

PERFORMANCE EVALUATION OF MUTUAL FUND

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ABSTRACT

the aim of conducting this research is to measure the performance of mutual fund through portfolio (risk/return) Sharpe's model and Treynor's model. The data used is daily high of NAVs of top performing mutual funds and Study period is January 2021-december 2022. we started with the sample of growth scheme for computing relative performance index. The research studies the concept of mutual fund and average risk and return of selected companies of mutual funds which is helpful to take better decisions for investment, whether to invest in which fund according to the rankings given by using Sharpe's and Treynor's model.

Keywords: Risk, returns, mutual funds, ranking.

INTRODUCTION

Indians have typically made their investments in real estate, gold, and bank fixed deposits. Mutual funds, on the other hand, have been more popular over the past 20 years as an alternative and perhaps better investment choice since they give investors the chance to earn bigger returns than these more conventional assets do. Additionally, since professional fund managers oversee them, mutual funds provide quick access, liquidity (similar to bank deposits), simpler exits (compared to real estate investments), and remove investment management risk from the individual investor.

A mutual fund is a type of financial instrument that pools money from investors to buy stocks, bonds, gold, and other assets. Companies that are eligible to establish mutual funds establish Asset Management Companies (AMCs) or Fund Houses, which collect investor cash, promote mutual funds, handle investments, and facilitate investor transactions.

Mutual funds are managed by qualified financial experts that specialize in investment analysis and portfolio management, known as fund managers. According to the investment objective of the mutual fund, the money raised from investors is invested by the fund managers in a variety of financial assets, including stocks, bonds, and other assets. The fund managers are responsible for a variety of tasks, including deciding where and when to invest.

Mutual funds can be characterized in a variety of ways, including by their structure, the kind of securities they hold, their investment strategy, etc. Based on the areas in which they invest, mutual funds are categorized by the Securities and Exchange Board of India (SEBI).

it is classified into open ended and close ended on the basis of there structure. The open-ended funds are the one that allow you to invest and redeem investments at any time, i.e., they are perpetual in nature. They are liquid in nature and don't come with a specific investment period and close ended fund have a fixed maturity date. You can only invest at the time of the new fund offer and redemption can only be done on maturity. You cannot purchase the units of a close-ended mutual fund whenever you please and on the basis of asset classes its classified into 3 types that is equity mutual fund, debt mutual fund and hybrid mutual fund.

Equity fund is the one in which you have to invest at least 65% of their assets in stocks of companies listed on the stock exchange. They are more suitable as long-term investments (> 5 years) as stocks can be volatile in the short term. They are not affected by stock market volatility and hence, can offer more stable returns compared to equity mutual funds.

The types of debt mutual funds are differentiated on the basis of the maturity period of the securities they hold and in hybrid mutual fund you have to invest in both equity and debt in varying proportions depending on the investment objective of the fund. Thus, hybrid funds give you diversified exposure to various asset classes.

Hybrid funds are categorized on the basis of their allocation to equity and debt. Depending on their market capitalization, funds are further divided into three subcategories: large cap, mid cap, and small cap.

Large-cap corporations are well-established companies with substantial market shares. Market capitalizations of Rs 20,000 crore or higher define large-cap corporations. These businesses are exceedingly solid and dominate their sector. When there is a recession or any unfortunate event, they handle it well. Additionally, they often have a long history of operation and a solid reputation. Large-cap stocks are a fantastic choice if you wish to invest in a company's stock while assuming less risk. Compared to mid-cap and small-cap stocks, these stocks are less volatile. They are less dangerous because of the decreased volatility.

Companies with a market worth of more than Rs 5,000 crore but less than Rs 20,000 crore are considered mid-cap. Compared to investing in large-cap market corporations, investment in these businesses can be riskier. This is as a result of the higher volatility of mid-caps. On the other hand, over time, mid-cap firms also have the potential to develop into large-cap firms. More investors are drawn to investing in these companies because they have a better growth potential than large-cap equities.

