



# A STUDY ON THE PERFORMANCE OF ELSS (G) MUTUAL FUNDS IN INDIA

A PROJECT REPORT submitted by

S. ASHISH Reg. No. 0720400007

In partial fulfillment of the requirements for the award of the degree

of

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KCT Business School

Department of Management Studies

Kumaraguru College of Technology

(An autonomous institution affiliated to Anna University, Coimbatore)

Coimbatore-641006



# TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. S. Ashish, Roll No. 07MBA07, a student of KCT Business School, Kumaraguru College of Technology, Coimbatore had undergone a Project entitled "A Study on the Performance of ELSS Growth Mutual Funds in India" between 12th January 2009 to 13th April 2009.

During the tenure, his performance was Good.

For MONEY GROW WEALTH ADVISORS

Organization Guide's M. JAYA KUMAR.

Name and Designation: BRANCH MANNIER.

Signature of the

Organization Guide

Postal Address

: 20 PONNURANGAM ROAD,

PURAM,

CAIMBATORE -641002.

Mobile No. : 9843009936.

: 6422 - 4521045. Phone No.

: 0482 - 43 65 321. Fax

: Money grow, wealth @ ymail.com. Email ID



# KCT BUSINESS SCHOOL DEPARTMENT OF MANAGEMENT STUDIES KUMARAGURU COLLEGE OF TECHNOLOGY COIMBATORE

#### **BONAFIDE CERTIFICATE**

Certified that this project titled "A STUDY ON THE PERFORMANCE OF ELSS (G) MUTUAL FUNDS IN INDIA" is the bonafide work of Mr. ASHISH S. who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

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Prof. Dr. S. V. DEVANATHAN

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## **DECLARATION**

I hereby declare that the dissertation entitled "A STUDY ON THE PERFORMANCE OF ELSS (G) MUTUAL FUNDS IN INDIA" submitted for the MASTER OF BUSINESS ADMINISTRATION degree is my original work and the dissertation has not formed the basis for the reward of any Degree, Associate ship, Fellowship or any other similar titles.

Signature of the student

With date

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#### **ABSTRACT**

Savings is a core component of a person's income. There are various instruments available in the market, which serves as tool for savings and attracting common people with higher returns. Examples of such savings schemes are insurance, provident funds, post office provident fund, bank deposits, mutual funds, etc. Some of these schemes provide investors with the benefit of tax rebates. Of these, mutual funds have been the pick of the lot. With the emergence of Equity Linked Savings Schemes (ELSS) Mutual Funds, investors are benefited with both savings and also tax exemption. Stock markets form the major underlying base for Mutual Funds. Launch of ELSS funds by various Mutual Fund companies have made investors evaluate before investing their hard earned money.

Therefore it becomes necessary to evaluate the Risk and Return involved in ELSS mutual funds to guide the investors with better ideas to make them invest in the right fund depending on their risk taking capability. In this study, 10 open-end growth ELSS mutual funds are taken, and the performance of these funds are evaluated with the help of tools viz. Beta, Correlation, Sharpe's ratio, Treynor's ratio, Jensen's ratio, Standard deviation and Mean Return. Based on the analysis a rank statement has been prepared for all ELSS funds. The Rank Statement gives a clue for selecting a risk-reward based fund for investment based on the variables taken for the study.

The variables of the funds are compared from year-on-year i.e. 2007 and 2008. These two years resemble both a bull market and a bear market and comparison of these two years would interpret how the funds have performed during uptrend and downtrend. It also gives which fund has a better cushion for risk during times of depression. This would be very much helpful for the investors to make the right investment decision and also gain good returns with appropriate risk.

# **CHAPTER I**

INTRODUCTION

#### CHAPTER I

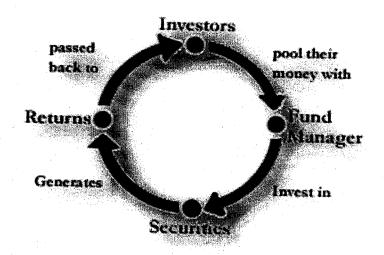
#### INTRODUCTION

#### 1.1 ABOUT THE STUDY

Savings form an integral part of a person's income in India. More the income, more the person would have to pay his tax. The Indian financial industry provides the common person with various avenues to park his hard earned money as savings and get rebates for tax. People appreciate schemes which provide them income on such savings amount. And the best of the lot turns out to be the Tax Savings Mutual Funds otherwise known as the Equity Linked Savings Scheme (ELSS). Since the mutual funds have stock markets as their underlying security, these funds also come with some risk. The risk and return varies from fund to fund. This study gives an insight about the risk and return of 10 Open-End ELSS Growth Mutual Funds launched during 2004-2006.

#### 1.2 ABOUT THE INDUSTRY

A Mutual Fund is a trust that pools the savings of a number of investors who share a common financial goal. The money thus collected is then invested in capital market instruments such as shares, debentures and other securities. The income earned through these investments and the capital appreciation realized are shared by its unit holders in proportion to the number of units owned by them. Thus a Mutual Fund is the most suitable investment for the common man as it offers an opportunity to invest in a diversified, professionally managed basket of securities at a relatively low cost. The flow chart below describes broadly the working of a mutual fund:



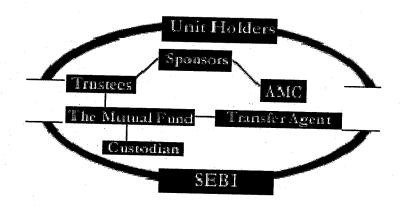
Source: AMFI Mutual Fund Operation Flow Chart

A mutual fund is the ideal investment vehicle for today's complex and modern financial scenario. Markets for equity shares, bonds and other fixed income instrument real estate, derivatives and other asset have became mature and information driven. Prices changes in these assets are driven by global events occurring in faraway places. A typical individual is unlikely to have the knowledge, skill, inclination and time to keep track of events, understand their implications and act speedily. An individual also finds it difficult to keep track of ownership of his asset, investment, brokerage dues and bank transaction etc.

A mutual fund is the answer to all these situations. If appoints professionally qualified and experienced staff that manages each of these functions on a full time basis. The large pool of money collected in the fund allows it to hire such staff at a very low cost to each investor. If effects, mutual fund vehicle exploit economies of scale in all three areas – research, investment and transaction processing while the concept of individual coming together to invest money collectively is not new, the mutual funds gained popularity only after Second World War. Globally these are thousands of mutual funds with different investment objectives. Today mutual funds collectively manage almost as much as or more money as compared to bank.

# 1.2.1. ORGANISATION OF A MUTUAL FUND

There are many entities involved and the diagram below illustrates the organizational set up of a mutual fund:



Source: AMFI

Organization of a Mutual Fund

# 1.2.2. HISTORY OF THE INDIAN MUTUAL FUND INDUSTRY:

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

# First Phase - 1964-87

Unit Trust of India (UTI) was established on 1963 by an Act of Parliament. It was set up by the Reserve Bank of India and functioned under the Regulatory and administrative control of the Reserve Bank of India. In 1978 UTI was de-linked from the RBI and the Industrial Development Bank of India (IDBI) took over the regulatory and administrative control in place of RBI. The first scheme launched by UTI was Unit Scheme 1964. At the end of 1988 UTI had Rs.6,700 crores of assets under management.

#### Second Phase – 1987-1993 (Entry of Public Sector Funds)

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

#### Third Phase – 1993-2003 (Entry of Private Sector Funds)

With the entry of private sector funds in 1993, a new era started in the Indian mutual fund industry, giving the Indian investors a wider choice of fund families. Also, 1993 was the year in which the first Mutual Fund Regulations came into being, under which all mutual funds, except UTI were to be registered and governed. The erstwhile Kothari Pioneer (now merged with Franklin Templeton) was the first private sector mutual fund registered in July 1993. The 1993 SEBI (Mutual Fund) Regulations were substituted by a more comprehensive and revised Mutual Fund Regulations in 1996. The industry now functions under the SEBI (Mutual Fund) Regulations 1996. The number of mutual fund houses went on increasing, with many foreign mutual funds setting up funds in India and also the industry has witnessed several mergers and acquisitions. As at the end of January 2003, there were 33 mutual funds with total assets of Rs. 1,21,805 crores. The Unit Trust of India with Rs.44,541 crores of assets under management was way ahead of other mutual funds.

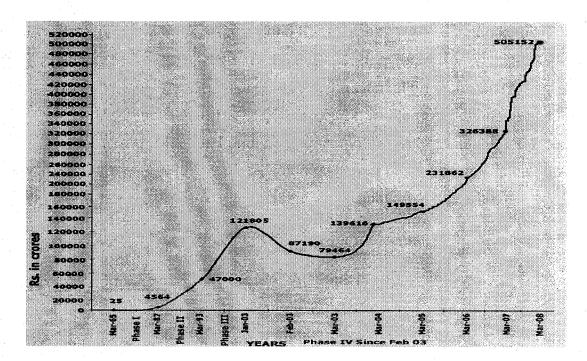
#### Fourth Phase - Since February 2003

In February 2003, following the repeal of the Unit Trust of India Act 1963 UTI was bifurcated into two separate entities. One is the Specified Undertaking of the Unit Trust of India with assets under management of Rs.29,835 crores as at the end of January

2003, representing broadly, the assets of US 64 scheme, assured return and certain other schemes. The Specified Undertaking of Unit Trust of India, functioning under an administrator and under the rules framed by Government of India and does not come under the purview of the Mutual Fund Regulations. The second is the UTI Mutual Fund Ltd, sponsored by SBI, PNB, BOB and LIC. It is registered with SEBI and functions under the Mutual Fund Regulations. With the bifurcation of the erstwhile UTI which had in March 2000 more than Rs.76,000 crores of assets under management and with the setting up of a UTI Mutual Fund, conforming to the SEBI Mutual Fund Regulations, and with recent mergers taking place among different private sector funds, the mutual fund industry has entered its current phase of consolidation and growth.

