Investor protection

Costs and performance of potential closet index funds

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Summary

Closet indexing' refers to the situation in which asset managers claim to manage their funds in an active manner while in fact tracking or staying close to a benchmark index. Panel regressions using annual fund-level data for the period 2010-2018 suggest that investors face lower expected returns from closet indexers than from a genuinely actively managed fund portfolio. At the same time, potential closet indexers are only marginally cheaper than genuinely active funds. Overall, the net performance of potential closet indexers is worse than the net performance of genuinely active funds, as the marginally lower fees of potential closet indexers are outweighed by reduced performance.

Introduction

Benchmark indices may play a role in the management of a fund in different ways. For example, an active fund may aim to outperform its benchmark or may use its benchmark to define its investment universe. Passive funds aim to track or stay close to a benchmark index.

'Closet indexing' refers to the situation in which asset managers claim to manage their funds in an active manner while in fact passively managing the fund. An economic incentive to do so is that fees for funds with an active mandate tend to be higher than those for passive funds. Closet indexing is a form of misconduct that has been criticised by supervisors and investor advocacy groups on numerous occasions in recent years. A major concern is that investors are being misled about a fund's investment strategy and objective and are not receiving the service that they have paid for.[127]

In recent years, ESMA and NCAs have worked to identify potential closet indexers by examining metrics on fund composition and performance and by conducting follow-up detailed supervisory work on a fund-by-fund basis. ESMA recognises that such metrics, while imperfect screening tools, are a useful source of evidence to help direct supervisory focus.

This article does not aim to identify particular closet indexers. Rather, it analyses how closet indexing relates to the costs and performance of EU-domiciled equity funds.[128] In so doing, it aims to contribute to the understanding of closet indexing in the EU.

Policy context

If a fund manager does carry out closet indexing, this has consequences for investor protection (ESMA 2016). An immediate concern is that, by definition, closet indexing involves misinforming prospective and current investors. Additional concerns include the following.

- Investors could be making investment decisions based on an inaccurate expectation of receiving a more active fund management service than the one they will actually receive.
- Investors may be exposed to a different risk/return profile from the one they had envisaged.
- Investors may also be subject to higher fees than those they would pay for a passive fund

[126] This article was authored by Lorenzo Danieli, Alexander Harris and Giorgia Pichini.

[127] See e.g. ESMA (2016), Central Bank of Ireland (2019), Better Finance (2019a).

[128] This article summarises the detailed results and discussion in Danieli, Harris and Pichini (2020).

that explicitly tracked a given benchmark index.

Among funds that pursue active strategies, some may materially underperform their benchmarks. In other words, they would have received higher returns from index-tracking. However, other genuinely active funds may outperform. Closet indexing does not offer the same ex-ante risk profile that investors should expect from genuine active management. In particular, it does not offer scope for strongly positive alpha (i.e. performance above the risk-free rate that is not attributable to market exposure).

To help investors protect themselves against poor fund performance and excessive fees, ESMA has published its Annual Statistical Report on Performance and Costs of Retail Investment Products in the EU (ESMA 2020). The report provides extensive comparative statistics on an annual basis about gross and net returns of fund products sold in the EU, which can serve as an important point of orientation for investors. The report also presents yardsticks for the performance of funds over several time horizons.

Related literature

This section introduces several metrics of closet indexing that have been developed in the literature. It then turns to studies of costs and performance of closet index funds in comparison with genuinely active funds.

Metrics for potential closet indexing

For a given fund and benchmark, the two main sources of data that can be used to try to identify closet indexing are the portfolio composition of the fund versus its benchmark and the fund's performance versus that of its benchmark. Neither source of data yields perfect identification of closet indexing for two reasons.

First, the portfolio composition and returns of potential closet indexers will in general differ from those of their benchmarks to varying extents, as a perfect index replication is not generally feasible. Additionally, some managers may follow a strategy of partial index replication, while retaining some degree of active management, possibly to a varying extent over time.

Second, active funds may pursue strategies that do not simply aim to replicate an index but that nonetheless closely match the benchmark in terms of portfolio composition or returns. As a result, any metric used to identify potential closet indexers is likely to yield false positives.

