CFR Working Paper No. 25-03

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W. Bazley • G. Cici • J. Liao

centre for financial research
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William Bazley Gjergji Cici Junchao Liao*

April 3, 2025

Abstract

Institutional features of 401(k) plans can give rise to conflicts of interest between plan participants and financial advisors that advise them. We study one such conflict that arises when advisors are affiliated with the plan's recordkeeper. Using a large dataset of 401(k) plans, we find that affiliated advisors reduce investment performance by steering participant flows to proprietary funds. We observe no similar effects for unaffiliated advisors. Additionally, affiliated advisors provide no significant benefits in terms of participation rates, administrative fees, or diversification. Given the increasing prevalence of advisors within 401(k) plans, our findings have relevant implications for households, plan sponsors, and policymakers.

Keywords: 401(k) plans, financial advisors, conflicts of interest, recordkeepers.

JEL classification: G10, G11, J32.

*Bazley (wbazley@ku.edu), Cici (gjergji.cici@ku.edu), and Liao (junchaoliao@ku.edu) are at the University of Kansas, School of Business, 1654 Naismith Dr., Lawrence, KS 66045. Cici is also a member of the Centre for Financial Research (CFR), Cologne. We are thankful for insightful comments from seminar participants at the University of Kansas.

1 Introduction

American households increasingly rely on employer-sponsored retirement plans, such as 401(k) plans, to save for retirement. This has given rise to both a growing demand for, and greater availability of, investment advice within these plans.[1] Regulators and consumer advocacy groups, however, have raised concerns that conflicts of interest may undermine the quality of advice provided to plan participants. As a result, the Department of Labor (DOL) attempted to address these concerns through its 2016 and 2024 rulings, intended to broaden the definition of fiduciary advice to ensure that financial advisors act in the best interests of plan participants. Some consumer advocacy groups have supported the DOL's position, warning about the risks of conflicted advice and its potential harm to households' retirement security (Bradford 2017 and Huang 2024). Yet, despite these concerns, there is limited empirical research into the impact of conflicted financial advice on 401(k) plan participants.

A key obstacle is identifying where and how such conflicts arise within such plans. Our study addresses this challenge by identifying one particular category of conflicted advice using a large cross-section of 401(k) plans and measuring its impact on plan participants. Specifically, we examine conflicts that emerge when financial advisors are affiliated with the plans' recordkeepers, firms that help employers administer their 401(k) programs and can themselves face conflicts of interest (Pool, Sialm, and Stefanescu 2016, 2022). When advisors are tied to these recordkeepers, these conflicts can bias the advice given to participants, advancing the recordkeeper's (and consequently the advisor's) interests at the expense of plan participants.

To empirically examine whether affiliated advisors' conduct is consistent with such a conflict of interest, we employ micro data on the 401(k) plans' investment options, such as mutual funds, along with their characteristics, performance, and flows from plans'

[1] Increased demand for financial advice is evidenced in a 2024 survey conducted by Charles Schwab, while increased availability of financial advice in 401(k) plans is supported by evidence from annual surveys organized by Plan Sponsor Council of America. A more detailed discussion of these trends is provided in the next section.

participants. We also employ information about whether advisors are available to plan participants, and the affiliation networks between advisors and recordkeepers. Crucially, a portion of the necessary data can be collected from Form 5500, which firms are required to file with the Department of Labor under the Employee Retirement Income Security Act (ERISA) regulations to protect employees' benefits. BrightScope Beacon digitizes the Form 5500 data, which enables us to link investment options within plans to traditional mutual fund data, as well as to identify plans' recordkeepers, the presence of an advisor, and the relationships between advisors and recordkeepers.

Conflicted advice in our setting arises in a particular way. Many recordkeepers offer proprietary mutual funds, which they include in the investment menus of the 401(k) plans they service. Because recordkeepers earn fee revenue from their own funds, they have an incentive to steer participants into these proprietary offerings (Pool et al. 2016). Affiliated advisors can help the recordkeeper achieve this objective by recommending that plan participants invest in the recordkeeper's funds. Since proprietary funds are often inferior to other menu options (Pool et al. 2016), such advice can undermine participants' performance outcomes. Thus, affiliated advisors may negatively affect participant returns by directing assets to the recordkeeper's own funds.

We find that performance outcomes deteriorate when a plan changes from having no advisor to adding an advisor that is affiliated with the recordkeeper. For each plan and year, we measure performance outcomes using allocation-weighted plan alpha (which we call allocation alpha), defined as the average alpha of all funds in the plan's investment menu weighted by participants' actual aggregate allocations at the beginning of the year. Relative to plans without advisors, allocation alpha declines by 21 basis points in the first year after the introduction of an affiliated advisor and by 33 basis points per year in subsequent years, compared to the pre-introduction period. In contrast, we find no effect on performance outcomes when plans add advisors who are unaffiliated with the recordkeeper. This finding suggests that the negative impact of affiliated advisors stems from their affiliation with

recordkeepers and the conflicts of interest it introduces, rather than their role as advisors per se. Moreover, our findings are not explained by heterogeneity in a variety of plan and recordkeeper characteristics.

Our baseline results provide initial insights into the relation between affiliated advisors and performance outcomes of plan participants. However, as with many studies that examine the impact of financial advice on the decisions of advice recipients, we need to compare the actual aggregate performance of plan participants against a counterfactual, i.e., aggregate performance that would have resulted if the advisor had not been present. Without directly observing this counterfactual, it is difficult to establish whether observed performance changes are truly caused by the advisor's presence or by other unobserved factors. To overcome this challenge, we follow Chalmers and Reuter (2020) and use target date funds within plans to construct counterfactual comparison portfolios. We do so because Chalmers and Reuter (2020) show that individuals use target date funds as substitutes for brokers' fund recommendations within a retirement plan. Thus, we rely on the returns of target date funds within a plan to capture the counterfactual performance outcomes that participants would have realized if an advisor was not present. The difference between allocation alpha and the alpha of the counterfactual portfolio serves as our key measure, which we refer to as counterfactual-adjusted alpha. Our results show that the introduction of affiliated advisors is associated with lower counterfactual-adjusted alpha. The effect is robust to controlling for myriad known determinants of investment decisions and portfolio outcomes. Furthermore, the results are not driven by how the counterfactual portfolio is constructed—the negative impact of affiliated advisors persists regardless of whether the underlying target date funds are value-weighted or equally-weighted when constructing the counterfactual portfolio. As with our baseline results, the introduction of unaffiliated advisors has no effect on counterfactual-adjusted alpha.

We address endogeneity concerns using multiple approaches. First, most of our tests exploit the staggered introductions of advisors across plans and implement a difference-in-differences design. We confirm that trends in the outcome variable were the same for both

treated and control groups prior to the treatment, which supports the validity of our identification strategy.

Second, we conduct instrumental variable (IV) regressions, whereby we instrument for the presence of an affiliated advisor in a given plan and year serviced by a given recordkeeper using the total proportion of plans serviced by that recordkeeper in the previous year that had affiliated advisors. This instrument satisfies the relevance condition because recordkeepers and affiliated advisors often work together as part of a service bundle offered consistently across their client plans. A recordkeeper servicing many plans that have affiliated advisors in one year could indicate the recordkeeper's focus on promoting these services, which is likely to continue and influence the use of affiliated advisors in other plans serviced by this recordkeeper. It is also likely to satisfy the exclusion restriction because the lagged proportion reflects a recordkeeper's overall strategy, which reasonably influences plan performance outcomes indirectly through its effect on the presence of affiliated advisors, and not directly or via other unobserved factors. We find that the evidence from the IV regressions is consistent with our ordinary least squares (OLS) results.

Finally, we directly address the potential concern that our findings may arise through unobserved mechanisms that simultaneously affect plan performance and correlate with the presence of affiliated advisors. In particular, recordkeepers might worsen the investment menu by introducing inferior investment options that benefit themselves, while convincing the plan sponsor to hire an affiliated advisor. If this is the case, the observed deterioration in performance outcomes could result from these menu changes rather than from the influence of affiliated advisors on participants' allocation decisions. To address this possibility, we implement two tests. First, we examine whether the menu composition changes when a plan introduces an advisor that is affiliated with the recordkeeper. We measure menu change by the turnover of the investment options in a given plan in the year. Second, we examine the relationship between menu quality and the presence of affiliated advisors. We measure menu quality by equally weighting the alphas of all funds offered within each plan. If our results are

driven by factors causing changes in the investment menus or their quality, rather than participants' allocation decisions influenced by affiliated advisors, we would observe significant relationships between menu turnover or quality and affiliated advisors. We find no such relations, further supporting the interpretation that the negative performance effects are primarily due to the influence of affiliated advisors on participants' allocation decisions.

If the affiliation between advisors and recordkeepers truly drives the deterioration in allocation-weighted alpha or its counterfactual-adjusted counterpart, we expect this effect to be concentrated in funds that are managed by the recordkeeper. The premise is that affiliated advisors may negatively affect performance outcomes by influencing participants' allocations towards recordkeeper's proprietary funds. To test this idea, we condition on plans with investment menus that have at least one proprietary fund and one non-proprietary fund. For each plan, we compute allocation-weighted alpha separately for the sub-portfolio of the plan that includes only proprietary funds and the subset that includes non-proprietary funds. We find that the deleterious performance effects are confined to the plan sub-portfolios that include proprietary funds.

Our next analysis provides direct evidence of how affiliated advisors impact performance. Specifically, we examine how affiliated advisors affect plan participant flows to the funds available within a plan during the year. We find that flows to the recordkeeper's proprietary funds are typically lower than flows to non-proprietary funds when advice is not available. However, the presence of an affiliated advisor within a plan offsets such behavior. That is, within the same plan and year, affiliated advisors seem to channel participant flows to the recordkeeper's proprietary funds, a pattern that does not extend to unaffiliated advisors. Combined with the performance results, these findings indicate that affiliated advisors influence participant behavior in ways that prioritize recordkeepers' interests over those of the plan participants.

Our results suggest that the presence of affiliated financial advisors introduces conflicts of interest that worsen the performance outcomes of plan participants. However, it is plausible

that plan participants receive nonperformance-related benefits after affiliated advisors are added to plans. For example, affiliated advisors could help increase participation and investment rates, negotiate lower administrative fees with recordkeepers as part of their advisory arrangement, or help increase portfolio diversification. Our analysis finds no evidence that affiliated advisors improve participation rates, lower administrative fees, or improve diversification outcomes. The only measurable benefit is a small increase in investment contributions, but the magnitude is economically small. This suggests that, overall, affiliated advisors may not provide meaningful benefits to plan participants that would offset the decline in investment performance.