The graph indicates the growth of assets over the years.

#### **GROWTH IN ASSETS UNDER MANAGEMENT**



Source: AMFI

#### 1.2.3. ADVANTAGES OF MUTUAL FUNDS

The advantages of investing in a Mutual Fund are:

**Diversification:** The best mutual funds design their portfolios so individual investments will react differently to the same economic conditions. For example, economic conditions like a rise in interest rates may cause certain securities in a diversified portfolio to decrease in value. Other securities in the portfolio will respond to the same economic conditions by increasing in value. When a portfolio is balanced in this way, the value of the overall portfolio should gradually increase over time, even if some securities lose value.

**Professional Management:** Most mutual funds pay topflight professionals to manage their investments. These managers decide what securities the fund will buy and sell.

**Regulatory oversight:** Mutual funds are subject to many government regulations that protect investors from fraud.

**Liquidity:** It's easy to get your money out of a mutual fund. Write a check, make a call, and you've got the cash.

**Convenience:** You can usually buy mutual fund shares by mail, phone, or over the Internet.

#### 1.2.4. DRAWBACKS OF MUTUAL FUNDS

Mutual funds have their drawbacks and may not be for everyone:

**No Guarantees:** Stock market investment is not risk free. If the entire stock market declines in value, the value of mutual fund shares will go down as well, no matter how balanced the portfolio. Investors encounter fewer risks when they invest in mutual funds than when they buy and sell stocks on their own.

Fees and commissions: All funds charge administrative fees to cover their day-to-day expenses. Some funds also charge sales commissions or "loads" to compensate brokers, financial consultants, or financial planners. Even if you don't use a broker or other financial adviser, you will pay a sales commission if you buy shares in a Load Fund.

**Taxes:** During a typical year, most actively managed mutual funds sell anywhere from 20 to 70 percent of the securities in their portfolios. If your fund makes a profit on its sales, you will pay taxes on the income you receive, even if you reinvest the money you made.

Management risk: When you invest in a mutual fund, you depend on the fund's manager to make the right decisions regarding the fund's portfolio. If the manager does not perform as well as you had hoped, you might not make as much money on your investment as you expected. Of course, if you invest in Index Funds, you forego management risk, because these funds do not employ managers.

# **ELSS MUTUAL FUNDS**

ELSS stands for Equity linked saving schemes. These are equity-oriented mutual funds. 3 years lock-in period is applicable for all ELSS schemes. This means that once an investor invests in these schemes he cannot redeem his units till the end of lock-in period. But the investor can receive the dividends on his invested amount, which are taxable.

Equity linked saving schemes provide 80C benefit for investments. 80C is the section under which tax payers can invest upto Rs. 1 lakh and save upto Rs. 30,000 tax in a year.

#### 1.2.5 MACRO-MICRO ANALYSIS

Today, India's financial system is considered to be sound and stable as compared to many other Asian countries where the financial market is facing many crises. During last one decade or so, role of Indian mutual funds industry as a significant financial service in financial market has really been noteworthy. In fact, Mutual Funds have emerged as an important segment of financial markets in India, especially following the initiatives taken by Government in the 1999-2000 Budget to resolve problems associated with UTI's US-64 Scheme and to liberalise tax treatment of incomes earned through mutual funds.

Unit Scheme 64 (US-64) was launched as per the provisions of the UTI Act. US-64 was an open ended, non-assured income scheme structured as a balanced fund. The scheme was a great success and was considered an essential investment by most middle class Indians. At its peak, the scheme had around 20 million investors. Till 1968, this special sales price (SSP) was marginally below the NAV based price. In the next six years, the margin fluctuated between - 7.5% and -19.5% of NAV based price. In 1975, an effort was made to bring the SSP in line with the NAV based price. After 1975, the SSP again began to go well below the NAV based price. Margins crossed -20% at some points of time, and reached -32.5% in 1985. Beginning 1st July 1981, UTI sold units at throwaway prices for the next 16 years. This policy of selling at prices below the NAV seemed to violate the business principles that had been envisaged under section 9 of the UTI Act, 1963 and the preamble to US-64. Investors who had purchased units at higher prices before the block offer period were put to disadvantage. US-64 was a phenomenal success in the first three decades of its existence. During the period 1965-1995, the number of units held by the investors grew from 1.87 lakh units in 1965 to 15,277 million units in 1995. But in the late 1990s, UTI went from crisis to crisis. Government efforts to restore the fund's past glory proved abortive. For the first time in 2001-02, UTI did not offer any dividend to its unit holders.

Mutual fund now play a crucial role in channeling savings of millions of individuals/households from different parts of the country into investment in both equity and debt instruments. The mutual fund industry has witnessed several innovations in the current financial year. The monetary and credit policy for 1999-2000 has permitted money market Mutual funds to offer cheque writing facility to unit holders. Some of the Mutual Funds have introduced limited cheque writing facility by allowing its unit holders to issue cheques against a savings account with a designated bank. The Mid-term Review of Monetary and Credit Policy announced the decision to permit scheduled commercial banks to offer "cheque writing" facility to Gilt Funds and those Liquid Income Schemes of Mutual Funds which predominantly (not less than 80 % of the corpus) invest in money market instruments. The Midterm policy statement of RBI has also permitted Mutual Funds to undertake Forward Rate Agreement (FRA)/Interest Rate Swaps (IRS) with banks, primary dealers and financial institutions for the purpose of hedging their own balance sheet risks. Mutual Funds cannot, however, undertake market making in FRAs/ IRS. Another significant development related to the emergence of sector funds targeting sectors such as information technology, pharmaceuticals, fast moving consumer goods, etc. Equally important was the emergence of Dedicated Gilt Fund envisaging 100 percent investment in Government securities, which has made the gilt market accessible to small investors. In order to promote dematerialization, the mutual fund industry introduced an innovative product facilitating investment solely in dematerialized securities and exchange of any security in dematerialized segment for the units of the scheme.

Nowadays, bank rates have fallen down below the inflation rate. Therefore, keeping large amounts of money in bank is not a wise option, as in real terms the value of money decreases over a period of time. One of the options available is to invest the money in stock market. The mutual fund industry growth is estimated at about 50 per cent, much higher than that of bank fixed deposits which are growing at about 20 per cent. But a common investor is not well informed and competent enough to understand the complexities involved in the price movement of shares in the stock market.

This is where mutual funds come to rescue them. The role of mutual funds will increase in the Indian markets also. This means that retail investors will opt for mutual funds. In the US, 35 to 40 per cent of the investments currently come through mutual funds while in India it is very eligible. With the stock markets reaching to newer heights in 2006, mutual funds could not be far behind. Total assets under management of 30 funds rose by Rs. 1, 25,296 crores, or 63 per cent, to Rs. 3, 23,601crore during the calendar year 2006, according to the data published by the Association of Mutual Funds of India (AMFI). Mutual funds saw record resource mobilization as investors lined up to take advantage of the stock market boom. Reliance Mutual Fund — controlled by the Anil Ambani group — has toppled Prudential ICICI MF as the country's largest private sector fund house, while UTI MF retained its leading position across both public and private sector funds in December.

According to the Global Asset Management 2006 Report from Boston Consulting Group, India-managed assets will exceed more than \$1 trillion by 2015. This means an annual growth rate of 21% for the next nine years. The Indian mutual funds industry has been growing at a healthy pace of 16.68 per cent for the past eight years and the trend will move further as has been emphasized by the report. With the entrance of new fund houses and the introduction of new funds into the market, investors are now being presented with a broad array of Mutual Fund choices. The total asset under management of Mutual Fund industry rose by 9.45% from Rs.309953.04 crores to 339232.46 crores in November, 2006 as published by AMFI. In 1987, its size was Rs.1, 000 crores, which went up to Rs. 4,100 crores in 1991 and subsequently touched a figure of Rs.72, 000 crores in 1998. Since then this figure has been increasing tremendously and thus revealing the efficiency of growth in the mutual fund industry. The tremendous growth of Indian Mutual Funds industry is an indicator of the efficient financial market we are currently having and the trust which investors have on the regulatory environment. Mutual Funds are essentially investment vehicles where people with similar investment objective come together to pool their money and then invest accordingly. Different business groups / financial institutions / banks have sponsored

these AMCs, either alone or in collaboration with reputed international firms. Several international funds like Alliance and Templeton are also operating independently in India. Many more international Mutual Fund giants are expected to come into Indian markets in the near future.

The mutual fund, as a capital market intermediary, has emerged as new avenue for capital resources. It bridges the gap between retail investors and capital markets. According to Value Research data, the top five equity NFOs were Reliance Equity (Rs. 5,790 crore), SBI Bluechip (Rs. 2,850crore), Reliance Long Term Equity (Rs. 2,100 crore), UTI Leadership Equity (Rs. 2,080crore) and Templeton India Equity Income (Rs. 2,030 crore). Close to 40 NFOs were made in 2006 with average collections of Rs. 950 crore. The industry is going to play a major role model in the capital markets. According to a study conducted by the Associated Chambers of Commerce and Industry of India, the size of the Mutual Funds industry is expected to be worth Rs. 4 lakh crores by 2010. Mutual Funds would be one of the major instruments of wealth creation and wealth saving in the years to come, giving positive results. The consistency in the performance of mutual funds has been a major factor that has attracted many retail investors. The Indian Mutual Funds industry has been growing at a healthy pace of 16.68 per cent for the past eight years and the trend will move further. According a study, it has been found out that almost 54 % of people invest for security and certainty while 38 % of the people invest for current spending. Some 53 % of the people prefer long term investment whereas 23% people each prefer medium term and small term investment.

