

## The Impact of Adding Private Equity to 401(k) Plans on Retirement Income Adequacy

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### Table of Contents

Introduction .....	3
EBRI’s Retirement Security Projection Model® .....	4
EBRI Retirement Security Projection Model® (RSPM) Methodology .....	4
Description of Scenarios .....	5
Increase in Retirement Readiness Rating by Adding Private Equity to TDFs .....	5
Decrease in Retirement Savings Shortfalls by Adding Private Equity to TDFs.....	7
Conclusion.....	9
References .....	9

Figure 1, Retirement Readiness Ratings by Age and Scenario: Limited to 401(k) Participants With at Least 10 Years of Future Participation ..... 6

Figure 2, Additional People Who Would Have the Ability to Retire at 65 Without Running Short of Money in Retirement Due to the Increase in Account Balances Associated With Replacing Various Percentages of the Equity in Target-Date Funds (TDFs) With Private Equity ..... 7

Figure 3, Retirement Savings Shortfalls for the Baseline Scenario: Limited to 401(k) Participants With at Least 10 Years of Future Participation..... 7

Figure 4, Reduction in Retirement Savings Shortfalls by Age and Scenario: Limited to 401(k) Participants With at Least 10 Years of Future Participation ..... 8

Figure 5, Reduction in Aggregate Retirement Savings Shortfalls in Billions of 2021 Dollars Due to the Increase in Account Balances Associated With Replacing Various Percentages of the Equity in Target-Date Funds With Private Equity ..... 9

# The Impact of Adding Private Equity to 401(k) Plans on Retirement Income Adequacy<sup>1</sup>

By Jack VanDerhei, Ph.D., Employee Benefit Research Institute

## Introduction

Measuring retirement security — or retirement income adequacy — is an extremely important topic. The Employee Benefit Research Institute's (EBRI) Retirement Security Projection Model<sup>®</sup> (RSPM) has determined that the aggregate retirement deficit for all U.S. households ages 35–64 as of January 1, 2020, was \$3.68 trillion.<sup>2</sup>

Eligibility for participation in a defined contribution plan can have a significant impact on reducing these savings shortfalls. Previous EBRI research<sup>3</sup> provides information on the average individual retirement income deficits by the number of future years eligible for coverage in a defined contribution retirement plan. The deficit value for those in the youngest cohort (ages 35–39) assumed to have no future years of eligibility (as if they were never simulated to be employed in the future by an organization that provides access to those plans) is \$78,046 per individual. That shortfall decreases substantially to \$44,546 for those with one to nine years of future eligibility and even further to \$27,830 for those with 10–19 years of future eligibility. Households in this age cohort fortunate enough to have at least 20 years of future eligibility in those programs have their average shortfall at retirement reduced to only \$14,638. In other words, workers ages 35–39 with no future eligibility in a DC plan have a deficit more than five times higher than those with at least 20 years of future eligibility.

### About the Retirement Security Projection Model

EBRI launched a major project to provide this type of measurement in the late 1990s for several states concerned whether their residents would have sufficient income when they reached retirement age. A national model — the EBRI Retirement Security Projection Model<sup>®</sup> (RSPM) — was developed in 2003 (VanDerhei and Copeland 2003). New versions of the model have been generated periodically to include updates for financial and real estate market performance, employee demographics, and real-world behavior of 401(k) participants (based on a database of 27 million 401(k) participants) and individual retirement account (IRA) accountholders (based on a database of 20 million unique individuals).

However, many American workers do not have access to employer-sponsored defined contribution plans — especially those who are employed by small businesses that cannot afford the cost of offering such plans, are ill-equipped to manage the administration of a plan, etc. Several legislative alternatives have been enacted to deal with this so-called coverage gap.<sup>4</sup> Previous EBRI research<sup>5</sup> used RSPM<sup>®</sup> to simulate the likely impact on retirement income adequacy of three of the Setting Every Community Up for Retirement Enhancement Act of 2019's (SECURE Act's) most important provisions:

- Widening access to multiple employer plans (MEPs) through open MEPs.
- Increasing the cap under which plan sponsors can automatically enroll workers in "safe harbor" retirement plans, from 10 percent of wages to 15 percent.
- Covering long-term part-time employees.

