Journal of Information Systems Engineering and Management
2025, 10(30s)
e-ISSN: 2468-4376
https://www.jisem-journal.com/

Research Article

Analysis of the Correlation between Rankings & Performance of Indian Mutual Funds: An Empirical Study

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ARTICLE INFO

Received: 24 Dec 2024

Revised: 12 Feb 2025

Accepted: 26 Feb 2025

ABSTRACT

The Indian mutual fund industry has witnessed substantial growth, especially following the 2017 "Mutual Funds Sahi Hai" campaign by the Association of Mutual Funds in India (AMFI). Investors often rely on past Net Asset Value (NAV), fund categories, prominent fund managers, and rankings to make investment decisions. However, rankings alone may not rigorously determine a fund's future performance. This study explores the correlation between mutual fund rankings and their actual performance, emphasizing macro and micro forecasting techniques employed by fund managers.

The research utilizes the Treynor-Mazuy (1966) and Henriksson-Merton (1981) models to evaluate market timing and stock selection abilities of Indian mutual fund managers. Additionally, tracking error and the information ratio are analyzed to assess fund performance consistency. Findings indicate that while mutual funds in India consistently generate excess returns relative to benchmarks, fund managers exhibit weak market timing abilities but strong stock selection skills. Moreover, CMFR rankings do not necessarily correlate with higher returns, as funds with lower rankings often outperform those ranked higher.

This study highlights the need for a multi-metric evaluation approach for investment decisions, incorporating models like Treynor-Mazuy and Henriksson-Merton. It underscores that mutual fund rankings alone are not sufficient indicators of superior performance and that investors should consider additional performance metrics to make informed investment choices.

Keywords: Mutual Funds, Fund Rankings, Market Timing, Stock Selection, Treynor-Mazuy Model, Henriksson-Merton Model, Tracking Error, Information Ratio, Performance Evaluation, Indian Mutual Fund Industry

INTRODUCTION

In March of 2017, the Association of Mutual funds in India (AMFI) launched a campaign famously known as *'Mutual funds sahi hai'* or 'Mutual funds are the right choice' which was used to promote & educate Indian investors to invest in mutual funds.

In simpleton, a mutual fund pools the funds of numerous investors which is managed by professionals who dabble in the capital markets and generate returns at varying risk depending on the portfolio managed by the fund. Investors select a mutual fund by analysing the NAV in the past, selecting a particular category or sector to invest in, a fund managed by a prominent fund manager and most importantly a mutual fund with a high ranking. While they may aid in making the right decision, they aren't rigorous.

A strong financial market is essential to developing economies. With an objective of encouraging saving and investment and participation in income, profit and gains arising from transacting, holding and disposing in securities the Government of India and Reserve Bank of India took the initiative in 1963 to establish the Unit Trust of India (UTI). According to the AMFI, the mutual fund industry grew significantly and it can be divided into five distinct phases:

1. **The First Phase – 1964-1987**
   With the inception of UTI formed in 1963 regulated by the RBI, later regulated by the Indian Development Bank of India (IDBI). At the end of 1988, UTI had ₹ 6700 crores of Assets Under Management (AUM)
2. **Second Phase – 1987-1993**
   1987 was the year marked by the entry of the public sector mutual funds set up but the LIC[1] and GIC[2]. Funds such as SBI Mutual Fund, CanBank Mutual Fund, Punjab National Bank Mutual Fund were some of the first non-UTI mutual funds established during this period. The mutual fund industry had assets under management of ₹ 47,004 crores.
3. **Third Phase – 1993-2003**
   India's dwindling forex led to the Liberalization, Privatization & Globalization reforms which opened the economy up to the world for trade and commerce. Indian securities gained a greater importance which led to the establishment of the SEBI in 1992 to protect the interest of the investors and promote development. The first private mutual fund was registered in 1993 in a merger with Erstwhile Kothari Pioneer & Franklin Tempelton Mutual Fund. This was a new era for investors who had a wider choice of products to invest in. The initial SEBI Mutual fund regulations were replaced with SEBI (Mutual Fund) Regulations. At the end of January 2003, 33 mutual funds had an AUM of ₹ 1,21,805 crores of which ₹ 44,541 crores were of UTI's alone.
4. **Fourth Phase – 2003-2014**
   In the wake of the 2008 crisis, securities markets world-wide tanked such was the case in India too when most investors lost faith in mutual funds. The abolition of the entry load combined with the 2009 melt down had an adverse impact on the Indian mutual fund industry which struggled over the over two years and witnessed sluggish growth between 2010 to 2013.
5. **Fifth Phase – 2014-Present Day**
   To overcome the financial distress caused by the 2008 financial crisis SEBI introduced several progressive measures in September 2012 to increase the mutual fund penetration. The industry witnessed steady inflows and increased AUM by crossing ₹ 10 Trillion on 31st May 2014 over the years it has grown to ₹ 66.70 Trillion as on August 31, 2024.

