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Authors: Veronika K. Pool, Clemens Sialm, Irina Stefanescu

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# ARE 401(K) INVESTMENT MENUS SET SOLELY FOR PLAN PARTICIPANTS?

BY VERONIKA K. POOL, CLEMENS SIALM, AND IRINA STEFANESCU\*

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## Introduction

Mutual fund companies play a critical part in the nation's retirement saving system. They manage about 56 percent of the \$4.7 trillion in assets held by 401(k)s and other defined contribution plans.<sup>1</sup> At the same time, these fund companies often help sponsors manage the plans and set the menu of investment options. This dual role creates conflicting incentives. On the one hand, fund companies are hired by plan sponsors – and required by law – to create menus that serve the interests of plan participants. On the other hand, they also have an incentive to include their own proprietary funds on the menu, even when more suitable options are available from other fund families. This *brief*, based on a study forthcoming in *The Journal of Finance*, investigates the extent of this conflict between the interests of mutual fund companies and plan participants.<sup>2</sup>

The *brief* proceeds as follows. The first section describes the study design and the data. The second section investigates whether mutual fund companies tend to influence 401(k) menus in ways that favor their own funds, especially their poor-quality funds. The third section explores whether participants shift their savings to offset any bias found in menu decisions, especially decisions that favor the fund

company's sub-par performers. The fourth section considers whether these sub-par funds continue to produce sub-par returns. The final section concludes that mutual fund company involvement in 401(k) menu decisions appears to favor the company's own funds, with potential adverse effects on the retirement savings of plan participants.

## Study Design and Data

The study created a large dataset to examine the effect of mutual fund companies on 401(k) menus and participant saving. It used the designation of a fund company as plan trustee to indicate the company's involvement in the management of the plan.<sup>3</sup> The study uses data on 2,494 plans from 1998-2009. Data on the plan trustee, the menu of investment options, and amounts invested in each option were drawn from annual Form 11-K filings to the U.S. Securities and Exchange Commission and Form 5500 filings to the U.S. Department of Labor. The plans in the sample had 9 million participants, held one-third of 401(k) assets in plans sponsored by publicly listed companies, and made close to 50,000 menu changes

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\* Veronika K. Pool is an associate professor of finance at the Kelley School of Business, Indiana University. Clemens Sialm is a professor of finance at the McCombs School of Business, University of Texas at Austin. Irina Stefanescu is an economist at the Board of Governors of the Federal Reserve System.

in the period studied.<sup>4</sup> Data on mutual funds that were or could be included on 401(k) menus, including their returns, fees, size, and age, were drawn from the CRSP Survivorship Bias-Free U.S. Mutual Fund Database.<sup>5</sup>

Most plans in the dataset, 76 percent, had trustees that are affiliated with mutual fund management companies. Most of these plans, however, adopted an “open architecture” format that included funds from unaffiliated companies as menu options. Many funds thus appear on some menus as a trustee-affiliated fund and on others as an unaffiliated fund, allowing for analysis of how the same fund is treated when affiliated and not affiliated with the plan trustee.

## Favoritism in Setting Menus

The first part of the study examined whether mutual fund companies involved in the management of 401(k) plans influence the menu of investment options in ways that advance their own interests. It tested whether such plans: 1) are less likely to remove their own affiliated funds; 2) are more likely to add them; and 3) appear to have less regard for the quality of these funds when making such decisions.

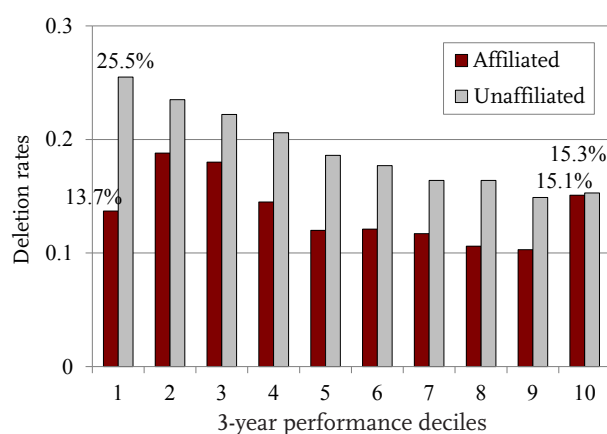
### *Bias in Menu Deletions*

To test for bias in menu deletions, the study calculated fund deletion rates – the number of times in a given year a fund is removed from a 401(k) menu divided by the number of potential deletions (defined as the number of menus on which it was listed at the end of the previous year). These fund deletion rates were calculated separately for when the fund is affiliated and not affiliated with the plan trustee.

