Project Dissertation Report on

ALPHA DECAY IN INDIAN MUTUAL FUNDS

Submitted By

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DECLARATION

I, Tanvi Gupta student of Delhi School of Management, Delhi Technological University hereby declare that the Major Research Project on Alpha Decay in Indian Mutual Funds submitted in partial fulfillment of the requirements for the award of the degree of Masters of Business Administration (MBA) is the original work conducted by me.

I also confirm that neither I nor any other person has submitted this project report to any other institution or university for any other degree or diploma. I further declare that the information collected from various sources has been duly acknowledged in this project.

Tanvi Gupta
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EXECUTIVE SUMMARY

The research project titled "Alpha Decay in Indian Mutual Funds" aims to investigate the phenomenon of alpha decay and its implications within the context of the Indian mutual fund industry. Alpha decay refers to the gradual reduction in the excess returns generated by a fund manager over a benchmark index over time. Understanding alpha decay is crucial for investors, fund managers, and policymakers as it sheds light on the efficiency and sustainability of active management strategies.

Methodology:

The study employs a comprehensive dataset spanning a period of 2 years, encompassing various mutual funds across different asset classes and investment styles. Performance metrics such as alpha, beta, Sharpe ratio etc are analyzed to assess the persistence and magnitude of alpha decay. Additionally, factors such as fund size, expense ratio, turnover, and market conditions are considered to understand their impact on alpha decay.

Key Findings:

Persistence of Alpha Decay: The research reveals a notable presence of alpha decay among Indian mutual funds, indicating challenges in sustaining superior performance over the long term.

Active Management Strategies: The study highlights the importance of adopting dynamic and adaptive active management strategies to mitigate alpha decay and enhance long-term performance.

Implications for Investors: Investors should carefully evaluate the performance consistency and risk-adjusted returns of mutual funds, recognizing the potential impact of alpha decay on investment outcomes.

Implications:

The findings of this research have several implications for stakeholders in the Indian mutual fund industry. Fund managers need to adapt their investment strategies to navigate the challenges posed by alpha decay and deliver sustainable value to investors. Regulators and policymakers can use these insights to enhance transparency, disclosure standards, and investor education initiatives within the mutual fund ecosystem.

Conclusion:

In conclusion, alpha decay is a prevalent phenomenon in Indian mutual funds, underscoring the importance of rigorous analysis and continuous monitoring of investment performance. By understanding the drivers and dynamics of alpha decay, investors and fund managers can make informed decisions to achieve their financial objectives in an increasingly competitive market environment.

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INTRODUCTION

This chapter examines alpha decay in Indian mutual funds, crucial for investors seeking sustained outperformance. Indian mutual funds are popular due to professional management and diversification benefits. Alpha, indicating market-beating potential, is central, but its decay over time poses concerns. By delving into this phenomenon, the chapter aims to provide insights into its implications for both investors and fund managers,

1.1 Background

What is a mutual Fund?

A Mutual Fund is a professionally managed investment vehicle that pools money from multiple investors with a shared investment objective, investing it in stocks, bonds, and other securities. The fund's profits, after deducting expenses and taxes, are distributed among investors based on the scheme's Net Asset Value (NAV). Essentially, a mutual fund comprises a collective investment made by a group of individuals.

Each investor in a mutual fund owns units of the fund, analogous to shares. For instance, if a group of friends collectively buys a box of chocolates and divides them equally, each friend effectively owns a unit. The cost per unit, or chocolate in this example, is determined by dividing the total cost by the number of units.

The Net Asset Value (NAV) per unit represents the market value of the assets held by the mutual fund after deducting fees and charges. This value is calculated by dividing the total market value of all assets by the number of outstanding units.

Mutual funds offer an accessible investment option for individuals looking to grow their wealth without the expertise or time required for direct market investment. Professional fund managers handle the investments according to the fund's objectives,

with fees regulated by authorities like the Securities and Exchange Board of India (SEBI).

In India, mutual funds have become increasingly popular among investors seeking higher returns compared to traditional options like bank fixed deposits and gold. Despite this trend, lack of awareness contributes to mutual funds being overlooked by some investors.

With a diverse range of schemes catering to various investment goals, mutual funds accommodate different investor preferences. While investing in mutual funds presents advantages, selecting the right fund requires thorough research, consideration of risk and return, and consultation with financial experts. Diversifying investments across different fund categories, including equities, debt, and gold, can optimize returns.

While individual investments in the securities market are feasible, mutual funds offer a bundled solution with numerous benefits for all types of investors.

1.2 Problem Statement

For Indian investors, mutual funds are a well-liked investment option since they provide expert management and diversity. The capacity of a mutual fund to beat the overall market is a significant component that determines its appeal; this ability is measured by alpha. The idea of alpha decay, however, makes one wonder if this outperformance can be sustained over an extended period of time. The concept of alpha decay is examined in this thesis, with particular reference to the mutual fund sector in India.

