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TARGET DATE FUNDS: WHAT'S UNDER THE HOOD?

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Introduction

In today's 401(k) world, individuals must choose how to invest their retirement savings. Yet evidence shows that they often make poor choices on their own.[1] Target date funds (TDFs) were designed as a potential solution. TDFs provide a pre-set mix of stocks and bonds, which shifts away from stocks and toward bonds as individuals age. These funds are often used as the default option for 401(k)s that have automatic enrollment. By 2014, nearly 20 percent of all 401(k) assets were in TDFs, and about half of participants held these funds.[2]

Despite the growing prominence of TDFs, little research has focused on the details of their holdings, fees, and performance. This *brief*, adapted from a recent study, uses data on TDFs and their underlying mutual fund investments that allows for a unique assessment of what is going on "under the hood."[3]

The discussion proceeds as follows. The first section offers background on TDFs. The second section describes the data. The third section looks at what assets TDFs hold. The fourth section examines TDF fees. The fifth section assesses their overall performance and the influence of day-to-day fund decisions. The final section concludes that: 1) TDFs often invest in specialized assets, as well as conventional stocks and bonds; 2) TDF fees are only modestly higher than if an investor assembled a similar portfolio on his own; and 3) TDF investment returns are broadly in line with other mutual funds; and TDF decisions on market timing and fund additions do not help, and may hurt, performance.

TDF Basics

A TDF is constructed from mutual funds, so it is a "fund of funds." TDFs are intended to provide a one-fund solution for investors that offers diversification and a changing asset allocation mix with age. Each TDF has a "target" year and a pre-determined glide path for gradually reducing the equity allocation as the target date approaches. This structure reflects the conventional notion that individuals should generally have less exposure to equities as they age.[4]

TDFs were developed in the mid-1990s, spurred by a need to make investing easier for 401(k) participants. Their growth was helped by the movement among 401(k)s toward auto-enrollment, which requires plan sponsors to pick a default investment

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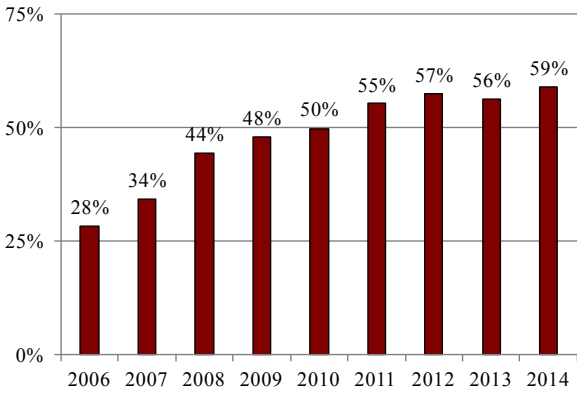
fund. The Pension Protection Act of 2006 both encouraged auto-enrollment and included TDFs as a qualified default investment alternative. By 2014, the share of new hires with a TDF had reached nearly 60 percent, double the 2006 level (see Figure 1).

Figure 1. Percentage of Recently Hired 401(k) Participants with a Target Date Fund, 2006-2014



Source: VanDerhei et al. (2016).

While TDFs have become a major investment vehicle, research on their characteristics and performance has been limited. One study finds that TDFs with the same target date have very different asset-allocation mixes and returns.[5] Another study shows that TDFs increase their investment in mutual funds within their own fund family after experiencing large outflows.[6] A study comparing TDFs to balanced funds analyzed returns using bond and stock factors to examine performance and infer management behavior.[7] In contrast, the study summarized in this brief uses the underlying holdings of TDFs to directly assess fund manager actions; it adjusts for the use of new asset categories and corrects for the changing risk profiles of TDFs.

The Data

The analysis uses Morningstar data for the period 2004-2012. The data include monthly returns and annual expenses for both TDFs and their underlying mutual funds, as well as the monthly TDF investment in each underlying fund. The inclusion of the underlying fund data allows for unique analysis of TDF holdings, fees, and performance.