A close analysis of mutual is integral to making the right decisions for investors it can be done so by evaluating a fund based on the macro and micro decisions made by a manager and measuring it impact on the performance; the following are the two crucial aspects of evaluation:

Macro forecasting

The act of changing investments to or from various asset classes based on predictions about bullish and bearish market patterns is known as macro forecasting. It is an approach used by traders and investors alike and it includes methods like fundamental, technical, quantitative and economic data. While some academia, investors, financial professionals and investors debate on its ineffectiveness some debate on its effectiveness in aiding in investing. While many investors dabble in timing the markets, doing so consistently is harder said than done. Market timing aids investors with economic indicators, trends & patterns, global events and market sentiment for long term investment regardless of short-term volatility. In essence it is used to evaluate a fund manager decision by assessing the direction of the market correctly by predicting economic trends and positioning portfolios by levering or de-levering on bullish or bearish forecast respectively.

Micro forecasting

[1] Life Insurance Company
[2] General Insurance Corporation of India

Micro forecasting predicts the future performance of a particular company or sector as compared to the economy as a whole by focusing on specific elements. It is used to assess the managers stock selection skills, simply put assessing whether a stock was bought at its low or at its peak. Treynor-Mazuy (1966) and Henriksson Merton (1981) are two distinct traditional models developed for testing market timing and stock selection abilities of fund managers. While touted for forecasting both macro and micro trends, traditional models lack macro forecasting capabilities.

LITERATURE REVIEW

A study of market timing of fund managers was conducted by Treynor & Mazuy (1966) using a self-developed a quadratic regression model with "Squared Market Return" as the key variable to evaluate the mutual. The study found only 1 out of 57 funds with significant timing ability. Henriksson (1984) contrasts with the Treynor & Mazuy, as it takes a two-factor model approach that distinguishes between stock-picking ability (selectivity) and market timing ability. This study found only 3 funds out of 116 with significant positive market timing ability. Bollen & Busse (2001) used regression analysis on daily data to assess whether mutual fund returns exhibit signs of market timing ability by comparing fund performance against market benchmarks by using the beta coefficient. The study found that 34.2 percent of the funds exhibited a significantly more timing ability. Tripathy (2006) evaluates the selection ability of 31 Indian equity linked savings schemes during the period December 1999 to January 2004 using the Treynor and Mazuy and Henriksson and Merton Models. The results do not favour the selection of fund managers. Grinblatt & Titman (1989) studied 274 funds during 1974 to 1984 and concluded that superior performance existed among growth funds and those growth funds with the smallest NAVs. A. Gupta (2000) used both the Treynor and Mazuy and Henriksson and Merton models to test 73 Indian mutual funds during 1994-1999 and found little evidence of meaningful market timing ability. Madugula (1996) evaluated the performance of 62 Indian mutual funds and found no selectivity ability of fund managers. Rao et al. (2017) found that Chinese equity funds actually produce market-beating returns and that fund managers have the ability to time the market positively. They also found that Chinese equity funds did not show the sustained performance seen in developed markets. The funds with the best (worst) performance of the last year no longer offer higher (lower) returns the following year. In addition, they also observed a positive relationship between fund size, age and expense ratio with fund performance. The overall results suggest that emerging market equity funds outperform developed market funds. Guha Deb et al. (2007) uses the Treynor-Mazuy (1966) model, Henriksson-Merton (1981) model and Jensen's Alpha to evaluate stock selection ability and the index manager's skill in selecting undervalued stocks and predicting market movements. The study found that most funds underperformed in timing skills and only a small portion of the funds demonstrated statistically significant timing skills, which aligns with the global research that generally suggests market timing is a difficult skill to master consistently. However, in terms of stock selection, the study found that several Indian mutual funds showed a positive alpha, indicating that managers have been successful in identifying undervalued stocks. It was concluded that stock selection, rather than market timing, was the primary driver of fund performance in the Indian context.