1.3 Objective of the study

The mutual fund sector in India has grown significantly in the last several years. Still, doubts remain about actively managed funds' capacity to reliably provide alpha. The following elements serve as motivation for this research:

- Investor Concerns: For Indian investors to choose actively managed funds wisely, they must have a thorough understanding of alpha decay. Alpha decay has the ability to affect investment results and cast doubt on the rationale for the increased fees connected to these types of products.

- Limited study: Although the idea of alpha decay is well-established, there hasn't been much study done especially on the Indian market. The purpose of this thesis is to add to the body of knowledge by examining alpha decay in relation to mutual funds in India.

- Strategic Importance: Investors and fund managers can both benefit from an understanding of the elements causing alpha erosion. Fund managers can create plans to lessen the effects of alpha decay, and investors can find funds with a lower risk of it.

1.4 Scope

The analysis of alpha decay in Indian equities mutual funds is the main emphasis of this thesis. The following topics will be covered by the study:

- Time Period: Clearly state the desired timeframe. The analysis will include data for a particular period of time.

- Fund Selection: Taking into account variables such as asset class, investing strategy, and fund size, the study will concentrate on a specific group of equity mutual funds. Depending on the availability of your data, you can further tailor this.

- Methodology: The thesis will examine factors that contribute to alpha decay in the Indian market and measure alpha using known methodologies.

CHAPTER-2

LITERATURE REVIEW

This chapter provides a detailed literature review on alpha in financial management and the surge of passive fund management. It explains alpha's significance in outperforming market benchmarks and examines the growth of passive funds, particularly in India. The chapter also scrutinizes the underperformance of active funds, emphasizing market efficiency challenges and the evolving role of intermediaries in investment decisions.

2.1 According to (Swedroe, 2010)

A highly sought-after term in financial management is alpha (α). It denotes the capacity of an investment strategy to beat a selected benchmark index and generate excess returns over what the market produces inertly. Put more simply, alpha is the active return that surpasses the market's intrinsic return and is produced by a fund manager's talent and smart decisions. This is a summary of the alpha idea:

Market Return vs. Excess Return: Typically represented by a wide market index such as the S&P 500 or Nifty 50, the market return is the average return of all assets within a certain market sector. Contrarily, alpha concentrates on the excess return that an investing strategy produces above this benchmark. For example, a fund has produced an alpha of 2% if it yields a 12% return while the market index yields a 10% return.

Alpha's risk-adjusted performance goes beyond merely outperforming the market. It takes into account the investing strategy's inherent risk. Although an alpha-focused strategy concentrates on the risk-adjusted excess return, a high-risk approach may occasionally beat the market.

2.2 According to (Deb, 2019)

Over the last ten years, passively managed funds have become a major player in the world market. As of 2020, the category is projected to have made up around 31% of all open-ended

mutual fund assets globally. It made up 40% of the nation's mutual fund assets in developed markets like the US, more than doubling its proportion ten years prior.

Distribution of active and passive mutual funds in the United States in 2010 and 2019, with a projection for 2025
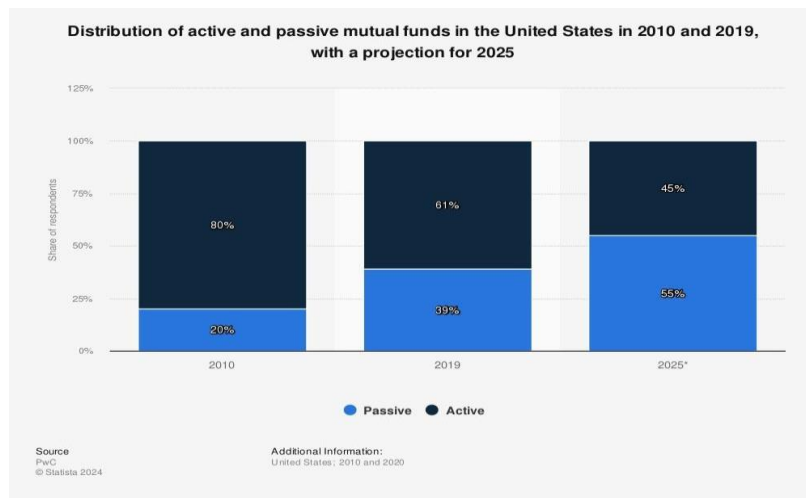
Source: Statista

The proportion of passive funds in mutual fund assets has increased dramatically in India as well in recent years. But this has been a low-key affair. In India, passive fund assets have been growing for more than 20 years, but this increase has really accelerated in the last five years. Provident fund (PF) trusts have led the investments; in 2015, they were permitted to make equity investments. The majority of pension funds choose to engage in the equity market by means of exchange-traded funds (ETFs). The biggest Provident Fund in India, Employees' Provident Fund Organisation (EPFO), has chosen to use exchange-traded funds (ETFs) to invest 5% of its yearly accumulation in stocks.

