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Risk and Return Analysis of Mutual Fund Industry in India

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ABSTRACT: The mutual funds is one of the important classes of financial intermediaries enabling tens of thousands small and large savers across India to participate in and get the benefits of the capital market. The involvement of mutual funds in the transformation of India's economy makes it all the more important to review their services for their role in mobilization and allocation of funds in the markets. The mutual funds have a lot of potential to grow but to capitalize the potential fully, however, the need is to create and market innovative products and frame distinct marketing strategies. Moreover, the equity culture has not yet developed fully in India as such, investor education would be equally important for greater penetration of mutual funds. As such mutual funds are expected to perform better than the market, therefore calls for a continuous evaluation of the performance of funds. In an academic perspective, the goal of identifying superior fund managers is of great interest due to the challenges it provides to the efficient market hypothesis. The present study looks into the risk and return analysis of the select mutual funds in India.

KEYWORD: Risk , Investors , Mutual Fund , Risk Return .

Contents

I. INTRODUCTION

Since its inception, the mutual fund industry has come a long way in India, the remarkable growth in the Indian mutual fund industry can be ascribed to multiple factors like, rise in savings of household, all-inclusive regulatory outline, and satisfactory tax policies, start of several new products, investor educational campaigns and the role of brokers. More pleasing aspect of the Indian fund market is that it has graduated from offering plain vanilla equity and debt funds, to an array of diverse products such as capital protection oriented funds, exchange traded funds, gold funds, and even the native funds. Although, the fund industry in India has achieved many milestones yet the potential that it enjoys remains unrealized. For example, assets under management as a percentage of GDP for India is about 5 to 6 percent, knowingly lower than some other emerging economies like Brazil and South Africa having 40 percent and 33 percent respectively. The other fact is that the fund industry in the country is yet to spread its reach beyond Tier-I cities which accounts for around 74 percent of the fund folios as on September 2013. There is also an interplay of cultural and behavioral factors which prevents savings from being streamlined into mutual funds. Therefore, if these and other challenges are properly addressed, the fund industry in the country will likely achieve newer heights.

Treynor (1965) used the characteristic line for relating expected rate of return of a fund to the rate of return (ROR) of a suitable market average. The researcher even coined the fund performance measure taking investment risk into account. Also, to deal with a portfolio, portfolio possibility line was used to relate expected return to the portfolio owner's risk preference. A composite portfolio evaluation technique regarding the risk-adjusted returns was used by Jensen (1968).

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The researcher evaluated the ability of 115 fund managers in selecting securities during the period 1945-66. Analysis of net returns indicated that, 39 funds had above average returns, while 76 funds yielded abnormally poor returns. Using the gross returns, 48 funds showed above average results and 67 funds below average results. On the basis of the study Jensen concluded that there was very little evidence that funds were able to perform significantly better than expected as fund managers were not able to forecast securities price movements.

The most prominent study by Sharpe (1966) developed a composite measure of return and risk. The researcher evaluated 34 open-end mutual funds for the period 1944-63. The study revealed that the reward to variability ratio for each scheme was significantly less than DJIA and ranged from 0.43 to 0.78. Also, it reveals that expense ratio was inversely related with the fund performance, as correlation coefficient was 0.0505. The results showed that notable performance was linked with the low expense ratio and not with the size. Also, the sample schemes showed consistency in risk measure.

The performance of 86 funds with random portfolios was compared by Irwin *et al.* (1970). The study has concluded that, mutual funds performed badly in terms of total risk. Funds with higher turnover outperformed the market. The size of the fund did not have any impact on their performance.

The methods to distinguish observed return due to the ability to pick up the best securities at a given level of risk from that of predictions of price movements in the market was developed by Fama (1972). The researcher, introduced a multi-period model allowing evaluation on a period-by-period and on a cumulative basis. The researcher explained that the return on a portfolio constitutes return for security selection and return for bearing risk. His contributions combined the concepts from modern theories of portfolio selection and capital market equilibrium with more traditional concepts of good portfolio management. The investment performance of 40 funds was analyzed by Klemkosky (1973) based on quarterly returns during the period 1966-71.