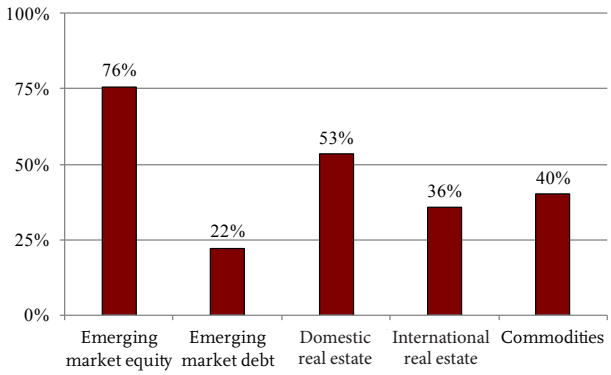
The Morningstar data include about 1,100 TDFs from 50 fund families, as many families offer multiple TDFs with different target dates. These different dated funds from the same family generally hold most of their assets in the same underlying funds, just with different asset allocations. Given this similarity, the sample uses only one dated fund – either 2035 or 2030 – from each family. The total sample has 229 funds because a specific family's 2035 TDF may be available in different share classes, which are part of the analysis.

What Do TDFs Invest In?

With the sample data in hand, a basic question is what type of assets do TDFs hold? At the broadest level, each TDF has a glide path that specifies the percentage in equities and bonds over time. The bulk of the sample funds with a target date of 2035 held 70-85 percent in equities in 2011. But a quarter of the funds held equity shares either above or below this range.

Interestingly, looking under the hood shows that most TDFs are not the simple mix of equities and bonds that many envision. The typical TDF invests in 17 funds on average. These holdings include emerging markets, real estate, and commodities (see Figure 2). And the prevalence of these specialized assets has increased over time.[8]

Figure 2. Percentage of TDFs Holding Selected Specialized Funds, 2011



Source: Elton et al. (2015).

How High Are TDF Fees?

TDFs have two layers of fees: 1) the fees charged by the underlying mutual funds ("underlying fees"); and 2) the fees added on by the TDF for the cost of managing the fund ("overlay fees").

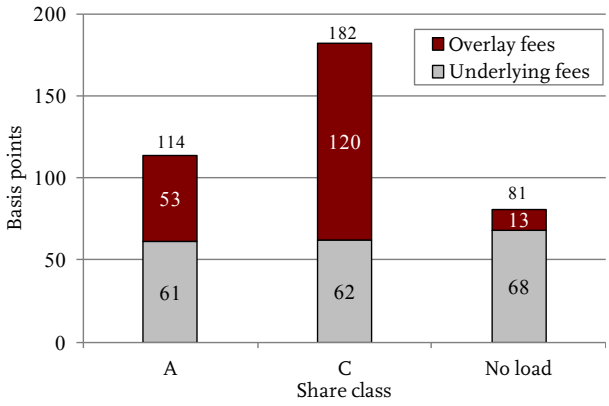
Like other mutual funds, TDFs often have several share classes of the same fund. Fund managers use share classes to offer different fees and services to different investors. For example, Class A shares have an up-front load fee for investments – a commission charge – while Class C shares have a level load each year. "No-load" shares have no commission charge, but may have other fees to cover specific investment services. In addition, funds often offer special low-fee share classes only to larger investors, giving them a volume discount.

Here's where the fee story for TDFs gets a little complicated. As expected, the amount of the overlay fee added by each TDF differs by share class, but the fees charged by the underlying funds are actually the same because the underlying funds all invest in *the same* share classes. For example, despite their different names, a "Class A" TDF and a "Class C" TDF both invest in the same class of underlying mutual funds.

Looking at the data may help. Figure 3 shows average expenses for TDFs in three different share classes: A, C, and no-load. The red bars show the overlay fee applied by the TDF, and the gray bars show the underlying fund fees. The red bars vary substantially, from 53 basis points for the A fund to 120 basis points for the C fund and just 13 basis points for the no-load fund. However, a comparison of the gray bars shows that they are nearly the same because they are each investing in the same underlying share class.[9] Therefore, it is the variation in the overlay fees that explains the variation in total fees among TDF funds of different share classes.

