8	0.22	0.39	0.31	0.34	2.52	0.033	0.37
UTI Wealth Builder Fund - Dividend Option	37.9	0.16	0.41	0.33	0.32	1.93	0.023	0.14
UTI Wealth Builder Fund - Growth Option	21.2	0.26	0.48	0.24	0.24	2.45	0.035	0.11
Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option	73.7	0.83	0.56	0.45	1.48	7.16	0.062	1.14
Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option	52.9	0.55	0.52	0.52	1.56	7.33	0.045	1.26
Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan	32.5	0.53	0.34	0.37	0.73	2.96	0.024	0.34
Franklin Templeton Fixed Tenure Fund Series X Plan A - Dividend	35.2	0.78	0.89	0.33	0.45	3.19	0.058	0.44
UTI-Short Term FMP Sr-II -III (90D) - Growth Option	34.1	0.35	0.34	0.24	0.36	3.24	0.023	0.26
UTI-Short Term FMP Sr-II -IV (90 D)- Growth Option	27.6	0.41	0.3	0.17	0.63	2.64	0.025	0.34
UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option	63.1	0.83	0.56	0.66	1.55	6.95	0.073	1.11
Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan - Growth	69.6	0.66	0.72	0.84	1.68	7.54	0.045	1.55
Sundaram BNP Paribas FTP 367 days Series P Growth	48.1	0.26	0.47	0.47	0.36	3.67	0.025	0.49
Sundaram BNP Paribas FTP 367 days Series P Dividend	59.6	0.48	0.66	0.33	0.39	3.43	0.023	0.21
SBI DEBT FUND SERS-90D-GROWTH	55.3	0.53	0.84	0.52	0.56	5.42	0.066	1.71
Religare FMP-375 days-Sr-XVI - Institutional Growth	54.4	0.60	0.65	0.43	0.67	4.58	0.053	1.73
Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment	36.2	0.41	0.49	0.36	0.66	3.61	0.056	0.32
LICMF Interval Fund Annual Plan - Series 1 Dividend Option	44.4	0.31	0.36	0.25	0.63	2.58	0.063	0.55
LICMF Interval Fund Annual Plan - Series 1 Growth Option	39.6	0.56	0.37	0.23	0.23	2.21	0.022	0.26
Kotak FMP 13M Series 6 Dividend	27.9	0.54	0.21	0.22	0.39	3.61	0.035	0.38
Kotak FMP 13M Series 6 Growth	60.4	0.85	0.73	0.55	0.43	6.65	0.066	1.42
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND	59.2	0.47	0.44	0.58	1.53	5.96	0.089	1.29
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL GROWTH	43.3	0.39	0.89	0.46	1.59	5.66	0.077	1.37
IDFC Fixed Maturity Plan QS 55-Dividend	69.1	0.71	0.64	0.74	0.68	5.42	0.063	0.55

IDFC Fixed Maturity Plan QS 55-Growth	45.7	0.85	0.49	0.43	0.41	3.67	0.032	0.65
ICICI Prudential Real Estate Securities Fund - Retail Dividend	34.1	0.45	0.83	0.36	0.43	3.39	0.056	0.57
ICICI Prudential Real Estate Securities Fund - Retail Growth	43.1	0.89	0.59	0.63	0.65	6.34	0.063	0.48
HSBC Fixed Term Series-53-Reg-Dividend	34.2	0.78	0.85	0.55	0.58	4.69	0.073	0.65
HSBC Fixed Term Series-53-Reg-Growth	67.9	0.22	0.66	0.29	0.24	3.387	0.033	0.32
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Growth Option	34.2	0.26	0.26	0.35	0.33	2.45	0.054	0.41
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Dividend Option	47.5	0.65	0.33	0.58	0.55	8.75	0.065	1.34
LICMF INDIA VISION FUND - DIVIDEND OPTION	41.2	0.52	0.24	0.75	0.66	7.33	0.079	1.32
LICMF INDIA VISION FUND - GROWTH OPTION	31.1	0.66	0.45	0.33	1.76	6.71	0.056	1.37
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND	44.1	0.48	0.39	0.66	1.84	7.43	0.079	1.73
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH	61.8	0.56	0.46	0.79	1.44	5.18	0.055	0.98
UTI - Infrastructure Advantage Fund - Growth Option	43.2	0.58	0.58	0.85	1.53	4.89	0.049	0.82

NAVs and Natex of the close ended funds have shown that HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option, Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan – Growth, UTI - Infrastructure Advantage Fund - Growth Option, SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH and LICMF INDIA VISION FUND - DIVIDEND OPTION have given higher returns. The t-statistic values of the funds have been higher than rest of the funds.

Table 5.26 Repurchase prices and ET Index

	Regression		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	23.71	0.44	0.69	1.54	0.46	1.34	0.058	1.13
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	23.67	0.65	0.53	1.75	0.34	1.76	0.052	0.37
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	29.41	0.36	0.62	0.32	0.53	0.47	0.034	0.42
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	15.4	0.52	0.43	0.84	0.69	0.54	0.067	0.66
HSBC Small Cap Fund - Dividend	21.97	0.51	0.57	1.54	0.32	0.69	0.043	0.44
HSBC Small Cap Fund - Growth	21.49	0.69	0.35	0.32	0.44	0.57	0.053	0.31
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	36.21	0.74	0.76	1.48	0.74	1.73	0.043	0.59
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	34.8	0.79	0.59	1.24	0.61	1.3	0.079	0.94
UTI Wealth Builder Fund - Dividend Option	24.78	0.32	0.21	0.51	0.44	0.54	0.037	0.35
UTI Wealth Builder Fund - Growth Option	25.9	0.24	0.36	0.43	0.33	0.43	0.025	0.23

The analysis based on repurchase prices and ET Index shows that LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION, HSBC Small Cap Fund – Dividend, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND and SBI INFRASTRUCTURE FUND - SERIES I GROWTH are the high earning funds. These funds have been able to give returns due to correct anticipations made by the fund managers.

Table 5.27 Repurchase prices and Natex

	Regression		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	b_{1i}	t	b_{2i}	t	a_i	t
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	22.73	0.79	0.67	1.11	0.51	1.27	0.076	1.79
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	28.62	0.51	0.46	1.36	0.57	1.22	0.052	1.22
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	25.57	0.66	0.59	0.79	0.78	1.43	0.068	1.39
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	17.93	0.49	0.61	0.57	0.62	0.49	0.049	0.49
HSBC Small Cap Fund - Dividend	21.8	0.57	0.39	1.22	0.46	0.32	0.024	0.33
HSBC Small Cap Fund - Growth	22.3	0.58	0.62	0.52	0.36	0.58	0.043	0.61
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	37.23	0.93	0.76	1.31	0.91	1.35	0.053	1.39
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	33.11	0.77	0.61	1.47	0.97	1.16	0.064	1.25
UTI Wealth Builder Fund - Dividend Option	23.8	0.33	0.34	0.37	0.49	0.37	0.052	0.44
UTI Wealth Builder Fund - Growth Option	26.8	0.35	0.28	0.46	0.32	0.33	0.049	0.51

LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, SBI INFRASTRUCTURE FUND - SERIES I GROWTH, HSBC Small Cap Fund – Dividend and SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND have shown good records than other funds and have shown market timing ability and selection ability of the portfolio managers.

Fabozzi and Francis Model (1979)

The below analysis has been done using Fabozzi and Francis (1979) methodology. For measurement of the market timing ability of the funds, following equation has been used

$$R_{it} - R_f = a_1 + a_2 D_t + b_{1i} D_t (R_{mt} - R_f) + b_{2i} (R_{mt} - R_f) + e_{it}$$

This analysis has used NAVs, market price and repurchase price of the funds and ET and Natex indices. The funds having positive and significant values show excess returns over the risk free return (in this case 91 day Treasury bills and 364 day Treasury bills have been taken for the study).

Table 5.28 Analysis based on Market Prices and ET Index

Name of the Schemes	Regression		a _{2i}		b _{1i}		b _{2i}		Constant	
	F	R-Sq	a _{2i}	t	b _{1i}	t	b _{2i}	t	a _{1i}	t
SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND	37.4	0.64	0.041	1.15	0.39	1.43	0.52	1.32	0.055	1.23
SBI CAPITAL PROTECTION ORIENTED FUND - I Growth	41.9	0.42	0.052	1.07	0.67	1.88	0.48	1.12	0.045	1.14
HSBC Interval Fund - Plan III - Regular - Dividend	31.5	0.39	0.046	1.56	0.32	0.55	0.61	0.89	0.036	0.22
HSBC Interval Fund - Plan III - Regular - Growth	36.8	0.51	0.038	0.59	0.48	1.46	0.34	0.52	0.047	0.49
LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION	26.5	0.58	0.053	0.88	0.42	1.12	0.59	1.22	0.038	0.32
LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION	22.5	0.49	0.054	1.25	0.65	1.48	0.56	1.35	0.055	0.25
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Dividend	12.5	0.38	0.047	0.74	0.47	0.33	0.51	1.52	0.039	0.22
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth	15.2	0.77	0.066	1.35	0.43	1.19	0.68	1.35	0.028	0.45

LICMF TOP 100 FUND - DIVIDEND OPTION	25.1	0.51	0.038	1.44	0.51	0.58	0.77	0.71	0.051	0.42
LICMF TOP 100 FUND - GROWTH OPTION	23.5	0.33	0.044	1.51	0.35	0.31	0.89	1.48	0.056	0.65

From above table, we find that SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND, LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION, Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth and LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION are performing better in the market. The strong performance is the result of the anticipations made by the fund managers based on the market conditions.

Table 5.29 Analysis based on Market Prices and Natex

	Regression		a_{2i}		b_{1i}		b_{2i}		Constant	
Name of the Schemes	F	R-Sq	a_{2i}	t	b_{1i}	t	b_{2i}	t	a_{1i}	t
SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND	33.9	0.52	0.041	1.15	0.78	1.54	0.52	1.28	0.065	1.18
SBI CAPITAL PROTECTION ORIENTED FUND - I Growth	34.1	0.45	0.074	1.29	0.52	1.36	0.68	1.86	0.048	1.13
HSBC Interval Fund - Plan III - Regular - Dividend	25.3	0.36	0.048	0.43	0.49	0.58	0.46	1.57	0.084	1.29
HSBC Interval Fund - Plan III - Regular - Growth	27.9	0.55	0.069	0.38	0.51	0.36	0.62	0.73	0.036	0.51
LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION	38.2	0.48	0.045	1.84	0.71	0.48	0.73	1.26	0.045	0.35
LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION	35.8	0.39	0.066	1.71	0.83	0.68	0.45	0.56	0.076	0.88

Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Dividend	25.4	0.31	0.034	0.32	0.35	0.35	0.28	0.69	0.042	0.68
Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth	11.8	0.23	0.021	0.28	0.2	0.23	0.24	0.45	0.034	0.32
LICMF TOP 100 FUND - DIVIDEND OPTION	43.6	0.49	0.063	1.36	0.54	0.49	0.54	0.59	0.041	0.51
LICMF TOP 100 FUND - GROWTH OPTION	36.2	0.55	0.042	1.65	0.78	0.81	0.87	1.21	0.064	1.68

Analysis using market prices and Natex show that SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND, SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION and LICMF TOP 100 FUND - GROWTH OPTION have been the top performers in the market.

Table 5.30 Analysis based on NAVs and ET Index

Name of the Schemes	Regression		a _{2i}		b _{1i}		b _{2i}		Constant	
	F	R-Sq	a _{2i}	t	b _{1i}	t	b _{2i}	t	a _{1i}	t
DWS Fixed Term Fund-Sr 60 Inst Div	4.42	0.13	-	-	0.14	0.24	0.17	0.16	0.0017	0.18
DWS Fixed Term Fund-Sr 60 Reg Div	3.35	0.25	-	-	0.17	0.33	0.23	0.28	0.0029	0.31
Tata Smart Investment Plan - 1 - Scheme A - Dividend	25.9	0.33	0.055	1.76	0.53	0.49	0.72	1.21	0.049	1.61
Tata Smart Investment Plan - 1 - Scheme B - Growth	33.2	0.51	0.051	1.33	0.47	0.55	0.69	1.59	0.063	1.23
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class A	26.9	0.44	0.043	0.94	0.36	0.63	0.52	0.61	0.021	0.23
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class B	47.1	0.62	0.034	0.69	0.52	0.39	0.44	0.46	0.035	0.37
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	11.7	0.21	0.025	0.32	0.27	0.19	0.31	0.44	0.045	0.53
LICMF SYSTEMATIC ASSET ALLOCATION FUND -	12.5	0.33	0.028	0.26	0.33	0.29	0.24	0.32	0.024	0.36

GROWTH OPTION										
Birla Tax Plan 98	31.4	0.64	0.046	1.91	0.46	1.41	0.69	1.37	0.048	1.38
HDFC LONG TERM EQUITY FUND-Dividend	26.5	0.66	0.069	1.62	0.61	1.88	0.71	0.42	0.077	2.81
HDFC LONG TERM EQUITY FUND-Growth	49.6	0.78	0.052	1.57	0.85	1.76	0.94	1.57	0.066	1.73
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	47.1	0.51	0.043	1.76	0.58	0.85	0.83	1.15	0.075	1.37
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	13.2	0.28	0.021	0.36	0.15	1.91	0.36	0.36	0.012	0.26
HSBC Small Cap Fund - Dividend	14.2	0.26	0.019	0.25	0.22	0.41	0.16	0.45	0.022	0.31
HSBC Small Cap Fund - Growth	17.3	0.34	0.021	0.22	0.35	0.35	0.24	0.13	0.029	0.17
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option	39.1	0.57	0.049	1.52	0.55	1.89	0.64	0.36	0.065	0.73
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option	26.9	0.69	0.053	1.95	0.49	0.55	0.75	1.69	0.046	0.85
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	51.9	0.46	0.069	1.76	0.46	0.37	0.73	0.49	0.074	0.61
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	41.6	0.53	0.061	0.75	0.84	0.64	0.83	0.58	0.055	0.68
Sundaram BNP Paribas Select Small Cap Dividend	11.1	0.36	0.034	0.14	0.79	0.39	0.41	0.55	0.038	0.26
Sundaram BNP Paribas Select Small Cap Dividend	23.3	0.29	0.026	0.20	0.26	0.17	0.33	0.21	0.035	0.17
UTI Wealth Builder Fund - Dividend Option	12.6	0.33	0.018	0.37	0.37	0.19	0.32	0.17	0.025	0.35
UTI Wealth Builder Fund - Growth Option	14.4	0.35	0.014	0.32	0.26	0.28	0.39	0.19	0.021	0.38
Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option	43.3	0.62	0.043	1.22	0.72	1.26	0.69	1.55	0.051	1.72
Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option	42.4	0.77	0.057	1.35	0.48	1.91	0.59	1.17	0.063	1.38
Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan	26.9	0.48	0.046	0.75	0.72	0.63	0.51	0.78	0.042	0.49
Franklin Templeton Fixed Tenure Fund Series X Plan A - Dividend	26.6	0.28	0.039	0.81	0.49	0.79	0.48	0.41	0.046	0.84

UTI-Short Term FMP Sr-II -III (90D) - Growth Option	12.7	0.43	0.046	0.36	0.34	0.27	0.41	0.66	0.055	0.46
UTI-Short Term FMP Sr-II -IV (90 D)-Growth Option	11.5	0.27	0.054	0.49	0.21	0.55	0.35	0.27	0.038	0.54
UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option	36.1	0.47	0.063	1.75	0.56	1.93	0.65	1.46	0.049	1.49
Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan - Growth	65.1	0.54	0.053	1.23	0.52	1.67	0.52	1.72	0.075	1.21
Sundaram BNP Paribas FTP 367 days Series P Growth	41.2	0.76	0.047	0.63	0.25	0.38	0.64	0.69	0.031	0.89
Sundaram BNP Paribas FTP 367 days Series P Dividend	55.2	0.53	0.053	0.76	0.37	0.56	0.69	0.78	0.046	0.51
SBI DEBT FUND SERS-90D-GROWTH	36.2	0.45	0.076	1.35	0.68	1.36	0.91	1.23	0.056	1.64
Religare FMP-375 days-Sr-XVI - Institutional Growth	46.5	0.68	0.055	1.71	0.91	1.45	0.72	1.53	0.075	1.33
Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment	35.1	0.26	0.068	0.69	0.55	0.25	0.66	0.41	0.044	0.55
LICMF Interval Fund Annual Plan - Series 1 Dividend Option	34.2	0.34	0.045	0.41	0.33	0.32	0.62	0.58	0.042	0.66
LICMF Interval Fund Annual Plan - Series 1 Growth Option	19.3	0.15	0.028	0.34	0.22	0.38	0.43	0.36	0.037	0.31
Kotak FMP 13M Series 6 Dividend	13.7	0.28	0.035	0.21	0.31	0.89	0.31	0.21	0.013	0.23
Kotak FMP 13M Series 6 Growth	44.8	0.63	0.068	0.84	0.42	0.78	0.74	0.68	0.033	0.51
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND	49.1	0.65	0.089	0.63	0.58	0.76	0.83	0.77	0.067	0.46
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL GROWTH	78.2	0.37	0.089	0.65	0.92	0.54	0.53	0.65	0.078	0.68
IDFC Fixed Maturity Plan QS 55-Dividend	53.1	0.88	0.075	0.64	0.63	0.65	0.65	0.69	0.056	0.61
IDFC Fixed Maturity Plan QS 55-Growth	27.5	0.36	0.068	0.78	0.36	0.34	0.43	0.81	0.043	0.46
ICICI Prudential Real Estate Securities Fund - Retail Dividend	28.7	0.51	0.063	0.87	0.27	0.46	0.36	0.37	0.043	0.39
ICICI Prudential Real Estate Securities Fund - Retail Growth	66.8	0.49	0.055	0.62	0.75	1.49	0.52	0.41	0.041	0.85

HSBC Fixed Term Series-53-Reg-Dividend	46.6	0.93	0.069	0.61	0.64	1.66	0.73	0.65	0.062	0.72
HSBC Fixed Term Series-53-Reg-Growth	26.5	0.45	0.065	0.53	0.48	0.38	0.48	0.55	0.042	0.66
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Growth Option	39.5	0.75	0.057	0.56	0.67	0.79	0.41	0.43	0.031	0.59
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option	41.6	0.48	0.071	1.76	0.53	1.61	0.95	1.14	0.043	1.26
LICMF INDIA VISION FUND - DIVIDEND OPTION	54.2	0.52	0.055	0.63	0.51	1.55	0.53	1.46	0.061	0.41
LICMF INDIA VISION FUND - GROWTH OPTION	35.7	0.88	0.074	0.91	0.86	0.89	0.84	1.49	0.058	1.51
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND	55.3	0.74	0.069	1.53	0.68	1.72	0.76	0.93	0.062	0.73
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH	57.5	0.67	0.063	1.34	0.76	0.71	0.63	0.77	0.072	0.82
UTI - Infrastructure Advantage Fund - Growth Option	64.7	0.72	0.055	1.44	0.83	1.55	0.92	0.79	0.089	0.75

HDFC MID-CAP OPPORTUNITIES FUND - Growth Option, HDFC LONG TERM EQUITY FUND-Dividend, HDFC LONG TERM EQUITY FUND-Growth, Birla Tax Plan 98, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option, HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option, SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND and UTI - Infrastructure Advantage Fund - Growth Option have recorded higher returns and the selection ability of the funds.

Table 5.31 Analysis based on NAVs and Natex

Name of the Schemes	Regression		a _{2i}		b _{1i}		b _{2i}		Constant	
	F	R-Sq	a _{2i}	t	b _{1i}	t	b _{2i}	t	a _{1i}	t
DWS Fixed Term Fund-Sr 60 Inst Div	3.26	0.12	-	-	0.13	0.17	0.13	0.09	0.0009	0.12
DWS Fixed Term Fund-Sr 60 Reg Div	3.55	0.28	-	-	0.22	0.22	0.24	0.12	0.0012	0.27

Tata Smart Investment Plan - 1 - Scheme A - Dividend	45.7	0.31	0.046	0.54	0.58	0.33	0.66	1.22	0.045	0.46
Tata Smart Investment Plan - 1 - Scheme B - Growth	48.8	0.38	0.075	0.95	0.39	1.61	0.33	1.16	0.031	0.33
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class A	22.3	0.47	0.071	0.47	0.33	1.67	0.46	0.53	0.039	0.31
Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class B	33.6	0.59	0.053	0.57	0.38	0.55	0.43	0.77	0.024	0.35
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	31.1	0.42	0.045	0.22	0.24	0.22	0.31	0.54	0.021	0.23
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	24.3	0.75	0.027	0.37	0.21	0.36	0.14	0.75	0.052	0.49
Birla Tax Plan 98	43.2	0.83	0.067	1.61	0.61	1.57	0.61	2.58	0.042	1.46
HDFC LONG TERM EQUITY FUND-Dividend	53.7	0.58	0.079	1.23	0.53	1.66	0.58	3.89	0.057	1.58
HDFC LONG TERM EQUITY FUND-Growth	47.11	0.75	0.068	1.85	0.78	0.77	0.76	3.33	0.061	1.61
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	61.4	0.63	0.054	1.53	0.89	0.85	0.91	3.61	0.086	1.64
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	31.6	0.13	0.034	0.33	0.14	0.39	0.31	0.28	0.024	0.34
HSBC Small Cap Fund - Dividend	33.9	0.27	0.029	0.35	0.23	0.28	0.44	0.31	0.013	0.21
HSBC Small Cap Fund - Growth	24.4	0.13	0.018	0.38	0.24	0.36	0.27	0.16	0.016	0.18
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option	64.3	0.95	0.079	1.16	0.47	1.57	0.48	2.15	0.051	0.67
ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option	51.7	0.47	0.061	1.48	0.63	1.26	0.77	3.61	0.033	0.53
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	25.6	0.36	0.043	0.45	0.56	0.57	0.58	3.44	0.063	0.46
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	49.8	0.43	0.056	0.79	0.67	0.46	0.53	2.61	0.061	0.36
Sundaram BNP Paribas Select Small Cap Dividend	12.6	0.23	0.033	0.24	0.35	0.21	0.13	1.63	0.036	0.33
Sundaram BNP Paribas Select Small Cap Dividend	14.7	0.36	0.031	0.16	0.17	0.28	0.28	1.51	0.023	0.21
UTI Wealth Builder Fund - Dividend Option	15.9	0.24	0.028	0.44	0.22	0.33	0.22	0.54	0.038	0.31

UTI Wealth Builder Fund - Growth Option	19.5	0.17	0.022	0.33	0.18	0.25	0.31	0.86	0.021	0.24
Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option	45.4	0.57	0.039	1.31	0.48	1.76	0.56	4.92	0.049	1.23
Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option	54.6	0.95	0.058	1.88	0.53	1.32	0.79	6.39	0.057	1.72
Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan	29.9	0.43	0.035	0.32	0.36	0.57	0.43	3.53	0.036	0.68
Franklin Templeton Fixed Tenure Fund Series X Plan A - Dividend	24.9	0.77	0.047	0.77	0.28	1.66	0.75	2.61	0.059	0.56
UTI-Short Term FMP Sr-II -III (90D) - Growth Option	24.7	0.69	0.056	0.75	0.39	0.75	0.42	1.56	0.053	0.66
UTI-Short Term FMP Sr-II -IV (90 D)-Growth Option	26.6	0.57	0.043	0.57	0.53	0.43	0.35	1.91	0.048	0.91
UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option	37.7	0.46	0.064	1.69	0.62	1.42	0.96	4.35	0.058	1.37
Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan - Growth	32.8	0.65	0.055	1.38	0.48	1.64	0.73	5.06	0.067	1.43
Sundaram BNP Paribas FTP 367 days Series P Growth	15.3	0.35	0.023	0.57	0.79	0.43	0.47	3.49	0.045	0.56
Sundaram BNP Paribas FTP 367 days Series P Dividend	17.1	0.54	0.036	0.94	0.47	0.64	0.62	3.81	0.053	0.43
SBI DEBT FUND SERS-90D-GROWTH	61.3	0.79	0.065	1.41	0.68	1.92	0.71	6.33	0.064	1.33
Religare FMP-375 days-Sr-XVI - Institutional Growth	43.2	0.72	0.089	1.27	0.51	1.57	0.85	5.71	0.091	1.66
Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment	26.1	0.65	0.041	0.63	0.45	0.54	0.59	2.14	0.039	0.47
LICMF Interval Fund Annual Plan - Series 1 Dividend Option	24.3	0.49	0.043	0.75	0.28	0.47	0.42	2.75	0.062	0.75
LICMF Interval Fund Annual Plan - Series 1 Growth Option	12.27	0.32	0.022	0.38	0.21	0.13	0.18	0.78	0.024	0.27
Kotak FMP 13M Series 6 Dividend	11.4	0.27	0.016	0.25	0.14	0.24	0.3	0.47	0.018	0.22
Kotak FMP 13M Series 6 Growth	39.55	0.63	0.043	0.46	0.61	0.36	0.22	1.22	0.038	0.38
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL	44.7	0.86	0.031	0.61	0.45	0.43	0.36	1.42	0.042	0.89

DIVIDEND										
JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL GROWTH	58.3	0.93	0.038	0.55	0.61	0.38	0.21	2.68	0.058	1.31
IDFC Fixed Maturity Plan QS 55-Dividend	47.9	0.45	0.045	0.69	0.71	0.55	0.33	2.77	0.078	1.85
IDFC Fixed Maturity Plan QS 55-Growth	23.6	0.56	0.037	0.32	0.56	0.31	0.34	1.78	0.037	0.65
ICICI Prudential Real Estate Securities Fund - Retail Dividend	14.6	0.44	0.037	0.27	0.41	0.43	0.41	1.67	0.048	0.56
ICICI Prudential Real Estate Securities Fund - Retail Growth	32.1	0.68	0.079	0.62	0.51	0.57	0.64	3.64	0.039	1.85
HSBC Fixed Term Series-53- Reg-Dividend	44.4	0.47	0.044	0.54	0.38	0.65	0.49	3.88	0.076	1.54
HSBC Fixed Term Series-53- Reg-Growth	36.7	0.44	0.066	0.55	0.48	0.44	0.48	3.49	0.062	0.47
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Growth Option	48.9	0.96	0.075	0.47	0.38	0.38	0.36	2.85	0.051	0.64
HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option	43.6	0.51	0.073	0.69	0.57	1.43	0.87	1.23	0.047	1.68
LICMF INDIA VISION FUND - DIVIDEND OPTION	47.4	0.47	0.057	1.03	0.86	1.21	0.64	2.93	0.057	1.13
LICMF INDIA VISION FUND - GROWTH OPTION	59.5	0.95	0.063	1.24	0.33	1.54	0.51	4.53	0.045	1.38
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND	70.5	0.56	0.056	1.13	0.63	0.45	0.65	3.57	0.069	1.27
SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH	71.3	0.46	0.044	0.63	0.74	1.23	0.48	2.51	0.059	0.86
UTI - Infrastructure Advantage Fund - Growth Option	66.3	0.62	0.045	0.75	0.83	1.77	0.68	2.98	0.084	0.41

HDFC LONG TERM EQUITY FUND-Dividend, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option, Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option, UTI - Infrastructure Advantage Fund - Growth Option, LICMF INDIA VISION FUND - GROWTH OPTION and HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option are the funds which have given higher returns than other funds.