Our study makes contributions to four interconnected strands of literature. First, we contribute to the literature that studies Defined Contribution (DC) plan designs. A long line of research studies how elements of plan design influence various aspects of employee behavior in retirement investing, such as participation rates, contribution rates, and portfolio choice. With respect to participation and contribution rates, Choi et al. (2004) and Madrian and Shea (2001) document that automatic enrollment significantly increases participation rates in DC plans, while Beshears et al. (2023) show that higher default contribution rates encourage higher savings. With respect to portfolio choice, Brown, Liang, and Weisbenner (2007) show that participants' portfolio allocations are influenced by the default investment options and the structure of the fund menu. Along the same vein, Mitchell and Utkus (2022) find that when TDFs are used as default investment options, they improve portfolio diversification and reduce idiosyncratic risk compared to participant-directed portfolios. The role of advice in DC plans is an element of plan design that is not quite well understood. As previous research shows that low financial literacy leads to suboptimal outcomes for participants in retirement plans (e.g., Clark, Lusardi, and Mitchell 2017; Tang et al. 2010; Benartzi and Thaler 2001), financial advice can serve as a substitute or complement to financial literacy in improving participant outcomes (e.g., Reuter and Richardson 2022; Lusardi and Mitchell 2014; Collins 2012; Bhattacharya et al. 2012). However, for financial advice to be effective in helping employees with low financial literacy improve their decision

making in retirement plans, it is necessary to understand what factors could undermine its quality. Our study shows that the quality of financial advice is poor when advisors are affiliated with recordkeepers, likely due to conflicts of interest. Thus, plan sponsors should consider ensuring the absence of such affiliations so that financial advice acts as an effective substitute for financial literacy and achieves its intended goals.

Second, our study contributes to the growing body of research studying how conflicts of interest among plan service providers affect DC plan design and participant outcomes. For example, Pool et al. (2016, 2022) document that recordkeepers structure investment menus to benefit themselves at the expense of plan participants. Building on this work, we identify a previously unexamined conflict of interest inherent in DC plan operations—the role of affiliated advisors. These advisors, connected to recordkeepers, can influence participants' allocation decisions in ways that prioritize the recordkeepers' interests over those of the participants. Unlike prior studies focused on conflicts arising from menu design, we demonstrate how affiliated advisors introduce systematic biases that influence participant allocations within DC plans, leading to poorer performance outcomes. Thus, our study suggests that addressing advisor affiliations to improve DC plan governance and protect participants' interests is important.

Third, we contribute to a relatively small but important literature that examines financial advice in DC plans and its impact on participant outcomes. Chalmers and Reuter (2020) evaluate the value of "biased" investment advice within the Oregon University System Optional Retirement Plan (ORP), where brokers serving as advisors were compensated based on commissions. They show that the value of advice depends on plan design, particularly the type of default investment options available in the investment menu. Advice was more valuable when brokers were present, but low-cost, well-diversified default options like TDFs were unavailable. When high-quality defaults were introduced, the value of advice diminished to the point where plan designs with better default options may mitigate the need for potentially biased financial advice. Reuter and Richardson (2022) study demand for financial

advice in 23 DC plans with TIAA as the sole recordkeeper. They find that advice-seeking increases with factors like age, account balances, contributions, and life events, such as marital changes. However, demand for advice is lower when TDFs are available, suggesting that high-quality defaults can crowd out investment advice. Our study identifies a new factor that affects the value of financial advice: advisor affiliations. Unlike prior research that focuses on the effect of default options on the value of financial advice, we show that affiliations between advisors and recordkeepers create conflicts of interest that undermine the value of financial advice, directly harming participant outcomes.

More broadly, our study is related to the larger literature that studies the effects of financial advice on households' financial choices and outcomes. This literature points to both benefits and adverse effects associated with financial advice. Some documented benefits include improvements in portfolio efficiency, enhanced diversification, increased stock market participation, greater tax efficiency, and the mitigation of behavioral biases.[2] However, several studies document that when conflicts of interest are present, financial advice harms recipients, leading to diminished investment performance.[3] Our study complements this literature by showing that conflicts of interest in financial advice lead to poorer outcomes for investors within a new and increasingly important setting—investing in 401(k) plans. Given the growing accessibility of financial advice within 401(k) plans and the significant long-term wealth effects associated with rates of return on savings (Favilukis, 2013; Benhabib, Bisin, and Luo, 2017), our findings have important implications for households, plan sponsors, policymakers, and regulators.

2 Institutional Background

Defined Contribution (DC) plans, especially 401(k) plans have become increasingly important for retirement saving in the United States, with assets growing from about $1.7 trillion in 2000 to $8.9 trillion in the third quarter of 2024 (ICI 2024a). 401(k) plans are

[2] E.g., Bhattacharya et al. (2012); Hoechle et al. (2018); Gennaioli, Shleifer, and Vishny (2015); Cici, Kempf, and Sorhage (2017); and Hackethal, Haliassos, and Jappelli (2012).
[3] E.g., Bergstresser, Chalmers, and Tufano (2009); Hackethal, Haliassos, and Jappelli (2012); Kramer (2012); Del Guercio and Reuter (2014); Egan, Ge, and Tang (2022).

governed by the Employee Retirement Income Security Act of 1974 (ERISA) and are sponsored and overseen by the employer, who, in consultation with the recordkeeper, chooses a menu of investment options and other features of the plan. The key service providers to 401(k) plans are recordkeepers, investment managers, and financial advisors. Recordkeepers provide plan reporting, manage participant accounts, process contributions, and track investments, among other services. Investment managers oversee the management of the underlying investment options available within the plan's investment menu. Financial advisors provide personalized investment and retirement planning advice to participants or plan sponsors.[4] Recordkeepers often provide bundled services that include investment management, financial advice, and custody of plan assets.[5]

Access to financial advice has become an increasingly important feature of 401(k) plans, which is driven in large part by increasing demand from plan participants. A 2024 survey by Charles Schwab reports that 61 percent of the survey participants think that their "financial situation does warrant advice," up from 55 percent in 2023. This rising demand has been accompanied by greater availability of financial advice within 401(k) plans. According to a survey by the Plan Sponsor Council of America, about 40 percent of surveyed 401(k) plans reported offering financial advice in 2023, compared to 30% in 2019.[6]

Financial advisors embedded in DC plans are considered fiduciaries under ERISA if their advice meets all the conditions of a five-part test established by the Department of Labor (DOL) in 1975. Under this definition, financial advisors are considered fiduciaries if they provide regular, personalized investment advice under a mutual understanding that it will guide and serve as a primary basis for plan decisions.[7] While the 1975 five-part test remains

[4] See ICI (2024b) for a description of the services provided in 401(k) plans.
[5] Recordkeepers can be asset management firms, insurance companies, brokerage firms, banks, or pure recordkeepers. Asset management firms tend to dominate the market, covering close to 60 percent of 401(k) plan assets as of 2021 (ICI 2024c).
[6] Plan Sponsor Council of America, 67th and 63rd Annual Survey(s) of 401(k) and other profit-sharing plans.
[7] Specifically, to meet the 1975 fiduciary standard, a financial advisor must: (1) provide investment recommendations or advice on asset values; (2) do so regularly; (3) have a mutual understanding that the advice guides decisions; (4) ensure the advice is a primary basis for decisions; and (5) tailor the advice to the plan's specific needs, such as investment strategy or diversification. All five criteria must be met to be considered a fiduciary (Definition of "Fiduciary" 1975).

central to determining fiduciary status for investment advice in 401(k) plans, the DOL has made attempts to broaden the definition of fiduciary advice in recent years. However, these attempts have been unsuccessful—the DOL's 2016 ruling was vacated while the DOL's 2024 ruling has been suspended due to ongoing legal challenges.[8] It is important to note that, "advice" or "guidance" in 401(k) plans often refers to resources that do not rise to the level of fiduciary advice. These include general educational tools, such as online retirement planning resources, workshops, or other financial wellness programs, which aim to enhance participants' financial literacy and support them in making informed retirement decisions.[9] Approximately 30 percent of surveyed plan sponsors reported offering comprehensive financial wellness programs.[10]

An advisor embedded within a 401(k) plan is often affiliated with the plan's recordkeeper. This affiliation could take various forms: the advisor might be directly employed by the recordkeeper, the recordkeeper might own the advisory firm (or vice versa), or both entities might operate under the same parent company. At the same time, many recordkeepers place their proprietary mutual funds in the investment menus of the 401(k) plans they service and are reluctant to remove underperforming proprietary funds from these menus (Pool et al. 2016). This practice hurts the performance of plan participants that invest in those funds. We hypothesize that such relationships between advisors and recordkeepers create incentives for advisors to steer plan participants toward proprietary investment options. Because the sale of proprietary funds directly benefits the recordkeeper through increased management fees, the affiliated advisor may face implicit or explicit pressure to recommend these funds.

Our analysis focuses specifically on affiliations arising through ownership links between advisors and recordkeepers because these relationships are straightforward and unambiguous to identify. However, beyond the context of retirement plans, multiple studies have

[8] See the U.S. Government Accountability Office (GAO) 2024 report on "Agencies Can Better Oversee Conflicts of Interest between Fiduciaries and Investors.".

[9] For example, HP Inc. provides *My HP Financial Wellness* through a dedicated website (https://www.myhpfinancialwellness.mysecurebenefitsportal.com/). This platform offers a variety of financial literacy resources, including materials developed by the company and resources supplied by Fidelity, the recordkeeper for HP Inc.'s 401(k) plan.

[10] Plan Sponsor Council of America, 67th Annual Survey of 401(k) plans.

documented similar conflicts of interest that arise when advisors or brokers sell products tied to firms with which they have business relationships. In such instances brokers are incentivized to sell the products of certain firms because they receive higher commissions from these firms. For example, Christoffersen, Evans, and Musto (2013) show that mutual funds that pay higher commissions to brokers receive higher inflows, while Bergstresser, Chalmers, and Tufano (2009) document that broker-sold funds underperform direct-sold funds even after adding back the distribution fees paid by these funds. Similarly, Egan (2019) demonstrates that brokers, incentivized by kickbacks from issuers, often sell dominated bonds to their clients. The evidence from these studies suggests that business relationships tied to commission payments can harm investors' interests, raising concerns about similar dynamics in retirement plans where advisors are affiliated with recordkeepers.

Consistent with this insight, a 2024 study by the Government Accountability Office (GAO) on conflicts of interest in retirement plans identifies relationships between affiliated entities that provide services to these plans as a major source of conflict of interest inherent in the institutional workings of 401(k) plans (GAO 2024). The GAO defines this conflict as: "A firm or financial professional may also direct clients' assets to the products and services of an affiliated business, one in which the firm has a corporate relationship with the business or has a financial stake in the business." The GAO study raises a significant concern that, in such cases, the affiliated entity "has an incentive to recommend the affiliated products rather than making such a determination based on a client's needs."

These conflicts of interest described above continue to attract regulatory and public scrutiny. Regulators are concerned that the current regulatory safeguards under ERISA are insufficient to fully protect the interests of plan participants. This concern is evident in the recent, albeit unsuccessful, efforts to broaden the definitions of fiduciary advice to provide greater protection for retirement plan participants.[11] Lawsuits such as *Shaffer v. Empower*

[11] The 2016 ruling sought to extend fiduciary responsibilities to more advisers, including those providing one-time or incidental advice, but was vacated in 2018. Similarly, the 2024 ruling aimed to expand the definition of fiduciary advisers and investment advice; however, its implementation has been delayed due to legal challenges (GAO 2024).