Consequently, EPFO boosted its distribution through this method to 15% of its yearly accretion, or the whole amount available, in fiscal 2018.

Another significant boost to passive funds in the nation has come from the government's choice to choose the ETF path over other options in order to sell its holdings in public sector enterprises (PSE). Some of the significant releases that have cleared the path for the segment's expansion include the Bharat 22 ETF, the Central Public Sector Enterprises (CPSE) ETF, and the most recent Bharat Bond ETF.

2.3 According to(Millo et al., 2023)
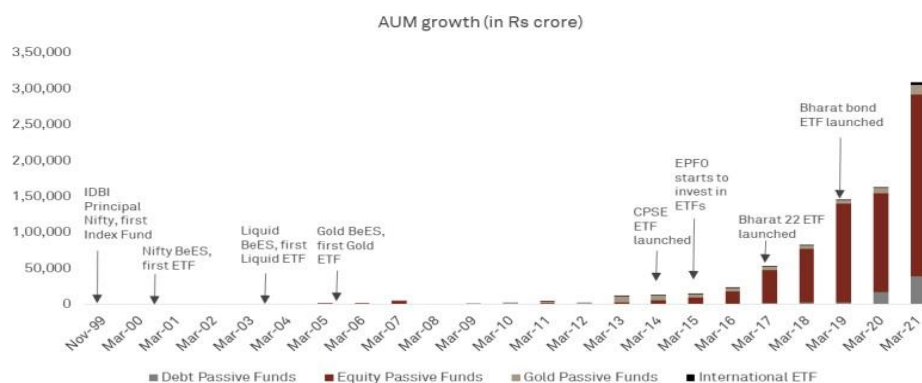
Source: Association of Mutual Funds in India

2.3.1 The Regulation by SEBI and Its Inadvertent Effect

Asset management firms (AMCs) are only permitted by SEBI to introduce a single fund per standard category. Fund-of-funds (FoFs), sectoral/thematic funds, index funds, and exchange- traded funds (ETFs) are examples of passive funds that are not subject to this restriction. AMCs have the chance to enter the passive market with a greater variety of products because to this regulatory gap.

2.3.2 Indications of Passive Segment Growth

The launch data reflects the strategic advantage afforded by the previously indicated rule. In the passive category, there have been 79 new offers since 2018. These include index funds, ETFs, and funds-of-funds (FoFs) that are tied to a single ETF. This number is far higher than the 50 actively managed equities mutual fund funds that were introduced in the same time frame.

2.3.3 Product Variety in Passive Investments

The number of passive investing possibilities has significantly increased as a result of new product releases and capital inflows. The category has grown from a small number of funds to more than 150 funds that include worldwide asset classes, debt, equities, and gold.

Passive Fund Types

2.3.3.1 Equity

ETFs that follow market capitalization, or market cap, include the Nifty 50 and Nifty 100. According to the picture, this category includes 35 index funds and 47 exchange-traded funds (ETFs). (AUM Rs 210,428 crore)

Sectoral ETFs: These focus on certain industries or subjects, such as IT or infrastructure. There are 25 ETFs in this category. (AUM Rs 27,020 crore)

Other ETFs: This group include smart beta plans, CPSE ETFs, and other ETFs. There are eight ETFs in this category (AUM Rs 13,890 crore |)

2.3.3.2 Debt

This group makes investments in government disinvestment programmes and debt securities. In this category, there are four index funds and eleven exchange-traded funds. (AUM Rs 35,836 crore |)

2.3.3.3 Gold

invests in bullion to track changes in gold prices. There are eleven ETFs in this category. (AUM Rs 14,123 crore)

2.3.3.4 Worldwide

makes investments in global indexes such as the Nasdaq and Hang Seng. In this category there are ETFs and four index funds. (AUM Rs 3,538 crore)

2.4 According to (Mascio et al., 2015)

Over time, regulatory changes enforced by SEBI, alongside increased transparency, a rise in market participants, and expanded research coverage, have enhanced market efficiency. This suggests a growing challenge in surpassing market returns consistently, thereby making it increasingly difficult to generate alpha.

CRISIL conducted a study analyzing the historical performance of actively managed equity funds in India. The study categorized equity mutual funds into three main variations: large- cap, mid-cap, and small-cap funds. CRISIL utilized asset-weighted returns from constituent funds, assessed quarterly through the CRISIL Mutual Fund Ranking, to construct a composite performance index for each fund category.

