TIAA Institute

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An update to: A lifecycle analysis of the performance of TIAA's Traditional Annuity in a Target Date Fund

An extension of Research Dialogue Issue no. 206; March 2024

Introduction

This is a report on the extension of our previous study[1] on the performance of a target date fund (TDF) that includes TIAA's Traditional RA (or SRA) compared to a TDF that does not include the TIAA Traditional product. The data extension allows us to consider longer payout phases, assumed to start at age 65 and last through the end of the available historical data, December 31, 2024. Extending the analysis by adding the financial experience of 2022 through 2024, which includes a period of substantially rising interest rates, we find that a TDF including TIAA's Traditional annuities continued to outperform and, indeed, furthered its outperformance relative to a TDF without TIAA's Traditional annuities in all scenarios through the end of 2024.

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1 Ciccotello, C., Herce, M., and Meyer, M. (2024). A lifecycle analysis of the performance of TIAA's Traditional Annuity in a Target Date Fund. TIAA Institute *Research Dialogue*, No. 206.

TABLE 1. SCENARIOS FOR ACCUMULATION AND PAYOUT PHASES

Scenario	Start of accumulation phase	Start of payout phase	Years in accumulation phase	Years in payout phase
1	1/1/1973	1/1/2003	30	22
2	1/1/1973	1/1/1998	25	27
3	1/1/1973	1/1/1995	22	30
4	1/1/1975	1/1/2005	30	20
5	1/1/1975	1/1/2000	25	25
6	1/1/1975	1/1/1997	22	28
7	1/1/1980	1/1/2010	30	15
8	1/1/1980	1/1/2005	25	20
9	1/1/1980	1/1/2002	22	23

Note: In all cases, the end of the payout phase is December 31, 2024. This constrains the length of the payout phase to be as short as 15 years in Scenario 7.

Our original scenarios (for each of the three risk profiles) are modified as shown in Table 1.

At the start of the payout phase, the full TIAA Traditional balance in the TDF with TIAA Traditional is annuitized at the historical TIAA Traditional payouts for a unisex lifetime with 10 year period certain immediate annuity. For the TDF without the TIAA Traditional, immediate annuities are purchased at various times through the payout phase so that the total monthly payouts equal the corresponding TIAA Traditional payouts.

This means that, after retirement, the TDF funds continue investing on the same asset classes, according to the prescribed glidepath. The only difference among the TDFs after retirement is the different monthly balances implied by (1) the different balances at the end of the accumulation phase, and (2) the additional annuitizations out of the TDF without the TIAA Traditional during the accumulation phase.

Data update

The asset classes, immediate annuity and TIAA crediting, and payout rates we consider are as in our original study and have been extended through December 31, 2024. However, some data sources used in the original study have been discontinued and we have replaced them with suitable alternatives, as discussed below:

- Long-Term US Corporate Bonds. The original index, FTSE USBIG Corp Index AAA/AA 10+ Yr (High-Grade Bond Index), was discontinued in early 2023, as announced by Morningstar on December 15, 2022. For the years 2023 and 2024, we have replaced this index with Bloomberg's US Corporate 10+ years Total Return Index Unhedged.[2]

Fixed annuities and bonds are distinct financial products. Both provide reliable credited interest and income, but may not protect against inflation. **A fixed annuity** is an insurance contract issued by an insurance company offering tax-deferred guaranteed interest accumulation, principal protection, guaranteed income for a specific period or for life to protect against longevity risk, and may include a death benefit. Guarantees are subject to the financial strength of the insurer. Some fixed annuities are complex, with additional benefits available for an extra cost, and have liquidity restrictions or charges. The **TIAA Traditional fixed annuity** expenses are reflected in its credited rate— there are no additional fees and charges. TIAA may increase income throughout retirement. A **bond** is a market-based investment issued for a specified duration that is more liquid than most annuities, has transparent pricing/yield data, disclosed expenses, and is subject to credit risk of the issuer. There is a wide variety of credit qualities and maturities available and flexibility in choice of issuer, maturity, and duration. Principal is usually returned upon maturity, but bond value can fluctuate and be subject to volatility risk due to interest rate changes, market sentiment and bond duration sensitivity. Income from some bonds may be tax-exempt. Bonds do not protect against the risk of outliving your savings and include risk you cannot reinvest at similar/better rates when a bond matures. Bonds have no death benefit but can be passed directly to heirs with a step-up basis.