During last few years, India's position as a market having potential for long-term growth has really been noteworthy as the Indian economy is being ranked among the top 10 globally (in terms of GDP), and as the fourth-largest [in terms of purchasing power parity (PPP)]. Another good thing to note about Indian mutual funds industry is that it has grown at a rapid pace of 16.4% during the last 8 years as compared to global growth rate of 13% during the same period. However, when it comes to assets under management (AUM) of the global mutual fund (MF) industry, India's ranks is 25th which is not very satisfactory, rather dismal. With assets of around \$76.5 billion (Rs. 3.41 lakh



crore) as per AMFI figures at the end of November '06, India forms just 0.4% of the world's global MF AUMs. MF assets worldwide stood at \$19.41 trillion at the end of the second quarter of 2006. US with \$12.4 trillion of MF assets is the topper, followed by Luxembourg \$1.9 trillion), France (\$1.6 trillion) and Australia (\$723 billion). Another important criterion which is used by the analysts as parameter to judge the majority of a country's mutual fund industry is MF assets to GDP (PPP basis) ratio.

NRIs can invest in both Primary Market and Secondary Market through a registered broker. These brokers offer wide range of services to ensure that NRIs feel at home while they take their investment decisions. Non Resident Indians including PIO (person of India origin) holding PIO card and OCI (overseas citizens of India) can make investments in Indian Capital Market by opening up an online NRI Account.

Under NRE [Non Resident (External) Rupee Account] accounts, funds can be repatriated here as funds under NRO [Ordinary Non Resident Rupee Account] accounts are non repatriable.

- 1. NRO Bank Account: Non-Resident (Ordinary): NRIs can also use this account to invest into Mutual Funds of India and IPOs on non-repatriable basis.
- 2. NRE Bank Account: Non-Resident (External) Rupee Account: Can also be used by NRIs to invest in Indian Mutual Funds on repatriable basis.

NRIs can invest in both Primary Market and Secondary Market through a registered broker. These brokers offer wide range of services to ensure that NRIs feel at home while they take their investment decisions.

NRIs can invest in Indian mutual funds through registered mutual fund distributors and brokers. Some distributors also have to offer simplified process which is free of all paperwork. These distributors also provide its clients with the latest updates on the top Funds, NAV's, New Fund Offers. They also provide performance report of various funds to ensure smart investments are made in Mutual Fund segment.

As on November 2006, total Investment of FII in India is approximately 1.5 lakh Crore and opposite to that Mutual funds investment is nearly 1.2 lakh crore, and in last three years thanks to rally on Indices Mutual funds market has increased by whooping 30-40% and so as FII inflow. But now one critical issue is that FII start pressing selling button to book profit and to pump out their money, here Domestic investors along with Mutual funds are saving the grace for Indian Equity markets. This was happening after Sensex and Nifty has corrected by whopping 12-13% in October itself, where net data shows FII were the sellers to the tune of Rs.2500 crore and opposite to that Mutual funds where buyers by Rs.1500 crore.

#### 1.3 ABOUT THE COMPANY

MoneyGrow Wealth Advisors through various types of brokerage accounts provides product and services related to purchase and sale of securities listed in NSE and BSE. It also provides financial planning, equity research services, mutual fund, commodities and insurance distribution to its clients. The company provides these services through off-line distribution channel.

In its ambition to emerge as a complete financial advisor, MoneyGrow has launched its personal financial planning wing. It proposes to cater all advice to its customer pertaining to personal finance. With India emerging as a strong market, the investments avenues have also increased, to advice our customers the right avenue according to their suitability. Its vision is "To cater to the unique needs and requirements of the mass affluent by providing complete financial solutions and thereby enabling them to transform their dreams into reality."

With the opening up of the insurance sector, the company in a position to provide holistic and tailor made policies for different segments of customers. With Indian markets seeing a sea change, both in terms of investment pattern and attitude of investors, insurance is no more seen as only a tax saving product but also as a product which provides a financial solution for the customer. Its strengths include personalized service provided by a dedicated team committed in giving hassle-free service to the clients.

Investment is the stepping stone to achieving one's financial dreams. Mutual funds offer an opportune way to long-term wealth creation. However, with more and more funds flooding the market, the task of selecting the most suitable scheme gets even more complicated. Mutual Fund Advisory Service at MoneyGrow guides investors through this maze and ensures that their investments are backed by its quality research.

# **CHAPTER II**

MAIN THEME OF THE PROJECT

#### **CHAPTER II**

#### 2.1. OBJECTIVE OF THE PROJECT

- To analyze the risk and return involved in the selected 10 ELSS mutual fund Investment.
- ❖ To analyze the performance of selected 10 ELSS mutual fund schemes using various performance measures.
- Performance of 10 ELSS open-end growth mutual funds are analyzed and ranked.

#### 2.2. SCOPE OF THE PROJECT

The scope of the study is to compare the performance of 10 ELSS mutual funds for the years 2007 and 2008 and therefore give better ideas about the risk and return involved in mutual funds to the clients in order to make them invest appropriately and save tax.

#### 2.2.1 LIMITATIONS OF THE PROJECT

- Open-end growth ELSS mutual funds have been taken.
- Funds launched only during 2004 to 2006 have been selected.
- Analysis was carried with the help of data for only 2 years i.e. 2007 and 2008.

#### 2.3 METHODOLOGY

#### 2.3.1 TYPE OF STUDY

The study is of comparative in nature, based on the collected data for the 10 mutual funds. Statistical and financial analysis tools were applied in the data to find out the performance level of each fund.

## 2.3.2 SAMPLING DESIGN

The sampling design is purposive sampling. Many ELSS mutual funds both open and closed-end, growth and dividend were launched between 2004 and 2006. But only open-end growth ELSS mutual funds were taken, which are 10 in number.

No. of funds and year of launch are as under:

Year	No. of funds
2004	1
2005	3
2006	6

# 2.3.3 METHOD OF DATA COLLECTION

The data collected for this study is from secondary sources. The data collected are

- Daily Net Asset Value (NAV) for the 10 funds.
- Nifty Index values NSE for the corresponding period.

#### 2.3.4 TOOLS FOR ANALYSIS

#### 1. Average Monthly Return

Return is the benefit arising out of an investment. The rate of return measures the rate at which investor's wealth increase or decrease. Since the investment, decision relates to the future, the expected rate of return is calculated for an asset. Monthly return has been calculated for each selected fund and selected benchmark index. The average monthly return of selected funds and benchmark index calculated.

Mean = 
$$\sum X/n$$

n- Number of years

X-Return of the fund

#### 2. Standard deviation

The variability of rates of return may be defined as the extent of the deviations of the individual rates of return from the average rate of return. The standard deviation of selected fund and benchmark index were calculated for analysis. Financial analysts and statisticians prefer to use a quantitative risk surrogate called the clash of return. The standard deviation and variance are equally acceptable and equivalent quantitative measures of an asset's total risk.

Standard Deviation 
$$(\sigma_p) = (mean - X)^2$$

n

#### 3. Co-efficient of Determination

The coefficient of determination, r<sup>2</sup>, is useful because it gives the proportion of the variance (fluctuation) of one variable that is predictable from the other variable. It is a measure that allows us to determine how certain one can be in making predictions from a certain model/graph.

#### 4. Beta Value

Beta is the measure of the mutual fund systematic risk. Betas for different mutual fund schemes are calculated for the present study by regressing fund return. Beta is a measure of a portfolio's volatility, or systematic risk in comparison to the market or market segment as opposed to distinct element of risk associated with a specific security. Systematic risk cannot be diversified away; it can only be hedged. A beta less than 1 means the security will be less volatile than the market. A beta greater than 1 indicates that the security's price will be more volatile than the market.

$$\beta = cov(i, m)$$

$$\sigma m^2$$

Cov(i,m)- Covariance of individual, market  $\sigma$  m<sup>2</sup> – Variance of Market

## 5. Sharpe's Performance Measure

Sharpe developed a composite performance measure to evaluate mutual funds, which followed especially the capital market line. In this model, performance of the fund is evaluated based on Sharpe Ratio, which is a ratio of return generated by the fund over and above risk free rate of return and the total risk associated with it. According to Sharpe measure, it is the total risk of the fund that the investors are concerned about. So, the model evaluates funds on the basis of reward per unit of total risk.

Sharpe's index = 
$$\frac{R_{\varrho}-R_{f}}{\sigma_{\varrho}}$$

Rf = Risk free return

**Rp** = Return free Portfolio

 $\sigma \rho$  = Standard Deviation of Portfolio

# 6. Treynor's Performance Measure

Treynor measure based on the systematic risk of the mutual fund shows the rates of return above risk-free rates during a given time period. This is called reward to volatility ratio. Developed by Jack Treynor, this performance measure evaluates funds on the basis of systematic risk. This Index is a ratio of return generated by the fund over and above risk free rate of return, during a given period and systematic risk associated with it (beta).

All risk-averse investor would like to maximize this value. While a high and positive Treynor's Index shows a superior risk-adjusted performance of a fund, a low and negative Treynor's Index is an indication of unfavorable performance.

Treynor's index =  $R_{\rho}$ - $R_{f}$ 

β

Where,  $R_p$  = Return free Portfolio

R<sub>f</sub> = Risk free return

 $\beta$  = Unsystematic Risk factor

## 7. Jensen Measure

Jensen has given a different dimension to the portfolio performance. This measure indicates that the realized rate of return is a linear function of risk free rate of return during the given period. Jensen's model proposed another risk adjusted performance measure. This measure involves evaluation of the return that the fund has generated vs the return actually expected out of the fund given the level of it systematic risk. The surplus between the two returns is called Alpha, which measures the performance of a fund compared with the actual return over the period.