Thus, it can be said that mutual funds have insignificant market timing ability all over the world. This study is empirical in nature and attempts to find the relationship between market timing & stock selection ability of various Indian mutual fund managers during the period 2019 to 2024 and their CRISIL rankings based on statistical techniques, risk free rates and market return.

METHODOLOGY

Mutual funds ease the process of investment in capital markets by directing the capital of investors to fund houses which specialise in investing, holding and disposing securities when needed. A quick glance at a mutual fund's past performance, NAVs, managers, etc. is often what a rational investor does, while often times they rely on fund rating agencies and they do so blindly assuming agencies know more. The study attempts to correlate the results from various financial and empirical models with mutual fund rankings. This study sheds light on the effectiveness of mutual fund rankings when compared to financial models and assessments used to assess a fund and its benchmark in investing in the ideal fund.

The T-M [3]& H-M[4] model in essence analyse the magnitude of a fund managers macro and micro forecasting ability using publicly available information. In theory a fund which performs well would be able to time both the market and

[3] Treynor-Mazuy (1966)
[4] Henriksson Merton (1981)

a stock efficiently. According to a survey conducted and published by the Deccan Herald (2020), investors look at investing in mutual funds from two lenses namely, return and rating. A significant number of investors rely on rating. Thus, we can make the assumption that the higher the ranking so should the micro & macro forecasting of fund managers and vice versa and this is the relation we aim to establish in this study.

This study comprises of the daily NAV closing for a span of 5 years for 20 direct linked growth mutual funds scattered across 5 sectors, i.e., large cap, mid cap, small cap, flexi cap & sectoral cap each consisting of 4 funds, spread evenly across high & low rated funds made available through Association of Mutual Funds in India (AMFI). The BSE 500 has been used in this study as a market benchmark and the returns on these indices have been used as the market return (Rm) and the return on government bonds for the past 5 years have been used as the risk-free return (Rf)

From the data, the following can be established:

- Excess returns & returns of a fund
- Jensen's Alpha
- T-M & H-M model
- Market timing & stock selection significance test based on T-Statistic & P-Value
- Tracking error
- Information ratio

Objectives of the study:

- Evaluate the mutual fund managers micro forecasting ability using Jensen's Alpha.
- Evaluate the mutual fund managers micro forecasting ability using the T-M & H-M model
- Checking the consistency of the fund managers timing performance.

UNDERSTANDING MUTUAL FUND RANKING

Mutual fund rankings aid investors in making the right investment decision in based on performances of a fund during a particular period using evaluation methods based on performance, returns & volatility.

The dawn of the early 2000's saw the budding growth in the private mutual fund industry. To facilitate the ease of investing for investors in the Indian market CRISL, launched the CRISL Mutual Fund Ranking (CMFR) in the year 2000 to provide ranking services which scope encompassed various asset classes such as equity, debt & hybrid.

Based on this mutuals funds are allotted ranks ranging from 1-5, 1 being a very good performance and 5 being the lowest.