The **Bloomberg U.S. Corporate 10+ years Total Return Index Unhedged** reflects the average experience (including expenses) of only a portion of the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market. Over the long-term, the credited interest rates of TIAA Traditional have been similar to returns of this Index, with less volatility due to the diversified investments of TIAA's large general account which support TIAA's fixed annuity credited rate, and which invests in nearly every type of portfolio asset available in the market, not just the bond market. You cannot invest in an index; nor can you invest in TIAA's general account.

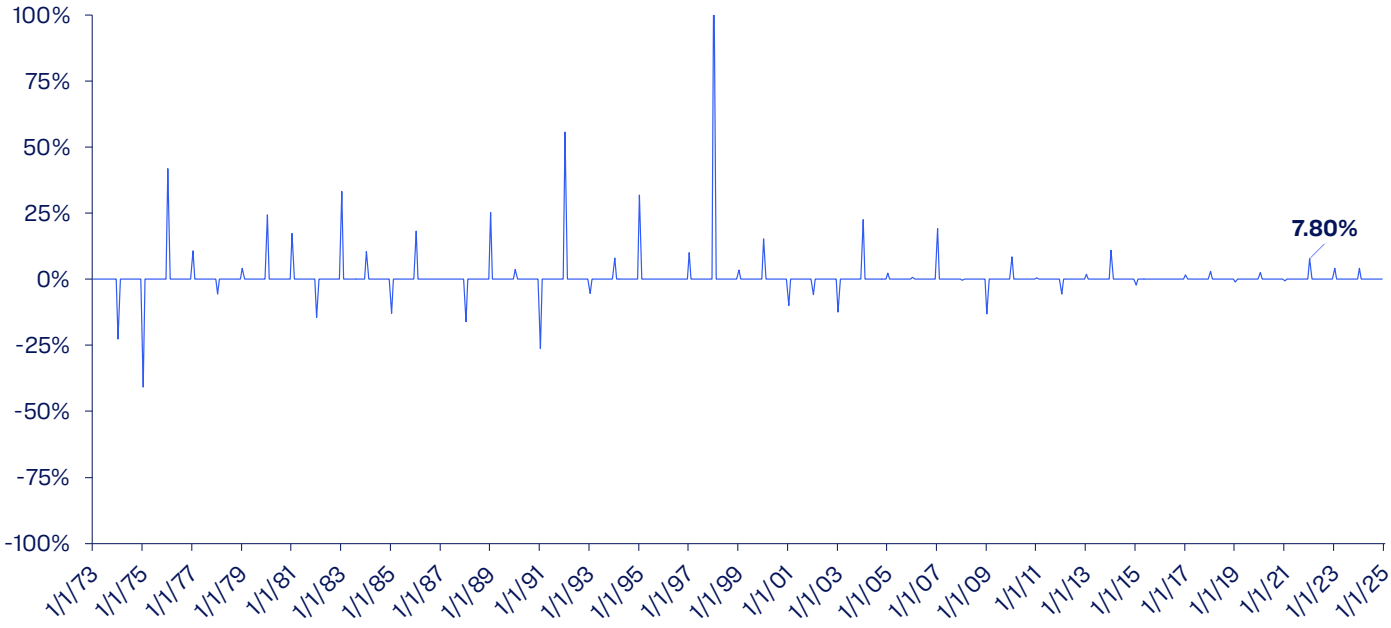
2 For the announcement, see https://advisor.morningstar.com/ReleaseNewsLive/releasePopUp.aspx?Id=894&type=Release%20Notes&name=Licensed%20Data. The two series track each other closely and have a correlation of more than 90% over the overlap period considered.

- Immediate annuity payouts from Annuity Shopper through 2021, when the publication was discontinued. For 2022–2024, data from the same publisher, are used.[3] These data, however, have lifetime plus 10 years period certain monthly payout rates for ages 65, 70, and 75, but does not include higher ages. We use average rates for ages 80, 85, and 90 from Annuity Shopper to extrapolate for 2022–2024.