Taking all three of these provisions into account, the reduction in retirement savings deficit was simulated to be \$114.9 billion.

Attempts to reduce the existing retirement deficit have also taken place through industry innovations to mitigate the impact of 401(k) leakages on job change. For example, previous EBRI research<sup>6</sup> has simulated the extent to which both partial and total auto portability would improve retirement income adequacy.

Another approach to reducing the simulated retirement deficits is to attempt to improve expected investment returns by substituting age-appropriate asset allocations for participant-directed decisions. EBRI research in 2009<sup>7</sup> examined how target-date funds (TDFs) would likely impact 401(k) participants assumed to be automatically enrolled. Recent EBRI/ICI research on the 2018 EBRI/ICI Participant-Directed Retirement Plan Data Collection Project<sup>8</sup> has examined the increased utilization of TDFs since the enactment of the Pension Protection Act of 2006 (PPA)<sup>9</sup> and found that the percentage of 401(k) participants holding TDFs varies from 62 percent of participants in their 20s to 50 percent of participants in their 60s. When analyzed on an asset-weighted basis, the percentages vary from 51 percent for participants in their 20s to 23 percent for participants in their 60s.

This report simulates the potential impact on retirement income adequacy if the current utilization of TDFs by age holds constant but the asset allocation of those TDFs is modified to substitute a specified percentage of the equity in the TDF portfolio with private equity (PE). If this modification in the TDF asset allocation does indeed cause average 401(k) plan savings to increase,<sup>10</sup> we would expect to see an overall improvement in retirement income adequacy. It should be noted that this would only impact some of the current \$3.68 trillion of retirement deficit since some households will be simulated never to have a 401(k) plan, and even those who do would need to be simulated to invest in a TDF for this scenario to apply. Still, we find that, depending on the percentage of TDF equity that is replaced with PE, the additional 401(k) participants who would have the ability to retire at 65 without running short of money in retirement varies from 130,000 (assuming 5 percent of the TDF equity is replaced with PE) to 356,000 (assuming 15 percent of the TDF equity is replaced with PE). Similarly, we find that, the reduction in retirement deficits varies from \$23.6 billion (assuming 5 percent of the TDF equity is replaced with PE) to \$37.3 billion (assuming 15 percent of the TDF equity is replaced with PE).

## **EBRI's Retirement Security Projection Model®**

EBRI's RSPM® simulates retirement income adequacy for all U.S. households between the ages of 35 and 64. The model reflects the real-world behavior of 27 million 401(k) participants as well as 20 million individuals with individual retirement accounts (IRAs).

RSPM® produces two important metrics for evaluating retirement income adequacy:

- Retirement Readiness Ratings (RRRs) provide the probability that a household will NOT run short of money in retirement.
- Retirement Savings Shortfalls (RSS) give the present value of the simulated retirement deficits at retirement age (in today's dollars).

### **EBRI Retirement Security Projection Model® (RSPM) Methodology**

One of the basic objectives of RSPM® is to simulate the percentage of the population at risk of NOT having retirement income to adequately cover average expenses and uninsured health care costs (including long-term-care costs) at ages 65 or older throughout retirement in specific income and age groupings. RSPM® also provides information on the distribution of the likely number of years before those at risk run short of money as well as the percentage of preretirement compensation they will need in terms of additional savings in order to have a 50, 70, or 90 percent probability of retirement income adequacy.

VanDerhei and Copeland (2010) describe how households are tracked through retirement age and how their retirement income/wealth is simulated for the following components:

- Social Security.
- Defined contribution (DC) balances.

- Individual retirement account (IRA) balances.
- Defined benefit (DB) annuities and/or lump-sum distributions.
- Net housing equity.

A household is considered to run short of money in this model if aggregate resources in retirement are not sufficient to meet average retirement expenditures, defined as a combination of deterministic expenses from the Consumer Expenditure Survey (as a function of income) and some health insurance and out-of-pocket, health-related expenses, plus stochastic expenses from nursing-home and home-health care (at least until the point such expenses are covered by Medicaid). This version of the model is constructed to simulate retirement income adequacy, as noted above. Alternative versions of the model allow similar analysis for replacement rates, standard-of-living calculations, and other ad hoc thresholds.

