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CLOSET INDEXING IN THE INDIAN MUTUAL FUND INDUSTRY: A BEFORE-AND-AFTER DIAGNOSTIC STUDY USING ACTIVE SHARE AND TRACKING ERROR

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Abstract
Few mutual funds in India present themselves as active funds, while their portfolio closely resembles their benchmark. They charge fees like Active Fund and design portfolio like passive funds. This activity has attracted serious attention by SEBI in India following its 26 February, 2026 circular limiting portfolio overlap for sectoral and thematic equity schemes at 50%.

This paper intends to presents a before-and-after study of closet indexing among 18 sectoral and thematic equity schemes managed by India's three largest asset management companies SBI, ICICI Prudential, and HDFC Mutual Fund. The study uses three metrics: Active Share, Tracking Error, and Portfolio Overlap within AMC. The researcher focusing on holdings and return data from January 2024 to May 2026, found that 13 of 18 schemes exhibit Active Share below the conventional 60% closet-indexing threshold. This means that more than 40% of these funds' holdings, by weight, are identical to their benchmark. In this study, Banking, Technology, PSU, Healthcare, and Defence funds showing the strongest index replicating behaviour, while Infrastructure and Business Cycle funds seems genuinely picking stocks. Further, in within AMC overlap analysis, the thematic "Business Cycle" funds carry the highest overlap with sibling sectoral funds from the same AMC. It went to as high as 31.9% for one ICICI Prudential pair, despite being sold under different investment themes. Specifically, SEBI's circular was designed to prevent this pattern. In this paper this closet indexing is discussed with reference to the change after the SEBIs circular on this point.

Introduction
Closet indexing describes a fund that markets itself as actively managed and charges fees accordingly, while actually holding a portfolio that closely mirrors its benchmark or a sibling scheme (Cremers&Petajisto, 2009). The issue has taken on a serious note in India when several asset management companies launched multiple narrowly labelled equity schemes in stretch between 2021 and 2024.

SEBI's own supervisory review found that few of schemes-maintained portfolios surprisingly similar to other funds from the same AMC. A circular dated 26 February 2026 caps portfolio overlap between sectoral or thematic schemes (excluding large-cap funds) at 50%, which should be calculated quarterly and disclosed monthly. A non-compliance of which within a three-year window shall attract further regulatory requirement including compulsion to merge.

This regulatory pinpointing puts forward a point of reference for a before-after diagnostic study. The paper thus carries a descriptive diagnostic on how prevalent was closet indexing among India's largest sectoral and thematic funds around the circular period. Further it is also targeted to know Active Share, Tracking Error and Portfolio Overlap to understand which schemes under the sample are vulnerable to the behaviour, SEBI is targeting recently. The study was conducted on 18 sectoral and thematic equity schemes managed by India's three largest AMCs by assets under management, SBI, ICICI Prudential, and HDFC Mutual Fund. Using portfolio holdings as of May 2026 and monthly returns from January 2024 to May 2026, Active Share, within-AMC portfolio overlap, and Tracking Error and R^2 was calculated for pre- and post-circular periods.

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Literature Review

Cremers and Petajisto (2009) introduced Active Share as a holdings-based measure of active management comparing a fund's portfolio weights and its benchmark's weights across all securities. In their U.S. study, funds with the highest Active Share significantly outperformed their benchmarks after fees. Cremers, Ferreira, Matos, and Starks (2016), studied the funds data across 32 countries and found that actively managed funds carry higher Active Share and that the average alpha generated by active management is higher where explicit indexing is more prevalent. This finding is in straight relevance to India's MF Industry.

Active Share standalone is only a partial measure, and the literature increasingly assigns it with return-based measures. Petajisto (2013) sorted U.S. equity mutual funds jointly by Active Share and Tracking Error and found that closet indexers underperformed. Cremers and Pareek (2016) in his study cautioned against treating Active Share as a sufficient statistic on its own. Amihud and Goyenko (2013) proposed a complementary return-based measure, showing that a fund's R^2 predicts future performance, with lower R^2 associated with superior subsequent alpha justifying this study using R^2 along with Active Share and Tracking Error.