Instead of relying on static point-to-point returns, the study examined rolling returns on a daily basis over a 5-year investment horizon, encompassing various market cycles since inception. To gauge performance, comparisons were made against widely used benchmarks such as NIFTY 50 to each mutual fund category.

CHAPTER-3

RESEARCH METHODOLOGY

This chapter investigates alpha measurement techniques like Treynor-Mazumbetare ratio and Jensen's alpha, discussing their pros and cons. It examines factors affecting alpha decay in Indian mutual funds, including market efficiency and managerial skill. The chapter also outlines a research methodology for analyzing alpha decay in selected mutual funds, offering insights into the interpretation of Jensen's alpha results.

3.1 Techniques for Measuring Alpha

Numerous quantitative approaches, each with a distinct viewpoint, try to quantify alpha:

1.Ratio of Treynor-Mazumbetare:

This ratio, which was created by Jack Treynor and William Mazumbetare, contrasts a portfolio's systematic risk (beta) with its active return (return less risk-free rate). When a ratio is positive, it signifies alpha, which means the portfolio is producing more returns than its beta. A negative ratio, on the other hand, indicates underperformance in relation to the amount of risk taken.

Advantages:

- comparatively easy to compute, just needing beta, risk-free rate, and portfolio return.
- Simple to understand: Alpha is the positive ratio; no alpha is the negative ratio.

Drawbacks:

- depends on the beta measurement's precision, which might be erratic.
- ignores portfolio-specific non-systematic risk, which might lead to an overstatement of alpha.

2.The Jensen Alpha

Michael Jensen's methodology expands upon the Capital Asset Pricing Model (CAPM). The Market Risk Premium (MARP) and a portfolio's beta determine its projected return, according to the CAPM. The difference between a portfolio's actual return and its predicted return, which is based on CAPM, is computed using Jensen's alpha. When the portfolio's Jensen's alpha is positive, alpha is being generated.

Advantages:

- use the CAPM framework to explicitly take market risk into account.
- somewhat takes into account non-systematic risk, possibly yielding a more accurate alpha value.

Drawbacks:

- depends on the accuracy of the CAPM assumptions, which could not hold true in every situation involving the market.
- needs the market risk premium to be estimated, which can be a subjective process.

3.The Sharpe Ratio

The Sharpe Ratio is frequently used in combination with alpha analysis, even though it is not precisely an alpha measure. It contrasts the entire risk (standard deviation) of the portfolio with its excess return (return less the risk-free rate). Better risk-adjusted performance is indicated by a greater Sharpe Ratio, which may also suggest the presence of alpha.

Advantages:

- provide a more comprehensive view of risk-adjusted performance by taking systematic and non-systematic risk into account.

- Generally simple to understand: Potentially superior risk-adjusted returns, including alpha, are indicated by a higher Sharpe Ratio.

Drawbacks
- doesn't isolate alpha directly. The Sharpe Ratio can be influenced by variables other than alpha.
- assumes a normal return distribution, which isn't necessarily the case.

It is important to recognize the inherent limits of alpha measurement:

-Selecting a Benchmark: Alpha computations are greatly impacted by the benchmark selection. When opposed to a sector-specific benchmark that represents the investing style of the portfolio, a wide market index may offer a less demanding comparison.

-Short-Term vs. Long-Term: Alpha is a statistical approximation that is subject to large short-term fluctuations. Extended examination, ideally spanning many market cycles, offers a more dependable representation of a strategy's capacity to produce alpha. Luck, not talent, might be the driving force behind short-term alpha.

-Risk Adjustment: Precise beta measurement is necessary for both Treynor-Mazumbetare and Jensen's alpha calculations. But beta can fluctuate, which affects how well alpha is calculated. Furthermore, there is subjectivity involved in determining the market risk premium in Jensen's alpha.

Research Methodology:

For the purpose of the study, the below mentioned mutual funds have been studied and analyzed to understand the shrinking of alpha in the Indian mutual fund's scenario

1. Large Cap- Growth option

   NIPPON INDIA LARGE CAP FUND

   ICICI PRUDENCIAL BLUECHIP FUND

   EDELWISS LARGE CAP FUND

   UNION LARGE CAP FUND

   SUNDARAM LARGE CAP FUND

2. Mid Cap- Growth Option

   QUANT MID CAP FUND

   MAHINDRA MANULIFE MID CAP FUND

   INVESCO INDIA MID CAP FUND

   KOTAK EMERGING EQUITY FUND

   ADITYA BIRLA SUNLIFE MID CAP FUND

3. Small Cap-Growth option

   BANK OF INDIA SMALL CAP EQUITY

   CANARA ROBECO SMALL CAP FUND

   FRANKLIN INDIA SMALLER COMPANIES FUND

   DSP SMALL CAP FUND

   AXIS SMALL CAP FUND

The reason for selection of these funds randomly from all mutual fund classes is to reduce the scenario of biasness of different fund houses and the time period of the study was 1-year, daily NAV and returns were used to calculate the alpha

For daily returns:

$= T_n / T_{(n-1)} - 1$ is used. This would give us the daily returns from the closing value of the Fund from the daily NAV (Net Asset Value)

For calculating Geometric mean from the daily returns:

= We add back 1 to eliminate the negative values as it will result in an error, the geometric men cannot be calculated for negative values due to the problem of the negative values not having a real square root

This is done for both the specific fund and the comparison index, which in this case is NIFTY.