The baseline version of the model used for this analysis assumes all workers retire at age 65; that they immediately begin drawing benefits from Social Security and defined benefit plans (if any); and, to the extent that the sum of their expenses and uninsured medical expenses exceed the projected, after-tax annual income from those sources, immediately begin to withdraw money from their individual accounts (defined contribution and cash balance plans as well as IRAs). If there is sufficient money to pay expenses without tapping into the tax-qualified individual accounts, those balances are assumed to be invested in a non-tax-advantaged account where the investment income is taxed as ordinary income. Individual accounts are tracked until the point at which they are depleted. At that point, any net housing equity is assumed to be added to retirement savings in the form of a lump-sum distribution (not a reverse annuity mortgage (RAM)). If all the retirement savings are exhausted and the Social Security and defined benefit payments are not sufficient to pay expenses, the individual is designated as having run short of money at that point.

## Description of Scenarios

The analyses in this report are all based on scenarios that are limited to those who are simulated to participate in a 401(k) plan in the future sometime prior to retirement. For those participants under age 55, we added an additional filter that they have at least 10 years of future participation in a 401(k) plan.<sup>11</sup> In the baseline scenario (assuming no addition of private equity to TDFs) we assume that all 401(k) participants utilize TDFs in a manner similar to that found in Holden, VanDerhei, and Bass (2021). Three alternate scenarios are then devised that are similar to the baseline scenario, but in each case, the following percentage of equity in the TDF is assumed to be replaced with private equity:<sup>12, 13</sup>

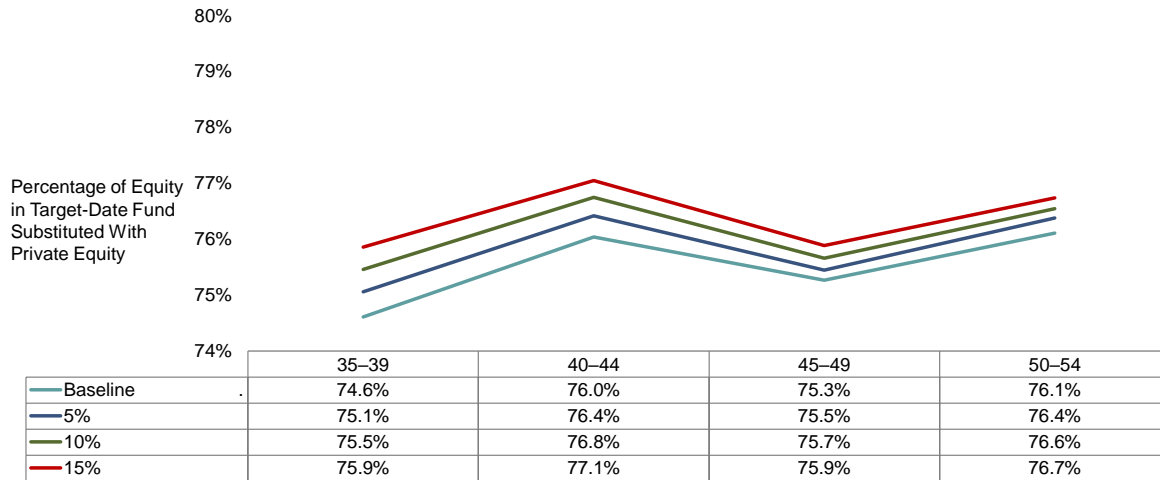
- 5 percent.
- 10 percent.
- 15 percent.

## Increase in Retirement Readiness Rating by Adding Private Equity to TDFs

Figure 1 shows the RRRs by age and scenario. In each case, the results are limited to those with at least ten future years of 401(k) participation. Under the baseline scenario in which no private equity was utilized, the percentage of 401(k) participants who are simulated to have sufficient retirement income (defined as not running short of money in retirement) varies from a low of 74.6 percent for those currently ages 35–39 to a high of 76.1 percent for those currently ages 50–54. When as much as 15 percent of the equity in the TDFs is assumed to be replaced with private equity, the RRRs increase for all age cohorts. For the youngest cohort (those currently ages 35–39) who have the

longest period to benefit from the change, the RRR increases by 1.3 percentage points. This differential decreases with age, and those currently ages 50–54 are simulated to have RRR increases of 0.6 percentage points.