Retirement, LLC[12] illustrate the continued scrutiny of potential conflicts of interests arising when advisors to plan participants are affiliated with the recordkeeper. In this case, Empower's affiliated advisors were accused of providing investment advice to plan participants while directing their funds into Great-West and Putnam mutual funds—both affiliated with Empower—without disclosing the affiliation. While this lawsuit was ultimately dismissed, such cases bring attention to the potential conflicts of interest that can result from advisors' affiliations with recordkeepers, raising important questions about whether participants' interests are being protected under the current regulations.

3 Data and Sample Characteristics

Our primary data on defined contribution 401(k) plans comes from BrightScope Beacon (BrightScope). BrightScope collects most of its data from Form 5500, which ERISA defined contribution plans are required to file annually with the Department of Labor. It also collects some data from plan sponsors and the Security and Exchange Commission (SEC).

Since our empirical methodology relies on detailed investment menu information, we focus on 401(k) plans that provide this level of detail, which are plans with more than 100 participants. The BrightScope dataset includes approximately 74,402 such plans with detailed investment menu data from 2009 to 2019, which represents about 84% of the total assets in the universe of U.S. 401(k) plans that disclose investment menu data.[13] This translates into 210,661plan-year observations. As explained later, for most of the tests we focus on plans that offer target date funds. This reduces the sample further to 112,030 plan year observations.

The BrightScope dataset provides annual plan-level information, including the identity of plan service providers—institutional entities that provide services to the plan, such as recordkeeping, investment management, and advisory service. It also includes annual aggregate plan characteristics, such as total assets, availability of auto-enrollment options, and number of participants in the plan. In addition, Brightscope provides annual data on each

[12] Shaffer v. Empower Retirement, LLC, No. 1:22-cv-02716-NYW (D. Colo. filed Oct. 14, 2022).
[13] This is based on our own calculations, in which we compared the assets of plans with detailed investment menu information in BrightScope against the universe of all 401(k) plans that disclose such information in their Form 5500 filings with the DOL.

plan's investment menu composition and the total participant allocations in each investment option within the plan menu in a given year. We supplement the BrightScope data with additional information that we collect from Form 5500. Specifically, we extract total administrative fees from Schedule H.

The BrightScope data also include annual information on the roles of service providers in each 401(k) plan. We use these data to identify advisors that provide advice to plan participants. In addition, we study all advisor-recordkeeper pairs to determine whether the advisor shares an affiliation with the recordkeeper through ownership links. This affiliation could take various forms: the advisor might be the same entity as the recordkeeper, the recordkeeper might own the advisor (or vice versa), or both entities might operate under the same parent company. We classify an advisor as affiliated with a recordkeeper if either of the following conditions holds: (i) the advisor and recordkeeper share the same name and identification number in BrightScope or (ii) the advisor and recordkeeper are listed as separate entities in BrightScope with distinct names and identification numbers but have verifiable ownership links. We confirm these links using publicly available data sources, such as company websites and Form ADV filings. Using this classification, we create our primary variable of interest, *Affiliated Advisor*, which equals one if the advisor is affiliated with the recordkeeper of the plan, and zero otherwise. We also create an analogous variable, *Unaffiliated Advisor*, which equals one if a plan's advisor is not affiliated with the plan's service provider, and zero otherwise.

To conduct our tests that rely on investment menu data, we link BrightScope's mutual fund data from each plan's investment menu with the CRSP Mutual Fund (CRSP MF) database using fund tickers provided by Brightscope. This linkage allows us to supplement the plan menu data from BrightScope with fund characteristics from CRSP MF, which includes funds' returns, expense ratios, turnover ratios, and total net assets. We also obtain monthly Fama-French factor returns from the Fama-French factor return dataset available in WRDS. Additionally, we use a bond factor return constructed as the excess return of the

Bloomberg Barclays Aggregate Bond Index.

We report summary statistics for our data in Table 1. Each characteristic is first averaged at the plan level. We then compute and report statistics based on the cross-section of plans. A detailed description of the variables is provided in Appendix I. The average plan has about $63 million in assets and has more than one million dollars in loans made against the plan assets. The average plan participant makes an annual contribution of $5,547 to their 401(k) account and has a balance of about $61,000. About 30 percent of the plans auto-enroll the sponsor's employees. In terms of investment options, the average plan has about 27 investment options, 23 of which are mutual funds. Accordingly, mutual funds represent a substantial proportion of the typical plan's investment menu. Moreover, the average fraction of mutual funds that are proprietary is about 22 percent, though there is substantial variation across plans, with some plans having more then 40 percent of investable funds as proprietary. The average total administrative fee as a percentage of plan assets amounts to 24 basis points while the average allocation-weighted fund expense ratio is 57 basis points, which is close to Pool et al. (2022), who report an allocation-weighted expense ratio 56 basis points, although their sample includes the 1,000 largest 401(k) plans.

In Figure 1, we plot the evolution of financial advisors' presence within 401(k) plans during our sample period. In 2009, about nine percent of plan assets have access to financial advice. By 2019, the proportion of plan assets with access to financial advice reached more than 20 percent. Notably, Figure 2 shows that about half of all plan assets with financial advisors have an advisor who is affiliated with the plan's recordkeeper.

4 Advisors and Performance Outcomes

4.1 Empirical Results

We empirically examine the effect of the introduction of affiliated advisors on the performance outcomes of plan participants by estimating the following ordinary least squares (OLS) regression:

$$Allocation\ Alpha_{j,t} = \alpha_0 + \beta_1 Affiliated\ Advisor_{j,t-1} + \theta' \boldsymbol{X}_{j,t-1} + \varepsilon_{j,t} (1)$$

Plan is denoted by *j* and year by *t*. **X** is a vector of control variables lagged by one year. The key independent variable is, *Affiliated Advisor*$_{j,t-1}$, an indicator variable identifying whether plan *j* has an affiliated advisor in year *t*.

Allocation Alpha$_{j,t}$ measures the overall risk-adjusted performance earned by participants of plan *j* in year *t*. Its construction is as follows. We first calculate alphas of individual mutual funds included in a plan's investment menu relying on the four-factor Carhart (1997) model augmented with the excess return on the Barclay US Aggregate Bond Index in order to account for fixed income exposure either in bond funds or target date funds. We compute fund alpha for a given month as the difference between the actual fund return and the expected fund return. The expected return is calculated by applying factor loadings, estimated from regressions of the fund's prior 36 monthly excess returns on five factor-mimicking portfolios, to the realized factor returns in the current month. To be included in the estimation, we require the fund have 18 monthly return observations within our rolling window. Monthly fund alphas are then compounded to compute an annual alpha measure for each fund. Next, at the plan level, we calculate *Allocation Alpha* by weighting the annual alphas of the individual funds making up the plan's investment menu by the participants' actual aggregate allocations in the individual funds at the beginning of year *t*.

In our regressions, we also include additional explanatory variables that may influence performance outcomes. Most notable among these is *Unaffiliated Advisor*, an indicator variable identifying whether a plan has an unaffiliated advisor. We include it to facilitate comparison between affiliated advisors and advisors who are not affiliated with plans' recordkeepers. The other control variables account for heterogeneity in plans' characteristics. They are the number of funds available for investment within the plan, the total dollar amount of the plan's assets, the amount of loans against participants' balances within the plan, the average dollar amount contributed to the plan in the year, the average account balance, and an indicator that identifies whether the plan automatically enrolls individuals in the plan.

Our empirical specifications also include plan fixed effects to account for plan-specific, time-invariant characteristics; recordkeeper fixed effects to control for recordkeeper-specific, time-invariant factors; and year fixed effects to absorb common time trends. This fixed effects structure enables a difference-in-differences estimation strategy that identifies the effect of introducing affiliated (or unaffiliated) advisors relative to plans without financial advisors. We cluster the standard errors at the plan level and winsorize all plan-level variables at the 1% and 99% levels.

Results from the estimation of Equation (1) are reported in Columns (1) and (2) of Table 2. Column (1) corresponds to a specification that includes only the *Affiliated Advisor* and *Unaffiliated Advisor* indicators, while Column (2) adds the control variables. Estimates from the specification in Column (2) indicate that the introduction of affiliated advisors to plans without one previously results in a risk-adjusted performance reduction of close to 22 basis points per year relative to plans in the comparison group, i.e., plans without advisors. The estimate is highly statistically significant (*t*-statistic = -4.32). Notably, this result does not depend on the inclusion or omission of the control variables, as it is stable across both regression specifications.[14] In contrast, we do not observe that the introduction of an unaffiliated advisor has a measurable effect on performance outcomes. While the empirical estimate is negative, its magnitude is indistinguishable from zero and not statistically significant. This finding suggests that the negative impact of affiliated advisors stems from their affiliation with recordkeepers and the conflicts of interest it introduces, rather than their role as advisors per se.

4.2 Considering the Counterfactual

A potential concern is that relying on *Allocation Alpha* does not provide an accurate measure of how plan participants are affected by the introduction of affiliated advisors. The reason is that

[14] In addition, as demonstrated in Table IA1, our findings remain robust in the full sample of all 401(k) plans, although the magnitude of the effect is reduced to about 14 basis points. Moreover, to reduce the concern that the results are driven by our alpha estimation process, we calculate allocation-weighted style-adjusted returns. We re-estimate our empirical tests and report the results related to the style-adjusted returns in Table IA2. We observe that after hiring an affiliated advisor, the allocation-weighted style-adjusted returns for funds in the plan decrease by 15 basis points.

doing so ignores the counterfactual, which would reflect the performance outcomes that would have materialized for plan participants if the plan did not have an affiliated advisor. To address this challenge, we employ a similar approach to that of Chalmers and Reuter (2020) and use the returns of target date funds within a plan to capture the counterfactual performance outcomes that participants would have realized if an advisor was not present. The idea is that, in the absence of financial advice, plan participants are more likely to use target date funds (Chalmers and Reuter 2020). Thus, we benchmark the allocation alpha against the alpha of a counterfactual portfolio and refer to this counterfactual-adjusted performance measure as the *CF Alpha*.

We re-estimate Equation (1) using *CF Alpha* as the dependent variable and report the estimates in Columns (3)-(6). In Columns (3) and (4) the counterfactual portfolio is an allocation-weighted portfolio of all the TDFs available in the menu with weights determined by the actual allocations at the beginning of the year. For robustness, in Columns (5) and (6) the counterfactual portfolio is an equal-weighted portfolio of all the TDFs in the plan's menu. No matter which approach we use to determine weights in the counterfactual portfolio, the results suggest that after adjusting *Allocation Alpha* by the alpha of the counterfactual benchmark, the introduction of affiliated advisors is still associated with a decline in investment performance for the plan participants. For example, the specifications (with controls) of Columns (4) and (6) suggest a decline in *CF Alpha* of about 19 basis points. This decline is slightly lower in magnitude than the decline in *Allocation Alpha* but confirms that even after accounting for the performance of the counterfactual portfolio, the performance of the plan participants declines after the introduction of an affiliated advisor. Regarding the introduction of unaffiliated advisors, the evidence is consistent with the specification of Columns (1) and (2) that use *Allocation Alpha* as the dependent variable—their introduction has no significant impact on the performance outcomes of plan participants.