The GEOMEAN is calculated through the function in excel, upon which the further execution would be done. We take geometric mean to calculate the returns as it takes into factor the compounding effect.

Compounding Effect: The geometric mean multiplies the daily returns together and takes the nth root, n being the number of periods. This method incorporates the effect of compounding, which provides a more accurate picture of how the investment has grown overtime rather than comparing the absolute figures of the NAV.

Arithmetic mean would showcase a false picture hence the geometric mean is used.

Government bond rate has been calculated by averaging the past data for each month for the years. For 2023-24 it was around 5.89% and for year 2022-23 it was around 7.10%, this is also taken as the risk-free rate.

Under the analysis, Jensen's Alpha has been taken. Jensen's alpha is a metric used in investment performance evaluation to assess a portfolio's ability to generate excess returns compared to its expected return based on its level of risk. Here's a breakdown of its interpretation for your thesis:

Positive Jensen's Alpha:

Indicates outperformance. The portfolio has delivered returns higher than what the Capital Asset Pricing Model (CAPM) predicted for its level of risk. This suggests the fund manager might have skillful security selection or implemented successful investment strategies.

Negative Jensen's Alpha:
Indicates underperformance. The portfolio's returns were lower than expected for the level of risk undertaken. This could be due to various factors like poor stock selection, ineffective strategies, or random chance.

Zero Jensen's Alpha:

Suggests the portfolio's performance matched expectations based on its risk profile. The returns were consistent with what CAPM predicted for the level of systematic risk (beta) involved.

CHAPTER-4

DATA ANALYSIS, DISCUSSIONS AND RECOMMENDATIONS

Factors Affecting Indian Mutual Fund Alpha Decay

1. Dissemination of Information and Market Efficiency:

- The Efficient Market Hypothesis (EMH): According to the EMH, asset prices quickly reflect all information that is available to the public. Alpha creation gets harder in an efficient market since knowledge advantages are easily arbitraged away.

- Information Dissemination in India: The Indian market now enjoys much better information dissemination because to technological developments and regulatory adjustments. Quicker price adjustments may result from faster information flow, which might reduce alpha chances.

2. Style Drift and Competition:

- Expanding Fund Industry: With an increase in actively managed funds, the mutual fund sector in India has experienced notable expansion. Squeezing alpha chances may result from price discovery being more efficient due to increased competition.

- Style Drift: A fund's investing universe may alter as it gets larger. As assets increase, a small-cap oriented fund can find it difficult to stick to its plan, which might result in style drift and eventually decline alpha.

3. Behavioral Biases, Tenure, and Managerial Skill:

- Manager Skill: Not every fund manager has the abilities needed to routinely beat the market. Choosing knowledgeable supervisors is essential for alpha generation.

- management Tenure: Alpha decay and investment strategy disruption can result from high management turnover. Alpha may be more likely to be sustained by funds with managers that have extensive expertise and extended tenures.

- Behavioral Biases: Overconfidence, herd mentality, anchoring, and other biases can cause managers to make poor investing decisions that might reduce alpha.

4. Fund Size and Expense Ratios:

- Expense Ratios: A fund's returns are reduced by higher expense ratios, which reduces the opportunity to generate alpha. Index funds with low expenses might be a more competitive option than highly charged actively managed funds.

- Fund Size: A large fund size may restrict your capacity to take advantage of tiny market inefficiencies that have the potential to produce alpha. Funds that are smaller and more agile could be better at seeing and seizing these kinds of opportunities.

