Mixed Target-Date Fund Investors

Is There a Method to the Madness?

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Executive Summary

- There are potentially over 10 million participants in defined contribution plans today combining a target-date fund with other plan investments, commonly referred to as "mixed target-date fund investors."

- Target-date funds are best used as an "all or none" investment option since mixing target-date funds with other plan investments significantly diminishes, and potentially eliminates, their value.

- Mixed target-date fund investors have attributes that would suggest they are more sophisticated than investors who use the default investment (for example, they have higher salaries and higher balances), but less sophisticated than participants self-directing their accounts and not using target-date funds.

- Overall, mixed target-date fund investors appear to have relatively diversified portfolios, but are more aggressive than the average target-date fund would be for a given age, especially at older ages

- The average allocation of mixed target-date fund investors is 37% target-date funds, 49% equity funds, and 13% bond funds. The non-target-date fund weights are relatively constant across different levels of target-date fund holdings.

- A participant who would like a more-aggressive allocation is better off moving "along" the target-date fund glide path by selecting a vintage (or target-date year) with a higher risk level, rather than mixing the target-date fund with equity (or bond) funds from the core menu.

- Plan sponsors should encourage participants who are not interested in using the target-date fund in its entirety to use some type of in-plan advice solution, such as advice or managed accounts.

Mixed Target-Date Fund Investors: Is There a Method to the Madness?

Introduction

Target-date funds are designed to simplify investing for participants in defined contribution plans, especially in plans that use them as the default investment. However, participants will sometimes combine target-date funds with other plan investment options, becoming what are called mixed target-date fund investors. While combining target-date funds with other investments may not seem problematic at first glance, it can diminish (or eliminate) the target-date fund's potential benefit. This issue is especially noteworthy given the potential number of affected investors, which could easily exceed 10 million defined contribution participants today.

This paper explores the allocation decisions of 30,516 mixed target-date fund investors to determine which types of investors are more susceptible to mixing target-date funds and how they mix them. The hope is to use these results to reduce the incidence of mixed target-date fund investing. Mixed target-date fund investors are relatively similar to other investors who decide to self-direct their accounts (compared with default investors) and tend to be older, with higher salaries, balances, and deferral rates—that is, investors who would generally be classified as more sophisticated. However, when comparing mixed target-date fund investors to other self-directors, mixed target-date investors appear to be slightly less sophisticated (they tend to be younger, with lower plan tenures, lower deferral rates, lower salaries, and lower balances);

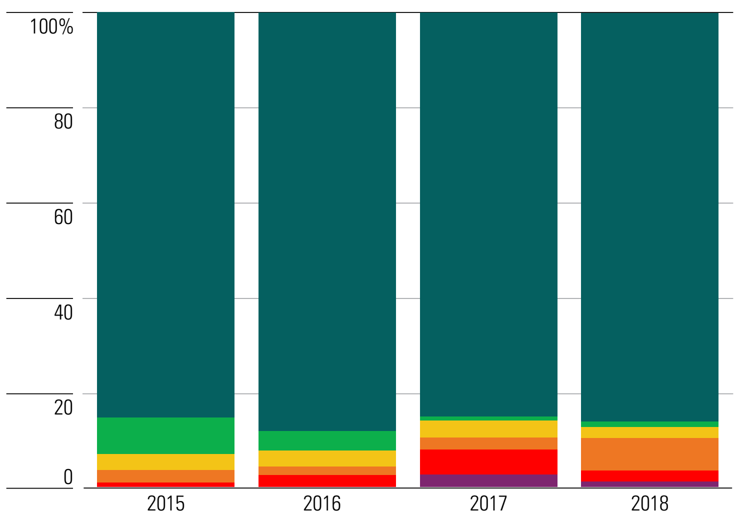
Mixed target-date fund investors generally build relatively diversified portfolios; although their allocation decisions tend to make them more aggressive than a target-date fund with an appropriate vintage (that is, target-date portfolio year). In fact, their allocations are consistent with a retirement year that is 10 years later than the actual vintage they should be in. Mixed target-date fund investors tend to have less than half of their portfolio in the target-date fund and overwhelmingly combine the target-date fund with equity funds. For example, the average allocation of mixed target-date fund investors is 37% target-date funds, 49% equity funds, and 13% bond funds. The non-target-date fund weights are relatively constant across different levels of target-date fund holdings.