Kholkin and Haug (2016) applied dataset consists of 74 Norwegian open-end equity funds with monthly observations. On average, they found quite low significance of all used models, compared to basic Capital Asset Pricing Model and excluding the Carhart (1997) model. Also, they found that funds with a top high idiosyncratic volatility have lower returns than other funds. More ever, they also found that funds with close to mean idiosyncratic volatility have the highest returns. Grinblatt *et al.* (2016) reveal stark differences between the investment philosophy and skill of hedge funds and mutual funds. Hedge funds tend to buy stocks with low past returns, while mutual funds tend to be trend followers. Jagric *et al.* (2015) studied the mutual fund industry and applies various tests to evaluate the performance capacity of mutual funds. They found that the rankings obtained by performing both the Sharpe and Treynor rules to be almost the same, implying that funds are well diversified. The rankings reveal that all analyzed funds outperformed the market on a risk-adjusted basis.

Bali *et al.* (2014) estimated hedge fund and mutual fund exposure to measures of macroeconomic risk that are interpreted as measures of economic uncertainty. They found that the resulting uncertainty betas explain a significant proportion of the cross-sectional dispersion in hedge fund returns. However, the same is not true for mutual funds, for which there is no significant relationship. After controlling for a large set of fund characteristics and risk factors, the positive relation between uncertainty betas and future hedge fund returns remains economically and statistically significant. Hence, they argue that macroeconomic risk is a powerful determinant of cross-sectional differences in hedge fund returns. Amihud and Goyenko (2013) proposed that fund performance is predicted by its R^2, obtained by regressing its return on the Fama-French-Carhart four benchmark portfolios. Lower R^2, or higher idiosyncratic risk relative to total risk, measures selectivity or active management. We show that lagged R^2 has significant negative predictive coefficient in predicting alpha or Information Ratio.

A strong link between the dispersion in beliefs among mutual fund managers was established by Jiang and Sun (2014) and the study also revealed through their active holdings, and future stock returns. The effect of dispersion on returns is particularly pronounced among stocks with high information asymmetry, moreover, the lower returns on stocks with low dispersion concentrate on those with binding short-sale constraints. The results are consistent with a subgroup of informed managers driving up the dispersion in active holdings when they place large bets after receiving positive

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information signals unobserved by their peers; conversely, binding short-sale constraints prevent them from fully using their negative private information, leading to low dispersion in active holdings.

1.1. Analysis

As of 2011 the mutual fund industry in the country is dominated by the private sector funds. Though India has achieved sufficient growth in the number of fund houses over a period of time but the mutual funds market is highly concentrated. Out of the 44 AMCs operating in India, approximately 80 percent, of the AUM is concentrated with 11 leading players in the market. These funds includes HDFC Mutual Fund (13 percent), Reliance Mutual Fund (12 percent), ICICI Prudential (10 percent), UTI (9 percent), Birla Sun Life (9 percent), SBI Mutual Funds(7 percent), Franklin Templeton (5 percent), IDFC Mutual Fund (5 percent), Kotak Mahindra Mutual Fund (4 percent), DSP Black Rock Mutual Fund (4 percent) and Axis Mutual Fund (2 percent). While, the remaining 33 mutual funds account for 20 percent of AUMs as on 2013. Also, the remaining 33 mutual funds account for 20 percent of AUMs as on 2013. This is indicative of the fact that the market is highly concentrated. Based on these findings it can be safely observed that for the normal growth of the industry, the need of the hour is to see the disbursement of the business across the fund houses.

Mutual Funds are primarily vehicles for channeling savings of small investors into financial markets who otherwise on their own find difficult to plan and manage their investments in today's complex, mature and information driven financial markets. Routing of investments through mutual funds is generally guided by the advantages of professional management, diversification, and economies of scale. As such mutual funds are expected to perform better than the market, therefore calls for a continuous evaluation of the performance of funds. The assessment of fund manager's performance is important for two reasons: one it enables investors to allocate investible funds into different funds efficiently second it influences the compensation of fund managers. From an academic perspective, the goal of identifying superior fund managers is interesting because it challenges the efficient market hypothesis.

1.2. Objectives of the Study

The study is aimed to achieve the following specific objectives:

1. To analyze the growth and development of Indian mutual fund industry and to identify the challenges confronting by the industry**.**
2. To analyze risk and return of select mutual fund in India.

1.3. Hypotheses

As mentioned in the above objectives, the following hypotheses are laid in order to provide a direction to the study:

H1: There is a significant difference between fund returns and risk free return

H2: There is a significant difference between fund returns and market return

H3: There is no difference between risk-adjusted fund return and market return

H4: There is a significant difference in the riskiness of the funds and the market portfolio

II. DATA AND METHODOLOGY

The analysis aims to evaluate the performance of mutual funds by assessing their returns relative to the risk they bear. The two key performance metrics used are:

1. **Sharpe Ratio**: This ratio evaluates the return of the portfolio per unit of total risk, which includes both **systematic risk** (market-related risks that cannot be diversified away) and **unsystematic risk** (specific to the fund or its holdings). By accounting for total risk, the Sharpe ratio provides a comprehensive measure of the risk-adjusted return.
2. **Treynor Ratio**: This focuses solely on **systematic risk**, which is inherent to the market and cannot be diversified. It measures the returns earned above the risk-free rate per unit of systematic risk (as represented by beta). This ratio is particularly useful when comparing funds that operate in the same market but have varying degrees of diversification.