4.3. Addressing Endogeneity Concerns

To establish a causal link between affiliated advisors and participant performance outcomes,

we need to consider potential endogeneity concerns. In particular, the decision to introduce an affiliated advisor may be influenced by unobserved factors, such as plan characteristics, employer preferences, or recordkeeper policies, which could also affect performance outcomes. To mitigate these concerns, we conduct three sets of tests.

4.3.1. Parallel Trends Assessment and Time Pattern of the Performance Effect

Our tests in Table 2 exploit the staggered introductions of affiliated advisors across plans in a difference-in-differences design. To strengthen the casual interpretation of these results, we need to confirm that trends in the outcome variable were the same for both treated and control groups prior to the treatment. To this end, we estimate an augmented version of Equation (1) that includes two indicator variables, *Prior Period 1* and *Prior Period 2*, which capture plans with affiliated advisors in the first and second year prior to the advisor's introduction, respectively. To also understand the timing of the treatment effect due to affiliated advisors, we replace *Affiliated Advisor* with two indicator variables that identify treated plans in the two periods after the introduction of the affiliated advisor, i.e., the first year after (termed *Post Period 1*) and all years from the second year onward (termed *Post Period 2+*). This allows us to assess how quickly the impact of affiliated advisors materializes.

Results from these augmented specifications are reported in Table 3. We also report the coefficients on the pre-period and post-period variables, along with their confidence intervals, in Figure 3. The results show that the estimates on *Prior Period 1* and *Prior Period 2* are not significantly different from zero, indicating that participants' performance in plans which will have an affiliated advisor and the performance of participants in plans without advisors have parallel trends prior to the introduction of affiliated advisors. This supports the validity of the difference-in-differences approach, and suggests that the observed performance deterioration, reflected in the coefficients of the *Post Period 1* and *Post Period 2+* variables, is due to the introduction of affiliated advisors rather than to pre-existing differences between treated and control plans.

Furthermore, the empirical estimates show that the negative performance effect, due to the introduction of an affiliated advisor, intensifies with time. For example, Column (3) shows that

CF Alpha declines by about 18 basis points in the first year after the introduction of an affiliated advisor while the decline in the subsequent period is about 31 basis points. This is consistent with the idea that it takes time for advisors' recommendation to influence the allocation decisions of plan participants.

Recent literature raises the concern that estimates from using a staggered difference-in-differences methodology can be biased (Baker, Larcker, and Wang 2022). In our setting, this would mean that the estimated effect of introducing an affiliated advisor could be contaminated by comparisons between plans that recently adopted affiliated advisors and those that adopted them in the more distant past. If the impact of affiliated advisors varies across cohorts or evolves over time, then these comparisons may lead to misleading conclusions. We use the model of Sun and Abraham (2021) to address the potential "bad comparisons" problem. Table IA3 reports the results. Even when employing the alternative model, we again find negative performance effects due to the introduction of an affiliated advisor. Moreover, the coefficients from this additional model are similar in terms of magnitude and statistical significance when compared with our baseline estimates.

4.3.2 Instrumental Variable

As another step towards addressing potential endogeneity concerns, we employ an instrumental variable (IV) approach that exploits a source of variation in a plan's likelihood of having an affiliated advisor in a given year. We instrument for the presence of an affiliated advisor in plan *j* during year *t* using an instrument constructed at the recordkeeper level. Specifically, we compute *Proportion of Plans*, as proportion of plans serviced by recordkeeper *i*, excluding plan *j*, that had an affiliated advisor in the prior year. We then estimate the following first-stage equation:

$$Affiliated\ Advisor_{j,i,t} = \alpha_0 + \beta_1 Proportion\ of\ Plans_{i,t-1} + \theta' \boldsymbol{X}_{j,t-1} + \varepsilon_{j,i,t} \quad (2)$$

In the regression, we include the same time-varying plan-level controls as in our baseline OLS specification (i.e., Equation (1)), as well as plan fixed effects to account for unobservable, time-invariant plan characteristics that may influence the advisor choice. We also incorporate

recordkeeper fixed effects to control for selection of a recordkeeper based on fixed characteristics. Additionally, year fixed effects are included to absorb potential time trends.

Column (1) of Table 4 reports the first-stage estimates. Consistent with the insight that recordkeepers and affiliated advisors often work together as part of a service bundle, the estimate on our instrument shows that the proportion of a recordkeeper's plans with an affiliated advisor is highly predictive of a plan onboarding an affiliated advisor in the following year. This result confirms the relevance of our instrument. Moreover, the sufficiently large *F*-statistic suggests that weak instrument bias is unlikely to be an issue in our setting.

Columns (2) through (4) present the second-stage estimates, which indicate a link between affiliated advice and performance. That is, regardless of whether we examine overall risk-adjusted performance earned by participants or counterfactual-adjusted performance, the estimates confirm that having an advisor who is affiliated with the plan's recordkeeper reduces participants' performance outcomes. As before, we find negligible evidence that unaffiliated advisors affect performance outcomes, and statistical comparisons of the coefficients on the affiliated and unaffiliated advisor indicators consistently reveal significant differences.

For our results to support a causal interpretation, our instrument must satisfy the exclusion restriction. We argue our instrument is valid because the lagged proportion of a recordkeeper's plans with an affiliated advisor plausibly reflects the recordkeeper's broader operational strategy. Consequently, the instrument is likely to influence plan performance outcomes indirectly through its effect on the presence of an affiliated advisor, and not directly or via other unobserved factors. One potential threat to the exclusion restriction relates to the selection of recordkeepers by plan sponsors. To address this concern, we include recordkeeper fixed effects in our IV specifications to ensure that our results are not driven by plan sponsors' selection of recordkeepers based on unobservable recordkeeper characteristics.

4.3.3 Changes in Investment Menu Composition or Quality?

A reasonable conjecture is that our results may arise through some other mechanism that simultaneously affects participants' performance outcomes and correlates with the presence

of affiliated advisors. For example, recordkeepers could reshuffle the investment menu by introducing inferior investment options that benefit themselves while convincing the plan sponsor to hire an affiliated advisor. In this case, the observed deterioration in performance outcomes could come from these menu changes rather than the influence of affiliated advisors on participants' allocation decisions. To examine this possibility, we implement two tests.

First, we examine whether the composition of the investment menu changes when a plan adds an advisor that is affiliated with the recordkeeper. We measure menu composition change by the turnover of the investment options in a given plan in the year, estimated as the minimum number of investment options added or removed in a year, divided by the number of investment options at the beginning of the year. We refer to this measure as *Menu Turnover*. We then estimate Equation (1) using *Menu Turnover* as the dependent variable. Results reported in Column (1) of Table 5 show that the introduction of affiliated advisors is not associated with variation in menu turnover, casting doubt on a link between investment menu changes and the introduction of affiliated advisors.

Our second test examines the relationship between menu quality and the presence of affiliated advisors. We measure menu quality using *Menu Alpha*, which is the equally weighted average alpha of all funds in the plan's investment menu. If our results are driven by factors causing changes in investment menu quality rather than participants' allocation decisions being influenced by affiliated advisors, we would observe a significant relationship between *Menu Quality* and *Affiliated Advisors*. We estimate Equation (1) with *Menu Alpha* as the dependent variable and report results in Column (2) of Table 5. We find no evidence that the introduction of affiliated advisors has an impact on *Menu Alpha,* as all coefficients are small in magnitude and not statistically significant.

Overall, we interpret this evidence to suggest that our baseline findings are not driven by changes in investment menu composition or quality. Importantly, the fact that *Menu Alpha* (equal-weighted) remains unaffected when affiliated advisors are introduced, while *Allocation Alpha* (allocation-weighted) declines significantly, suggests that the deterioration in participant performance is caused by changes in the participants' allocation decisions rather

than changes in menu quality.

5. How Do Affiliated Advisors Shape Fund Allocations?

The performance deterioration among plan participants following the introduction of affiliated advisors is consistent with these advisors affecting the allocation decisions of plan participants in a way that benefits the recordkeeper at the expense of optimal allocation decisions. One way in which affiliated advisors could do so is by steering participants' investments toward the recordkeeper's proprietary funds. This is then likely to worsen the performance of plan participants since recordkeepers tend to add and retain poorly performing proprietary funds on plans' menus (Pool et al. 2016). Consequently, we conduct two tests to examine our proposed fund flows mechanism.

5.1. Recordkeeper Funds vs. Non-recordkeeper Funds

If the influence of affiliated advisors on plan participants' allocations contributes to the observed decline in *Allocation Alpha*, the performance deterioration should be more pronounced in the part of the aggregate plan portfolio that includes proprietary funds. To empirically test this notion, we focus on plans that have at least one proprietary and one non-proprietary fund. We then decompose a plan's aggregate portfolio that reflects the collective allocation decisions of all plan participants into two sub-portfolios: one comprising all the proprietary funds (proprietary sub-portfolio) and the other including all non-proprietary funds (non-proprietary sub-portfolio). We compute an *Allocation Alpha* for each sub-portfolio and estimate Equation (1) separately for each sub-portfolio. As before, our key explanatory variable is *Affiliated Advisor*. We expect a negative and statistically significant coefficient on this variable when examining the proprietary sub-portfolio.

We report the estimates in Table 6. Column (1) shows results for the proprietary sub-portfolio, Column (2) for the nonproprietary sub-portfolio, and Column (3) for the entire portfolio. Note that Column (3) is similar to Column (2) of Table 2 but is instead based on a more restrictive sample that requires the presence of both proprietary and nonproprietary

funds.[15] The evidence in Columns (1) and (2) show that the introduction of an affiliated advisor is associated with a significant decline in the *Allocation Alpha* for the proprietary sub-portfolio but not for the non-proprietary sub-portfolio. Participants' risk-adjusted performance related to the proprietary sub-portfolio declines by about 34 basis points. In contrast, Column (2) reports a positive, but statistically insignificant, coefficient on *Affiliated Advisor*, suggesting that affiliated advisors do not have a meaningful impact on that segment of the portfolio. These findings reinforce the idea that affiliated advisors primarily impact investment performance through their influence on proprietary fund allocations, which supports our conjecture that the presence of affiliated advisors introduces incentives on their part that do not align with optimal investor outcomes.

5.2 Advisors and Fund Flows

Our findings indicate that 401(k) participants experience lower performance following the introduction of affiliated advisors, with the decline primarily concentrated in the recordkeeper's proprietary funds. This suggests that affiliated advisors influence participants' allocation decisions in ways that favor proprietary funds. If this is the case, we would expect the flow differential between proprietary and non-proprietary funds within a plan to widen in favor of proprietary funds when affiliated advisors are present.