An investor who would like a more-aggressive allocation would generally be better off moving along the target-date fund glide path by selecting a vintage (or target-date year) with a higher risk level than mixing the target-date fund with equity (or bond) funds from the core menu. For example, if a participant thought the equity allocation in the 2025 target-date fund vintage was too conservative, he or she could select the 2050 vintage to achieve this more-aggressive risk level. While moving along the glide path results in a mismatch between the actual and expected target dates, it keeps the participant entirely in a professionally managed portfolio. Alternatively, the plan sponsor could nudge those participants who are not allocating to the target-date fund in its entirety toward some type of in-plan advice solution, such as advice or managed accounts.

The Rise of Default Investments

There has been a significant increase in the use of "intelligent" default investments in defined contribution plans over the past decade. Among the various options available target-date funds have become the clear favorite among plan sponsors. From example, as of 2018, target-date funds were selected as the default investment by 86.2% plan sponsors, which makes them roughly 25 times more popular than the next most-utilized default investment option (Callan 2019). Exhibit 1 includes statistics on default investment selections from 2015 to 2018.

Exhibit 1 Default Investment Selections: 2015-2018



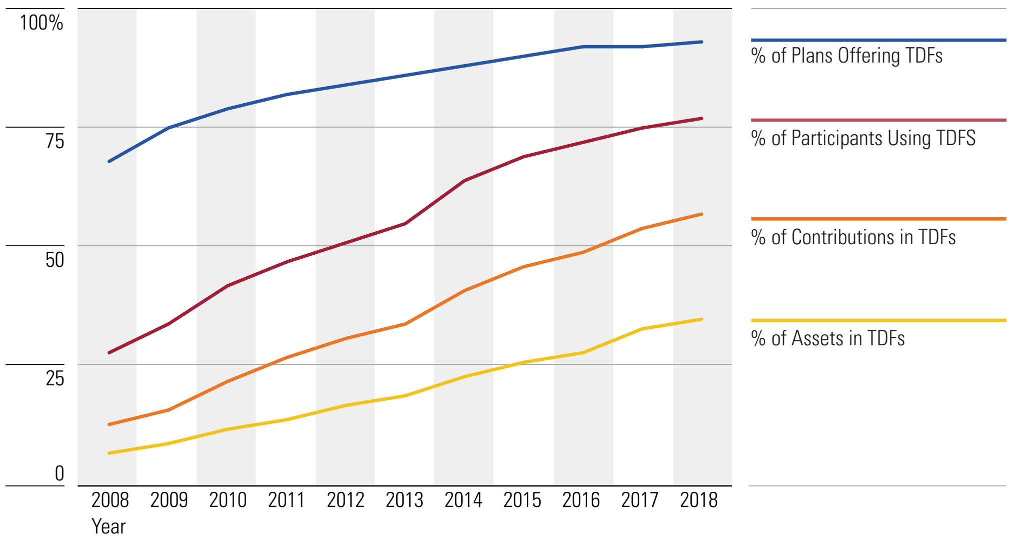
85.5	88.2	85.2	86.2	Target-Date Fund
7.7	4.2	0.9	1.1	Stable Value or Money Market
3.4	3.4	3.5	2.3	Balanced Fund
2.6	1.7	2.6	6.9	Target Risk
0.9	2.5	5.2	2.3	Managed Accounts
0	0	2.6	1.1	Other

Source: Callan 2019.

Assets in target-date funds increased almost tenfold from December 2007 to December 2018, from $180 billion to $1.7 trillion, based on data from Morningstar's 2019 Target-Date Fund Landscape report (Holt, Carlson, and Oey 2019).

Exhibit 2 provides some perspective regarding the growth in target-date fund usage in defined contribution plans recordkept at Vanguard from 2008 to 2018, in terms of availability, access, and usage (Young and Young 2019).

Exhibit 2 Growth of Availability and Usage of Target-Date Funds at Vanguard: 2008-2018