# $R\rho - Rf = \alpha\rho + \beta\rho (Rm-Rf) + \Box\rho$

**Rp-** Observed return of the Portfolio

Rf- Risk Free Return

Rm- Return of the market index

□**ρ**- Error term

αρ, βρ- Parameters of the model

## 8. Rank Statement

#### 2.4 REVIEW OF LITERATURE

<sup>1</sup>The article presents suggestions on retirement planning. Buying shares of mutual funds in the U.S. when prices are low positions an employee for big gains when the market rebounds. The savers' credit can also be used for contributions to an individual retirement accounts (IRA), either a traditional IRA that offers up-front tax breaks or a Roth IRA that provides tax-free withdrawals in retirement. Other tips include checking retirement saving and selling a company stock

<sup>2</sup>This paper focuses on return-based style analysis of equity mutual funds in India using quadratic optimization of an asset class factor model proposed by William Sharpe. The study finds the 'Style Benchmarks' of each of its sample of equity funds as optimum exposure to 11 passive asset class indexes. The study also analyzes the relative performance of the funds with respect to their style benchmarks. The results of the study show that the funds have not been able to beat their style benchmarks on the average.

<sup>3</sup>Morgan Stanley in January became the first to launch a mutual fund within India, Fidelity and Alliance Capital (American) and Credit Lyonnais (French) now plan to sell mutual funds to Indians. India benefitting from emerging-market mania sweeping investors around the world; Economic reforms; Industrial production; Bombay Sensitive Index; How foreign investors can buy Indian funds.

<sup>&</sup>lt;sup>1</sup> Franklin, Mary Beth" 6 simple ways to retire rich." Kiplinger's Personal Finance; Fall2008 Retirement Planning, p8-14.

<sup>&</sup>lt;sup>2</sup> Deb, Soumya Guha" Performance of Indian Equity Mutual Funds vis-é-vis Their Style Benchmarks" ICFAI Journal of Applied Finance; Jan2008, Vol. 14 Issue 1, p49-81, 33p. <sup>3</sup> "Over Sensitive.Find More Like This" Economist; 2/5/94, Vol. 330 Issue 7849, p80-81, 2p

<sup>4</sup>The article offers financial investment advice on the worthiness of high-yield, tax-free municipal bonds despite the risk usually involved with high-yield bonds. The author gives the example of Ohio's Buckeye Tobacco Settlement Bonds that yield a tax-free 6.6% return compared to 10.2% U.S. government bills that will be taxed. The article lists several poorly and well-performing municipal bonds, and details how investors can minimize risk by buying into mutual funds.

<sup>5</sup>The article offers stock market investment advice for investors in the U.S. Investors can ask a mutual fund manager to look for businesses whose profits they could share for the next few decades. Investors must think of their investments as businesses selling products and services in the real world. They should consider the stocks of Pfizer as demand for health-care basics escalates and drug research is getting more efficient.

<sup>6</sup>The author reports that Countrywide Financial Corp. has been asked by mutual fund owners to hire a third party to look into its "Friends of Angelo" loan program. A description of the loan program is given. According to the article, the loan program has been accused of violating laws regarding public corruption and securities.

<sup>7</sup>The article reports on the increase in money-fund assets in the U.S. in the last week of June 2008 based on the Money Fund Report published by iMoneyNet Inc. Investors have contributed \$8.06 billion to money-market funds during the week ending June 24. Money-fund assets surged to \$3.442 trillion. Institutional investors added \$15.73 billion while retail investors withdrew \$7.67 billion.

<sup>5</sup> Glassman, James K." Keep the Best Company" Kiplinger's Personal Finance; Jul2008, Vol. 62 Issue 7, p22-24,

<sup>&</sup>lt;sup>4</sup> Light, Larry "High-Yield Munis Still Worth Risk" Wall Street Journal - Eastern Edition; 7/5/2008, Vol. 252 Issue 4, pB1-B1, 0p

<sup>&</sup>lt;sup>6</sup> Aspan, Maria" Fund Leaders Seek Countrywide Probe." American Banker; 6/23/2008, Vol. 173 Issue 120, pp16-16

Whitmore, Regina" Money-Fund Assets Increased in Week" Wall Street Journal - Eastern Edition; 6/26/2008, Vol. 251 Issue 149, pC11.

<sup>8</sup>The Wharton study on the performance of mutual funds was followed by Treynor(1965) when he devised a satisfactory way to measure the performance of the fund with the help of the characteristic line and the portfolio possibility line. The characteristic line contains information about expected rate of return and risk. The slope of the line measures volatility. He found that relative quantitative performance ranking could be read directly from the characteristic line despite market fluctuations and different risk policies.

<sup>9</sup>The article lists the ten largest stock funds, which includes the Fidelity Contrafund, the Vanguard 500 Index, and the American Funds EuroPacific Growth fund. Also listed are the top-performing mutual funds within various fund categories.

<sup>10</sup>Jensen(1968) developed an absolute measure rather than a relative measure of evaluating a portfolio manager's predictive ability based on Capital Asset Pricing Model. The sample selected consisted of the return on the portfolios of 115 open mutual funds for the ten year period from 1955 to 1964. He employed 't' values to question the statistical significance of the estimated performance measures. Based on the above, he concluded that none of the mutual funds in the sample was able to predict security prices well enough to outperform the market.

<sup>11</sup>Friend and Blume (1970) commended on the one parameter risk adjusted measures of portfolio performance of Sharpe, Treynor and Jensen as biased and suggested that improvement measures of portfolio performance for any period could be obtained by adjusting the earlier measures depending on the degree of risk. They were of the opinion that traditional two parameter measures would be more useful.

Mutual Funds. Money; July2008, Vol. 37 Issue 7, p122-122, 1p, 3 charts
 Jensen, Micheal C. "The performance of Mutual Funds in the Period 1945", 1964,
 The Journal of Finance, Vol.23, No 2, May 1968, pp.389-416.

<sup>&</sup>lt;sup>8</sup> Treynor, jack L." How to Rate Management of Investment Funds", Harvard Business Review, Vol 43, January/February 1965,pp 63-75

Friend, Irwin and Blume, Marshall."Measurement of Portfolio Performance under Uncertanity", American Economic Review, Vol.60, No 4, September 1970, pp.561-575.

<sup>12</sup>Ajay Shah and Susan Thomas studied the performance of eleven mutual fund schemes on the basis of market price data. The weekly returns were computed for these schemes since their commencement to April 1994. Jenson and Sharpe measures were used to evaluate the superior performance of the schemes. They concluded that except UGC 2000 of Unit Trust of India, none of these schemes is very high an funds might be inadequately diversified.

<sup>13</sup>In 1994, Unit Trust of India constituted a social audit committee which evaluate the performance of Unit Trust of India from various dimension, such as return, investor service and satisfaction of employees and agent of Unit Trust on India. The main findings of the committee report are as follows – Unit scheme 64 and various other monthly income schemes have consistently yielded more than interest rate on bank deposits and from the investors' point of view UTI is regarded as a progressive financial institution managing the funds most efficiently with low expense ratio.

Shah Ajay, Thomas Susan. "Performance Evaluation of Professional Portfolio Management in India", A Paper Prepared by CMIE, April 10 1994
 Report of the Social Audit Committee, Unit Trust of India, October 1994.

# **CHAPTER III**

**ANALYSIS AND INTERPRETATION** 

### **CHAPTER III**

### **ANALYSIS AND INTERPRETATION**

# 3.1. r² and Beta comparison between 2007 and 2008

Table No. 3.1.1. r<sup>2</sup> and Beta comparison between 2007 and 2008

	T				
Funds	20	2007		008	
	r <sup>2</sup>	Beta	r <sup>2</sup>	Beta	
ING Tax Saving (G)	0.8	0.6	0.9	1.2	
Sundaram Tax Saver (G)	0.4	2.4	0.5	-1.6	
Reliance Tax Saver (ELSS) (G)	0.4	0.7	0.6	-1.6	
Kotak Tax Saver (G)	0.8	1.3	0.4	-1.7	
DBS Chola Tax Saver Fund (G)	0.9	0.6	0.9	0.9	
Fortis Tax Advantage (G)	0.9	1.1	0.9	1.2	
DWS Tax Saving Fund (G)	0.9	1.0	0.9	1.0	
Fidelity Tax Advantage (G)	0.9	1.0	0.9	1.0	
Birla Sun Life Tax Plan (G)	0.9	0.8	0.9	1.0	
Religare India Tax Plan (G)	0.9	1.0	0.9	1.0	

Chart No. 3.1.1.  $r^2$  for the year 2007 and 2008

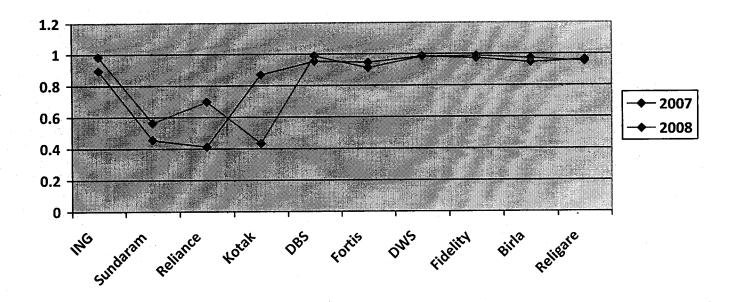
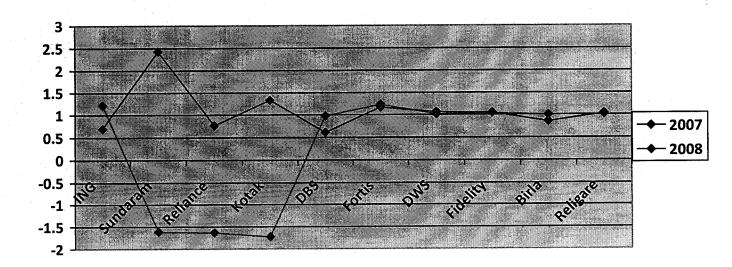


Chart No. 3.1.2. Beta for the year 2007 and 2008



The above table (Table 3.1.1) and charts (Chart 3.1.1 and 3.1.2) depict the comparison of  $\rm r^2$  and Beta between 2007 and 2008 for all the 10 funds.