Different metrics have been developed to help identify potential closet indexers. We will focus on Active Share (AS), Tracking Error (TE), Style Shifting Activity (SSA), R^2 and Beta.

The main portfolio-based measure is AS, introduced by Cremers and Petajisto (2009). Intuitively, AS is the part of a fund's portfolio that cannot be decomposed into a benchmark component.[129] AS is a useful way of indicating the potential for outperformance.

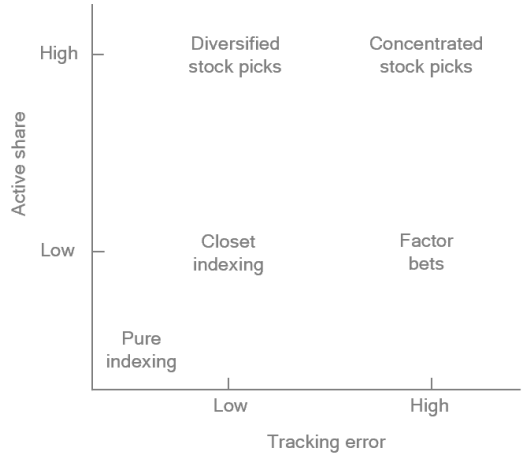
AS can be complemented by performance-based metrics, a prominent example of which is TE, the standard deviation of the difference in fund returns and benchmark returns over time.[130]

Cremers and Petajisto (2009) note that TE is sensitive to strategic decisions around factors such as momentum or value, which involve a fund manager taking correlated active positions. In contrast, AS weights all active positions equally regardless of the extent to which they are diversified. For this reason, it is likely to be more suitable as a proxy for undiversified stock picking. To the extent that TE and AS reflect these two fundamental approaches to active fund management, they are complementary (RA.1).

[129] More precisely, any fund can be decomposed into a benchmark component plus its AS, which is a residual that comprises a zero net-investment long-short portfolio.

[130] Alternative measures of TE are based on the residuals of regressions of fund returns on investment factors such as those in Fama and French (1993) and Carhart (1997).

RA.1
Relation of active management styles to AS and TE
Different metrics capture different styles



Source: Reproduced from Cremers and Petajisto (2009).

Another performance-based approach is SSA, developed by Hermann et al (2016). SSA measures the extent to which a fund changes its quarterly aggregate exposure to the investment factors of market exposure, value, size and momentum. [131] Intuitively, the 'factor bets' style of active management (RA.1) involves changes in exposure to such factors in response to a changing investment environment. Closet indexers, in contrast, might be expected to have low SSA values as closet indexing by definition involves benchmark replication.

Other performance-based metrics arise from regressing fund returns on factors. Following Fong (2016), we define a fund's R^2 to be the coefficient of determination from the Capital Asset Pricing Model (CAPM), i.e. a time series regression of fund returns on benchmark returns plus a constant. R^2 is therefore a measure of how far variations in benchmark performance explain variations in fund performance. A related measure is beta, the coefficient on the benchmark returns in the same regression, which gives a performance-based measure of a fund's benchmark exposure.

In a study published by the Autorité des Marchés Financiers (AMF), Demartini and Mosson (2018) calculate measures of SSA, TE and R^2 for a sample of nearly 800 French funds invested in European equities. They show that the three metrics are complementary in that they exhibit a high degree of covariance within the sample.

Costs and performance literature

A theoretical framework for understanding the average returns of active funds versus benchmarks is found in Sharpe (1991). Sharpe argues that the aggregated holdings of equity funds in a given market should equal the market benchmark as a whole. For this reason, performance before costs of all actively managed portfolios, taken together, should equal benchmark performance. Taking costs into account, actively managed funds should on average therefore underperform their benchmarks. Several empirical studies have supported this hypothesis. [132]

If Sharpe's hypothesis is correct and assuming that closet indexers manage to replicate their benchmarks closely, gross returns for closet indexers in a given market should approximately equal those of genuinely active funds.