Companies classified as small-caps have a market capitalization of less than Rs 5,000 crore. These businesses have a great deal of room for expansion while being relatively tiny in size. They are dangerous since there is little chance that they will succeed in the long run. As a result, these companies' stocks are volatile by nature. Small-cap companies have a long history of underperformance, but small-cap equities frequently thrive when an economy is coming out of a recession.

PERFORMANCE EVALUATION OF MUTUAL FUNDS

Every investor has a desire to measure his / her investment performance in mutual funds. The index will only show the mirror image of NAVs of mutual funds. It is more important to measure the performance. Practically the researchers follow two well-known models to evaluate the performance of mutual funds.

- Sharpe's Model
- Treynor's Model

The Sharpe's ratio, which was created by Nobel winner economist William Sharpe, measures performance after adjusted for risk. It is computed by deducting the rate of return for an investment from the risk-free rate of return (the yield on a US Treasury Bond), then dividing the result by the investment's standard deviation of return.

$$\text{Sharpe's Model} = \frac{R_i - R_f}{\sigma}$$

The Treynor's ratio calculates the excess returns over the risk-free return at a specific degree of market risk. It brings focus to the earnings made by a mutual fund scheme after accounting for risk. Jack Treynor provided this ratio, expanding William Sharpe's contribution to current portfolio theory. The Treynor Ratio measures how effectively the portfolio's return and risk are balanced by the fund management. It uses beta in the denominator,

unlike Sharpe Ratio. You should be aware that beta measures how sensitive fund returns are to changes in the underlying benchmark.

$$Treynor's Model = \frac{R_i - R_f}{\beta}$$

The Sharpe Ratio gives a summary of the fund's ability to generate returns relative to overall risk. However, the Treynor Ratio only considers how well the portfolio has done against the backdrop of current economic uncertainties.

PROBLEM STATEMENT

In constructing an effective portfolio there has to be diversification of investments. The challenging situation is to select the best combination of investments in portfolio, there are risk takers and risk averse (who are not willing to take risk). The good investment for averse is the mutual fund. Investment in mutual fund leads to perennial regular returns for the specified time period. Choosing the best mutual fund scheme is the tough task for the long-term investors as an attempt is made, we are choosing the combination of mutual fund in the portfolio based on a Sharpe's and Treynor's model with large, mid and small cap funds.

OBJECTIVES

- 1) To know the concept of mutual funds
- 2) To evaluate the performance of mutual fund by using Sharpe's and Treynor's model
- 3) To understand the scope of mutual fund.

SCOPE

The data for measuring the performance was limited to only two years (2021 and 2022) comprising of large cap, Mid cap and small cap funds of each 10 fund schemes were selected for the study.

DATA ANALYSIS AND INTERPRETATION

SHARPE'S SINGLE INDEX MODEL

Table no 1 - LARGE CAP FUNDS						
NO	FUND	RETURNS	R _F	SD	SHARPE'S MODEL	RANKING
1	Canara Rebeca Blue-chip growth	0.050442232	0.011479452	0.979993343	0.039758209	8
2	Kotak Blue-chip Growth	0.056070027	0.011479452	0.991983053	0.044950944	6
3	Mirae Asset Large Cap Dir Gr	0.059521355	0.011479452	0.986764406	0.048686295	4
4	Axis BlueChip Dir Gr	0.029645252	0.011479452	1.002271016	0.018124639	10
5	IDBI India Top 100 Equity Gr	0.06450597	0.011479452	1.045721466	0.05070807	3
6	ICICI prudential blue-chip fund	0.029927378	0.011479452	1.097024579	0.016816329	9
7	Mahindra Manulife Pragati yojana	0.066257377	0.011479452	1.021696194	0.05361469	2
8	JM Value Gr	0.075691637	0.011479452	1.099431836	0.058404881	1
9	Edelweiss Large Cap Dir Gr	0.058109189	0.011479452	0.991229885	0.047042304	5
10	UTI Master Share Gr Dir	0.055200154	0.011479452	1.001307477	0.043663612	7

From the above table it is evident that JM value Gr. Ranked no 1 having Sharpe's performance of 0.058404881 and last rank has Axis BlueChip Reg Gr having Sharpe's performance of 0.018124639, followed by all the funds.