Figure 1  
**Retirement Readiness Ratings by Age and Scenario: Limited to 401(k) Participants With at Least 10 Years of Future Participation**



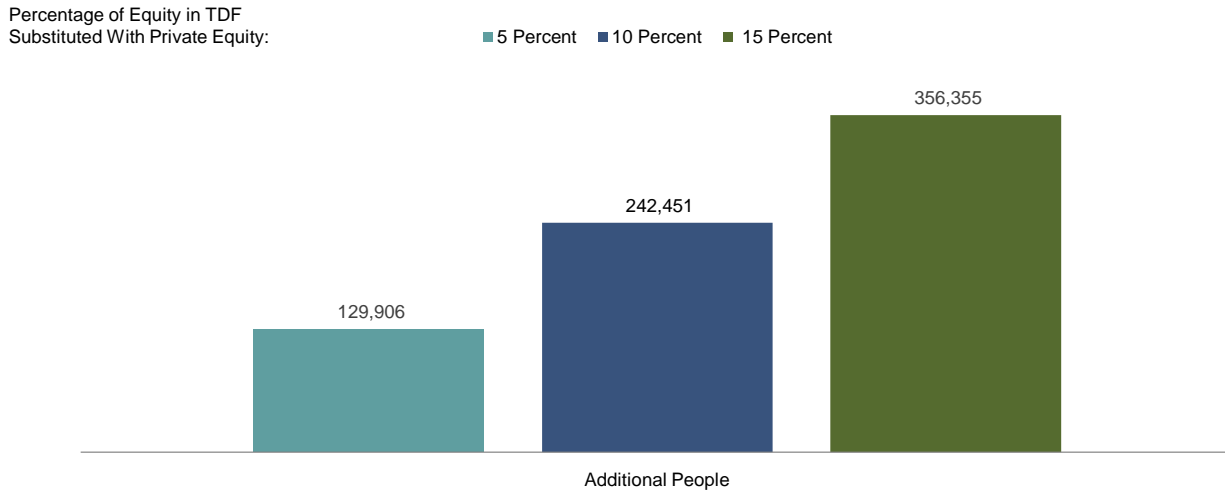
Source: Employee Benefit Research Institute Retirement Security Projection Model® Version 3682

A similar relationship exists as the percentage of equity in a TDF that is replaced by private equity is assumed to decrease. When 10 percent of equity in a TDF is replaced with private equity, the increase in RRR varies from 0.8 percentage points for those currently 35–39 to 0.4 percentage points for those currently ages 50–54. The increase in RRR varies from 0.4 percentage points for those currently 35–39 to 0.3 percentage points for those currently ages 50–54 when 5 percent of equity in a TDF is replaced with private equity.

Figure 2 sums the results for age cohorts 35–64 together for each of the scenarios above to show the additional people who would have the ability to retire at 65 without running short of money in retirement due to the increase in account balances associated with replacing various percentages of the equity in TDFs with private equity.<sup>14</sup> The additional number of 401(k) participants who would switch from running short of money in retirement to having sufficient resources given various levels of private equity in the TDF in place of a portion of the equity allocation would be:

- 5 percent PE: 129,906 participants.
- 10 percent PE: 242,451 participants.
- 15 percent PE: 356,355 participants.

Figure 2  
**Additional People Who Would Have the Ability to Retire at 65 Without Running Short of Money in Retirement Due to the Increase in Account Balances Associated With Replacing Various Percentages of the Equity in Target-Date Funds (TDFs) With Private Equity**