Importantly however, the framework in Sharpe (1991) rests on certain assumptions that may not fully hold in a given market. The assumption that active funds' aggregate holdings equal the market as a whole may not hold if sizeable direct equity holdings that differ in aggregate from the overall portfolio held by investment funds in the market exist.[133] Another reason is that time lags in updating equity indices, to reflect changing valuations, may prevent them from accurately representing the market as a whole. In such cases, there is scope for closet indexers to outperform or underperform genuinely active funds. Overall, empirical studies have tended to show that closet indexers have slightly underperformed genuinely active funds.

Empirical studies in the academic literature on how closet indexing relates to performance have focused largely on US equity funds. An exception

[131] For a formal definition of SSA, see Herman et al (2016).

[132] The degree of empirical support for the hypothesis appears to vary across years. A recent example is Morningstar Research (2019), based on a sample of US funds representing 64% of the overall market. The study compares performance of active funds with that of passive funds, as opposed to the performance of benchmark indices, thereby taking into account the costs involved in passive management when assessing relative performance. According to the results, 48% of active U.S. stock funds survived and outperformed their average passive peer for the period July 2018 to June 2019, compared with only 37% in the previous 12-month period.

[133] Fama and French (2010) find that the assumption does hold in US equity markets, i.e. the aggregate portfolio of active funds closely matches the market as whole.

is Morningstar Research (2016), which focuses on Europe-domiciled funds investing in large cap equities, using data from 2006 to 2015. The study finds that large cap equity funds in the top quintile of AS tended to enjoy higher average benchmark-adjusted returns than other funds.[134] Using a sample of international funds, Cremers et al (2016) find that explicit indexing and closet indexing are associated with countries' regulatory and financial market environments.

A common pattern is that among US equity funds with an active mandate, greater activeness is associated with higher returns. Cremers and Petajisto (2009) find that US equity funds with the highest AS persistently outperform their benchmarks. Petajisto (2013) reports similar findings. Among another sample of US equity funds, Amihud and Goyenko (2013) find that the R^2 measure predicts returns in excess of the benchmark. However, Cremers and Pareek (2015) have a more qualified result: AS is associated with higher performance only among funds whose holding duration exceeds 2 years.[135] Finally, Frazzini et al (2016) find, contrary to previous studies, that although higher-AS funds performed better than their lower-AS counterparts after controlling for benchmarks, the difference was not significant.

Turning to the issue of costs, Cremers et al (2016) find that actively managed funds are more active and charge lower fees when they face more competitive pressure from low-cost (explicitly) passive funds. Amihud and Goyenko (2013) find that among funds with active mandates, activeness measured by R^2 is associated with slightly higher fees.

Empirical approach

Our empirical strategy is to investigate how several complementary measures of potential closet indexing – AS, TE, R^2 and Beta – relate to costs and performance. Unlike in a supervisory context, our aim is not to identify precisely which funds in the sample carry out closet indexing, but rather to investigate the likely in-sample impact of closet indexing on investor outcomes.

In addition to examining the relationship of the variables taken individually with performance and costs, we also investigate how the variables together relate to these outcomes. Interdependence of the variables would complicate a joint regression of the untransformed variables and its interpretation.[136] A tractable way to address this problem is to combine different metrics in a single, binary variable, allowing us to test whether the metrics are jointly associated or not with directional effects on investor outcomes.

In common with the prevailing approach in the literature, including Cremers and Petajisto (2009) and Amihud and Goyenko (2013), we run pooled OLS regressions, including time fixed effects.[137] This approach, in contrast to a model including fund fixed effects, enables us to identify relationships among variables measured across (rather than within) entities, which is the intended focus of our analysis. As such, we identify differences in variables of interest (such as fund alpha) between potential closet indexers and the rest of the population of active funds, controlling for observed characteristics.

We define a combined indicator of potential closet indexing, denoted $potCI_{i,t}$, for fund i in year t, to take the value 1 when the following three conditions are met:

i. $TE_{i,t} < 3\%$
ii. $R^2_{i,t} > 95\%$
iii. $\beta_{i,t} \in (0.95, 1.05)$

and to take the value 0 otherwise. Recall from the discussion of metrics in the literature review that the incidence of closet indexers is expected to decrease in TE, increase in R^2 and to be greater in the region of beta values close to one.