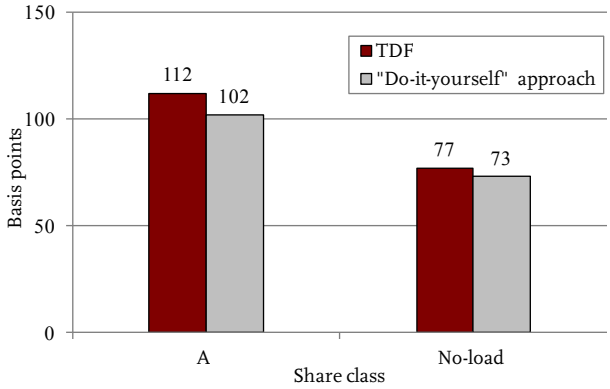
To avoid overlay fees, an investor might consider replicating the TDF portfolio on his own. Interestingly, the analysis found little benefit from this "do-it-yourself" approach. The reason is that individual investors who buy, say, Class A shares will pay more than the TDF itself pays for Class A shares, as the TDF has access to a lower-cost version of the shares due to its size.[10] For example, Figure 4 compares total fees between TDFs and the do-it-yourself approach for Class A and no-load shares. The total TDF fees are only a little higher – 10 basis points more for Class A and 4 basis points more for no-load – and of course the TDF provides the added service of constructing and maintaining the portfolio.

Figure 3. Average Fees for TDFs by Type of Fee and Share Class, in Basis Points



Source: Elton et al. (2015).

Figure 4. Average Total Fees for TDFs and "Do-It-Yourself" Approach by Share Class, in Basis Points



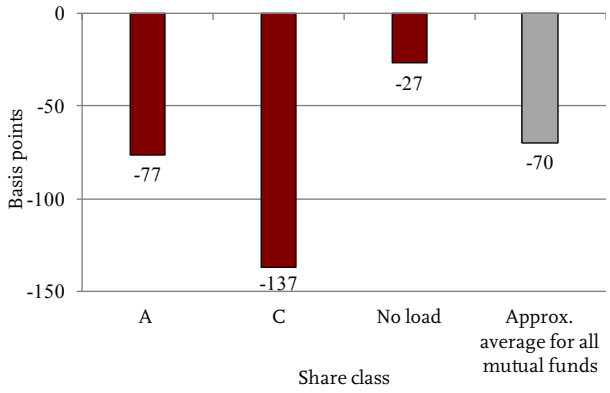
Note: Total fees for TDFs in Figures 3 and 4 differ slightly because not all TDFs belong to fund families that allow investors to build a portfolio that exactly matches the TDF.
Source: Elton et al. (2015).

How Do TDFs Perform?

The acid test for any investor is how well a fund performs. The most common way to measure a mutual fund's performance is to compare its return to a benchmark index, a metric known as alpha.[11] The alpha for a TDF is a weighted average of its underlying funds. The average alpha for the TDFs in the sample

is -20 basis points per year, which is statistically significant. This return reflects the fees on the underlying funds but does not account for the overlay fee added by the TDF. When this fee is added – roughly 50 basis points on average – the total alpha is roughly -70 basis points (see Figure 5 for the alpha of selected share classes). This value approximates the average alpha for mutual funds in general. So, overall, TDFs fall short of their benchmark indices, but perform about the same as all other mutual funds.

Figure 5. Average Alpha for TDFs by Share Class, in Basis Points

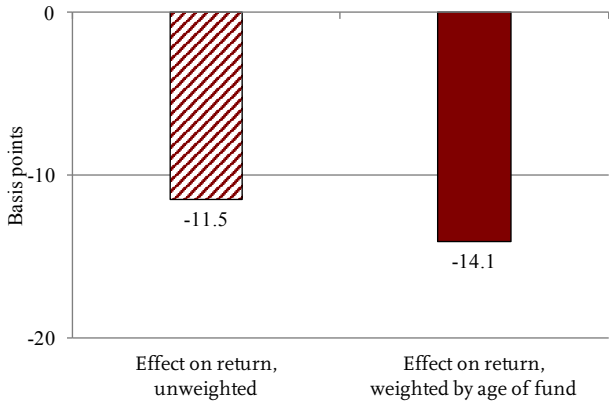


Note: Solid bars are statistically significant.
Source: Elton et al. (2015).

Does Market Timing Help?

As noted, all TDFs have a glide path that determines how their stock-bond allocation changes over time. However, funds often deviate from their path to try to improve returns by responding to changing market conditions. The results show that, compared to strictly following the glide path, the average return due to market timing across all funds is -11.5 basis points per year (see Figure 6).[12] If the returns are weighted toward funds with a longer track record, the result is -14.1 basis points. In short, deviations from the glide path do not improve, and may even hurt, performance.