The study then assessed the relationship between the quality of the fund and the deletion decisions. The measure of quality was the fund’s performance, relative to similar funds, over the preceding three years. The first step was to divide all funds in the CRSP universe into “domestic equity,” “international equity,” “balanced,” “bond,” and “other” groups. The second step was to sort the funds in each group into performance deciles according to their trailing three-year returns. The final step was to calculate the average deletion rate for funds in each decile separately for affiliated and unaffiliated funds.

Figure 1 shows the relationship between fund quality, as measured by the prior performance decile, and deletion rates for affiliated and unaffiliated funds. Affiliated funds are significantly less likely to be deleted than unaffiliated funds. The average annual deletion rate across the deciles is 13.7 percent for funds affiliated with the plan’s service provider and 19.1 percent for unaffiliated funds.

FIGURE 1. FUND DELETION RATES BY RECENT PERFORMANCE AND AFFILIATION WITH PLAN TRUSTEE



Source: Pool, Sialm, and Stefanescu (2015).

More strikingly, deletion rates for affiliated funds are less sensitive to past performance. As seen in Figure 1, the bias in favor of affiliated funds is particularly pronounced for poor performers. Plans remove just 13.7 percent of affiliated funds in the lowest performance decile, dramatically less than the 25.5 percent deletion rate for unaffiliated funds in the lowest performance decile.

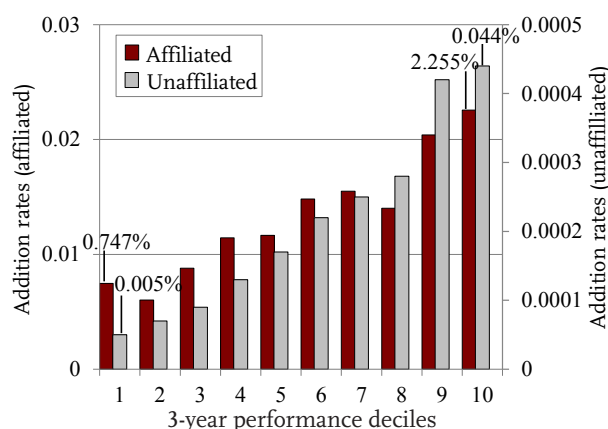
### *Bias in Menu Additions*

A similar approach was used to test for bias in menu additions. The analysis calculated fund addition rates – how often a fund is added to a 401(k) menu in a given year divided by the number of potential additions, with a potential addition defined as the number of menus on which the fund had not been listed at the end of the previous year. Again, the funds in each group were sorted into performance deciles, based

on their trailing three-year returns relative to similar funds; and the analysis calculated the average addition rate for affiliated and unaffiliated funds in each performance decile.<sup>6</sup>

Unlike for the deletion rates, a direct comparison of addition rates *between* the affiliated and unaffiliated funds is not very informative because the denominators (i.e. the number of “potential additions”) vary greatly in size.<sup>7</sup> Instead, it is more useful to compare the differences by decile *within* the group of affiliated funds to the differences by decile within the unaffiliated funds (see Figure 2: the left-hand axis is for affiliated funds; the right-hand axis is for unaffiliated funds). These results show that decisions to add funds to the menu, like decisions to delete funds, are less sensitive to past performance for affiliated funds than for unaffiliated funds. The addition rate for affiliated funds in the highest performance decile is around three times higher than that for funds in the lowest performance decile (2.255/.747). In contrast, the addition rate for unaffiliated funds in the top performance decile is about eight times the rate for funds in the lowest performance decile (.044/.005).<sup>8</sup>

FIGURE 2. FUND ADDITION RATES BY RECENT PERFORMANCE AND AFFILIATION WITH PLAN TRUSTEE



Source: Pool, Sialm, and Stefanescu (2015).

