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Retirement Plan Conflicts of Interest in Mutual Fund Management

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Abstract

Form ADV regulatory disclosures made by mutual fund management firms indicate that nearly one-third of investment advisers to mutual funds offer pension consulting services to defined contribution plans, creating inherent conflicts of interest that allow advisers to recommend their own affiliated funds to plan sponsors. Using the complete universe of Form ADV filings merged with CRSP mutual fund data, I examine how these retirement plan conflicts affect mutual fund portfolio management and performance over the period 2003 to 2014. In contrast to prior studies that relied on hand-collected plan-level data and focused on participant outcomes, this study provides fund-level evidence using comprehensive regulatory disclosures to assess how such conflicts affect managerial incentives. I found that equity mutual funds managed by conflicted advisers exhibited widespread underperformance and were managed to a significantly lesser extent, consistent with weakened incentives arising from sticky defined contribution assets. The effects were economically larger for target date mutual funds, which played a central role as default investment options in retirement plans. The results have important policy implications, suggesting that disclosure alone may be insufficient to mitigate conflicts of interest and highlighting the need for stronger fiduciary oversight and governance of plan menus, particularly for default investment options.

Keywords: mutual funds; retirement plans; defined contribution; conflicts of interest

JEL Classification: G11; G23; G24

1. Introduction

According to the Investment Company Institute (ICI), in 2024, over 50 percent of households in the United States owned mutual funds through employer-sponsored defined contribution (DC) retirement plans such as 401(k) or 403(b) plans. ICI data further show that significant growth in defined contribution plan assets over the recent past has directly benefited the mutual fund industry. DC assets invested in mutual funds have grown fivefold since 2000, reaching $5.32 trillion in 2024. This amounts to nearly a fifth of all assets invested in mutual funds.[1] Given the defined contribution industry's importance to growth in the mutual fund industry, it comes as no surprise that conflicts of interest have become an area of concern. Prior literature has documented the existence of defined contribution conflicts of interest for mutual fund companies [e.g., Pool et al. (2016) and Werner (2016)]. Many mutual fund companies offer 401(k) plans or act as service providers (consultant or trustee) and may be inclined to use their influence with plan sponsors to place their own affiliated funds on plan menus. Prior studies on DC conflicts of interest for mutual fund managers have used hand-collected plan-level data, with a focus on

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plan participant outcomes and individual plan quality. This study uses a complete set of regulatory disclosures made by mutual fund managers and fund-level data to examine how this conflict of interest affects incentives for mutual fund companies and their portfolio managers to produce outperformance.

Prior mutual fund literature presents evidence that portfolio managers and fund companies are less incentivized to generate outperformance if underlying shareholders are unwilling to withdraw assets when funds perform poorly [e.g., Del Guercio and Reuter (2014); Evans and Fahlenbrach (2012)]. Retirement plan conflicts of interest present a similar scenario for fund management companies. For example, Pool et al. (2016) find that mutual fund 401(k) trustees are less likely to remove their own poorly performing funds from plans. If managers of these funds are not at risk of losing assets when performance is poor, this potentially provides lower incentives for portfolio managers and management firms to invest in active management and produce outperformance.

This study addresses three related research questions: First, do mutual funds managed by advisers with defined contribution conflicts of interest underperform otherwise similar funds? Second, do such conflicts weaken managerial incentives by reducing active portfolio management and muting the sensitivity of investor flows to past performance? Third, are these effects more pronounced for target date funds, which play a central role as default investment options in defined contribution plans? The analysis is guided by four testable hypotheses that link defined contribution conflicts of interest to managerial incentives and fund outcomes. If advisers face weaker discipline because conflicted retirement plan assets are relatively sticky and affiliated funds are less likely to be removed from plan menus, then funds managed by conflicted advisers should exhibit inferior performance (H1). Weaker performance incentives should also reduce costly managerial effort, leading conflicted funds to be managed less actively than their peers (H2). Further, insulation from investor withdrawals should manifest as a weaker flow–performance relationship, particularly following poor performance (H3). Finally, these effects should be strongest for target date funds, which receive substantial plan-level inflows as qualified default investment alternatives and are less subject to active participant choice (H4).

To investigate whether mutual funds with defined contribution conflicts of interest underperform, I examine annual regulatory disclosures made by the investment advisory firms that manage each mutual fund. Investment advisers to mutual funds are required to file Form ADV with the U.S. Securities and Exchange Commission (SEC) on an annual basis and provide information regarding potential conflicts of interest.[2] To identify defined contribution conflicts of interest, I consider whether a mutual fund's investment adviser, or an affiliated firm, provides pension consulting services to retirement plans. I term funds managed by these investment advisers as defined contribution conflicted (DCC) mutual funds. Werner (2016) provides an overview of the role of consultants in 401(k) plan management. The SEC has also defined the scope of services that pension consultants typically provide to defined contribution plans. In both cases, the selection of investment options, such as mutual funds, for use by plan participants falls squarely within the scope of services provided by pension consultants.[3] The disclosure of this potential conflict, however, does not necessarily indicate that it manifests materially within an adviser's business. First, I check whether the disclosure of the conflict on Form ADV is consistent with the existence of a conflict. I find that DCC mutual funds obtain a significantly greater percentage of their fund assets from institutional share classes and exhibit weaker flow–performance relationships relative to peers, particularly when performance is poor. These findings are consistent with the presence of a conflict of interest, i.e., the presence of retirement plan

assets in the funds and reluctance of the adviser to remove their own poor performing funds from client plans.[4]

The primary contribution of this study documents that retirement plan conflicts of interest affect the performance of the adviser's mutual funds. The results reveal that actively managed domestic equity DCC mutual funds underperform by 36 basis points annually as measured by CAPM alpha and 29 basis points annually as measured by 4-factor alpha [Carhart (1997)]. While the magnitude of underperformance for DCC equity funds on an annual basis may not be striking, the cumulative underperformance over an employee's combined earning and retirement years would be economically substantial. Measures of fund activeness, such as Active Share and R^2 [Cremers and Petajisto (2009) and Amihud and Goyenko (2013)], indicate that these funds are actively managed to a lesser extent relative to peers. Economically, DCC funds have approximately 2.1 percentage points lower Active Share on average relative to peers. Lower levels of Active Share provide evidence of lower managerial effort exerted by managers due to the presence of conflicts of interest stemming from self-dealing (i.e., hiring and failing to fire themselves) in client plans.

DCC funds underperform regardless of whether the fund's adviser or an affiliated firm provides pension consulting services. Next, to provide more convincing evidence, I identify a sample of funds whose adviser 'switches' to offering pension consulting services during the sample period and show that these funds only significantly underperform *after* the investment adviser begins offering pension consulting services. The magnitude of results from the switcher analyses is stronger than the baseline results. Switcher funds underperform by 94 basis points and 86 basis points annually, as measured by CAPM and 4-factor alpha, respectively, after the fund's investment adviser begins offering pension consulting services.

While actively managed domestic equity funds are examined in baseline analyses for ease of comparison to the prior literature, I next investigate how retirement plan conflicts of interest affect target date mutual fund performance. Following the Pension Protection Act of 2006, there was a sharp increase in the use of target date funds as default options in defined contribution plans. Consistent with this notion, ICI data show that target date fund net assets have increased almost twelvefold from 2008 to 2024, from $160 billion to $2.0 trillion. Given the recent overwhelming asset flows to target date funds, mutual fund pension consultants might be most aggressive in recommending their own target date funds to plan sponsors, relative to any other asset class.[5] Thus, if conflicts of interest are more pronounced for target date funds, the magnitude of target date fund underperformance should be greater. Consistent with this prediction, DCC target date funds underperform peers with similar target retirement dates by 60 basis points annually. Since Balduzzi and Reuter (2019) show significant heterogeneity in fund risk, even within the same target retirement date, I also consider the authors' risk-adjusted performance measure. When performance is measured using 5-factor alpha, DCC target date funds still underperform 43 basis points annually.

I next conduct robustness tests. Many mutual fund advisers who provide pension consulting services are affiliated with other lines of business in the financial services industry, such as insurance, brokerage, and commercial banking. Form ADV disclosures are used to control for these business-related conflicts of interest, and the baseline results are similar. I also conduct propensity-score-adjusted analyses to ensure an appropriate comparison of funds is obtained based on observables (e.g., expense ratios, size, etc.) and find that the baseline results are statistically and economically similar.

This paper contributes to the literature that examines the intertwined relationship between mutual funds and defined contribution plans. The most closely related paper to this study is Pool et al. (2016), which analyzed plan-level data as opposed to fund-level

data. The authors hand-collected 11-k disclosures for 401(k) plans sponsored by a sample of companies in the COMPUSTAT universe, and examined whether mutual fund families acting as trustees for 401(k) plans display favoritism toward their own affiliated funds. They showed that fund deletions and additions are less sensitive to prior performance for affiliated than unaffiliated funds and that poor performance for affiliated funds persists. Participants did not correct for affiliation bias through their investment choices. Notably, in their hand-collected sample of funds, the authors did not find that affiliated funds underperformed peers or index funds.[6] The present study differs from this prior work because I obtain the complete set of Form ADV filings for mutual fund investment advisers, which allows for a thorough examination of DC conflicts using fund-level data. Form ADV filings provide a natural panel dataset free of selection biases. The data shed light on the extent to which DC conflicts of interest exist in the financial services industry. Nearly one-third (32%) of mutual fund advisers, or an affiliate, offered pension consulting services at some point during the sample period, 2003 to 2014. Using this sample, I find that both domestic equity and target date mutual funds with DC conflicts of interest statistically and economically underperform their peers.

Other related literature examines the role of defined contribution assets in mutual fund management and selection. For example, Sialm et al. (2015) examined the flow–performance relationship of DC assets relative to non-DC assets using data from Pensions and Investments (P&I) Surveys. The authors found that defined contribution assets tend to be more sensitive to past fund performance, relative to non-defined contribution assets. Similarly, a study by Christoffersen and Simutin (2017) used P&I data to show that fund managers controlling large sums of DC assets tend to increase their exposure to high-beta stocks, while aiming to maintain tracking errors around the benchmark. Neither of these studies, however, considered mutual fund firms with DC conflicts of interest. A study by Kronlund et al. (2021) examined participants' fund selection after a 2012 regulatory reform mandated fee and performance disclosures for the investment options in 401(k) plans. The authors showed that participants became significantly more attentive to expense ratios and short-term performance after the reform.

The present study also broadly contributes to the literature, which examines incentives and conflicts of interest affecting the performance generated by mutual fund management companies and other asset managers [e.g., Del Guercio and Reuter (2014); Berzins et al. (2013); Ferreira et al. (2018)]. It also contributes to a growing body of literature that examines target date funds [e.g., Balduzzi and Reuter (2019); Sandhya (2011); Elton et al. (2015); Mitchell and Utkus (2022); Gomes et al. (2022); Parker et al. (2023)]. The remainder of the paper is structured as follows: Section 2 presents the data, Section 3 establishes the existence of conflicts of interest for mutual fund pension consultants, Section 4 examines the performance and activeness of equity funds with DC conflicts, Section 5 explores differences in performance and risk-taking in target date mutual funds, Section 6 discusses robustness tests, and Section 7 outlines the conclusions.