Criteria for CMFR

- CRISL ranks open ended mutual fund and **NOT** ETFs, interval funds and close ended funds.
- NAVs for funds are calculated over a span of 1-3 years varying on the tenure of the fund.
- The asset under management (AUM) threshold fund should be:
    - ₹ 10 crores, for equity funds.
    - ₹ 50 crores, for debt and hybrid funds.
    - ₹ 250 crores, for debt funds (which include money market, ultra-short-term, and liquid funds) with maturities of less than a year.

Parameters of ranking

CRISL assesses a fund based on the following parameters, namely:

- **Consistent returns**

A fund with high returns is important but having consistent returns play an important role in evaluating a fund.

- **Diversification analysis**

Evaluation a fund's portfolio diversification is necessary to rating as over diversification can lead to a fund ending up with similar stocks which defeats the purpose of diversification and increases the concentration risk.

- **Quality of assets**

Quality of assets is essential in assessing debt funds where the credit worthiness of the issuer is integral to timely debt repayments.

- **Tracking error**

It is used to measure if a fund has outperformed or underperformed the benchmark, a low tracking error indicates a fund is precisely tracking a benchmark

TRADITIONAL MODELS

Several models have been used in this study to the market timing and stock selection ability of mutual funds managers, namely, the T-M (1966) & H-M (1981) models.

ANALYSIS OF JENSEN'S ALPHA

Jensen's Alpha is a performance metric used in finance to evaluate the performance of an investment portfolio relative to a benchmark index. It measures the excess return generated by the portfolio over the expected return, which is predicted by the Capital Asset Pricing Model (CAPM).

In simpler terms, it tells you how much an investment has outperformed or underperformed compared to its expected return, given its level of risk. A positive Jensen's Alpha indicates that the portfolio has outperformed the benchmark, while a negative value suggests underperformance.

Jensen's Alpha Equation:

$$\alpha = Ri - [Rf + \beta i \times (Rm - Rf)]$$

Where,

- α: Jensen's Alpha
- Ri: The portfolio's return
- Rf: The risk-free rate of return
- βi: The portfolio's beta, which measures its volatility relative to the market
- Rf: The market's return

Jensen's Alpha is calculated by taking the actual return of the portfolio and subtracting the expected return, this is b ased on the market return and adjusted for the portfolio's risk.

To summarize, Jensen's alpha evaluates the fund managers stock selection ability, if positive the fund managers stock selection ability is good and vice versa.

Jensen's Alpha			
Market Cap	Scheme	Beta	Alpha
Large Cap	Nippon	0.013059	0.000549
	JM	0.002197	0.00054
	Axis Bluechip	0.009722	0.000546
	Mirae Asset	0.009294	0.000546
Mid Cap	Motilal Oswal	0.029427	0.000562
	Mahindra Manulife	0.027798	0.000561
	DSP	0.011624	0.000548
	PGIM	0.022354	0.000556
Small Cap	HSBC	0.026539	0.00056
	Franklin	0.010938	0.000547
	DSP	0.021661	0.000556
	Canara Robeco	0.021198	0.000555
Flexi Cap	JM	0.015948	0.000551

	HDFC	0.007765	0.000545
	PGIM	0.019861	0.000554
	UTI	0.007459	0.000544
Sectoral Cap	Sundaram	0.006816	0.000544
	BOI	0.021374	0.000556
	HDFC	0.008592	0.000545
	ICICI Prudential	0.006518	0.000544