Here  $r^2$  is the coefficient of determination of NAV values of funds and Nifty values, and Beta is the measure of mutual fund's systematic risk.

From the Table 3.1.1 it can be interpreted as follows:

ING - The fund's  $r^2$  for 2007 is 0.8 where it has increased to 0.9 in 2008; it has a low beta value of 0.6 and doubled in 2008 to 1.2.

Sundaram -  $r^2$  value is less at 0.4 in 2007 and a bit increase to 0.5 in 2008. It had a higher beta value of 2.4 in 2007 and went to a low of -1.6 in 2008.

Reliance - The fund has a similar  $r^2$  value of 0.4 like Sundaram in 2007 and increased to 0.6 in 2008. It has a considerable beta value of 0.7 in 2007, but a low of -1.6 in 2008.

Kotak -  $r^2$  value is 0.8 in 2007, and half the value in 2008. It has a higher beta value of 1.3 in 2007 and a very low value of -1.7 in 2008.

DBS - The fund's coefficient of determination is at 0.9 for the year 2007 and similar value for 2008. 2007 beta value is 0.6 and rises to 0.9 during 2008.

Fortis -  $r^2$  value is at 0.9 for 2007 and maintains the similar value for 2008 also. It has a bit higher beta value of 1.1 for 2007 and 1.2 for 2008.

DWS - Similar to previous two funds, DWS has constant  $r^2$  value of 0.9 for both the years. The fund has a considerable beta value of 1.0 for both the years.

Fidelity - Fidelity fund has performed considerably well, with  $r^2$  value of 0.9 for years 2007 and 2008. The beta value has been constant at 1.0 for both the years.

Birla - Fund Birla has constant  $r^2$  value of 0.9 maintaining its performance. Beta is 0.8 for 2007, but has increased to 1.0 for 2008.

Religare - Fund's performance has been good, as it has  $r^2$  value of 0.9 for 2007 and 2008, and also a beta value of 1.0 for both the years.

Chart 3.1.1 showcases the movement of  $r^2$  value of all funds for years 2007 and 2008. Funds ING, Sundaram, Reliance and Kotak has shown a major difference in their  $r^2$  values, whereas other funds have maintained consistency

Chart 3.1.2 depicts the movement of Beta value of all these funds for years 2007 and 2008. Similar to  $r^2$ , the funds ING, Sundaram, Reliance and Kotak have shown large variations in Beta values, which can be seen from the Cup shape image in the graph.

### 3.2. RANK STATEMENT

Table No. 3.2.1 Standard Deviation for 2007

Funds	Standard Deviation	Rank
ING	3.0	9
Sundaram	6.0	10
Reliance	2.0	4
Kotak	2.4	6
DBS	1.5	1
Fortis	2.7	8
DWS	2.5	7
Fidelity	2.1	5
Birla	1.8	2
Religare	1.9	3

Table No. 3.2.2 Standard Deviation for 2008

Funds	Standard Deviation	Rank
ING	6.4	10
Sundaram	5.9	9
Reliance	2.8	4
Kotak	3.9	8
DBS	3.1	6
Fortis	3.7	7
DWS	3.0	5
Fidelity	2.7	3
Birla	2.6	2
Religare	2.4	1

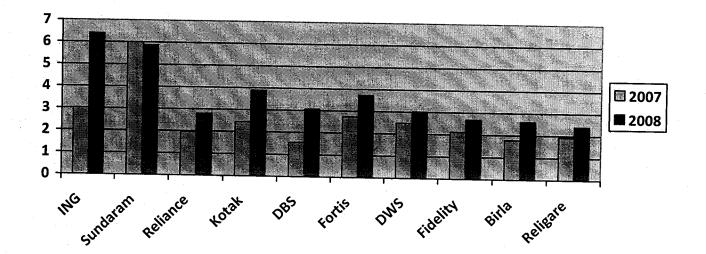


Chart No. 3.2.1 Standard Deviation for 2007 and 2008

Tables 3.2.1 and 3.2.2, and chart 3.2.1 interprets the Standard Deviation values of 10 funds for the year 2007 and 2008

The Table 3.2.1 provides the rank statement for 10 funds for the year 2007 based on their Standard Deviation values. Lower the Standard Deviation better is the fund's performance. Therefore DBS Chola mutual fund has the lowest S.D of 1.54 and hence ranked as 1st, whereas Sundaram mutual fund has the highest S.D. value of 5.9 and is ranked as 10, which is closely followed by ING fund.

Similarly Table 3.2.2 tabulates the rank statement for the year 2008. Here ING which was ranked 9 last year has dropped to 10 and DBS has dropped to 6. The pick of the lot turns out to be Religare fund, which was ranked 3rd last year. Birla fund has maintained its 2nd place. Overall all other funds have experienced changes in their standings.

Chart 3.2.1 explains via a bar graph how the fund's S.D. have changed year-over-year.

Table No. 3.2.3 Sharpe Ratio for 2007

Funds	Sharpe	Rank
ING	7.1	1
Sundaram	4.0	4
Reliance	4.2	3
Kotak	3.7	5
DBS	4.5	2
Fortis	2.8	8
DWS	1.9	9
Fidelity	3.3	6
Birla	2.8	7
Religare	1.9	10

Table No. 3.2.4 Sharpe Ratio for 2008

Funds	Sharpe	Rank
ING	2.4	2
Sundaram	4.1	1
Reliance	2.1	4
Kotak	1.8	5
DBS	1.4	8
Fortis	1.2	10
DWS	1.4	6
Fidelity	2.2	3
Birla	1.2	9
Religare	1.4	7

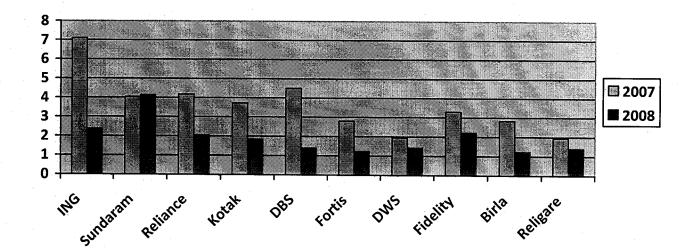


Chart No. 3.2.2 Sharpe Ratio for 2007 and 2008

The Sharpe Ratio for the years 2007 and 2008 for all 10 funds is tabulated in tables 3.2.3 and 3.2.4. The table also provides ranks for these funds.

From Table 3.2.3, it can be interpreted that ING fund holds rank 1, as it has a higher Sharpe ratio value and Religare the lowest and therefore ranked 10. DBS holds rank 2, but is far behind ING mutual fund, closely followed by Reliance and Sundaram mutual funds.

Similar interpretation can be given from table 3.2.4 for year 2008. ING has dropped one place to 2 and Sundaram reaches the top place from 4 last year. Kotak mutual fund has maintained its position at 5<sup>th</sup> place and Fortis mutual fund has dropped 2 places to rank 10.

Chart 3.2.2 interprets the above tables in a pictorial format and clearly explains the performance.

Table No. 3.2.5 Treynor Ratio for 2007

Funds	Treynor	Rank
ING	30.8	1
Sundaram	10.0	4
Reliance	10.7	3
Kotak	6.8	5
DBS	11.3	2
Fortis	6.5	7
DWS	4.5	9
Fidelity	6.7	6
Birla	5.9	8
Religare	3.6	10

Table No. 3.2.6 Treynor Ratio for 2008

Funds	Treynor	Rank
ING	12.5	1
Sundaram	-15.1	10
Reliance	-3.5	8
Kotak	-4.2	9
DBS	4.4	3
Fortis	3.7	5
DWS	4.2	4
Fidelity	5.7	2
Birla	3.2	7
Religare	3.3	6

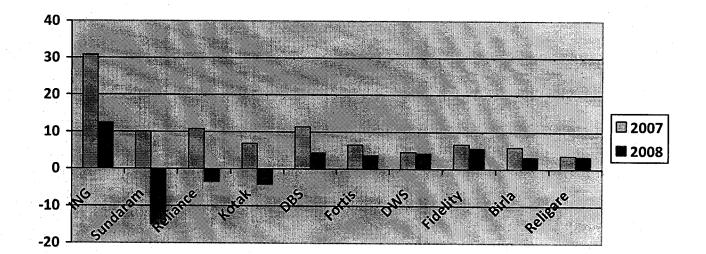


Chart No. 3.2.3 Treynor Ratio for 2007 and 2008

The next performance ratio is the Treynor's Ratio. Tables 3.2.5 and 3.2.6 are rank statements of 10 funds for 2007 and 2008 based on their Treynor values.

Table 3.2.5 interprets that higher the ratio, the better is the performance of the fund. It can be seen that ING has a far better ratio of 30.7 and is ranked 1st and Religare the lowest of 3.5 and ranked 10, closely followed by DWS and Birla funds.