2. Data, Variables and Sample Selection

2.1. Form ADV Pension Consulting Data

Data on mutual fund management firms that offer pension consulting services come from each mutual fund investment adviser's annual amendment to Form ADV.[7] The Form ADV data were obtained from the SEC through a FOIA request and include the full universe of filings from 2001, when electronic filing began, through March 2015.[8] Under Section 203A of the Investment Advisers Act of 1940, all mutual fund investment advisers are required to register with the SEC and file an annual amendment to Form ADV within

90 days of their fiscal year-end. This requirement generates a natural panel dataset that is largely free of selection bias.

The analyses focus on data disclosed in Form ADV Items 5G(5) and 7A(13). Item 5G requires the investment advisers to disclose the types of advisory services they offer. Advisers who check Item 5G(5) indicate they provide pension consulting services. According to Section 203(A) of Investment Advisers Act of 1940, pension consultants are defined as "An investment adviser who provides advice to: (i) Any employee benefit plan described, in Section 3(3) of the Employee Retirement Income Security Act of 1974 ("ERISA"); (ii) Any governmental plan described in Section 3(32) of ERISA; or (iii) Any church plan described in Section 3(33) of ERISA."

An examination report issued by the SEC's Office of Compliance Inspections and Examinations sheds light on the nature of advice offered by pension consultants, which includes their role in fund selection and monitoring:

> "Pension consultants provide advice to pension plans and their trustees with respect to such matters as: (1) identifying investment objectives and restrictions; (2) allocating plan assets to various objectives; (3) selecting money managers to manage plan assets in ways designed to achieve objectives; **(4) selecting mutual funds that plan participants can choose as their funding vehicles; (5) monitoring performance of money managers and mutual funds and making recommendations for changes**; and (6) selecting other service providers, such as custodians, administrators and broker-dealers. Many pension plans rely heavily on the expertise and guidance of their pension consultant in helping them to manage pension plan assets." (SEC Staff Report Concerning Examinations of Select Pension Consultants, 16 May 2005)

Importantly, pension consulting services disclosed on Form ADV may apply to both defined contribution (DC) and defined benefit (DB) plans.[9] Because Form ADV does not separately identify the type of plan advised, the presence of pension consulting alone does not mechanically imply exposure to DC assets. To distinguish between these possibilities, the analysis relies on the composition of mutual fund assets as an indirect but economically motivated proxy. In particular, institutional share-class assets are used to capture pooled retirement plan investments that are characteristic of DC plans, where participant contributions are aggregated and invested through omnibus vehicles. This approach is imperfect, as institutional share classes may also be used by other large investors, including fee-based advisers. However, multiple validation exercises support its relevance in this context. Funds managed by advisers providing pension consulting services derive a significantly larger share of assets from institutional classes and exhibit weaker flow–performance sensitivity, particularly following poor performance, consistent with the presence of conflicted DC assets. These patterns are difficult to reconcile with DB-only advisory relationships, which typically rely on separate accounts or commingled vehicles rather than mutual funds. Nevertheless, the proxy nature of institutional share-class assets remains a limitation, and future research using plan-level data or alternative disclosures could further refine the measurement of DC exposure.

Similarly, Item 7A requires investment advisers to disclose financial industry affiliations. Item 7A(13) requires investment advisers to disclose whether they are affiliated with a firm that provides pension consulting services.[10] While data from Item 5G(5) are available for the entire Form ADV data set since inception, Item 7A(13) data are available only beginning in 2011.

From these disclosures, I create an indicator variable. This variable (*DCC*) is equal to one if a mutual fund is managed by an investment adviser who checks *either* Item 5G(5) or Item 7A(13), indicating they or an affiliated firm provides pension consulting services

at the end of the prior fiscal year, and zero otherwise. One drawback to this approach is that affiliation data on pension consulting services are available beginning in 2011. The fact that there are some affiliated funds, without a direct conflict, operating prior to 2011 would likely bias the study away from finding results because conflicted funds, only by affiliation, would enter the non-conflicted sample prior to 2012. To alleviate potential concerns, adviser and affiliate conflicts of interest are examined separately for the applicable time periods where data are available. DCC mutual funds underperform regardless of whether the adviser or an affiliate provides pension consulting services.

2.2. Mutual Fund Data

Form ADV data are merged with the CRSP Survivor-Bias-Free US Mutual Fund Database using the investment adviser name reported in CRSP.[11] The baseline sample spans 2003 to 2014.[12] CRSP provides information on fund returns, total net assets (TNA), investment objectives, and other fund characteristics. Fund characteristics and returns are aggregated across share classes on an asset-weighted basis using the CRSP class group identifier (crsp_cl_grp). Fund age is measured using the oldest available share class. CRSP returns are reported net of fees, expenses, and brokerage commissions, but exclude front-end and back-end loads. Net returns are converted to excess returns by subtracting the corresponding risk-free rate.[13] Holdings data are obtained from Thomson Reuters and merged with CRSP through the MFLINKS table. Annual Active Share data for the full sample are sourced from Martijn Cremers' website (see Cremers & Pareek, 2016). Monthly time-series data for the market, size, value, and momentum factors are obtained from Kenneth French's website.

The main results focus on diversified actively managed domestic equity funds. Restricting the sample to equity funds is appropriate, as data provided by the Investment Company Institute's (ICI, 2016) Factbook indicates that the majority (58%) of defined contribution mutual fund assets are invested in equity funds. Exchange-traded funds (ETFs) and variable annuities are excluded from the sample. Index funds are removed using the CRSP index fund flag and additional name-based screens. Based on CRSP style codes, the sample is restricted to domestic equity funds with stated investment objectives of large-cap, mid-cap, small-cap, micro-cap, growth, growth and income, or equity income. Following Evans (2010), potential incubation bias is mitigated by requiring funds to have a minimum age of three years before entering the sample. Funds are also required to have total net assets of at least $5 million as of the prior month-end and to invest between 80% and 105% of their portfolios in common stocks. For funds with available holdings data, an additional requirement is that they hold at least 10 individual stocks. The resulting baseline sample consists of 199,186 fund-month observations from 3035 mutual funds, representing 677 fund families and 734 investment advisers.

The baseline measure of fund performance is a one-month-ahead four-factor alpha estimated using a 24-month rolling window, following Amihud and Goyenko (2013). For comparison, I also compute a one-month-ahead CAPM alpha based solely on the market factor. Control variables include the natural logarithm of fund total net assets (*Log(TNA)*), its square ($Log(TNA)^2$), the natural logarithm of family total net assets (*Log(Family TNA)*), turnover (*Turnover*), expense ratio (*Expense*), fund age (*Age*), the cumulative net fund flows over the prior 12 months (*Net_Flows*), and the standard deviation of fund flows over the prior 12 months (*Vol_Flows*). The proportion of fund assets held in institutional share classes (*Inst_Ratio*) is identified using the CRSP institutional share class flag. All continuous variables are Winsorized at the 1st and 99th percentiles to mitigate the influence of outliers.

2.3. Summary Statistics

Table 1 presents fund-month summary statistics on the baseline sample of mutual funds. Approximately 28% of fund-month observations in the sample are managed by an investment adviser who also provides pension consulting services to retirement plans directly or through affiliates. This indicates that an economically significant portion of actively managed mutual fund advisers are providing potentially conflicted advice to both their mutual fund and retirement plan clients. The incidence of conflicts is similar at the adviser level, where 236 out of 734 (32%) investment advisers in the sample disclose that they provide pension consulting services at some point during the sample. Summary statistics for other fund variables are consistent with the prior literature. Notably, mean net 4-factor alphas of −108 basis points annually are approximately equal to mean annual expense ratios of 120 basis points [Fama and French (2010)].[14]

Table 1. Mutual fund summary statistics.

VARIABLES	(1) n	(2) Mean	(3) Median	(4) Std. Dev.	(5) p(10)	(6) p(90)
DCC	199,186	0.28	1.00	0.45	0	1
4-factor Alpha (monthly)	199,186	−0.09%	−0.09%	1.19%	−1.44%	1.26%
Fund Family TNA ($MM)	199,186	124,903	16,745	313,928	299	247,468
Fund TNA ($MM)	199,186	1418	235	5885	22	2652
Age (years)	199,186	15.09	11.41	13.18	4.50	27.83
Net_Flows ($MM)	199,186	−19.45	−4.20	804.82	−215.27	165.14
Vol_Flows ($MM)	199,186	30.16	4.96	316.04	0.47	54.62
Turnover (%)	199,186	78%	60%	68%	17%	160%
Expense (%)	199,186	1.20%	1.18%	0.42%	0.71%	1.72%
Inst_Ratio (%)	199,186	34%	11%	40%	0%	100%

Table 1 provides descriptive statistics for the sample of actively managed non-specialty equity mutual funds from 2003 to 2014. It gives the number of observations, mean, median, standard deviation and 10th and 90th percentiles of fund-month observations. Statistics are given for DCC which indicates whether the fund's investment adviser provides pension consulting services on Form ADV; 4-factor alpha, which is a one-month ahead alpha calculated using an estimation window over the previous 24 months; R^2, which is the R^2 from a regression of fund excess returns on FFC factors over the previous 24-month period; Active Share, which measures the extent to which a fund's holdings differ from its benchmark as calculated in Cremers and Pareek (2016); Inst_Ratio, which is the percentage of fund assets derived from institutional share classes; fund and fund family assets (TNA) in millions; fund age in years; sum of the fund's flows over the previous 12 months; standard deviation of the fund's flows over the previous 12 months; and turnover ratio and annual expense ratio.

Table 2 presents differences in variable means for DCC and non-DCC mutual funds. The univariate analyses show that DCC funds realize lower net 4-factor alphas despite charging significantly lower fees on average. DCC funds are significantly smaller, come from smaller fund families, and are younger than non-DCC funds. DCC funds also have greater average net flows and lower average variation in flows, suggesting possible gains from DC assets during the sample period, consistent with recent growth in DC assets and potential conflicts of interest stemming from weaker flow variation. DCC funds have lower turnover, lower expense ratios, and a higher percentage of assets derived from institutional share classes. Low turnover may signify less managerial effort due to conflicts of interest. The significant difference in assets from institutional share classes helps to identify that a greater percentage of assets in DCC funds are obtained from DC plans. This relationship is further explored in the next section. Lower expenses for DCC funds in the univariate analyses are primarily the result of more assets coming from institutional share classes, which typically charge lower expense ratios.

Table 2. Univariate analysis of mutual funds managed by investment advisers with DC conflicts.

VARIABLES	(1) *DCC*	(2) *Non-DCC*	(3) Diff in Means (1–2)
4-factor Alpha (%)	−0.102%	−0.090%	−0.012% * (1.94)
Fund Family TNA ($MM)	67,517	147,705	−80,188 *** (−51.77)
Fund TNA ($MM)	754	1693	−939.7 *** (−32.10)
Age (years)	12.83	15.99	−3.15 *** (−48.48)
Net_Flows ($MM)	6.75	−29.86	36.61 *** (9.16)
Vol_Flows ($MM)	22.92	33.04	−10.13 *** (−6.45)
Turnover (%)	77.49%	78.78%	−1.29% *** (−3.82)
Expense (%)	1.16%	1.22%	−0.06% *** (−29.26)
Inst_Ratio (%)	49.33%	27.83%	21.49% *** (107.79)
N	56,639	142,547	

Table 2 presents summary statistics for the full sample of actively managed, non-specialty equity mutual funds from 2003 to 2014. Column (1) contains mean values of fund characteristics for funds whose investment adviser, or an affiliate, provides pension consulting services at the end of the prior fiscal year on Form ADV. Column (2) contains mean values of fund characteristics for funds whose investment adviser indicates that they do not provide pension consulting services. Column (3) presents differences in means between the two samples as well as t-statistics. Means are shown for 4-factor alpha which is a one-month ahead alpha calculated using an estimation window over the previous 24 months; fund and fund family assets (TNA) in millions; fund age in years; sum of fund's flows over the previous 12 months; standard deviation of the fund's flows over the previous 12 months; turnover ratio; annual expense ratio; and Inst_Ratio which is the percentage of fund assets derived from institutional share classes. ***, **, and * indicate significance at the 1%, 5%, or 10% levels.