Table 1: Stock selection ability of sample fund managers using Jensen's alpha

	Jensen's Alpha		
Market Cap	*Scheme*	*Beta*	*Alpha*
Large Cap	*Nippon*	*0.013059*	*0.000549*
	JM	*0.002197*	*0.00054*
	Axis Bluechip	*0.009722*	*0.000546*
	Mirae Asset	*0.009294*	*0.000546*
Mid Cap	*Motilal Oswal*	*0.029427*	*0.000562*
	Mahindra Manulife	*0.027798*	*0.000561*
	DSP	*0.011624*	*0.000548*
	PGIM	*0.022354*	*0.000556*
Small Cap	*HSBC*	*0.026539*	*0.00056*
	Franklin	*0.010938*	*0.000547*
	DSP	*0.021661*	*0.000556*
	Canara Robeco	*0.021198*	*0.000555*
Flexi Cap	*JM*	*0.015948*	*0.000551*
	HDFC	*0.007765*	*0.000545*
	PGIM	*0.019861*	*0.000554*
	UTI	*0.007459*	*0.000544*
Sectoral Cap	*Sundaram*	*0.006816*	*0.000544*
	BOI	*0.021374*	*0.000556*
	HDFC	*0.008592*	*0.000545*
	ICICI Prudential	*0.006518*	*0.000544*

A positive alpha indicates good stock selection ability by fund managers, from the data presented in Table 1. All mutual funds, good & bad included clearly show a positive alpha over a period of 5 years. Mid cap & small cap funds having funds have the highest alphas as stated in the Figure 1. Furthermore, there is no correlation between high ranked funds and alphas.

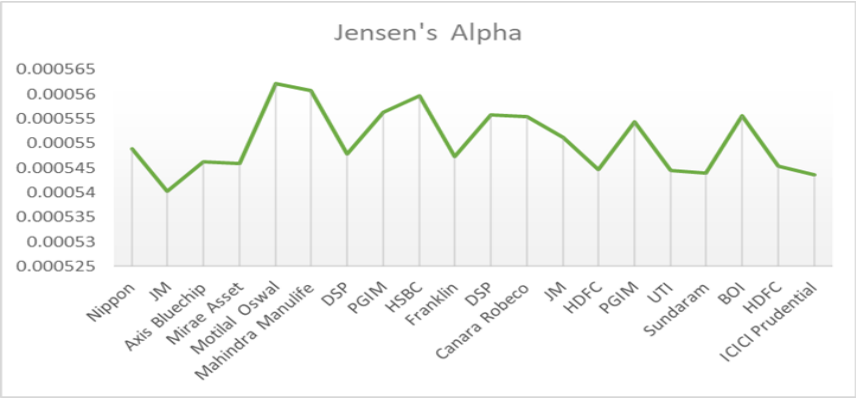

Figure 1: Stock selection ability of sample fund managers using Jensen's alpha

While Jensen's alpha valuable in evaluating fund managers stock selection ability, it lacks in scrutinising the significance of the results, to better understand the significance we use the T-M (1966) & H-M (1981).

ANALYSIS OF TREYNOR MAZUY & HENRIKSSON-MERTON MODEL

The T-M & H-M model are an investment performance metrics that extends the Capital Asset Pricing Model (CAPM) by adding a quadratic term to capture the convexity in returns. Both models evaluate the market timing ability of portfolio managers, determining whether they can predict market movements and adjust their portfolio exposure accordingly. The inclusion of the quadratic term allows the model to assess the manager's ability to navigate varying market conditions effectively, making it a valuable tool for analysing investment performance beyond stock-picking skills.

In essence, while both models aim to assess the market timing ability, the T-M model does it through a quadratic term, while the H-M model uses a more direct approach with a dummy variable to capture changes in beta. This leads to slightly different interpretations and insights about a manager's market timing skills.

they measure the fund managers decisions based on three factors, namely:

- Gamma: It is the value of market timing that can contained by levering or de-levering the portfolio depending on the bullish or bearish forecast respectively
- Beta: It is a measure of market volatility or market risk
- Alpha: It is associated with the fund managers stock picking ability

Treynor Mazuy (1966) model:

$$Ri = Rf + \beta(Rm - Rf) + \gamma(Rm - Rf)2 + \epsilon$$

Where,

- Ri: Portfolio return
- Rf: Risk-free rate of return (usually from government bonds)
- β: Measure of the portfolio's sensitivity to market movements
- Rm: Market return
- γ: Coefficient indicating the manager's market timing ability. A positive γ signifies good market timing, whil e a negative γ signifies poor timing
- ϵ: Error term, representing the random deviation of the actual returns from the model's predictions