From Table 3.2.6 it can be seen that ING has maintained its top spot, even though it has declined by 60%. Sundaram fund has dropped to negative value and ranked 10, with funds Reliance and Kotak entering the negative value arena. DWS, Fidelity, Birla and Religare have experienced marginal changes.

Chart 3.2.3 clearly depicting the reversal in performance of Reliance, Kotak and Sundaram fund.

Table No. 3.2.7 Jensen Ratio for 2007

Funds	Jensen	Rank
ING	29.0	2
Sundaram	31.8	1
Reliance	15.8	4
Kotak	16.7	3
DBS	14.5	7
Fortis	15.2	5
DWS	12.4	9
Fidelity	14.6	6
Birla	12.6	8
Religare	11.3	10

Table No. 3.2.8 Jensen Ratio for 2008

Funds	Jensen	Rank
ING	22.9	2
Sundaram	32.1	1
Reliance	13.5	6
Kotak	14.9	3
DBS	11.1	9
Fortis	13.7	4
DWS	11.7	7
Fidelity	13.7	5
Birla	11.0	10
Religare	11.1	8

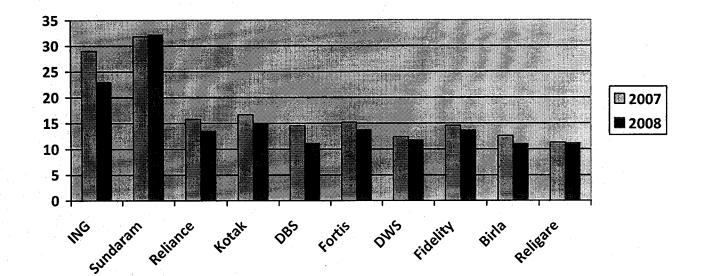


Chart No. 3.2.4 Jensen Ratio for 2007 and 2008

The final performance ratio is Jensen's ratio. Similar to other ratios, higher the Jensen value, the better is the fund's performance.

Table 3.2.6 ranks the fund's Jensen ratio for the year 2007. It can be interpreted that Sundaram has the highest value of 31.8 and ranks 1, which is closely followed by ING fund with 28.9. Funds Reliance, Kotak, DBS, Fidelity and Fortis are around the same value. Religare has the lowest value and therefore ranks 10.

Year 2008's value is tabulated in Table 3.2.7 and ranked. Funds Sundaram and ING hold the same positions of 1st and 2nd. Birla and Religare have interchanged their standings and other funds have toggled rankings among themselves, not causing much of a change in their standings.

Chart 3.2.4 pictures out the values and it can be seen that the changes in the fund's Jensen value have been only marginal.

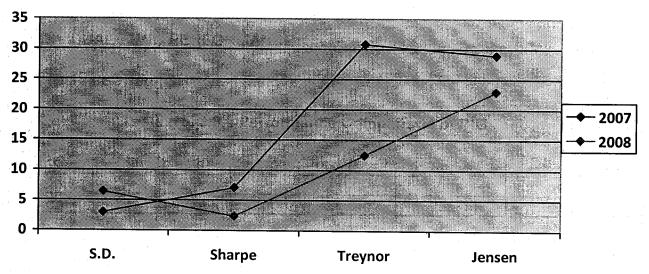
### 3.3. INDIVIDUAL FUND PERFORMANCE

### 3.3.1 ING Tax Saving (G)

Table No. 3.3.1 Performance Comparison of ING

Year/Var	S.D.	Sharpe	Treynor	Jensen
2007	3.0	7.1	30.8	29.0
2008	6.4	2.4	12.5	22.9

Chart No. 3.3.1 Performance Comparison of ING



#### INTERPRETATION

The above table 3.3.1 assesses the performance of ING fund based on four variables. The S.D. has doubled from 2007 to 2008. The Sharpe ratio has declined almost 71%, whereas Treynor ratio has shown a decline of 60% i.e. from 30 to 12. Jensen ratio has seen a similar decline of 21, which is a lesser decline when compared with other ratios.

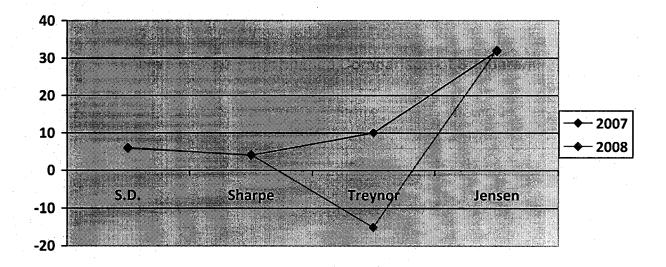
Chart 3.3.1 gives a graphical representation of the data in the table. Year 2008 has seen a larger decline from the year 2007 on all ratios.

### 3.3.2 Sundaram Tax Saver (G)

**Table No. 3.3.2 Performance Comparison of Sundaram** 

Year/Var	S.D.	Sharpe	Treynor	Jensen
2007	5.9	4.0	10.0	31.8
2008	5.8	4.1	-15.0	32.1

**Chart No. 3.3.2 Performance Comparison of Sundaram** 



#### INTERPRETATION

The above table 3.3.2 can be interpreted as the performance assessment of Sundaram Mutual Fund. S.D. has been constant year-over-year and also is the Sharpe ratio which is 4.0 in 2007 and 4.1 in 2008. Treynor ratio has seen a drastic change from positive value in 2007 to negative value in 2008. Jensen has seen an increase of 300 basis points.

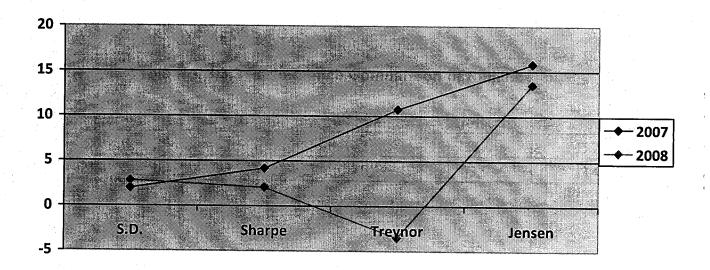
Chart 3.3.2 gives a pictorial representation of the data in the table.

## 3.3.3 Reliance Tax Saver (ELSS) (G)

Table No. 3.3.3 Performance Comparison of Reliance

Year/Var	S.D.	Sharpe	Treynor	Jensen
2007	1.9	4.1	10.7	15.7
2008	2.7	2.0	-3.5	13.4

Chart No. 3.3.3 Performance Comparison of Reliance



### INTERPRETATION

Table 3.3.3 can be interpreted as the performance of Reliance mutual fund. Standard Deviation has doubled year-over-year, and inversely Sharpe ratio has declined by 50%. Treynor ratio has seen a larger decline and is in negative value of 3.5. Jensen ratio has declined, but only marginally from 15 to 13.

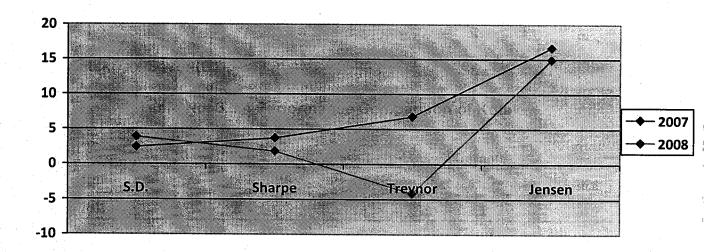
The chart 3.3.3 gives the graphical representation of the above table and shows the movement of all four variables.

### 3.3.4. Kotak Tax Saver (G)

Table No. 3.3.4 Performance Comparison of Kotak

Year/Var	S.D.	Sharpe	Treynor	Jensen
2007	2.4	3.7	6.8	16.6
2008	3.8	1.8	-4.1	<b>14.</b> 9

Chart No. 3.3.4 Performance Comparison of Kotak



### INTERPRETATION

Table 3.3.4 gives the performance analysis of Kotak mutual fund for years 2007 and 2008. S.D. has increased 50% from 2.4 to 3.88. Sharpe ratio has shown a decline of 66%, but Treynor ratio had larger decline of 167% from 6.8 to -4.1, which has ended up in negative value. Jensen ratio hasn't seen a bigger impact, as it has declined only marginally.

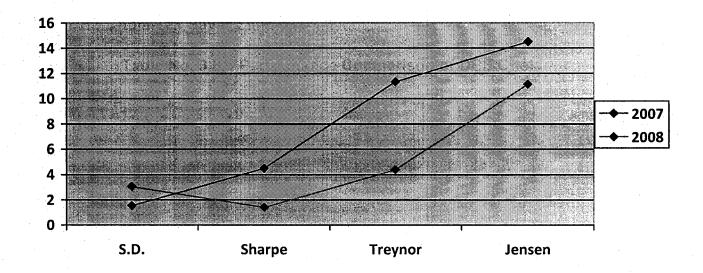
Supporting the table, chart 3.3.4 gives a pictorial explanation of the performance of Kotak fund.

### 3.3.5. DBS Chola Tax Saver Fund (G)

Table No. 3.3.5 Performance Comparison of DBS Chola

Year/Var	S.D.	Sharpe	Treynor	Jensen
2007	1.5	4.5	11.3	14.5
2008	3.0	1.3	4.3	11.1

Chart No. 3.3.5 Performance Comparison of DBS Chola



### **INTERPRETATION**

The above table 3.3.5 assesses the performance of DBS fund based on four variables. The S.D. has doubled from 2007 to 2008. The Sharpe ratio has declined almost 75%, whereas Treynor ratio has shown a decline of 63% i.e. from 11 to 4. Jensen ratio has seen a similar decline of 21, which is a lesser decline when compared with other ratios.