Large Capital Funds:

2. NIPPON

		22-23		23-24		
		Fund	Nifty	Fund	Nifty	
Daily Gmean Avg		1.00	0.999779	1.00106	0.99878	
Daily CAGR		0.00	-0.00022	0.00106	-0.00122	
Annualized		0.03	-0.05	0.29	-0.25	
Return in %		0.03	-0.05	0.29	-0.25	
Govt Bond rate		7.1033		5.89		
Beta		0.69		-0.17657		
SD		0.01		0.011794		
Treynor Ratio		0.11		-3.06769		
Jensen's Alpha		-2.12		-6.68645		
Sharpe's Ratio		8.153324		45.92687		

Figure 3.1

3. ICICI

		22-23		23-24		
		Fund	Nifty	Fund	Nifty	
Daily Gme		1.00	0.999779	1.002226	0.998778	
Daily CAG		0.00	-0.00022	0.002226	-0.00122	
Annualize		0.04	-0.05	0.70	-0.25	
Return in		0.04	-0.05	0.70	-0.25	
Govt Bond		7.1033		5.89		
Beta		0.68		-0.0989		
SD		0.01		0.013244		
Treynor Ra		0.13		-9.65405		
Jensen's A		-2.22		-5.79616		
Sharpe's R		10.97643		72.09308		

Figure 3.2

4. EDELWISS

	22-23		23-24	
	Fund	Nifty	Fund	Nifty
Daily Gmean Avg	1.00	0.999779	1.001678	0.998778
Daily CAGR	0.00	-0.00022	0.001678	-0.00122
Annualized	-0.01	-0.05	0.49	-0.25
Return in %	-0.01	-0.05	0.49	-0.25
Govt Bond rate	7.1033		5.89	
Beta	0.73		-0.06082	
SD	0.01		0.010241	
Treynor Ratio	0.05		-12.2678	
Jensen's Alpha	-1.91		-5.7709	
Sharpe's Ratio	4.197862		72.85473	

Figure 3.3

5. UNION

	22-23		23-24	
	Fund	Nifty	Fund	Nifty
Daily Gme	1.00	0.999779	1.00174	0.998778
Daily CAG	0.00	-0.00022	0.00174	-0.00122
Annualize	-0.05	-0.05	0.52	-0.25
Return in	-0.05	-0.05	0.52	-0.25
Govt Bond	7.1033		5.89	
Beta	0.71		-0.07231	
SD	0.01		0.010716	
Treynor R	0.01		-10.628	
Jensen's /	-2.06		-5.81909	
Sharpe's R	0.495062		71.71557	

Figure 3.4

6. SUNDARAM

		22-23		23-24	
		Fund	Nifty	Fund	Nifty
	Daily Gmean Avg	1.00	0.999779	1.001614	0.998778
	Daily CAGR	0.00	-0.00022	0.001614	-0.00122
	Annualized	-0.03	-0.05	0.47	-0.25
	Return in %	-0.03	-0.05	0.47	-0.25
	Govt Bond rate	7.1033		5.89	
	Beta	0.73		-0.05003	
	SD	0.01		0.009512	
	Treynor Ratio	0.03		-14.4655	
	Jensen's Alpha	-1.89		-5.72702	
	Sharpe's Ratio	2.459449		76.08559	

Figure 3.5

The analysis of the Large Cap Fund performance data reveals a concerning trend regarding Jensen's alpha. The alpha is negative for both analyzed years, indicating the fund's underperformance relative to the Nifty benchmark after adjusting for systematic risk.

Notably, Jensen's alpha has significantly worsened, dropping from 2022- 23 to 2023-24.

This substantial decline suggests the fund's active management strategy is struggling to generate excess returns compared to the broader market. Further investigation into the specific portfolio holdings and recent market movements might be necessary to pinpoint the reasons behind this underperformance

Mid Capital Funds:

1. QUANT

		22-23		23-24	
		Fund	Nifty	Fund	Nifty
Daily Gmean Avg		1.00	0.999779	1.002961	0.998778
Daily CAGR		0.00	-0.00022	0.002961	-0.00122
Annualized		-0.01	-0.05	1.03	-0.25
Return in %		-0.01	-0.05	1.03	-0.25
Govt Bond rate		7.1033		5.89	
Beta		0.86		-0.14217	
SD		0.01		0.018285	
Treynor Ratio		0.05		-9.00766	
Jensen's Alpha		-0.97		-5.73614	
Sharpe's Ratio		3.369581		70.04055	

Figure 3.6

2. MAHINDRA

		22-23		23-24	
		Fund	Nifty	Fund	Nifty
Daily Gmean Avg		1.00	0.999779	1.002664	0.998778
Daily CAGR		0.00	-0.00022	0.002664	-0.00122
Annualized		-0.02	-0.05	0.89	-0.25
Return in %		-0.02	-0.05	0.89	-0.25
Govt Bond rate		7.1033		5.89	
Beta		0.76		-0.11228	
SD		0.01		0.01494	
Treynor Ratio		0.04		-10.1724	
Jensen's Alpha		-1.72		-5.69101	
Sharpe's Ratio		3.331815		76.44966	