The Bond asset class return series is a weighted average of monthly returns for US long-term corporate (25%) long-term government bonds (25%), and intermediate-term government/credit index returns (50%) , so as to include both long-term and intermediate term US bonds. We obtain monthly returns that are net of the appropriate average fund fees and expenses from the Investment Company Institute (ICI). TIAA Traditional (RA and SRA) crediting rates are obtained from TIAA.

As indicated above, payout data for the TIAA Traditional annuities was provided by TIAA. Payout data for market immediate annuities was obtained from Annuity Shopper, which has been a source of annuity data in previous academic studies,[4] through 2021, when it was discontinued, and from *Comparative Annuity Reports*, from the same publisher, for 2022–2024.

FIGURE 1. SCENARIO 2, CONSERVATIVE RISK PROFILE: NET REBALANCING AMOUNTS IN AND OUT OF THE BOND ACCOUNT IN THE TDF WITH TIAA RA (AS A PERCENT OF BOND ACCOUNT BALANCE)



3 See https://www.immediateannuities.com/comparative-annuity-reports/.

4 See, e.g., Wettstein, Munnell, Hou, and Gok, available at https://crr.bc.edu/wp-content/uploads/2021/02/wp_2021-5.pdf.

Performance of TIAA Traditional during the accumulation and payout phases

Our analysis with the extended data is the same as was done in our previous study. And we next present sets of tables and charts for representative scenarios. A full set of results for all scenarios and risk profiles can be prepared, based on the Excel calculation files that will be delivered to TIAA.

Rebalancing

First, in Figure 1, we show how rebalancing out of the bond account in the TDF with TIAA Traditional RA would have been over the additional three years of data for a representative example where the accumulation period is 1973–1997 and the payout period is 1998–2024. This corresponds to Scenario 2 (Conservative risk profile).

The last three years have been generally poor for US bond funds and this is reflected in modest rebalancing into the bond sleeve of the TDFs. Note that the model allows for quarterly, semi-annual, or annual rebalancing. Figure 1 corresponds to the annual rebalancing option.

Ending balance and payout comparisons

To illustrate the life-cycle effects of the Traditional RA or SRA, Table 2 shows the TDF asset accumulation results for Scenario 2 (1973–1998), the payout from annuitizing the entire TIAA Traditional balance at retirement, the total amount of the annuitization necessary to match the payouts of the TDF with Traditional, and end-of-payout period balances. The results show that over the last three years, the dominance of the TDF with the TIAA Traditional RA has continued during the last three years of the payout period considered in this scenario. The TDF without Traditional would have had to continue annuitizing funds during the payout phase to match the growing payouts offered by the TIAA Traditional RA. The result is an even higher end-of-payout balance for the TDF with Traditional.

We summarize three cases in Table 2. These cases are extensions of the same summary scenarios in our original study. We pay special attention in Section 2 to the only scenario in our original study where the end of payout phase balances were higher for the TDF without TIAA Traditional than for the TDF including the TIAA Traditional.

1. A representative scenario

Table 2 and Figure 2 results are highly representative across all the scenarios we examine as the TDF with Traditional has both a larger end-of-accumulation period balance and a larger end-of-payout period balance. The results for the SRA are very similar. With an interesting area of improvement, as discussed below.