3. Identifying Defined Contribution Assets and Conflicts of Interest

From an economic perspective, defined contribution conflicts of interest can weaken performance incentives through their effect on investor discipline. In competitive mutual fund markets, when poor performance is punished by investor outflows, this reduces fee revenue and increases the likelihood of fund termination. This flow–performance sensitivity plays a central role in disciplining portfolio managers and incentivizing costly effort aimed at generating alpha. However, conflicted retirement plan assets differ from other mutual fund assets in important ways that can attenuate this disciplinary mechanism.

Assets invested through defined contribution plans can be "sticky" because investment options are selected and monitored at the plan level rather than by individual participants. When an investment adviser or an affiliated firm provides pension consulting services to a plan, the adviser may influence fund selection and retention decisions, reducing the likelihood that its own affiliated funds are removed following poor performance. Plan participants, in turn, are less likely to respond to underperformance by reallocating assets, particularly when funds serve as default options or are embedded in target date structures.

This insulation from competitive pressure weakens the link between performance and flows, especially on the downside. When portfolio managers anticipate that poor performance will not result in meaningful asset outflows, their incentives to exert costly effort, deviate from benchmarks, or pursue active strategies that generate alpha are reduced. As a result, defined contribution conflicts of interest may manifest not only in weaker flow–performance sensitivity but also in lower levels of active management and

persistent underperformance. Consistent with this mechanism, funds exposed to defined contribution conflicts should exhibit both a higher reliance on institutional share class assets (reflecting pooled retirement plan investments) and weaker investor discipline in response to performance.

3.1. Institutional Share Class Assets

Providing an affirmative response on Form ADV Items 5G(5) and 7A(13) allows for the possibility that the investment adviser, or affiliated entity, provides investment advice to ERISA defined benefit plans as well as defined contribution plans. Since defined benefit plans typically pool participant assets when investing in specific asset classes, they tend to use vehicles such as separate accounts or commingled funds to obtain actively managed equity exposure [e.g., Gerakos et al. (2021)]. Thus, it is possible that minimal conflicts of interest exist. I first investigate whether DCC funds appear to obtain assets from retirement plans. This is done by examining whether a significant portion of DCC fund assets is derived from institutional share classes [e.g., Beggs et al. (2022)]. The ICI's 2025 Factbook indicates that nearly all new net cash flows to mutual funds have gone to no-load and institutional share classes over the recent past. The ICI attributes this growth to two factors: (1) growth in the DC sector and (2) the increasing use of fee-based compensation by financial advisers. Since DC plans are typically large enough to meet minimum investment levels for institutional share classes when pooling all participant assets, I expect DCC funds to obtain a significant proportion of assets from institutional share classes.

Table 3 presents panel regressions of the percentage of fund assets obtained from institutional share classes (*Inst_Ratio*) for fund *i* in month *t* on the *DCC* indicator variable and controls. Column (1) presents OLS results, and column (2) presents the results from a censored regression with a lower bound of zero and an upper bound of one, since *Inst_Ratio* is bounded between zero and one. Both regressions include month-by-objective fixed effects so that the ratio of institutional assets is compared against funds in the same investment objective, operating in the same month and standard errors are clustered on fund.

Table 3. Panel regressions of the percentage of mutual fund assets derived from institutional share classes on explanatory variables.

	Inst_Ratio	
VARIABLES	**(1) OLS**	**(2) Censored [0, 1]**
DCC	0.172 ***	0.268 ***
	(12.15)	(11.42)
Log(TNA)	0.034 **	0.091 ***
	(2.11)	(2.97)
$Log(TNA)^2$	−0.015 ***	−0.010 ***
	(−3.57)	(−3.94)
Log(Family TNA)	0.001	0.028 ***
	(0.28)	(4.46)
Age	−0.005 ***	−0.006 ***
	(−7.77)	(−6.04)
Net_Flows	0.001	−0.003
	(0.20)	(−0.52)
Vol_Flows	0.000	−0.019
	(0.01)	(−0.96)
Turnover	0.040 ***	0.059 **
	(4.53)	(3.58)

Table 3. *Cont.*

	Inst_Ratio	
VARIABLES	**(1) OLS**	**(2) Censored [0, 1]**
Expense	−0.394 ***	−0.595 ***
	(−22.63)	(−17.34)
Month × Obj FE	Yes	Yes
N	199,186	199,186
Adj. R-squared	0.249	

The table above reports coefficients from panel regressions of fund *i*'s monthly ratio of assets obtained from institutional share classes on fund-, adviser-, and family-level characteristics. The sample is restricted to non-specialty actively managed domestic equity funds operating between January 2003 and December 2014. Column (1) presents coefficient estimates from an OLS specification, while Column (2) presents coefficient estimates from a censored regression with a lower bound of zero and an upper bound of one since the ratio of assets obtained from institutional share classes for a given fund is bounded between zero and one. All regressions include investment objective-by-month fixed effects and the following contemporaneous control variables: expense ratio (Expense), log of fund TNA (Log(TNA)), squared log of fund TNA (Log(TNA)^2), log of family TNA (Log(Family TNA)), turnover (Turnover), fund age in years (Age), net flows into fund i between months t−11 and t in billions (Net_Flows), and the standard deviation of net flows over the same period in billions (Vol_Flows). Both columns examine DCC as the key independent variable, which equals one if a fund's investment adviser indicates that they provide pension consulting services on their Form ADV at the end of the prior fiscal year, or if the fund's adviser is affiliated with an entity that provides pension consulting services, and zero otherwise. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

The coefficient estimates for *DCC* in both regressions are consistent with the univariate analyses and show that DCC funds obtain a significantly higher percentage of assets (17 to 27 percentage points) from institutional share classes relative to non-DCC funds. These estimates are consistent with ICI data and confirm an increased presence of DC assets in DCC funds.

3.2. The Flow–Performance Relationship for DCC Funds

In their sample of 401(k) plans sponsored by COMPUSTAT firms, Pool et al. (2016) show that mutual fund trustees are less likely to remove their own poorly performing funds from a client's plan menu. Thus, if Item 5(G)5 and 7A(13) are capturing similar conflicts of interest for mutual fund pension consultants, it would be expected that DCC funds exhibit much weaker flow–performance sensitivities relative to non-DCC funds, particularly when fund performance is poor.

Following Sirri and Tufano (1998), I examine the flow–performance relationship using a linear piecewise OLS specification, which allows for kinks at the 20th and 80th percentiles of performance.[15] Columns (1) and (2) of Table 4 examine sensitivity to raw returns and present estimates from a single pooled regression, which allows for different coefficients on DCC and non-DCC fund returns. Columns (3) and (4) similarly examine flow–performance sensitivity using 4-factor alpha. The model incorporates interaction terms between the DCC indicator and performance-quantile indicators, allowing the slope of the flow–performance relation to differ across quantiles for DCC and non-DCC funds. The hypothesis tests reported at the bottom of each regression correspond to the coefficients and t-statistics on these interaction terms. Columns (1) and (3) present estimates for DCC funds, and columns (2) and (4) present estimates for non-DCC funds. The dependent variable in each regression is the percentage of fund flows in period $t + 1$. Both regressions also include control variables, month-by-investment objective fixed effects, and standard errors are clustered on fund.

Table 4. Flow–performance relationship for mutual funds managed by investment advisers with DC conflicts.

	%Flow$_{t+1}$		%Flow$_{t+1}$	
VARIABLES	**(1)** ***DCC***	**(2)** ***Non-DCC***	**(3)** ***DCC***	**(4)** ***Non-DCC***
%Flow$_t$	0.272 ***	0.368 ***	0.271 ***	0.368 ***
	(20.47)	(38.89)	(15.03)	(38.84)
HighRet$_t$	3.015 ***	5.085 ***		
	(4.27)	(12.78)		
MedRet$_t$	0.304 ***	0.400 ***		
	(2.61)	(5.70)		
LowRet$_t$	0.982 *	2.444 ***		
	(1.76)	(8.03)		
High4FAlpha$_t$			2.426 ***	4.434 ***
			(3.22)	(11.23)
Med4FAlpha$_t$			0.488 ***	0.342 ***
			(4.48)	(4.94)
Low4FAlpha$_t$			1.005 *	2.615 ***
			(1.81)	(8.54)
H_0: *DCC—Non-DCC*	−2.070 **			
HighRet Coeff = 0	(−2.55)			
H_0: *DCC—Non-DCC*	−1.462 **			
LowRet Coeff = 0	(−2.38)			
H_0: *DCC—Non-DCC*			−2.011 **	
High4fAlpha Coeff = 0			(−2.44)	
H_0: *DCC—Non-DCC*			−1.620 **	
Low4fAlpha Coeff = 0			(−2.52)	
Controls	Yes		Yes	
Month × Obj FE	Yes		Yes	
N	196,739		196,739	
Adj. R-squared	0.138		0.138	

The table above reports coefficients from panel regressions of fund *i*'s %Flow in month $t + 1$ on lagged fund-, adviser-, and family-level characteristics. The sample is restricted to non-specialty actively managed domestic equity funds operating between January 2003 and December 2014. The dependent variable in all columns is $\%Flow_{t+1}$, which is calculated using the standard definition of mutual fund flows [e.g., Sirri and Tufano (1998)]. Key independent variables include $\%Flow_t$ and a lagged piecewise linear performance specification with kinks at the 20th and 80th percentiles of returns, so the *Low* variables account for returns at or below the 20th percentile, the *Medium* variables account for returns above the 20th percentile and at or below the 80th percentile, and the *High* variables account for returns above the 80th percentile. Following Sirri and Tufano (1998), percentiles are calculated within the date and investment objective. With these percentiles, the formula for low return is LowRet = Min(0.2, RetPtile), the formula for medium return is MedRet = Min(0.6, RetPtile-LowRet), and the formula for high return is HighRet = RetPtile-MedRet-LowRet. *High*, *Medium* and *Low* variables are calculated analogously for 4-factor alphas. Columns (1) and (2) examine flow–performance sensitivity for raw returns and are the result of a single pooled regression allowing for separate coefficient estimates for funds whose investment adviser, or an affiliate, provides pension consulting services and funds whose investment adviser does not. Columns (3) and (4) examine flow–performance sensitivity analogously for 4-factor alpha and present the results of a single pooled regression allowing for separate coefficient estimates for funds whose investment adviser, or an affiliate, provides pension consulting services and funds whose investment adviser does not. All regressions include investment objective-by-month fixed effects and the following fund level control variables: lagged expense ratio, lagged log of fund TNA, lagged log of fund TNA squared, lagged log of family TNA, lagged turnover, lagged fund age in years, and the percentage of fund assets invested in institutional share classes are included as control variables. Standard errors are clustered at the fund level, and t-statistics are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

The estimates in columns (1) and (2) show that flows to DCC funds are significantly less sensitive to both high and low levels of performance relative to non-DCC funds. Weak flow–performance sensitivities for DCC funds are especially notable in the case of poor performers. The estimate for *LowRet* in column (1), which represents performance in the bottom quintile of the fund's investment objective, is only weakly statistically significant, at the 8% level, for DCC funds. This shows that conflicted advisers do not realize flows out

of their poorest performing funds to the same extent as non-conflicted advisers. Estimates for performance measured by 4-factor alpha in columns (3) and (4) are economically and statistically similar to those in columns (1) and (2) for raw returns.