The use of daily NAV data and geometric averaging for annualized returns ensures higher granularity and precision, reflecting real-time fund performance. Furthermore, using the 91-day treasury bill as a proxy for the risk-free rate

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aligns with standard financial practices, while S&P CNX Nifty serves as a reliable benchmark for market performance and variability. Together, these methods provide a well-rounded analysis of fund manager performance and portfolio efficiency.

2.1. Scope and Reference Period of the Study

The mutual fund industry in India comprises public, private, and foreign funds. All three sectors were included in this study to facilitate a performance comparison based on fund sponsorship. The focus of the study was on active funds across growth, income, balanced, and tax-saving schemes.

The study covered a five-year period from 2007 to 2011, chosen for two key reasons. First, this timeframe was marked by significant stock market volatility, making it an ideal period to analyze whether the funds outperformed the market, even during downturns. Second, a five-year span was considered sufficiently long to encompass various market phases, allowing for more comprehensive and meaningful conclusions.

2.2. Sample Design

During the study period, a large number of schemes were in existence, making it impractical to analyze all of them due to time and other constraints. To address this, a representative sample was selected using the convenience sampling method. Initially, 76 schemes were considered out of a total of 587 schemes available as of April 1, 2007. However, consistent data for the study period (2007 to 2011) was only accessible for 40 schemes. Consequently, the final sample size was narrowed to 40 schemes, representing approximately 70% of the initially considered schemes.

These 40 schemes were spread across 19 fund houses, encompassing all three sectors: public sector, private sector, and foreign funds. Of the selected schemes, 33 were from the private sector, and 7 were from the public sector, including UTI. Moreover, 37 of the schemes were open-ended, while 3 were close-ended. In terms of investment objectives, the sample included 28 growth schemes, 3 income schemes, 3 balanced funds, and 6 tax-saving schemes.

2.3. Models Used

Initially we have assessed the overall performance of the sample funds by analyzing their excess return, (R_p-R_f), abnormal excess return, (R_p-R_m), and riskiness of funds vis-à-vis. market portfolio. Then the poor or superior performance was decomposed by assessing whether the fund performance is due to the stock selectivity skills or market timing abilities of fund managers. The daily returns for each of the sample schemes and the market portfolio have been calculated after making proper adjustments for the dividend, if any, paid by the schemes, as follows:

$$\text{Fund Return (Rpt)} = \frac{\text{NAV}_t - \text{NAV}_{t-1}}{\text{NAV}_{t-1}}$$

Where:

R_{pt} = Return of a scheme at the end of day t

NAV_t = Net assets value of the scheme at the end of day 't' NAV_{t-1} = Net assets value of the scheme at the beginning of day 't'

Similarly the daily returns for the market Index i.e. for S&P CNX Nifty have been calculated using the following formula:

$$\text{Market Index Return (Rmt)} = \frac{\text{MI}_t - \text{MI}_{t-1}}{\text{S\&P CNX Nifty}t_{t-1}}$$

Where:

R_{mt} = Return of the market Index for the day 't'

MI_t = Market value of the market index i.e. S&P Nifty at the end of day 't'

MI_{t-1}= Market value of the Market Index i.e. S&P Nifty in the beginning of day 't'

The daily returns are then annualized to obtain mean annual daily returns of each sample scheme and the market Index as follows:

Mean Annual Daily Portfolio Return (R_{pt}-a) = (R_{p1}+R_{p2}+R_{p3}+…….R_{pn})/N

Mean Annual Daily Market Return (R_{mt}-a) = (R_{m1}+R_{m2}+ R_{m3}…….R_{mn})/N

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2.3.1. Excess Return

This formula and explanation assess the performance of a sample of investment schemes by comparing their returns to a risk-free benchmark, like Treasury bills. Here's a simplified breakdown:

- **Excess Fund Return (ERP):** This measures how much more (or less) the fund has earned compared to a risk-free investment (like a Treasury bill). It shows the extra return generated by the fund.
- **R pt-a:** This is the fund's average daily return over five years. It represents the fund's performance.
- **R ft-a:** This is the average daily return of a 91-day Treasury bill over the same five-year period. It acts as the benchmark for a "risk-free" return.
- **ERP = R pt-a – R ft-a:** This calculation subtracts the risk-free return from the fund's return. A positive ERP indicates the fund performed better than a risk-free investment, while a negative ERP means it performed worse.