The methodology however has its own critics. Frazzini, Friedman, and Pomorski (2016), reanalysing the data used by Cremers and Petajisto (2009) and Petajisto (2013), argued that Active Share's projecting power is largely a outcome of its correlation with benchmark type. The funds those are benchmarked to concentrated indices generally register higher Active Share than those funds benchmarked to broad indices, independent of manager skill of picking stocks.

India-specific research in this area is limited. Data construction for the current study is motivated by the work carried in the paper Pareek and Anagol (2019) which is among the few relevant studies using detailed Indian holdings data. The study applied Active Share, Tracking Error, and overlap analysis to a live Indian regulatory episode.

Regulatory Background

SEBI's regulatory approach to fund categorisation has evolved in two steps which are particularly relevant to this study. A 2017, circular mandated minimum portfolio composition thresholds for each fund category, indirectly compelling genuinely active positioning.

More directly relevant is the circular dated 26 February 2026, which responded to SEBI's own supervisory finding that AMC’s differently-labelled sectoral and thematic funds from the same fund house may bet on suspiciously similar top holdings despite different labelling.

The operative rule imposes a portfolio overlap ceiling of 50% between any two equity schemes of the same AMC within the sectoral and thematic universe wherein large-cap funds are exempted. This needs to be calculated quarterly on daily portfolio values whereas to be disclosed monthly. AMCs are given a three-year compliance window up to 26 February 2029, after which non-compliant scheme pairs must merge.

Data and Sample

The sample comprises 18 open-ended equity schemes across five categories covered by SEBI's overlap-norm circular (Banking & Financial Services, Technology, Infrastructure, Healthcare/Pharma, and PSU) plus three broader thematic categories (Manufacturing, Business Cycle, and Defence), drawn from India's three largest AMCs by assets under management as of May 2026: SBI, ICICI Prudential, and HDFC Mutual Fund. Table 1 summarises the sample.

AMC	Category	Scheme	Benchmark	Inception
SBI	Banking & Fin. Serv.	SBI Banking & Financial Services Fund	Nifty Financial Services TRI	Feb-2015
SBI	Technology	SBI Technology Opportunities Fund	BSE Teck TRI	Jul-1999
SBI	Infrastructure	SBI Infrastructure Fund	Nifty Infrastructure TRI	Jul-2007
SBI	Healthcare	SBI Healthcare Opportunities Fund	BSE Healthcare TRI	Jul-1999
SBI	PSU	SBI PSU Fund	BSE PSU TRI	Jul-2010
ICICI Pru.	Banking & Fin. Serv.	ICICI Pru. Banking & Financial Services Fund	Nifty Financial Services TRI	Aug-2008
ICICI Pru.	Technology	ICICI Pru. Technology Fund	BSE Teck TRI	Mar-2000
ICICI Pru.	Infrastructure	ICICI Pru. Infrastructure Fund	BSE India Infrastructure TRI	Aug-2005
ICICI Pru.	PSU	ICICI Pru. PSU Equity Fund	BSE PSU TRI	Sep-2022
ICICI Pru.	Manufacturing	ICICI Pru. Manufacturing Fund	Nifty India Manufacturing TRI	Oct-2018
ICICI Pru.	Business Cycle	ICICI Pru. Business Cycle Fund	Nifty 500 TRI	Jan-2021
HDFC	Banking & Fin. Serv.	HDFC Banking and Financial Services Fund	Nifty Financial Services TRI	Jul-2021
HDFC	Technology	HDFC Technology Fund	BSE Teck TRI	Sep-2023
HDFC	Infrastructure	HDFC Infrastructure Fund	BSE India Infrastructure TRI	Mar-2008
HDFC	Healthcare	HDFC Pharma and Healthcare Fund	BSE Healthcare TRI	Oct-2023
HDFC	Manufacturing	HDFC Manufacturing Fund	Nifty India Manufacturing TRI	May-2024
HDFC	Business Cycle	HDFC Business Cycle Fund	Nifty 500 TRI	Nov-2022
HDFC	Defence	HDFC Defence Fund	Nifty India Defence TRI	Jun-2023

Table 1: Sample of 18 sectoral and thematic equity schemes.

Portfolio holdings were procured from each AMC's monthly factsheet as of May 2026. Benchmark constituent data were sourced from NSE Indices and BSE Index Services Ltd. Monthly NAV history for each scheme's Direct Growth plan was sourced from AMFI data covering January 2024 to May 2026, matched against benchmark Total Return Index (TRI) levels for the same window.