Results in Table 4 provide evidence that conflicts of interest, similar to those documented by Pool et al. (2016), exist for mutual funds managed by advisers that provide pension consulting services. In their study, the authors find that poor-performing funds managed by mutual fund company trustees are less likely to be removed from DC plan menus and that participant actions do not offset this bias. Consistent with this notion, the results presented in this section show that poor-performing DCC funds do not suffer outflows to the same extent as poor-performing non-DCC funds.

4. Do Mutual Funds with Defined Contribution Conflicts of Interest Underperform?

4.1. Baseline Panel Regression Results

Differences in risk-adjusted performance and fund activeness are examined within a regression framework that controls for observable characteristics. Table 5 reports panel OLS regressions in which measures of mutual fund performance and activeness are regressed on the DCC indicator and the full set of control variables. Each specification includes investment objective-by-month fixed effects, ensuring that performance is evaluated relative to other actively managed funds with the same investment style in the same month. The main variable of interest for each regression is the *DCC* indicator variable, which measures whether fund *i*'s investment adviser or an affiliate provides pension consulting services to retirement plans. Standard errors are clustered on fund.

In columns (1) and (2) of Table 5, the dependent variables are each mutual fund's one-month ahead CAPM and 4-factor alpha. The results in columns (1) and (2) show that funds managed by investment advisers with DC conflicts of interest underperform peers by 36 basis points annually as measured by CAPM alpha and 29 basis points annually as measured by 4-factor alpha.[16] In both regressions, the coefficient estimates on the DCC indicator are statistically significant at the 1% level. While the magnitude of underperformance for DCC equity funds on an annual basis may not be striking, the cumulative underperformance over an employee's combined earning and retirement years would be economically substantial. Consider a representative participant who contributes $6000 per year over a 35-year career and earns a 6% annual return absent conflicts. Reducing returns by 30 basis points lowers the annual return to 5.7%, which reduces terminal wealth by approximately 6–8%. For this participant, the difference amounts to roughly $45,000–$65,000 less retirement wealth, holding contributions fixed. Thus, even seemingly small annual performance differences translate into economically meaningful losses for households relying on defined contribution plans as their primary retirement savings vehicle. Importantly, this loss arises purely from weaker performance incentives rather than differences in risk exposure or participant preferences.

Columns (3) and (4) investigate measures of mutual fund activeness. In column (3), the dependent variable is fund *i*'s Active Share as calculated in Cremers and Pareek (2016). Active Share measures the proportion of fund *i*'s portfolio that would need to be reallocated to replicate its benchmark. The number of observations in column (3) is smaller because Active Share data are available only at an annual frequency.[17] Column (4) examines the R^2 measure of Amihud and Goyenko (2013). This is the R^2 produced by a regression of the fund's excess returns on the Fama–French–Carhart (FFC) factors over the subsequent 24-month period. R^2 measures the extent to which the mutual fund's returns can be explained by market returns and known risk factors. In the case of R^2, higher values indicate lower levels of activeness. The coefficient estimates in columns (3) and (4) indicate

that DCC funds are significantly less actively managed relative to peers. The coefficient estimate for the DCC indicator variable in column (3) suggests that DCC funds exhibit a lower Active Share of 2.1 percentage points on average relative to non-DCC funds.

Table 5. Panel OLS regressions of mutual fund performance and activeness on investment adviser DC conflicts and lagged controls.

VARIABLES	(1) CAPM Alpha	(2) 4-Factor Alpha	(3) Active Share	(4) R^2
DCC	−0.030 ***	−0.024 ***	−0.021 ***	0.006 ***
	(−4.00)	(−3.56)	(−4.27)	(3.77)
Inst_Ratio	−0.009	0.001	−0.031 ***	0.091 ***
	(−0.93)	(0.15)	(−4.41)	(4.06)
Log(TNA)	−0.007	−0.002	−0.001	0.009 ***
	(−0.63)	(−0.24)	(−0.26)	(4.50)
Log(TNA)^2	0.001	0.001	0.001	−0.009 ***
	(0.54)	(0.70)	(0.94)	(−5.11)
Log(Family TNA)	0.003 *	0.004 **	−0.012 ***	0.040 ***
	(1.81)	(2.41)	(−10.41)	(8.10)
Age	0.001 **	0.010 ***	−0.001 ***	0.003 ***
	(2.17)	(2.60)	(−2.67)	(3.82)
Net_Flows	0.013 **	0.016 **	0.005 **	−0.017 **
	(2.29)	(2.64)	(2.35)	(−2.25)
Vol_Flows	−0.000	−0.011 ***	0.004 **	0.012 ***
	(−0.08)	(−2.77)	(2.24)	(2.67)
Turnover	−0.012 *	−0.024 ***	0.005	−0.066 ***
	(−1.76)	(−3.81)	(1.38)	(−6.20)
Expense	−0.051 ***	−0.042 ***	0.066 ***	−0.166 ***
	(−4.17)	(−4.10)	(8.62)	(−5.95)
Month × Obj FE	Y	Y	Y	Y
N	199,186	199,186	14,782	173,576
Adj. R-squared	0.346	0.159	0.410	0.225

The table above reports coefficients from panel regressions of fund *i*'s monthly performance and activeness on fund-, adviser-, and family-level characteristics. The sample is restricted to non-specialty actively managed domestic equity funds operating between January 2003 and December 2014. The performance measure in column (1) is CAPM alpha, a one-month-ahead alpha estimated over the preceding 24-month window. Column (2) reports 4-factor alpha, also a one-month-ahead alpha calculated using a 24-month estimation window. The dependent variable in column (3) uses an annual value of *Active Share* as calculated in Cremers and Pareek (2016). The fact that data on *Active Share* are available annually explains the smaller number of observations in column (3). The dependent variable in column (4) is the R^2 from a regression of fund excess returns on FFC factors over the subsequent 24 months. The key independent variable of interest is *DCC*, which is equal to one if the fund's investment adviser, or an affiliate, indicates they provide pension consulting services at the end of the prior fiscal year on Form ADV and zero otherwise. All regressions include investment objective-by-month fixed effects and the following control variables: lagged expense ratio (*Expense*), lagged log of fund TNA (*Log(TNA)*), lagged log of fund TNA squared (*Log(TNA)*^{2}) lagged log of family TNA (*Log(Family TNA)*), lagged turnover (*Turnover*), lagged fund age (*Age*) measured in years, net flows into fund *i* between month $t-12$ and $t-1$ in billions (*Net_Flows*), the standard deviation of net flows over the same period in billions (*Vol_Flows*) and *Inst_Ratio* which is the percentage of fund assets invested in institutional share classes. Standard errors are clustered on fund, and t-statistics are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% or 10% levels.

Results in Table 5 are consistent with the presence of conflicts of interest stemming from investment advisers being less likely to terminate their own mutual funds in client DC plans. Specifically, these results are consistent with a mechanism in which defined contribution conflicts weaken flow discipline by reducing the sensitivity of investor flows to past performance. With less pressure from potential outflows, portfolio managers may have weaker incentives to engage in costly active management and instead manage portfolios more closely to their benchmarks. Consistent with this interpretation, conflicted funds exhibit lower Active Share and higher R^2, indicating reduced activeness and, in turn, lower realized alphas.

In Appendix A, we examine additional proxies for managerial effort and portfolio activeness. These results show that funds affiliated with advisers that provide pension consulting services exhibit significantly lower turnover and reduced exposure to smaller, less benchmark-like stocks, while overall market exposure remains unchanged. These patterns are consistent with weaker incentives to exert costly active management effort rather than shifts in aggregate risk. Appendix A also presents the main regression results restricting the sample period to 2012–2014, when affiliate pension consulting data are available, and the clustering standard errors at the adviser level and the inferences remain unchanged.

4.2. Does It Matter if Conflicts of Interest Originate from Advisers or Affiliates?

While some mutual fund advisers provide pension consulting services directly (e.g., John Hancock Advisers, LLC), others are only exposed to potential conflicts through affiliated firms (e.g., Sterling Capital Management, LLC via BB&T Securities, LLC). This section investigates whether it matters if funds are exposed to DC conflicts through their own adviser or an affiliate. Since data on affiliates are only available post-2011, the analyses allow me to alleviate concerns that the subset of data on affiliates is driving the baseline results. I create two indicator variables: (1) *DCC_ADV* is equal to one if the fund's investment adviser indicates it provides pension consulting services on Item 5G(5) of Form ADV and zero otherwise, and (2) *DCC_AFF* is equal to one if the fund's adviser indicates an affiliated firm provides pension consulting services on Item 7A(13) of Form ADV and zero otherwise.

Table 6 repeats the panel baseline regressions, but considers adviser and affiliate conflicts separately. Panel A uses the *DCC_ADV* indicator variable for the entire sample, and Panel B uses the *DCC_AFF* indicator post-2011. The results in both Panels show that significant underperformance is present in the case of both adviser and affiliate conflicts of interest. While the magnitude of the coefficient estimates in columns (1) and (2) is greater for funds with affiliate conflicts, these funds are not significantly less actively managed.[18]

Results in Table 6 show that conflicts of interest between mutual fund management firms and defined contribution plans likely run deeper than just the mutual fund management companies themselves. Disclosures on Form ADV reveal many instances where investment management firms are exposed to conflicts of interest via affiliated insurance companies, commercial banks, broker-dealers or other investment advisers. The results suggest that conflicts of interest, which arise due to affiliation, can also affect mutual fund performance materially.

Table 6. Panel OLS regressions of mutual fund performance and activeness on adviser and affiliated firm DC conflicts and lagged controls.

Panel A: Investment Adviser DC Conflict				
VARIABLES	**(1) CAPM Alpha**	**(2) 4-Factor Alpha**	**(3) Active Share**	**(4) R^2**
DCC_ADV	−0.029 ***	−0.021 ***	−0.023 ***	0.006 ***
	(−3.54)	(−2.87)	(−4.54)	(3.49)
Controls	Y	Y	Y	Y
Month × Obj FE	Y	Y	Y	Y
N	199,186	199,186	14,782	173,576
Adj. R-squared	0.346	0.159	0.410	0.224

Table 6. *Cont.*

Panel B: Affiliated Firm DC Conflict				
VARIABLES	**(1) CAPM Alpha**	**(2) 4-Factor Alpha**	**(3) Active Share**	**(4) R^2**
DCC_AFF	−0.047 ***	−0.049 ***	−0.008	0.006
	(−3.46)	(−4.23)	(−0.96)	(1.57)
Controls	Y	Y	Y	Y
Month × Obj FE	Y	Y	Y	Y
N	53,049	53,049	3444	35,019
Adj. R-squared	0.365	0.153	0.424	0.111

The table above reports coefficients from panel regressions of fund *i*'s monthly performance and activeness on fund-, adviser-, and family-level characteristics. The sample in Panel A is restricted to non-specialty actively managed domestic equity funds operating between January 2003 and December 2014. Panel B is restricted to non-specialty actively managed domestic equity funds operating between January 2012 and December 2014, since data on affiliates providing pension consulting services on Form ADV are available beginning in 2011. The performance measure in column (1) is CAPM alpha, a one-month-ahead alpha estimated using a 24-month rolling window. The performance measure in column (2) is 4-factor alpha, which is a one-month-ahead alpha calculated using an estimation window over the previous 24 months. The dependent variable in column (3) uses an annual value of *Active Share* as calculated in Cremers and Pareek (2016). The fact that data on *Active Share* are available annually explains the smaller number of observations in column (3). The dependent variable in column (4) is the R^2 from a regression of fund excess returns on FFC factors over the subsequent 24 months. The key independent variable of interest in Panel A is *DCC_ADV*, which is equal to one if the fund's investment adviser indicates that it provides pension consulting services on its Form ADV at the end of the prior fiscal year. The key independent variable of interest in Panel B is *DCC_AFF*, which is equal to one if the fund's investment adviser indicates that it is affiliated with an entity that provides pension consulting services on its Form ADV at the end of the prior fiscal year. All regressions include investment objective-by-month fixed effects and the following control variables: lagged expense ratio, lagged log of fund TNA, lagged log of fund TNA squared, lagged log of family TNA, lagged turnover, lagged fund age measured in years, net flows into fund *i* between month $t-12$ and $t-1$ in billions, the standard deviation of net flows over the same period in billions, and the percentage of fund assets derived from institutional share classes. Standard errors are clustered on fund, and t-statistics are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% or 10% levels.