2.3.2. Risk-Adjusted Return

Key Points:

1. Sharpe Ratio (S):
   - Measures the return earned per unit of total risk (both systematic and unsystematic risk).
   - Formula: S=Rpt−RftσtS = \frac{R_{pt} - R_{ft}}{\sigma_t}S=σtRpt−Rft
     - RptR_{pt}Rpt: Fund’s average return.
     - RftR_{ft}Rft: Risk-free return (91-day Treasury bill).
     - σt\sigma_tσt: Total risk, represented by the standard deviation of the fund's returns.
2. Treynor Ratio (T):
   - Measures the return earned per unit of systematic risk (market-related risk).
   - Formula: T=Rpt−RftβtT = \frac{R_{pt} - R_{ft}}{\beta_t}T=βtRpt−Rft
     - βt\beta_tβt: Beta of the fund, showing its sensitivity to market movements.

The Difference:

- Sharpe Ratio considers all types of risks (total risk).
- Treynor Ratio focuses only on systematic risk (risk tied to market changes).

Modification in Calculation:

Instead of using the risk-free rate (RftR_{ft}Rft), the comparison is made against the market return as a benchmark. This adjustment helps evaluate how well the fund performed relative to the market as a whole, offering a practical perspective on risk-adjusted returns.

In simple terms:

These ratios help investors understand whether a fund's higher returns justify the risks it takes compared to both risk-free and market benchmarks.

2.4. Hypotheses Testing

To guide the study, hypotheses were established and tested using appropriate statistical tools. The risk levels of the sample funds and the benchmark market index were evaluated using standard deviation and the Beta coefficient. Specifically, standard deviation measured the total risk of the investments, while the Beta coefficient identified the portion of the risk attributed to systematic factors.

III. RESULTS

The superior financial performance of fund managers is a key driver of investor confidence and the growth of the mutual fund industry. Fund managers aim to provide maximum value to investors by generating higher returns while minimizing risk. The performance of mutual funds is commonly assessed through returns, risk-adjusted returns, or comparisons with benchmarks. In this study, we evaluated the performance of the sample schemes using the following metrics:

- **Excess Return**: Calculated as the difference between the fund return (Rpt) and the risk-free return (Rft).
- **Abnormal Excess Return**: Measured as the difference between the average fund return (Rpt) and the average market return (Rmt).

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- **Risk Differential**: Assessed using the co-variance and standard deviation (Beta), which measure the risk associated with the fund compared to the benchmark.
- **Risk-Adjusted Return**: Evaluated using the Capital Asset Pricing Model (CAPM).

Table-1.1. Mean Daily Annual Excess Return & Mean Daily Annual Excess Abnormal Return of Sample Funds for Five Year Period (2007-2011).

Schemes	Mean Daily Annual Fund Return (Rpt)	Mean Daily Annual Market Return (Rmt)	Risk F Return (Rft)	Mean Daily Excess Return (Rpt–Rft)	Mean Daily Annual Excess Abnormal Return (Rpt-Rmt)
Baroda Pioneer ELSS	0.17582	0.10037	0.07527	0.10055	0.07545
Baroda Pioneer Growth	0.23406	0.10037	0.07527	0.15879	0.13369
Birla Sun Life Frontline Equity	0.24004	0.10037	0.07527	0.16477	0.13967
Birla Sun Life Top 100 Fund – Growth	0.19947	0.10037	0.07527	0.12421	0.09911
Fidelity Equity Fund	0.21251	0.10037	0.07527	0.13724	0.11214
Franklin India Bluechip Fund	0.24666	0.10037	0.07527	0.17139	0.14629
HDFC Equity Fund	0.29875	0.10037	0.07527	0.22349	0.19839
HDFC Tax Saver Fund	0.25853	0.10037	0.07527	0.18326	0.15816
HSBC Cash Fund	0.06216	0.10037	0.07527	-0.01311	-0.03821
HSBC Equity Fund	0.17761	0.10037	0.07527	0.10234	0.07724
ICICI Pru Tax Plan	0.27500	0.10037	0.07527	0.19974	0.17464
ICICI Prudential Discovery Fund – Growth	0.34368	0.10037	0.07527	0.26841	0.24331
ING Balanced Fund (D)	0.15392	0.10037	0.07527	0.07866	0.05356
ING Core Equity Fund – Growth	0.17961	0.10037	0.07527	0.10435	0.07925
ING Tax Savings Fund	0.17483	0.10037	0.07527	0.09957	0.07447
JM Balanced Fund - (D)	0.05516	0.10037	0.07527	-0.02010	-0.04520
Kotak 50 Growth	0.18094	0.10037	0.07527	0.10567	0.08058