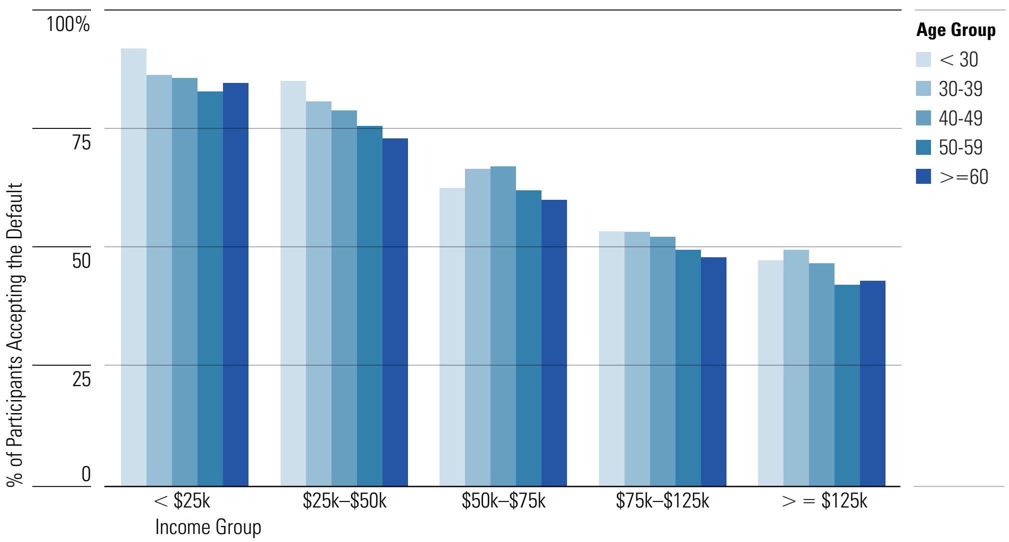


Source: Young and Young (2019)

Approximately 80% of participants initially accept target-date funds when they are offered as the default investment, although acceptance declines to approximately 70% after five years of participation in the defined contribution plan, according to Blanchett and Bruns (2019). These are similar estimates to Clark and Young (2018), who note that 84% of participants are 100% invested in the default option after one year, 82% by two years, and 77% by three years, based on defined contribution plans recordkept at Vanguard.

While most participants end up in target-date funds (or the default investment), only roughly half the assets do (Blanchett and Bruns 2019). This is because participants with higher balances are more likely to opt out of the default, as are participants who have been in the plan longer, have higher incomes, and higher savings rates. Income has an especially noteworthy effect on default acceptance, as noted in Exhibit 3, based on research from Blanchett and Bruns (2019).

Exhibit 3 Default Acceptance by Age and Income Groups



Source: Blanchett and Bruns (2019)

Exhibit 3 demonstrates that while older participants tend to have lower levels of default acceptance, this is primarily driven by factors other than age, such as income and balance.

Mixed Target-Date Fund Investors

A well-known concern regarding target-date funds is that participants can potentially "mix" them with other investments in the plan—that is, become a mixed target-date fund investor. Target-date funds that are prepackaged, such as a mutual fund or collective investment trust, are especially prone to being combined with other plan investments because they may appear as a single investment option and participants may not realize the target-date fund is in fact a diversified, multi-asset fund intended to be a standalone investment.

The frequency of mixed target-date fund investing varies by source. For example, in 2018, 32% of all target-date fund investors at Vanguard were noted to be mixed target-date fund investors according to Young and Young (2019), which implies approximately 25% of all participants at Vanguard were mixed target-date fund investors.[1] This is an improvement from 2012, when 46% of all target-date fund participants at Vanguard were noted as being mixed (Pagliaro and Utkus 2017). Financial Engines and Aon (2014) have a similar estimate, where 27.9% of all participants had partial allocations to target-date funds, and the majority of participants in target-date funds only had a fraction of their total allocation in target-date funds. The incidence of mixed target-date fund investing is significantly smaller in this dataset, at 6.9%, which will be discussed more in detail in the following section.

1 Seventy-nine percent of participants at Vanguard were in a target-date fund as of 2018 (note Exhibit 2), and 32% of all target-date fund investors were mixed, which implies approximately 25% of all participants were mixed target-date fund investors.

Given the considerable variation in the frequency of mixed target-date fund investing among the previously cited sources it is difficult to estimate the total number of affected participants. However, if we conservatively assume that 10% of all defined contribution participants are mixed target-date fund investors, that would imply there are roughly 10 million mixed target-date fund investors today, given the roughly 100 million total participants in defined contribution plans.[2] While the incidence (and number) of mixed target-date fund investors is likely to decline in the future as automatic enrollment and plan re-enrollments become more popular, it is nevertheless a significant issue for defined contribution plans today given the number of affected participants.

Participants have various reasons for becoming a mixed target-date fund investor. Pagliaro and Utkus (2017) estimate that the majority (55%) of participants do so out of choice, while the remainder (45%) stem from plan sponsor decisions, such as including employer contributions in company stock, nonelective contributions to the plan's default fund, and so on. Additionally, Pagliaro and Utkus (2017) note half of the mixed target-date fund investors become mixed at enrollment, while one third added were not invested in a target-date fund but added it to their portfolio at some point.