Table 5.32 Repurchase prices and ET Index

	Regression		a _{2i}		b _{1i}		b _{2i}		Constant	
Name of the Schemes	F	R-Sq	a _{2i}	t	b _{1i}	t	b _{2i}	t	a _{1i}	t
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	29.33	0.46	0.076	1.31	0.33	1.31	0.62	1.25	0.065	1.52
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	23.46	0.32	0.079	1.29	0.54	1.4	0.44	1.94	0.051	1.37
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	27.37	0.28	0.056	1.46	0.81	0.83	0.35	0.74	0.042	0.46
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	27.9	0.46	0.048	0.38	0.79	0.57	0.47	0.62	0.043	0.61
HSBC Small Cap Fund - Dividend	21.67	0.49	0.049	0.78	0.44	1.64	0.68	0.54	0.047	1.35
HSBC Small Cap Fund - Growth	28.98	0.27	0.042	0.36	0.42	0.31	0.46	0.63	0.034	0.28
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	35.7	0.73	0.071	1.82	0.59	1.62	0.73	1.27	0.075	1.42
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	38.15	0.62	0.073	1.22	0.61	1.35	0.75	1.54	0.094	1.94
UTI Wealth Builder Fund - Dividend Option	29.33	0.34	0.041	0.89	0.44	0.67	0.56	0.39	0.041	0.56
UTI Wealth Builder Fund - Growth Option	24.37	0.41	0.057	0.63	0.25	0.45	0.51	0.25	0.036	0.42

The above analysis shows that SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION and LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION are the strong performers in the market due to the accurate decisions taken by the fund managers.

Table 5.33 Repurchase prices and Natex

Name of the Schemes	Regression		a_{2i}		b_{1i}		b_{2i}		Constant	
	F	R-Sq	a_{2i}	t	b_{1i}	t	b_{2i}	t	a_{1i}	t
LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION	24.63	0.43	0.043	1.26	0.51	1.76	0.63	1.34	0.034	0.46
LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION	28.37	0.51	0.059	1.55	0.43	1.51	0.72	1.26	0.065	0.59
HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option	25.89	0.36	0.052	0.59	0.85	0.69	0.63	0.81	0.044	1.14
HDFC MID-CAP OPPORTUNITIES FUND - Growth Option	31.88	0.34	0.047	0.75	0.49	0.55	0.51	0.59	0.042	1.18
HSBC Small Cap Fund - Dividend	12.54	0.66	0.051	1.29	0.31	1.07	0.68	1.51	0.048	0.64
HSBC Small Cap Fund - Growth	26.58	0.39	0.065	0.85	0.74	1.44	0.48	0.78	0.045	0.63
SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND	35.82	0.63	0.079	1.51	0.91	1.51	0.78	0.89	0.071	1.29
SBI INFRASTRUCTURE FUND - SERIES I GROWTH	32.41	0.82	0.072	1.77	0.89	1.34	0.61	0.97	0.074	1.87
UTI Wealth Builder Fund - Dividend Option	23.37	0.74	0.069	0.37	0.48	0.49	0.33	0.63	0.055	0.47
UTI Wealth Builder Fund - Growth Option	21.69	0.62	0.039	0.28	0.51	0.41	0.47	0.46	0.049	0.39

The analysis has been done using repurchase prices and Natex. The funds which have found out to be the top performers are SBI INFRASTRUCTURE FUND - SERIES I GROWTH, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, HSBC Small Cap Fund – Dividend and LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION.

CHAPTER – VI

CONCLUDING REMARKS

6.1 Introduction

Mutual Fund industry in India originated with the introduction of mutual fund by UTI in India in 1963. The growth of mutual fund was slow but with the entry of private sector in 1987, the pace of progress accelerated. The main reason for the slow progress initially is unfamiliarity and unawareness among Indian investors.

Mutual fund makes it convenient for the investors especially small investors and household sector to realize their demand for capital growth and income preservation. Mutual fund introduces diversification in the selection of the funds and hence reduces risk. Mutual fund is a company that draws money from various investors and invests in varieties of securities like stocks, bonds, money market instruments.

Mutual Fund has become one of the popular forms of investment in recent times. Entry of Foreign Institutional Investors (FII)³² in mutual fund is bringing lot of foreign investment that also helps the industry to grow fast. Mutual funds have been handled by professionally managed company who guide the money according to the investment objectives of the investors.

³² Mutual Fund Data has been given in Appendix III

Mutual fund has its own disadvantages too. The cost of the mutual funds is the biggest threat for the investors. These costs make the funds to end up with sub standard performance of the funds. These costs are also hidden by the concerned companies through layer of financial terminology.

There are two kinds of costs or fees attached with mutual fund: ongoing yearly fees and transaction fees. Ongoing expenses are given by expense ratio also referred as Management Expense Ratio (MER). MER constitutes of cost of the fund managers (management fee), administrative cost and commission charges.

All these expenses lead to a higher cost of the funds. As stated by Securities and Exchange Commission's

"Higher expense funds do not, on average, perform better than lower expense funds."

Investors have to be cautious about the loads imposed on the mutual funds. Investors should not go for the funds with loads. Loads are the commission charges that are paid by the fund to the brokers and sale persons for selling the funds. Loads are divided in to front end load and back end load. Front end load is the payment made at the time of purchase of the funds. Back end load is the amount paid at the time of the sale of the funds in the given time frame. Apart from these, no load fund is the fund without the commission charges.

Before investing in a particular fund, we need to look at the performance of the funds. But considering the performance of the funds in isolation does not give any fruitful results. There are various ways to evaluate the performance of the funds. One way it to judge the performance against the market benchmark, another way is to compare with the other competing funds. Another point for the investors to keep in mind before investing is to look at the performance of the funds for a long period; as performance results monthly, quarterly or yearly basis does not show a true picture of the funds.

Many fund companies close the funds incurring losses from a long time. When the losers are excluded from category, their results are no longer included in the performance data. This makes the average in the category to move higher than they would have if the losers were included. This is known as survivorship bias.

Suppose there are three funds in a category. First fund has 3 year annualized total return of 10% and second, third funds have the annualized return (three years) of 6% and 4% respectively. The average annual return for all these funds is 6.67%. Now if second fund is facing losses and it needs to be liquidated or merged in to either first or third fund then it would not be included in the category. Then the average return would be 7%.

Nevertheless, the benefits of the mutual funds can not be discarded. Mutual funds have introduced diversification, economies of scale and liquidity. Mutual funds can be brought from the concerned companies or banks directly or through a broker.

There are certain terms used in mutual fund industry which need to be understood such as fund name, net asset value, trade time, and previous close price, year to date return, net assets, market prices and repurchase prices³³.

Net asset value: The total value of all the securities in the fund divided by the number of shares in the fund is called the net asset value (NAV) per share.

Market price: A security's last reported sale price (if on an exchange) or its current bid and ask prices (if Over-the-Counter); i.e. the price as determined dynamically by buyers and sellers in an open market also called market value.

Repurchase price: Repurchase price is different from redemption price and refers to the price at which a close-ended scheme repurchases its units. Repurchase can either be at NAV or can have an exit load.

³³ www.investorwords.com

Mutual funds have been categorized according to these investment objectives. The categorization can be put as:

- Interval Schemes
- Equity fund Schemes
- Bond fund Schemes
- Balanced fund Schemes
- Sector (industrial) fund Schemes
- Leverage fund Schemes
- Gilt fund Schemes
- Index fund Schemes
- Tax saving Schemes
- Money market fund Schemes
- Domestic fund Schemes
- Offshore fund Schemes
- Load funds
- No load funds
- Income fund Schemes
- Growth fund Schemes
- Hedge funds
- Fund of fund
- Exchange traded funds

Mutual fund can also be categorized on the way of its sale and purchase. On this basis, mutual fund has been categorized as close ended funds and open ended funds.

Objectives of the study

1. To investigate whether the mutual funds offer or do not offer better risk adjusted returns.
2. To investigate the performance of the schemes by the computation of β .
3. To evaluate the market timing of the fund managers.
4. To check the consistency of the performance of the mutual funds.
5. To check the performance of the equity funds and debt funds

Data and Methodology of the study

Introduction of the mutual funds has been given in chapter I followed by the studies done on the mutual funds previously. The literature deals with Market Timing of the portfolio managers, performance of the funds comparable to the benchmark selected, past performance indicative of future performance of the funds, performance analyzed on risk and return and performance of the Equity funds.

Data and methodologies used in the study have been discussed in detail in Chapter III. The summarized results of the analysis have been given in this chapter. Later in Chapter IV and V, the detailed analysis of funds' performance has been done for open ended funds and close ended funds.

This study mainly deals with the performance of various funds (public, private and banks). The performance has been evaluated on the basis of its comparison with the benchmark selected for the study and market timing abilities of the portfolio managers. By judging the fund against a benchmark gives an insight in to the performance of the fund. Seeing the returns earned by the funds also gives future predictions of the fund.

The performance of the funds depends on the strategies developed by the fund managers. The loss and profit of the funds depend on the time to time decisions taken by the fund managers'. There are mainly two decisions taken by the managers³⁴:

- Asset Allocation: How well the manager can overweight or underweight certain positions in order to outperform the stated benchmark.
- Security Selection: The manager's skill at selecting individual securities that outperform the market benchmark.

³⁴ www.investopedia.com

The study has mainly looked into:

- a. Performance of the funds by calculation of Jensen's α , β and Sharpe's measure.
- b. Market timing abilities of the fund managers by using various models. The models selected for the study are:
 - Treynor and Mazuy (1966)
 - Henriksson and Merton (1981)
 - Fabozzi and Francis (1979)

The data have been collected from May 2003 to October 2009. Data have been collected on daily basis but the analysis has been done monthly. Those funds have been included for the study which has more than 25 monthly observations. The data have been on NAVs, market prices and repurchase prices of the funds.

In case of open ended funds, out of the total schemes of 88 NAVs are available for 65 schemes, market prices for 13 schemes and repurchase prices for 10 schemes. In case of close ended funds, NAVs are available for 55 schemes, market prices for 10 schemes and repurchase prices also for 10 schemes

Then various adjustments have been done for rights, bonus and dividends in each case i.e. NAVs, market prices and repurchase prices. These adjustments have been done for getting adjusted returns. The returns of the funds have been compared with the market indices. The market indices which have been selected for the study are ET Index and Natex.

6.2 Summary of the findings

6.2.1 To find out the adjusted returns of the funds (both open ended and closed ended funds), the following equation has been used

$$R_{it} - R_f = a_i + b_i (R_{mt} - R_f) + e_{it}$$

1. In case of open ended funds, taking market prices and ET Index, we get that the top performers are HSBC Equity Fund – Dividend, HSBC Equity Fund – Growth, HSBC Flexi Debt Fund-Regular Growth, LICMF Index Fund-Nifty-Growth, SBI Debt Fund Series - 15 Months - 5 DIVIDEND, LICMF Index Fund-Nifty-Dividend.

2. In case of close ended funds, the top performers are SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, HSBC Interval Fund - Plan III - Regular – Dividend, HSBC Interval Fund - Plan III - Regular – Growth, LICMF TOP 100 FUND - DIVIDEND OPTION, SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND and LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION.

3. Taking market prices and Natex, in case of open ended funds we get that HDFC Equity Fund - Dividend Option, HSBC Equity Fund – Dividend, HSBC Equity Fund – Growth, HSBC Flexi Debt Fund-Reg.Growth, LICMF Index Fund-Nifty-Dividend, LICMF Index Fund-Nifty-Growth, SBI Debt Fund Series - 15 Months - 5 DIVIDEND, HDFC Equity Fund - Growth Option, HSBC Flexi Debt Fund-Inst. Monthly Dividend have performed well in the market.

4. In case of close ended funds, we get the top performers are SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, HSBC Interval Fund - Plan III - Regular – Dividend, LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION, LICMF TOP 100 FUND - GROWTH OPTION, LICMF TOP 100 FUND - DIVIDEND OPTION and SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND

5. In case of open ended funds, taking NAVs and ET Index, we find that the top performers are LICMF Tax plan-Dividend, LICMF Balanced Fund-Growth, SBI Magnum Balanced Fund – Growth, HSBC Gilt Fund - Dividend – Weekly, HDFC Growth Fund - Growth Option, HDFC Income Fund-Dividend, LICMF Growth Fund - Growth Option, UTI - Master Value Fund-Growth Option, ICICI Prudential Flexible Income Plan Regular- Growth.

6. In case of close ended funds, the analysis shows that the top performers are LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option, Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, SBI INFRASTRUCTURE FUND - SERIES I GROWTH.

7. Taking NAVs and Natex, in case of open ended funds we get that the top performers are LICMF Liquid Fund-Dividend, UTI - Master Value Fund-Growth Option, BARODA PIONEER BALANCE FUND -Growth Plan, HDFC Gilt Fund-Long Term-Dividend, HDFC Tax Saver-Dividend Plan, LICMF Balanced Fund-Growth, LICMF Tax plan-Dividend, LICMF Liquid Fund-Growth, HSBC Income Fund - Investment - Inst. – Growth, LICMF Growth Fund - Dividend Option, UTI - Master Share-Income Option, UTI- Liquid Fund-Cash Plan-Income

8. In case of close ended funds, we get that the top performers are SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, SBI INFRASTRUCTURE FUND - SERIES I GROWTH, SBI DEBT FUND SERS-90 DGROWTH, HSBC Fixed Term Series-53-Reg-Growth, Birla Tax Plan 98 and HDFC LONG TERM EQUITY FUND-Growth.

9. In case of open ended funds, the analysis using repurchase prices and ET Index we find the top performing funds are SBI Magnum Income Fund-Growth, HSBC Income Fund - Investment - Inst. – Growth, SBI Magnum Income Fund-Dividend, LICMF

Growth Fund - Dividend Option, LICMF Growth Fund - Growth Option, BARODA PIONEER INCOME FUND-Dividend Plan and HDFC Income Fund-Growth.

10. In case of close ended funds, we get the top performing funds are HSBC Small Cap Fund – Dividend, HDFC MID-CAP OPPORTUNITIES FUND - Growth Option, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, UTI Wealth Builder Fund - Growth Option and SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND.

11. The analysis based on repurchase prices and Natex, we find that in case of open ended funds the top performers are BARODA PIONEER INCOME FUND-Dividend Plan, HDFC Income Fund-Dividend, LICMF Growth Fund - Growth Option, SBI Magnum Income Fund-Dividend, BARODA PIONEER INCOME FUND-Growth Plan and HDFC Income Fund-Growth.

12. In case of close ended funds, we get that top performing funds are HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION, HSBC Small Cap Fund – Dividend and SBI INFRASTRUCTURE FUND - SERIES I GROWTH.

6.2.2 To judge the performance of the funds, β has been computed using the following equation:

$$R_{it} = a_i + b_i R_{mt} + e_{it}$$

1. The analysis based on market prices and ET Index, in case of open ended funds the top performers are HSBC Flexi Debt Fund-Institutional Monthly Dividend, LICMF Index Fund-Nifty-Dividend, UTI - Equity Fund-Growth Option, HSBC Flexi Debt Fund-Inst. Monthly Dividend, HSBC Equity Fund – Growth, UTI - Equity Fund-Income Option and HDFC Equity Fund - Growth Option.

2. In case of close ended funds, the top performers are SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION, LICMF TOP 100 FUND - DIVIDEND OPTION, LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION and SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND.

3. The analysis of market prices and Natex, we find that HSBC Equity Fund –Dividend, LICMF Index Fund-Nifty-Growth, HDFC Index Fund-Nifty Plan, HDFC Index Fund-Nifty Plan and UTI - Equity Fund-Income Option are the top performers in the market.

4. In case of close ended funds, we get that LICMF TOP 100 FUND - GROWTH OPTION, SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, HSBC Interval Fund - Plan III - Regular – Growth, LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION, LICMF TOP 100 FUND - DIVIDEND OPTION and HSBC Interval Fund - Plan III - Regular – Dividend.

5. Taking NAVs of the open ended funds and ET Index, we get that HDFC Balanced Fund - Dividend Option, LICMF Growth Fund - Dividend Option, LICMF Liquid Fund-Growth, HDFC Growth Fund - Growth Option, SBI Magnum Income Fund-Growth, UTI - Master Share-Income Option, ICICI Prudential Flexible Income Plan Regular- Growth, HDFC Gilt Fund-Long Term-Growth, HDFC Tax Saver-Dividend Plan, LICMF Tax plan-Growth, SBI TAX ADVANTAGE FUND - SERIES I – GROWTH, HSBC Gilt Fund – Dividend, HDFC Income Fund-Growth, SBI Magnum Balanced Fund – Dividend, SBI TAX ADVANTAGE FUND - SERIES I – DIVIDEND, HSBC Gilt Fund – Dividend.

6. In case of close ended funds, we find the best performing funds are HDFC LONG TERM EQUITY FUND-Growth, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, SBI INFRASTRUCTURE FUND - SERIES I GROWTH, UTI-Short Term FMP Sr-II -IV (90 D)-Growth Option, SBI DEBT FUND SERS-90D-GROWTH, JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL

DIVIDEND, and SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH.

7. NAVs of the open ended funds and Natex analysis show that HDFC Balanced Fund - Dividend Option, LICMF Liquid Fund-Dividend, UTI - Master Value Fund-Growth Option, HSBC Income Fund - Investment - Inst. – Growth, HDFC Gilt Fund-Long Term-Growth, HDFC Gilt Fund-Short Term-Growth, LICMF Liquid Fund-Dividend, SBI Magnum Income Fund-Growth, SBI Magnum Income Fund-Dividend, HDFC Tax Saver-Dividend Plan, HSBC Income Fund - Investment - Regular – Dividend.

8. Taking NAVs of the close ended funds and Natex show that HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts) - Growth Option, ICICI Prudential Real Estate Securities Fund - Retail Growth, HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Dividend Option, Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option and HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option.

9. The analysis based on repurchase prices of the open ended funds and ET Index, we find the top performing funds are SBI Magnum Income Fund-Growth, BARODA PIONEER INCOME FUND-Dividend Plan, LICMF Growth Fund - Dividend Option, BARODA PIONEER INCOME FUND-Growth Plan and HDFC Income Fund-Growth.

10. In case of close ended funds, the top performers in this category are SBI INFRASTRUCTURE FUND - SERIES I GROWTH, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION and HDFC MID-CAP OPPORTUNITIES FUND - Growth Option.

11. The repurchase prices of the open ended funds and Natex show that the better performing funds in the market are LICMF Growth Fund - Dividend Option, BARODA PIONEER INCOME FUND-Growth Plan, LICMF Growth Fund - Growth Option, BARODA PIONEER INCOME FUND-Dividend Plan and HSBC Income Fund - Investment - Inst. – Growth.

12. In case of close ended funds, the top performers are SBI INFRASTRUCTURE FUND - SERIES I GROWTH, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION and HSBC Small Cap Fund – Growth.

6.2.3 To evaluate the market timing of the fund managers, Treynor and Mazuy Model (1966) has been used.

$$R_{it} - R_f = a_i + b_{1i} (R_{mt} - R_f) + b_{2i} (R_{mt} - R_f)^2 + e_{it}$$

1. In case of open ended funds, taking market prices and ET Index show that that HSBC Equity Fund – Growth, UTI - Equity Fund-Growth Option, LICMF Index Fund-Nifty-Growth, LICMF Index Fund-Nifty-Dividend, HDFC Equity Fund - Dividend Option, HDFC Equity Fund - Growth Option, HSBC Flexi Debt Fund-Inst. Monthly Dividend, UTI - Equity Fund-Growth Option, HDFC Equity Fund - Growth Option, LICMF Index Fund-Nifty-Dividend and SBI Debt Fund Series - 15 Months - 5 GROWTH have performed better in the market.

2. In case of close ended funds, we find the top performing funds are HSBC Interval Fund - Plan III - Regular – Dividend, SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, LICMF TOP 100 FUND - DIVIDEND OPTION, LICMF TOP 100 FUND - DIVIDEND OPTION, SBI CAPITAL PROTECTION ORIENTED FUND - I Growth and HSBC Interval Fund - Plan III - Regular – Growth.

3. The market prices of the open ended funds and Natex show that HDFC Equity Fund - Dividend Option, HSBC Equity Fund – Dividend, HSBC Equity Fund – Growth, HSBC Equity Fund – Dividend, SBI Debt Fund Series - 15 Months - 5 GROWTH, HDFC Index Fund-Nifty Plan and LICMF Index Fund-Nifty-Growth are the top performers in the market.

4. In case of close ended funds, we find the top performers are SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND, SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, LICMF TOP 100 FUND - DIVIDEND OPTION, LICMF TOP 100 FUND - GROWTH OPTION, LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION and LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION.

5. NAVs of open ended funds and ET Index show that HDFC TaxSaver-Dividend Plan, SBI Magnum Balanced Fund – Growth, SBI TAX ADVANTAGE FUND - SERIES I – DIVIDEND, HSBC Gilt Fund – Dividend, IDFC Tax Saver (ELSS) Fund A DIVIDEND, HDFC Income Fund-Growth, HDFC TaxSaver-Dividend Plan, LICMF Tax plan-Growth, Reliance Growth Fund-Dividend Plan-(D), LICMF Balanced Fund-Dividend, SBI TAX ADVANTAGE FUND - SERIES I – GROWTH have shown better market timing ability of the portfolio managers.

6. Taking NAVs of close ended funds and ET Index, we find that Birla Tax Plan 98, HDFC LONG TERM EQUITY FUND-Growth, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, SBI INFRASTRUCTURE FUND - SERIES I GROWTH, UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option, HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option, LICMF INDIA VISION FUND - DIVIDEND OPTION and UTI - Infrastructure Advantage Fund - Growth Option have performed strongly in the market.

7. In case of open ended funds, the analysis of NAVs and Natex show the top performing funds are HDFC Balanced Fund - Dividend Option, HDFC Growth Fund - Growth Option, HDFC Tax Saver-Dividend Plan, UTI - Master Share-Income Option, HSBC Income Fund - Investment - Inst. – Growth, HDFC Growth Fund - Growth Option, LICMF Balanced Fund-Dividend, LICMF Liquid Fund-Growth, SBI TAX ADVANTAGE FUND - SERIES I – GROWTH, HDFC Gilt Fund-Short Term-Dividend, LICMF Liquid Fund-Growth, SBI Magnum Balanced Fund – Growth, UTI Balanced Fund-Income.

8. In case of close ended funds, we find that Tata Smart Investment Plan - 1 - Scheme A – Dividend, HDFC LONG TERM EQUITY FUND-Growth, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option, UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option, SBI DEBT FUND SERS-90D-GROWTH, LICMF INDIA VISION FUND - GROWTH OPTION and SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND have performed better and have given more returns than other funds.

9. The repurchase prices of the open ended funds and ET Index show that the top performers are LICMF Growth Fund - Dividend Option, HDFC Income Fund-Growth, BARODA PIONEER INCOME FUND-Dividend Plan, SBI Magnum Income Fund-Growth, LICMF Growth Fund - Dividend Option, HSBC Income Fund - Investment - Regular – Dividend, SBI Magnum Income Fund-Dividend, HDFC Income Fund-Dividend, LICMF Growth Fund - Growth Option and SBI Magnum Income Fund-Dividend.

10. In case of close ended funds, we find the top performing funds are LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION, HDFC MID-CAP OPPORTUNITIES FUND - Growth Option, HDFC MID-CAP OPPORTUNITIES FUND - Growth Option, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND and SBI INFRASTRUCTURE FUND - SERIES I GROWTH.