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Kotak Equity Arbitrage Growth	0.07717	0.10037	0.07527	0.00190	-0.02320
L&T Growth Fund	0.19081	0.10037	0.07527	0.11554	0.09044
LIC Nomura Mf Equity Fund	0.14311	0.10037	0.07527	0.06785	0.04275
LIC Nomura Mf India Vision Fund (D)	0.12295	0.10037	0.07527	0.04769	0.02259
Morgan Stanley Growth Fund	0.17809	0.10037	0.07527	0.10283	0.07773
Principal Index Fund	0.19014	0.10037	0.07527	0.11487	0.08977
Principal Personal Tax Saver Fund	0.08750	0.10037	0.07527	0.01223	-0.01287
Quantum Liquid Fund – Growth	0.07415	0.10037	0.07527	-0.00112	-0.02621
Quantum Long-Term Equity Fund	0.22769	0.10037	0.07527	0.10283	0.12732
Reliance Growth Fund	0.28849	0.10037	0.07527	0.21323	0.18813
Reliance Regular Savings Fund	0.27089	0.10037	0.07527	0.19562	0.17052
Sahara Growth Fund	0.18653	0.10037	0.07527	0.11127	0.08617
Sahara Growth Fund – Div	-0.00377	0.10037	0.07527	-0.07904	-0.10414
SBI Arbitrage Opportunities Fund	0.07508	0.10037	0.07527	-0.00019	-0.02529
SBI Magnum NRI Investment Fund-Flexi Asset (D) Balanced	0.14899	0.10037	0.07527	0.07372	0.04863
SBI One India Fund	0.10606	0.10037	0.07527	0.03079	0.00569

International Research Dynamics of Economics, 2017, 1(1): 8-19

Sundaram Growth Fund	0.22263	0.10037	0.07527	0.14736	0.12226
Sundaram Select Focus	0.21523	0.10037	0.07527	0.13997	0.11487
Tata Pure Equity Fund	0.23666	0.10037	0.07527	0.16139	0.13629
Tata Tax Advantage Fund	0.24386	0.10037	0.07527	0.16859	0.14349
Templeton India TMA	0.07187	0.10037	0.07527	-0.00340	-0.02850
UTI - Growth Retail	0.20554	0.10037	0.07527	0.13027	0.10517
UTI - Opportunities Fund	0.32868	0.10037	0.07527	0.25341	0.22831
Mean Return	**0.18393**	**0.10037**	**0.07527**	**0.10742**	**0.08356**

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Note:

- **Rpt:** Mean Daily Annual Fund Return
- **Rmt:** Mean Daily Annual Market Return
- **Rft:** Risk Free Return

Source: AMC reports, NSE historical data and RBI reports

Table 1.1 The analysis of the sample fund performance from 2007 to 2011 reveals that 39 out of 40 schemes generated positive returns, with an average return of 18.39%. Returns ranged from -0.37% to 34.36%, with the Sahara Growth Fund being the only scheme to report a negative return of -0.37% during this period.

Notably, 20 funds outperformed the average return of 18.39%, including schemes such as Baroda Pioneer Growth, Birla Sun Life Frontline Equity, Fidelity Equity Fund, HDFC Equity Fund, ICICI Prudential Discovery Fund–Growth, Reliance Growth Fund, Sundaram Select Focus, and UTI-Opportunities Fund, among others. These top-performing funds demonstrated strong growth, significantly contributing to the overall positive trend observed in the sample.

The data indicates that the average return of 18.39% for the sample fund schemes during the 2007–2011 period significantly exceeded the average market return of 10.03%. Among the 40 sample schemes, 32 (80%) outperformed the market average, while 8 schemes (20%)—including HSBC Cash Fund, JM Balanced Fund-(D), Kotak Equity Arbitrage Growth, Principal Personal Tax Saver Fund, Quantum Liquid Fund–Growth, Sahara Growth Fund–Div, SBI Arbitrage Opportunities Fund, and Templeton India TMA—delivered returns below the market average.