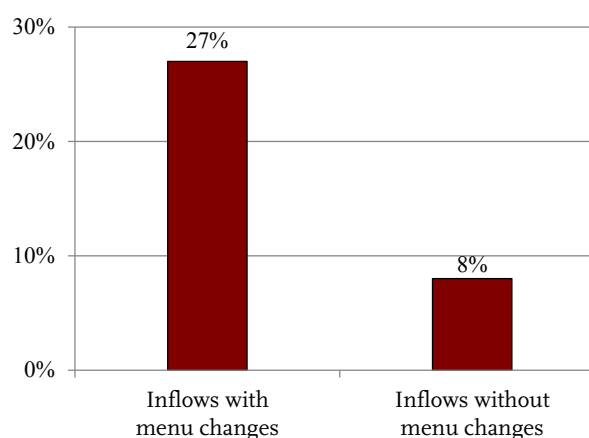
## Effect on Retirement Savings

The bias in favor of affiliated funds in menu decisions does not necessarily mean that the favored funds capture a large share of 401(k) savings. Participants could undo the bias in menu decisions by directing

their savings away from favored funds, and especially away from those affiliated funds that are poor performers. To test this possibility, the study ran a regression to identify factors associated with new money inflows – participant contributions and asset reallocations – into particular funds. The analysis controlled for such factors as expense ratios, growth in total plan assets (to capture the effect of participants using the same allocation rule every year), and performance rank.

To isolate the effects of menu changes, the regression was run twice – once using overall money flows into the plans’ investment options and once excluding the flows due to menu changes. This latter measure reflects participant preferences alone. The results showed that overall inflows into affiliated funds are 27 percent higher than inflows into unaffiliated funds (see Figure 3). This percentage is higher than when

FIGURE 3. DIFFERENCE IN MONEY FLOWS BETWEEN AFFILIATED AND UNAFFILIATED FUNDS, WITH AND WITHOUT MENU CHANGES



Source: Pool, Sialm, and Stefanescu (2015).

flows due to menu changes are excluded. In this case, new money inflows into affiliated funds are only 8 percent higher than inflows into unaffiliated funds. Thus, biased menu changes, not participant preferences, appear to be primarily responsible for the higher inflows into affiliated funds.

More importantly, participants do not undo the favoritism shown to poorly performing affiliated funds. Inflows that exclude new menu additions are not very sensitive to past performance, especially for affiliated

funds with below median returns over the preceding three years. Whether excluding or including new menu additions, a 10-point decrease in the performance rank of sub-par affiliated funds is associated with just a 1-percent decrease in new money inflows.

## Does Poor Performance Continue?

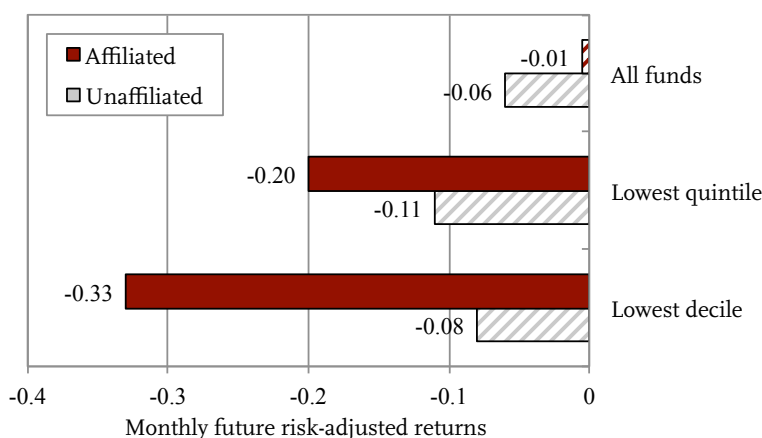
The bias in menu-setting thus results in affiliated funds with poor past performance capturing a large share of 401(k) savings. But does this outcome harm plan participants? The mutual fund service provider could have private information that the performance of the sub-par funds that are left or added to the menu will improve. It could also be the case that “past performance is no indicator of future results” – a common investment maxim. In either case, plan participants would not be adversely affected by the bias shown in menu decisions.