11. In case of open ended funds, the analysis of repurchase prices and Natex show that HDFC Income Fund-Growth, HSBC Income Fund - Investment - Inst. – Growth, HDFC Income Fund-Dividend, LICMF Growth Fund - Growth Option, SBI Magnum Income Fund-Dividend, HSBC Income Fund - Investment - Regular – Dividend, SBI Magnum Income Fund-Growth and BARODA PIONEER INCOME FUND-Dividend Plan are the high yielding funds.

12. In case of close ended funds, we get that the better performing funds in the market are SBI INFRASTRUCTURE FUND - SERIES I GROWTH, SBI MAGNUM TAXGAIN SCHEME 1993 – GROWTH, HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option and LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION.

6.2.4 To evaluate the market timing ability of the fund managers, another model which has been used is Henriksson and Merton (1981). The following equation has been used

$$R_{it} - R_f = a_i + b_{1i} Y(t) + b_{2i} (R_{mt} - R_f) + e_{it}$$

1. In case of open ended funds, the analysis of the market prices and ET Index show the top performers in the market are HSBC Flexi Debt Fund-Inst. Monthly Dividend, HDFC Index Fund-Nifty Plan, HDFC Equity Fund - Growth Option, LICMF Index Fund-Nifty-Growth, SBI Debt Fund Series - 15 Months - 5 GROWTH, HSBC Flexi Debt Fund-Inst. Monthly Dividend and UTI - Equity Fund-Growth Option.

2. In case of close ended funds, we find the high yielding funds are LICMF TOP 100 FUND - DIVIDEND OPTION, LICMF TOP 100 FUND - GROWTH OPTION, HSBC Interval Fund - Plan III - Regular – Growth, and SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND, HSBC Interval Fund - Plan III - Regular – Growth and LICMF FIXED MATURITY PLAN SERIES 42 DIVIDEND OPTION.

3. Market prices of the open ended funds and Natex show that Using Natex and market prices, we get that funds performing comparatively better in the market are HDFC Equity Fund - Growth Option, LICMF Index Fund-Nifty-Dividend, SBI Debt Fund Series - 15 Months - 5 DIVIDEND, HDFC Index Fund-Nifty Plan, HSBC Flexi Debt Fund-Inst. Monthly Dividend, UTI - Equity Fund-Growth Option and HSBC Flexi Debt Fund-Inst.

4. In case of close ended funds, SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND, HSBC Interval Fund - Plan III - Regular – Growth and LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION are the top performers in the market.

5. NAVs of the open ended funds and ET Index show that the LICMF Tax plan-Dividend, IDFC Tax Saver (ELSS) Fund A DIVIDEND, Franklin India Tax shield-Dividend, HDFC Income Fund-Dividend, LICMF Liquid Fund-Growth, UTI Balanced Fund-Income, ICICI Prudential Flexible Income Plan Regular- Growth, HDFC Gilt Fund-Long Term-Growth, HDFC Gilt Fund-Long Term-Dividend, LICMF Liquid Fund-Dividend and SBI Magnum Balanced Fund – Dividend have performed well in the market.

6. In case of close ended funds, we find the top performers are HSBC Fixed Term Series-53-Reg-Dividend, ICICI Prudential Real Estate Securities Fund - Retail Dividend, Kotak FMP 13M Series 6 Growth, Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan – Growth, UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option,

HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option and HDFC LONG TERM EQUITY FUND-Growth.

7. Taking NAVs and Natex of open ended funds, the funds which have performed well in the market are HDFC Balanced Fund - Dividend Option, LICMF Balanced Fund-Growth, HSBC Gilt Fund – Growth, HDFC Income Fund-Dividend, SBI Magnum Income Fund-Dividend, UTI - Master Share-Income Option, HDFC Gilt Fund-Long Term-Growth, SBI Magnum Income Fund-Growth, UTI - Master Value Fund-Growth Option, HDFC Growth Fund - Dividend Option, HDFC Tax Saver-Growth Plan and LICMF Tax plan-Growth.

8. In case of close ended funds, the top performing funds are HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option, Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan – Growth, UTI - Infrastructure Advantage Fund - Growth Option, SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH and LICMF INDIA VISION FUND - DIVIDEND OPTION.

9. The repurchase prices and ET Index in case of open ended funds show that SBI Magnum Income Fund-Dividend, BARODA PIONEER INCOME FUND-Growth Plan, SBI Magnum Income Fund-Growth, LIC MF Growth Fund - Growth Option and BARODA PIONEER INCOME FUND-Dividend Plan are the high earning funds.

10. In case of close ended funds, the high earning funds are LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION, HSBC Small Cap Fund – Dividend, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND and SBI INFRASTRUCTURE FUND - SERIES I GROWTH.

11. In case of open ended funds, we find that the top performers (repurchase prices and Natex) are HDFC Income Fund-Growth, HSBC Income Fund - Investment - Regular – Dividend, LICMF Growth Fund - Growth Option, HDFC Income Fund-Growth, LIC MF Growth Fund - Dividend Option, HSBC Income Fund - Investment - Inst. – Growth and SBI Magnum Income Fund-Growth.

12. In case of close ended funds, the top performers are LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, SBI INFRASTRUCTURE FUND - SERIES I GROWTH, HSBC Small Cap Fund – Dividend and SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND.

6.2.5 Another model which has been used to evaluate the market timing ability of the fund managers is Fabozzi and Francis (1979). The following equation has been used

$$R_{it} - R_f = a_1 i + a_2 i D_t + b_{1i} D_t (R_{mt} - R_f) + b_{2i} (R_{mt} - R_{ft}) + e_{it}$$

1. The market prices of the open ended funds and ET Index show that the top performers are HDFC Equity Fund - Dividend Option, HSBC Equity Fund – Growth, HSBC Flexi Debt Fund-Reg.Growth, LIC MF Index Fund-Nifty-Dividend, HDFC Index Fund-Nifty Plan, SBI Debt Fund Series - 15 Months - 5 DIVIDEND and HDFC Equity Fund - Growth Option.

2. In case of close ended funds, the top performing funds are SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND, LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION, Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth and LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION.

3. The market prices of the open ended funds and Natex show the high earning funds are HSBC Equity Fund – Growth, HDFC Index Fund-Nifty Plan, HDFC Equity Fund - Growth Option, SBI Debt Fund Series - 15 Months - 5 DIVIDEND, UTI - Equity Fund-

Income Option, LICMF Index Fund-Nifty-Dividend, UTI - Equity Fund-Growth Option, SBI Debt Fund Series - 15 Months - 5 GROWTH, LICMF Index Fund-Nifty-Growth, LICMF Index Fund-Nifty-Dividend and HSBC Equity Fund – Dividend.

4. In case of close ended funds, the top performers are SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND, SBI CAPITAL PROTECTION ORIENTED FUND - I Growth, LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION and LICMF TOP 100 FUND - GROWTH OPTION.

5. Taking NAVs and ET Index of the open ended funds show that the better performers in the market are that SBI TAX ADVANTAGE FUND - SERIES I – DIVIDEND, LICMF Liquid Fund-Growth, HDFC TaxSaver-Growth Plan, HDFC Balanced Fund - Dividend Option, HSBC Income Fund - Investment - Regular – Dividend, LICMF Tax plan-Dividend, LICMF Liquid Fund-Growth, UTI - Master Value Fund-Growth Option and HDFC TaxSaver-Dividend Plan.

6. In case of close ended funds, the top performers are HDFC MID-CAP OPPORTUNITIES FUND - Growth Option, HDFC LONG TERM EQUITY FUND-Dividend, HDFC LONG TERM EQUITY FUND-Growth, Birla Tax Plan 98, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option, HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option, SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND and UTI - Infrastructure Advantage Fund - Growth Option.

7. In case of open ended funds, the analysis of NAVs and Natex show the high yielding funds are HDFC Income Fund-Growth, LICMF Liquid Fund-Growth, HDFC Growth Fund - Dividend Option, SBI TAX ADVANTAGE FUND - SERIES I – GROWTH, HSBC Gilt Fund - Dividend – Weekly, LICMF Balanced Fund-Growth, FT India Monthly Income Plan-Growth, HDFC Income Fund-Growth, HDFC TaxSaver-Dividend

Plan, HSBC Income Fund - Investment - Regular – Dividend and SBI Magnum Balanced Fund – Dividend.

8. In case of close ended funds, the top performers are HDFC LONG TERM EQUITY FUND-Dividend, ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option, Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option, UTI - Infrastructure Advantage Fund - Growth Option, LICMF INDIA VISION FUND - GROWTH OPTION and HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN -Dividend Option.

9. The analysis of repurchase prices of the open ended funds and ET Index show that the top performers are HDFC Income Fund-Dividend, BARODA PIONEER INCOME FUND-Dividend Plan, SBI Magnum Income Fund-Growth, LICMF Growth Fund - Dividend Option, HDFC Income Fund-Growth, BARODA PIONEER INCOME FUND-Growth Plan, SBI Magnum Income Fund-Dividend and LICMF Growth Fund - Dividend Option.

10. In case of close ended funds, the high yielding funds are SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION and LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION.

11. The repurchase prices of the open funds and Natex show that the top performers are SBI Magnum Income Fund-Growth, LICMF Growth Fund - Dividend Option, HDFC Income Fund-Growth, BARODA PIONEER INCOME FUND-Dividend Plan HSBC Income Fund - Investment - Inst. – Growth and HDFC Income Fund-Dividend.

12. In case of close ended funds, the top performers are SBI INFRASTRUCTURE FUND - SERIES I GROWTH, LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION, SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND, HSBC

Small Cap Fund – Dividend and LICMF SYSTEMATIC ASSET ALLOCATION FUND
- DIVIDEND OPTION.

6.3 Conclusion

Open Ended Funds

As mentioned earlier, there are NAVs for 65 schemes, market prices for 13 schemes and repurchase prices for 10 schemes.

1. When net asset values of the schemes have been taken, we find that 40 schemes out of total 65 schemes have positive and significant α ; have performed better than the market index (ET Index). 39 schemes out of total 65 schemes have positive and significant α and have performed better than the market index (Natex).
2. When market prices of the funds are taken, we find that only 8 schemes out of total of 13 schemes have positive and significant α and only these 8 funds have performed better than the market index (ET Index). 10 schemes have positive and significant α and have performed better than the market index (Natex).
3. Taking repurchase prices of the funds, we get that only 8 schemes and 5 schemes out of total of 10 schemes that have positive and significant α and have performed better than ET Index and Natex respectively.
4. Measuring Sharpe Ratio in case of open ended funds based on net asset values, we find that 30 schemes and 36 schemes out of total of 65 schemes have high Sharpe ratio and have performed better than the market indices ET Index and Natex respectively. While taking market prices of the schemes, we get that 8 and 9 schemes out of total of 13 schemes have Sharpe ratio greater than ET Index and Natex respectively. When repurchase prices of the schemes have been taken, we

- find that 6 and 8 schemes out of total of 10 schemes have performed better than the market indices ET Index and Natex respectively.
5. Calculation of β shows that when net asset values of the funds have been taken, 44 and 43 schemes out of total of 65 schemes have shown positive and significant β and have performed better than ET Index and Natex respectively.
 6. When market prices of the funds are taken, the funds have not performed so well in the market as 6 schemes and 11 schemes out of total 13 schemes have been found to have positive and significant β and have surpassed the market indices ET Index and Natex respectively.
 7. In case of repurchase prices of the funds, only 6 schemes each out of total of 10 schemes have performed better than ET Index and Natex and have shown positive and significant β .
 8. Taking model of Treynor and Mazuy (1966) to evaluate the market timing abilities of the portfolio managers, we find that while calculating net asset values of the funds, 49 funds have shown have shown positive and significant values of b_{1i} and have performed better than ET Index. But only 42 schemes have shown significant values of b_{1i} and have performed better than Natex. When market prices of the funds have been taken, only 5 schemes have been performing better in the market and have shown significant values of b_{1i} . In case of the repurchase prices of the funds also, only 8 schemes have performed better than ET Index and 6 schemes have performed better than Natex.
 9. Taking model of Henriksson and Merton (1981) to evaluate the market timing abilities of the portfolio managers, we find that while calculating net asset values of the schemes 30 schemes have shown a significant value of b_{1i} and have performed better than ET Index and 32 schemes have performed better than Natex. When market prices of the funds have been calculated, we get that 10

schemes have performed better than ET Index and 8 schemes have performed better than Natex. Calculation of repurchase prices of the funds show that 9 schemes have performed better than ET Index and this proves the better market timing of the managers. Only 7 schemes have performed better than Natex.

10. Taking Fabozzi and Francis (1979) Model for evaluation of the market timing of the managers, we get that while calculating net asset values of the schemes only 33 schemes have shown significant values of b_{1i} and have performed better than ET Index and only 41 schemes have performed better than Natex. Calculation of market prices of the funds show that 9 schemes have performed better than ET Index and 10 schemes have performed better than Natex which shows a better market timing of the portfolio managers. Repurchase prices of the funds show that only 6 schemes and 4 schemes have given significant values of b_{1i} and have performed better than ET Index and Natex respectively.

Close Ended Funds

NAVs are available for 55 schemes, market prices for 10 schemes and repurchase prices for 10 schemes.

11. When net asset values of the schemes have been taken, we find that only 24 schemes out of total 55 schemes have positive and significant α ; have performed better than the market index (ET Index). 36 schemes out of total 55 schemes have positive and significant α and have performed better than the market index (Natex).
12. When market prices of the funds are taken, we find that only 7 schemes out of total of 10 schemes have positive and significant α and have performed better than the market index (ET Index). 7 schemes have positive and significant α and have performed better than the market index (Natex).

13. Taking repurchase prices of the funds, we get that only 8 schemes and 5 schemes out of total of 10 schemes have positive and significant α and have performed better than ET Index and Natex respectively.
14. Measuring Sharpe Ratio in case of open ended funds based on net asset values, we find that 22 schemes and 26 schemes out of total of 55 schemes have high Sharpe ratio and have performed better than the market indices ET Index and Natex respectively. While taking market prices of the schemes, we get that only 4 and 2 schemes out of total of 10 schemes have Sharpe ratio greater than ET Index and Natex respectively. When repurchase prices of the schemes have been taken, we find that 5 and 6 schemes out of total of 10 schemes have performed better than the market indices ET Index and Natex respectively.
15. Calculation of β shows that when net asset values of the funds have been taken, 29 and 16 schemes out of total of 55 schemes have shown positive and significant β and have performed better than ET Index and Natex respectively.
16. When market prices of the funds are taken, the funds have not performed so well in the market as 7 schemes out of total 10 schemes have found out to have positive and significant β and have surpassed the market indices ET Index and Natex.
17. In case of repurchase prices of the funds, only 8 schemes and 7 schemes out of total of 10 schemes have performed better than ET Index and Natex and have shown positive and significant β .
18. Taking model of Treynor and Mazuy (1966) to evaluate the market timing abilities of the portfolio managers, we find that while calculating net asset values of the funds, 42 funds have shown have shown positive and significant values of b_{1i} and have performed better than ET Index. But only 36 schemes have shown significant values of b_{1i} and have performed better than Natex. When market

prices of the funds have been taken, 9 and 8 schemes have been performed better than ET Index and Natex and have shown significant values of b_{1i} . In case of the repurchase prices of the funds also, only 8 schemes have performed better than ET Index and 9 schemes have performed better than Natex.

19. Taking model of Henriksson and Merton (1981) to evaluate the market timing abilities of the portfolio managers, we find that while calculating net asset values of the schemes only 35 schemes have shown a significant value of b_{1i} and have performed better than ET Index and only 27 schemes have performed better than Natex. When market prices of the funds have been calculated, we get that 7 schemes have performed better than ET Index and 7 schemes have performed better than Natex. Calculation of repurchase prices of the funds show that 7 schemes have performed better than ET Index and 8 schemes have performed better than Natex; this proves the better market timing of the managers.

20. Taking Fabozzi and Francis (1979) Model for evaluation of the market timing of the managers, we get that while calculating net asset values of the schemes only 36 schemes have shown significant values of b_{1i} and have performed better than ET Index and only 32 schemes have performed better than Natex. Calculation of market prices of the funds show that 8 schemes have performed better than ET Index and 7 schemes have performed better than Natex which shows a better market timing of the portfolio managers. Repurchase prices of the funds show that only 4 schemes have given significant values of b_{1i} and have performed better than ET Index and 6 schemes have performed better than Natex. This again proves the better market timing and selection ability of the portfolio managers.

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Appendix I

Structural Classification

a. Open ended Funds

Fund which is available for subscription all through the year and does not have a stipulated period of maturity is called open ended scheme. It functions according to the wish of the investors. It sells the shares and buys back whenever investors wish. After an initial lock-in period³⁵, the investors are free to join and withdraw from the funds. These funds are traded at the current net asset value (NAV). Open ended funds can be liquidated on demand. These funds retain a certain amount for investing in short term and money market securities. These funds have a constant capitalization.

b. Close ended Funds

The very term suggests that these funds have a stipulated maturity period usually ranging from 3 to 15 years. The investors can subscribe to these funds during a certain period of time. Close ended scheme does not offer funds for purchase and sale on a periodic basis. These funds are open for investors to purchase at the initial public issue and can be redeemed on the stock markets and secondary markets. The market price of these funds is determined by the demand and supply rather than by Net Asset Values unlike in open ended schemes. These funds provide an exit route to the investors by selling back the units to the Mutual funds by periodic repurchase at the NAV related prices. These funds capitalization keeps changing.

³⁵ Lock-in period prohibits the investors from making any transactions either on stock markets or making repurchase facility.

Open ended funds have no restrictions on the amount of shares issued. Depending on the demand, the funds can continue issuing shares and also buy back the shares when the investors wish to sell it. Close ended funds are traded like at stock exchange like a stock. Close ended funds raise a fixed amount through an initial public offering. The prices of the funds fluctuate due to the changing market conditions.

In short, we can say that close ended funds are brought in the stock market and open ended funds are brought directly from the fund. Close ended funds are sold at market prices and open ended funds are sold at net asset values. The outstanding shares in case of open ended funds keep varying and in case of close ended funds, it remains fixed.

Open ended funds are more flexible and liquid than the close ended funds. Close ended funds have an advantage of selling then at a discount makes them more attractive to the investors. The discount is the difference between the market price of the close ended funds and its total net asset value.

Open ended funds can be sold and redeemed directly to the shareholders. The price of the open ended funds is mainly on the net asset value of the funds and these funds have no time duration and can be sold and redeemed anytime but not in the stock market. Close ended funds are bought immediately after the issue of the funds. As the share price often drops below the net asset value, thus are sold at a discount.

The risk associated with the open ended funds is that the funds invested in some sectors or industries are subject to the market fluctuations and this adversely affects the returns of the funds. Open ended funds are also subject to sudden redemptions which also affect the returns of the funds. Close ended funds are more volatile than open ended funds. The funds can be traded at huge discount and thus the true value of the funds can not be enjoyed.

The difference between the open ended funds and close ended funds lie in the selling and buying of the units issued. In case of close ended funds, the transactions can take place only if the shares are listed in the stock exchange and thus available only for a short duration. The market prices at which they are traded vary from their net asset value of the scheme. Thus the prices are affected by the market fluctuations (demand and supply). In contrast, open ended funds are traded at their net asset values.

Under regulations by the Securities and Exchange Board of India

“An open-ended fund cannot repurchase its units from investors at a price that is more than 6 per cent below the NAV (the difference in price is known as the exit load). They also cannot sell them to investors at a premium of greater than 6 per cent to the NAV (an entry load). Further, the range between the entry load and the exit load cannot exceed 7 per cent-if a fund is repurchasing its units at Rs 9.40, and the NAV is Rs 10.00, it cannot sell them at above Rs 10.10. Hence with an open-ended scheme, investors can be sure they are buying and selling units at prices close to the NAV”.³⁶

In close ended funds unlike open ended funds (when funds are traded at their net asset values), the investors get back a price related to net asset value only when the funds buy back its units. This also has an advantage that the fund managers in case of close ended funds do not have to show case their net asset values often as in case of open ended funds.

Public sector introduced many close ended funds in eighties but with the entry of private sector, open ended funds came to the market. Most of the close ended are not at all traded in the market and hence it is difficult to evaluate the entry and exit opportunities of the funds and these are mostly illiquid. This led to the change in the preference of the investors from close ended funds to open ended funds.

³⁶ www.investor.com

Several closed-end schemes have been converted to open-ended ones as their redemption dates come close. But well managed close ended funds can be more profitable than open ended funds as the managers do not have to keep aside an amount to meet the continuous demand of redemption. But open ended funds give the security to the investors by giving all the required information and thus enable the investors to pull out the money when they foresee losses in the funds.

c. Interval Funds

Interval schemes are a blend of the close ended and open ended schemes. This is a sort of close ended scheme which remains open at a particular period of time in a year for sale and redemption at a pre determined intervals at NAV related prices.

Investment based Classification

a. Equity fund Schemes

These funds are otherwise called as stock mutual funds as these are basically invested in stocks of the public companies and hence carry a certain degree of risk. Stocks of the public companies can be compartmentalized according to market capitalization and hence can be put as large cap, mid cap and small cap. So the funds which are invested in the respective caps are called large cap funds, mid cap funds and small cap funds. These obtain profitable returns at the time of favourable capital trends.

The fund managers follow different sorts of stocks selection when they make investment decisions for the portfolios. When the stocks are undervalued as compared to stocks of different companies or equivalent companies, the fund managers pick up value approach to stocks. Another way is to find out the stocks which are growing faster as compared to stocks of other companies or market as a whole and this is primarily called as growth approach. Sometimes the fund managers follow both the approaches value approach and growth approach in selection of the funds.

b. Bond fund Schemes

These funds are basically invested in bonds and debentures. These funds come with low risk, steady and certain income but have very low opportunities of capital appreciation. This is a type of liquid fund which is invested in the short term money markets.

c. Balanced fund Schemes

Balanced fund is a hybrid fund which provides both regular income and has the features of the growth funds. Balanced funds are invested in the stocks, preferred stocks, bonds and short term bonds to provide both income and capital appreciation. Balanced funds invest in stocks for growth and bonds for income. So this serves the purpose of both the objectives of growth and income.

d. Sector fund Schemes

The funds which are invested in a particular sector or segment of the industry are called sector or industrial funds. These funds get invested in a particular sector such as infrastructure, health, IT, real estate, pharmaceuticals and so and so forth. These funds are chosen to be invested in sectors of high potential and growth. As these are invested in a particular industry, these have a high degree of risk and tend to render uncertain returns than the funds which are diversified in nature. These can have a high capital appreciation in case the sectors have huge profit margins.

e. Leverage fund Schemes

The investment is made out of the resources gathered by the small investors and also fund managers who borrow from capital market. The basic objective behind this is to enhance the value of the portfolio and enhance the profit level of the unit holders by making more gains than the cost of the borrowed funds. These funds carry high risk and they need

permission to be invested. These funds start investing in short sales like call options of money market with a decline in the market.

f. Gilt fund Schemes

The funds which are invested in gilts are called gilt fund schemes. The investment is mainly made on securities of the government (both central and state) and repos and reserve repos securities. These securities do not carry any risk and are safest forms of investment. Under this scheme, a portion of the money is invested in call money markets or Reserve Bank of India. This is mainly done with an intention to meet the liquidity.

g. Index fund Schemes

These funds are invested in a portfolio by buying the stocks of all the companies of a particular index such as BSE sensex or NSE 50. The aim is to increase the value of the portfolio in accordance with the benchmark. These investments are considered to be passive investment. These are invested mainly in the securities of the companies which are included in the index with same benchmark. The growth basically depends on the growth of the index.

h. Tax saving Schemes

These funds are invested to provide tax rebate to the investors under the section 80 (L,T) of the Income Tax Act 1961. Government offers tax incentives for investing in these funds. The amount collected is distributed periodically which is based on the surplus. The investment made on the Equity linked saving schemes (ELSS) and Pension schemes attract tax deduction under u/s 88 of the Income Tax Act, 1961. The subscription made up to Rs 10,000 in a year is also liable for tax deduction under section 88. These also offer the investors to save capital gains under u/s 54EA and 54EB by investing in mutual funds. The main intention is to minimize the tax burden of the tax paying investors.

i. Money Market funds Schemes

The funds that are invested exclusively on money market instruments like treasury bills, certificates of deposit, commercial papers and inter bank call money and this provides liquidity and a steady income. These instruments mature in less than in a year hence very liquid in nature and are considered generally to be risk free. The aim of these funds is to retain principal while the returns can be moderate. The returns fluctuate depending on the interest rates prevailing in the market. These are considered to be the safest and secure form of investment. These are akin to bank yield rate but still are safe. It is considered to be suitable for the corporate houses and individual investors who need returns in the short run only.

j. Domestic fund Schemes

These funds are mainly conceptualized to mobilize the savings of the nationals within a domestic territory of the country and exclude investment by NRIs and foreign investors. These schemes can take any form mentioned under the classification. The schemes introduced by Indian Mutual funds like GIC MF, UTI LIC MF, SEBI MF, Bank of Baroda MF, Bank of India MF, Templeton, Alliance etc. These investments are mainly Indian based.

k. Offshore fund Schemes

These funds are invested in non-domestic securities to mobilize the savings of the foreign nationals with the pre requisite from Reserve bank of India. These investments are mainly done in the form of foreign currency. The motive behind launching the scheme is to attract foreign capital to be invested in the country of the issuing country. These funds facilitate cross border investment. In this regard, the first attempt was made by UTI in 1986 and named the fund as Indian Fund. The offshore investments open up the domestic securities for investment by the international investors and global investment in the domestic portfolio.

l. Load funds

The funds which charge a fee at the time of purchase and redemption and the funds fee are over and above NAV. These can be further categorized as front-end load funds and back-end load funds. Front-end load funds charge commission at the time of purchase and back-end load funds charge commission at the time of redemption. Load funds underperform the funds and reduce the real commission charged as it reduces the total amount being invested.

k. No load funds

No load funds are those funds which can be purchased without any commission. The fee if charged is very low as very little effort is put to promote the selling of the funds through advertising. These funds have an edge over the load funds because of the commission charged which understates the funds. Some of the examples of the funds are property funds, art funds, commodity funds and energy funds.