The choice of threshold values for TE and R^2 is guided by ESMA (2016). In the case of the combined metric, the share of false positives among funds classified as potential closet indexers can be expected to decrease as the relevant thresholds are made stricter. In choosing the threshold values for the core specification of the metric $potCI_{i,t}$ as above, we therefore calibrate thresholds that are strict enough to allow

[134] Better Finance (2019b) includes a regression of Jensen's alpha on TE, benchmark returns and costs for a sample of funds in Belgium, France and Luxembourg. The study funds a positive relationship between TE and alpha.

[135] This finding suggests that measures of activeness such as SSA may neglect a relevant source of alpha among funds that pursue active strategies.

[136] Another complication is that closet indexing is expected to be non-monotonic in Beta, since funds with beta that is significantly higher or lower than 1 may deviate significantly from their benchmarks.

[137] Amihud and Goyenko also include style fixed effects, encoded by a category variable in which each fund is identified by one of nine different management styles.

for directional effects to be identified when we subsequently study how the combined metric relates to cost and performance, to complement our study of how the individual components of the metric relate to these outcomes.[138]

In Danieli et al. (2020), we establish that the combined returns-based indicator is a significant predictor of AS in our sample.

To examine the extent to which potential closet indexers are associated with higher or lower performance and costs, we regress

$$Y_{i,t} = \beta_0 + \beta_1 C_{i,t} + \beta_2 X_{i,t} + \beta_3 W_{i,t} + \sum_{t=1}^{8} \delta_t T_t + u_{i,t} \quad (1)$$

where, according to the specification, $Y_{i,t}$ denotes (Jensen's) alpha or Total Expenses Ratio (TER) and $C_{i,t}$ denotes $AS_{i,t}$, $TE_{i,t}$, $R^2_{i,t}$ or $potCI_{i,t}$. The other variables are as follows: $X_{i,t}$ is a set of fund-level characteristics such as size and age, $W_{c,t}$ is a set of country-level characteristics and time dummies T_t are included to control for one-off shocks on an annual basis.

There does not appear to be an obvious prediction for the sign of β_1 in equation (1) when (gross) returns are the dependent variable. If the theoretical framework of Sharpe (1991) approximately holds, one would expect the coefficient to be small in magnitude.

Finally, when TER is the dependent variable in equation (1), one would expect β_1 to be: (i) non-positive for $C_{i,t} \in \{AS_{i,t}, TE_{i,t}, potCI_{i,t}\}$ and non-negative for $C_{i,t} = R^2_{i,t}$, assuming closet indexing is not related to pricing power; and (ii) small in magnitude. The latter hypothesis is based on the theoretical observations that setting significantly lower prices would lower the economic incentive to do closet indexing although some undercutting on price (facilitated by the fact that closet indexers would bear lower economic costs than those that active strategies entail) may win market share.[139]

Data description

We use yearly data from 2010 to 2018 for a sample of about 5,400 funds.[140] Sample selection is guided by the specification in ESMA (2016). The sample comprises EU-domiciled UCITS equity funds not categorised as index-trackers that had management fees of more than 0.65% of fund NAV.

The measures of potential closet indexing included in our dataset are AS, TE, R^2 and Beta (RA.2). While the latter three measures are available as reported by funds, AS is the result of a calculation that combines, at the fund level, a fund's portfolio and its benchmark index. Furthermore, the dataset includes many fund-specific characteristics such as fund size and age, returns (net of costs and gross, benchmark-adjusted and unadjusted), alpha and TER. Finally, the dataset includes time-varying macro-level data such as inflation and market volatility.