To formally test this hypothesized relation, we estimate the following OLS regression:

$$Flow_{j,f,t} = a_0 + \beta_1 Proprietary\ Fund_{j,f,t}$$

$$+\beta_2 Affiliated\ Advisor_{j,t-1} \times Proprietary\ Fund_{j,f,t} + \boldsymbol{\phi}' \boldsymbol{X}_{f,t-1} + u_{f,t} \quad (2)$$

where $Flow_{j,f,t}$ is the flow contributed to fund *f* of plan *j* during year *t* by the participants of plan *j*. $Proprietary\ Fund_{j,f,t}$ an indicator variable equal to one if fund *f* in plan *j* is a proprietary fund offered by the plan's recordkeeper, and zero otherwise. $Affiliated\ Advisor_{j,t-1}$ is an indicator

[15] Because of this restriction, the specifications in Table 6 have 45,767 observations versus 88,186 observations in Table 2. As a result, the decline in *Allocation Alpha* for the entire portfolio of approximately 32 basis points is greater than the 22 basis-point decline observed in Column (2) of Table 2. This is likely because plans that include proprietary funds provide affiliated advisors with more opportunities to influence participants' allocation decisions in a way that aligns with their interests. In contrast, if proprietary funds were absent, affiliated advisors would have fewer opportunities to steer allocations toward them, thereby limiting their overall impact.

variable identifying whether plan *j* has an affiliated advisor in year *t-1*. **X** is a vector of control variables to account for common determinants of fund flows, including a fund's realized returns, expense ratio, return volatility, turnover, and size. Importantly, we include plan by year fixed effects to capture differences in flows across funds within the same plan in the same year. We also include fund style fixed effects to control for common variation due to fund styles. We winsorize the dependent and explanatory variables at the at 1% and 99% levels.

The key coefficient of interest, β_2, is on the interaction term between *Affiliated Advisor* and *Proprietary Fund*. This estimate captures the difference in flows to proprietary funds relative to non-proprietary funds when an affiliated advisor is present relative to plans when it is not present. We expect β_2 to be positive and significant if affiliated advisors channel flows to proprietary funds.

We employ four different versions for our flow measure, whereby the first three are based on Pool et al. (2016) and the last one is based on Tran and Wang (2023).

$$Fund\ Flow\ 1_{j,f,t} = \frac{Value_{j,f,t} - Value_{j,f,t-1} * (1+R_{f,t})}{Value_{j,f,t-1} * (1+R_{f,t})} \quad (3)$$

$$Fund\ Flow\ 2_{j,f,t} = \frac{Value_{j,f,t} - Value_{j,f,t-1} * (1+R_{f,t})}{Value_{j,f,t} + Value_{j,f,t-1} * (1+R_{f,t})} \quad (4)$$

$$Fund\ Flow\ 3_{j,f,t} = \frac{Value_{j,f,t} - Value_{j,f,t-1} * (1+R_{f,t})}{\sum_f Value_{j,f,t-1} * (1+R_{f,t})} \quad (5)$$

$$Fund\ Flow\ 4_{j,f,t} = \frac{Value_{j,f,t} - Value_{j,f,t-1} * (1+R_{f,t})}{\sum_f Value_{j,f,t-1}} \quad (6)$$

In all the flow measures, the numerator captures the change in the plan aggregate position in fund *f* during year *t* than is not attributable to the return appreciation of the fund, denoted by $R_{f,t}$, during the same period. The denominator in *Fund Flow 1* is the amount to which the position in fund *f* grows to the end of the year, excluding new money flows from plan participants. The denominator in *Fund Flow 2* is the sum of the end of period and beginning of period position (allowed to grow by $R_{f,t}$) in fund *f*. The denominator in *Fund Flow 3* captures the sum of all fund positions in the plan at *t-1* and is allowed to grow by the respective fund return during the year. The dominator in *Fund Flow 4* is similar to that of *Fund Flow 3* with the difference being that it sums all the positions in the respective funds of the plan at *t-1*.

We report the regression results in Table 7. The coefficient on *Proprietary Fund* is consistently negative and statistically significant in all specifications corresponding to each version of the flow measure. This suggests that in the absence of affiliated or unaffiliated advisors, plan participants contribute lower flows to proprietary funds relative to non-proprietary funds. This could be due to potential concerns about conflicts of interest or a preference for non-proprietary options that may be more competitive in terms of performance (Pool et al. 2016).

Importantly, the coefficients on our key interaction term are consistently positive and statistically significant across all the regression specifications. The positive and significant coefficients on the interaction term suggest that when an affiliated advisor is present, the differential in flows between proprietary and non-proprietary funds widens in favor of proprietary funds. This indicates that affiliated advisors counter the tendency of plan participants to avoid proprietary funds, steering them towards recordkeepers' proprietary funds instead. The coefficients on the interaction between the proprietary fund and the unaffiliated advisor indicators are consistently positive but statistically significant. Thus, unlike affiliated advisors, unaffiliated advisors do not appear to influence participant flows towards recordkeepers' funds. Taken together, these findings support the hypothesis that affiliated advisors steer participants toward proprietary funds, which benefits the recordkeeper at the expense of participants' investment performance.

6. Are Affiliated Advisors Associated with Any Benefits?

Our results suggest that the introduction of affiliated financial advisors leads to conflicts of interest that negatively impact the performance outcomes of plan participants. However, it is possible that plan participants might receive nonperformance-related benefits after affiliated advisors are added to plans. For example, affiliated advisors could help increase participation and investment rates,[16] negotiate lower administrative fees with recordkeepers as part of their advisory arrangement, or help increase portfolio diversification.[17] If this is the case, then the

[16]In their model, Gennaioli, Shleifer, and Vishny (2015) show that trusted financial advisors create peace of mind for their clients, leading them to increase their stock market participation.

[17] Prior literature documents that individual investors tend to under-diversify in their stock portfolios (Goetzmann and Kumar, 2008) or in their 401(k) plans (Poterba, 2003; Benartzi, Thaler, Utkus, and Sunstein, 2007). Furthermore, previous studies suggest that access to financial advice helps households improve diversification

introduction of affiliated advisors may not necessarily have a net negative effect on plan participants.

To test whether the introduction of affiliated advisors is associated with any of these benefits, we estimate Equation (1) separately for each measure of benefit as the dependent variable. *Participation Rate* is the percentage of a sponsor's employees that are enrolled in the 401(k) plan in a given year. *Salary Deferral* is the average amount a plan participant contributes to the 401(k) plan during the year. *Administrative Fees* is the total administrative fees as a percent of plan assets. To test for the presence of diversification benefits, we introduce a plan-level measure of participants' portfolio concentration, *Plan Concentration*, measured as:

$$Plan\ Concentration_{i,t} = \frac{1}{2}\sum_{j=1}^{N_{i,t}=7}\left|w_{i,j,t} - \overline{W}_{j,t}\right| \qquad (7)$$

where $w_{i,j,t}$ is the weight of plan *i*'s assets in asset class *j* in year *t* and $\overline{W}_{j,t}$ is the benchmark weight of asset class *j*. We classify plan holdings into seven asset classes: Target-date Funds, U.S. Equity, International Equity, Taxable Bond, Real Estate, Commodities, and Cash. Then, we aggregate the holdings in each of these asset classes to calculate the weight for each plan in each asset class in each year. We construct the benchmark portfolio by aggregating assets across all plans and then compute the benchmark weight, $\overline{W}_{j,t}$, for each asset class in the benchmark.[18] A lower *Plan Concentration* value suggests greater diversification.

The estimation results are reported in Table 8. The coefficient on *Affiliated Advisor* is statistically insignificant for the specifications that employ *Participation Rate*, *Administrative Fees*, and *Plan Concentration* as dependent variables, suggesting that the introduction of affiliated advisors in a plan does not lead to higher participation rates in 401(k) plans by the employees, lower administrative fees, or broader diversification. We note that our tests are confined to and should be interpreted within the context of 401(k) plans. That is, we caveat

(Kramer, 2012; van Gaudecker, 2015; Bekaert, Hoyem, Hu, and Ravina, 2017; Hoechle et al., 2017; Rossi and Utkus, 2024).

[18] As a robustness check, for plans that do not have one or more asset classes available in the menu, we construct the benchmark to include only the assets classes that are available in the menu of the plan. Results remain the same when we use this alternative benchmark to compute weight deviations.

that we cannot observe participants' decisions in any external investment accounts they may own. Consequently, we cannot rule out that 401(k) participants implement any advice related to portfolio diversification in their external investments.

Only in the specification with *Salary Deferral* as the dependent variable is the coefficient on *Affiliated Advisor* positive and statistically significant, suggesting that the introduction of an affiliated advisor is associated with an increase in investment contributions by plan participants. However, this effect is economically modest—the coefficient suggests an increase of about $125 in the annual contribution per plan participant following the introduction of affiliated advisors. This estimate amounts to roughly 2 percent of the average annual contribution of $5,547. These findings suggest that, overall, the introduction of affiliated advisors does not provide substantial measurable benefits to plan participants.

7 Conclusion

Employer-sponsored retirement plans, such as 401(k) plans, are a key vehicle through which American households save for retirement. Notably, such plans are increasingly offering access to financial advisors for their participants, which raises questions about how these advisors impact plan participants' outcomes. While advisors embedded in 401(k) plans could improve the decision-making of plan participants, relationships between advisors and plan recordkeepers can potentially generate conflicts of interest between advisors and plan participants. We examine whether such relationships impact the performance and investment decisions of plan participants using data on a large sample of 401(k) plans in the United States.

We document that participants in plans that introduce financial advisors that are affiliated with the plan's recordkeepers subsequently experience lower investment performance. The performance deterioration is concentrated in proprietary funds offered by the recordkeepers, towards which affiliated advisers tend to steer plan participants' savings. Notably, we do not observe a similar negative effect when plans add unaffiliated advisors, which supports the conclusion that the observed decline in performance associated with the introduction of

affiliated advisors stems from conflicts of interest rather than the general role of financial advisors.

We also rule out the possibility that affiliated advisors impact performance by influencing plan menu design. Instead, the evidence suggests that affiliated advisors affect participants' allocation decisions directly. Moreover, we explore whether affiliated advisors provide any compensating benefits, such as increased participation rates, lower administrative fees, or broader portfolio diversification. Our results indicate that affiliated advisors do not significantly improve any of these outcomes. The only measurable benefit is a small increase in investment contributions, but the magnitude is economically small. This suggests that, overall, affiliated advisors do not provide meaningful benefits to plan participants that would offset the decline in investment performance. Given households' reliance on 401(k) plans to save for retirement, and the long-term wealth effects associated with rates of return on savings, our findings have important implications for plan participants, sponsors, and policymakers.

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Figure 1: Evolution of Financial Advisors Within 401(k) Plans

The figure shows the yearly percentage of total assets in 401(k) plans that have financial advisors. Specifically, the solid line plots, in each year, the total assets in 401(k) plans with financial advisors scaled by the total assets of all 401(k) plans in our sample.