To assess whether the poor performance of sub-par affiliated funds continued, the study examined domestic equity funds on 401(k) menus. It divided these funds into affiliated and unaffiliated funds that were retained during a given year. To test for persistence in investment performance, the study computed

subsequent risk-adjusted returns – the metric used is the “abnormal” return; i.e. the return relative to what would have been earned on a passive portfolio of indexes with the same risk profile. These returns were calculated on a month-by-month basis for a 12-month period.<sup>9</sup> The results support the notion that past poor performance is a reasonable indicator of future poor performance for low-ranked affiliated funds on 401(k) menus.<sup>10</sup> Most funds generally perform as expected. “All” affiliated and unaffiliated funds have small and statistically insignificant risk-adjusted returns. The striking exceptions are affiliated funds in the lowest past-performance quintile and decile retained on the menu (see Figure 4). Converting the monthly abnormal risk-adjusted returns shown in Figure 4 into annual rates, annual risk-adjusted returns are -2.4 percentage points for bottom-quintile affiliated funds and -4.0 percentage points for bottom-decile affiliated funds kept on the menu.

Not all participants invest a significant portion of their savings in sub-par trustee funds that are retained or added to a plan’s menu of investment options due to bias. It is also difficult to project how long funds with poor past performance will continue to underperform. But such underperformance, if compounded to retirement, would impair the retirement income security of participants with savings invested in these funds.

FIGURE 4. MONTHLY RISK-ADJUSTED RETURNS OF AFFILIATED AND UNAFFILIATED FUNDS



Notes: Returns are relative to the return that would have been earned on a passive portfolio of indexes with the same risk profile. Solid bars are statistically significant at least at the 10-percent level; striped bars are not statistically significant.

Source: Pool, Sialm, and Stefanescu (2015).

## Conclusion

Those involved in managing 401(k) plans are expected to make decisions for the exclusive benefit of plan participants and beneficiaries. This study provides evidence that mutual fund companies involved in plan management often act in ways that appear to advance their interests at the expense of plan participants. Where mutual fund companies serve as plan trustees – indicating their involvement in the management of the plan – additions and deletions from the menu of investment options often favor the company's family of funds. More significantly, this bias is especially pronounced in favor of affiliated funds that delivered sub-par returns over the preceding three years. And participants do not shift their savings to undo this favoritism, especially the favoritism shown to sub-par affiliated funds. The study also found that the lackluster performance of these sub-par funds usually persists. These findings thus suggest that, with respect to setting 401(k) menus, mutual fund companies tend to influence decisions in ways that appear to adversely affect employee retirement income security.

## Endnotes

- 1 Investment Company Institute (2015).
- 2 Pool, Sialm, and Stefanescu (2015). The study can be obtained at <http://ssrn.com/abstract=2112263>.
- 3 Employers that sponsor 401(k) plans are ultimately responsible for making management decisions. Service providers often offer bundled arrangements through which the same entity provides trustee, recordkeeping, and educational services. Over 90 percent of the mutual fund trustees in our sample are also recordkeepers of the same plan.
- 4 The dataset includes over 18,000 menu deletions and over 29,000 menu additions.
- 5 For further information on the data used in this study, see Pool, Sialm, and Stefanescu (2015).
- 6 Addition rates are much lower than deletion rates because the number of potential additions – the number of menus on which a fund is *not* listed at the beginning of the year – is much greater than the number of potential deletions – the number of menus on which a plan *is* listed at the beginning of the year.
- 7 This difference occurs because there are many fewer “potential additions” to menus where a fund is affiliated with the plan trustee than where it is not affiliated with the plan trustee. Due in large part to this difference in the size of the denominator used to calculate addition rates, the average rate for trustee-affiliated funds (1.33 percent) is over 60 times larger than the average rate for unaffiliated funds (0.02 percent).
- 8 This pattern of bias in menu deletions and additions holds up under a wide variety of specifications. See Pool, Sialm, and Stefanescu (2015) for the results using other specifications.
- 9 The authors calculated risk-adjusted returns using the Fama-French-Carhart model, which calculates expected returns based on the fund portfolio's sensitivity to market changes, mix of large and small stocks, book-to-market ratio, and prior stock performance. For more details, see Pool, Sialm, and Stefanescu (2015).
- 10 Carhart (1997) shows that poorly performing funds in general exhibit significant performance persistence.

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## Contact Information

Center for Retirement Research  
Boston College  
Hovey House  
140 Commonwealth Avenue  
Chestnut Hill, MA 02467-3808  
Phone: (617) 552-1762  
Fax: (617) 552-0191  
E-mail: [crr@bc.edu](mailto:crr@bc.edu)  
Website: <http://crr.bc.edu>

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