AS is calculated against technical benchmarks assigned by the data provider, rather than the benchmark that a fund reports in its prospectus. An advantage of using AS based on technical benchmarks is that it has higher coverage; the sample size would be around one quarter lower if we were to use AS based on the prospectus benchmark. A disadvantage is that the technical benchmark does not form part of the information disclosed to investors.[141]

The micro-level data originate from three commercial data terminals. Data on TER and net returns are from Refinitiv Lipper, as reported by funds. All other figures on fund characteristics and performance are from Morningstar Direct, as

[138] In Danieli et al. (2020), we find that a notable property of the metric is that the directional effects on investor outcomes are preserved as the metric is 'tightened' by making the thresholds stricter. This consistency property suggests that in the region of the joint distribution of the component metrics TE, R^2 and beta where false positives are sufficiently low to permit meaningful analysis, the inferred impact of potential closet indexing is qualitatively the same as that for the metrics studied individually. Furthermore, our key qualitative results do not appear sensitive to the choice of thresholds within this region of meaningful analysis.

[139] A related theoretical constraint on optimal price-setting from the perspective of a closet indexer is that setting fees sufficiently low may reveal to the market that the manager faces lower economic costs than those that active strategies typically entail, thereby revealing that the fund is not genuinely active.

[140] This includes annualised values of TE, R^2 and Beta, which are calculated based on monthly returns

[141] As a robustness check, we ran our regressions using AS calculated against prospectus benchmarks. The main difference was in the case of the performance (alpha net of costs) regression, in which AS was significant at the 5% level in the absence of controls but lost significance in the presence of controls. However, AS was significantly associated (at the 1% level) with performance measured by gross returns

reported by funds. Finally, macroeconomic data (inflation, VSTOXX, etc) are from Refinitiv Eikon.

One issue encountered in constructing the dataset was missing observations. Following the deletion of missing or suspect observations, the final sample amounted to 3,206 UCITS funds. [142] The final sample has a total size of EUR 1.41tn.

Most variables are expressed in percentage form. To guarantee some degree of stationarity, trending variables such as VSTOXX were transformed in first differences.

RA.2
Descriptive statistics
Summary of key variables

	Obs.	Mean	Min	Max	St. dev
CI metrics					
Beta	25,426	1.0	-1.2	3	0.2
R^2	25,426	82.9	0	100	16.7
AS	25,889	76.9	9.1	100	18
TE	25,426	5.1	0.1	35.2	2.9
Fund characteristics					
Fund size	28,683	443	0	13,100	914
Net flows	26,093	1.3	-7,790	5,230	216
Alpha	24,423	9.7	-65.9	138.3	15.2
TER	24,002	1.7	0	10	0.6
Age	26,168	13.1	0	85.0	9.8

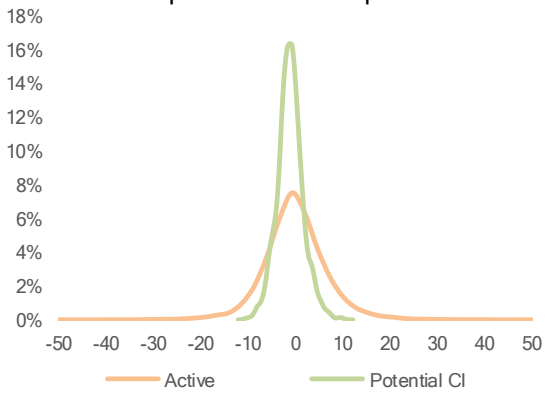
Note: R^2, AS, TE, alpha and TER in percentage points. "Alpha" = Jensen's alpha for a fund at year-end based on a 36-month trailing calculation. Fund size and net flows in EUR mn. Age in years. "Obs." = Total observations. "P10"=Value of variable at top of first decile; subsequent columns analogously defined.

The *potCI* metric – i.e. the indicator variable that combines the returns-based metrics of Beta, R^2 and TE, as defined above – has some time variation ranging from a high of around 11% of funds in 2018 to a low of around 5% in 2017.[143] This variability appears to be driven by a relatively small subpopulation of funds that is 'marginal', in the sense that their returns-based metrics (R^2 and TE in particular) are close to the threshold values. As a result, potCI is sensitive to market conditions for these funds.[144]

Excess returns, defined as gross fund returns minus gross benchmark returns, are a variable of interest as managers' performance is often judged relative to the market in which they invest. In keeping with the literature, however, we use alpha as our primary measure of performance as it also adjusts for risk from benchmark exposure.