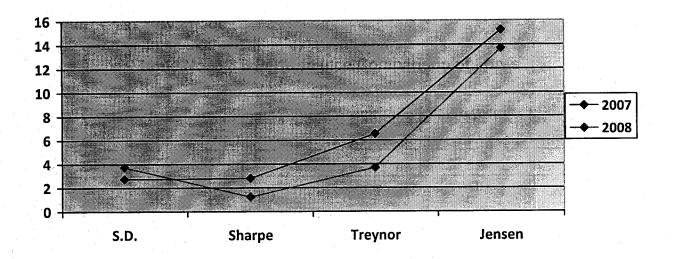
Chart 3.3.5 gives a graphical representation of the data in the table. Year 2008 has seen a marginal decline from the year 2007 on all ratios.

### 3.3.6. Fortis Tax Advantage (G)

**Table No. 3.3.6 Performance Comparison of Fortis** 

Year/Var	S.D.	Sharpe	Treynor	Jensen
2007	2.7	2.7	6.5	15.2
2008	3.7	1.2	3.6	13.6

Chart No. 3.3.6 Performance Comparison of Fortis



### **INTERPRETATION**

The above table 3.3.6 can be interpreted as the performance assessment of Fortis Mutual Fund. S.D. has seen a marginal increase, whereas the Sharpe ratio which is 2.7 in 2007 and 1.2 in 2008. Treynor ratio has seen a decline of double from 6.5 in 2007 to 3.7 in 2008. Jensen has seen a decrease of 13%.

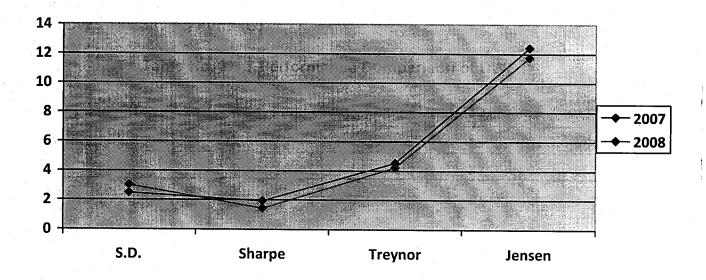
Chart 3.3.6 gives a pictorial representation of the data in the table.

### 3.3.7. DWS Tax Saving Fund (G)

Table No. 3.3.7 Performance Comparison of DWS

Year/Var	S.D.	Sharpe	Treynor	Jensen
2007	2.4	1.9	4.5	12.4
2008	3.0	1.4	4.2	11.7

Chart No. 3.3.7 Performance Comparison of DWS



### INTERPRETATION

Table 3.3.7 can be interpreted as the performance of DWS mutual fund. Standard Deviation has increased 25% year-over-year. Sharpe ratio of this fund has shown variability from other funds, i.e. it has remained constant. Similarly Treynor ratio has seen only a decline of 6%, whereas Jensen ratio has declined very marginally.

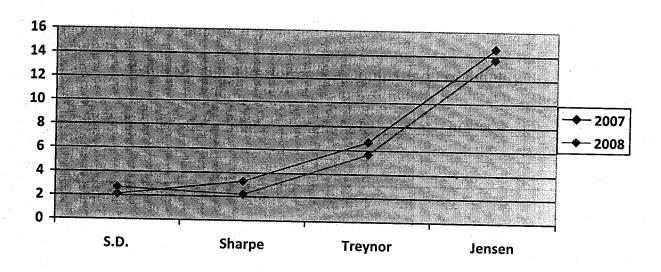
The chart 3.3.7 gives the graphical representation of the above table and shows the movement of all four variables.

### 3.3.8. Fidelity Tax Advantage (G)

Table No. 3.3.8 Performance Comparison of Fidelity

Year/Var	S.D.	Sharpe	Treynor	Jensen
2007	2.1	3.2	6.7	14.5
2008	2.6	2.2	5.6	13.6

Chart No. 3.3.8 Performance Comparison of Fidelity



### INTERPRETATION

The above table 3.3.8 can be interpreted as the performance assessment of Fidelity Mutual Fund. S.D. has remained constant from 2007 to 2008. Rest three variables, Sharpe, Treynor and Jensen have all seen marginal declines of 33%, 16% and 7% year-over-year.

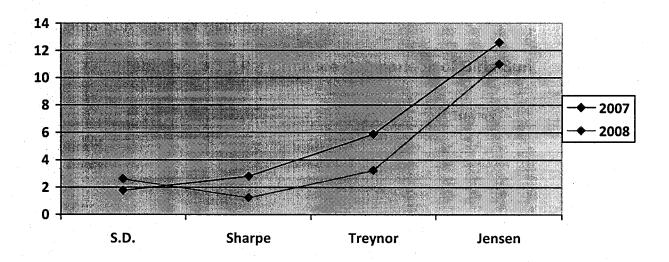
Chart 3.3.8 gives a graphical representation of the data in the table. Year 2008 has seen only very little decline from the year 2007 on all ratios.

### 3.3.9. Birla Sun Life Tax Plan (G)

Table No. 3.3.9 Performance Comparison of Birla Sun

Year/Var	S.D.	Sharpe	Treynor	Jensen
2007	1.7	2.8	5.8	12.5
2008	2.6	1.2	3.2	10.9

Chart No. 3.3.9 Performance Comparison of Birla Sun



### **INTERPRETATION**

Table 3.3.9 gives the performance analysis of Birla Sun mutual fund for years 2007 and 2008. S.D has experienced an increase of 52% from 1.7 to 2.6. Conversely Sharpe ratio has seen a decrease of 57%. Treynor ratio has declined from 5.8 to 3.2 year-over-year and similarly Jensen ratio has also decreased by 17%.

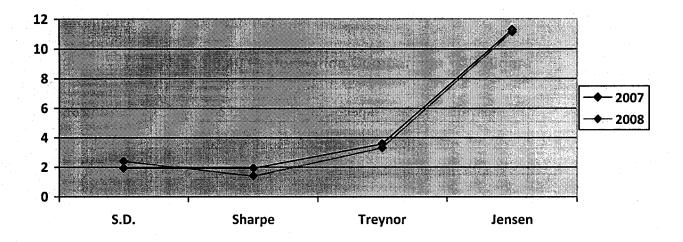
Supporting the table, chart 3.3.9 gives a pictorial explanation of the performance of Birla Sun fund.

### 3.3.10. Religare India Tax Plan (G)

Table No. 3.3.10 Performance Comparison of Religare

Year/Var	S.D.	Sharpe	Treynor	Jensen
2007	1.9	1.9	3.5	11.2
2008	2.4	1.4	3.3	11.1

Chart No. 3.3.10 Performance Comparison of Religare



### INTERPRETATION

Table 3.3.10 shows the performance of Religare fund for 2007 and 2008. It can be noted that all the four ratios have changed only marginally. S.D. has increased, whereas Sharpe, Treynor and Jensen have decreased.

The above chart 3.3.9 explains the table in a graphical format. It's quite evident from the graph that both the lines i.e. 2007 and 2008 and neck-in-neck, meaning there hasn't been a big difference in values.

### **CHAPTER IV**

FINDINGS, SUGGESTIONS AND CONCLUSION

#### **CHAPTER IV**

### FINDINGS, SUGGESTION & CONCLUSION

### **FINDINGS**

### 1. Comparison between R<sup>2</sup> and Beta

In this study R is the coefficient of correlation between the NAV values of funds and the nifty values. The Nifty values have been eliminated from any base effect whatsoever in order to get unbiased results. Therefore both the NAV values and Nifty values don't have any base effects.

Beta is the measure of the mutual fund systematic risk. Betas for different mutual fund schemes are calculated for the present study by regressing fund return. Beta is a measure of a portfolio's volatility, or systematic risk in comparison to the market or market segment as opposed to distinct element of risk associated with a specific security.

The table 3.1.1 gives the comparison of the square of coefficient of correlation and beta values of the funds. ING tax savings fund has shown a slight increase in R<sup>2</sup> which represents that the correlation between the fund's NAV values and nifty are closely related.

Similarly funds Sundaram, Reliance, DBS Chola, Fidelity, and Birla mutual funds have an increased R<sup>2</sup> value from 2007 to 2008, representing the fact that these funds have greater correlation to market. Funds nearer to value 1 are more correlated when compared to other funds.

Now when considering the Beta value, values closer to 1 represents the fact that the fund values move in tandem with the nifty (market). Sundaram fund has a beta value of 2.4 in 2007, this shows that the NAV values react twice the market. This holds good when the markets are in bull phase, but it's very unhealthy when the markets are in a bear phase.

Similarly for 2008, Sundaram's Beta value is negative i.e. -1.16. This means that the NAV values move in the opposite direction of the Nifty values, both NAV and Nifty are inversely proportional. For eg. when markets rise, the NAV values decline.

For year 2007 funds DWS, Fidelity and Religare have beta values of around 1, and for year 2008 funds DWS, Fidelity, Birla Sun, and Religare also have beta values of 1, which means that these funds move along the market and are less volatile.

#### 2. Rank Statement

The rank statement is processed for four variables, Standard Deviation, Sharpe Ratio, Treynor Ratio and Jensen Ratio.

Standard Deviation may be defined as the extent of the deviations of the individual rates of return from the average rate of return. Therefore lower the S.D. the better is the performance of the fund. The S.D. values are given in tables 3.2.1 and 3.2.2.

For 2007 DBS fund has a lower S.D. of 1.54 meaning the fact that individual rate of return is less deviated from the average return of the fund. On the other hand for 2008, ING fund has the highest S.D. of 6.40, therefore the fund's returns are scattered away from the average.