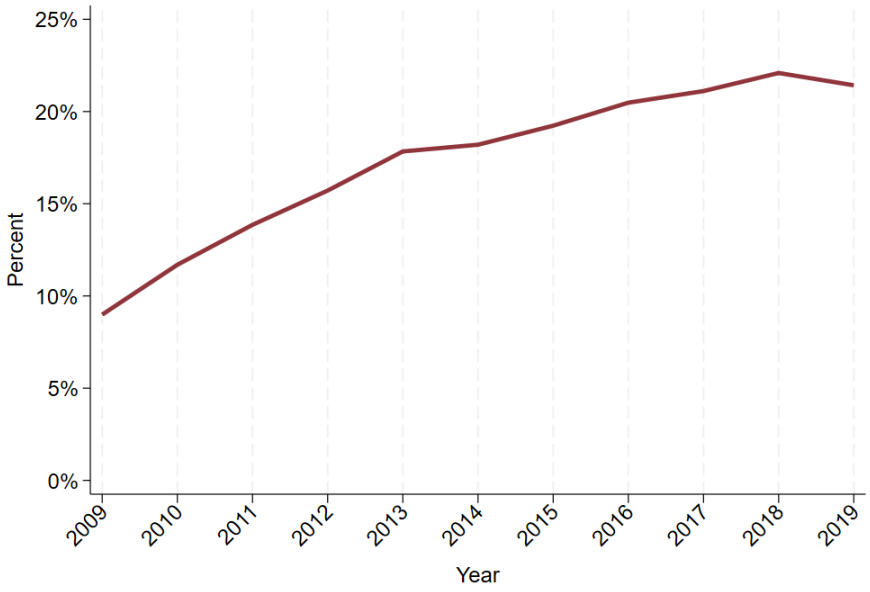

Figure 2: Evolution of Affiliated Advisors Within 401(k) Plans

The figure shows the yearly percentage of total assets in 401(k) plans that have financial advisors who are affiliated with the plan's recordkeeper. Specifically, the solid line plots, in each year, the total assets in 401(k)plans with affiliated advisors scaled by the total assets of all 401(k) plans in our sample.

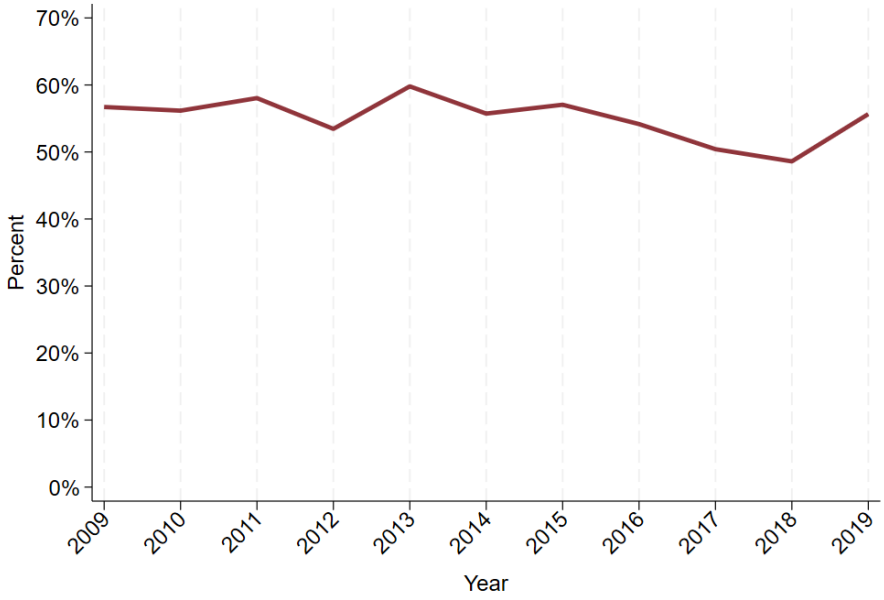

Figure 3: Parallel Trends Assessment and Time Pattern of the Performance Effect

The figure shows how risk-adjusted performance of 401(k) plans change around the hiring of an affiliated advisor. The top plot shows how *Allocation Alpha*, which is the value-weighted alpha of all mutual funds in a plan in a year, changes around the hiring of an affiliated advisor, relative to the performance of plans without advisors. The middle plot depicts how *CF Alpha (Value-weighted)*, which is the difference between *Allocation Alpha* and the alpha of the value-weighted counterfactual portfolio, varies around the hiring of an affiliated advisor, relative to the performance of plans without advisors. The bottom plot depicts how *CF Alpha (Equal-weighted)*, which is the difference between *Allocation Alpha* and the alpha of the equal-weighted counterfactual portfolio, varies around the hiring of an affiliated advisor, relative to the performance of plans without advisors.

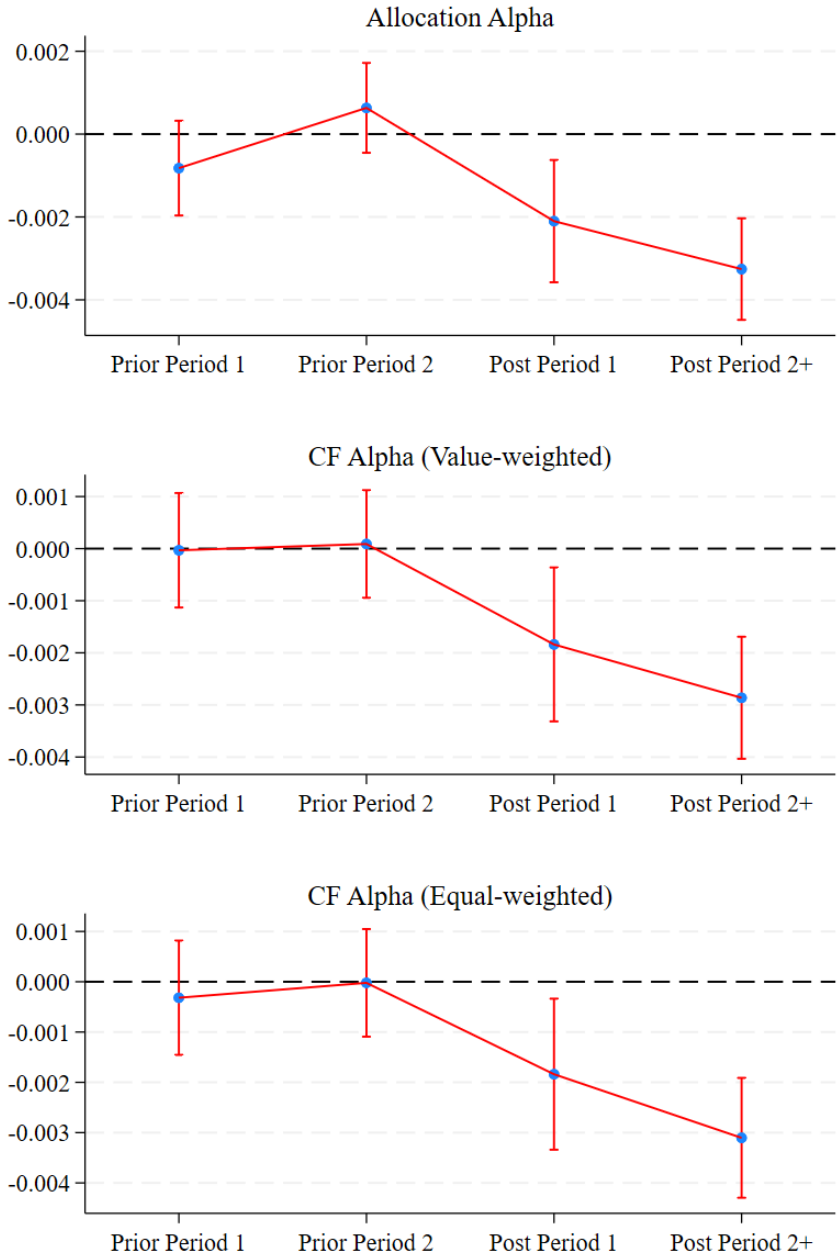

Table 1: Summary Statistics

The table reports descriptive statistics, including the means, medians, standard deviations, and percentiles for our variables. All variables are defined in Appendix I.

	Mean	Std. Deviation	25th Pctl.	Median	75th Pctl.	N.
Account Balance ($thousands)	61.147	68.342	27.058	46.365	75.305	52,747
Administrative Fees (%)	0.236	0.292	0.032	0.118	0.338	52,747
Asset Weighted Expense (%)	0.566	0.295	0.330	0.527	0.727	52,747
Automatic Enrollment (%)	30.026	43.566	0.000	0.000	87.500	52,747
Investment Count	26.641	9.775	21.333	26.000	30.500	52,747
Mutual Fund Count	23.007	10.515	17.000	23.000	28.000	52,747
Participant Loan Value ($thousands)	1,075.190	9,190.380	36.815	151.859	422.829	52,747
Participation Rate (%)	72.295	88.357	57.309	80.770	93.030	52,747
Plan Assets ($millions)	63.330	514.960	4.773	10.675	26.989	52,747
Proprietary Fund Percent (%)	21.704	30.375	0.000	2.381	40.673	52,747
Salary Deferral ($thousands)	5.547	44.891	2.696	4.124	6.344	52,747

Table 2: Advisors and Performance Outcomes

The table reports estimates from OLS regressions of the effects of advisors on performance. The dependent variable used in the regressions reported in Columns (1) and (2) is *Allocation Alpha*, which is the value-weighted alpha of all mutual funds in a plan in a year. The dependent variable used in the regressions reported in Columns (3) and (4) is *CF Alpha (Value-weighted)*, which is the difference between *Allocation Alpha* and the alpha of the value-weighted counterfactual portfolio. The dependent variable used in the regressions reported in Columns (5) and (6) is *CF Alpha (Equal-weighted)*, which is the difference between *Allocation Alpha* and the alpha of the equal-weighted counterfactual portfolio. The key explanatory variable is *Affiliated Advisor*, which equals one if the advisor is affiliated with the plan's recordkeeper, and zero otherwise. All variables are defined in Appendix I. Standard errors are clustered at the plan level and *t*-statistics are presented in parentheses. Significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

	Allocation Alpha		CF Alpha (Value-weighted)		CF Alpha (Equal-weighted)	
	(1)	(2)	(3)	(4)	(5)	(6)
Affiliated Advisor	-0.00179***	-0.00216***	-0.00152***	-0.00192***	-0.00139***	-0.00193***
	(-4.05)	(-4.32)	(-3.45)	(-3.87)	(-3.10)	(-3.89)
Unaffiliated Advisor	-0.00005	-0.00026	0.00003	-0.00005	0.00015	-0.00007
	(-0.17)	(-0.80)	(0.10)	(-0.15)	(0.51)	(-0.21)
Log(Investment Count)		-0.00077**		-0.00024		-0.00081***
		(-2.50)		(-0.81)		(-2.73)
Log(Plan Assets)		0.00037		0.00005		0.00014
		(1.54)		(0.22)		(0.62)
Log(Participant Loan Value)		0.00001		-0.00000		-0.00001
		(0.26)		(-0.14)		(-0.47)
Log(Salary Deferral)		-0.00008		0.00002		0.00003
		(-1.11)		(0.21)		(0.38)
Log(Account Balance)		0.00008		-0.00005		0.00007
		(0.32)		(-0.18)		(0.26)
Automatic Enrollment		-0.00085***		-0.00065***		-0.00074***
		(-3.58)		(-2.76)		(-3.14)
P-value of F-statistics	0.0007	0.0010	0.0029	0.0014	0.0061	0.0034
N	112,030	88,186	112,030	88,186	112,030	88,186
Adj. R-sq.	0.784	0.784	0.303	0.265	0.329	0.299
Plan FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Recordkeeper FE	YES	YES	YES	YES	YES	YES