RETURN BASED CLASSIFICATION

a. Income fund Schemes

These funds are invested with a view to provide a certain and steady income. These investments are made in the securities with a fixed income such as bonds, corporate debentures and government securities. These funds provide investors a regular income and bring capital stability.

b. Growth fund Schemes

When the investors' intention is to invest money in those securities which appreciate capital over medium to long run, growth fund schemes are suitable for those investors. These funds get invested in the portfolio of various industries. These investments are apt for the investors with a goal of achieving income over a long run.

Other Funds

a. Hedge funds

Hedge funds are private funds which charge commissions such as management fee and professional fee. Hedge funds take long and short positions in assets to lower portfolio risk arising from broad market instruments. Their portfolio beta comes to zero³⁷ as these funds take long positions in certain and short positions in other stocks. These funds are considered to be secured and lessen the market risk. These compensate market risk by investing in derivatives and this can also offset market losses by pertaining to various methods like short selling.

b. Fund of fund

The funds which hold the securities and shares of other mutual funds are called fund of funds. The units of a particular mutual fund get invested in other mutual funds with an objective of achieving diversification. But on the contrary, the expense fees are higher than regular funds as it encompasses various funds. As these are invested in various funds, it is difficult to keep a record of the holdings of the funds.

c. Exchange traded funds

These funds resemble with index funds as they are mainly invested in the securities of other companies that have the same market index. The securities are traded on an exchange of other securities. The securities are invested in either on all the securities or a representative of the securities and to earn the return as the market index. These funds can be traded like any stock through out the trading day. Arbitrage mechanism is followed to decide the prices so that trade can be carried in accordance with the net asset values of the securities in hand.

³⁷ When portfolio beta comes to zero that means portfolio will remain unchanged due to broad market instruments.

Disadvantages of Mutual funds

The advantages of the mutual funds can not ignore the shortcomings of the mutual funds which put forth problems for the investors in selecting funds.

- Costs of the funds
- Lack of control over selection
- Incompetence of fund managers
- Price uncertainty

Advantages of Mutual funds

With in a few years of inception, mutual funds has gained a rampant success and has become popular among the investors especially among the small investors with a modest income level and do not possess adequate information to invest in stocks or bonds or say high profile financial market. Those investors when put money in stocks or bonds carry a high risk of loosing out money , has great deal of uncertainty and do not have enough resources to invest in those. Mutual funds in this situation have come as a rescue to those investors. Mutual funds facilitate investors in more than one way and has certainly promise to have a certain and secured return. Some of the advantages of the mutual funds are discussed below:

- Diversification
- Professional Management
- Liquidity
- Low Costs
- Tax benefits
- Administratively Convenient

DETERMINANTS OF MUTUAL FUNDS

- Income level of the investors
- Returns on bank deposits and other savings
- Availability of substitutes and complements
- Tax policies and regulations

Appendix II

Investible Funds of UTI

Rs crore

	Total Investments in corporate sector		Other Investments		Total
Year June - end	Equity/ Preference Shares	Debentures	Money Market Instruments	Government Securities etc	
1981	145.4	138.1	110.6	0.1	523.2
	-27.8	-26.4	-21.1	0.0	
1982	165.9	196.3	163.1	141.9	679.2
	-24.4	-28.8	-24	-20.9	
1983	192.9	288.9	215.2	129	870.2
	-22.2	-33.2	-24.7	-14.8	
1984	226.6	487.9	268.1	221.8	1261.3
	-18	-38.7	-21.3	-17.6	
1985	289.4	830.9	923.7	0.1	2209.6
	-13.1	-37.6	-41.8	0.0	
1986	381.1	1314.6	1233.6	0.1	3218.3
	-11.8	-40.8	-38.3	0.0	
1987	631	1804.9	1746.9	0.1	4563.7
	-13.8	-39.5	-38.3	0.0	
1988	1151.6	2786.3	1852	0.0	6783.8
	-17.1	-41.3	-27.5	0.0	
1989	2544.4	3196	4005.2	0.0	11834.7
	-21.5	-27	-33.8	0.0	
1990	3508.8	3767.8	1234	4572.3	17650.9
	-19.9	-21.4	-7.0	-25.9	
1991	4253.1	4430.9	3514.9	5109.8	21376.5
	-19.9	-20.7	-16.4	-23.9	
1992	8883.7	6185.5	4674.7	5755.5	31805.7
	-27.9	-19.4	-14.7	-18.1	
1993	14941.4	8822	3292.1	3949.6	38976.1
	-38.3	-22.6	-8.4	-10.1	
1994	21141.1	11007.3	3036.4	8050.5	51709.0
	-40.9	-21.3	-5.9	-15.6	
1995	28533	11862.9	2069.3	9796.7	59618.7
	-47.9	-19.9	-3.5	-16.4	
1996	28280.1	13911.8	2098.5	6262.1	56620.1

	-49.9	-24.6	-3.7	-11.1	
1997	27956.6	16179.2	3747.2	4491.1	57125.4
	-48.9	-28.3	-6.6	-7.9	
1998	31986.1	18907.8	3808.6	2764	60978.9
	-52.5	-31	-6.2	-4.5	
1999	35007.8	19626.9	1460.3	5273.8	63548.0
	-55.1	-30.9	-2.3	-8.3	
2000	42095.5	23209.2	2270.9	5052.8	74291.0
	-56.7	-31.3	-3.0	-6.8	
2001	40719.5	22652.7	151.4	4611.9	70201.6
	-58	-32.6	-0.2	-6.6	
2002	32196.2	17361.5	2497.4	4930.8	57628.9
	-55.9	-30.1	-4.3	-8.6	

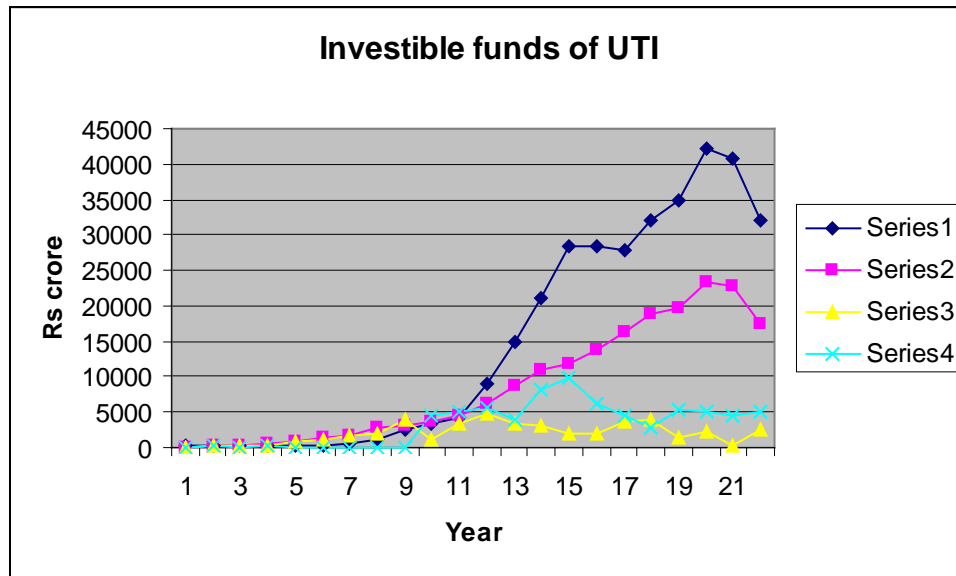
Note: UTI Act 1963 was repealed in 2002-03 and UTI has been reorganized into two separate institutions which no longer come under the operational domain of AIFIs

Note: Data in the next line of the total figure indicate percentage to total

Source: Unit Trust of India

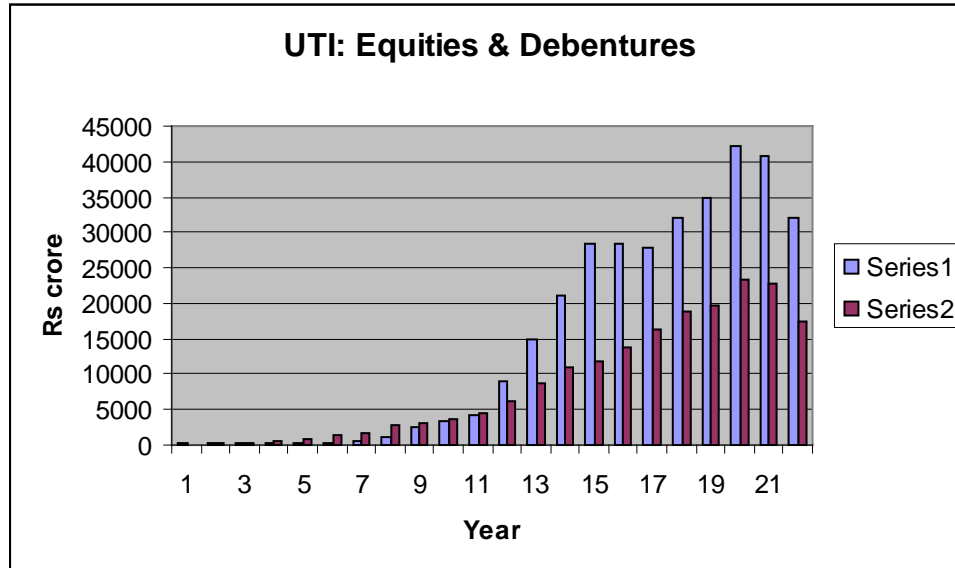
The investment by UTI on equity and debentures has gone up since 1981; however the percentage to total has seen a declining trend. In the initial years, the investment in debentures has been more than the investment in the equities but later the investment has switched to the equity market; this shows not only the corporate sector but also UTI has started focusing on the equities to attract more investors and this market is also one reaping productive profit. The investment in debentures went on declining. The UTI investment in money market has seen a declining trend over the years; the probable reason may be the money market instruments are not attractive as the equities and the lock-in period of the instruments is also a constraining factor. The figure below displays the same facts.

Figure 1



Series 1 – Equities, Series 2 – Debentures, Series 3 – Money market, Series 4 – Government securities

Figure 2



Series 1 – Equities, Series 2 - Debentures

Net Resource Mobilization by Mutual funds

Year	UTI	Bank	FI	Private	Total
1970-71	18.0	-	-	-	18
1971-72	15.1	-	-	-	15.1
1972-73	23.2	-	-	-	23.2
1973-74	30.6	-	-	-	30.6
1974-75	17.2	-	-	-	17.2
1975-76	29.0	-	-	-	29
1976-77	34.6	-	-	-	34.6
1977-78	73.3	-	-	-	73.3
1978-79	101.5	-	-	-	101.5
1979-80	57.9	-	-	-	57.9
1980-81	52.1	-	-	-	52.1
1981-82	157.4	-	-	-	157.4
1982-83	166.9	-	-	-	166.9
1983-84	330.2	-	-	-	330.2
1984-85	756.2	-	-	-	756.2
1985-86	891.8	-	-	-	891.8
1986-87	1261.1	-	-	-	1261.1
1987-88	2059.4	250.3	-	-	2309.7
1988-89	3855	319.7	-	-	4174.8
1989-90	5583.6	888.1	315.3	-	6786.9
1990-91	4553	2351.9	603.5	-	7508.4
1991-92	8685.4	2140.4	427.1	-	11252.9
1992-93	11057	1204	760	-	13021
1993-94	9297 (7453.0)	148.1	238.6	1559.5	11243.2
1994-95	8611(-6800.0)	765.5	576.3	1321.8	11274.6
1995-96	-6314 (-2877.0)	113.3	234.8	133	-5832.9
1996-97	-3043 (-855.0) @	5.9	136.9	863.6	-2036.7
1997-98	2875 (-2592.0)	236.9	203.4	748.6	4063.9
1998-99	170 (1300.0)	-88.3	546.8	2066.9	2695.4
1999-00	4548 (5762.0)	335.9	295.5	16937.4	22116.8
2000-01	322 (1201.0)	247.8	1272.8	9292.1	11134.7
2001-02	-7284 (-6119.0)	862.8	406.8	16134.1	10119.7
2002-03	-9434.1	1033.4	861.5	12122.2	4583
2003-04	1049.9**	4526.2	786.8	41509.8	47872.7
2004-05	-2467.2 #	706.5	-3383.5	7933.1	2788.9
2005-06	3423.8 #	5364.9	2111.9	41581	52481.6
2006-07	7326.1 #	3032	4226.1	76687	91271.2

Note: @ Excludes re-investment sales, ** data pertain to UTI Mutual fund for the period February 01, 2003 to March 31, 2004 being the first year in operation after the bifurcation of the erstwhile UTI into UTI Mutual fund and Specified Undertaking of UTI.

Data pertain to UTI only

Data in parentheses pertain to net sales at face value excluding premium

Source: UTI and Respective Mutual funds

The figures on investible funds of UTI and the net resources mobilized by UTI has gone down over the periods reflecting that the gradual entry of various sectors into the mutual fund has reduced the importance and hold of UTI in mutual funds. The declining trend of UTI has become negative 1995-96 onwards till 2005-06. This is the period which reaped the benefits of the entry of the private sector and opening of the economy due to the liberalization of the economy.

The investment generated by banks sponsored mutual funds has been highs and lows over the years; however the resources mobilized has been considerable. The private sector entities in 1991 started with a low investment and then spectacularly captured the market. In today's scenario, the private sector has dominated the market and has left behind the banks and financial institutions sponsored mutual funds. The figures below portray the resource mobilization by various categories and showed that the mutual fund market started with the dominance of UTI but it lost the market to the private sector eventually. The private sector though entered the market long after UTI has already captured the market; but did not take long to snatch the market from UTI.

The negative period of UTI has been due to various reasons: the bifurcation of UTI hampered the functioning of UTI and then the capture of the market by the private entities with the introduction and launching of varied funds catering to the needs of various segments of the economy. The demand satisfaction and tax relaxation has attracted investors towards the private sector sponsored mutual funds.

Figure 3

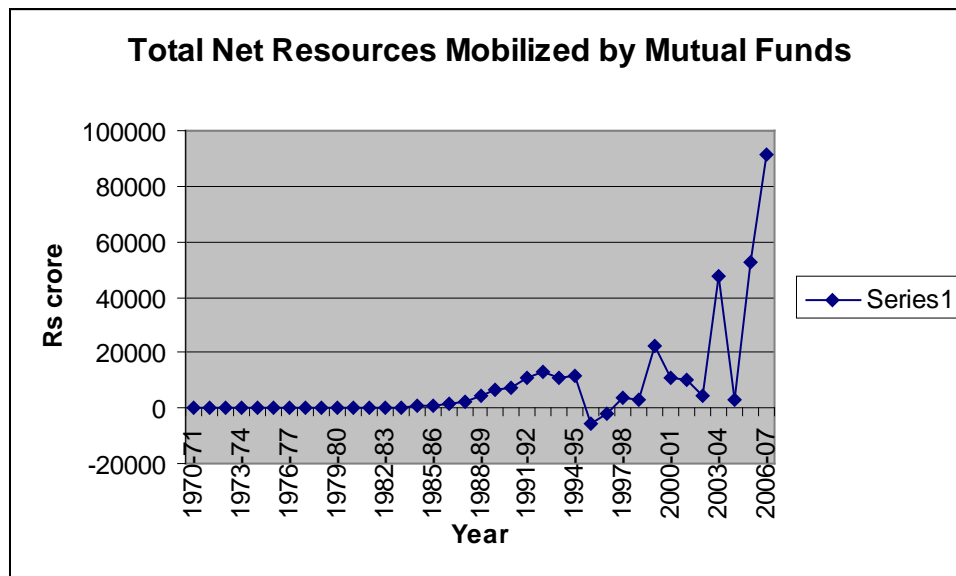


Figure 4

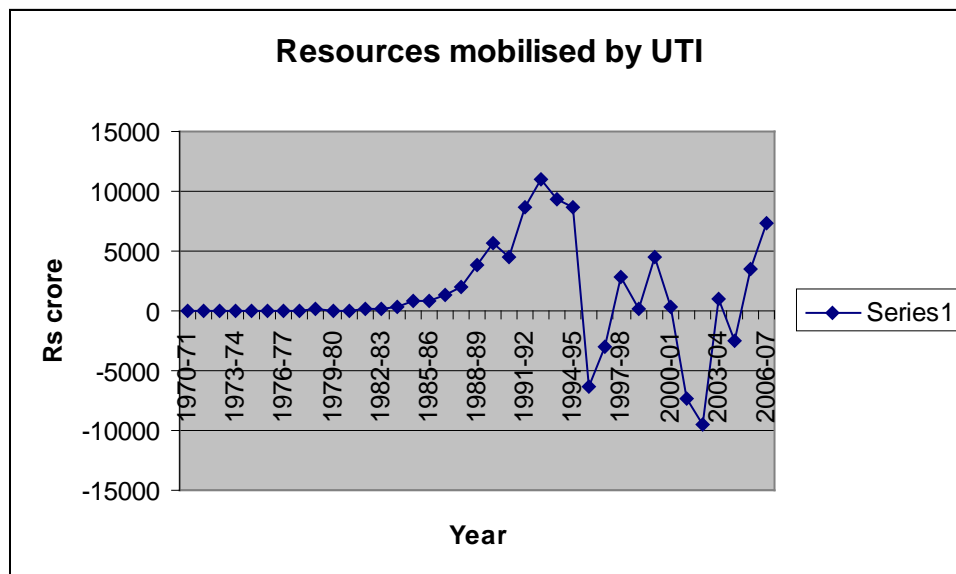


Figure 5

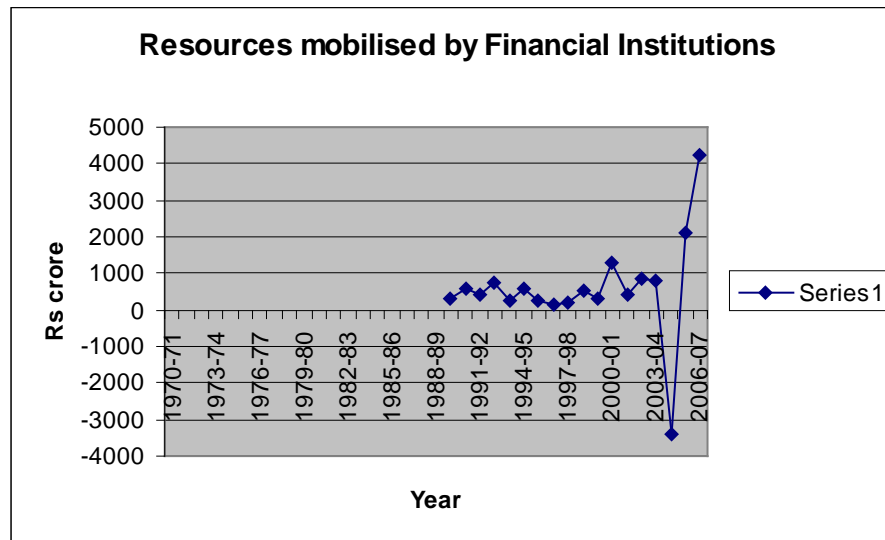


Figure 6

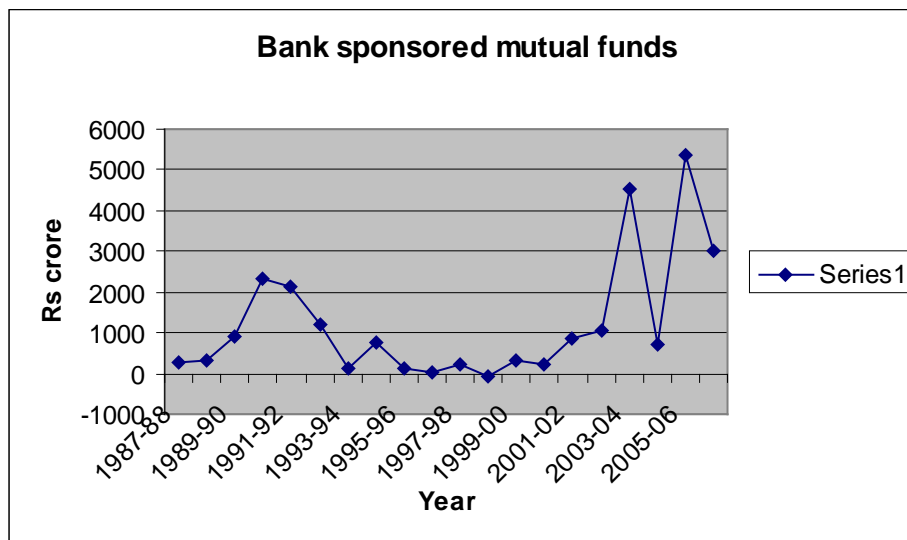


Figure 7

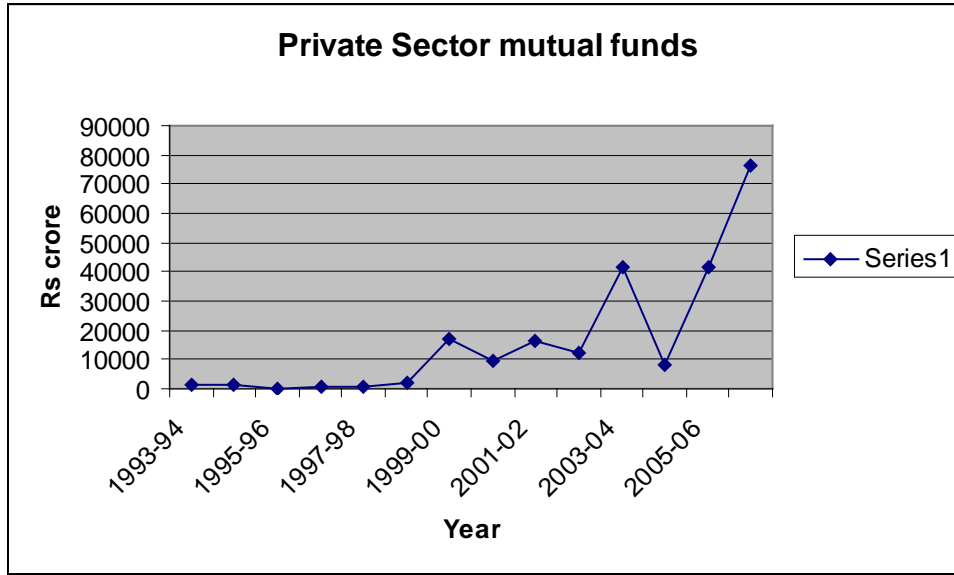
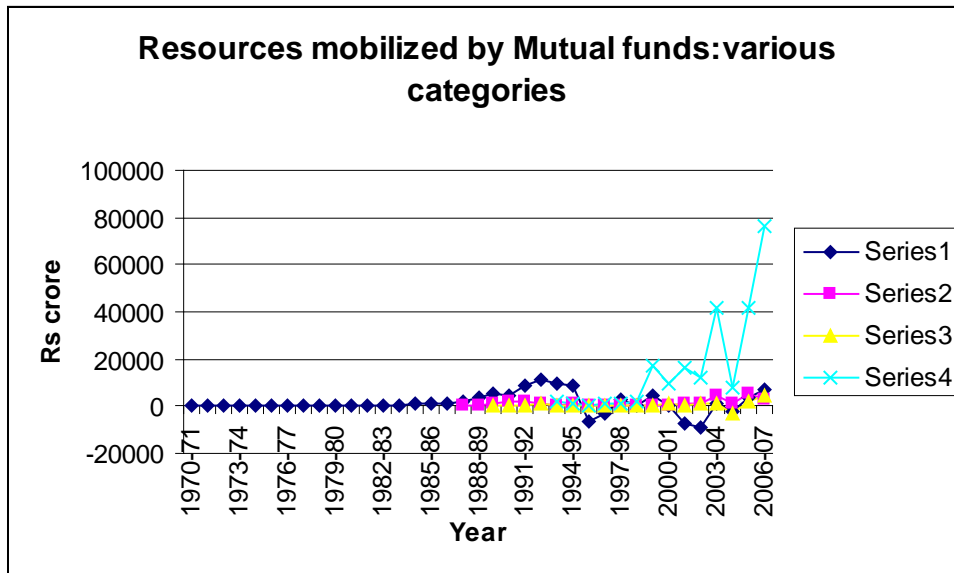
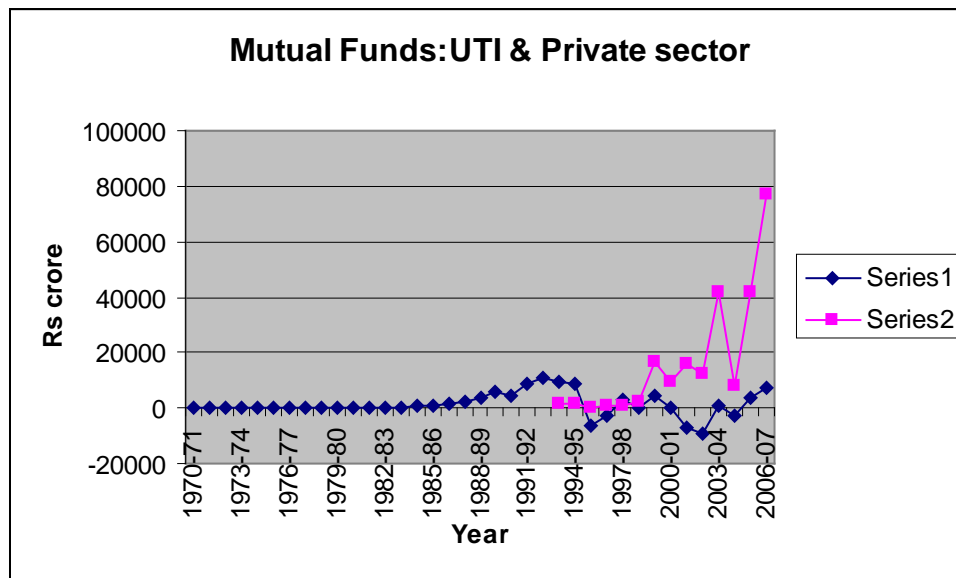