When compared to the risk-free return of 7.527%, six funds (15% of the sample), such as HSBC Cash Fund, JM Balanced Fund-(D), and Quantum Liquid Fund–Growth, underperformed, reporting mean returns lower than the risk-free rate. Two additional funds, Principal Personal Tax Saver Fund and Kotak Equity Arbitrage Growth, slightly surpassed the risk-free return but showed only marginal excess returns, reflecting weak performance.

Conversely, 31 funds (77.5% of the sample) delivered superior performance by generating excess returns ranging from 4.768% to 26.841% above the risk-free rate. Most of these funds achieved substantial or significant excess returns, indicating their strong performance during the period. Overall, the analysis concludes that a large majority of the sample funds demonstrated robust results, outperforming both the market and risk-free benchmarks.

Excess return alone does not fully indicate fund performance, as it primarily reflects the risk premium offered to investors for taking on systematic risk. To assess whether this premium aligns with the risk exposure, it is necessary to compare the mean fund return and the mean market return along with their respective standard deviations. For this purpose, **abnormal excess return** (the difference between the mean daily annual fund return and the daily annual mean market return, Rpt−RmtR_{pt} - R_{mt}Rpt−Rmt) was calculated. Positive abnormal excess returns signal better-than-average fund performance.

The analysis shows that the sample schemes reported an average return of 18.393%, significantly higher than the mean market return of 10.037%, indicating superior overall performance. Specifically, 32 funds (80% of the sample) delivered positive abnormal excess returns exceeding the market average. These returns ranged from 2.259% to 24.331%.

On the other hand, 8 funds, including HSBC Cash Fund, JM Balanced Fund-(D), and Quantum Liquid Fund–Growth, reported negative abnormal excess returns, ranging from -1.287% to -10.414%. These underperforming funds represent 20% of the sample.

Assessing fund performance based solely on abnormal excess returns can be misleading, as returns are inherently linked to risk levels. Since funds have varying risk profiles, while the market portfolio's risk (Beta) is fixed at 1, a better approach is to evaluate performance using risk-adjusted returns or by comparing the standard deviations of the funds with the market.

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The analysis shows that the average standard deviation of the sample funds during the study period was 0.01419, which is lower than the market portfolio's standard deviation of 0.02016. This demonstrates that the sample funds subjected investors to less risk than the market average. Consequently, the funds offered competitive returns with reduced risk, reflecting effective risk management.

Scheme- all sample schemes have a standard deviation lower than the market portfolio, indicating less risk. However, the Sahara Growth Fund-Dividend not only exhibits a higher standard deviation (0.03543) compared to the market portfolio but also reports a negative return of -0.0377%. This suggests an aggressive risk approach by its fund manager, which led to poor performance.

In contrast, five schemes with returns below the risk-free rate—HSBC Cash Fund, Quantum Liquid Fund–Growth, SBI Arbitrage Opportunities Fund, Templeton India TMA, and Kotak Equity Arbitrage Growth—show significantly lower standard deviations than the market portfolio. This reflects a conservative risk strategy, likely at the expense of potential returns.

Overall, the findings emphasize the principle of risk-return trade-off: higher risks can lead to either higher returns or greater losses, while lower risks typically yield modest but stable returns. Managing risk within acceptable limits increases the likelihood of achieving a balanced or normal return.

Table-1.2. Total Risk and Systematic Risk of Sample Funds

Schemes	Portfolio Beta (β)	Portfolio SD (σp)	Market SD (σm)
Baroda Pioneer ELSS	-0.4926	0.0165	0.0202
Baroda Pioneer Growth	-0.5150	0.0172	0.0202
Birla Sun Life Frontline Equity	-0.4870	0.0162	0.0202
Birla Sun Life Top 100 Fund – Growth	-0.4736	0.0158	0.0202
Fidelity Equity Fund	-0.4505	0.0145	0.0202
Franklin India Bluechip Fund	-0.4725	0.0153	0.0202
HDFC Equity Fund	-0.4906	0.0156	0.0202
HDFC Tax Saver Fund	-0.4573	0.0141	0.0202
HSBC Cash Fund	0.0008	0.0003	0.0202
HSBC Equity Fund	-0.4469	0.0147	0.0202
ICICI Pru Tax Plan	-0.4171	0.0142	0.0202
ICICI Prudential Discovery Fund –G	-0.3951	0.0142	0.0202
ING Balanced Fund (D)	-0.3608	0.0119	0.0202
ING Core Equity Fund –Growth	-0.5020	0.0162	0.0202
ING Tax Savings Fund	-0.4542	0.0162	0.0202
JM Balanced Fund - (D)	-0.3946	0.0139	0.0202
Kotak 50 Growth	-0.5166	0.0154	0.0202
Kotak Equity Arbitrage Growth	0.0112	0.0012	0.0202
L&T Growth Fund	-0.5396	0.0177	0.0202
LIC Nomura Mf Equity Fund	-0.5422	0.0183	0.0202
LIC Nomura Mf India Vision Fund (D)	-0.4979	0.0174	0.0202
Morgan Stanley Growth Fund	-0.4854	0.0164	0.0202
Principal Index Fund	-0.5536	0.0180	0.0202
Principal Personal Tax Saver Fund	-0.4938	0.0181	0.0202
Quantum Liquid Fund – Growth	0.0004	0.0002	0.0202
Quantum Long-Term Equity Fund	-0.4549	0.0144	0.0202
Reliance Growth Fund	-0.4401	0.0152	0.0202