Figure 3.7

3. INVESCO INDIA

	22-23		23-24	
	Fund	Nifty	Fund	Nifty
Daily Gmean Avg	1.00	0.999779	1.002384	0.998778
Daily CAGR	0.00	-0.00022	0.002384	-0.00122
Annualized	-0.01	-0.05	0.77	-0.25
Return in %	-0.01	-0.05	0.77	-0.25
Govt Bond rate	7.1033		5.89	
Beta	0.73		-0.11789	
SD	0.01		0.013499	
Treynor Ratio	0.05		-8.65138	
Jensen's Alpha	-1.90		-5.8477	
Sharpe's Ratio	4.002848		75.55375	

Figure 3.8

4. KOTAK EMERGING

	22-23		23-24	
	Fund	Nifty	Fund	Nifty
Daily Gmean Avg	1.00	0.999779	1.001704	0.998778
Daily CAGR	0.00	-0.00022	0.001704	-0.00122
Annualized	0.01	-0.05	0.50	-0.25
Return in %	0.01	-0.05	0.50	-0.25
Govt Bond rate	7.1033		5.89	
Beta	0.66		-0.07241	
SD	0.01		0.009077	
Treynor Ratio	0.10		-10.4341	
Jensen's Alpha	-2.40		-5.83267	
Sharpe's Ratio	7.704412		83.2372	

Figure 3.9

5.   ADITYA

		22-23		23-24	
		Fund	Nifty	Fund	Nifty
	Daily Gmean Avg	1.00	0.999779	1.002019	0.998778
	Daily CAGR	0.00	-0.00022	0.002019	-0.00122
	Annualized	-0.07	-0.05	0.62	-0.25
	Return in %	-0.07	-0.05	0.62	-0.25
	Govt Bond rate	7.1033		5.89	
	Beta	0.74		-0.06632	
	SD	0.01		0.010402	
	Treynor Ratio	-0.03		-13.1593	
	Jensen's Alpha	-1.87		-5.67806	
	Sharpe's Ratio	-2.09804		83.90405	

Figure 3.10

The analysis of the Mid Cap Funds performance data reveals a concerning trend regarding Jensen's alpha. The alpha is negative for both analyzed years, indicating the fund's underperformance relative to the Nifty benchmark after adjusting for systematic risk.

Notably, Jensen's alpha has significantly worsened, dropping from 2022-23 to 2023-24.

This substantial decline suggests the fund's active management strategy is struggling to generate excess returns compared to the broader market. Further investigation into the specific portfolio holdings and recent market movements might be necessary to pinpoint the reasons behind this underperformance

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Small Capital Funds:

1. BANK OF INDIA

		22-23		23-24	
		Fund	Nifty	Fund	Nifty
	Daily Gmean Avg	1.00	0.999779	1.002126	0.998778
	Daily CAGR	0.00	-0.00022	0.002126	-0.00122
	Annualized	-0.03	-0.05	0.66	-0.25
	Return in %	-0.03	-0.05	0.66	-0.25
	Govt Bond rate	7.1033		5.89	
	Beta	0.65		-0.18187	
	SD	0.01		0.011685	
	Treynor Ratio	0.03		-5.02877	
	Jensen's Alpha	-2.51		-6.34609	
	Sharpe's Ratio	2.435836		78.27465	

Figure 3.11

2. CANARA ROBECO

		22-23		23-24	
		Fund	Nifty	Fund	Nifty
	Daily Gmean Avg	1.00	0.999779	1.001843	0.998778
	Daily CAGR	0.00	-0.00022	0.001843	-0.00122
	Annualized	-0.04	-0.05	0.55	-0.25
	Return in %	-0.04	-0.05	0.55	-0.25
	Govt Bond rate	7.1033		5.89	
	Beta	0.65		-0.16867	
	SD	0.01		0.010959	
	Treynor Ratio	0.02		-4.77894	
	Jensen's Alpha	-2.52		-6.37351	
	Sharpe's Ratio	1.159589		73.55107	

Figure 3.12

3. FRANKLIN

		22-23		23-24	
		Fund	Nifty	Fund	Nifty
	Daily Gmean Avg	1.00	0.999779	1.002401	0.998778
	Daily CAGR	0.00	-0.00022	0.002401	-0.00122
	Annualized	0.05	-0.05	0.77	-0.25
	Return in %	0.05	-0.05	0.77	-0.25
	Govt Bond rate	7.1033		5.89	
	Beta	0.63		-0.228	
	SD	0.01		0.013545	
	Treynor Ratio	0.17		-4.50547	
	Jensen's Alpha	-2.56		-6.51682	
	Sharpe's Ratio	11.80385		75.84268	

Figure 3.13

4. DSP

		22-23		23-24	
		Fund	Nifty	Fund	Nifty
	Daily Gmean Avg	1.00	0.999779	1.001951	0.998778
	Daily CAGR	0.00	-0.00022	0.001951	-0.00122
	Annualized	-0.03	-0.05	0.59	-0.25
	Return in %	-0.03	-0.05	0.59	-0.25
	Govt Bond rate	7.1033		5.89	
	Beta	0.62		-0.15165	
	SD	0.01		0.01137	
	Treynor Ratio	0.04		-5.58421	
	Jensen's Alpha	-2.71		-6.22817	
	Sharpe's Ratio	2.918437		74.47828	