Figure 8



Series 1 – UTI, Series 2 – Banks, Series 3 – Financial Institutions, Series 4 – Private sector

Figure 9



Series 1 – UTI, Series 2 – Private sector

Appendix III

Mutual Funds data for the quarter April 2010

	Category	Sales - All Schemes				Redemptions All schemes	Total Assets Under Management As on April 2010
		From new schemes #		From existing schemes	Total for the month	Total for the quarter	
		No.	Amount	Amount			
A	Bank Sponsored						
i	Joint ventures predominantly Indian	-	-	60122	60122	57094	49877
ii	Joint ventures predominantly foreign	-	-	10319	10319	7553	4363
iii	Others	-	-	92844	92844	79158	79457
	Total	-	-	163285	163285	143805	133697
B	Institutions	-	-	99586	99586	85416	40507
C	Private Sector						
i	Indian	3	329	395693	396022	324584	239005
ii	Foreign	1	265	23428	23693	16727	50032
iii	Joint ventures predominantly Indian	1	14	381727	381741	310543	283558
iv	Joint ventures predominantly Foreign	-	-	23865	23865	21161	22366
	Total	5	608	824713	825321	673015	594961
	Grand Total	4	119	708362	708481	554289	551300

Source: www.amfi.com

Note: 1 data is provisional and hence subject to revision
2 # only new schemes where allotment is completed

**ASSET UNDER MANAGEMENT AND FOLIOS - CATEGORY WISE -
AGGREGATE - AS ON March 31, 2010**

Types of Schemes	Investor Classification	AUM (Rs. Cr)	% to Total	No of Folios	% to Total
Liquid/Money Market	Corporates	60527.71	79.90	14552	6.08
	Banks/FIs	6389.50	8.43	210	0.09
	FIIIs	2565.95	3.39	23	0.01
	High Networth Individuals*	4921.47	6.50	25420	10.61
	Retail	1348.18	1.78	199334	83.22
	Total	75752.81	100.00	239539	100.00
Gilt	Corporates	2954.38	85.36	3203	10.17
	Banks/FIs	16.99	0.49	35	0.11
	FIIIs	0.00	0.00	0	0.00
	High Networth Individuals*	342.73	9.90	1589	5.04
	Retail	146.93	4.25	26674	84.68
	Total	3461.02	100.00	31501	100.00
Debt Oriented	Corporates	223284.90	71.04	70345	2.03
	Banks/FIs	9285.82	2.95	640	0.02
	FIIIs	1081.80	0.34	16	0.00
	High Networth Individuals*	62530.71	19.89	202089	5.83
	Retail	18146.67	5.77	3194220	92.12
	Total	314329.93	100.00	3467310	100.00
Equity Oriented	Corporates	23009.53	11.52	257740	0.63
	Banks/FIs	2293.08	1.15	2630	0.01
	FIIIs	1383.59	0.69	76	0.00
	High Networth Individuals*	39826.21	19.93	374592	0.92
	Retail	133298.38	66.71	40293410	98.45
	Total	199810.78	100.00	40928448	100.00
Balanced	Corporates	2084.88	13.21	16209	0.57
	Banks/FIs	62.42	0.40	124	0.00
	FIIIs	3.11	0.02	2	0.00
	High Networth Individuals*	4663.24	29.55	38783	1.37
	Retail	8969.41	56.83	2772800	98.05
	Total	15783.06	100.00	2827918	100.00
Gold ETF	Corporates	594.22	37.36	2119	1.44
	Banks/FIs	1.76	0.11	6	0.00
	FIIIs	3.00	0.19	3	0.00
	High Networth Individuals*	509.16	32.01	2649	1.80
	Retail	482.49	30.33	142270	96.75
	Total	1590.63	100.00	147047	100.00
ETFs(other than Gold)	Corporates	303.43	31.72	3415	9.26
	Banks/FIs	5.53	0.58	4	0.01

	FII's	62.56	6.54	12	0.03
	High Networth Individuals*	467.17	48.84	1623	4.40
	Retail	117.90	12.33	31844	86.30
	Total	956.59	100.00	36898	100.00
Fund of Funds investing Overseas	Corporates	628.12	21.95	9936	3.48
	Banks/FIs	50.19	1.75	22	0.01
	FII's	0.04	0.00	1	0.00
	High Networth Individuals*	1236.88	43.23	9589	3.36
	Retail	945.91	33.06	265853	93.15
	Total	2861.16	100.00	285401	100.00
	Grand Total	614545.98		47964062	

* Defined as individuals investing Rs 5 lakhs and above
Source: www.amfi.com

AGEWISE ANALYSIS OF ASSETS UNDER MANAGEMENT AS ON March 31, 2010 - AGGREGATE (Rs. in crores)

Types of Schemes	Investor Classification	0-1 Month	% to category	1-3 Month	% to category	3-6 Month	% to category	6-12 Month	% to category	12-24 Month	% to category	> 24 Month	% to category	Total
EQUITY	Corporates	1214.27	5.64	2357.79	10.96	1808.31	8.41	3032.04	14.09	1629.40	7.57	11469.72	53.32	21511.53
	Banks/FIs	500.69	8.52	544.15	9.26	396.07	6.74	745.91	12.69	399.72	6.8	3291.76	56	5878.31
	FII's	63.86	5.57	90.34	7.88	21.18	1.85	136.81	11.93	646.41	56.39	187.71	16.38	1146.31
	High Networth Individuals*	2695.23	6.05	4525.90	10.17	4030.78	9.06	7034.33	15.8	4493.20	10.09	21733.12	48.82	44512.56
	Retail	6418.13	4.54	6689.33	4.73	5500.81	3.89	11410.42	8.08	22870.41	16.19	88415.81	62.57	141304.90
	Total	10892.17	5.08	14207.53	6.63	11757.14	5.48	22359.52	10.43	30039.15	14.01	125098.12	58.36	214353.63
NON-EQUITY	Corporates	14984.503	56.73	39766.09	15.06	24064.46	9.11	25361.70	9.6	18825.12	7.13	6268.31	2.37	264130.72
	Banks/FIs	22825.36	53.13	6930.14	16.13	5548.27	12.92	4803.43	11.18	2290.59	5.33	562.10	1.31	42959.91
	FII's	131.87	3.53	1828.64	49	767.85	20.58	514.78	13.79	488.18	13.08	0.40	0.01	3731.72
	High Networth Individuals	14651.07	20.94	11393.55	16.28	15941.24	22.78	13211.03	18.88	10735.86	15.34	4045.70	5.78	69978.45

	Is*													
	Retail	1784.11	9.2	1629.79	8.4	1969.21	10.15	2044.98	10.55	2590.51	13.36	9374.14	48.34	19392.74
	Total	189237.44	47.29	61548.23	15.38	48291.02	12.07	45935.92	11.48	34930.25	8.73	20250.63	5.06	400193.49
	Grand Total	200129.61	32.57	75755.76	12.33	60048.16	9.77	68295.44	11.11	64969.4	10.57	145348.75	23.65	614547.12

* Defined as individuals investing Rs 5 lakhs and above

Source: www.amfi.com

Existing Schemes

	Open End		Close End		Interval fund		Total	
	No of schemes	Amount	No of schemes	Amount	No of schemes	Amount	No of schemes	Amount
INCOME	182	420680	125	264	38	119	345	421063
EQUITY	270	4781	34	-	1	-	305	4777
BALANCED	30	416	4	-	-	-	34	416
LIQUID/MONEY MARKET	56	660343	-	-	-	-	56	660343
GILT	35	297	-	-	-	-	35	297
ELSS-EQUITY	36	233	12	-	-	-	48	233
GOLD ETF	7	61	-	-	-	-	7	61
OTHER ETFs	14	355	-	-	-	-	14	355
FUND OF FUNDS INVESTING OVERSEAS	14	39	-	-	-	-	14	39
TOTAL	644	1087201	175	264	39	119	858	1087584

Note: The change in number of existing schemes is because of the maturity and reclassification of some of the existing schemes

Source: www.amfi.com

Total of All Schemes

	Open End		Close End		Interval fund		Total	
	No of schemes	Amount	No of schemes	Amount	No of schemes	Amount	No of schemes	Amount
INCOME	182	420680	129	868	38	119	349	421667
EQUITY	271	4781	34	-	1	-	306	4781
BALANCED	30	416	4	-	-	-	34	416
LIQUID/MONEY MARKET	56	660343	-	-	-	-	56	660343
GILT	35	297	-	-	-	-	35	297
ELSS-EQUITY	36	233	12	-	-	-	48	233
GOLD ETF	7	61	-	-	-	-	7	61
OTHER ETFs	14	355	-	-	-	-	14	355
FUND OF FUNDS INVESTING OVERSEAS	14	39	-	-	-	-	14	39
TOTAL	645	1087205	179	868	39	119	863	1088192

Source: www.amfi.com

Assets Under Management as on April 30, 2010 (Category and Type wise)

	Open End	Close End	Interval Fund	Total	% of Total
INCOME	451073	32553	12726	496352	62
EQUITY	157960	18699	171	176830	22
BALANCED	16127	1630	-	17757	2
LIQUID/MONEY MARKET	83827	-	-	83827	10
GILT	3436	-	-	3436	1
ELSS-EQUITY	21328	3157	-	24485	3
GOLD ETF	1711	-	-	1711	@
OTHER ETFs	1271	-	-	1271	@
FUND OF FUNDS INVESTING OVERSEAS	2872	-	-	2872	@
TOTAL	739605	56039	12897	808541	100

@ Less than 1%

Source: www.amfi.com

Redemptions/Repurchases during the month of April 2010 (Category and Type wise)

	Open End	Close End	Interval Fund	Total	Net Inflow/Outflow for the month	Net Inflow/Outflow for the month Previous Year
INCOME	230839	10217	2838	243894	177773	103055
EQUITY	5373	527	14	5914	1133	196
BALANCED	469	4	-	473	57	64
LIQUID/MONEY MARKET	651068	-	-	651068	9275	51852
GILT	346	-	-	346	49	400
ELSS-EQUITY	298	41	-	339	106	90
GOLD ETF	9	-	-	9	52	4
OTHER ETFs	55	-	-	55	300	89
FUND OF FUNDS INVESTING OVERSEAS	138	-	-	138	99	52
TOTAL	888595	10789	2852	902236	185956	154192

Source: www.amfi.com

Average Assets Under Management – April 2010 (Rs in crore)

Sr. No.	Name of the Asset Management Company	AUM
A	BANK SPONSORED	
i	JOINT VENTURES (INDIAN)	
1	Cananra Robeco Asset Manangement Co. Ltd	10051
2	SBI Funds Management Pvt Ltd	39826
	Total	49877
ii	JOINT VENTURES (FOREIGN)	
1	Baroda Pioneer Asset Management Company Ltd	4363
	Total	4363
iii	OTHERS	
1	UTI Assst Management Company Ltd	79457
	Total A (iii)	79457
	Total A (i+ii+iii)	133697
B	INSTITUTIONS	
1	LIC Mutual Fund Asset Management Co. Ltd	40507
	Total	40507
C	PRIVATE SECTOR	
i	INDIAN	
1	Axis Axis Asset Management Co.Ltd	3478
2	Benchmark Asset Management Co.Pvt Ltd	1931
3	Deutsche Asset Management(India) Co.Pvt Ltd	10112
4	Edelweiss Asset Management Co.Pvt Ltd	216
5	Escorts Asset Management Ltd	205
6	IDFC Asset Management Co.Pvt Ltd	25177
7	J.M. Financial Asset Management Co.Pvt Ltd	8569
8	Kotak Mahindra Asset Management Co.Pvt Ltd	33743
9	L&T Asset Investment Management Ltd	4126
10	Peerless Funds Managemwnt Co. Ltd	496
11	Quantum Asset Management Co.Pvt Ltd	101
12	Reliance Capital Asset Management Ltd	111819
13	Religare Asset Management Co.Pvt Ltd	13829
14	Sahara Asset Management Co.Pvt Ltd	805
15	Tata Asset Management Ltd	22051
16	Taurus Asset Management Co.Pvt Ltd	2347
	Total	239005
ii	Foreign	
1	AIG Global Asset Management Co.(India)Pvt Ltd	1093
2	FIL Fund Management Private Ltd	7685
3	Fortis Investment Management(Indian) Pvt Ltd	6902
4	Franklin templeton Asset Management Co.(India)Pvt Ltd	34107
5	Mirae Asset Global Investment (India) Private Ltd	245
	Total	50032
iii	Joint Ventures(Indian)	
1	Birla Sun Life Asser Management Co. Ltd	69509
2	DSP BlackRock Investment Managers Pvt Ltd	21949
3	HDFC Asset Management Co. Ltd	94703

4	ICICI prudential Asset Management Co. Ltd	83036
5	Sundaram BNP Paribas Asset Management Co.Pvt Ltd	14361
	Total	283558
iv	JOINT VENTURES (FOREIGN)	
1	Bharati AXA Investment Managers Pvt Ltd	595
2	HSBC Asset Management India Ltd	6005
3	ING Investment Asset Management India Ltd	1653
4	JP Morgan Asset Management India Pvt Ltd	4115
5	Morgan Stanley Investment Management Pvt Ltd	2306
6	Principal Pnb Asset Management Co. Pvt Ltd	7470
7	Shinsei Asset Management India Pvt Ltd	222
	Total C (iv)	22366
	Total C (i+ii+iii+iv)	594961
	A+B+C	769165

Source: www.amfi.com

Asset Management Company (AMC) wise Data on Folios on 31 March 2010

Name of the AMC	Income/debt oriented Schemes	Growth/Equity oriented schemes	Balanced Schemes	Exchange Traded Funds	fund of funds investing overseas	Grand Total
AIG Global Asset Management Co.(India)Pvt Ltd	925	105246	-	-	44794	150965
Axis Axis Asset Management Co.Ltd	1291	150724	-	-	-	152015
Baroda Pioneer Asset Management Company Ltd	1105	27573	185	-	-	28863
Benchmark Asset Management Co.Pvt Ltd	-	4123	-	94773	-	98896
Bharati AXA Investment Managers Pvt Ltd	6021	43667	-	-	-	49688
Birla Sun Life Asset Management Co. Ltd	186377	2235419	36957	-	-	2458753
Cananra Robeco Asset Manangement Co. Ltd	16310	277700	64216	-	-	358226
Deutsche Asset Management(India) Co.Pvt Ltd	15060	86707	-	-	3588	105355
DSP BlackRock Investment Managers Pvt Ltd	38036	1340969	28913	-	140271	1548189
Edelweiss Asset Management Co.Pvt Ltd	374	1329	-	-	-	1703
Escorts Asset Management Ltd	1298	10725	15843	-	-	27866
FIL Fund Management Private Ltd	7724	1015764	-	-	3617	1027105
Fortis Investment Management(Indian) Pvt Ltd	8267	107175	-	-	-	115442
Franklin templeton Asset Management Co.(India)Pvt Ltd	174569	2119264	22165	-	51	2316049
HDFC Asset Management Co. Ltd	285976	3295753	320621	-	-	3902350
HSBC Asset Management India Ltd	22781	486215	-	-	13338	522334
ICICI prudential Asset Management Co. Ltd	319806	2645034	16070	1311	-	2982221
IDFC Asset Management Co.Pvt Ltd	28624	446943	-	-	-	475567
ING Investment Asset Management India Ltd	7332	103329	2253	-	30289	143203
J.M. Financial Asset Management Co.Pvt Ltd	11655	514675	3918	-	-	530248
JP Morgan Asset Management India Pvt Ltd	1431	142394	-	-	1430	145255
Kotak Mahindra Asset Management Co.Pvt Ltd	31038	1009570	8993	8	-	1049609

L&T Asset Investment Management Ltd	7347	104750	-	-	-	112097
LIC Mutual Fund Asset Management Co.Pvt Ltd	51982	357083	65563	-	-	474628
Mirae Asset Global Investment (India) Private Ltd	955	42914	-	-	2962	46831
Morgan Stanley Investment Management Pvt Ltd	863	476239	-	-	-	477102
Peerless Funds Managemwnt Co. Ltd	87		-	-	-	87
Principal Pnb Asset Management Co. Pvt Ltd	22794	951912	12908	-	8395	996009
Quantum Asset Management Co.Pvt Ltd	294	2813	-	3834	-	6941
Reliance Capital Asset Management Ltd	222657	6177665	1032152	45094	-	7477568
Religare Asset Management Co.Pvt Ltd	3334	228855	-	4904	-	237097
Sahara Asset Management Co.Pvt Ltd	970	42845	-	-	-	43815
SBI Funds Management Pvt Ltd	100122	5735418	73144	19603	-	5928287
Shinsei Asset Management India Pvt Ltd	94	2168	-	-	-	2262
Sundaram BNP Paribas Asset Management Co.Pvt Ltd	28216	2262134	10737	-	36702	2337789
Tata Asset Management Ltd	40762	1528149	93843	-	-	1662754
Taurus Asset Management Co.Pvt Ltd	917	173458	-	-	-	174375
UTI Assst Management Company Ltd	2091448	6862084	1019831	34013	-	10007376
Total	3738842	41118785	2828312	203544	285437	48174920

Source: www.amfi.com

Appendix IV

List of the Schemes selected for the study

The analysis has been done for open ended funds and close ended funds. The name of the schemes has been given below:

1. Market Prices (open ended funds)

- HDFC Equity Fund - Dividend Option
- HDFC Equity Fund - Growth Option
- HDFC Index Fund-Nifty Plan
- HSBC Equity Fund - Dividend
- HSBC Equity Fund - Growth
- HSBC Flexi Debt Fund-Inst. Monthly Dividend
- HSBC Flexi Debt Fund-Reg.Growth
- LICMF Index Fund-Nifty-Dividend
- LICMF Index Fund-Nifty-Growth
- SBI Debt Fund Series - 15 Months - 5 DIVIDEND
- SBI Debt Fund Series - 15 Months - 5 GROWTH
- UTI - Equity Fund-Growth Option
- UTI - Equity Fund-Income Option

2. NAVs (open ended funds)

- HDFC Balanced Fund - Dividend Option
- HDFC Growth Fund - Dividend Option
- HDFC Growth Fund - Growth Option
- HDFC Income Fund-Dividend
- HDFC Income Fund-Growth
- HDFC Gilt Fund-Long Term-Dividend
- HDFC Gilt Fund-Long Term-Growth
- HDFC Gilt Fund-Short Term-Dividend
- HDFC Gilt Fund-Short Term-Growth
- HDFC TaxSaver-Dividend Plan
- HDFC TaxSaver-Growth Plan
- LICMF Balanced Fund-Dividend
- LICMF Balanced Fund-Growth
- LICMF Growth Fund - Dividend Option
- LICMF Growth Fund - Growth Option

- LICMF Tax plan-Dividend
- LICMF Tax plan-Growth
- LICMF Liquid Fund-Dividend
- LICMF Liquid Fund-Growth
- SBI Magnum Balanced Fund - Dividend
- SBI Magnum Balanced Fund - Growth
- SBI Magnum Income Fund-Dividend
- SBI Magnum Income Fund-Growth
- SBI TAX ADVANTAGE FUND - SERIES I - DIVIDEND
- SBI TAX ADVANTAGE FUND - SERIES I - GROWTH
- UTI - Master Share-Income Option
- UTI - Master Value Fund-Growth Option
- UTI Balanced Fund-Growth
- UTI Balanced Fund-Income
- UTI- Liquid Fund-Cash Plan-Growth
- UTI- Liquid Fund-Cash Plan-Income
- HSBC Tax Saver Equity Fund - Dividend
- HSBC Tax Saver Equity Fund - Growth
- HSBC Gilt Fund - Dividend
- HSBC Gilt Fund - Growth
- HSBC Gilt Fund - Dividend - Weekly
- HSBC Income Fund - Investment - Inst. - Growth
- HSBC Income Fund - Investment - Regular - Dividend
- ICICI Prudential Gilt Fund Treasury Plan PF Option
- ICICI Prudential Gilt Fund-Investment-Dividend
- ICICI Prudential Flexible Income Plan Regular- Growth
- IDFC Tax Advantage (ELSS) Fund - Growth
- IDFC Tax Saver (ELSS) Fund A DIVIDEND
- IDFC Tax Saver (ELSS) Fund A GROWTH
- BARODA PIONEER BALANCE FUND -Growth Plan
- BARODA PIONEER BALANCE FUND-Dividend Plan
- BARODA PIONEER GROWTH FUND-Dividend Plan
- BARODA PIONEER GROWTH FUND-Growth Plan
- BARODA PIONEER INCOME FUND-Dividend Plan
- BARODA PIONEER INCOME FUND-Growth Plan
- Franklin India Taxshield-Dividend
- Franklin India Taxshield-Growth
- FT India Balanced Fund-Dividend Plan
- FT India Balanced Fund-Growth Plan
- FT India Monthly Income Plan-Growth
- Reliance Liquid Fund-Cash Plan-Dividend
- Reliance Liquid Fund-Cash Plan-Growth
- Reliance Monthly Income Plan-Growth Plan
- Reliance Monthly Income Plan-Monthly Dividend Plan

- Reliance Monthly Income Plan-Quarterly Dividend Plan
- Reliance Gilt Securities Fund - Retail Plan-Dividend Option
- Reliance Gilt Securities Fund - Retail Plan-Growth Option
- Reliance Tax Saver (ELSS) Fund-Dividend Plan-Dividend Option
- Reliance Tax Saver (ELSS) Fund-Growth Plan-Growth Option
- Reliance Growth Fund-Dividend Plan-(D)

3. Repurchase Prices (open ended funds)

- HDFC Income Fund-Dividend
- HDFC Income Fund-Growth
- LICMF Growth Fund - Dividend Option
- LICMF Growth Fund - Growth Option
- SBI Magnum Income Fund-Dividend
- SBI Magnum Income Fund-Growth
- HSBC Income Fund - Investment - Inst. - Growth
- HSBC Income Fund - Investment - Regular - Dividend
- BARODA PIONEER INCOME FUND-Dividend Plan
- BARODA PIONEER INCOME FUND-Growth Plan

4. Market Prices (close ended funds)

- SBI DEBT FUND SERIES - INSTITUTIONAL DIVIDEND
- SBI CAPITAL PROTECTION ORIENTED FUND - I Growth
- HSBC Interval Fund - Plan III - Regular - Dividend
- HSBC Interval Fund - Plan III - Regular - Growth
- LICMF FIXED MATURITY PLAN SERIES 41 - GROWTH OPTION
- LICMF FIXED MATURITY PLAN SERIES 42 - DIVIDEND OPTION
- Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Dividend
- Religare Yearly FMP - Series I - Plan A (375 Days)- Regular Growth
- LICMF TOP 100 FUND - DIVIDEND OPTION
- LICMF TOP 100 FUND - GROWTH OPTION

5. NAVs (close ended funds)

- DWS Fixed Term Fund-Sr 60 Inst Div
- DWS Fixed Term Fund-Sr 60 Reg Div
- Tata Smart Investment Plan - 1 - Scheme A - Dividend
- Tata Smart Investment Plan - 1 - Scheme B - Growth

- Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class A
- Benchmark Split Capital Fund - Balanced-Benchmark Split Capital Fund - Balanced-Class B
- LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION
- LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION
- Birla Tax Plan 98
- HDFC LONG TERM EQUITY FUND-Dividend
- HDFC LONG TERM EQUITY FUND-Growth
- HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option
- HDFC MID-CAP OPPORTUNITIES FUND - Growth Option
- HSBC Small Cap Fund - Dividend
- HSBC Small Cap Fund - Growth
- ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Dividend Option
- ICICI Prudential Fixed Maturity Plan - Series 42 - Six Months Plan C - Retail Growth Option
- SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND
- SBI INFRASTRUCTURE FUND - SERIES I GROWTH
- Sundaram BNP Paribas Select Small Cap Dividend
- Sundaram BNP Paribas Select Small Cap Dividend
- UTI Wealth Builder Fund - Dividend Option
- UTI Wealth Builder Fund - Growth Option
- Fidelity Fixed Maturity Plan - Series 1 - Plan B - Retail Plan Growth Option
- Fidelity Fixed Maturity Plan - Series 1 - Plan C - Institutional Plan Growth Option
- Franklin Templeton Fixed Tenure Fund - Series VIII - 60 Months Plan (Plan A) - Growth Plan
- Franklin Templeton Fixed Tenure Fund Series X Plan A - Dividend
- UTI-Short Term FMP Sr-II -III (90D) - Growth Option
- UTI-Short Term FMP Sr-II -IV (90 D)-Growth Option
- UTI-Fixed Term Income Fund Sr.V Plan X (12 Mts)- Growth Option
- Tata Fixed Investment Plan - 3 Scheme A - Institutional Plan - Growth
- Sundaram BNP Paribas FTP 367 days Series P Growth
- Sundaram BNP Paribas FTP 367 days Series P Dividend
- SBI DEBT FUND SERS-90D-GROWTH
- Religare FMP-375 days-Sr-XVI - Institutional Growth
- Religare FMP-375 days-Sr-XVI - Regular Dividend Reinvestment
- LICMF Interval Fund Annual Plan - Series 1 Dividend Option
- LICMF Interval Fund Annual Plan - Series 1 Growth Option
- Kotak FMP 13M Series 6 Dividend
- Kotak FMP 13M Series 6 Growth
- JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL DIVIDEND

- JM FIXED MATURITY FUND SERIES X QUARTERLY PLAN 2 - INSTITUTIONAL GROWTH
- IDFC Fixed Maturity Plan QS 55-Dividend
- IDFC Fixed Maturity Plan QS 55-Growth
- ICICI Prudential Real Estate Securities Fund - Retail Dividend
- ICICI Prudential Real Estate Securities Fund - Retail Growth
- HSBC Fixed Term Series-53-Reg-Dividend
- HSBC Fixed Term Series-53-Reg-Growth
- HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Growth Option
- HDFC QUARTERLY INTERVAL FUND - PLAN A - RETAIL PLAN - Dividend Option
- LICMF INDIA VISION FUND - DIVIDEND OPTION
- LICMF INDIA VISION FUND - GROWTH OPTION
- SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE DIVIDEND
- SBI INFRASTRUCTURE FUND - SERIES I REPURCHASE GROWTH
- UTI - Infrastructure Advantage Fund - Growth Option

6. Repurchase prices (close ended funds)

- LICMF SYSTEMATIC ASSET ALLOCATION FUND - DIVIDEND OPTION
- LICMF SYSTEMATIC ASSET ALLOCATION FUND - GROWTH OPTION
- HDFC MID-CAP OPPORTUNITIES FUND - Dividend Option
- HDFC MID-CAP OPPORTUNITIES FUND - Growth Option
- HSBC Small Cap Fund - Dividend
- HSBC Small Cap Fund - Growth
- SBI INFRASTRUCTURE FUND - SERIES I DIVIDEND
- SBI INFRASTRUCTURE FUND - SERIES I GROWTH
- UTI Wealth Builder Fund - Dividend Option
- UTI Wealth Builder Fund - Growth Option

Appendix V

BSE National Index³⁸

A broad-based index, the BSE-100 was formerly known as the BSE National index. This Index has 1983-84 as the base year and was launched in 1989. In line with the shift of the BSE Indices to the globally accepted Free-Float methodology, BSE-100 was shifted to Free-Float methodology effective from April 5, 2004.