4.3. Analysis of Change in DC Conflicts for Mutual Fund Advisers

To provide more convincing evidence on the effect of DC conflicts, analyses of 'switcher' funds are conducted. Switcher funds are those whose investment adviser changes from not offering pension consulting services to later offering pension consulting services during the sample period. Funds that switch multiple times or have DC conflicts for the entire sample period are not included. I compare the performance of the 'switchers' to the group of funds managed by advisers without DC conflicts, both before and after the switch. Investment adviser conflicts (as opposed to affiliate conflicts) are examined because the pension consultant disclosures for advisers are available for the entire sample. I identify a total of 155 switcher funds managed by 57 investment advisory firms during the sample period. The variable *Pre-switch DCC_ADV* is equal to one for switcher funds in all fund-months before the switch date, whereas the variable *Post-switch DCC_ADV* is equal to one for the switcher funds in all fund-months after the switch date.

Table 7 presents the results of the switcher analyses using regression specifications similar to the baseline tests, but now examining *Pre-switch DCC_ADV* and *Post-switch DCC_ADV* as the key explanatory variables of interest. The results in columns (1) and (2) indicate that switcher funds do not significantly underperform peers prior to the switch, but do significantly underperform after the switch. Economically, the magnitude of underperformance is greater relative to the baseline tests. Switcher funds underperform peers by 94 basis points and 86 basis points annually post-switch, as measured by CAPM and 4-factor alpha, respectively. Moreover, I can reject the hypothesis that the coefficient for *Pre-switch DCC_ADV* is equal to the coefficient on the *Post-switch DCC_ADV* variable at the 5% level or better in both cases.

Table 7. Analysis of change in DC conflicts for mutual fund investment advisers.

VARIABLES	(1) CAPM Alpha	(2) 4-Factor Alpha	(3) Active Share	(4) R^2
Pre-switch DCC_ADV	−0.018	0.004	−0.014	0.008 **
	(−0.90)	(0.29)	(−1.29)	(2.49)
Post-switch DCC_ADV	−0.079 ***	−0.072 ***	−0.027 **	0.008 **
	(−3.65)	(−3.76)	(−2.44)	(2.20)
H_0: *Post-switch*—*Pre-switch* = 0	−0.060 **	−0.077 ***	−0.012	−0.000
	(−2.26)	(−3.46)	(−1.21)	(−0.30)
Controls	Y	Y	Y	Y
Month × Obj FE	Y	Y	Y	Y
N	154,546	154,546	11,645	132,224
Adj. R-squared	0.338	0.156	0.420	0.223

The table above reports coefficients from panel regressions of fund *i*'s monthly performance and activeness on fund-, adviser-, and family-level characteristics. The sample is restricted to non-specialty actively managed domestic equity funds operating between January 2003 and December 2014. This table examines 155 switcher funds whose adviser began offering pension consulting services during the sample period. For these funds, *Pre-switch DCC_ADV* is an indicator variable equal to one for switcher funds in fund-months prior to the switch. *Post-switch DCC_ADV* is an indicator variable equal to one for switcher funds in fund-months after the switch. The performance measure in column (1) is CAPM alpha, a one-month-ahead alpha estimated using a 24-month rolling window. Column (2) reports 4-factor alpha, also a one-month-ahead alpha calculated over a 24-month estimation window. The dependent variable in column (3) uses an annual value of *Active Share* as calculated in Cremers and Pareek (2016). The fact that data on *Active Share* are available annually explains the smaller number of observations in column (3). The dependent variable in column (4) is the R^2 from a regression of fund excess returns on FFC factors over the subsequent 24 months. All regressions include investment objective-by-month fixed effects and the following control variables: lagged expense ratio, lagged log of fund TNA, lagged log of fund TNA squared, lagged log of family TNA, lagged turnover, lagged fund age measured in years, net flows into fund *i* between month $t-12$ and $t-1$ in billions, the standard deviation of net flows over the same period in billions, and the percentage of fund assets invested in institutional share classes. Standard errors are clustered on fund, and t-statistics are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% or 10% levels.

In columns (3) and (4), the results for activeness are weaker relative to the performance results. Column (3) examines Active Share and presents evidence that switcher funds are not significantly less active relative to peers prior to the switch, but are significantly less active after the switch. This is consistent with the baseline results. However, column (4) shows that switcher funds are less active relative to peers both before and after the switch when using R^2 as the measure of fund activeness.

Table 8 examines the timing of underperformance around the initiation of pension consulting using an event-study framework and a complementary placebo test. Column (1) reports lead and lag coefficients for switcher funds relative to the year prior to the switch. The estimates show no evidence of economically meaningful underperformance prior to the initiation of pension consulting. While the coefficient three years prior to the switch is positive and marginally significant, there is no systematic pattern of declining performance in the pre-period, and performance in the year immediately before the switch is statistically indistinguishable from zero. In contrast, underperformance emerges following the switch. The contemporaneous post-switch coefficient is negative and statistically significant, and the magnitude of underperformance grows over time, reaching −12.6 basis points annually three years after the adviser begins offering pension consulting services. These results indicate that performance deterioration coincides with, and follows, the onset of pension consulting rather than preceding it.

Column (2) of Table 8 presents results from a placebo test in which switch dates are randomly assigned to non-switcher funds. Consistent with the absence of spurious timing effects, neither the placebo pre- nor post-switch indicators are statistically significant. Taken together, the event-study and placebo evidence strengthen the causal interpretation by showing that underperformance arises after the initiation of pension consulting and

is unlikely to be driven by coincident adviser-level trends or unrelated business-model changes. Overall, the time series results for switcher funds confirm the cross-sectional findings and are consistent with the notion that the presence of DC conflicts for mutual fund advisers can weaken incentives to generate performance.

Table 8. Timing and placebo tests for switcher funds.

VARIABLES	(1) 4-Factor Alpha	(2) 4-Factor Alpha
Pre-switch t − 3	0.091 **	
	(2.03)	
Pre-switch t − 2	−0.035	
	(−1.10)	
Pre-switch t − 1	0.021	
	(0.80)	
Post-switch t	−0.070 ***	
	(−2.40)	
Post-switch t + 1	−0.050	
	(−1.62)	
Post-switch t + 2	−0.083 *	
	(−1.81)	
Post-switch t + 3	−0.126 ***	
	(−2.41)	
Pre-switch Placebo		0.004
		(0.16)
Post-switch Placebo		−0.004
		(−0.21)
Controls	Y	Y
Month × Obj FE	Y	Y
N	154,546	154,546
Adj. R-squared	0.156	0.156

The table above reports coefficients from panel regressions of fund *i*'s monthly performance on fund-, adviser-, and family-level characteristics. The sample is restricted to non-specialty actively managed domestic equity funds operating between January 2003 and December 2014. Column (1) of this table examines 155 switcher funds whose adviser began offering pension consulting services during the sample period. In Column (1), the independent variables of interest are dummy variables, which take a value of one in a given calendar year for up to three years prior to the fund's adviser switching to offering pension consulting services and up to three years after the fund's adviser begins offering pension consulting services. Column (2) presents results from a placebo test where 'switch' years are randomly assigned to 155 non-switcher funds and non-pension consulting funds in the sample period. Fund performance is examined before and after the placebo switch dates using the *Pre-switch Placebo* and *Post-switch Placebo* indicator variables. The performance measure used is 4-factor alpha, which is a one-month-ahead alpha calculated using an estimation window over the previous 24 months. All regressions include investment objective-by-month fixed effects and the following control variables: lagged expense ratio, lagged log of fund TNA, lagged log of fund TNA squared, lagged log of family TNA, lagged turnover, lagged fund age measured in years, net flows into fund *i* between month $t-12$ and $t-1$ in billions, the standard deviation of net flows over the same period in billions, and the percentage of fund assets derived from institutional share classes. Standard errors are clustered on fund, and t-statistics are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% or 10% levels.

5. Target Date Fund Analyses

While baseline tests focus on actively managed domestic equity funds for ease of comparison to the prior literature, it could be easily argued that target date funds play a more important role in defined contribution plans since they typically serve as default options for plan participants. Further, they provide an intuitive asset allocation option for retail investors who may lack appropriate expertise in portfolio diversification. According to the ICI, from 2008 to 2024, assets invested in target date funds increased significantly from $160 billion to $2 trillion. This fast-paced growth in asset flows would naturally incentivize mutual fund pension consultants to favor their own target date funds relative

to other asset classes. Thus, it might be expected that underperformance resulting from conflicts of interest may be more severe in target date funds relative to equity funds.

5.1. Target Date Fund Sample and Data

I follow Balduzzi and Reuter (2019) and use the target retirement year in each fund's name to identify the full sample of target date funds in CRSP. I compare target date funds with similar objectives. This is accomplished by creating objective groups for target date funds with retirement dates in the same decade, yielding five target date objectives covering the 2010s to the 2050s. I examine both raw returns as well as risk-adjusted returns using a 5-factor alpha.[19] While it might be expected that funds with similar target dates would have similar risk profiles, the prior literature shows that there exists significant heterogeneity in the realized returns and risk profiles of target date funds, even with the same target retirement date. To measure target date fund risk, both the volatility of returns and the coefficients on betas in the 5-factor model are used. Control variables are identical to those in the equity analyses and calculated analogously. I require that funds have a minimum total net assets of at least $5 million as of the previous month-end to enter the sample. The final target date fund sample yields a total of 377 funds managed by 50 investment advisers and 44 fund families. DC conflicts are more prevalent for advisers to target date mutual funds relative to those to equity funds. I find that 38% of fund-month observations are managed by an adviser who provides pension consulting services either directly or through an affiliate, and 54% (27 out of 50) of investment advisers (or an affiliate) provide pension consulting services at some point during the sample period.

5.2. Flow–Performance Relationship for DCC Target Date Funds

I first investigate whether DCC target funds also suffer from a weaker flow–performance relationship consistent with the presence of conflicts of interest. Table 9 presents the result of panel OLS regressions of fund i's percentage of monthly flows at time $t + 1$ on performance measures in time t, the percentage of flows in time t and control variables. Each regression includes target date objective-by-month fixed effects, and standard errors are clustered on fund. Unlike the equity analyses, I focus on a linear performance specification as opposed to a linear piecewise specification because each target date objective has fewer than 100 funds in each month on average.