An alpha for funds that meets our combined metric for potential closet indexing show far less variability than the rest of the population (RA.3). A similar result holds for excess returns.

RA.3
Jensen's alpha distributions by *PotCI* value
Concentrated performance for potential CIs



Note: Kernel density in % (y-axis) of Jensen's alpha (x-axis) of the two identified groups. "Potential CI"=Funds satisfying the PotCI indicator variable in a given year, "Active"=other funds in the sample.
Sources: Morningstar Direct, ESMA

Closet indexing, similar to explicit passive investing, is generally much less costly to implement than are genuinely active strategies. A major concern however is that investors in closet index funds nonetheless pay the higher fees associated with active management compared with passive management (RA.4).[145]

[142] Funds with missing values of AS, TE and R^2 were excluded. Outliers that were deleted from the sample included cases in which AS for some funds vastly exceeded 100%, even though none of the funds in the sample were heavily leveraged.

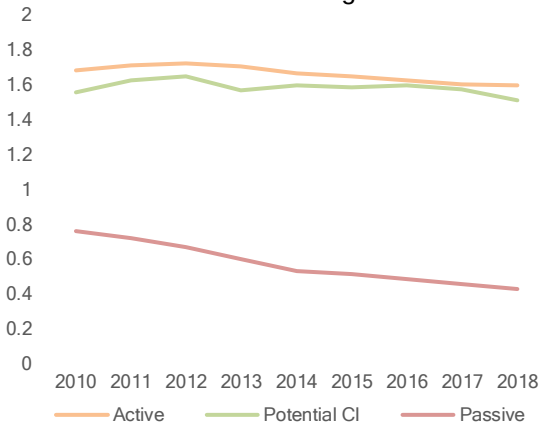
[143] The incidence of potential closet indexing according to the *PotCI* metric shows a similar pattern to that measured by the indicator set out in Box T.76. The latter indicator has been developed in the context of identifying potential CI rather than studying the effects of the phenomenon, as we do in this article. The indicator in Box T.76 has the advantage of being calculated on a higher-frequency basis (quarterly rather than annual), allowing for a more detailed time series. This feature, together with some differences in the samples used, means the implied incidence of time is not identical for the two indicators.

[144] The apparent sensitivity of potCI to market conditions among the subpopulation in question was another reason to investigate the effect of 'tightening' the threshold values of R2, TE and beta used to define the potCI indicator. As reported above, our key qualitative results are insensitive to the precise choice of thresholds.

[145] Our main dataset does not contain data on passive funds. Data on TER of passive funds have been extracted from

To investigate this issue, we complemented our dataset with data on TER of passive equity funds. As expected, potential CIs cost investors much more than passive funds, showing a TER only very slightly lower than other funds with active mandates. Average TER among the sample of funds with an active mandate had only a slight downward trend over the period 2010-18, in contrast to TER among passive funds, which decreased steadily and substantially. [146]

RA.4
TER by *potCI* values and passive funds, 2010-2018
Potential CIs and active charge similar costs



Note: Evolution of average total expense ratio, % (y-axis) over time (x-axis) of Active, Potential CIs and Passive funds.
Sources: Refinitive Lipper, ESMA

Results

Regressing the different potential closet indexing metrics on alpha (RA.5) strongly shows significant relationships under all specifications. [147] The sign of the coefficients consistently shows that potential closet indexers tend to have significantly lower performance, in keeping with much of the empirical literature.[148]

The fact that this relationship is consistently observed across portfolio-based and returns-based measures suggests that different approaches to active management – e.g. factor bets, diversified stock picks and correlated stock picks – are positively associated with higher performance among our sample of equity funds.