1. Base Year = 1983-84
2. Base Index Value = 100
3. Date of Launch = January 3, 1989
4. Method of calculation = Launched on full market capitalization method and effective April 5, 2004, calculation method shifted to free float market capitalization.

Formula for Calculation of Index

All BSE indices (except BSE-PSU index) are calculated using following formula:

Free-float market capitalization of index constituents / Base Market capitalization * Base IndexValue

For calculation of BSE-PSU index, full market capitalization of index constituents is considered instead of free-float market capitalization. Dollex-30, Dollex-100 and Dollex-200 are dollar-linked versions of SENSEX, BSE-100 and BSE-200 index. For more details click 'Dollex series of BSE indices'.

³⁸ www.bseindia.com

BSE IPO index is calculated using following formula:

Capped market capitalization of index constituents/ Base Market capitalization * Base Index Value

Where capped market capitalisation for scrips in BSE IPO index is arrived by multiplying free-float adjusted market capitalisation of individual scrip with its respective capping factor. Such capping factor is assigned to the index constituent to ensure that no single scrip based on its free-float market capitalisation exceeds weightage of 20% at the time of rebalancing. In case, weightage of all the constituents in the index is below 20%, each company would be assigned capping factor of 1.

Free-Float Adjustment Factor revised from 10/05/2010

BSE-100

Code	Name	Sector	Adj. Factor
523204	Aban Offshore Ltd.	Oil & Gas	0.50
500002	ABB Ltd.	Capital Goods	0.50
500410	ACC Ltd.	Housing Related	0.55
512599	Adani Enterprises Ltd.	Diversified	0.30
500303	Aditya Birla Nuvo Limited	Diversified	0.55
500425	Ambuja Cements Ltd.	Housing Related	0.55
500477	Ashok Leyland Ltd.	Transport Equipments	0.50
532215	AXIS Bank Ltd.	Finance	0.65
532977	Bajaj Auto Limited	Transport Equipments	0.50
532134	Bank of Baroda	Finance	0.50
532149	Bank Of India	Finance	0.40
500493	Bharat Forge Ltd.	Transport Equipments	0.60
500103	Bharat Heavy Electricals Ltd.	Capital Goods	0.35
500547	Bharat Petroleum Corpn Ltd.	Oil & Gas	0.40
532454	Bharti Airtel Ltd.	Telecom	0.35
532792	Cairn India Ltd.	Oil & Gas	0.25
500040	Century Textiles Ind Ltd.	Diversified	0.60
500087	Cipla Ltd.	Healthcare	0.65
500093	Crompton Greaves Ltd.	Capital Goods	0.60
532488	Divi's Laboratories Ltd.	Healthcare	0.50
532868	DLF Ltd.	Housing Related	0.25
500124	Dr Reddy's Laboratories Ltd.	Healthcare	0.75
532696	Educomp Solutions Limited.	Information Technology	0.50
500134	Essar Oil Ltd.	Oil & Gas	0.15
526881	Financial Technologies (India) Ltd	Information Technology	0.55

532155	Gail (India) Ltd.	Oil & Gas	0.40
532296	Glenmark Pharmaceuticals Ltd.	Healthcare	0.55
532754	GMR Infrastructure Ltd.	Diversified	0.25
500820	Asian Paints Ltd.	Chemical, Petrochemical	0.50
532281	HCL Technologies Ltd.	Information Technology	0.35
500010	HDFC	Finance	0.90
500180	HDFC Bank Ltd.	Finance	0.80
500182	Hero Honda Motors Ltd.	Transport Equipments	0.50
500440	Hindalco Industries Ltd.	Metal,Metal Products & Mining	0.70
500104	Hindustan Petroleum Corp Ltd.	Oil & Gas	0.50
500696	Hindustan Unilever Ltd.	FMCG	0.50
532873	Housing Dev & Infrastructure Ltd	Housing Related	0.45
532174	ICICI Bank Ltd.	Finance	1.00
532822	Idea Cellular Ltd	Telecom	0.25
530005	India Cements Ltd.	Housing Related	0.75
532544	Indiabulls Financial Services Ltd.	Finance	0.75
532832	Indiabulls Real Estate Ltd.	Housing Related	0.85
500850	Indian Hotels Co Ltd.	Tourism	0.75
530965	Indian Oil Corporation Ltd.	Oil & Gas	0.10
500116	Industrial Dev Bank of India	Finance	0.50
500209	Infosys Technologies Ltd.	Information Technology	0.85
532659	Infrastructure Development Finance Co. Ltd.	Finance	0.80
500875	ITC Ltd.	FMCG	0.70
530773	IVRCL Infrastructures & Projects Ltd.	Housing Related	0.95
532532	Jaiprakash Associates Ltd.	Housing Related	0.55
532286	Jindal Steel & Power Ltd	Metal,Metal Products & Mining	0.45
500228	JSW Steel Ltd	Metal,Metal Products & Mining	0.55
500247	Kotak Mahindra Bank Ltd.	Finance	0.50
500510	Larsen & Toubro Limited	Capital Goods	0.90
500257	Lupin Ltd.	Healthcare	0.55
513377	M M T C Ltd.	Miscellaneous	0.05
500520	Mahindra & Mahindra Ltd.	Transport Equipments	0.75
532500	Maruti Suzuki India Ltd.	Transport Equipments	0.50
532921	Mundra Port & Special Economic Zone	Transport Services	0.20
532234	National Aluminium Co. Ltd.	Metal,Metal Products & Mining	0.15
500790	Nestle India Ltd.	FMCG	0.40
533098	NHPC Ltd.	Power	0.15
526371	NMDC Limited	Metal,Metal Products & Mining	0.10
532555	NTPC Ltd.	Power	0.20
500312	ONGC Ltd.	Oil & Gas	0.20
532810	Power Finance Corporation Ltd	Finance	0.15
532898	Power Grid Corporation of India Ltd.	Power	0.15
532693	Punj LLOYD Ltd	Capital Goods	0.65
532461	Punjab National Bank	Finance	0.45
500359	Ranbaxy Laboratories Ltd.	Healthcare	0.40

500111	Reliance Capital Ltd.	Finance	0.50
532712	Reliance Communications Ltd.	Telecom	0.35
500325	Reliance Industries Ltd.	Oil & Gas	0.55
500390	Reliance Infrastructure Ltd.	Power	0.60
532709	Reliance Natural Resources Ltd.	Oil & Gas	0.50
532939	Reliance Power Limited	Power	0.20
500295	Sesa Goa Ltd.	Metal,Metal Products & Mining	0.45
511218	Shriram Transport Finance Company Ltd.	Finance	0.60
500550	Siemens Ltd.	Capital Goods	0.45
500112	State Bank of India	Finance	0.45
500113	Steel Authority of India Ltd.	Metal,Metal Products & Mining	0.15
500900	Sterlite Industries Ltd.	Metal,Metal Products & Mining	0.45
524715	Sun Pharmaceutical Inds Ltd.	Healthcare	0.40
532667	Suzlon Energy Ltd.	Capital Goods	0.50
500770	Tata Chemicals Ltd.	Diversified	0.75
500483	Tata Communications Ltd.	Telecom	0.25
532540	Tata Consultancy Services Limited	Information Technology	0.30
500570	Tata Motors Ltd.	Transport Equipments	0.65
500400	Tata Power Co. Ltd.	Power	0.70
500470	Tata Steel Ltd.	Metal,Metal Products & Mining	0.70
500800	Tata Tea Ltd.	FMCG	0.65
532779	Torrent Power Ltd.	Power	0.50
532538	UltraTech Cement Ltd.	Housing Related	0.50
532477	Union Bank of India	Finance	0.45
507878	Unitech Ltd.	Housing Related	0.55
512070	United Phosphorus Ltd.	Agriculture	0.75
532432	United Spirits Ltd.	FMCG	0.70
532144	Welspun Gujarat Stahl Rohren Ltd.	Metal,Metal Products & Mining	0.60
507685	Wipro Ltd.	Information Technology	0.20
505537	Zee Entertainment Enterprises Ltd.	Media & Publishing	0.60

BSE Mid-Cap

Code	Name	Adj. Factor
523395	3M India Ltd.	0.25
523204	Aban Offshore Ltd.	0.50
532799	Ackruti City Ltd.	0.20
532683	AIA Engineering Limited	0.40
505885	Alfa Laval (India) Ltd.	0.15
532480	Allahabad Bank	0.45
532749	Allcargo Global Logistics Ltd.	0.25
532309	Alstom Power India Ltd.	0.35
520077	Amtek Auto Ltd	0.75
515055	Anant Raj Industries Ltd	0.40
532418	Andhra Bank	0.50
526173	Andrew Yule & Company Ltd	0.10
508869	Apollo Hospitals Enterprises Ltd.	0.45

500877	Apollo Tyres Ltd	0.65
500477	Ashok Leyland Ltd.	0.50
506820	Astrazeneca Phrama Ltd.	0.15
526991	Atlas Copco (India) Ltd.	0.20
524804	Aurobindo Pharma Ltd.	0.45
500674	Aventis Phrama Ltd.	0.40
500031	Bajaj Electricals Ltd.	0.35
532978	Bajaj Finserv Ltd.	0.45
500032	Bajaj Hindustan Ltd.	0.60
500490	Bajaj Holdings & Investment Ltd.	0.65
500038	Balrampur Chini Mills Ltd.	0.65
532525	Bank of Maharashtra	0.25
506285	Bayer Cropscience Ltd.	0.30
500048	BEML Ltd.	0.50
509480	Berger Paints India Ltd.	0.20
532430	Bf Utilities Ltd.	0.35
532930	BGR Energy Systems Ltd.	0.20
500493	Bharat Forge Ltd.	0.60
500055	Bhushan Steel Ltd.	0.35
532523	Biocon Ltd.	0.35
500335	Birla Corporation Ltd.	0.40
526612	Blue Dart Express Ltd	0.15
500067	Blue Star Ltd.	0.60
523457	BOC India Ltd.	0.15
500020	Bombay Dyeing & Mfg Co Ltd	0.55
532678	Bombay Rayon Fashions Ltd.	0.50
532929	Brigade Enterprises Ltd.	0.45
500825	Britannia Industries Ltd.	0.50
513375	Carborundum Universal Ltd.	0.50
500870	Castrol India Ltd.	0.30
532885	Central Bank of India	0.20
500040	Century Textiles & Industries Ltd.	0.60
500084	CESC Ltd.	0.50
500085	Chambal Fertilisers & Chemicals Ltd.	0.50
500110	Chennai Petroleum Corporation Ltd	0.35
517326	CMC Ltd.	0.50
500830	Colgate-Palmolive (India) Ltd.	0.50
512199	Core Projects & Technologies Ltd.	0.55
506395	Coromandel International Ltd.	0.35
532179	Corporation Bank	0.20
533144	Cox And Kings (India) Limited	0.30
500092	CRISIL Ltd.	0.50
500480	Cummins India Ltd.	0.50
533151	D.B.Corp Ltd.	0.15
500097	Dalmia Cement (Bharat) Ltd.	0.40
532608	Deccan Chronicle Holdings Ltd.	0.40
533137	Den Networks Limited	0.15

532121	Dena Bank	0.50
511072	Dewan Housing Finance Corporation Ltd.	0.35
532839	Dish TV India Ltd.	0.40
532526	Dishman Pharmaceuticals & Chemicals Ltd.	0.40
523618	Dredging Corporation of India Ltd.	0.25
500125	E.I.D. Parry (I) Ltd.	0.55
532922	Edelweiss Capital Ltd.	0.60
532696	Educomp Solutions Ltd.	0.50
505200	Eicher Motors Ltd.	0.45
500840	EIH Ltd.	0.40
531162	Emami Ltd.	0.30
530323	Era Infra Engineering Ltd.	0.35
500630	Essar Shipping Ports & Logistics Ltd.	0.20
500086	Exide Industries Co. Ltd.	0.55
500469	Federal Bank Ltd.	1.00
526881	Financial Technologies (India) Ltd.	0.55
532843	Fortis Healthcare Ltd.	0.20
532545	Fresenius Kabi Oncology Ltd.	0.10
509550	Gammon India Ltd	0.70
532959	Gammon Infrastructure Projects Ltd.	0.25
531863	Gee Kay Finance & Leasing Co. Ltd.	0.10
507815	Gillette India Ltd	0.15
500676	Glaxosmithkline Consumer Healthcare	0.60
532296	Glenmark Pharmaceuticals Ltd.	0.55
500163	Godfrey Phillips India Ltd	0.30
532424	Godrej Consumer Products Ltd.	0.30
500164	Godrej Industries Ltd.	0.25
533150	Godrej Properties Ltd.	0.15
500620	Great Eastern Shipping Co. Ltd.	0.70
532786	Great Offshore Ltd.	0.40
532775	GTL Infrastructure Ltd.	0.25
500160	GTL Ltd.	0.55
500173	Gujarat Fluorochemicals Ltd	0.30
523477	Gujarat Gas Company Ltd.	0.35
517300	Gujarat Industries Powerco.Ltd.	0.35
532181	Gujarat Mineral Development Corpn.	0.30
500670	Gujarat Narmada Val Fer Co. Ltd.	0.60
512579	Gujarat NRE Coke Ltd.	0.55
500690	Gujarat State Fertilisers & Chem. Ltd.	0.60
532702	Gujarat State Petronet Ltd.	0.55
532708	GVK Power & Infrastructure Ltd.	0.50

533162	Hathway Cable & Datacom Ltd.	0.30
517354	Havells India Ltd	0.30
500179	HCL Infosystems Ltd.	0.50
500185	Hindustan Construction Co Ltd	0.65
500186	Hindustan Oil Explorat Co. Ltd.	0.55
515145	Hindusthan National Glass & Industries Ltd.	0.10
500191	HMT Ltd.	0.05
517174	Honeywell Automation India Ltd.	0.20
500193	Hotel Leela Venture Ltd.	0.40
532653	HSBC InvestDirect (India) Ltd	0.10
532662	HT Media Limited.	0.25
532800	IBN18 Broadcast Ltd.	0.45
500710	ICI India Ltd.	0.40
500116	IDBI Bank Ltd.	0.50
500106	IFCI Ltd.	0.95
533177	Il&Fs Transportation Networks Ltd.	0.15
530005	India Cements Ltd.	0.75
532636	India Infoline Ltd.	0.70
532544	Indiabulls Financial Services Ltd.	0.75
533122	Indiabulls Power Limited	0.30
532832	Indiabulls Real Estate Ltd.	0.85
532814	Indian Bank Ltd.	0.20
500850	Indian Hotels Co. Ltd.	0.75
532388	Indian Overseas Bank	0.40
532514	Indraprastha Gas Ltd.	0.50
532187	Indusind Bank Ltd	0.75
532777	Infoedge (India) Ltd.	0.45
532175	Infotech Enterprises Ltd.	0.55
531807	ING Vysya Bank Ltd.	0.60
524494	IPCA Laboratories Ltd.	0.55
532947	IRB Infrastructure Developers Ltd.	0.30
500305	Ispat Industries Ltd.	0.60
530773	IVRCL Infrastructures & Projects Ltd.	0.95
532705	Jagran Prakashan Ltd.	0.35
512237	Jai Corp Ltd.	0.30
500219	Jain Irrigation Systems Ltd	0.70
532627	Jaiprakash Hydro-Power Limited.	0.15
532209	Jammu & Kashmir Bank Ltd.	0.50
532617	Jet Airways(India) Ltd.	0.25
500378	Jindal Saw Ltd.	0.45
532642	Jindal Southwest Holdings Limited	0.45
523405	JM Financial Ltd	0.20
532508	Jsl Limited	0.55
533155	Jubilant Foodworks Ltd.	0.40
530019	Jubilant Organosys Ltd.	0.50
526209	K.S.Oils Ltd.	0.50

522287	Kalpataru Power Transmission Ltd.	0.40
500165	Kansai Nerolac Paints Ltd.	0.35
532652	Karnataka Bank Ltd.	1.00
532714	KEC International Ltd.	0.60
502937	Kesoram Industries Ltd	0.75
531612	KGN Industries Ltd	0.55
532747	Kingfisher Airlines Ltd.	0.35
531882	Kwality Dairy (India) Ltd.	0.20
500252	Lakshmi Machine Works Ltd.	0.60
500253	LIC Housing Finance Ltd	0.65
500260	Madras Cements Ltd.	0.60
500108	Mahanagar Telephone Nigam Ltd	0.45
500265	Maharashtra Seamless Ltd.	0.50
532720	Mahindra & Mahindra Fin.Ser.Ltd.	0.40
533088	Mahindra Holidays & Resorts India Ltd	0.15
532313	Mahindra Lifespace Developers Ltd.	0.50
533169	Man Infraconstruction Ltd.	0.10
531213	Mannapuram Gen. Fin. & Leasing Ltd.	0.40
531642	Marico Limited.	0.40
500271	Max India Ltd.	0.50
532654	McLeod Russel India Ltd	0.55
532819	MindTree Ltd.	0.60
513446	Monnet Ispat Ltd.	0.65
524084	Monsanto India Ltd.	0.30
517334	Motherson Sumi Systems Ltd.	0.35
532892	Motilal Oswal Financial Services Ltd.	0.25
500290	MRF Ltd.	0.60
532991	Mvl Limited	0.20
500294	Nagarjuna Construction Co Ltd.	0.80
500075	Nagarjuna Fertiliser & Chem. Ltd.	0.65
523630	National Fertilisers Ltd.	0.05
513023	Nava Bharat Ventures Ltd	0.55
500308	Nirma Ltd.	0.25
500672	Novartis India Ltd.	0.25
532880	Omaxe Ltd.	0.15
532944	OnMobile Global Ltd.	0.50
532391	Opto Circuits (India) Ltd.	0.75
500315	Oriental Bank Of Commerce	0.50
523574	Pantaloon Retail (India) Ltd.	0.55
532780	Parsvnath Developers Ltd.	0.30
531120	Patel Engineering Ltd.	0.50
532517	Patni Computer Systems Ltd.	0.40
503031	Peninsula Land Ltd.	0.50
532522	Petronet Lng Ltd.	0.35
500680	Pfizer Ltd.	0.30

503100	Phoenix Mills Ltd	0.35
500331	Pidilite Industries Ltd.	0.30
533107	Pipavav Shipyard Limited	0.20
500302	Piramal Healthcare Ltd.	0.55
532254	Polaris Software Lab Ltd.	0.45
522205	Praj Industries Ltd.	0.70
506022	Prakash Industries Ltd	0.50
500459	Procter & Gamble Hygiene & Health	0.30
532524	PTC India Ltd.	0.85
532693	Punj Lloyd Ltd.	0.65
532891	Puravankara Projects Ltd.	0.15
531500	Rajesh Exports Ltd.	0.45
524230	Rashtriya Chem & Fert. Ltd.	0.10
532805	Redington (India) Ltd.	0.30
532106	Rei Agro Ltd.	0.65
533065	REI Six Ten Retail Ltd.	0.50
532915	Religare Entreprises Ltd.	0.15
500366	Rolta India Ltd.	0.60
500368	Ruchi Soya Industries Ltd.	0.45
532710	Sadbhav Engineering Ltd.	0.55
523598	Shipping Corporation Of India Ltd.	0.20
522175	Shiv-Vani Oil & Gas Explo. Serv. Ltd.	0.45
500387	Shree Cements Ltd.	0.25
512463	Shree Global Tradefin Ltd.	0.30
532670	Shree Renuka Sugars Limited	0.60
532498	Shriram City Union Finance Ltd.	0.20
523838	Simplex Infrastructure Limited	0.50
502742	Sintex Industries Ltd.	0.70
500472	SKF India Ltd.	0.50
532784	Sobha Developers Ltd	0.40
501061	State Bank of Bikaner & Jaipur	0.25
532200	State Bank of Mysore	0.10
532191	State Bank of Travancore	0.25
512531	State Trading Corporation of India Ltd.	0.10
532374	Sterlite Technologies Ltd	0.50
532872	Sun Pharma Advanced Research Ltd.	0.30
512179	Sunteck Realty Ltd.	0.35
532276	Syndicate Bank Ltd.	0.35
500770	Tata Chemicals Ltd.	0.75
501301	Tata Investment Corporation Ltd.	0.35
500800	Tata Tea Ltd.	0.65
532371	Tata Teleservices (Maharashtra) Ltd	0.25
532299	Television Eighteen India Ltd	0.45
505400	Texmaco Ltd.	0.55
532218	The South Indian Bank Ltd.	1.00

500411	Thermax Ltd.	0.40
500413	Thomas Cook (India) Ltd.	0.25
500114	Titan Industries Ltd.	0.50
500420	Torrent Pharma Ltd.	0.30
500251	Trent Ltd.	0.70
532356	Triveni Engineering & Industries	0.35
532691	Tulip Telecom Ltd.	0.35
532343	TVS Motor Ltd.	0.40
532505	UCO Bank	0.40
533171	United Bank Of India	0.20
507458	United Breweries (Holdings) Ltd.	0.50
532478	United Breweries Ltd.	0.30
512070	United Phosphorus Ltd.	0.75
517146	Usha Martin Ltd.	0.60
532619	UTV Software Communications Ltd.	0.30
511389	Videocon Industries Ltd.	0.35
532401	Vijaya Bank	0.50
500575	Voltas Ltd.	0.75
532144	Welspun Gujarat Stahl Rohren Ltd.	0.60
500238	Whirlpool Of India Ltd.	0.25
532300	Wockhardt Ltd.	0.30
500095	Wyeth Ltd.	0.45
532648	Yes Bank Ltd.	0.60
500780	Zuari Industries Ltd.	0.40

BSE Small-Cap

Code	Name	Adj. Factor
532628	3i Infotech Ltd.	0.80
524208	Aarti Industries Ltd.	0.55
500488	Abbott India Ltd.	0.35
520155	ABG Infralogistics Ltd	0.30
532682	ABG Shipyard Ltd.	0.35
521064	Abhishek Industries Ltd.	0.30
531897	Accentia Technologies Ltd.	0.75
532762	Action Construction Equipment Ltd.	0.35
532727	Adhunik Metaliks Ltd.	0.45
532974	Aditya Birla Money Ltd	0.25
517041	Ador Welding Ltd.	0.45
523269	Advani Hotels & Resorts (India) Ltd.	0.20
532840	Advanta India Ltd.	0.40
500003	Aegis Logistics Ltd.	0.35
500215	Agro Tech Foods Ltd.	0.40
532811	Ahluwalia Contracts (India) Ltd.	0.30
513335	Ahmednagar Forgings Ltd	0.50
513349	Ajmera Realty & Infra India Ltd.	0.35
506235	Alembic Ltd.	0.40