Table 3: Temporal Effects of Advisors on Performance Outcomes

The table reports estimates from regressions of the effects of advisors on performance. The dependent variable used in the regression reported in Column (1) is *Allocation Alpha*, which is the value-weighted alphas of all mutual funds in a plan in a year. The dependent variable used in the regression reported in Column (2) is *CF Alpha (Value-weighted)*, which is the difference between *Allocation Alpha* and the alpha of the value-weighted counterfactual portfolio. The dependent variable used in the regression reported in Column (3) is *CF Alpha (Equal-weighted)*, which is the difference between *Allocation Alpha* and the alpha of the equal-weighted counterfactual portfolio. Indicator variables *Prior Period 1* and *Prior Period 2* capture plans with affiliated advisors in the first and second year prior to the advisor's introduction, respectively. *Post Period 1* is an indicator variable that identifies treated plans in the first year after the introduction of the affiliated advisor and *Post Period2+* identifies treated plans in all years from the second year onward. All other variables are defined in Appendix I. Standard errors are clustered at the plan level and *t*-statistics are presented in parentheses. Significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

	(1)	(2)	(3)
	Allocation Alpha	CF Alpha (Value-weighted)	CF Alpha (Equal-weighted)
Prior Period 2	-0.00082	-0.00003	-0.00032
	(-1.41)	(-0.06)	(-0.55)
Prior Period 1	0.00063	0.00009	-0.00002
	(1.14)	(0.17)	(-0.04)
Post Period 1	-0.00210***	-0.00184**	-0.00184**
	(-2.79)	(-2.44)	(-2.40)
Post Period 2+	-0.00326***	-0.00286***	-0.00310***
	(-5.21)	(-4.79)	(-5.11)
Unaffiliated Advisor	-0.00017	-0.00003	-0.00005
	(-0.52)	(-0.09)	(-0.15)
Log(Investment Count)	-0.00072**	-0.00024	-0.00081***
	(-2.23)	(-0.82)	(-2.73)
Log(Plan Assets)	0.00031	0.00004	0.00013
	(1.27)	(0.19)	(0.59)
Log(Participant Loan Value)	0.00001	-0.00000	-0.00001
	(0.20)	(-0.14)	(-0.48)
Log(Salary Deferral)	-0.00006	0.00001	0.00003
	(-0.76)	(0.18)	(0.35)
Log(Account Balance)	0.00012	-0.00004	0.00007
	(0.46)	(-0.14)	(0.30)
Automatic Enrollment	-0.00084***	-0.00065***	-0.00074***
	(-3.42)	(-2.74)	(-3.13)
N	88,186	88,186	88,186
Adj. R-sq.	0.794	0.302	0.279
Plan FE	YES	YES	YES
Year FE	YES	YES	YES
Recordkeeper FE	YES	YES	YES

Table 4: Advisors and Performance Outcomes: Evidence from Instrumental Variable Regressions

The table reports IV estimates of the effects of advisors on performance. The instrumental variable, *Proportion of Plans*, is the total proportion of plans serviced by a plan's recordkeeper, excluding the plan of interest, that have an affiliated advisor in the prior year. Column (1) reports first-stage estimates from Equation (2). Columns (2) through (4) report second-stage estimates. The dependent variables are specified in the column headers. The key explanatory variable is *Affiliated Advisor*, which equals one if the advisor is affiliated with the plan's recordkeeper, and zero otherwise. All variables are defined in Appendix I. Standard errors are clustered at the plan level and *t*-statistics are presented in parentheses. Significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

	(1) First-stage	(2) Allocation Alpha	(3) CF Alpha (Value-weighted)	(4) CF Alpha (Equal-weighted)
Proportion of Plans	0.81835***			
	(3.26)			
Affiliated Advisor		-0.03472**	-0.07555***	-0.08302***
		(-2.02)	(-2.98)	(-3.06)
Unaffiliated Advisor	-0.00979	-0.00062	-0.00033	-0.00058
	(-1.45)	(-1.46)	(-0.53)	(-0.87)
Log(Investment Count)	0.00200	0.00013	0.00008	0.00014
	(0.37)	(0.30)	(0.14)	(0.24)
Log(Plan Assets)	0.00002	-0.00039	-0.00046	-0.00100**
	(0.01)	(-1.04)	(-0.99)	(-2.07)
Log(Participant Loan Value)	-0.00014	-0.00002	-0.00004	-0.00004
	(-0.35)	(-0.49)	(-0.98)	(-0.96)
Log(Salary Deferral)	0.00444***	0.00003	0.00033	0.00034
	(2.83)	(0.21)	(1.60)	(1.58)
Log(Account Balance)	-0.00060	-0.00041	-0.00039	-0.00033
	(-0.15)	(-1.16)	(-0.87)	(-0.71)
Automatic Enrollment	0.00531	0.00047	0.00027	0.00043
	(1.20)	(1.31)	(0.58)	(0.87)
First-stage F-statistic	10.62			
Second-stage F-statistic		4.00	8.94	9.36
P-value of F-statistic		0.0454	0.0028	0.0022
N	58,307	58,307	58,307	58,307
Plan FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Recordkeeper FE	YES	YES	YES	YES

Table 5: Variation in Menu Composition and Quality

The table reports OLS estimates of the relations between advisors and investment menu composition and quality. The dependent variable in each regression is indicated in the column header. The key explanatory variable is *Affiliated Advisor*, which equals one if the advisor is affiliated with the plan's recordkeeper, and zero otherwise. All variables are defined in Appendix I. Standard errors are clustered at the plan level and *t*-statistics are presented in parentheses. Significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

	(1) Menu Alpha	(2) Menu Turnover
Affiliated Advisor	-0.00115	0.00034
	(-1.55)	(1.21)
Unaffiliated Advisor	-0.00064*	-0.00004
	(-1.85)	(-0.23)
Log(Investment Count)	-0.00064	-0.00044**
	(-1.50)	(-2.22)
Log(Plan Assets)	0.00010	0.00020
	(0.42)	(1.36)
Log(Participant Loan Value)	0.00001	-0.00000
	(0.52)	(-0.16)
Log(Salary Deferral)	0.00002	0.00002
	(0.35)	(0.54)
Log(Account Balance)	-0.00037	-0.00009
	(-1.22)	(-0.60)
Automatic Enrollment	-0.00061*	-0.00049***
	(-1.92)	(-3.72)
N	88,186	88,186
Adj. R-sq.	0.848	0.110
Plan FE	YES	YES
Year FE	YES	YES
Recordkeeper FE	YES	YES

Table 6: Performance Across Proprietary and Non-proprietary Funds

The table reports OLS estimates of the relations between advisors and performance across recordkeepers' proprietary funds and non-recordkeeper funds. The dependent variable used in the regressions is *Allocation Alpha*, which is the value-weighted alphas of all mutual funds in a plan in a year. The key explanatory variable is *Affiliated Advisor*, which equals one if the advisor is affiliated with the plan's recordkeeper, and zero otherwise. Column (1) reports estimates based on the sub-portfolio of proprietary funds while Column (2) reports estimates from the non-proprietary sub-portfolio. Column (3) shows estimates from using all funds in the restricted sample that requires the presence of both proprietary and nonproprietary funds. All variables are defined in Appendix I. Standard errors are clustered at the plan level and t-statistics are presented in parentheses. Significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

	(1) Proprietary Funds	(2) Non-proprietary Funds	(3) All Funds
Affiliated Advisor	-0.00341***	0.00114	-0.00316***
	(-2.79)	(0.73)	(-3.88)
Unaffiliated Advisor	0.00048	-0.00091	-0.00054
	(0.56)	(-1.17)	(-1.23)
Log(Investment Count)	-0.00391***	0.00220***	-0.00130***
	(-5.09)	(2.71)	(-3.00)
Log(Plan Assets)	0.00181***	-0.00112*	0.00020
	(3.54)	(-1.74)	(0.62)
Log(Participant Loan Value)	0.00015***	-0.00010	0.00005
	(2.64)	(-1.48)	(1.40)
Log(Salary Deferral)	-0.00006	0.00004	0.00002
	(-0.27)	(0.20)	(0.16)
Log(Account Balance)	0.00024	-0.00113	0.00023
	(0.39)	(-1.53)	(0.64)
Automatic Enrollment	-0.00130**	-0.00101	-0.00121***
	(-2.51)	(-1.47)	(-3.49)
P-value of F-statistics	0.0083	0.2262	0.0037
N	45,767	45,767	45,767
Adj. R-sq.	0.818	0.612	0.458
Plan FE	YES	YES	YES
Year FE	YES	YES	YES
Recordkeeper FE	YES	YES	YES

Table 7: Advisors and Fund Flows

The table reports OLS estimates of the relations between advisors and flows to funds. The dependent variable used in each regression is indicated in the column header. *Fund Flow 1* is the dollar flows into the mutual fund in year *t* divided by the product of the mutual fund balance in the plan during year *t-1* and the mutual fund returns generated in year *t*. *Fund Flow 2* is the dollar flows into the mutual fund in the year *t* divided by the sum of the mutual fund balance in the plan during year *t* and the product of the mutual fund balance in the plan during year *t-1* and the mutual fund returns generated in year *t*. *Fund Flow 3* is the dollar flows into the mutual fund in the year *t* divided by the sum of the product of every mutual fund balance in the plan during year *t-1* and the mutual fund returns generated in year *t*. *Fund Flow 4* is the dollar flows into the mutual fund in the year *t* divided by the sum of the product of every mutual fund balance in the plan during year *t-1*. *Proprietary Fund* equals one if the fund is a proprietary fund offered by the plan's recordkeeper, and zero otherwise. *Affiliated Advisor* equals one if the advisor is affiliated with the plan's recordkeeper, and zero otherwise. All variables are defined in Appendix I. Standard errors are clustered at the fund level and t-statistics are presented in parentheses. Significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

	(1)	(2)	(3)	(4)
	Fund Flow 1	Fund Flow 2	Fund Flow 3	Fund Flow 4
Proprietary Fund	-0.20867***	-0.02460***	-0.00074***	-0.00083***
	(-11.09)	(-8.37)	(-4.29)	(-4.37)
Proprietary Fund x Affiliated Advisor	0.20223***	0.03785***	0.00158***	0.00176***
	(2.88)	(4.77)	(3.01)	(3.05)
Proprietary Fund x Unaffiliated Advisor	0.05054	0.00493	0.00033	0.00032
	(1.39)	(1.06)	(1.26)	(1.10)
Fund Return	0.63757***	0.17500***	0.01141***	0.01206***
	(7.80)	(15.33)	(16.46)	(15.96)
Fund Expense Ratio	-0.38949***	-0.06050***	-0.00265***	-0.00290***
	(-8.82)	(-9.02)	(-7.74)	(-7.59)
Fund Return Volatility	-1.33047	0.39399**	0.01706	0.02103
	(-1.45)	(2.24)	(1.22)	(1.34)
Fund Turnover Ratio	-0.05843***	-0.00892***	-0.00028***	-0.00033***
	(-4.16)	(-4.98)	(-2.67)	(-2.86)
Fund Size	-0.13658***	-0.01458***	0.00010	0.00011
	(-9.21)	(-7.90)	(1.58)	(1.59)
P-value of F-statistics	0.0523	0.0002	0.0243	0.0184
N	1,076,584	1,076,651	1,076,658	1,076,658
Adj. R-sq.	0.105	0.155	0.267	0.269
Plan x Year FE	YES	YES	YES	YES
Style FE	YES	YES	YES	YES

