

## Under the Dome — A Closer Look at Legislative Proposals Impacting Retirement

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

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### AT A GLANCE

The EBRI Retirement Security Projection Model® was developed to provide an assessment of national retirement adequacy prospects. The baseline analysis shows the current state of the employer-based retirement system and its ability to allow workers to sufficiently cover simulated expenses — including uninsured health expenses — during retirement. However, the model also has the flexibility to quantify the impact of potential changes to the retirement system on projected retirement deficits. In this *Issue Brief*, we examine several legislative proposals, including ones geared to improve coverage, reduce plan leakage, increase utilization of guaranteed income for life solutions, and delay and/or reduce required minimum distributions (RMDs). We find that:

- Expanding retirement plan eligibility by requiring a plan for all employers except those with fewer than 10 employees would make a substantial impact on the youngest employees simulated (ages 35–39), even though we assume that all new plans take the form of an auto-IRA with lower contribution limits and no employer contributions. This modification is simulated to decrease the retirement deficit for this age cohort by 15.2 percent. When the auto-escalation cap for the auto-IRAs is increased from 10 percent to 15 percent, the average retirement deficit is simulated to decrease by 17.0 percent. If, in addition to these provisions, all non-excludable employees are covered by the plan, the average retirement deficit for this cohort is simulated to decrease by 17.3 percent. If, in addition to the coverage enhancements mentioned above, a full auto portability scenario is assumed, the average retirement deficit is simulated to decrease by 27.1 percent.
- There is an overall positive impact in using half of 401(k) or 403(b) balances at age 65 to purchase an immediate annuity. The results vary with the simulated date of death, but overall, a single premium immediate annuity purchase amounting to 50 percent of 401(k) or 403(b) balances at age 65 would decrease average retirement deficits by \$985.
- Open multiple employer plans (MEPs) are simulated to result in a significant reduction in retirement deficits for those who would have spent a considerable portion of their work career without eligibility for an employer-sponsored retirement plan. When we look at reductions in retirement deficits as a function of the number of years an employee would have been without eligibility for an employer-sponsored retirement plan in lieu of an open MEP, we find those with the least amount of eligibility would have a decrease in their average retirement deficit of 26.7 percent.
- The one-time impact on individual retirement account (IRA) distributions for those ages 71–100 under several combinations of increases in RMD life expectancy and/or increases in the start date of RMDs ranges from as small as 0.2 percent to as much as 8.4 percent.

Jack VanDerhei is director of research at the Employee Benefit Research Institute (EBRI). This *Issue Brief* was written with assistance from the Institute’s research and editorial staffs. Any views expressed in this report are those of the author and should not be ascribed to the officers, trustees, or other sponsors of EBRI, Employee Benefit Research Institute-Education and Research Fund (EBRI-ERF), or their staffs. Neither EBRI nor EBRI-ERF lobbies or takes positions on specific policy proposals. EBRI invites comment on this research.

**Suggested Citation:** Jack VanDerhei. “Under the Dome – A Closer Look at Legislative Proposals Impacting Retirement,” *EBRI Issue Brief*, no. 486 (Employee Benefit Research Institute, July 11, 2019).

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## Introduction

Although the question of whether a retirement “crisis” exists (and if so, to what extent) is still the subject of considerable debate,<sup>1</sup> several legislative proposals<sup>2</sup> have been recently introduced or reintroduced that could have a significant impact on retirement coverage as well as on the ability of individuals to manage important retirement-related risks.

Since 2003 EBRI has used its Retirement Security Projection Model<sup>®</sup> (RSPM) to evaluate retirement income adequacy on a national basis. EBRI’s use of RSPM<sup>®</sup> typically is confined to analysis of the current retirement system. However, it has periodically been used to evaluate the potential impact of changes to the system, primarily from proposed legislative changes:

- The “20/20 caps” proposed by the National Commission on Fiscal Responsibility and Reform.<sup>3</sup>
- Modifying the tax treatment of employee and/or employer contributions.<sup>4, 5, 6</sup>
- The Obama administration’s budget proposal to include a cap on tax-deferred retirement savings.<sup>7</sup>
- Reductions in the current Social Security retirement benefit structure.<sup>8</sup>
- Rothification of 401(k) contributions.<sup>9, 10</sup>
- The Automatic Retirement Plan Act of 2017.<sup>11</sup>

As part of EBRI’s May 2019 Policy Forum, RSPM<sup>®</sup> was used to simulate the impact of some of the more important aspects of current legislative proposals, including:

- Requiring retirement plans for all but the smallest employers.
- Covering part-time employees.
- Introducing auto portability.
- Providing the option of guaranteed income for life from 401(k) and 403(b) plans.
- Allowing open multiple employer plans (MEPs).
- Modifying required minimum distributions.

As such, the analyses in this *Issue Brief* are not specific to any one legislative proposal and certainly are not meant to represent the entirety of any single proposal. Instead, the impact of these items (either by themselves or in combination with others) is analyzed to provide a quantitative estimate on the impact on retirement income adequacy. In most cases this impact is measured by changes in the average simulated retirement deficits.