Table no 2 - MID CAP FUNDS						
NO	FUND	RETURNS	R _F	SD	SHARPE'S MODEL	RANKING
1	Quant Midcap Gr	0.118276894	0.011479452	1.243298956	0.085898441	2
2	PGIM India Midcap Opportunities	0.103903457	0.011479452	1.086441157	0.085070419	3
3	axis midcap growth	0.063844377	0.011479452	0.98305023	0.053267802	9
4	SBI Magnum Midcap	0.09488441	0.011479452	1.025828987	0.081304934	4
5	Mirae Asset Arbitrage	0.017992552	0.011479452	0.055796671	0.116729178	10
6	Edelweiss Midcap	0.094732952	0.011479452	1.133526972	0.073446422	7
7	Motilal Oswal Midcap	0.118651212	0.011479452	1.116508801	0.095988281	1
8	Baroda midcap	0.077589093	0.011479452	1.044127294	0.063315691	8
9	Kotak Emerging Equity	0.088872848	0.011479452	0.964529533	0.08023953	5
10	HDFC Mid-Cap Opportunities Dir Gr	0.094389344	0.011479452	1.063821623	0.077935896	6

It is clear from the above table that Motilal Oswal Midcap is ranked first with a Sharpe's performance of 0.095988281, and Mirae Asset Arbitrage is in last place with a Sharpe's performance of 0.116729178, followed by all the funds.

Table no 3 - SMALL CAP FUNDS						
NO	FUND	RETURNS	R _F	SD	SHARPE'S MODEL	RANKING
1	dsp small cap	0.100576564	0.011479452	1.034640159	0.086114105	10
2	quant small cap	0.159128879	0.011479452	1.410636767	0.104668637	5
3	HDFC small cap	0.117616844	0.011479452	1.116295344	0.095080028	9
4	HSBC Small Cap Fund Dir Gr	0.12572209	0.011479452	1.129294858	0.101162807	6
5	BANK OF INDIA Small Cap	0.112386055	0.011479452	1.0520926	0.095910382	8
6	Tata Small Cap Dir Gr	0.13412138	0.011479452	1.021979994	0.120004235	1
7	Nippon India Small Cap	0.131073499	0.011479452	1.125620525	0.106247216	3
8	Kotak -Small Cap	0.107616282	0.011479452	0.908699579	0.105796054	4
9	Edelweiss Small Cap	0.116007373	0.011479452	1.048876882	0.099656998	7
10	Canara Robeco Small Cap	0.130656703	0.011479452	1.089382046	0.109398949	2

According to the aforementioned table, Tata Small Cap Dir Gr is placed first with a Sharpe's performance of 0.120004235, while dsp small cap is last with a Sharpe's performance of 0.086114105, followed by all the funds.

TREYNOR'S MODEL

Table no 4 - LARGE CAP FUNDS						
NO	FUND	RETURNS	RF	BETA	TREYNOR'S MODEL	RANKING
1	Canara Robeco Blue-chip growth	0.050442232	0.01147945	0.827779261	0.047069046	8
2	Kotak Blue-chip Growth	0.056070027	0.01147945	0.809164611	0.055106927	5
3	Mirae Asset Large Cap Dir Gr	0.059521355	0.01147945	0.813801761	0.059033913	4
4	Axis BlueChip Gr	0.029645252	0.01147945	0.792830047	0.022912603	10
5	IDBI India Top 100 Equity Gr	0.06450597	0.01147945	0.768565688	0.068994126	3
6	ICICI prudential blue-chip fund	0.029927378	0.01147945	0.631154088	0.029228878	9
7	Mahindra Manulife Pragati yojana	0.066257377	0.01147945	0.77972814	0.070252595	2
8	JM Value Gr	0.075691637	0.01147945	0.772773135	0.08309319	1
9	Edelweiss Large Cap Dir Gr	0.058109189	0.01147945	0.884265005	0.052732763	7
10	UTI Master Share Gr Dir	0.055200154	0.01147945	0.799953247	0.054654071	6

JM Value Gr is ranked top in the aforementioned table with a sharp performance of 0.08309319, while Axis BlueChip Gr is last with a sharp performance of 0.022912603, followed by all the funds.