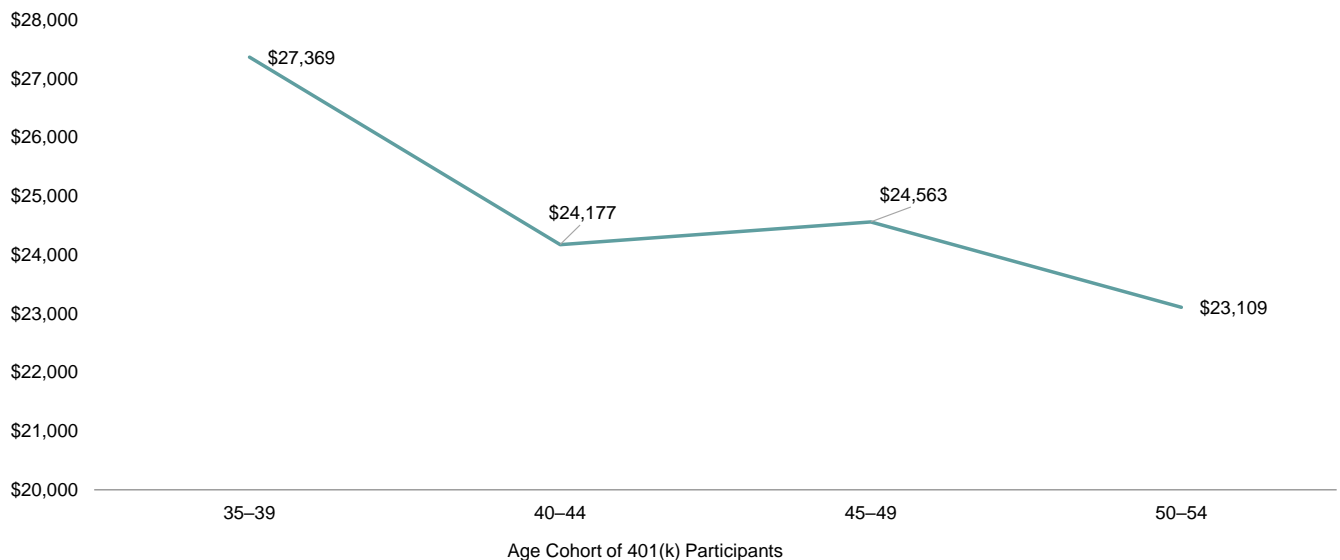
Source: Employee Benefit Research Institute Retirement Security Projection Model® Version 3682

### Decrease in Retirement Savings Shortfalls by Adding Private Equity to TDFs

While the RRRs in the previous section are an easy-to-understand metric, their simplicity represents a major limitation in quantifying retirement deficits, since someone simulated to run short of money in retirement could miss the threshold by only a few hundred dollars or by tens of thousands of dollars. As a result, EBRI started using the Retirement Savings Shortfalls (RSS) metric in 2010<sup>15</sup> to provide additional insight into the ability of various policy proposals and plan design changes to decrease simulated retirement deficits for the preretirement cohorts. RSS are defined as the present value of the simulated retirement deficits at retirement age (in today's dollars).

Figure 3 shows the RSS for the baseline scenario for those who are simulated to have at least 10 years of future participation in a 401(k) plan. The RSS for the youngest cohort is \$27,369 and decreases to \$23,109 for those 50–54.<sup>16</sup>

Figure 3  
**Retirement Savings Shortfalls for the Baseline Scenario: Limited to 401(k) Participants With at Least 10 Years of Future Participation**



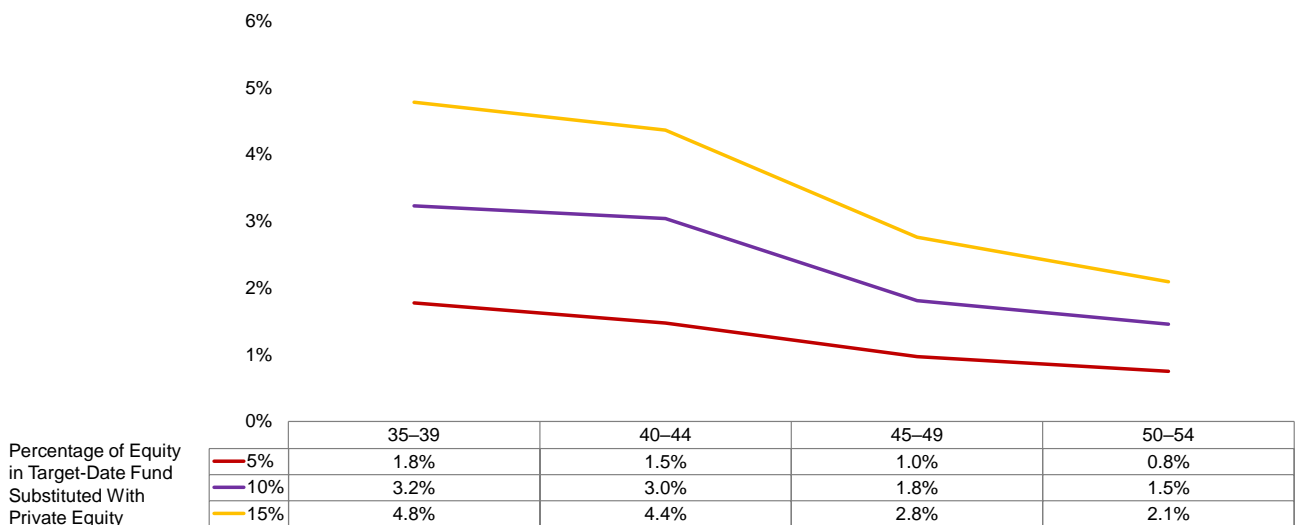
Source: Employee Benefit Research Institute Retirement Security Projection Model® Version 3683