Columns (1) and (2) of Table 9 examine sensitivity to raw returns and present estimates from a single regression, which allows for different coefficients on DCC funds and non-DCC fund returns. Columns (3) and (4) similarly examine flow–performance sensitivity using 5-factor alpha. Columns (1) and (3) present the estimates for DCC funds, and columns (2) and (4) present the estimates for non-DCC funds. The dependent variable in each regression is the percentage of fund flows in period $t + 1$.

Table 9 shows that the flow–performance relationship for target date funds, in general, is much weaker than that for equity funds, which is consistent with the prior literature [e.g., Sandhya (2011)]. The coefficient estimates in columns (1) and (2) show that DCC fund flows are less sensitive to prior raw returns than the flows of non-DCC funds, with the difference in coefficients being statistically significant at the 10% level. The results in columns (3) and (4) for 5-factor alpha are similar. The magnitude of the coefficient on 5-factor alpha in column (3) for DCC funds is approximately one-third of that for non-DCC funds in column (4), though the difference in magnitudes is not statistically significant. Overall, the results support the notion that DC conflicts also affect the flow–performance relationship for target date funds, although the relationship is weaker than for equity funds.

Table 9. Flow–performance relationship for target date mutual funds managed by investment advisers with DC conflicts.

VARIABLES	%Flow$_{t+1}$		%Flow$_{t+1}$	
	(1) ***DCC***	**(2)** ***Non-DCC***	**(3)** ***DCC***	**(4)** ***Non-DCC***
%Flow$_t$	0.284 ***	0.290 ***	0.283 ***	0.292 ***
	(9.76)	(10.92)	(9.77)	(11.13)
Return$_t$	1.352 ***	1.644 ***		
	(3.17)	(3.69)		
5FAlpha$_t$			0.529	1.530 ***
			(0.73)	(2.82)
H_0: *DCC—Non-DCC Ret*	−0.292 *			
Coeff = 0	(−1.80)			
H_0: *DCC—Non-DCC 5fAlpha*			−1.001	
Coeff = 0			(−1.19)	
Controls	Yes		Yes	
Month × Target Date FE	Yes		Yes	
N	18,858		18,858	
Adj. R-squared	0.226		0.225	

The table above reports coefficients from panel regressions of fund *i*'s *%Flow* in month *t* + 1 on lagged fund-, adviser-, and family-level characteristics. The sample is restricted to target-date mutual funds operating between January 2003 and December 2014. The dependent variable is *%Flow*$_{t+1}$, which is calculated using the standard definition of mutual fund flows [e.g., Sirri and Tufano (1998)]. Columns (1) and (2) examine flow–performance sensitivity for raw returns and are the result of a single regression allowing for separate coefficient estimates for funds whose investment adviser provides pension consulting services and funds whose investment adviser does not. Columns (3) and (4) examine flow–performance sensitivity analogously for 5-factor alpha, which is estimated using a 24-month window. Factors include domestic and international stock index returns, domestic and international bond index returns and a commodity index return following Balduzzi and Reuter (2019). All regressions include target date objective-by-month fixed effects and the following fund level control variables: lagged expense ratio, lagged log of fund TNA, lagged log of fund TNA squared, lagged log of family TNA, lagged turnover, lagged fund age measured in years, and the percentage of fund assets invested in institutional share classes. Standard errors are clustered on fund, and t-statistics are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% or 10% levels.

5.3. Performance and Risk Taking of DCC Target Date Funds

A muted flow–performance relationship gives portfolio managers weaker incentives to generate outperformance. This section investigates how DC conflicts impact performance and risk-taking for target date mutual funds. Since target date funds typically serve as default options within DC plans and there have been significant asset flows to these funds over the recent past, it is possible that underperformance may be more pronounced relative to equity funds. Underperformance of target date funds relative to peers with the same target date could result from two possible sources. Since the majority of target date funds use a fund-of-funds structure (see the ICI 2025 Factbook), underperformance could manifest from poor performance of the underlying funds. In this case, since target date fund assets with DC conflicts are sticky assets for the adviser's underlying funds, this provides the portfolio managers of the underlying funds with weaker incentives to outperform. Contrarily, underperformance could also result from the asset allocation process. DCC target date funds may choose to place less weight on riskier asset classes with higher expected returns, and this may result in underperformance relative to peers. To test for both explanations, I examine differences in raw fund returns as well as risk-adjusted returns and risk measures.

Table 10 presents the results of panel OLS regressions of performance and risk on the DCC indicator variable and lagged control variables for the sample of target date mutual funds. Each regression includes target date objective-by-month fixed effects so that performance is compared amongst funds operating in the same month and in similar target retirement date objectives, and standard errors are clustered on fund. Columns (1) and (2)

examine raw returns and 5-factor alphas, respectively, as the dependent variables. The coefficient estimate on the DCC indicator variable in column (1) indicates that DCC target date funds underperform peers with a similar target retirement date by 60 basis points annually. The estimate is statistically significant at the 1% level (t-stat of −4.53), and its magnitude suggests that the underperformance of DCC target date funds is nearly twice that of equity funds. Column (2) examines risk-adjusted returns using 5-factor alpha. Balduzzi and Reuter (2019) show that target date funds with similar target dates may have significantly different risk profiles. Risk-adjusted returns help account for the asset allocation decisions made by target date fund managers in choosing underlying funds. The coefficient estimate on the DCC indicator variable in column (2) is significant at the 1% level (t-stat of −3.36) and indicates that DCC target date funds underperform peers even when accounting for heterogeneity in the risk-taking of target date funds. Economically, DCC target date funds underperform peers with similar target dates by 43 basis points annually as measured by 5-factor alpha. This suggests some, but not all, underperformance can be attributed to differences in risk-taking.

Table 10. Panel OLS regressions of target date mutual fund performance and risk on investment adviser DC conflicts and lagged controls.

VARIABLES	(1) Return	(2) 5-Factor Alpha	(3) Return Volatility	(4) Equity Beta
DCC	−0.050 ***	−0.036 ***	−0.055	−0.017 *
	(−4.53)	(−3.36)	(−1.22)	(−1.85)
Controls	Y	Y	Y	Y
Month × Target Date FE	Y	Y	Y	Y
N	18,865	18,865	18,612	17,690
Adj. R-squared	0.924	0.432	0.884	0.644

The table above reports coefficients from panel regressions of fund *i*'s monthly performance and activeness on fund-, adviser-, and family-level characteristics. The sample is restricted to non-specialty actively managed domestic equity funds operating between January 2003 and December 2014. The performance measure in column (1) is the fund's return. Column (2) reports 5-factor alpha, a one-month-ahead alpha estimated using a 24-month rolling window. Factors include domestic and international stock index returns, domestic and international bond index returns and a commodity index return following Balduzzi and Reuter (2019). The dependent variable in column (3) is the fund's standard deviation of returns realized over the following 12 months. The dependent variable in column (4) is the coefficient estimate on US equity returns from a regression of fund excess returns on the 5 factors of Balduzzi and Reuter (2019) over the subsequent 24 months. The key independent variable of interest is *DCC*, which is equal to one if the fund's investment adviser, or an affiliate, indicates they provide pension consulting services at the end of the prior fiscal year on Form ADV and zero otherwise. All regressions include target date objective-by-month fixed effects and the following control variables: lagged expense ratio (*Expense*), lagged log of fund TNA (*Log(TNA)*), lagged log of fund TNA squared ($Log(TNA)^2$) lagged log of family TNA (*Log(Family TNA)*), lagged turnover (*Turnover*), lagged fund age (*Age*) measured in years, net flows into fund *i* between month $t-12$ and $t-1$ in billions (*Net_Flows*), the standard deviation of net flows over the same period in billions (*Vol_Flows*) and *Inst_Ratio* which is the percentage of fund assets invested in institutional share classes. Standard errors are clustered on fund, and t-statistics are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% or 10% levels.

The results in columns (3) and (4), which examine differences in risk measures for target date funds, confirm this notion. In column (3), the dependent variable is the standard deviation of fund returns over the subsequent 12 months. The dependent variable in column (4) is the coefficient estimate (beta) for US equity excess returns from the 5-factor model over the subsequent 24 months. The coefficient estimate on the DCC indicator variable in column (3) is negative but not statistically significant, and the coefficient estimate in column (4) is negative and statistically significant at the 10% level. Taken together, the results in columns (3) and (4) suggest that DCC target date funds are only weakly less risky relative to their peers, suggesting that differences in risk do not account for the differences in realized returns.

As mentioned above, the underperformance of target date funds may arise through two related channels: differences in asset allocation and risk exposure or weaker performance of the underlying constituent funds. The evidence in this paper is more consistent with the latter incentive-based channel. After controlling for standard risk measures and glide-path characteristics, target date fund underperformance remains associated with the presence of conflicted underlying funds, suggesting that lower alpha at the sleeve level, as opposed to systematic differences in equity–bond tilts or factor exposures, is an important contributor to the observed results. Thus, the results point to the poor performance of underlying funds as the primary explanation for target date fund underperformance. This is consistent with the presence of DC conflicts of interest, which may weaken the incentives faced by portfolio managers of the underlying funds.

6. Robustness Checks

6.1. Controlling for Other Business Conflicts Using Form ADV

Mutual fund advisers that provide pension consulting services tend to be involved in financial services businesses other than asset management, either directly or via an affiliate. These include insurance companies (e.g., John Hancock Advisers), brokerage firms (e.g., Goldman Sachs Asset Management) and commercial banks (e.g., J.P. Morgan Investment Management). The prior literature shows that asset management units of both investment banks and commercial banks underperform [Berzins et al. (2013); Ferreira et al. (2018)]. Thus, it is important to account for these operational arrangements in the framework of the baseline empirical tests. Form ADV provides information on whether the adviser or an affiliate operates as an insurance company, broker-dealer, or commercial bank, which allows for the introduction of control variables taking these arrangements into account. I also consider the possibility that mutual fund advisers with DC conflicts choose to outsource their asset management function to subadvisers, which could result in underperformance. Chen et al. (2013) show that outsourced mutual funds tend to underperform those managed in-house. Form ADV also furnishes information on whether each adviser chooses to hire other investment advisers as part of the services provided to advisory clients.

First, I consider whether the adviser or an affiliate operates as an insurance company. I create a dummy variable which is equal to one if the adviser indicates that it dually operates as an insurance company (ADV Item 6A(6)) or if it is affiliated with an insurance company (ADV Item 7A(12)) and zero otherwise (*Insurance Company*). Next, I consider whether the investment adviser is engaged in either brokerage services or commercial banking or is affiliated with another entity that is. For broker-dealers, I create a dummy variable which is equal to one if the adviser indicates that it is dually registered as a broker-dealer with the SEC (ADV Item 6A(1)) or if it is affiliated with a registered broker-dealer (ADV Item 7A(1)) and zero otherwise (*Broker-dealer*). For commercial banking, I create a dummy variable which is assigned a value of one if an investment adviser indicates that they provide commercial banking or trust services (ADV Items 6A(7) and 6A(8)) or are affiliated with an entity that does (Items 7A(8) and 7A(9)) and zero otherwise (*Commercial Bank*). Lastly, I examine whether the investment adviser outsources any of their investment advisory functions. I create a dummy variable which is equal to one if the investment adviser indicates on their Form ADV that they select other investment advisers as a part of their services to clients (ADV Item 5G(7)) and zero otherwise (*Outsource*).