Financial Engines (2016) explored the drivers behind mixed target-date fund investing, and found that participants who were mixed target-date fund investors thought doing so could lead to outperformance; were concerned about "putting all their eggs in one basket," despite the fact target-date funds are already incredibly diversified (and 82% reported knowing as such); and were seeking greater personalization than the target-date fund alone could provide. For many participants, target-date funds appear to be a "black box"—the lack of understanding exactly how the product works, how it is allocated, and so on, likely leads many participants to combine it with other investments on the core menu.

The "damage" caused by mixing target-date funds with other plan investments obviously varies by participant and is going to be driven by a variety of factors. For example, from a pure return perspective, the extent to which mixed target-date fund investing is good (or bad) will depend on market returns, as well as the quality of the respective funds available. Should markets perform well, a participant who increases the risk of the portfolio through mixed target-date fund investing is likely to be better, and vice versa. The key is whether the expectation of mixing the target-date fund with other investments is likely to lead to a better outcome.

In theory, a participant may be able to create a better (or more appropriate) portfolio by combining the core funds with target-date fund. For example, the investor could potentially reduce the expense ratio of investing by combining an index fund with the plan's target-date fund (if the target-date fund has a relatively high expense ratio), or create a risk level that

2 https://www.americanbenefitscouncil.org/pub/e613e1b6-f57b-1368-c1fb-966598903769

is more aggressive (or conservative) than the most aggressive (or conservative) target-date fund available. In reality, though, mixing the target-date fund with other funds is likely to significantly dilute their primary value, which is getting participants to completely transfer investment management responsibilities from the participant to a professional investment manager. Target-date funds are, by their nature, incredibly complex investments, with risk levels that evolve over time (that is, the glide path) and it is unlikely a participant fully understands the ramifications associated with blending the target-date fund with other funds. Therefore, target-date funds are likely best used as an "all or none" investment option.

Data Set

An analysis was conducted using data from a recordkeeper of U.S. 401(k) plans provided as of December 31, 2018. In addition to investment elections, several additional demographic variables were available for each participant, including age; date of participation in the 401(k) plan (which we can use to estimate plan tenure); deferral rate; salary; and 401(k) plan balance. Only participants coded as active were included in the analysis to ensure timely compensation data was available.

Data was also scrubbed for reasonableness (for example, participants negative salaries, missing birthdays, etc were removed) and information for 100% of investment elections must be available for the participant to be included. Combined, these filters created an initial test dataset of 439,859 participants. Of these 439,859 participants, 107,083 (24.3%) were self-directing their accounts (that is, not in the default investment).

In order to be classified as a mixed target-date fund investor the participant must have between 1% and 99% of investment allocations going to a target-date fund. Of the 107,083 participants self-directing their accounts, 30,516 participants met the definition of mixed target-date fund investors, which is 28.5% of participants self-directing their accounts and 6.9% of all participants. This is a significantly lower percentage of mixed target-date fund investors than previously noted sources (approximately 25% of all participants) and can be attributed to a different recordkeeper being used for the analysis.

Descriptive statistics for the various groups are included in Exhibit 4.

Exhibit 4 Descriptive Statistics

Panel A: Medians

	Age	Tenure	Salary	Balance	Deferral
All Participants	45.00	6.29	$69,010	$44,152	7.00
Default Investor	44.00	5.54	$64,176	$33,834	6.00
Self-Director	48.00	9.67	$87,867	$93,171	9.00
Mixed TDF Investor	47.00	8.16	$88,000	$84,462	9.00

Panel B: Averages

	Age	Tenure	Salary	Balance	Deferral
All Participants	45.09	8.71	$98,726	$127,687	10.02
Default Investor	44.27	8.02	$88,750	$104,367	9.19
Self-Director	47.63	10.84	$129,729	$200,157	12.59
Mixed TDF Investor	46.49	9.95	$120,478	$184,246	12.02

Panel C: Standard Deviations

	Age	Tenure	Salary	Balance	Deferral
All Participants	12.09	7.38	$189,700	$241,524	11.82
Default Investor	12.24	7.07	$153,042	$210,169	10.59
Self-Director	11.23	7.89	$271,590	$308,879	14.71
Mixed TDF Investor	10.84	7.35	$225,258	$278,130	13.49

Source: Authors' calculations

Mixed target-date fund investors clearly have demographics that are more like self-directors than default investors, consistent with the findings of Pagliaro and Utkus (2017). Both groups of participants (self-directors and mixed target-date fund investors) tend to be older, with higher salaries, balances, and deferral rates—that is, they are investors who would generally be classified as more sophisticated. If we compare mixed target-date fund investors to all other self-directors, mixed target-date fund investors have attributes that would generally suggest they are slightly less sophisticated, since they tend to be younger, with lower salaries, balances, and deferral rates.