Henriksson Merton Model (1981):

$$Ri = Rf + \beta(Rm - Rf) + \gamma D(Rm - Rf) + \epsilon$$

Where,

- Ri: Portfolio return
- Rf: Risk-free rate of return
- β: Portfolio's sensitivity to market movements
- Rm: Market return
- γ: Coefficient indicating market timing ability. Positive γ suggests good timing, while negative γ indicates p oor timing
- D: Dummy variable, which equals 1 if the market return exceeds the risk-free rate, and 0 otherwise
- ϵ: Error term, representing random deviations

The funds in this study which have no significant market timing ability. But unlike Jensen's alpha which stated funds with a positive alpha correctly forecast stock movements, T-M (1966) & H-M (1981) further scrutinises the alphas by testing for its significance using T-stat & two tailed distribution.

How it works?

T-Statistic: Measures the difference between the sample mean and the population mean in units of standard error. It helps determine how much the sample mean deviates from the hypothesized population mean.

Relationship:

A small t-stat (typically ≤ 2) in absolute terms indicates weak evidence against the null hypothesis, so you fail to reject it.

A large t-stat (typically > 2) in absolute terms indicates strong evidence against the null hypothesis, so you reject it.

P-Value: Represents the probability of obtaining a test statistic as extreme as the one observed, assuming the null hypothesis is true. It helps gauge the significance of the results.

Relationship:

A small p-value (typically ≤ 0.05) indicates strong evidence against the null hypothesis, so you reject it.

A large p-value (typically > 0.05) indicates weak evidence against the null hypothesis, so you fail to reject it.

		T-M			**H-M**		
Market Cap	Scheme	α	T - stat	P - value	α	T - stat	P - value
Large Cap	Nippon	0.07%	1.97	0.04946	0.08%	1.74	0.08152
	JM	0.06%	2.58	0.00985	0.07%	2.35	0.01888
	Axis Blue-chip	0.05%	1.82	0.06900	0.06%	1.61	0.10850
	Mirae Asset	0.06%	1.83	0.06681	0.07%	1.68	0.09358
Mid Cap	Motilal Oswal	0.11%	3.38	0.00075	0.15%	3.34	0.00084
	Mahindra Manulife	0.10%	3.24	0.00121	0.13%	3.15	0.00165
	DSP	0.07%	2.43	0.01521	0.09%	2.27	0.02312
	PGIM	0.10%	3.14	0.00170	0.13%	3.14	0.00175
Small Cap	HSBC	0.10%	3.05	0.00234	0.13%	3.11	0.00189
	Franklin	0.09%	2.85	0.00446	0.11%	2.63	0.00871
	DSP	0.10%	3.14	0.00173	0.12%	3.03	0.00248
	Canara Robeco	0.11%	3.37	0.00078	0.14%	3.29	0.00101
Flexi Cap	JM	0.09%	2.76	0.00587	0.11%	2.57	0.01014
	HDFC	0.07%	2.24	0.02548	0.08%	1.93	0.05439
	PGIM	0.08%	2.53	0.01148	0.10%	2.43	0.01528
	UTI	0.06%	2.06	0.03922	0.08%	2.18	0.02970
Sectoral Cap	Sundaram	0.06%	2.12	0.03399	0.07%	1.86	0.06374
	BOI	0.10%	3.09	0.00202	0.12%	2.88	0.00402
	HDFC	0.08%	2.03	0.04265	0.08%	1.61	0.10672
	ICICI Prudential	0.07%	2.47	0.01377	0.08%	2.07	0.03901

Table 2: Significance of fund managers stock selection ability

While the majority of fund managers have positive alphas correlating with Jensen's alpha, but after testing each scheme based on the funds rank, we get the following results.