Table 11 introduces the above-mentioned investment adviser business practice indicator variables as explanatory variables into the baseline specification, where 4-factor alpha is the dependent variable. Results in Table 11 show that none of the business practice

variables are significantly associated with 4-factor alphas. Most importantly, the results show that the baseline estimate for the *DCC* indicator variable is largely unaffected by controlling for other business practices of the investment adviser.

Table 11. Regressions of mutual fund performance on DC conflicts for the investment adviser and other Form ADV data.

	4-Factor Alpha			
VARIABLES	**(1)**	**(2)**	**(3)**	**(4)**
DCC	−0.025 ***	−0.024 ***	−0.023 ***	−0.022 ***
	(−3.68)	(−3.63)	(−3.42)	(−3.29)
Insurance Company	0.013			
	(1.39)			
Broker-dealer		0.007		
		(0.65)		
Commercial Bank			−0.004	
			(−0.56)	
Outsource				−0.013
				(−1.58)
Controls	Yes	Yes	Yes	Yes
Month × Obj FE	Yes	Yes	Yes	Yes
N	199,186	199,186	199,186	199,186
Adj. R-squared	0.159	0.159	0.159	0.159

The table above reports coefficients from panel regressions of fund *i*'s monthly performance on fund-, adviser-, and family-level characteristics. The sample is restricted to non-specialty actively managed domestic equity funds operating between January 2003 and December 2014. The performance measure in all columns is 4-factor alpha, a one-month-ahead alpha estimated using a 24-month rolling window. The key independent variable of interest is *DCC*, which equals one if the fund's investment adviser indicates on its Form ADV at the end of the prior fiscal year that it provides pension consulting services, or if the fund's adviser is affiliated with an entity that provides such services. Other independent variables include *Insurance Company*, *Broker-dealer*, *Commercial Bank*, and *Outsource*. *Insurance Company* is an indicator variable equal to one if fund *i*'s investment adviser indicates on Form ADV that it operates as an insurance company or is affiliated with an entity that does, and zero otherwise. *Broker-dealer* is an indicator variable equal to one if fund *i*'s investment adviser indicates on Form ADV that it operates as a broker-dealer or is affiliated with an entity that does, and zero otherwise. *Commercial Bank* is an indicator variable equal to one if fund *i*'s investment adviser indicates on Form ADV that it operates as a bank, thrift, or trust company or is affiliated with an entity that does, and zero otherwise. *Outsource* is an indicator variable equal to one if fund *i*'s investment adviser indicates that it recommends the services of other investment advisory firms, and zero otherwise. All regressions include investment objective-by-month fixed effects and the following fund level control variables: lagged expense ratio, lagged log of fund TNA, lagged log of fund TNA squared, lagged log of family TNA, lagged turnover, lagged fund age measured in years, the percentage of net flows into fund *i* between month $t-12$ and $t-1$, the standard deviation (as a percent of TNA) of net flows over the same period and the percentage of fund assets invested in institutional share classes. Standard errors are clustered on fund, and t-statistics are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% or 10% levels.

6.2. Propensity Score-Adjusted Analyses

Univariate analyses in Table 2 show that mutual funds managed by advisers with and without DC conflicts have significantly different mean fund characteristics, such as fund size, fund family size, fund turnover and expense ratios. It is plausible that funds managed by advisers with DC conflicts exhibit systematic differences in observables, which drive the baseline results. To ensure I obtain a valid comparison of funds managed by advisers with and without DC conflicts based on observables, I use propensity score matching in two ways. First, I use the estimated propensity score to reweight observations. Second, following Angrist and Pischke (2009), I use the estimated propensity score as a pre-screen in the regression analysis. Intuitively, I exclude observations with outlier values of the propensity score and check the robustness of the baseline results to this exclusion.

I calculate the propensity score using a logit regression where the dependent variable is a dummy variable equal to one if the fund's investment adviser provides pension consulting services at time *t* and zero otherwise. I use the same set of control variables that were used

in the analyses earlier as explanatory variables in the model. Coefficient estimates from the logit model largely reflect differences in means from Table 3. A fund is more likely to be managed by an adviser with DC conflicts if it derives a higher percentage of assets from institutional share classes, comes from a smaller fund family, is younger, has lower turnover and charges lower fees.

Table 12 presents baseline results adjusted for propensity scores. Panel A shows regression estimates where observations have been reweighted using the estimated propensity score. Panel B shows unweighted estimates where the propensity score has been used to pre-screen observations, i.e., observations with extreme values of the score have been eliminated from the regression. Both methods yield estimates that are very similar to the baseline results shown in Table 5.

Table 12. Propensity score adjusted panel regressions of mutual fund performance and activeness on investment adviser DC conflicts and lagged controls.

Panel A: Propensity Score Weighting				
VARIABLES	**(1) CAPM Alpha**	**(2) 4-Factor Alpha**	**(3) Active Share**	**(4) R^2**
DCC	−0.030 ***	−0.024 ***	−0.019 ***	0.007 ***
	(−3.87)	(−3.49)	(−4.02)	(3.64)
Controls	Y	Y	Y	Y
Month × Obj FE	Y	Y	Y	Y
N	199,186	199,186	14,782	173,576
Adj. R-squared	0.346	0.159	0.410	0.224
Panel B: Propensity Score Screening (0.1–0.6)				
VARIABLES	**(1) CAPM Alpha**	**(2) 4-Factor Alpha**	**(3) Active Share**	**(4) R^2**
DCC	−0.030 ***	−0.024 ***	−0.021 ***	0.006 ***
	(−4.03)	(−3.59)	(−4.32)	(3.79)
Controls	Y	Y	Y	Y
Month × Obj FE	Y	Y	Y	Y
N	197,551	197,551	14,649	172,109
Adj. R-squared	0.347	0.159	0.409	0.224

The above table reports coefficients from panel regressions of fund *i*'s monthly performance and activeness on fund, adviser and family characteristics. The sample in Panel A is restricted to non-specialty actively managed domestic equity funds operating between January 2003 and December 2014. The performance measure in column (1) is CAPM alpha, which is a one-month-ahead alpha calculated using an estimation window over the previous 24 months. The performance measure in column (2) is 4-factor alpha, which is a one-month-ahead alpha calculated using an estimation window over the previous 24 months. The dependent variable in column (3) uses an annual value of *Active Share* as calculated in Cremers and Pareek (2016). The fact that data on *Active Share* are available annually explains the smaller number of observations in column (3). The key independent variable of interest is *DCC*, which is equal to one if the fund's investment adviser indicates that it provides pension consulting services on its Form ADV at the end of the prior fiscal year or if the fund's adviser is affiliated with an entity that provides pension consulting services. Propensity score screening is used in two ways. In Panel A, regression observations are reweighted using the estimated propensity score. In Panel B, the propensity score is used to pre-screen observations in the regression and observations with outlier propensity score values are excluded. Propensity scores are calculated using a logit regression where *DCC* is the dependent variable and explanatory variables include the same set of controls used in the baseline analyses. All regressions include investment objective-by-month fixed effects and the following control variables: lagged expense ratio, lagged log of fund TNA, lagged log of fund TNA squared, lagged log of family TNA, lagged turnover, lagged fund age measured in years, net flows into fund *i* between month $t-12$ and $t-1$ in billions, the standard deviation of net flows over the same period in billions, and the percentage of fund assets derived from institutional share classes. Standard errors are clustered on fund, and t-statistics are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% or 10% levels.

7. Conclusions

This paper explores how defined contribution conflicts of interest impact the portfolio management of an investment adviser's mutual funds. The study utilizes a comprehensive

panel of required regulatory disclosures from mutual fund investment advisers, which allows for a thorough examination of retirement plan conflicts using the complete CRSP mutual fund universe. Cross-sectionally, the results reveal that funds managed by investment advisers providing pension consulting services significantly underperform peers and exhibit lower levels of active management. Funds underperform regardless of whether the adviser or an affiliate provides pension consulting services. Time-series analyses of "switcher" funds further show that underperformance emerges only after an investment adviser begins offering pension consulting services. The magnitude of underperformance is especially pronounced for target date funds, where conflicts of interest are likely most severe due to their role as qualified default investment alternatives in defined contribution plans and the substantial growth in assets allocated to these products. Several limitations suggest avenues for future research. The sample ends in 2014 and relies on institutional share classes as a proxy for defined contribution assets, which may not capture all plan-level features. Extending the analysis to more recent periods would help assess how subsequent market developments and regulatory changes have affected the incentives documented in this study.

The findings have important implications for retirement investors. Because target date funds are commonly used as default options, many participants are passively exposed to the consequences of adviser conflicts without actively selecting these funds or monitoring their performance. Even modest annual underperformance can translate into economically meaningful losses when compounded over an individual's working life and retirement horizon. The results suggest that participants in plans advised by conflicted pension consultants may bear lower expected returns not because of differences in risk preferences or investment sophistication, but due to weakened incentives for fund managers to generate alpha.

The results are also relevant for plan sponsors and fiduciaries. While the use of affiliated funds may reduce administrative complexity or headline fees, the evidence suggests that such arrangements can come at the cost of lower performance and reduced managerial effort. These findings underscore the importance of rigorous fund monitoring, careful evaluation of consultant incentives, and heightened scrutiny of affiliated investment options, particularly for default menu offerings. Plan sponsors relying heavily on consultant recommendations may benefit from additional safeguards to ensure that fund selection decisions prioritize participant outcomes rather than adviser convenience or affiliation.

Finally, the analysis has implications for regulators and policymakers. Although current disclosure requirements under Form ADV provide transparency regarding potential conflicts of interest, the results suggest that disclosure alone may be insufficient to mitigate their effects. Given the central role of target date funds in retirement saving and the documented persistence of underperformance, regulators may wish to consider whether additional oversight, enhanced fiduciary standards, or clearer guidance regarding affiliated fund recommendations is warranted. More broadly, the findings contribute to the growing literature on how institutional incentives and conflicts of interest shape asset manager behavior and ultimately affect investor welfare in retirement markets.

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Appendix A

Appendix A.1. Additional Tests for Managerial Effort

Table A1 examines additional proxies for managerial effort and portfolio activeness to further assess the incentive channel. Column (1) shows that funds whose advisers are exposed to defined contribution conflicts exhibit significantly lower portfolio turnover, consistent with reduced trading intensity and weaker active management effort. In contrast, Column (2) indicates no meaningful difference in market beta, suggesting that conflicted advisers do not systematically alter overall market exposure. Column (3) shows a significantly lower loading on the SMB factor for *DCC* funds, implying reduced exposure to smaller, less benchmark-like stocks that typically require greater information acquisition and monitoring. Taken together, these results complement the Active Share and R^2 evidence by indicating that funds affiliated with pension consulting advisers are managed in a more benchmark-oriented and less active manner along multiple dimensions, consistent with weakened incentives to exert costly managerial effort rather than changes in aggregate risk exposure.

Table A1. Panel OLS regressions of mutual fund characteristics on adviser and affiliated firm DC conflicts and lagged controls.