Mixed Target-Date Fund Investor Behaviors

In this section we explore the allocation decisions of mixed target-date fund investors. Exhibit 5 includes information about the distribution of allocations to target-date funds, other allocation funds (for example, balanced funds), equity funds, bond funds, and alternative funds, based on broad Morningstar Category groups as of December 31, 2018 (date of the dataset).

Exhibit 5 Portfolio Weights of Mixed Target-Date Fund Investors

Panel A: Allocations

Percentile	Target-Date Fund	Allocation Fund	Equity Fund	Bond Fund	Alternative Fund
95th	80.0	10.0	85.0	50.0	0.0
75th	50.0	0.0	70.0	20.0	0.0
Median	30.0	0.0	50.0	5.0	0.0
Average	37.2	1.3	48.5	13.0	0.0
25th	20.0	0.0	30.0	0.0	0.0
5th	8.0	0.0	0.0	0.0	0.0

Panel B: Number of Funds

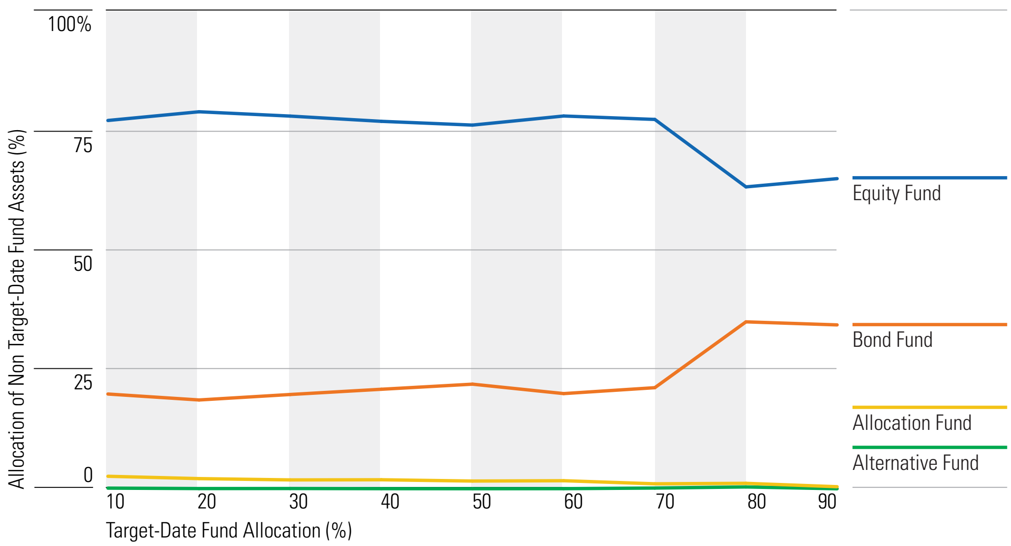
Percentile	Target-Date Fund	Allocation Fund	Equity Fund	Bond Fund	Alternative Fund
95th	3.0	1.0	8.0	3.0	0.0
75th	1.0	0.0	4.0	1.0	0.0
Median	1.0	0.0	3.0	1.0	0.0
Average	1.4	0.1	3.1	0.8	0.0
25th	1.0	0.0	1.0	0.0	0.0
5th	1.0	0.0	0.0	0.0	0.0

Source: Authors' calculations

The average mixed target-date fund investor only allocates approximately 37.2% of the portfolio to the target-date fund; 1.3% to some other allocation fund (for example, a balanced fund); 48.5% to equity funds; 13.0% to bond funds; and 0.0% to alternative funds (Panel A). The median and average values are relatively similar. In terms of number of funds held, the average mixed target-date fund investor holds 1.4 target-date funds, 0.1 allocation fund, 3.1 equity funds, 0.8 bond funds, and 0.0 alternative funds. These results strongly suggest mixed target-date fund investors do not hold the target-date fund as the majority of the allocation and are overwhelmingly combining the target-date fund with equity funds to make the risk level of their portfolio more aggressive than it would be in the target-date fund alone.