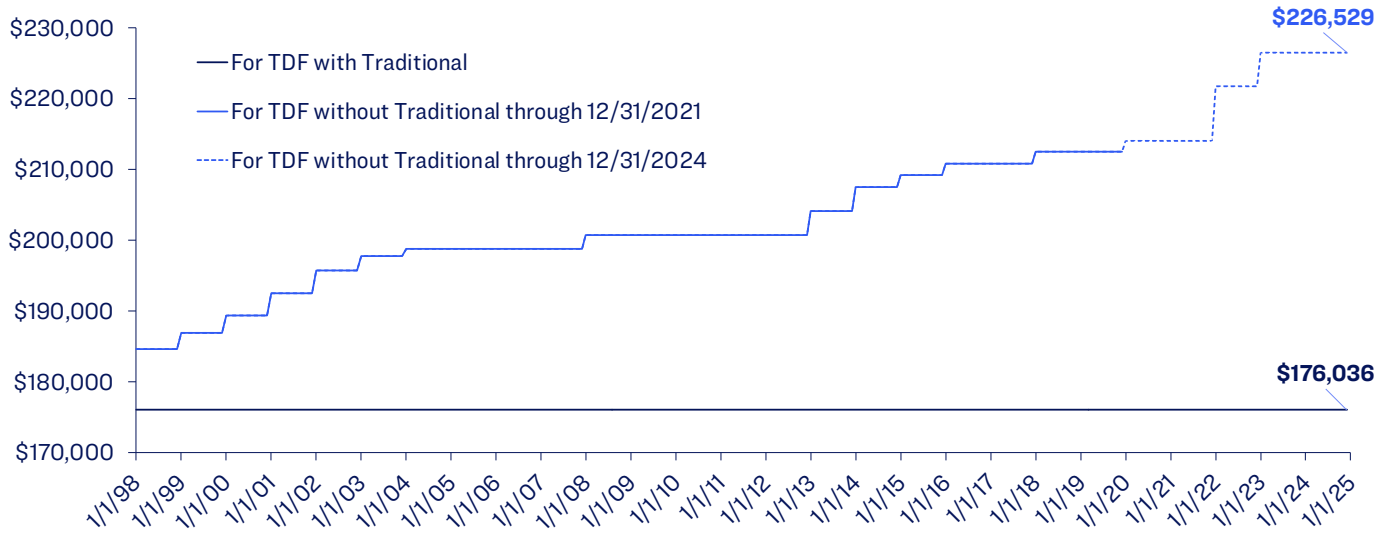
TABLE 2. A REPRESENTATIVE SCENARIO ANALYSIS

TDF risk profile:	Conservative
Start of accumulation phase:	1/1/1973
Start of payout phase:	1/1/1998
Years in accumulation phase:	25
Years in payout phase:	27
End of payout phase:	12/31/2024
Total contributions:	$152,654

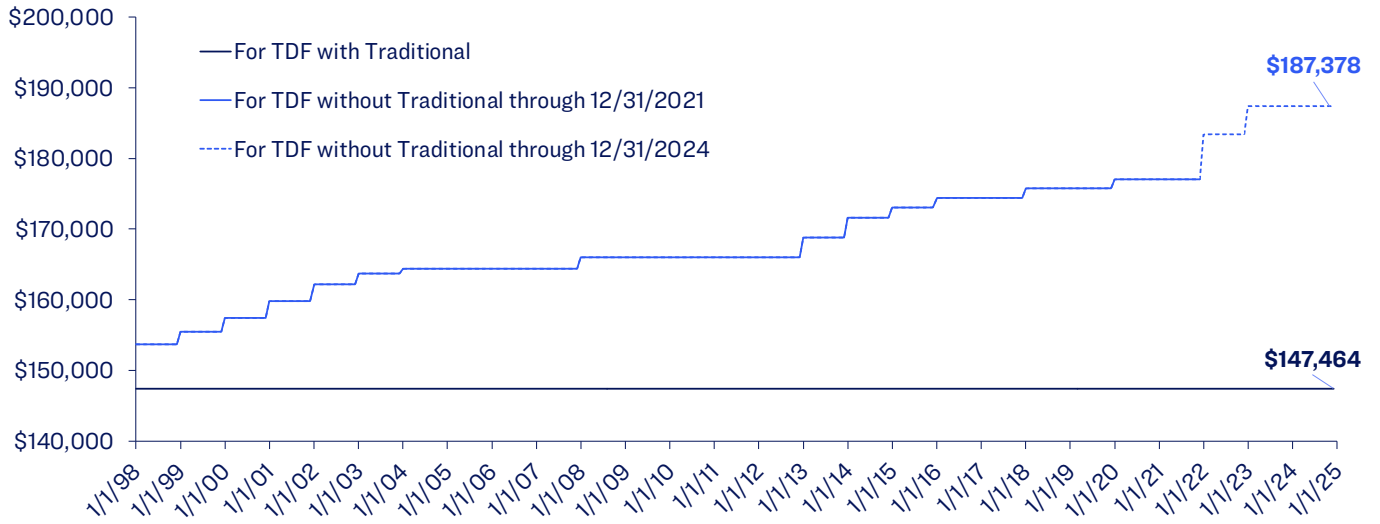
	12/31/21		12/31/24	
	Amount	Average payout ratio	Amount	Average payout ratio
Ending balance				
Including TIAA	$1,958,239		$1,908,256	
Excluding TIAA	$1,812,991		$1,753,719	
Difference	$145,248		$154,537	
Annuitized amounts				
Including TIAA	$176,036	9.53%	$176,036	9.69%
Excluding TIAA	$214,080	7.84%	$226,529	7.53%
Total payout amounts	**$402,730**		**$460,671**	