VARIABLES	(1) Turnover	(2) Market Beta	(3) SMB Beta
DCC	−0.052 ***	0.004	−0.123 **
	(−2.72)	(1.17)	(−2.04)
Controls	Y	Y	Y
Month × Obj FE	Y	Y	Y
N	199,186	173,576	173,576
Adj. R-squared	0.109	0.082	0.634

The above table reports coefficients from panel regressions of fund *i*'s turnover and beta exposures on fund, adviser and family characteristics. The sample in Panel A is restricted to non-specialty actively managed domestic equity funds operating between January 2003 and December 2014. The dependent variable in column (1) is the one-month-ahead turnover as available in the CRSP database. The dependent variable in column (2) is the beta on the excess return on the market from a regression of excess fund returns on FFC factors over the subsequent 24 months. The dependent variable in column (3) is the beta on the SMB factor from a regression of excess fund returns on FFC factors over the subsequent 24 months. The key independent variable of interest is *DCC*, which is equal to one if the fund's investment adviser or an affiliated firm provides pension consulting services on its Form ADV at the end of the prior fiscal year. All regressions include investment objective-by-month fixed effects and the following control variables: lagged expense ratio, lagged log of fund TNA, lagged log of fund TNA squared, lagged log of family TNA, lagged turnover, lagged fund age measured in years, net flows into fund *i* between month $t-12$ and $t-1$ in billions, the standard deviation of net flows over the same period in billions, and the percentage of fund assets derived from institutional share classes. Standard errors are clustered on fund, and t-statistics are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% or 10% levels.

Appendix A.2. Additional Robustness Tests of the Main Regression Results

Table A2 replicates the main regression results from Table 5 using the 2012–2014 subsample, the period for which affiliate conflict data are available. As expected, given the shorter sample and corresponding loss of statistical power, the estimated coefficients are generally less precisely estimated. Nonetheless, the *DCC* indicator remains statistically significant at the 6% level or better in three of the four specifications. Notably, in Column (2), where 4-factor alpha is the outcome variable, the *DCC* coefficient remains statistically significant at the 2% level.

Table A3 replicates the main regression results from Table 5 while clustering standard errors at the investment adviser level. Although the absolute values of the t-statistics on the *DCC* coefficients are smaller than in the baseline specifications, each remains above 2.5 and statistically significant at approximately the 1% level or better.

Table A2. Panel OLS regressions of mutual fund performance and activeness on adviser and affiliated firm DC conflicts and lagged controls 2012–2014.

VARIABLES	(1) CAPM Alpha	(2) 4-Factor Alpha	(3) Active Share	(4) R^2
DCC	−0.022 *	−0.025 **	−0.011	0.007 *
	(−1.86)	(−2.49)	(−1.56)	(1.92)
Controls	Y	Y	Y	Y
Month × Obj FE	Y	Y	Y	Y
N	53,049	53,049	3444	35,019
Adj. R-squared	0.365	0.153	0.425	0.111

The above table reports coefficients from panel regressions of fund *i*'s monthly performance and activeness on fund, adviser and family characteristics. The sample is restricted to non-specialty actively managed domestic equity funds operating between January 2012 and December 2014, since data on affiliates providing pension consulting services on Form ADV is available beginning in 2011. The performance measure in column (1) is CAPM alpha, which is a one-month-ahead alpha calculated using an estimation window over the previous 24 months. The performance measure in column (2) is 4-factor alpha, which is a one-month-ahead alpha calculated using an estimation window over the previous 24 months. The dependent variable in column (3) uses an annual value of *Active Share* as calculated in Cremers and Pareek (2016). The fact that data on *Active Share* are available annually explains the smaller number of observations in column (3). The dependent variable in column (4) is the R^2 from a regression of fund excess returns on FFC factors over the subsequent 24 months. The key independent variable of interest is *DCC*, which is equal to one if the fund's investment adviser or an affiliated firm provides pension consulting services on its Form ADV at the end of the prior fiscal year. All regressions include investment objective-by-month fixed effects and the following control variables: lagged expense ratio, lagged log of fund TNA, lagged log of fund TNA squared, lagged log of family TNA, lagged turnover, lagged fund age measured in years, net flows into fund *i* between month $t-12$ and $t-1$ in billions, the standard deviation of net flows over the same period in billions, and the percentage of fund assets derived from institutional share classes. Standard errors are clustered on fund, and t-statistics are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% or 10% levels.

Table A3. Panel OLS regressions of mutual fund performance and activeness on adviser and affiliated firm DC conflicts and lagged controls with standard errors clustered on adviser.

VARIABLES	(1) CAPM Alpha	(2) 4-Factor Alpha	(3) Active Share	(4) R^2
DCC	−0.030 ***	−0.024 **	−0.021 **	0.006 **
	(−3.22)	(−2.55)	(−2.51)	(2.55)
Controls	Y	Y	Y	Y
Month × Obj FE	Y	Y	Y	Y
N	199,186	199,186	14,782	35,019
Adj. R-squared	0.346	0.159	0.410	0.111

The above table reports coefficients from panel regressions of fund *i*'s monthly performance and activeness on fund, adviser and family characteristics. The sample is restricted to non-specialty actively managed domestic equity funds operating between January 2012 and December 2014, since data on affiliates providing pension consulting services on Form ADV is available beginning in 2011. The performance measure in column (1) is CAPM alpha, which is a one-month-ahead alpha calculated using an estimation window over the previous 24 months. The performance measure in column (2) is 4-factor alpha, which is a one-month-ahead alpha calculated using an estimation window over the previous 24 months. The dependent variable in column (3) uses an annual value of *Active Share* as calculated in Cremers and Pareek (2016). The fact that data on *Active Share* are available annually explains the smaller number of observations in column (3). The dependent variable in column (4) is the R^2 from a regression of fund excess returns on FFC factors over the subsequent 24 months. The key independent variable of interest is *DCC*, which is equal to one if the fund's investment adviser or an affiliated firm provides pension consulting services on its Form ADV at the end of the prior fiscal year. All regressions include investment objective-by-month fixed effects and the following control variables: lagged expense ratio, lagged log of fund TNA, lagged log of fund TNA squared, lagged log of family TNA, lagged turnover, lagged fund age measured in years, net flows into fund *i* between month $t-12$ and $t-1$ in billions, the standard deviation of net flows over the same period in billions, and the percentage of fund assets derived from institutional share classes. Standard errors are clustered on investment adviser, and t-statistics are reported in parentheses. ***, ** and * indicate significance at the 1%, 5% or 10% levels.

Notes

1 See the ICI 2025 Factbook for all figures.

2 While the motivating statistics cited above draw on recent ICI data to highlight the continued growth and importance of defined contribution plans, the empirical analysis focuses on the period from 2003 to 2014. The underlying economic mechanism by which affiliated mutual funds may be insulated from competitive pressure through plan-level selection and default investment structures was already present during the sample period and remains relevant today. Nonetheless, the analysis does not capture the substantial post-2014 expansion of defined contribution assets and target date fund usage, which may amplify the effects documented in this study. Extending the analysis to more recent data is therefore a natural direction for future research.

3 See Section 2 for more details on the SEC's definition of pension consulting services.

4 Beggs et al. (2022) use assets invested in institutional share classes as a proxy for tax-exempt retirement assets invested in mutual funds.

5 I thank my contact at Voya Investment Management, Timothy Movido, for pointing this out.

6 Similarly, Werner (2016) examines the role of plan consultants in participant menu choice using hand-collected plan-level data. She finds that non-mutual fund consultants can help overcome issues in investment choice composition for participants, but only if the consultant's incentives are not distorted through underlying compensation arrangements.

7 Advisers are also required to update their Form ADV if material changes to their business occur during the year.

8 Research using Form ADV filings has been relatively limited in the mutual fund literature, largely because earlier studies relied on hand-collected samples rather than comprehensive datasets. Notable exceptions include Chen et al. (2013), who examine the performance of outsourced mutual funds, and Casavecchia and Tiwari (2016), who study how investment adviser cross-trading practices affect mutual fund performance. Dimmock and Gerken (2012) are the first to construct a complete panel of Form ADV filings and provide a comprehensive overview of the information disclosed by registered investment advisers.

9 Pension consulting pertains to advice given to the plan as a whole. As such, mutual fund advisers that manage separate account mandates with regard to a specific asset class (i.e., institutional asset managers) would not be expected to indicate that they provide pension consulting services on Form ADV [e.g., Evans and Fahlenbrach (2012)].

10 Under the Investment Advisers Act, "affiliated" means the adviser either controls, is controlled by, or is under common control with another entity. Control means the power to direct or cause the direction of the management or policies of an investment adviser, whether through ownership of securities, by contract, or otherwise. Any person or entity that directly or indirectly has the right to vote 25 percent or more of the voting securities, or is entitled to 25 percent or more of the profits, of any investment adviser is presumed to control that investment adviser.

11 I successfully match more than 95% of actively managed mutual funds in CRSP to Form ADV data.

12 The sample begins in 2003 because the analysis relies on lagged ADV data, and many advisers did not begin filing Form ADV electronically until 2002.

13 Monthly risk-free rate data are obtained from Kenneth French's website. See http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/ (accessed on 12 May 2017). I thank Kenneth French for making these data available.

14 I multiply monthly alphas by 12 to obtain annual estimates.

15 The *Low* variables account for returns at or below the 20th percentile, the *Medium* variables account for returns above the 20th percentile and at or below the 80th percentile, and the *High* variables account for returns above the 80th percentile. Following Sirri and Tufano (1998), percentiles are calculated within date and investment objective. With these percentiles, the formula for the low return is LowRet = Min(0.2, RetPtile), the formula for the medium return is MedRet = Min(0.6, RetPtile-LowRet), and the formula for the high return is HighRet = RetPtile-MedRet-LowRet. High, Medium and Low variables are calculated analogously for 4-factor alphas.

16 I multiply coefficient estimates by 12 to obtain annual estimates.

17 Active Share is observed only annually using data from Cremers and Pareek (2016), resulting in a smaller sample than in the main analyses. To assess representativeness, I compare the Active Share subsample to the full sample along key fund characteristics. Funds in the Active Share subsample are similar in size, fees, turnover, and institutional share-class usage, and exhibit comparable average performance, suggesting that the subsample is broadly representative of the full universe of actively managed domestic equity funds. Nonetheless, the reduced coverage limits statistical power and may attenuate estimated effects.

18 One possible explanation for the stronger alpha effects but weaker activeness results for affiliate conflicts is that these arrangements operate through different organizational and distribution channels than adviser-level conflicts. When conflicts arise at the affiliate level, funds may benefit from especially stable distribution through insurance platforms, bank networks, or bundled retirement products, which can insulate performance from flow discipline without requiring uniform changes in portfolio activeness. In addition, affiliate-managed funds may be subject to heterogeneous governance structures or portfolio mandates that limit observable shifts in Active Share or R^2, even as weaker incentives to generate alpha translate into poorer performance outcomes. The stronger alpha effects but weaker evidence on activeness for affiliate conflicts may also reflect limitations of commonly

used activeness measures. Active Share and R^2 capture deviations from benchmark holdings and factor exposures but may be less sensitive to changes in security selection quality, implementation costs, or intra-benchmark positioning that can materially affect performance. Thus, affiliate-level conflicts may depress alpha through channels that are not fully captured by observable activeness metrics, even if overall portfolio structure appears similar to that of non-conflicted funds.

[19] The 5-factor alpha is a one-month-ahead measure estimated using a 24-month rolling estimation window. The five factors are the monthly excess returns on the CRSP U.S. market, the MSCI World Index excluding the U.S., the Barclays U.S. Aggregate Bond Index, the Barclays Global Aggregate Bond Index excluding the U.S., and the GSCI Commodity Index.

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