Sharpe Ratio, is the ratio of return generated by the fund over and above risk free rate of return and the total risk associated with it. Here for the study the risk free rate is taken as T-bill rates of the respective years i.e. 2007 and 2008. The Sharpe ratio values are given in tables 3.2.3 and 3.2.4. Higher the ratio, better is the fund's performance, meaning the fund is providing a better return than the risk free rate per unit of total risk.

ING Fund seems to have performed far better than the risk free rate having a ratio of 7.09 for the particular amount of risk taken during the year 2007. For the year 2008 Sundaram has a good ratio when compared to other funds of 4.14. Fortis fund provides a minimal return of 1.22 for the amount of risk taken and therefore has a declined performance when compared to other funds.

Treynor measure based on the systematic risk of the mutual fund shows the rates of return above risk-free rates during a given time period. In this ratio also, higher the ratio, the better is the fund's performance. This ratio considers Beta for calculation. Tables 3.2.5 and 3.2.6 ranks the funds.

Similar to Sharpe ratio, ING fund has a far better ratio of 30 for 2007 providing the investors a better return than the risk free rate. For the 2008 also ING has outperformed other funds having a ratio of 12, almost 50% lesser than 2007. Sundaram fund has the lowest ratio in negative, stating the fact that it is providing negative returns when compared to risk free rate.

Jensen measure involves evaluation of the return that the fund has generated vs. the return actually expected out of the fund given the level of it systematic risk. Here too, higher the ratio, the better is the performance of the fund. The values and ranks are given in tables 3.2.7 and 3.2.8

Sundaram mutual fund has a constant ratio of 31 and 32 for the years 2007 and 2008, and hence outperformed the risk free rate return, giving the investors a constant return. The fund is closely followed by ING fund with ratios 28 and 22. The ratio represents the fund has actually generated returns which was expected from it when compared to other funds. Birla fund has the lowest ratio and has performed below expectations.

### 3. Individual Fund Performance

The funds are assessed individually based on four variables, like Standard Deviation, Sharpe, Treynor and Jensen for 2007 and 2008. The comparison between the years gives an overall perspective of how a particular fund has performed year-over-year and also the consistency of its returns and the risk involved in the funds. From the analysis it has been found that Fortis, DWS, Fidelity, Birla, and Religare had lesser deviations in 2008 from 2007 values and therefore have performed with consistency, with increasing Standard Deviation and decreasing Sharpe, Treynor and Jensen ratios.

#### **SUGGESTIONS**

- i). The basic ideology of investors investing in ELSS (Growth) mutual funds is to avail tax benefits and therefore get gains for their investment which has a diversified risk.
- ii). Suggestions can be given based on the risk taking nature of the investor, whether he is a high risk taker or medium risk taker or a risk averter.
- iii). High risk taker can go for funds which have higher beta value, which have high risk, but higher returns too. A fund with beta value of more than 1 is riskier, but has a good return when the market is in uptrend, but it turns out to be a great loss when the market is falling. Funds with higher standard deviation, lower Sharpe ratio, lower Treynor ratio, and higher Jensen ratio are suggested for high risk taking investors, as these funds would provide high returns only with high risks.
- iv). Some investors go for a balanced approach. They are ready to take risks, but only to some extent. For such investors funds with beta value between the range of 0.8 to 1 is more appropriate. This would mean that the investor suffers loss when market falls, but not to a larger extent. Funds which are more appropriate for these type of investors should have medium standard deviation, Sharpe ratio, Treynor ratio and Jensen ratio. The medium value can be attained when comparing other fund values.
- v). Investors invest in ELSS mutual funds only with the motive of parking their funds and get tax exempt. They are not worried about any returns and would be more cautious that they don't lose their principal amount invested. Such investors are totally risk averse and would prefer funds which have the lowest risk, even though they don't get returns. Funds having low beta value, low standard deviation, high Sharpe ratio, high Treynor ratio and low Jensen ratio are the most suited for risk averting investors.
- vi). There are various other factors that affect a fund's performance which are not considered in the present study, and its best suggested for investors to consider all measures before investing in ELSS Growth mutual funds.

#### CONCLUSION

The study was conducted with an intention of advising and suggesting the investors about the risk and return involved in funds launched during 2004, 2005 and 2006. Their performance were assessed using their NAV values and compared with the market values i.e. Nifty for years 2007 and 2008. Investors investing in ELSS Growth mutual funds mostly have the intention of getting tax exemption, but with growing competition such funds are also looked as funds for returns and safety.

From the above suggestions provided investors should identify themselves upon the level of risk they are ready to take and how much return they expect from investing in ELSS funds. Markets are volatile and hence equity based funds are also more affected by this volatility. ELSS mutual funds are equity based and also have greater effects of the market.

The lock-in period is also a factor which has to be considered when investing in ELSS mutual funds. The 3-year lock-in period helps the fund manager to use the funds collected to invest in appropriate sectors according to prevailing market conditions.

Using the variables like Standard Deviation, Beta, Coefficient of Correlation, Sharpe ratio, Treynor ratio and Jensen ratio the funds are evaluated and hence provided with suggestions. There are some other tools available which can also be used for assessing the performance of the funds. Investors can use the analysis to make better decisions depending on their financial ability and risk taking capability.

So, it can be concluded that while selecting mutual funds or shares for investment, the investors should track the market volatility and its risk and return. The risk and return will fluctuate based on the demand and supply in the market. So, all the investors should be aware of the market conditions based on the risk and return before selecting any mutual fund investment.

**APPENDIX** 

### **APPENDIX**

	ING	Nifty	Sundaram	Nifty	Reliance	Nifty
2-Jan-07	27.2	12.7	28.3	3.3	14.9	-1.2
3-Jan-07	27.4	12.8	28.5	3.4	14.9	-1.0
4-Jan-07	27.5	12.6	28.5	3.6	15.0	-1.1
5-Jan-07	27.7	12.6	28.4	3.7	15.0	-1.0
8-Jan-07	27.5	12.3	28.2	3.8	15.0	-1.1
9-Jan-07	27.3	12.2	28.1	3.7	14.9	-1.0
10-Jan-07	27.1	11.9	27.9	3.5	14.7	-1.2
11-Jan-07	27.3	12.4	28.4	3.7	14.8	-1.1
12-Jan-07	27.7	13.0	28.9	3.7	15.1	-1.0
15-Jan-07	28.0	13.1	29.1	3.6	15.2	-1.0
16-Jan-07	28.2	13.2	29.2	3.6	15.2	-1.1
17-Jan-07	28.3	13.1	29.2	3.7	15.2	-1.2
18-Jan-07	28.1	13.3	29.2	3.8	15.3	-1.1
19-Jan-07	27.9	13.2	29.1	4.0	15.2	-1.0
22-Jan-07	28.2	13.3	29.2	4.1	15.2	-1.0
23-Jan-07	27.8	13.1	28.7	4.3	15.0	-0.9
24-Jan-07	28.0	13.2	28.8	4.3	15.1	-1.0
25-Jan-07	28.0	13.5	29.0	4.2	15.2	-0.9
29-Jan-07	27.9	13.4	28.9	4.3	15.0	-0.7
31-Jan-07	27.9	13.2	28.6	4.5	15.0	-0.7
1-Feb-07	28.0	13.5	28.8	4.4	15.2	-0.6
2-Feb-07	28.2	13.7	28.9	4.4	15.3	-0.7
5-Feb-07	28.2	13.9	29.0	4.4	15.4	-0.6
6-Feb-07	28.2	13.8	29.0	4.3	15.5	-0.5
7-Feb-07	28.4	14.0	29.1	4.0	15.7	-0.5
8-Feb-07	28.6	14.0	29.0	4.3	15.8	-0.4
9-Feb-07	27.9	13.8	28.6	4.2	15.5	-0.5
12-Feb-07	26.8	13.0	27.7	4.4	14.8	-0.6
13-Feb-07	26.8	13.0	27.5	4.4	14.6	-0.6
14-Feb-07	26.8	13.0	27.5	4.4	14.6	-0.5
15-Feb-07	27.6	13.5	28.1	4.7	15.1	-0.4
19-Feb-07	27.5	13.6	28.1	4.8	15.0	-0.5
20-Feb-07	27.4	13.3	27.8	4.8	14.7	-0.4
21-Feb-07	27.3	13.2	27.7	4.8	14.7	-0.3
22-Feb-07	27.0	12.9	27.4	4.8	14.5	-0.4
23-Feb-07	26.3	12.4	26.8	4.6	14.2	-0.4
26-Feb-07	26.5	12.4	26.8	4.5	14.3	-0.4
27-Feb-07	26.5	12.1	26.8	4.5	14.3	-0.6
28-Feb-07	25.5	11.3	26.0	4.4	14.0	-0.6

## 2007 analysis

Funds	Sharpe	Treynor	Jensen
ING	7.1	30.8	29.0
Sundaram	4.0	10.0	31.8
Reliance	4.2	10.7	15.8
Kotak	3.7	6.8	16.7
DBS	4.5	11.3	14.5
Fortis	2.8	6.5	15.2
DWS	1.9	4.5	12.4
Fidelity	3.3	6.7	14.6
Birla	2.8	5.9	12.6
Religare	1.9	3.6	11.3

# 2008 analysis

Funds	Sharpe	Treynor	Jensen
ING	2.4	12.5	22.9
Sundaram	4.1	-15.1	32.1
Reliance	2.1	-3.5	13.5
Kotak	1.8	-4.2	14.9
DBS	1.4	4.4	11.1
Fortis	1.2	3.7	13.7
DWS	1.4	4.2	11.7
Fidelity	2.2	5.7	13.7
Birla	1.2	3.2	11.0
Religare	1.4	3.3	11.1

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