FIGURE 2. CUMULATIVE ANNUITIZED BOND BALANCE DURING THE PAYOUT PHASE V. ANNUITIZED TIAA TRADITIONAL (RA) BALANCE – REPRESENTATIVE SCENARIO[5]

Panel A. Conservative risk profile



Panel B. Aggressive risk profile



5 The annuitized TIAA Traditional Balance occurs at the end of the accumulation phase, December 31, 1997 for this scenario. In Figures 2, 3, and 4 it is represented as a horizontal line for ease of comparison with the cumulative annuitized bond balance.

2. An outlier case

Table 3 and Figure 3 illustrate an outlier scenario. In Scenario 7, the payout phase starts on 1/1/2010 and ends on 12/31/2024. This is the shortest payout period analyzed—15 years. For the TDF with the Traditional RA (conservative risk profile), the end-of-payout period difference is still positive (by about $20K), but this positive difference is much smaller than in the other scenarios. The combination of relatively high immediate annuity payouts in 2010 and the short duration of the payout phase explains this outlier result. In Scenario 7, the total contributions of $205,581 are higher than total annuity payouts of $187,776. Given the proximity of the end-of-payout balances between the TDFs with and without Traditional, this 12-year distribution scenario could thus be considered a "breakeven" payout period between the TDF with and without Traditional.

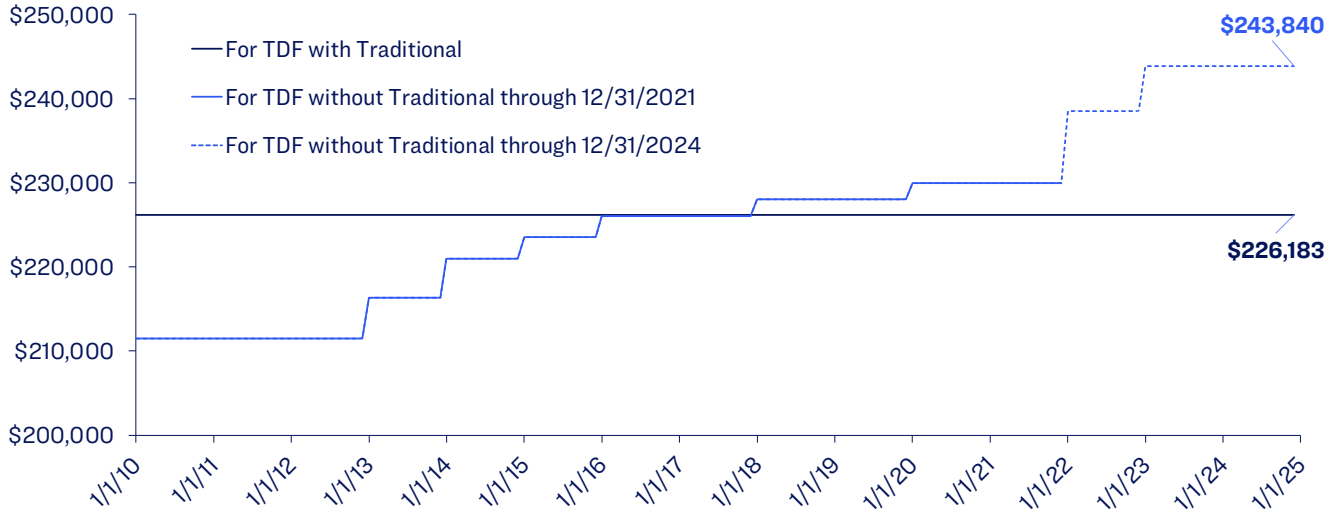
TABLE 3. AN OUTLIER SCENARIO ANALYSIS

TDF risk profile:	Conservative
Start of accumulation phase:	1/1/1980
Start of payout phase:	1/1/2010
Years in accumulation phase:	30
Years in payout phase:	15
End of payout phase:	12/31/2024
Total contributions:	$205,581