Turning to costs, the results suggest that potential closet indexers are slightly cheaper than the wider population of truly active funds (RA.6). Significant effects can be found via return-based metrics for potential closet indexing in both the single and the combined regressions. Specifically, TE, R^2 and *potCI* are valid predictors at the 1% significance level. In terms of magnitude, potential closet indexers are 0.06 pp (i.e. 6 bp) cheaper than truly active funds. Similarly, funds with a higher tracking error (truly active) have a higher TER on average. The effect of a decrease of 1pp in R^2 is associated with a decrease in TER of less than a tenth of a basis point.

RA.5
Regression results
Impact of potential closet indexing on alpha

	Alpha	Alpha	Alpha	Alpha
TE	0.198***			
R^2		-0.072***		
potCI			-0.880***	
AS				0.013***
Controls	Yes	Yes	Yes	Yes
N	21,254	21,254	21,254	21,254
N cluster	2,847	2,847	2,847	2,847

Note: Annual observations from 2010 to 2018. R^2 = coefficient of determination obtained from CAPM regression of fund returns on benchmark returns, which is then used as an independent variable in regression reported in the table. N = number of observations. "N cluster" = number of observations clustered by fund ID. All specifications include time dummies. ***p<0.01, **p<0.05, *p<0.1 .

Refinitiv Lipper to ensure a meaningful comparison across costs. TER values might differ slightly from those in other ESMA publications owing to differences in methodology and sample selection.

146 The slight downward trend in TER across the population of active funds as a whole may be owing to increasing competitive pressure from passive funds, as documented for example in Cremers et al (2016).

147 For the reasons set out above, we run unlagged pooled OLS regressions of the models specified in equation (1). Varying our specifications respectively to include fund fixed effects, and lagged x-variables and replacing alpha with other performance metrics yields qualitatively similar results in most cases. Throughout, we control for fund characteristics and macroeconomic factors, and cluster standard errors by funds.

148 We find that the results are qualitatively similar when unadjusted gross returns are used as the dependent variable instead of alpha. The same is true for excess returns measured simply as the difference between net returns and benchmark returns.

RA.6
Regression results
Impact of potential closet indexing on TER

	TER	TER	TER	TER
TE	0.017***			
R^2		-0.001**		
potCI			-0.075***	
AS				0.001*
Controls	Yes	Yes	Yes	Yes
N	19,884	19,884	20,327	20,327
N cluster	2,686	2,686	2,735	2,735

Note: Annual observations from 2010 to 2018. R^2 = coefficient of determination obtained from CAPM regression of fund returns on benchmark returns, which is then used as an independent variable in regression reported in the table. N = number of observations. "N cluster" = number of observations clustered by fund ID. All specifications include time dummies. ***p<0.01, **p<0.05, *p<0.1 .

Conclusion

Closet indexing can be defined as a practice whereby asset managers claim to manage their funds in an active manner while in fact passively managing them. As ESMA has previously highlighted, closet indexing is a major investor protection concern in its own right, as it involves misrepresenting information to investors.

We investigate how potential closet indexing – as measured by a range of different metrics – relates to performance and costs of EU equity funds. We find evidence that demonstrates that the potential closet indexing metrics we study are associated with lower alpha. This result is in line with several recent studies of US equity funds. Similar results hold for simpler performance measures such as unadjusted returns. Turning to costs, we find that potential closet indexers are associated with a slightly lower TER than active funds generally. Although closet indexing funds enjoy much lower economic costs than other active funds, they only pass on a small proportion of these savings to consumers on average, rather than competing strongly on price to win market share.

A possible topic for future work, building on the present study, would be to further broaden the set of closet indexing metrics still used.

In summary, our results suggest investors in closet indexing funds on average have worse outcomes than investors in genuinely active funds. Investors face lower expected returns from closet indexers than from what they are promised, namely an actively managed fund portfolio. In other words, as well as being a form of misconduct, closet indexing makes investors worse off ex-ante. Even though potential closet indexers are marginally cheaper than genuinely active funds, this difference is outweighed by reduced performance: potential closet indexers perform worse even when fees are taken into account. More generally, our results provide strong confirmation of the concerns of supervisors and investor advocacy groups that investors in closet indexing funds face an unjustifiably high level of costs, far in excess of those for explicitly passive funds.

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