Methodology

Active Share for scheme i is calculated as:

$\text{Active Share}_i = 0.5 \times \Sigma_j |w_{ij} - b_{ij}|$

where w_{ij} is the portfolio weight of security j in scheme i and b_{ij} the corresponding benchmark weight, summed across the set of securities held by either as discussed in (Cremers&Petajisto, 2009). Active Share of 100% means zero portfolio overlap with the benchmark, and 0% means the fund is an

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exact replica of its benchmark. Consistent with the literature, a 60% threshold flags potential closet indexing (Cremers et al., 2016).

Within-AMC portfolio overlap between two sibling schemes A and B of the same AMC is calculated as the sum, across all securities held by either scheme, of the minimum of the two schemes' respective portfolio weights:

$\text{Overlap}(A,B) = \Sigma_{\square} \min(w\_A_{\square}, w\_B_{\square})$

This is in line with SEBI's own overlap-norm methodology, a 50% overlap would mean half of the smaller position in each shared stock is duplicated across both schemes. This was computed for all 46 within-AMC scheme pairs, 10 for SBI's five schemes, 15 for ICICI Prudential's six and 21 for HDFC's seven schemes.

Tracking Error is the annualised standard deviation of the difference between monthly fund and benchmark returns:

$TE_i = \sigma(r\_fund,_i - r\_bench,_i) \times \sqrt{12}$

and R^2 is the squared Pearson correlation between the same return series (Amihud&Goyenko, 2013; Petajisto, 2013), wherein a higher Tracking Error means fund returns move more independently of the benchmark. Further a higher R^2 means more of the fund's month-to-month return is explained by the benchmark alone. This is computed over the full window and separately before/after the 26 February 2026 circular.

Results

Active Share

Table 2 reports Active Share for all 18 schemes as of May 2026, sorted by category.

Category	Range (%)	Schemes < 60% (closet-indexing flag)
Banking & Financial Services (n=3)	36.8 – 41.8	3 of 3
Technology (n=3)	43.5 – 51.2	3 of 3
PSU (n=2)	48.2 – 51.2	2 of 2
Healthcare/Pharma (n=2)	54.9 – 58.1	2 of 2
Defence (n=1)	31.3	1 of 1
Manufacturing (n=2)	57.2 – 69.5	1 of 2
Infrastructure (n=3)	60.5 – 76.7	0 of 3
Business Cycle (n=2)	75.5 – 79.5	0 of 2

Table 2: Active Share by category, May 2026.

Thirteen of eighteen schemes (72%) register Active Share below the 60% threshold. The point attracting attention (in sample) is the pattern is consistency within category, every Banking, Technology, PSU, Healthcare, and Defence fund falls below it, while every Infrastructure and Business Cycle fund clears it. HDFC Defence Fund records the sample's lowest Active Share at 31.3% signifying nearly 69% of its portfolio, by weight, overlaps with its own benchmark being the strongest single closet-indexing signal in the sample. Probable reason lies in the fact that, its benchmark, the Nifty India Defence Index, is itself highly concentrated.

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Within-AMC Portfolio Overlap

Table 3 reports the ten highest within-AMC scheme-pair overlaps among the 46 pairs computed.

AMC	Scheme Pair	Overlap (%)
ICICI Prudential	Banking & Financial Services vs. Business Cycle	31.9
ICICI Prudential	Manufacturing vs. Business Cycle	21.6
HDFC	Banking & Financial Services vs. Business Cycle	21.5
ICICI Prudential	Infrastructure vs. Business Cycle	20.2
HDFC	Infrastructure vs. Business Cycle	17.1
HDFC	Pharma& Healthcare vs. Manufacturing	14.2
HDFC	Infrastructure vs. Manufacturing	13.8
HDFC	Manufacturing vs. Defence	12.9
HDFC	Technology vs. Business Cycle	11.8
ICICI Prudential	Banking & Financial Services vs. PSU	11.6

Table 3: Top ten within-AMC scheme-pair overlaps, May 2026.