Figure 4 shows the percentage decrease in RSS for those with at least 10 years of simulated future 401(k) participation. As expected, the reductions are largest for the youngest cohort, since they would have the most time to benefit from the modification in asset allocation for the TDF. When 15 percent of the equity in the TDFs is assumed to be replaced with private equity, the RSS reduction varies from 4.8 percent for the youngest cohort to 2.1 percent for the oldest cohort. The RSS reduction varies from 3.2 percent for the youngest cohort to 1.5 percent for the oldest cohort when 10 percent of the equity in the TDFs is assumed to be replaced with private equity, and it varies from 1.8 percent for the youngest cohort to 0.8 percent for the oldest cohort when 5 percent of the equity in the TDFs is assumed to be replaced with private equity.

Figure 5 shows the reduction in aggregate RSS summed over all age cohorts from 35–64 in billions of 2021 dollars due to the increase in account balances associated with replacing various percentages of the equity in TDFs with private equity.<sup>17</sup> When 15 percent of the equity in the TDFs is assumed to be replaced with private equity, the aggregate RSS reduction is \$37.3 billion. This value decreases to \$33.3 billion when 10 percent of the equity in the TDFs is assumed to be replaced with private equity and \$23.6 billion when 5 percent of the equity in the TDFs is assumed to be replaced with private equity.

It should be noted that these estimates may be viewed as conservative with respect to the Retirement Savings Shortfalls reduction since the analysis focused on those with at least 10 years of future participation in the 401(k) system (at least for those currently younger than age 55). When we looked at all 401(k) participants regardless of years of future participation, the baseline retirement deficits are much larger, and consequently, the dollar value of the reductions from including private equity in the TDF were larger than those shown in Figure 5. However, it was decided to use this filter to provide sufficient time for the advantages of including private equity in TDFs to accumulate in the 401(k) account balances.

Figure 4  
**Reduction in Retirement Savings Shortfalls by Age and Scenario: Limited to 401(k) Participants With at Least 10 Years of Future Participation**



Source: Employee Benefit Research Institute Retirement Security Projection Model® Version 3683



Figure 5  
Reduction in Aggregate Retirement Savings Shortfalls in Billions of 2021 Dollars Due to the Increase in Account Balances Associated With Replacing Various Percentages of the Equity in Target-Date Funds With Private Equity



Source: Employee Benefit Research Institute Retirement Security Projection Model© Version 3683

## Conclusion

American workers ages 35–64 are on track to fall \$3.68 trillion short of the money they will need to pay their expenses in retirement. There have been various legislative attempts to reduce this deficit in recent years. The most recent attempt was the Setting Every Community Up for Retirement Enhancement Act of 2019 (SECURE Act), which was simulated to reduce this deficit by \$114.9 billion.

The purpose of this report was to simulate the likely change in retirement income adequacy if a portion of the equity in 401(k) plan TDFs was replaced with private equity. We ran alternative simulations on the following percentages:

- 5 percent.
- 10 percent.
- 15 percent.

We found that every level of private equity modeled resulted in additional 401(k) participants (who are currently ages 35–64) being able to retire at age 65 without running short of money in retirement.