Low Ranked	**T-M**		**HM**		**High Ranked**	**T-M**		**H-M**	
Schemes	T - stat	P - Value	T - stat	P - Value	Schemes	T - stat	P - Value	T - stat	P - Value
Nippon	0	1	0	0	**Axis**	0	0	0	0
JM	1	1	1	1	**Mirae**	0	0	0	0
Motilal Oswal	1	1	1	1	**DSP**	1	1	1	1
Mahindra Manulife	1	1	1	1	**PGIM**	1	1	1	1
HSBC	1	1	1	1	**DSP**	1	1	1	1
Franklin	1	1	1	1	**Canara**	1	1	1	1
JM	1	1	1	1	**PGIM**	1	1	1	1
HDFC	1	1	0	0	**UTI**	1	1	1	1
Sundaram	1	1	0	0	**HDFC**	1	1	0	0
BOI	1	1	1	1	**ICICI Pru**	1	1	1	1
Insignificant	1	0	3	3	**Insignificant**	2	2	3	3
Significant	9	10	7	7	**Significant**	8	8	7	7

Table 3: Stock selection significance of good & bad fund managers

Table 3. shows the absence of any relationship between ranking & alphas signifying that fund managers with low ranking have positive alphas and vice versa.

While no fund in this study has generated significant market timing, the majority of funds have positive alphas irrespective of their ranking (CRISL Mutual Fund Ranking) which would mean fund managers stock selection ability is directly related to the returns a fund generates as seen in Figure 2. and it thus can be said that there is a positive correlation between a fund managers stock selection ability and a fund's annual return.

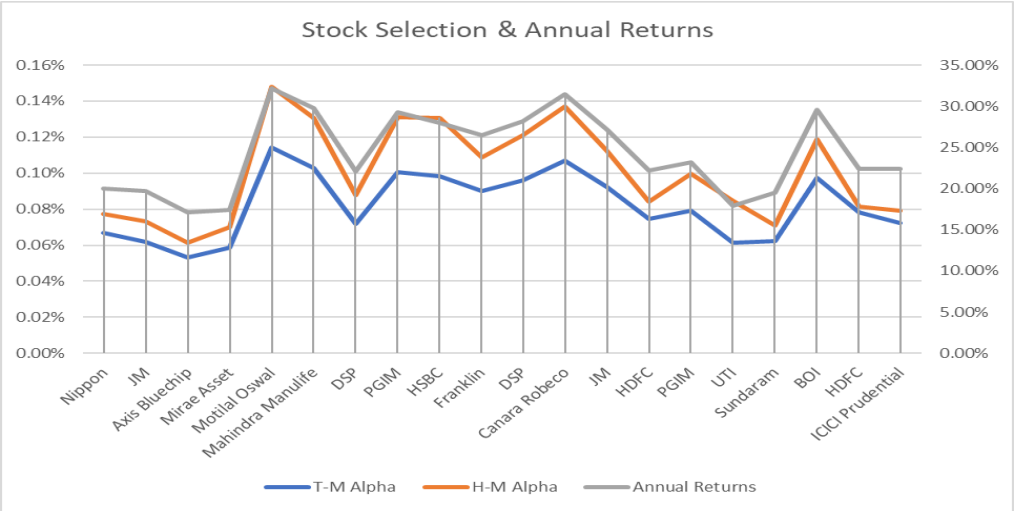

Figure 2: Relation between stock selection ability and annual returns

ANALYSIS OF THE TRACKING ERROR

According to Association of Mutual Funds in India (AMFI), tracking error is the difference between the funds return and the index or benchmark that it was aimed to beat. A higher tracking error implies a higher deviation from the index/benchmark.

A study conducted by Maheen. M (2018) evaluated the performance of SBI mutual funds using tracking error. The study found that that the majority of SBI mutual funds demonstrate low to moderate tracking error which concluded that the mutual fund was generally successful in tracking their benchmarks. These funds also provided more consistent returns and less deviation from the benchmark. The study also identified that funds with higher tracking error, reflect higher management discretion, more active strategies, or inefficiencies in portfolio management.