A clear pattern is coming out, broadly-mandated Business Cycle funds carry the highest overlap with their AMC's own narrower sectoral siblings in six of the top ten pairs, at both ICICI Prudential and HDFC. The highest single overlap, 31.9% between ICICI Prudential's Banking & Financial Services and Business Cycle Funds, remains below SEBI's 50% ceiling but is large enough to represent a meaningful shared bet between funds marketed under distinct labels. SBI's pairs, by contrast, show significantly lower overlap throughout (maximum 11.2%, not shown in the table), suggesting overlap intensity is AMC-specific rather than purely category-driven.

Tracking Error and R^2

Table 4 reports annualised Tracking Error and R^2 for the full sample window (January 2024–May 2026) and the pre-/post-circular split.

Category	TE, all (%)	R^2, all	TE, before (%)	TE, after (%)
Banking& Financial Services	3.9 – 5.0	0.91 – 0.94	3.9 – 5.3	3.3 – 4.0
Technology	4.0 – 6.2	0.90 – 0.96	3.4 – 6.5	4.8 – 6.5
Infrastructure	7.2 – 9.9	0.83 – 0.87	6.0 – 10.4	5.4 – 11.5
Healthcare/Pharma	3.3 – 3.7	0.96	3.6 – 3.8	1.6 – 3.6
PSU	4.5 – 5.5	0.96	4.5 – 5.8	3.6 – 4.6
Manufacturing	4.0 – 4.7	0.94 – 0.95	4.1 – 4.9	3.4 – 3.6
Business Cycle	4.4 – 4.7	0.90 – 0.92	4.2 – 4.5	3.2 – 5.6
Defence	9.9	0.94	10.5	6.3

Table 4: Tracking Error and R^2 by category, monthly returns, Jan 2024–May 2026.

The return-based measure captures a different story. Infrastructure and Defence funds the categories with the lowest Active-Share, register the highest Tracking Error (7–9.9% and lowest R^2 0.83–0.94), versus above 95% for the tightest-hugging funds, indicating their returns diverge most from their benchmarks. This divergence between holdings-based and returns-based diagnostics is consistent with the two-dimensional framework of Cremers and Petajisto (2009) and Petajisto (2013). Funds can be "concentrated stock pickers" (low Active Share, high Tracking Error) or "factor bets" (the reverse) as readily as straightforward closet indexers, and no single metric is able to captures the full picture.

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The average tracking error after the circular should have been lower than the tracking error before the circular, as per the research theme. But actual numbers differs than expectations. The reason most probably is hidden in the India VIX data. The pre-circular window closed at a record-low VIX reading of 9.15 (26 December 2025), while the post-circular window registers a sharp spike to a 52-week high of 28.91 before cooling down to approximately 12 by second quarter of 2026.

Discussion and Conclusion

The study finds substantial evidence of closet-indexing-consistent behaviour among India's largest sectoral and thematic equity funds. The concentration was seen in Banking & Financial Services, Technology, PSU, Healthcare, and Defence categories, where Active Share ranges below the conventional threshold for nearly every scheme studied. Further, within-AMC overlap analysis exposes that broadly-mandated "Business Cycle" thematic funds are the largest single contributor to overlap with an AMC's own narrower sectoral siblings. This is specifically the cross-scheme resemblance pattern that motivated SEBI's February 2026 circular. Together, these findings suggest closet indexing in the Indian context is not confined to one fund story. The narrow sectoral funds are found to hug their own benchmarks; while broader thematic funds appear to hug their AMC's other offerings. Both situations raise serious flags.

Though, the Interpretation comes with following limitations. First, the benchmark-composition critique of Frazzini et al. (2016) applies with particular strength: several of the lowest-Active-Share schemes (notably HDFC Defence Fund) are benchmarked to narrow, highly concentrated indices, and some of their measured closet-indexing signal may reflect benchmark structure rather than manager behaviour.

Further, the "after" window spans only five to seven months against a twenty-four-month of "before" window, and SEBI's compliance timeline extends three years from the circular date. Post-circular results including the near-doubling of SBI Infrastructure Fund's Tracking Error are therefore an early signal of AMC response, not evidence of the regulation's steady-state effect, which will not be observable before 2029.

Utility wise, So far investors are concerned, if you know two things about a fund, what category it's in and which AMC runs it, based on this research, you can easily make a reasonable idea about whether you're likely to be paying active management fees for a fund that actually is tracking its benchmark closely. For regulators, these results offer a pre-circular baseline. Further with SEBI's own mandated monthly overlap disclosures can be benchmarked as post-circular history accumulates.

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