Interestingly, the weights of the non-target-date fund funds are relatively constant across levels of target-date fund holdings (among mixed target-date fund investors), as documented in Exhibit 6.

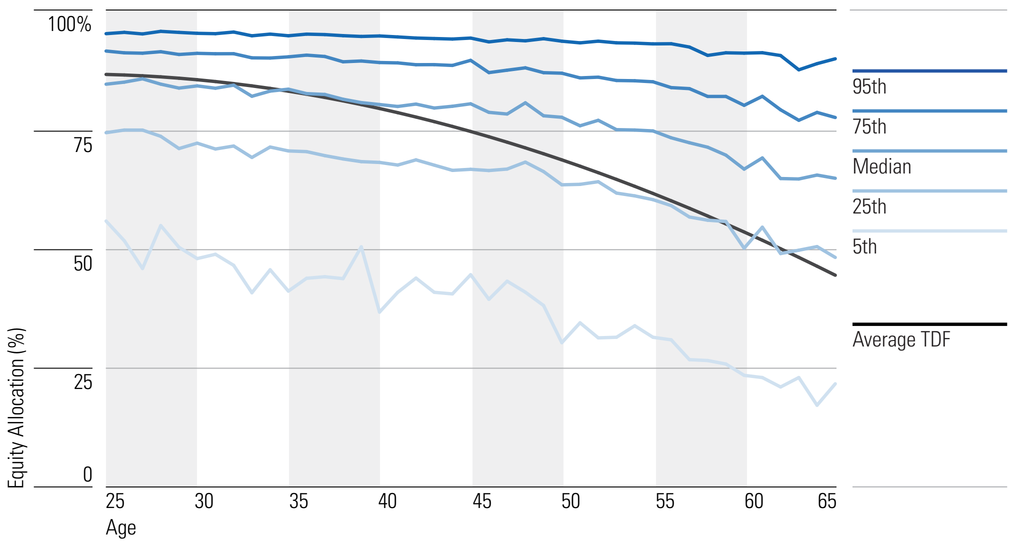
Exhibit 6 How Non-Target-Date Fund Allocations Vary by Target-Date Fund Allocation



Source: Authors' calculations

Mixed target-date fund investors tend to have relatively diversified portfolios. Exhibit 7 includes the distribution of equity allocations for participants by age. Equity allocations are determined based on the net equity allocation for each holding as of December 31, 2018 (the date of the dataset), using data from Morningstar Direct. The equity allocation for the average target-date fund is also included in Exhibit 7, which is based on the average equity allocation among the target-date funds included in the analysis.

Exhibit 7 Distribution of Equity Allocations for Mixed Target-Date Fund Investors



Source: Authors' calculations

Overall, mixed target-date fund investors appear to have relatively diversified portfolios, but are more aggressive than the average target-date fund would be for a given age, especially at older ages. The average mixed target-date fund investor could achieve the same approximate risk level if he or she selected a target-date fund vintage that is approximately 10 years later than their actual target retirement age. For example, a retiree who expects to retire in 2030 could select the 2040 target-date fund to achieve the same average risk level as mixed target-date fund investors. Selecting a different target-date vintage for risk purposes is not ideal, but it's arguably better than mixing the target-date fund with other plan investments.

Conclusions

Mixed target-date fund investing is a big deal today, with potentially over 10 million defined contribution participants currently engaged in the practice. Why do participants in defined contribution plans mix target date funds (target-date funds)? There are likely myriad reasons. One key reason is likely because target-date funds typically appear as a single investment option (that is, a "black box") on a plan website or participant statement, similar to other equity or bonds funds, and investors aren't aware that target-date funds are actually diversified options designed to be held by themselves.[3] While an investor may feel he or she needs to combine the target-date fund with other funds to create a diversified portfolio, doing so will likely have the opposite effect, reducing the portfolio's efficiency.

This research suggests mixed target-date fund investors typically only have about 37% of the allocation in the target-date fund, with the majority of the rest of the allocation (49%) in equity funds. These more-aggressive portfolios are consistent with a target-date fund vintage with a retirement date 10 years later. A participant who is interested in changing the risk exposure of the portfolio is likely better off moving along the glide path (that is, selecting a different vintage) versus adding other core funds to the allocation. Plan sponsors should communicate to participants who are not interested in using the target-date fund in its entirety that they should consider some type of in-plan advice solution, such as advice or managed accounts.

3 This would obviously not apply to custom target-date funds created from the plan core menu.

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