Figure 6. Average Effect of Market Timing Decisions on Returns in TDFs, in Basis Points



Note: The solid bar is statistically significant.
Source: Elton et al. (2015).

Do Fund Family Objectives Hurt?

A body of research suggests that fund managers tend to make investment decisions that help fund family objectives at the expense of lower returns for shareholders.[13] For this study, the data on each TDF's underlying mutual funds allow for a direct assessment of the effects of managers' fund selections on returns, rather than inferring their actions from overall TDF returns.

TDFs in general are useful for studying potential bias toward fund family objectives because they primarily hold funds from within their own family. For example, in the sample, 70 percent of the funds that were added to a TDF during the period studied had at least one alternative fund in the family with the same Morningstar classification. The analysis uses these alternative funds as the point of comparison in evaluating whether actual fund changes helped or hurt returns.

The results suggest that three types of fund family objectives can adversely affect TDF returns.[14] First, TDF managers tended to favor start-up funds, which had substantially lower returns over the next three years than the alternatives within their fund family.

Second, some managers tilted toward high-fee funds, which had a lower subsequent performance than the alternatives; this difference, though, was not statistically significant. Third, managers favored smaller funds, perhaps to help them grow to a profitable size. Again, the subsequent performance of these smaller funds was much lower than the alternatives.[15]

Conclusion

TDFs are an increasingly important investment vehicle, particularly for 401(k) participants. TDFs hold a relatively complex mix of assets that goes well beyond conventional stocks and bonds. Overlay fees in TDFs vary considerably by share class, but total TDF fees are only slightly above the fees that an individual would face if duplicating a TDF's holdings on his own.

Looking at TDF performance shows that funds, on average, perform roughly the same as other mutual funds. Interestingly, when fund managers attempt to boost returns by veering off the glide path, their decisions do not seem to help and may even hurt. And, consistent with previous research on mutual funds, some evidence indicates that fund family objectives can lead to fund additions that hurt returns.

Endnotes

1 See, for example, Ameriks and Zeldes (2004), Benartzi and Thaler (2001), Madrian and Shea (2001), and Elton, Gruber, and Blake (2007).

2 VanDerhei et al. (2016).

3 Elton et al. (2015).

4 Interestingly, little empirical evidence exists for the optimality of decreasing stock allocation and increasing bond allocation over time. For example, see Poterba et al. (2005, 2009). However, the focus of the analysis summarized in this *brief* is simply on how well TDFs achieve their intended objectives.

5 Balduzzi and Reuter (2013).

6 Bhattacharya, Lee, and Pool (2013).

7 Sandhya (2011).

8 Analysts have suggested three possible reasons for the growing popularity of specialized asset classes. First, some TDFs may be trying to stand out from their competitors. Second, these asset classes were identified as hot areas by the financial community in general. Third, fund managers may believe that adding such investments will lower risk through diversification. On this last point, however, some evidence suggests that adding specialized asset classes does not lower risk. For example, 60 percent of the TDFs in the sample have higher risk than Vanguard TDFs, which invest only in stocks and bonds.

9 The only reason that the underlying fund fees are not completely identical is that not every fund family in the sample offers every share class, so the sample sizes for each share class vary.

10 For example, the TDF is more likely to have access to institutional class or master trust shares.

11 Any benchmark index used in calculating alpha does not include fees; it is strictly a measure of the index's investment performance. As a result, on average, alpha for mutual funds is negative.

12 For each TDF, the glide path is calculated by taking the average percentage in stocks at the midpoint of its history and the average change in stock investment over time to estimate the other points along the glide path. Deviations from the path are tracked by comparing the actual weight of stocks or bonds at each point to the weight that they would have had if the TDF were perfectly following its path. The investment returns associated with the deviations are then compared to the returns if the fund had adhered exactly to its path. In calculating these returns, the analysis uses market benchmark indices, rather than the returns on the actual mutual funds that each TDF holds. This approach, by excluding any influence from the TDF's actual funds, isolates the effects of timing decisions on returns. For more details, see Elton et al. (2015).

13 See Elton et al. (2015) for a summary of the findings from previous research.

14 A test involving a fourth fund family objective – bolstering funds with slow growth or a sizable outflow of assets – found no evidence of bias in the selection process.

15 The base case used $60 million as the threshold for a small fund, due to a common belief in the investment community that it is the minimum size needed for a fund to be profitable. Start-up funds were excluded from this analysis.

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