Table 8: Benefits of Advice

The table reports OLS estimates of the relations between advisors and potential benefits of advice. The dependent variable used in each regression is indicated in the column header. *Participation Rate* is the proportion of the plan sponsor's employees enrolled in the plan in the year. *Salary Deferral* is the average dollar amount (in thousands) of new money contributed per employee to the plan during the year. *Administrative Fees* is the total administrative fees paid by the plan in the year divided by the plan's assets in the year. *Plan Concentration* measures the concentration of the plan participants' portfolios across asset classes based on their investment allocations. *Affiliated Advisor* equals one if the advisor is affiliated with the plan's recordkeeper, and zero otherwise. All variables are defined in Appendix I. Standard errors are clustered at the plan level and t-statistics are presented in parentheses. Significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

	(1)	(2)	(3)	(4)
	Participation Rate	Salary Deferral	Administrative Fees	Plan Concentration
Affiliated Advisor	-0.23950	0.12530**	0.00529	0.51031
	(-0.27)	(2.09)	(0.96)	(1.31)
Unaffiliated Advisor	-0.48332	0.00728	0.02049***	0.08242
	(-1.22)	(0.18)	(3.90)	(0.42)
Log(Investment Count)	-0.02324	-0.00172	-0.00014	-0.02852***
	(-0.89)	(-1.23)	(-0.94)	(-4.00)
Log(Plan Assets)	4.23191**	0.38051***	-0.00929**	-0.88627**
	(2.18)	(9.16)	(-2.25)	(-3.01)
Log(Participant Loan Value)	0.04337	-0.00127	0.00036	0.00069
	(0.67)	(-0.39)	(1.07)	(0.06)
Log(Salary Deferral)	-6.77941		-0.00363**	-0.13703**
	(-1.18)		(-2.26)	(-2.32)
Log(Account Balance)	2.79558	0.52232***	-0.04205***	-0.57297**
	(0.32)	(11.37)	(-9.09)	(-2.52)
Automatic Enrollment	4.37308***	-0.12062***	0.01150***	0.29131
	(7.37)	(-4.15)	(3.63)	(1.69)
N	87,639	87,639	82,918	88,192
Adj. R-sq.	0.355	0.896	0.851	0.889
Plan FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Recordkeeper FE	YES	YES	YES	YES

Appendix I. Variable Definitions

Key Variables	
Name	Definition
Allocation Alpha	The value-weighted alphas of all mutual funds in a plan in a year.
CF Alpha	The difference between Allocation Alpha and the alpha of the value-weighted or equal-weighted counterfactual portfolio in a year.
Affiliated Advisor	Indicator equal to one if the advisor is affiliated with the plan's recordkeeper, and zero otherwise.
Unaffiliated Advisor	Indicator equal to one if the advisor is not affiliated with the plan's recordkeeper, and zero otherwise.
Menu Turnover	The minimum number of proprietary investment options added or deleted from the menu in a year scaled by the total number of investment options in the menu in the prior year.
Participation Rate	The proportion of the plan sponsor's employees enrolled in the plan in the year.
Administrative Fees	The total administrative fees paid by the plan in the year, as reported on the plan's Form 5500, divided by the plan's assets in the year.
Plan Concentration	Measures the concentration of the plan participants' portfolios across asset classes based on their investment allocations.
Fund Flow 1	Dollar flows into the mutual fund in year *t*, divided by the product of the mutual fund balance in the plan during year *t-1* and the mutual fund returns generated in year *t*.
Fund Flow 2	Dollar flows into the mutual fund in year *t* divided by the sum of the mutual fund balance in the plan during year *t* and the product of the mutual fund balance in the plan during year *t-1* and the mutual
Fund Flow 3	Dollar flows into the mutual fund in year *t* divided by the sum of the product of every mutual fund balance in the plan during year *t-1* and the mutual fund returns generated in year *t*.
Fund Flow 4	Dollar flows into the mutual fund in the year *t* divided by the sum of the product of every mutual fund balance in the plan during year *t-1*.
Additional Variables	
Account Balance	Account value, in thousands of dollars, of the plan's average participant.
Automatic Enrollment	Indicator equal to one if the plan automatically enrolls participants during the year, and zero otherwise.
Fund Expense Ratio	The expense ratio of the mutual fund during the year.
Investment Count	Total number of investment options in the plan.
Participant Loan Value	Total dollar amount of loans (in thousands) against participants' plan balances.
Plan Assets	The total dollar amount (in millions) of assets in the plan.
Fund Return	The annualized monthly return of the mutual fund during the year.
Fund Return Volatility	The annualized monthly return volatility of the mutual fund during the year.
Salary Deferral	The average dollar amount (in thousands) of new money contributed per employee to the plan during the year.
Fund Size	The total dollar value of assets (in billions) managed by the mutual fund during the year.
Fund Turnover Ratio	The portfolio turnover of the mutual fund during the year reported in CRSP MF Database.
Proprietary Fund	Indicator equal to one if the fund is a proprietary fund offered by the plan's recordkeeper, and zero otherwise

Internet Appendix

Table IA1: Advisor and Performance Outcomes Using the Full Data Sample

The table reports estimates from OLS regressions of the effects of advisors on performance using the full data sample. The dependent variable used in the regressions is *Allocation Alpha*, which is the value-weighted alphas of all mutual funds in a plan in a year. The key explanatory variable is *Affiliated Advisor*, which equals one if the advisor is affiliated with the plan's recordkeeper, and zero otherwise. All variables are defined in Appendix I. Standard errors are clustered at the plan level and *t*-statistics are presented in parentheses. Significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

	(1)	(2)
Affiliated Advisor	-0.00125***	-0.00143***
	(-4.01)	(-4.16)
Unaffiliated Advisor	-0.00037	-0.00053*
	(-1.48)	(-1.84)
Log(Investment Count)		-0.00110***
		(-4.42)
Log(Plan Assets)		0.00099***
		(4.94)
Log(Participant Loan Value)		0.00000
		(0.03)
Log(Salary Deferral)		-0.00009
		(-1.47)
Log(Account Balance)		-0.00014
		(-0.64)
Automatic Enrollment		-0.00059***
		(-3.01)
P-value of F-statistics	0.0224	0.0352
N	210,661	165,564
Adj. R-sq.	0.694	0.692
Plan FE	YES	YES
Year FE	YES	YES
Recordkeeper FE	YES	YES

Table IA2: Advisor and Performance Outcomes Using Style-adjusted Returns

The table reports estimates from OLS regressions of the effects of advisors on performance using style adjusted returns. Each year, the style-adjusted return for a mutual fund is calculated as the difference between its reported return and the average return of all funds with the same investment style. The dependent variable used in the regression reported in Column (1) is *Allocation Style-Adjusted Return*, which is the value-weighted style-adjusted return of all mutual funds in a plan in a year. The dependent variable used in the regression reported in Column (2) *CF Style-Adjusted Return (Value-weighted)* is the difference between *Allocation Style-Adjusted Return* and the style-adjusted return of the value-weighted counterfactual portfolio. The dependent variable used in the regression reported in Column (3) *CF Style-Adjusted Return (Equal-weighted)* is the difference between *Allocation Style-Adjusted Return* and the style-adjusted return of the equal-weighted counterfactual portfolio. The key explanatory variable is *Affiliated Advisor*, which equals one if the advisor is affiliated with the plan's recordkeeper, and zero otherwise. All variables are defined in Appendix I. Standard errors are clustered at the plan level and *t*-statistics are presented in parentheses. Significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

	(1)	(2)	(3)
	Allocation Style-Adjusted Return	CF Style-Adjusted Return (Value-weighted)	CF Style-Adjusted Return (Equal-weighted)
Affiliated Advisor	-0.00152***	-0.00120**	-0.00153***
	(-3.11)	(-2.14)	(-2.76)
Unaffiliated Advisor	-0.00035	-0.00067*	-0.00074*
	(-1.06)	(-1.71)	(-1.89)
Investment Count	0.00003***	0.00003*	0.00003**
	(3.22)	(1.89)	(2.43)
Plan Assets	-0.00099***	-0.00118***	-0.00087***
	(-3.95)	(-4.00)	(-2.94)
Participant Loans	-0.00002	-0.00004	-0.00007**
	(-0.60)	(-1.46)	(-2.53)
Salary Deferrals	0.00002	-0.00016*	-0.00008
	(0.25)	(-1.66)	(-0.82)
Account Balance	0.00060**	0.00032	0.00024
	(2.28)	(1.04)	(0.79)
Automatic Enrollment	-0.00102***	-0.00003	-0.00002
	(-4.44)	(-0.10)	(-0.08)
P-value of F-statistics	0.0420	0.4456	0.2526
N	88,192	88,192	88,192
Adj. R-sq.	0.435	0.260	0.297
Plan FE	YES	YES	YES
Year FE	YES	YES	YES
Recordkeeper FE	YES	YES	YES

Table IA3: Effects of Advisors on Performance Using the Correction of Sun and Abraham (2021).

The table reports estimates of the effects of advisors on performance from regressions using the methodology of Sun and Abraham (2021). The dependent variable used in the regression reported in Column (1) is *Allocation Alpha*, which is the value-weighted alpha of all mutual funds in a plan in a year. The dependent variable used in the regression reported in Column (2) is *CF Alpha (Value-weighted)*, which is the difference between *Allocation Alpha* and the alpha of the value-weighted counterfactual portfolio. The dependent variable used in the regression reported in Column (3) is *CF Alpha (Equal-weighted)*, which is the difference between *Allocation Alpha* and the alpha of the equal-weighted counterfactual portfolio. The key explanatory variable is *Affiliated Advisor*, which equals one if the advisor is affiliated with the plan's recordkeeper, and zero otherwise. All models include all additional explanatory variables. All variables are defined in Appendix I. Standard errors are clustered at the plan level and *t*-statistics are presented in parentheses. Significance at the 10%, 5%, and 1% levels are denoted by *, **, and ***, respectively.

	(1) Allocation Alpha	(2) CF Alpha (Value-weighted)	(3) CF Alpha (Equal-weighted)
Affiliated Advisor	-0.00263***	-0.0022***	-0.00227***
	(-4.56)	(-3.73)	(-3.78)
Unaffiliated Advisor	-0.00024	-0.00009	-0.0001
	(-0.75)	(-0.26)	(0.31)
N	88,186	88,186	88,186
Adj. R-sq.	0.784	0.302	0.279
Controls	YES	YES	YES
Plan FE	YES	YES	YES
Year FE	YES	YES	YES
Recordkeeper FE	YES	YES	YES

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D-50923 cologne
Fon +49(0)221-470-6995
Fax +49(0)221-470-3992
kempf@cfr-cologne.de
www.cfr-cologne.de