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International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Reliance Regular Savings Fund	-0.3570	0.0122	0.0202
Sahara Growth Fund	-0.4756	0.0187	0.0202
Sahara Growth Fund – Div	-0.4270	0.0354	0.0202
SBI Arbitrage Opportunities Fund	0.0123	0.0011	0.0202
SBI Magnum NRI Investment Fund- (D)	-0.4296	0.0134	0.0202
SBI One India Fund	-0.4929	0.0149	0.0202
Sundaram Growth Fund	-0.5309	0.0175	0.0202
Sundaram Select Focus	-0.5166	0.0173	0.0202
Tata Pure Equity Fund	-0.4633	0.0154	0.0202
Tata Tax Advantage Fund	-0.4112	0.0140	0.0202
Templeton India TMA	0.0003	0.0002	0.0202
UTI - Growth Retail	-0.3988	0.0135	0.0202
UTI - Opportunities Fund	-0.2045	0.0154	0.0202

Note:

- **β:** Portfolio Beta
- **σp:** Standard Deviation Portfolio
- **σm:** Standard Deviation Market

Source: AMC reports, NSE historical data and RBI reports

Based on the above analysis, it can be confidently concluded that, overall, the sample schemes have provided higher returns than the market, while assuming less risk than the market portfolio during the observed period. The majority of the sample schemes, around 80%, outperformed the market portfolio across various performance metrics, including excess return, abnormal excess return, and risk-adjusted return. However, a small percentage of the funds were found to have underperformed the market portfolio.

Mutual funds operate on two key principles: maximizing returns and diversifying risk. To achieve these goals, fund managers must implement effective investment management strategies. This involves strategically allocating assets across broad categories, identifying undervalued stocks for the portfolio, and accurately timing market movements (market timing skills). Consequently, the performance of fund managers, whether good or poor, is largely influenced by their stock selection expertise and market timing abilities.

Table-1.3. Sharpe Ratio and Tyrenor Ratio of Sample Funds

Schemes	Excess Ret (Rpt – Rft)	Portfolio SD (σp)	Sharpe Ratio	Portfolio Beta (β)	Tyrenor Ratio
Baroda Pioneer ELSS	0.1006	0.0165	6.0970	-0.49261	-0.20422
Baroda Pioneer Growth	0.1588	0.0172	9.2326	-0.51501	-0.30834
Birla Sun Life Frontline Equity	0.1648	0.0162	10.1728	-0.48695	-0.33843
Birla Sun Life Top 100 Fund – Growth	0.1242	0.0158	7.8608	-0.47362	-0.26224
Fidelity Equity Fund	0.1372	0.0145	9.4621	-0.45048	-0.30456
Franklin India Bluechip Fund	0.1714	0.0153	11.2026	-0.47255	-0.36271
HDFC Equity Fund	0.2235	0.0156	14.3269	-0.49064	-0.45553
HDFC Tax Saver Fund	0.1833	0.0141	13.0000	-0.4573	-0.40083
HSBC Cash Fund	-0.0131	0.0003	-43.6667	0.0008	-16.375
HSBC Equity Fund	0.1023	0.0147	6.9592	-0.44685	-0.22894
ICICI Pru Tax Plan	0.1997	0.0142	14.0634	-0.41706	-0.47883
ICICI Prudential Discovery Fund – Growth	0.2684	0.0142	18.9014	-0.39511	-0.6793

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(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