Table no 5 - MID CAP FUNDS						
N O	FUND	RETURNS	RF	BETA	TREYNOR'S MODEL	RANKING
1	Quant MidCap Gr	0.118276894	0.01147945	0.628818259	0.169838328	1
2	PGIM India MidCap Opportunities	0.103903457	0.01147945	0.777429478	0.118884101	3
3	axis midcap growth	0.063844377	0.01147945	0.834277509	0.062766794	10
4	SBI Magnum MidCap	0.09488441	0.01147945	0.798913555	0.104397976	5
5	Mirae Asset Arbitrage	0.017992552	0.01147945	0.081065416	0.08034375	9
6	Edelweiss MidCap	0.094732952	0.01147945	0.741867024	0.112221594	4
7	Motilal Oswal Midcap	0.118651212	0.01147945	0.68076012	0.157429551	2
8	baroda midcap	0.077589093	0.01147945	0.772773135	0.085548575	8
9	Kotak Emerging Equity	0.088872848	0.01147945	0.884265005	0.087522853	7
10	HDFC Mid-Cap Opportunities Dir Gr	0.094389344	0.01147945	0.799953247	0.103643421	6

The top fund in the aforementioned table is Quant Midcap Gr, which have a sharp performance of 0.169838328. which is followed by all the other funds and the last ranked fund, axis midcap growth, have a sharp performance of 0.062766794.

Table no 6 - SMALL CAP FUNDS						
NO	FUND	RETURNS	RF	BETA	TREYNOR'S MODEL	RANKING
1	dsp small cap	0.100576564	0.01147945	1.205462195	0.073911162	9
2	quant small cap	0.159128879	0.01147945	0.764661683	0.193091181	1
3	HDFC small cap	0.117616844	0.01147945	1.283664896	0.082683099	8
4	HSBC Small Cap Fund Dir Gr	0.12572209	0.01147945	1.122334052	0.101790227	4
5	BANK OF INDIA Small Cap	0.112386055	0.01147945	1.031449965	0.097829858	5
6	Tata Small Cap Dir Gr	0.13412138	0.01147945	1.287801401	0.095233572	6
7	Nippon India Small Cap	0.131073499	0.01147945	1.065276786	0.112265703	3
8	Kotak -Small Cap	0.107616282	0.01147945	1.461563352	0.065776711	10
9	Edelweiss Small Cap	0.116007373	0.01147945	1.226694246	0.085211064	7
10	Canara Robeco Small Cap	0.130656703	0.01147945	1.057479969	0.112699299	2

quant small cap, the top fund in the aforementioned ranking, had a strong performance of 0.193091181. It is followed by all of the other funds, with Kotak -Small Cap coming in last with a stellar performance of 0.065776711.

FINDINGS

- 1) By Sharpe's model the JM value growth stood in 1st rank in large cap funds followed by Mahindra n others.
- 2) According to Sharpe's model Motilal Oswal Midcap, placed first among mid cap funds, followed by Quant Midcap Gr and other companies.
- 3) Tata Small Cap Dir Gr came out on top among small cap funds in Sharpe's model, followed by Canara Robeco Small Cap and other funds.
- 4) In Treynor's model, JM Value Gr outperformed other large cap funds, followed by Mahindra Manulife Pragati yojana.
- 5) Quant Midcap Gr beat other mid cap funds in Treynor's model, and Motilal Oswal Midcap came in second.
- 6) Canara Robeco Small Cap placed second, while Quant Midcap quant small cap outperformed other small cap funds in Treynor's methodology.

REFERENCE

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