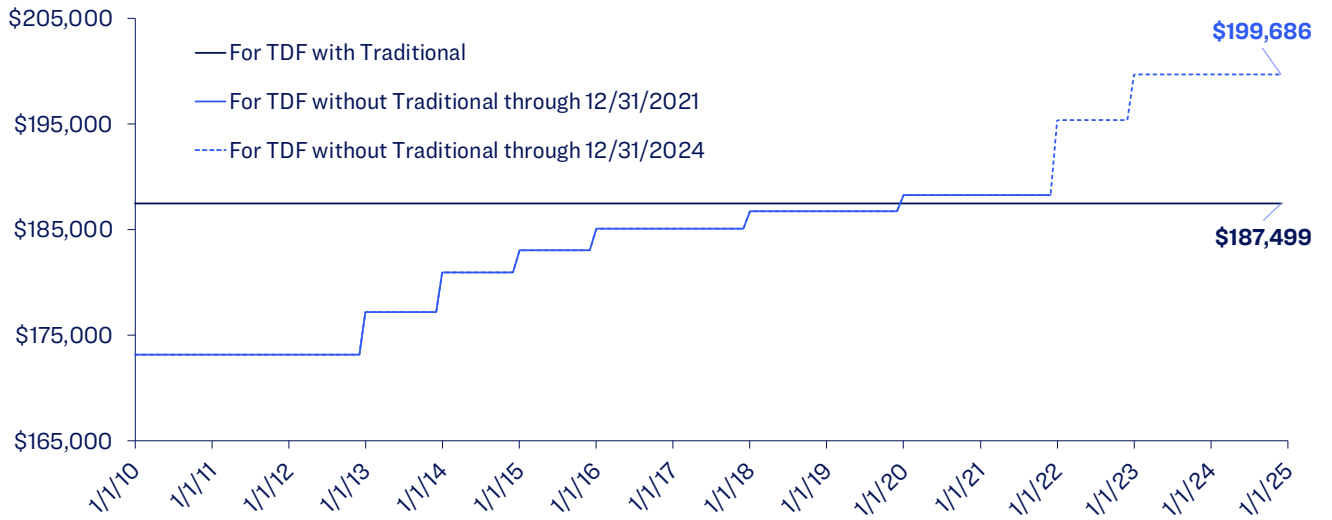
	12/31/21		12/31/24	
	Amount	Average payout ratio	Amount	Average payout ratio
Ending balance				
Including TIAA	$1,090,904		$1,063,060	
Excluding TIAA	$1,074,849		$1,032,889	
Difference	$16,055		$30,171	
Annuitized amounts				
Including TIAA	$226,183	6.92%	$226,183	7.07%
Excluding TIAA	$229,918	6.81%	$243,840	6.56%
Total payout amounts	**$187,776**		**$239,954**	

FIGURE 3. CUMULATIVE ANNUITIZED BOND BALANCE DURING THE PAYOUT PHASE V. ANNUITIZED TIAA TRADITIONAL (RA) BALANCE – OUTLIER SCENARIO

Panel A. Conservative risk profile



Panel B. Aggressive risk profile



This outlier scenario is relevant because in the earlier study, with historical data ending December 2021, the end of payout phase balance was higher for the TDF without the TIAA Traditional than the corresponding balance for the TDF with the TIAA Traditional, for the aggressive risk profile with the RA, and across the board with the SRA. However, extending the data through December 2024 reverses or mitigates these discrepancies, as Table 4 shows.