532875	Allied Digital Services Ltd.	0.55
521070	Alok Industries Ltd.	0.65
500008	Amara Raja Batteries	0.50
532282	Amtek India Ltd.	0.65
532141	Andhra Cement Ltd.	0.35
502330	Andhra Pradesh Paper Mills Ltd.	0.50
531683	Ankur Drugs And Pharma Ltd.	0.65
500013	Ansal Properties & Infrastructure Ltd.	0.45
532259	Apar Industries Ltd.	0.25
532475	Aptech Ltd.	0.65
533159	Aqua Logistics Ltd.	0.35
506074	Arshhiya International Ltd.	0.60
533163	ARSS Infrastructure Projects Ltd.	0.20
500101	Arvind Ltd.	0.65
515030	Asahi India Glass Ltd.	0.45
527001	Ashapura Minechem Ltd.	0.35
531847	Asian Star Company Ltd.	0.15
500024	Assam Company Ltd.	0.55
532493	Astra Microwave Products Ltd.	0.65
532320	Atco Corporation Limited	0.25
532759	Atlanta Ltd.	0.30
500027	Atul Ltd.	0.60
532668	Aurionpro Solutions Limited	0.70
533016	Austral Coke & Projects Ltd.	0.75
505010	Automotive Axles Ltd.	0.30
500463	Avaya Globalconnect Ltd.	0.45
532719	B L Kashyap and Sons Ltd.	0.30
532507	B.A.G. Films Ltd.	0.35
500034	Bajaj Auto Finance Ltd.	0.45
507500	Bajaj Hindustan Sugar & Industries Ltd.	0.20
500035	Balaji Distilleries Ltd.	0.25
532382	Balaji Telefilms Ltd.	0.35
502355	Balkrishna Industries Ltd.	0.50
500102	Ballarpur Industries Ltd	0.60
523319	Balmer Lawrie & Co. Ltd.	0.40
532485	Balmer Lawrie Investment Ltd.	0.45
500039	Banco Products (I) Ltd.	0.35
500041	Bannari Amman Sugars Ltd.	0.50
532694	Bartronics India Ltd.	0.70
500042	BASF India Ltd.	0.30
500043	Bata India Ltd.	0.50
500046	Best & Crompton Engg.Ltd.	0.20
500052	Bhansali Engg Polymers Ltd.	0.55
503960	Bharat Bijlee Ltd.	0.65
532609	Bharati Shipyard Ltd.	0.65
526853	Bilcare Ltd.	0.55
532849	Binani Cement Ltd.	0.15
500059	Binani Industries Ltd.	0.50

506197	Bliss GVS Pharma Ltd.	0.35
501425	Bombay Burmah Trg Corpn Ltd	0.30
532813	C & C Constructions Ltd.	0.25
526652	Cals Refineries Ltd.	1.00
532616	Cambridge Solutions Ltd.	0.15
500446	Carol Info Services Ltd.	0.40
519600	CCL Products (India) Ltd.	0.55
500878	Ceat Ltd.	0.55
501150	Centrum Capital Ltd.	0.05
500280	Century Enka Ltd.	0.75
532548	Century Plyboards India Ltd.	0.15
506355	Chemplast Sanmar Ltd.	0.25
511243	Cholamandalam Dbs Finance Ltd.	0.30
532210	City Union Bank Ltd.	0.75
506390	Clariant Chemicals (India) Ltd.	0.40
500147	CMI FPE Ltd.	0.25
531216	Comfort Intech Ltd.	0.60
526829	Confidence Petroleum India Ltd.	0.55
532902	Consolidated Construction Consortium Ltd.	0.50
508814	Cosmo Films Ltd.	0.50
512093	Cranes Software International Ltd.	0.70
532528	Datamatics Global Services Ltd	0.25
523367	DCM Shriram Consolidated Ltd.	0.45
523369	DCM Shriram Industries Ltd	0.35
500117	DCW Ltd.	0.65
532760	Deep Industries Ltd.	0.50
500645	Deepak Fert. & Petrochemicals	0.60
532848	Delta Corp Ltd.	0.40
532772	Development Credit Bank Ltd.	0.70
500119	Dhampur Sugar Mills Ltd.	0.60
532180	Dhanalakshmi Bank Ltd.	1.00
507717	Dhanuka Agritech Ltd.	0.15
507442	Dharani Sugars & Chemicals Ltd.	0.55
522163	Diamond Cables Ltd.	0.45
500068	Disa India Ltd	0.15
522261	Dolphin Offshore Ent. (I) Ltd.	0.45
533176	DQ Entertainment (International) Ltd.	0.25
509130	Dunlop India Ltd.	0.30
505242	Dynamatic Technologies Ltd.	0.50
532927	Eclerx Services Ltd.	0.35
533055	Edserv Soft Systems Ltd.	0.35
523127	EIH Associated Hotels Ltd.	0.25
500123	Elantas Beck India Ltd.	0.15
532322	Elder Pharmacueticals Ltd.	0.40
505700	Elecon Engineering Co.Ltd.	0.55
500128	Electrosteel Castings Ltd.	0.45
526608	Electrotherm (India) Ltd.	0.30
522074	Elgi Equipments Ltd.	0.80

504000	Elpro International Ltd	0.50
504008	Emco Ltd.	0.65
532920	Empee Distelleries Ltd.	0.30
509525	Empire Industries Ltd.	0.35
526560	English Indian Clays Ltd.	0.25
532287	Entegra Ltd.	0.30
532700	Entertainment Network (India) Ltd.	0.30
500133	Esab India Ltd.	0.45
500495	Escorts Ltd	0.70
532787	Ess Dee Aluminium Ltd.	0.40
500135	Essel Propack Ltd.	0.45
531508	Eveready Industries (I) Ltd.	0.60
508906	Everest Industries Ltd.	0.45
532684	Everest Kanto Cylinders Ltd.	0.40
532876	Everonn Education Ltd.	0.60
505790	Fag Bearings India Ltd.	0.50
509527	Falcon Tyres Ltd	0.20
532666	FCS Software Solutions Ltd.	0.70
531599	FDC Ltd.	0.35
500139	Fedders Lloyd Corporation Ltd.	0.60
505744	Federal-Mogul Goetze (India) Ltd.	0.30
524608	Fem Care Pharma Ltd.	0.10
500141	Ferro Alloys Corporation Ltd.	0.30
500144	Finolex Cables Ltd.	0.55
500940	Finolex Industries Ltd.	0.50
532809	Firstsource Solutions Ltd.	0.40
502865	Forbes & Company Ltd.	0.30
500033	Force Motors Limited.	0.50
500150	Foseco India Ltd.	0.15
506803	Fulford (India) Ltd.	0.45
532938	Future Capital Holdings Ltd.	0.25
505714	Gabriel India Ltd.	0.40
532726	Gallantt Metal Ltd.	0.30
526367	Ganesh Housing Corp. Ltd.	0.45
500155	Garden Silk Mills Ltd.	0.45
501848	Garware Offshore Services Ltd.	0.40
532622	Gateway Distriparks Ltd.	0.60
532345	Gati Ltd.	0.35
532767	Gayatri Projects Ltd	0.40
532764	GeeCee Ventures Ltd.	0.45
532318	Gemini Communications Ltd.	0.40
506109	Genesys International Corpn. Ltd.	0.45
530343	Genus Power Infrastructures Ltd	0.60
503699	Geodesic Ltd.	0.80
532285	Geojit BNP Paribas Financial Services Ltd.	0.35
532312	Geometric Ltd.	0.65
511676	GIC Housing Finance Ltd.	0.55
532715	Gitanjali Gems Ltd.	0.50

532672	Glodyne Technoserve Ltd.	0.40
500162	GMR Industries Ltd.	0.30
532734	Godavari Power & Ispat Ltd.	0.45
532630	Gokaldas Exports Ltd.	0.15
532980	Gokul Refoils And Solvent Ltd.	0.35
500151	Golden Tobacco Ltd.	0.75
500166	Goodricke Group Ltd.	0.30
500168	Goodyear India Ltd.	0.30
509488	Graphite India Ltd.	0.40
509546	Graviss Hospitality Limited	0.10
501455	Greaves Cotton Ltd.	0.50
526797	Greenply Industries Ltd	0.45
506076	Grindwell Norton Ltd.	0.45
511288	Gruh Finance Ltd	0.40
532951	GSS America Infotech Ltd.	0.45
530001	Gujarat Alkalies & Chemicals Ltd.	0.60
524226	Gujarat Ambuja Exports Ltd.	0.40
522217	Gujarat Apollo Industries Ltd	0.55
518029	Gujarat Sidhee Cement Ltd.	0.60
506480	Gulf Oil Corporation Ltd.	0.40
517296	Halonix Ltd.	0.35
532770	Hanung Toys & Textiles Ltd.	0.35
500467	Harrisons Malayalam Ltd	0.50
531531	Hatsun Agro Products Ltd.	0.30
508486	Hawkins Cookers Ltd	0.45
517271	HBL Power Systems Ltd.	0.30
509631	HEG Ltd.	0.50
532671	Henkel India Limited	0.35
505720	Hercules Hoists Ltd	0.35
519552	Heritage Foods (India) Ltd.	0.55
532129	Hexaware Technologies Ltd.	0.75
511116	HFCL Infotel Ltd.	0.50
524735	Hikal Ltd.	0.20
500183	Himachal Futuristic Communications	1.00
500184	Himadri Chemicals & Industries Ltd.	0.30
514043	Himatsingka Seide Ltd.	0.50
505982	Hinduja Foundries Ltd.	0.35
532859	Hinduja Global Solutions Ltd.	0.35
500189	Hinduja Ventures Ltd.	0.35
509627	Hindustan Dorr-Oliver Ltd	0.45
500500	Hindustan Motors Ltd.	0.75
500449	Hindustan Organic Chemical Ltd	0.45
500187	Hindustan Sanitaryware & Inds	0.25
523398	Hitachi Home & Life Soln. (I) Ltd.	0.35
522064	Honda Siel Power Products Ltd.	0.35
509675	Hyderabad Industries Ltd	0.60
532835	ICRA Ltd.	0.65
531524	ICSA India Ltd.	0.80

505726	IFB Industries Ltd.	0.35
511208	II & Fs Investment Managers Ltd.	0.50
500201	India Glycols Ltd.	0.50
501700	India Nivesh Ltd.	0.60
532960	Indiabulls Securities Ltd.	0.70
504741	Indian Hume Pipe Co. Ltd.	0.35
533047	Indian Metals & Ferro Alloys Ltd.	0.25
500207	Indo Rama Synthetics (India) Ltd.	0.40
532717	Indo Tech Transformers Ltd.	0.30
532612	Indoco Remedies Ltd.	0.40
532894	Indowind Energy Ltd.	0.50
532150	Indraprastha Medical Corpn. Ltd.	0.50
506222	INEOS ABS (India) Ltd.	0.20
533154	Infinite Computer Solutions (India) Ltd.	0.30
509069	Infomedia 18 Ltd.	0.35
500210	Ingersoll - Rand (India) Ltd.	0.30
532706	Inox Leisure Ltd.	0.35
509709	International Conveyors Ltd.	0.50
531959	Intra Infotech Ltd.	0.30
532479	ISMT Ltd.	0.45
509496	ITD Cementation India Ltd.	0.35
523610	ITI Ltd.	0.10
532881	IVR Prime Urban Developers Ltd.	0.15
532940	J. Kumar Infraprojects Ltd.	0.40
506943	J.B. Chemicals & Pharmaceuticals Ltd.	0.45
532644	J.K. Cement Ltd.	0.35
530007	J.K. Tyre & Industries Ltd.	0.55
507155	Jagatjit Industries Ltd	0.65
532976	Jai Balaji Industries Ltd.	0.50
520051	Jamna Auto Industries Ltd.	0.25
522285	Jayaswal Neco Industries Ltd.	0.55
509715	Jayshree Tea & Industries Ltd.	0.60
514034	JBF Industries Ltd	0.35
533103	Jindal Cotex Ltd.	0.50
511034	Jindal Drilling & Industries Ltd.	0.15
500227	Jindal Poly Films Ltd.	0.35
531543	Jindal Worldwide Ltd.	0.30
500380	JK Lakshmi Cement Ltd.	0.60
532162	JK Paper Ltd.	0.40
522263	JMC Projects (India) Ltd.	0.45
511092	JMD Telefilms Industries Ltd.	0.15
502335	Jolly Board Ltd	0.15
532926	Jyothy Laboratories Ltd.	0.30
513250	Jyoti Structures Ltd.	0.75
532081	K Sera Sera Productions Ltd.	1.00
532889	K.P.R. Mill Ltd.	0.30
500233	Kajaria Ceramics Ltd.	0.50
522259	Kalindee Rail Nirman (Engineers) Ltd.	0.85

506184	Kanani Industries Ltd	0.30
531687	Karuturi Global Ltd.	0.55
532899	Kaveri Seed Company Ltd.	0.40
526015	Kemrock Inds & Expo Ltd	0.35
532732	Kewal Kiran Clothing Ltd.	0.30
532967	Kiri Dyes & Chemicals Ltd.	0.25
500245	Kirloskar Ferrous Industries Ltd.	0.45
505283	Kirloskar Pneumatic Co. Ltd.	0.45
531269	KLG Systel Ltd.	0.75
532942	KNR Constructions Ltd.	0.20
532924	Kolte-Patil Developers Ltd.	0.30
530299	Kothari Products Ltd.	0.25
532901	Koutons Retail India Ltd	0.35
532400	KPIT Cummins Infosystems Ltd.	0.55
530813	KRBL Ltd.	0.35
500249	KSB Pumps Ltd.	0.35
519570	Lakshmi Overseas Industries Ltd.	0.60
532368	Lanco Global Systems Ltd.	0.35
513605	Lanco Industries Ltd.	0.30
509048	Lancor Holdings Ltd.	0.20
513536	Lesha Energy Resources Ltd.	0.45
512455	Lloyds Metals & Engineers Ltd.	0.55
500254	Lloyds Steel Industries Ltd.	0.80
531497	Madhucon Projects Ltd.	0.45
524000	Magma Fincorp Ltd.	0.55
504824	Maharashtra Elektros melt Ltd	0.05
524232	Maharashtra Polybutenes Ltd.	0.20
500266	Maharashtra Scooters Ltd.	0.50
532756	Mahindra Forgings Ltd.	0.40
513269	Man Industries (India) Ltd.	0.55
532932	Manaksia Ltd.	0.45
502157	Mangalam Cement Ltd.	0.70
530011	Mangalore Chemicals & Fert. Ltd.	0.70
503101	Marathon Nextgen Realty & Textiles Ltd.	0.15
530543	Marg Ltd.	0.50
524404	Marksans Pharma Ltd.	0.55
523704	Mastek Ltd.	0.60
533152	MBL Infrastructures Ltd.	0.35
532629	Mcnally Bharat Engineering Co.Ltd.	0.70
532865	Meghmani Organics Ltd.	0.55
526235	Mercator Lines Ltd.	0.65
500126	Merck Ltd.	0.50
532850	MIC Electronics Ltd.	0.65
532539	Minda Industries Ltd.	0.30
500279	Mirc Electronics Ltd	0.45
503015	Modern India Ltd.	0.15
531595	Money Matters Financial Services Ltd.	0.05
517140	Moser-Baer (India) Ltd.	0.40

531096	Mount Everest Mineral Water	0.50
532553	Msk Projects (India) Ltd.	0.60
532650	Msp Steel & Power Ltd.	0.30
500460	Mukand Ltd.	0.50
520043	Munjal Showa Ltd	0.35
519323	Murli Industries Ltd	0.20
500292	Mysore Cements Ltd.	0.35
524709	Nagarjuna Agrichem Ltd.	0.25
519136	Nahar Industrial Enterprises Ltd.	0.40
500296	Nahar Spinning Mills Ltd.	0.40
532256	Nalwa Sons Investment Ltd.	0.45
524816	Natco Pharma Ltd	0.40
532504	Navin Fluorine International Ltd.	0.65
508989	Navneet Publications Ltd.	0.40
532649	Nectar Lifesciences Limited.	0.45
504112	Nelco Ltd.	0.50
505355	Nesco Ltd	0.40
532798	Network 18 Media & Investments Ltd.	0.40
532529	New Delhi Television Ltd.	0.40
500304	NIIT Ltd.	0.70
532541	NIIT Technologies Ltd.	0.65
523385	Nilkamal Ltd.	0.30
500307	Nirlon Ltd.	0.85
532854	Nitin Fire Protection Industries Ltd.	0.30
500730	Nocil Ltd.	0.70
532481	Noida Toll Bridge Co.Ltd.	0.70
530367	NRB Bearings Ltd.	0.30
531209	Nucleus Software Exports Ltd.	0.45
532051	Numeric Power Systems Ltd.	0.40
502165	OCL India Ltd.	0.35
533008	OCL Iron and Steel Ltd.	0.25
500313	Oil Country Tubular Ltd.	0.50
531092	OM Metals Infraprojects Ltd	0.35
532837	Orbit Corporation Ltd.	0.60
524372	Orchid Chemicals & Pharmaceuticals Ltd.	0.60
513121	Oricon Enterprises Ltd.	0.50
504879	Orient Abrasives Ltd.	0.45
502420	Orient Paper & Industries Ltd.	0.60
500314	Oriental Hotels Ltd.	0.45
504864	Orissa Sponge Iron & Steel Ltd.	0.40
501179	Oscar Investments Ltd.	0.25
512449	Pace Textiles Limited	0.90
532827	Page Industries Ltd.	0.40
531349	Panacea Biotec Ltd.	0.35
531816	Panoramic Universal Ltd.	0.30
509820	Paper Products Ltd.	0.40
524689	Parenteral Drug (India) Ltd.	0.40
513228	Pennar Industries Ltd.	0.65

506590	Phillips Carbon Black Ltd.	0.50
532949	Piramal Glass Ltd	0.25
532979	Piramal Life Sciences Ltd.	0.45
532739	Plethico Pharmaceuticals Ltd.	0.15
532366	PNB Gilt Ltd.	0.30
524051	Polyplex Corporation Ltd.	0.55
532718	Pratibha Industries Ltd.	0.40
500540	Premier Ltd.	0.60
532748	Prime Focus Ltd.	0.35
500338	Prism Cement Ltd	0.25
532647	Provogue (India) Ltd.	0.55
531611	Prraneta Industries Ltd.	0.35
526801	PSL Ltd.	0.65
517556	PVP Ventures Ltd.	0.30
532689	PVR Limited	0.55
532497	Radico Khaitan Ltd.	0.65
500339	Rain Commodities Ltd.	0.50
533093	Raj Oil Mills Ltd.	0.30
500355	Rallis India Ltd.	0.50
532369	Ramco Industries Ltd.	0.50
532690	Ramsarup Industries Ltd.	0.25
505800	Rane Holdings Ltd.	0.60
520111	Ratnamani Metals & Tubes Ltd.	0.45
500330	Raymond Ltd.	0.65
530517	Relaxo Footwears Ltd.	0.25
523445	Reliance Industrial Infrastructure Ltd.	0.55
533143	Reliance Media World Limited	0.35
532399	Reliance Mediaworks Ltd.	0.35
526927	Religare Technova Ltd.	0.25
533017	Resurgere Mines & Minerals India Ltd.	0.45
520008	Rico Auto Industries Ltd.	0.55
502448	Rollatainers Ltd	0.15
500350	RSWM Ltd.	0.55
503169	Ruby Mills Ltd.	0.30
509020	Ruchi Infrastructure Ltd.	0.35
514304	S.Kumars Nationwide Ltd.	0.55
502090	Sagar Cements Ltd.	0.35
503691	Sahara One Media And Entert. Ltd	0.10
507315	Sakthi Sugars Ltd	0.70
504918	Sandur Manganese & Iron Ores Ltd.	0.30
526521	Sanghi Industries Ltd	0.30
530073	Sanghvi Movers Ltd	0.50
504614	Sarda Energy & Minerals Ltd.	0.30
532663	Sasken Communication Techno. Ltd.	0.65
508996	Satprop Ltd.	0.35
524667	Savita Oil Technologies Ltd.	0.30
526807	Seamec Ltd.	0.25
530075	Selan Exploration Technology Ltd.	0.60

512529	Sequent Scientific Ltd.	0.35
522034	Shanti Gears Ltd	0.60
530549	Shilpa Medicare Ltd	0.40
512289	Shirpur Gold Refinery Ltd.	0.30
532638	Shopper's Stop Ltd.	0.35
532793	Shree Ashtavinayak Cine Vision Ltd.	0.55
502180	Shree Digvijay Cement Company Ltd	0.30
503205	Shree Ram Mills Ltd.	0.45
523236	Shrenuj & Co Ltd	0.40
532945	Shriram EPC Ltd.	0.30
511411	Shristi Infra. Dev. Corp Ltd.	0.10
520086	Sical Logistics Ltd.	0.45
532877	Simplex Projects Limited	0.30
532725	Solar Industries India Ltd.	0.30
532447	Solvay Pharma India Ltd.	0.35
520057	Sona Koyo Steering Systems Ltd.	0.50
532221	Sonata Software Ltd.	0.50
532452	South Asian Petrochem Ltd.	0.45
512413	Spectacle Industries Ltd.	0.85
517214	Spice Mobiles Ltd.	0.40
500285	Spicejet Ltd.	0.70
523756	SREI Infrastructure Finance Ltd.	0.70
503806	SRF Ltd.	0.55
523363	Sterling Holiday Resorts India Ltd	0.55
532531	Strides Arcolab Ltd.	0.50
526733	Suashish Diamonds Ltd.	0.15
532348	Subex Ltd	0.90
500402	Subhash Projects & Marketing Ltd.	0.30
531866	Subhkam Capital Ltd.	0.65
517168	Subros Ltd	0.35
506655	Sudarshan Chemical Indus. Ltd.	0.40
513414	Sujana Metal Products Ltd.	0.60
532887	Sujana Towers Ltd.	0.60
522087	Sulzer India Ltd.	0.20
520056	Sundaram Clayton Ltd.	0.20
500403	Sundaram Fastners Ltd.	0.55
533166	Sundaram Multi Pap Ltd.	0.45
500404	Sunflag Iron & Steel Co. Ltd.	0.50
532711	Sunil Hitech Engineers Limited.	0.50
509930	Supreme Industries Ltd.	0.50
532904	Supreme Infrastructure India Ltd.	0.40
500405	Supreme Petrochem Ltd.	0.45
507892	Su-Raj Diamonds & Jewellery Ltd.	0.55
513597	Surana Industries Ltd.	0.10
532516	Surya Pharmaceutical Ltd.	0.40
530239	Suven Life Sciences Ltd.	0.40
503310	Swan Mills Ltd	0.20
500407	Swaraj Engines Ltd.	0.50

505192	Swaraj Mazda Ltd.	0.40
505854	T R F Ltd.	0.60
532515	T.V.Today Network Ltd.	0.45
532390	Taj Gvk Hotels & Resorts Ltd.	0.30
532890	Take Solutions Ltd.	0.40
531426	Tamil Nadu Newsprint & Papers	0.65
532790	Tanla Solutions Ltd.	0.65
532301	Tata Coffee Ltd.	0.40
500408	Tata Elxsi Ltd.	0.60
513434	Tata Metaliks Ltd.	0.50
513010	Tata Sponge Iron Ltd.	0.60
532262	TCI Industries Ltd.	0.30
505397	Techno Electric & Engg. Co. Ltd.	0.50
533033	The Saraswati Industrial Syndicate Ltd.	0.45
533121	Thinksoft Global Services Limited	0.40
507450	Thiru Arooran Sugars Industries Ltd.	0.45
505196	TIL Ltd.	0.50
507205	Tilaknagar Industries Ltd.	0.40
532856	Time Technoplast Ltd.	0.30
500414	Timex Group India Ltd.	0.30
522113	Timken India Ltd.	0.20
504966	Tinplate Company of India Ltd	0.55
532966	Titagarh Wagons Ltd.	0.40
532928	Transformers And Rectifiers (India)	0.25
532349	Transport Corporation Of India Ltd.	0.35
517506	Ttk Prestige Ltd.	0.30
504973	Tube Investments Of India Ltd.	0.50
509992	UB Engineering Ltd.	0.60
500148	Uflex Ltd.	0.50
530363	Ugar Sugar Works Ltd.	0.55
506690	Unichem Laboratories Ltd.	0.55
532746	Unity Infraprojects Ltd.	0.40
511736	Ushdev International Ltd	0.20
507880	V.I.P.Industries Ltd.	0.60
502986	Vardhman Textiles Ltd.	0.35
532917	Varun Industries Ltd	0.35
500465	Varun Shipping Ltd.	0.60
533156	Vascon Engineers Ltd.	0.25
523261	Venkys (India) Ltd.	0.45
526953	Venus Remedies Ltd.	0.75
520113	Vesuvius India Ltd.	0.45
532953	V-Guard Industries Ltd.	0.30
519307	Vikas Wsp Ltd.	0.75
524200	Vinati Organics Ltd	0.30
517015	Vindhya Telelinks Ltd	0.60
511726	Vipul Ltd.	0.30
532721	Visa Steel Ltd.	0.30
533011	Vishal Information Technologies Ltd.	0.75

532757	Voltamp Transformers Ltd.	0.55
509966	Vst Industries Ltd.	0.30
531266	VST Tillers Tractors Ltd	0.50
533023	Wabco-TVS (India) Ltd.	0.25
507410	Walchandnagar Industries Ltd.	0.45
517498	Websol Energy Systems Ltd.	0.70
514162	Welspun India Ltd.	0.45
500444	West Coast Paper Mills Ltd.	0.50
532795	Wire & Wireliess (India) Ltd.	0.40
505163	Z.F Steering Gear (India) Ltd.	0.30
506720	Zandu Pharma Works Ltd.	0.50
532298	Zenith Infotech Ltd.	0.35
532039	Zenotech Laboratories Ltd.	0.30
504067	Zensar Technologies Ltd.	0.30
521163	Zodiac Clothing Co. Ltd.	0.40
531335	Zydus Wellness Ltd.	0.30
532883	Zylog Systems Ltd.	0.65