ING Balanced Fund (D)	0.0787	0.0119	6.6134	-0.36079	-0.21813
ING Core Equity Fund – Growth	0.1043	0.0162	6.4383	-0.502	-0.20777
ING Tax Savings Fund	0.0996	0.0162	6.1481	-0.4542	-0.21929
JM Balanced Fund - (D)	-0.0201	0.0139	-1.4460	-0.39465	0.050931
Kotak 50 Growth	0.1057	0.0154	6.8636	-0.51663	-0.2046
Kotak Equity Arbitrage Growth	0.0019	0.0012	1.5833	0.00001	190
L&T Growth Fund	0.1155	0.0177	6.5254	-0.53963	-0.21404
LIC Nomura Mf Equity Fund	0.0678	0.0183	3.7049	-0.54219	-0.12505
LIC Nomura Mf India Vision Fund (D)	0.0477	0.0174	2.7414	-0.49786	-0.09581
Morgan Stanley Growth Fund	0.1028	0.0164	6.2683	-0.48543	-0.21177
Principal Index Fund	0.1149	0.018	6.3833	-0.55356	-0.20757
Principal Personal Tax Saver Fund	0.0122	0.0181	0.6740	-0.00027	-45.1852
Quantum Liquid Fund – Growth	-0.0011	0.0002	-5.5000	0.00039	-2.82051
Quantum Long-Term Equity Fund	0.1524	0.0144	10.5833	-0.4549	-0.33502
Reliance Growth Fund	0.2132	0.0152	14.0263	-0.44011	-0.48442
Reliance Regular Savings Fund	0.1956	0.0122	16.0328	-0.35704	-0.54784
Sahara Growth Fund	0.1113	0.0187	5.9519	-0.47562	-0.23401
Sahara Growth Fund – Div	-0.079	0.0354	-2.2316	-0.427	0.185012
SBI Arbitrage Opportunities Fund	-0.0002	0.0011	-0.1818	0.01229	-0.01627
SBI Magnum NRI Investment Fund-Flexi Asset (D) Balanced	0.0737	0.0134	5.5000	-0.42955	-0.17157
SBI One India Fund	0.0308	0.0149	2.0671	-0.49286	-0.06249
Sundaram Growth Fund	0.1474	0.0175	8.4229	-0.53085	-0.27767
Sundaram Select Focus	0.14	0.0173	8.0925	-0.51664	-0.27098
Tata Pure Equity Fund	0.1614	0.0154	10.4805	-0.46333	-0.34835
Tata Tax Advantage Fund	0.1686	0.014	12.0429	-0.41117	-0.41005
Templeton India TMA	-0.0034	0.0002	-17.000	0.00034	-10
UTI - Growth Retail	0.1303	0.0135	9.6519	-0.39876	-0.32676
UTI - Opportunities Fund	0.2534	0.0154	16.4545	-0.2045	-1.23912

Note:

- **Rpt:** Mean Daily Annual Fund Return
- **Rft :** Risk Free Return
- **σp:** Standard Deviation Portfolio
- **β:** Portfolio Beta

Source: AMC reports, NSE historical data and RBI reports

IV. CONCLUSION

The Indian mutual fund industry has seen remarkable growth in various aspects, including the number of fund houses, schemes, mobilized funds, and assets under management (AUM). Initially dominated by UTI Mutual Fund, the sector now includes a mix of public, private, and foreign fund houses. The number of fund houses grew from 31 in 1997-98 to

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44 by 2013, and the number of schemes expanded from 235 to 1,131 during this period, reflecting a compound annual growth rate (CAGR) of 14%.

In the 1990s, public sector funds held the majority share, but post-1999, private sector funds became the dominant force, mobilizing 90.59% of the industry's funds by 2003-04. Money Market Mutual Funds (MMMFs) also gained prominence, surpassing income schemes that had previously been the market leader.

AUMs grew significantly, from ₹68,984 crores in 1997-98 to ₹5,92,250 crores in 2010-11, with a CAGR of 20%. The private sector's share of AUMs grew from 5.93% to 77.9%, emphasizing its dominance. By 2013, liquid and money market funds, along with gilt funds, made up 73% of AUMs, while equity-oriented funds accounted for just 1%. Gold ETFs, though still small in size, showed rapid growth.

Investor composition reveals that corporate investors contribute nearly 50% of AUMs, followed by high-net-worth individuals, while retail investors account for only 20%. This indicates limited penetration among retail investors, due to factors such as low financial literacy, cultural preferences, and limited outreach outside major cities.

Despite the significant progress, the industry still lags behind developed and emerging economies in terms of penetration and performance. Challenges such as low retail participation, lack of awareness, insufficient product differentiation, and shifting industry dynamics remain. To fully realize its potential, the industry must focus on expanding its reach in Tier II and Tier III cities, promoting investor education, offering better risk-adjusted returns, and ensuring cost efficiency. These steps will help mobilize more household savings and direct them towards more profitable investment opportunities.

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