Figure 3.14

5. AXIS

		22-23		23-24		
		Fund	Nifty	Fund	Nifty	
	Daily Gmean Avg	1.00	0.999779	1.001899	0.998778	
	Daily CAGR	0.00	-0.00022	0.001899	-0.00122	
	Annualized	0.00	-0.05	0.57	-0.25	
	Return in %	0.00	-0.05	0.57	-0.25	
	Govt Bond rate	7.1033		5.89		
	Beta	0.54		-0.14981		
	SD	0.01		0.011052		
	Treynor Ratio	0.09		-5.52108		
	Jensen's Alpha	-3.27		-6.2366		
	Sharpe's Ratio	6.52388		74.83838		

Figure 3.15

The analysis of the Small Cap Funds performance data reveals a concerning trend regarding Jensen's alpha. The alpha is negative for both analyzed years, indicating the fund's underperformance relative to the Nifty benchmark after adjusting for systematic risk.

Notably, Jensen's alpha has significantly worsened, dropping from 2022-23 to 2023-24. This substantial decline suggests the fund's active management strategy is struggling to generate excess returns compared to the broader market. Further investigation into the specific portfolio holdings and recent market movements might be necessary to pinpoint the reasons behind this underperformance.

Final Interpretation:

The analysis of performance data for the Large, Mid, and Small Cap Funds reveals a potentially concerning trend. The negative Jensen's alpha values for both analyzed years indicate that all three funds have underperformed the Nifty 50 benchmark, even after adjusting for systematic risk. This underperformance is particularly troubling due to the steep decline in alpha observed between 2022-23 and 2023-24. These findings suggest that the active management strategies employed by these funds may be struggling to deliver the promised outperformance compared to the broader market. Further investigation is necessary to pinpoint the specific factors contributing to this potential case of alpha decay.

CHAPTER-5

CONCLUSION

This chapter concludes the study by highlighting the negative Jensen's alpha trend observed in Large, Mid, and Small Cap Funds, indicating underperformance against the Nifty 50 benchmark. This aligns with existing literature on alpha decay, a challenge exacerbated by factors like enhanced information dissemination, intensified competition, managerial challenges, and expense ratios. Further research could explore investor perspectives on factors contributing to alpha decay and strategies to mitigate it through a

This study investigated the performance of the Large, Mid, and Small Cap Funds, uncovering a concerning trend of negative Jensen's alpha in both analyzed years. This signifies that all three funds underperformed the Nifty 50 benchmark, even after accounting for systematic risk. Notably, a further decline in alpha between 2022-23 and 2023-24 suggests a potential case of alpha decay within these actively managed funds.

The findings resonate with existing literature that documents a decline in alpha generation by actively managed funds over time. This phenomenon, known as alpha decay, presents a significant challenge for investors seeking to outperform the market through active management.

In the context of the Indian mutual fund industry, several factors likely contribute to alpha decay:

The Evolving Information Landscape: Technological advancements and regulatory reforms have significantly enhanced information dissemination in the Indian market. This aligns with the Efficient Market Hypothesis (EMH), which posits that readily available information is rapidly incorporated into asset prices. As information flows more quickly, price adjustments occur faster, potentially diminishing opportunities for alpha generation through information asymmetry.

The Double-Edged Sword of Competition: The Indian mutual fund industry has witnessed a remarkable expansion, leading to a more competitive landscape. While this fosters innovation and potentially benefits investors with lower fees, it also presents a challenge for active managers. Increased competition can lead to more efficient price discovery, potentially squeezing alpha opportunities. Active managers need to constantly refine their investment strategies and possess superior stock selection skills to distinguish themselves in this crowded marketplace.

Managerial Challenges: Skill, Tenure, and Behavioral Biases: Not all fund managers possess the necessary talent to consistently outperform the market. Selecting managers with proven track records and strong investment expertise is crucial for alpha generation. High management turnover can disrupt investment strategies and contribute to alpha decay. Funds with experienced managers exhibiting long-term tenure might be better positioned to sustain alpha. Additionally, behavioral biases can also hinder alpha generation. Overconfidence, herding mentality, and anchoring can lead to suboptimal investment decisions by managers, thereby eroding returns.

The Cost Drag of Expense Ratios: Higher expense ratios erode fund returns, diminishing the potential for alpha generation. In an environment where low-cost index funds are readily available, actively managed funds with high expense structures need to demonstrate a clear and consistent ability to outperform the market to justify their fees.

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