ET Index

ET 100 (As on 16 June 2010)

Company	Days Close	% Change	Marketcap(Rs.Cr.) *	Days Weight	PE
ET 100	5780.1	0.26	1827816	100	19.52
Reliance Industries Ltd.	1057.35	-0.76	156371	8.56	21.3
Infosys Technologies Ltd.	2766.65	1.12	132577	7.25	25.3
Larsen & Toubro Ltd.	1718.65	-0.39	103660	5.67	23.7
ICICI Bank Ltd.	877.6	2.37	97892	5.36	24.3
ITC Ltd.	290.75	-0.27	75523	4.13	27.3
Housing Development Finance Corp. Ltd.	2911.9	1.84	74473	4.07	29.9
HDFC Bank Ltd.	1971.2	0.53	73053	4	30.7
State Bank of India	2361	-0.12	60842	3.33	12.8

Oil & Natural Gas Corporation Ltd.	1163.15	-0.26	39233	2.15	14.8
Bharat Heavy Electricals Ltd.	2390.05	-0.46	37767	2.07	27.1
Tata Consultancy Services Ltd.	771.9	0.84	35941	1.97	21.6
Bharti Airtel Ltd.	266.1	-1.28	33196	1.82	11
Axis Bank Ltd.	1219.7	-2.1	31480	1.72	19.7
Tata Steel Ltd.	485.5	-1.09	28457	1.56	-21.4
Hindustan Unilever Ltd.	255.7	-1.63	27108	1.48	25.7
Mahindra & Mahindra Ltd.	630.25	3.69	25811	1.41	17.5
Jindal Steel & Power Ltd.	651.85	-0.68	25033	1.37	16.7
Tata Motors Ltd.	778.2	2.39	23353	1.28	17.3
Sterlite Industries (India) Ltd.	689.5	2.1	22842	1.25	15.5
Infrastructure Development Finance Company Ltd.	162.25	-1.73	21119	1.16	19.9
Wipro Ltd.	409.9	0.33	20747	1.14	21.8
GAIL (India) Ltd.	463.2	0.36	20811	1.14	18.7
Tata Power Company Ltd.	1255.9	-0.35	19893	1.09	15.2
Maruti Suzuki India Ltd.	1364.35	1.52	18050	0.99	15.8
Hero Honda Motors Ltd.	2009.7	-0.79	18076	0.99	18
Reliance Infrastructure Ltd.	1177.1	-0.48	18000	0.98	25
Hindalco Industries Ltd.	144.75	0.1	17703	0.97	14.5
NTPC Ltd.	200.4	-0.74	17350	0.95	18.9

Bajaj Auto Ltd.	2281.4	-0.14	16589	0.91	44.8
Cipla Ltd.	333.9	-1.17	16252	0.89	24.8
Indian Oil Corporation Ltd.	333.2	0.89	15897	0.87	7.9
Hindustan Zinc Ltd.	1014.25	2.15	15034	0.82	10.6
Jaiprakash Associates Ltd.	126.8	0.52	14752	0.81	15.8
Sesa Goa Ltd.	354.1	0.58	14862	0.81	11.6
Punjab National Bank	1041.75	-0.5	13861	0.76	8.4
Dr.Reddy's Laboratories Ltd.	1414	-0.53	13816	0.76	67.9
Cairn (I) Ltd.	308.35	1.08	13268	0.73	55.7
Sun Pharmaceuticals Industries Ltd.	1700.15	0.01	12779	0.7	26.1
Reliance Communications Ltd.	187.05	0.21	12609	0.69	8.3
Kotak Mahindra Bank Ltd.	762.4	-1	12642	0.69	20.3
Grasim Industries Ltd.	1794.7	-0.08	12310	0.67	5.3
Bank of Baroda Ltd.	726.2	-0.55	12310	0.67	8.7
Steel Authority of India Ltd.	198.05	-1.69	11600	0.63	12.1
Asian Paints Ltd.	2310	0.84	11084	0.61	26.5
Siemens Ltd.	721.95	0.41	10911	0.6	26.8
Nestle India Ltd.	2925.75	0.88	10762	0.59	42.8
JSW Steel Ltd.	1056.8	-0.57	10868	0.59	12.4
Unitech Ltd.	70.25	-0.43	10313	0.56	26
DLF Ltd.	277.6	1.97	10060	0.55	27.2
United Spirits Ltd.	1254.1	-0.16	9990	0.55	39.3
Crompton Greaves Ltd.	256.55	0.92	9620	0.53	19.1

Ambuja Cements Ltd.	116.05	0.52	9473	0.52	13.1
Idea Cellular Ltd.	54.95	1.1	9225	0.5	19
Satyam Computer Services Ltd.	86.9	-0.23	8889	0.49	5
ABB Ltd.	860.9	-0.09	8736	0.48	64.5
ACC Ltd.	862.8	-1.7	8722	0.48	10.4
Glaxosmithkline Pharmaceuticals Ltd.	2079.5	0.05	8689	0.48	33.2
Reliance Capital Ltd.	757.55	2.82	8673	0.47	42.9
HCL Technologies Ltd.	382.55	-0.38	8242	0.45	25.6
Lupin Ltd.	1884.6	0.28	8279	0.45	24.6
Zee Entertainment Enterprises Ltd.	299.4	2.92	7601	0.42	26.1
Torrent Power Ltd.	336.25	0.27	7501	0.41	19
Adani Enterprises Ltd.	543.9	-0.02	7328	0.4	31.8
Adani Power Ltd.	122.85	0.66	7097	0.39	157.5
Bharat Petroleum Corpn Ltd.	534	0.63	6900	0.38	12.6
Union Bank of India Ltd.	307.65	-0.03	6926	0.38	7.5
Ranbaxy Laboratories Ltd.	432.45	-0.71	6563	0.36	8.2
Reliance Power Ltd.	174.7	-1.58	6373	0.35	61.3
Bank of India Ltd.	331.3	-1.53	6182	0.34	10
Container Corporation of India Ltd.	1301.9	3.79	6246	0.34	21.7

Power Grid Corporation Ltd.	102.6	-0.63	5890	0.32	21.2
Hindustan Petroleum Corp. Ltd.	341.9	1	5672	0.31	8.9
GMR Infrastructure Ltd.	56	-0.27	5469	0.3	136.6
Ultra Tech Cement Ltd.	979.1	-0.62	5494	0.3	11.1
Mundra Port and Special Economic Zone Ltd.	706.05	0.81	5319	0.29	40.4
Rural Electrification Corporation Ltd.	289.25	-0.96	5193	0.28	14.3
Bosch Ltd.	5538.75	6.63	5115	0.28	23.4
Reliance Natural Resources Ltd.	67.9	1.57	4967	0.27	150.9
NHPC Limited	28.85	0	4837	0.26	17
Canara Bank Ltd.	425.85	-1.01	4684	0.26	5.8
Mphasis Ltd.	588.75	-0.4	4837	0.26	13.6
Dabur India Ltd.	188.05	-1.13	4775	0.26	32.4
Housing Development & Infrastructure Ltd.	245.05	-0.73	4643	0.25	15.1
Lanco Infratech Ltd.	69.1	4.94	4396	0.24	36.4
Oil India Ltd.	1268.45	-1.6	3864	0.21	11.7
Suzlon Energy Ltd.	57.25	0	3856	0.21	-10.3
National Aluminium Company Ltd.	434	3.1	3593	0.2	33.6

Oracle Financial Services Software Ltd.	2198.25	-0.1	3583	0.2	25
Sun TV Network Ltd.	402.9	-2.09	3652	0.2	28
Power Finance Corporation Ltd.	292.9	-1.18	3436	0.19	14.3
Jaybharat Textiles And Real Estate Ltd.	288.95	11.03	3479	0.19	577.9
Bharat Electronics Ltd.	1828.05	2.47	3530	0.19	19.9
Essar Oil Ltd.	127.2	0	2074	0.11	636
Tata Communications Ltd.	257.35	2.45	1745	0.1	15.2
NMDC Ltd	261.45	-0.32	1679	0.09	30.1
Neyveli Lignite Corporation Ltd.	154	0	1664	0.09	20.7
Mangalore Refinery And Petrochemicals Ltd.	68.5	0.51	1372	0.08	10.8
Tech Mahindra Ltd.	727.15	-0.66	1498	0.08	12.8
Minerals & Metal Trading Corp. Ltd.	33064.15	-4.1	1108	0.06	761.1
Hindustan Copper Ltd.	510.95	-0.47	194	0.01	306

ET Smallcap (As on 16 June 2010)

Company	Days Close	% Change	Marketcap(Rs.Cr.) *	Days Weight	PE
ET Smallcap	11831.97	0.41	94975	100	18.59
Karur Vysya Bank Ltd.	534.4	0.42	2827	2.98	8.7
Karnataka Bank Ltd.	163.55	2.83	2192	2.31	13.1

Sterlite Technologies Ltd.	100.55	-1.28	2017	2.12	14.5
Ipca Laboratories Ltd.	292.55	2.06	1965	2.07	17.5
Indraprastha Gas Ltd.	240.2	-0.02	1850	1.95	15.6
South Indian Bank Ltd.	162.95	-1.54	1842	1.94	7.9
Gammon India Ltd.	201.65	1.23	1765	1.86	17.8
Redington (I) Ltd.	391.75	-0.08	1745	1.84	16.8
Sterling International Enterprises Ltd.	146.6	2.73	1648	1.74	88.3
Lakshmi Machine Works Ltd.	1804.7	0.26	1656	1.74	21.3
Infotech Enterprises Ltd.	193.35	1.52	1645	1.73	12.6
Ruchi Soya Industries Ltd.	102.85	-0.72	1569	1.65	17.3
Havells India Ltd.	625.55	-0.49	1500	1.58	-23.5
Sundaram Finance Ltd.	452.3	0.87	1482	1.56	11.1
MindTree Ltd.	550.65	2.21	1425	1.5	10.1
REI Agro Ltd.	28.45	2.52	1412	1.49	17.3
Chambal Fertiliser & Chemicals Ltd.	63.35	1.2	1328	1.4	10.6
Great Offshore Ltd.	445.2	-0.67	1326	1.4	9.4
Dewan Housing Finance Corp Ltd.	229.55	0.11	1333	1.4	15.8
Maharashtra Seamless Ltd.	383.9	0.23	1325	1.39	9.5
Dena Bank	90.85	-2.73	1272	1.34	5.1
Usha Martin Ltd.	79.45	0	1253	1.32	12
Akzo Nobel India Ltd.	738.65	1.01	1242	1.31	17.1
Vijaya Bank	62.3	-1.66	1246	1.31	5.3
Polaris Software Lab Ltd.	177.8	-0.34	1247	1.31	11.5
Trent Ltd.	887.25	0.34	1205	1.27	44.2

Gujarat State Fertilisers & Chem.Ltd.	240.4	-0.23	1191	1.25	7.5
Eicher Motors Ltd.	942.95	0.73	1166	1.23	23.4
Monnet Ispat and Energy Ltd.	366.55	0.83	1162	1.22	7.2
Praj Industries Ltd.	79.65	-0.56	1132	1.19	12.9
SKF India Ltd.	460.75	0.41	1128	1.19	19.7
Simplex Infrastructures Ltd.	478.8	1.19	1087	1.14	18.6
KS Oils Ltd.	56.4	2.55	1069	1.13	18.3
CMC Ltd.	1450.55	1.9	1074	1.13	15.3
Novartis India Ltd.	664.5	-2.41	1042	1.1	18.3
Bombay Rayon Fashions Ltd.	233.45	-0.6	1045	1.1	14.9
Birla Corporation Ltd.	362.75	0.17	1036	1.09	5
Info Edge (I) Ltd.	827.1	3.1	1035	1.09	39.7
Core Projects And Technologies Ltd.	200.3	0.07	1033	1.09	11.5
TVS Motor Company Ltd.	102.3	-0.24	1035	1.09	28.1
Sobha Developers Ltd.	294.45	0.48	1020	1.07	21.1
Bombay Dyeing & Mfg. Co. Ltd.	510.9	-1.22	1014	1.07	107.1
Gujarat Narmada Valley Fertilisers Co. Ltd.	107.75	0.42	981	1.03	13.5
ibn18 Broadcast Ltd.	90.8	-0.49	972	1.02	-19.6
Bayer Cropscience Ltd.	816.4	3.74	932	0.98	25.3
Rajesh Exports Ltd.	77.85	3.66	923	0.97	11.4
Shiv-Vani Oil & Gas Exploration Services Ltd.	429.55	0.86	916	0.96	9.8
Tata Investment Corporation Ltd.	478.1	-0.31	899	0.95	11.9
Peninsula Land Ltd.	68.05	-1.02	881	0.93	6.5

Prakash Industries Ltd.	157.9	0.83	884	0.93	7.4
Kesoram Industries Ltd.	328.95	-0.86	876	0.92	6.3
Moser Baer (India) Ltd.	62.05	0	874	0.92	-28.9
Hotel Leela Venture Ltd.	47	0.21	860	0.91	43.1
Mahindra Lifespace Developers Ltd.	423.7	-1.48	841	0.89	21.8
Jindal South West Holdings Ltd.	1701.2	-0.49	833	0.88	430.7
Firstsource Solutions Ltd.	26.55	-0.38	836	0.88	8.4
3i Infotech Ltd.	62.8	-0.55	836	0.88	36.1
Orbit Corporation Ltd.	256.25	-1.78	830	0.87	14.8
Reliance Industrial Infrastructure Ltd.	999.3	3.74	823	0.87	68.6
Consolidated Construction Consortium Ltd.	89.35	0.79	820	0.86	17.7
JSL Stainless Ltd.	100.55	-0.59	806	0.85	5
Whirlpool of India Ltd.	250.65	2.54	795	0.84	21.9
REI Six Ten Retail Ltd.	54.9	1.2	789	0.83	29.8
Wyeth Ltd.	813.25	-0.02	792	0.83	18.9
Television Eighteen India Ltd.	90.05	0.5	789	0.83	-14
Texmaco Ltd.	132.05	2.52	762	0.8	18.1
Gujarat Industrial Power Co. Ltd.	115.9	-0.43	733	0.77	16.4
OnMobile Global Ltd.	285.55	-1.57	718	0.76	39.1
3M India Ltd.	2640.2	1.19	714	0.75	45.8
Motilal Oswal Financial Services Ltd.	165.85	-2.21	704	0.74	13.9
United Breweries Holdings Ltd.	213.15	4	686	0.72	13.3
Berger Paints	73.5	0.27	669	0.7	21.4

India Ltd.					
Brigade Enterprises Ltd.	138.35	-2.12	660	0.7	15.2
Dishman Pharmaceuticals & Chemicals Ltd.	205.65	-0.29	651	0.69	14.1
Sun Pharma Advanced Research Co.Ltd.	87.45	0.81	613	0.65	-84.1
Bank of Maharashtra Ltd.	59.6	-0.75	596	0.63	5.8
State Bank of Bikaner and Jaipur	456.25	-1.15	570	0.6	5
Godfrey Phillips India Ltd.	1797.7	-1.58	541	0.57	15.8
MVL Ltd.	63.95	0.95	539	0.57	83.1
Everest Kanto Cylinder Ltd.	127.1	-1.4	517	0.54	31
Gujarat Fluorochemicals Ltd.	154.45	0.72	509	0.54	4.9
Jai Balaji Industries Ltd.	192.9	-0.03	512	0.54	38.7
Parsvnath Developers Ltd.	126.15	-1.21	499	0.53	18.6
Honeywell Automation India Ltd.	2909.6	6.12	483	0.51	19.2
Gammon Infrastructure Projects Ltd.	27.9	6.9	483	0.51	79.7
Kwality Dairy (India) Ltd.	131.15	-5	434	0.46	132.5
Kingfisher Airlines Ltd.	46.9	3.65	421	0.44	-0.8
Atlas Copco (I) Ltd.	1122.75	2	411	0.43	26
Allcargo Global Logistics Ltd.	173.4	2.85	401	0.42	14.9
Wockhardt Ltd.	138.2	-1.74	389	0.41	-1.5
Alfa Laval (I) Ltd.	1416	0.63	289	0.3	20.7
UTV Software Communications Ltd.	403.5	-1.45	275	0.29	48.2

Future Capital Holdings Ltd.	175.9	2.12	279	0.29	18.9
BOC Ltd.	291.95	1.57	262	0.28	34.6
Fresenius Kabi Oncology Ltd.	151.15	3.39	239	0.25	29.8
Puravankara Projects Ltd.	108.25	2.95	232	0.24	15.9
State Trading Corporation of India Ltd.	425.05	-2.16	229	0.24	30.3
Astrazeneca Pharma Ltd.	890.15	-2.33	223	0.23	42
State Bank of Mysore	638	-0.44	176	0.19	5.2
Omaxe Ltd.	95.15	-0.63	184	0.19	14.7

ET Midcap (As on 16 June 2010)

Company	Days Close	% Change	Marketcap(Rs.Cr.) *	Days Weight	PE
ET Midcap	9478.56	0.04	291666	100	18.84
Shriram Transport Finance Company Ltd.	585.7	0.51	7668	2.63	15.1
Yes Bank Ltd.	282.7	-0.37	6490	2.23	20.1
LIC Housing Finance Ltd.	999.4	2.75	6017	2.06	14.3
United Phosphorus Ltd.	185.95	3.28	5871	2.01	15.4
Jain Irrigation Systems Ltd.	1122.65	0.81	5765	1.98	31.4
Cummins India Ltd.	586.65	1.44	5692	1.95	26.2
Colgate Palmolive (I) Ltd.	835.3	1.01	5566	1.91	26.8
Exide Industries Ltd.	124.9	1.83	5428	1.86	19.8
Tata Chemicals Ltd.	314.35	-1.55	5412	1.86	12.6
Federal Bank	323.7	-2.19	5273	1.81	11.9
Piramal Healthcare Ltd.	490.5	-1.54	5170	1.77	21.3
Indian Hotels Co Ltd.	101.65	-0.44	5158	1.77	47.9
Bajaj Holdings & Investment Ltd.	712.55	0.05	5152	1.77	5.6
Divi's Laboratories Ltd.	761.95	-0.09	4691	1.61	29.6

Pantaloon Retail (India) Ltd.	422.85	0.43	4662	1.6	53.3
Titan Industries Ltd.	2221.65	-0.76	4630	1.59	39.4
Tata Tea Ltd.	1122.05	-0.12	4483	1.54	17.8
Voltas Ltd.	183.75	-2.29	4394	1.51	16
Aditya Birla Nuvo Ltd.	773.35	0.11	4384	1.5	51.6
IVRCL Infrastructures & Projects Ltd.	181.5	-1.12	4375	1.5	69
IndusInd Bank	189.85	-1.09	4380	1.5	22.3
Glaxosmithkline Consumers Healthcare Ltd.	1704.05	0.14	4074	1.4	29.2
Oriental Bank of Commerce	330.1	-0.02	4045	1.39	7.3
Pipavav Shipyard Ltd.	100.25	-0.2	4020	1.38	--
IDBI Bank Ltd.	116.75	-0.38	4005	1.37	8.2
KGN Industries Ltd.	353.3	0.8	4005	1.37	--
IFCI Ltd.	54.2	-2.78	3999	1.37	6
Indiabulls Real Estate Ltd.	149.1	-0.77	3954	1.36	204.2
Ashok Leyland Ltd.	62.4	-0.56	3981	1.36	19.6
Nagarjuna Construction Company Ltd.	187.05	-1.81	3627	1.24	20.6
Glenmark Pharmaceuticals Ltd.	269.7	2.74	3487	1.2	22
Bharat Forge Co. Ltd.	278.15	-0.78	3470	1.19	106.2
Corporation Bank Ltd.	551.5	0.39	3388	1.16	6.8
Gujarat State Petronet Ltd.	94.5	-1.05	3308	1.13	12.8
Cadila Healthcare Ltd.	626.95	1.62	3257	1.12	25.4
Thermax Ltd.	719.45	2.61	3259	1.12	60.6
Allahabad Bank Ltd.	160.3	-1.08	3206	1.1	5.9
Andhra Bank Ltd.	136.05	0.07	3197	1.1	6.3
Godrej Consumers Products Ltd.	341.55	-1.34	3186	1.09	31
Financial Technologies (India) Ltd.	1304.95	-0.98	3138	1.08	17.5

GVK Power & Infrastructure Ltd.	43.3	0.81	3128	1.07	43.7
Great Eastern Shipping Co. Ltd.	293.95	0.96	3116	1.07	8.7
Jindal Saw Ltd.	199.3	-0.99	3096	1.06	8.7
Castrol India Ltd.	424.35	2.08	3040	1.04	24.9
Petronet LNG Ltd.	80.4	-0.37	3015	1.03	14.9
Opto Circuits (India) Ltd.	227.3	-1.17	3016	1.03	16
Bajaj Finserv Ltd.	454.1	-0.12	2988	1.02	11.8
Shree Renuka Sugars Ltd.	66.6	-0.15	2838	0.97	6.7
Welspun Corp Ltd.	242.15	0.08	2775	0.95	9.2
Educomp Solutions Ltd.	527.75	-1.93	2733	0.94	18.5
Jubilant Organosys Ltd.	348.65	-0.47	2742	0.94	13.1
KSK Energy Ventures Ltd.	162.95	-1.3	2717	0.93	34.7
Marico Ltd.	115.15	-1.33	2563	0.88	30.3
Century Textiles Ind Ltd.	459.1	-1.5	2527	0.87	12.6
Indiabulls Power Ltd.	28.75	0.17	2514	0.86	151.3
Shree Cement Ltd.	2072.45	-0.57	2498	0.86	10.7
Punj Lloyd Ltd.	125.9	4.01	2447	0.84	-38.5
EIH Ltd.	117.2	-0.72	2462	0.84	80.3
Max India Ltd.	162.1	0.25	2454	0.84	--
Biocon Ltd.	311.3	2.65	2433	0.83	21.2
IRB Infrastructure Developers Ltd.	279.35	0.18	2377	0.81	24.1
CESC Ltd.	389.05	-0.8	2305	0.79	11.2
Indiabulls Financials Services Ltd.	132.85	-0.49	2173	0.74	13.7
Hindustan Construction Co Ltd.	116.65	-0.26	2125	0.73	43.4
Britannia Industries Ltd.	1812.4	1.61	2124	0.73	37.2
Indian Overseas Bank	97.15	-1.97	2052	0.7	7.5
Procter & Gamble Hygiene & Health Care Ltd.	2000.2	-1.03	2030	0.7	29.9
Indian Bank Ltd.	227.3	-0.66	1954	0.67	6.3
Areva T&D India Ltd.	290.65	-1.11	1933	0.66	48.2
BEML	1009.5	-0.06	1932	0.66	18.9

Aurobindo Pharma Ltd.	829.95	-0.73	1881	0.65	8.3
India Infoline Ltd.	96.9	-0.56	1836	0.63	11.9
Bhushan Steel Ltd.	1368.8	-0.31	1793	0.61	7
Patni Computer Systems Ltd.	560.4	0.69	1702	0.58	10.9
Pidilite Industries Ltd.	113.85	-1.09	1678	0.58	20.8
Syndicate Bank	92.75	-4.63	1623	0.56	6
Dish TV (I) Ltd.	43.3	0.12	1620	0.56	-17.6
Motherson Sumi Systems Ltd.	145.05	1.19	1617	0.55	23
Fortis Healthcare Ltd.	152.35	0.53	1525	0.52	69.6
Tata Teleservices (Maharashtra) Ltd.	22.5	6.64	1467	0.5	-13.4
Shipping Corporation of India Ltd.	164.1	-0.76	1381	0.47	18.4
Mahanagar Telephone Nigam Ltd.	61.25	9.87	1359	0.47	-1.5
Hindustan Oil Exploration Co. Ltd.	199.4	-0.35	1375	0.47	62.5
Bajaj Hindusthan Ltd.	113.85	-1.51	1351	0.46	8.9
Jai Corp Ltd.	265.85	-0.8	1282	0.44	77.7
Aban Offshore Ltd.	707.95	4.32	1206	0.41	9.9
Central Bank of India	145.15	0.07	1161	0.4	5.5
Shree Global Tradefin Ltd.	220.15	3.92	1139	0.39	--
Anant Raj Industries Ltd.	108.45	1.5	1076	0.37	13.4
Engineers India Ltd.	324.35	-0.83	1049	0.36	25.1
Godrej Industries Ltd.	154.25	0.03	1050	0.36	24.1
Gujarat Mineral Development Corpn. Ltd.	127.15	-1.89	1051	0.36	14.4
Videocon Industries Ltd.	202.05	-0.59	988	0.34	9.4
BF Utilities Ltd.	738.65	1.58	943	0.32	--
Jet Airways (I) Ltd.	517.9	4.56	894	0.31	-9.6
Essar Shipping Ports & Logistics Ltd.	85	0.83	853	0.29	55.9
Gillette India Ltd.	1691.15	0.99	621	0.21	35.2

Rashtriya Chemicals & Fertilizers Ltd.	83.9	0.9	347	0.12	19.7
Ackruti City Ltd.	488.7	4.05	357	0.12	20.7
Hindustan Machine Tools Ltd.	71.9	-1.17	61	0.02	-98.5