Table 4 also illustrates a general pattern, concerning end of payout phase balances, for all scenarios. Due to the poor performance of US bond funds during the years 2022–2024, the stock market correction of 2022, and the heavier concentration of bonds in the TDFs as the payout phase advances, end of payout phase balances are generally lower at December 31, 2024 than at December 31, 2021. Recall that there is no non-annuitized TIAA Traditional component in the TDFs after retirement

TABLE 4. END OF PAYOUT PHASE BALANCE DIFFERENCES FOR SCENARIO 7

	Payout phase ends December 2021			Payout phase ends December 2024		
	Conservative	Moderate	Aggressive	Conservative	Moderate	Aggressive
Traditional RA						
Including TIAA	$1,090,904	$1,253,646	$1,380,141	$1,063,060	$1,233,592	$1,380,715
Excluding TIAA	$1,074,849	$1,250,984	$1,387,530	$1,032,889	$1,217,751	$1,375,892
Difference	$16,055	$2,662	−$7,389	$30,171	$15,841	$4,822
Traditional SRA						
Including TIAA	$1,077,624	$1,242,272	$1,370,466	$1,050,119	$1,222,400	$1,371,036
Excluding TIAA	$1,091,581	$1,265,007	$1,399,709	$1,049,671	$1,231,935	$1,388,402
Difference	−$13,957	−$22,735	−$29,243	$448	−$9,535	−$17,366

3. The impact of a longer payout phase

To illustrate the impact of a longer payout period in cases where the immediate annuity market initially favors the non-TIAA Traditional TDF, Table 5 and Figure 4 show another scenario where immediate annuity payouts are relatively high compared to the TIAA Traditional annuitization rate at the retirement date. This is an analysis of Scenario 5 in Table 1, where retirement begins in January 2000. However, in contrast to the results in Table 3, the longer payout phase in this scenario (25 years versus 15 years in the Table 3 scenario) is sufficient to result in larger end of payout phase balances (by about 8.7%) for the TDF with Traditional compared to the TDF without Traditional.

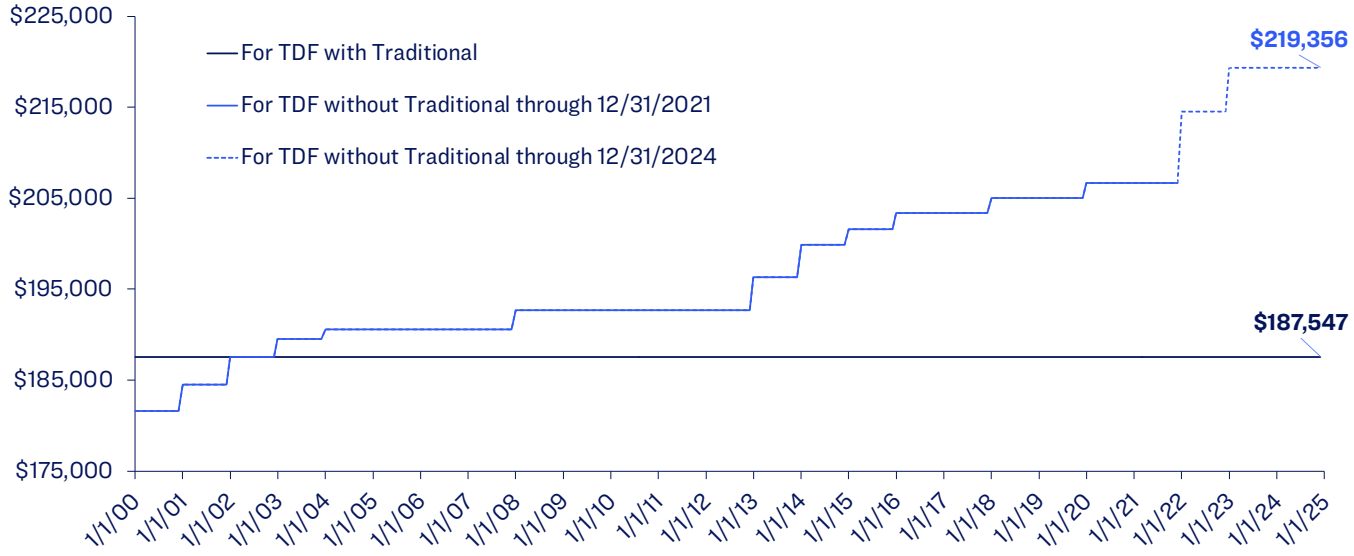
TABLE 5. SCENARIO ILLUSTRATING THE IMPACT OF A LONGER PAYOUT PHASE

TDF risk profile:	Conservative
Start of accumulation phase:	1/1/1975
Start of payout phase:	1/1/2000
Years in accumulation phase:	25
Years in payout phase:	25
End of payout phase:	12/31/2024
Total contributions:	$152,654