We also find that, depending on the percentage substitution, the present value of retirement deficits would be reduced by \$23.6 billion to \$37.3 billion. While this represents only a small fraction of the total retirement deficit, it should be noted that the scenario modeled in this paper would only impact some of the current aggregate retirement deficit, since some households will be simulated never to have a 401(k) plan, and even those who do would need to be simulated to invest in a TDF for this scenario to apply. Still, these numbers compare favorably with the expected impact of SECURE, even though the latter applies to all U.S. households in this age range.

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## Endnotes

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<sup>1</sup> This study is made possible through generous funding and allocation guidance by the American Investment Council. All results are hypothetical, holding all other plan design elements constant.

<sup>2</sup> VanDerhei (April 2020). While that number may seem extraordinarily large, it must be remembered that this applies to all U.S. households in that age range, whether they work for employers that sponsor retirement plans or not. The baseline scenario for this number also assumes Social Security retirement benefits are paid as currently calculated. For sensitivity analysis assuming that a proportional reduction in these benefits takes place when the Social Security trust fund is exhausted, see VanDerhei (March 2019).

<sup>3</sup> VanDerhei (March 2019).

<sup>4</sup> Currently, there are several legislative proposals that would provide additional assistance. For EBRI simulations of the Automatic Contribution Plan/Arrangement (ACPA), enhanced savers' credits, and allowing individuals to receive an employer match in their retirement plans for paying down a student loan, see VanDerhei (September 2021).

<sup>5</sup> VanDerhei (February 2020).

<sup>6</sup> VanDerhei (August 2019).

<sup>7</sup> VanDerhei (2009).

<sup>8</sup> Holden, VanDerhei, and Bass (2021).

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<sup>9</sup> The PPA created incentives for plan sponsors to implement auto-enrollment with its 401(k) safe harbor provisions. The PPA directed the Department of Labor to issue a regulation to assist employers in selecting default investments that best serve the retirement needs of workers who do not direct their own investments. The final regulation provides conditions that must be satisfied in order to obtain safe harbor relief from fiduciary liability for investment outcomes including, inter alia, that assets must be invested in a “qualified default investment alternative” (QDIA) as defined in the regulation. The final regulation provides for four types of QDIAs, including a product with a mix of investments that takes into account the individual’s age or retirement date (an example of such a product could be a lifecycle or targeted-retirement-date fund). For additional detail see VanDerhei and Copeland (2008).

<sup>10</sup> For a detailed examination of the potential impact on retirement savings of allowing 401(k) plan participants to invest in private equity (PE), see Cosic et al. (2021). They find that, under most reasonable assumptions, average retirement savings would increase when 401(k) plans include PE investments.

<sup>11</sup> It was decided to use this filter to provide sufficient time for the advantages of including private equity in TDFs to accumulate in the 401(k) account balances.

<sup>12</sup> All other assumptions are similar to those used in VanDerhei (February 2020) with the exception of the rate-of-return assumptions. All rate-of-return assumptions during the accumulation phase are based on one-year net returns from July 1, 1995, to June 30, 2020. Private equity returns are taken from PRIVATE EQUITY: INDEX AND SELECTED BENCHMARK STATISTICS, Cambridge Associates, June 30, 2020. <https://www.cambridgeassociates.com/wp-content/uploads/2020/11/WEB-2020-Q2-Global-Private-Equity.pdf>

<sup>13</sup> The simulation holds all other plan design elements constant (e.g., there is no liquidity buffer for the private equity assumed) and does not reflect specific administrative, legal, or operational considerations for changes to TDF asset allocation.

<sup>14</sup> The additional people simulated for ages 55–64 are based on the analysis of those with any future 401(k) participations (since they would not meet the minimum 10-year filter by the assumed retirement age of 65).

<sup>15</sup> VanDerhei (2010).

<sup>16</sup> Note that these values are not directly comparable to those published in VanDerhei (March 2019) for two reasons. First, the numbers in this report are limited to 401(k) participants. Second, the rate-of-return assumptions are based on a different time period.

<sup>17</sup> The deficit reductions simulated for ages 55–64 are based on the analysis of those with any future 401(k) participations (since they would not meet the minimum 10-year filter by the assumed retirement age of 65).