ANALYSIS OF INFORMATION RATIO

The information ratio is often used as an alternative to Sharpe ratio. It is the risk-adjusted returns of an investment portfolio relative to a certain benchmark. It aims to show excess returns relative to the benchmark, as well as the consistency in generating the excess returns. Unlike the Sharpe Ratio, which considers total risk, the Information Ratio focuses on tracking error and how well a fund manager generates returns above a benchmark index.

(Goodwin, n.d.), demonstrated that the Information Ratio provides a more precise measure of a portfolio's relative performance compared to the Sharpe Ratio, especially in active management contexts. (F. Gupta et al., 1999), studied 6 asset class calculate the Information Ratio across different time periods to understand how the Information Ratio functions in various market conditions. The study found that the Information Ratio provides more nuanced insights than the Sharpe Ratio in situations where tracking error is a central concern. It also found that that portfolios with a high Information Ratio demonstrated a manager's ability to consistently generate excess returns relative to the benchmark while keeping the volatility of those excess returns low.

$$Information\ Ratio = \frac{(R_p - R_b)}{\sigma_{(R_p - R_b)}}$$

Where,

Rp: Portfolio return for period

Rb: Return on fund used as benchmark

σ(Rp-Rb): Standard deviation of the difference between the portfolio and the benchmark

CONCLUSION

Rank	Schemes	CRISL Ranking	Annual Returns	Outperformance	Tracking Error	Information Ratio
1	**Motilal Oswal**	★★★★★	32.12%	48%	26%	1.80
2	**Canara Robeco**	★★	31.42%	47%	26%	1.82
3	**Mahindra Manulife**	★★★★★	29.73%	45%	26%	1.77
4	**BOI**	★★★★★	29.57%	45%	26%	1.76
5	**PGIM**	★	29.30%	45%	26%	1.74
6	**DSP**	★	28.13%	44%	25%	1.73
7	**HSBC**	★★★★	27.98%	44%	26%	1.69
8	**JM**	★★★★★	27.18%	43%	26%	1.62
9	**Franklin**	★★★★	26.45%	42%	26%	1.63
10	**PGIM**	★	23.15%	39%	26%	1.51
11	**ICICI Prudential**	★	22.42%	38%	25%	1.52
12	**HDFC**	★	22.35%	38%	29%	1.32
13	**HDFC**	★★★★	22.15%	38%	27%	1.42
14	**DSP**	★	22.09%	38%	25%	1.51

15	**Nippon**	★★★★★	19.97%	36%	27%	1.33
16	**JM**	★★★★★	19.74%	35%	23%	1.53
17	**Sundaram**	★★★★★	19.54%	35%	25%	1.41
18	**UTI**	★	17.91%	33%	25%	1.33
19	**Mirae Asset**	★	17.39%	33%	26%	1.27
20	**Axis Bluechip**	★	17.09%	33%	25%	1.31

Table 4: Ranking of funds

From this study we can draw the following conclusions:

- All the funds have outperformed the market regardless of their rank while providing a significant information ratio and a low tracking error indicating that volatility in outperformance is constant.
- Indian mutual fund managers have very little evidence of market timing ability but on contrary the majority of funds have significant stock selection abilities irrespective of their rankings.
- Market timing ability of managers remains negative or insignificant because the data being used is public, on the contrary qualified institutional investors have access to information not readily available to the public which can be evaluated using conditional models.
- Rankings by the CMFR aren't an assurance for guaranteed returns, they are merely an evaluation of various quantitative and qualitative factors which aid an investor in making the right investments. From the data above funds with low ranking provide investors with returns that are higher than funds with rankings higher than theirs.
- Finally, we can conclude the CMFR rank of a fund has no relation to the respective managers macro & micro forecasting ability, meaning the models can be more sensitive to short term movements while CMFR give weightage to numerous factors like risk-adjusted returns, asset concentration, and liquidity which leads to the disparity.
- While investing one must look at multiple evaluation metrics such as Treynor-Mazuy (1966) model & Henriksson-Merton (1981) when assessing a fund's performance which other metrics tend overlook fail to critically scrutinise.

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