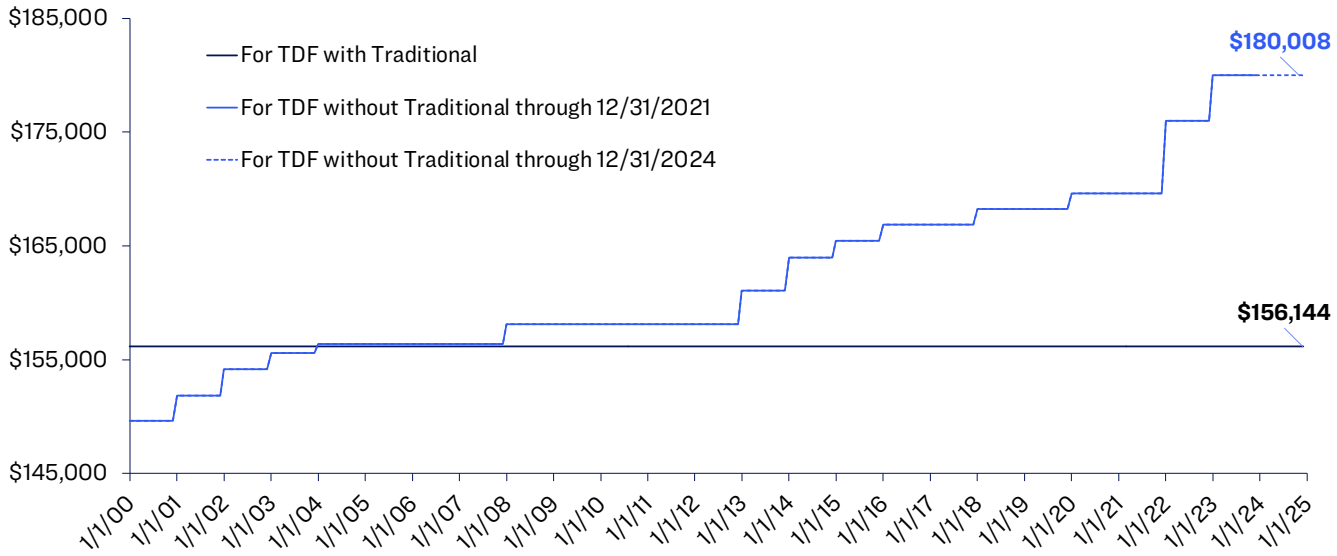
	12/31/21		12/31/24	
	Amount	**Average payout ratio**	**Amount**	**Average payout ratio**
Ending balance				
Including TIAA	$1,576,035		$1,535,808	
Excluding TIAA	$1,463,367		$1,412,773	
Difference	$112,668		$123,035	
Annuitized amounts				
Including TIAA	$187,547	8.98%	$187,547	9.14%
Excluding TIAA	$206,670	8.15%	$219,356	7.81%
Total payout amounts	**$370,714**		**$428,458**	

FIGURE 4. CUMULATIVE ANNUITIZED BOND BALANCE DURING THE PAYOUT PHASE
V. ANNUITIZED TIAA TRADITIONAL (RA) BALANCE – LONGER PAYOUT PHASE

Panel A. Conservative risk profile



Panel B. Aggressive risk profile



About the authors

Conrad S. Ciccotello is the Director of the Reiman School of Finance at the University of Denver and a Senior Consultant to the Finance Practice of Charles River Associates. He has led academic programs in personal financial planning and wealth management for over two decades. Dr. Ciccotello has over 60 publications, including articles in the Journal of Financial Economics, Management Science, and the Journal of Law and Economics.

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