## Background: EBRI’s Retirement Security Projection Model<sup>®</sup>

RSPM<sup>®</sup> simulates retirement income adequacy for all U.S. households between the ages of 35 and 64. The model’s accumulation module reflects the real-world behavior of 27 million 401(k) participants as well as 20 million individuals with individual retirement accounts (IRAs).<sup>12</sup>

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

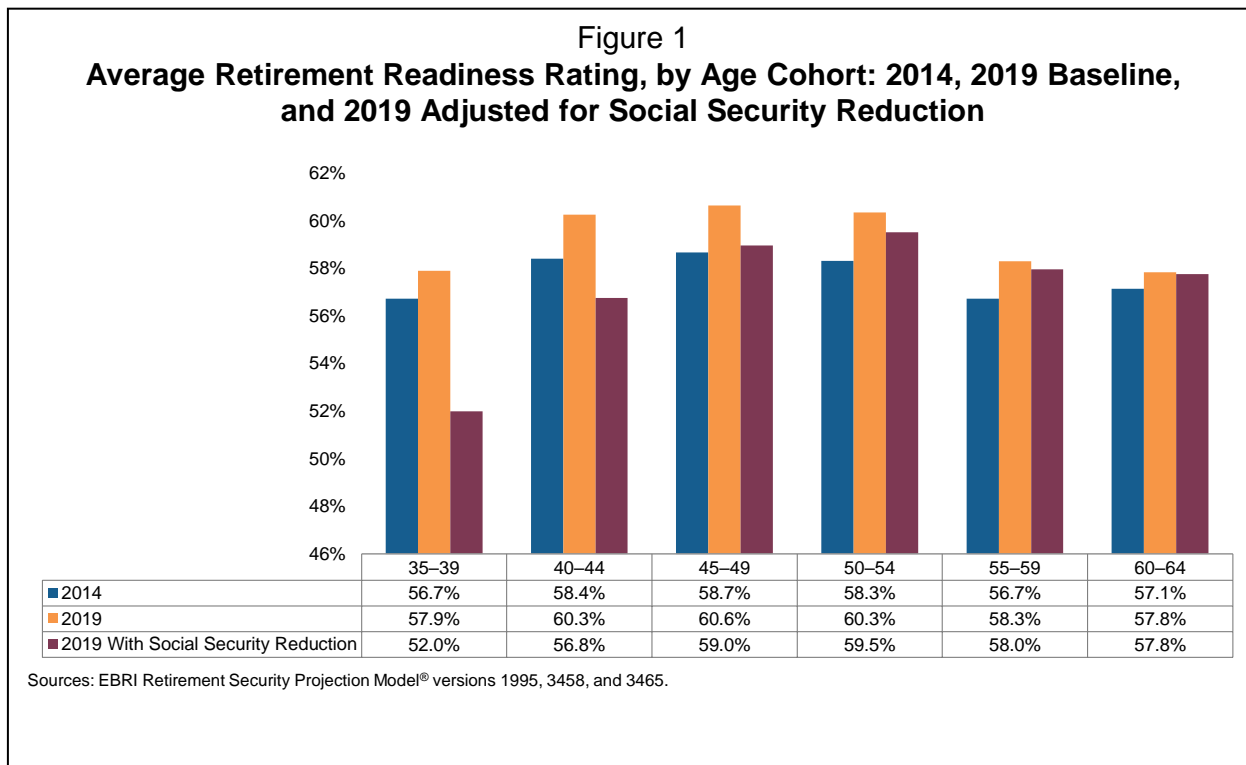
- The EBRI Retirement Readiness Ratings™ (RRRs) show the probability that households will NOT run short of money in retirement.
- Retirement Savings Shortfalls (RSS) give the size of the deficits that households are simulated to generate in retirement.

### Baseline Retirement Readiness

Overall, the average RRR for 2014 was 57.7 percent. In other words, RSPM® projected that 57.7 percent of U.S. households will NOT run short of money in retirement. In 2019, this value increased by 1.7 percentage points to 59.4 percent (Figure 1). In other words, the most recent version of the EBRI simulation model estimates that 4 percent fewer households will run short of money in retirement than was the case with the 2014 version of the model.

### Impact of Reduced Social Security Benefits

The baseline version of RSPM® assumes that future Social Security retirement benefits under current law will not be modified. However, the current Social Security Trustees Report projects that the funds for Old-Age and Survivors Insurance (OASI) will be exhausted by 2034. While this would not result in Social Security retirement benefits being eliminated, left unaddressed, it might well require a reduction in benefits for at least some cohorts of retirees. Assuming a pro-rata reduction of 23 percent once the OASI Trust Fund reserves become depleted in 2034, the average RRR of the youngest cohort (ages 35–39) would decrease by 5.9 percentage points, from 57.9 percent to 52.0 percent (Figure 1). Older cohorts would experience less of an impact: those ages 40–44 would have a decrease of 3.5 percentage points from the 2019 baseline values, while those ages 45–49 would have a 1.7 percentage point decrease. The average RRR for households above age 50 would decrease but by less than 1 percentage point.



## EBRI Retirement Security Projection Model® 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.

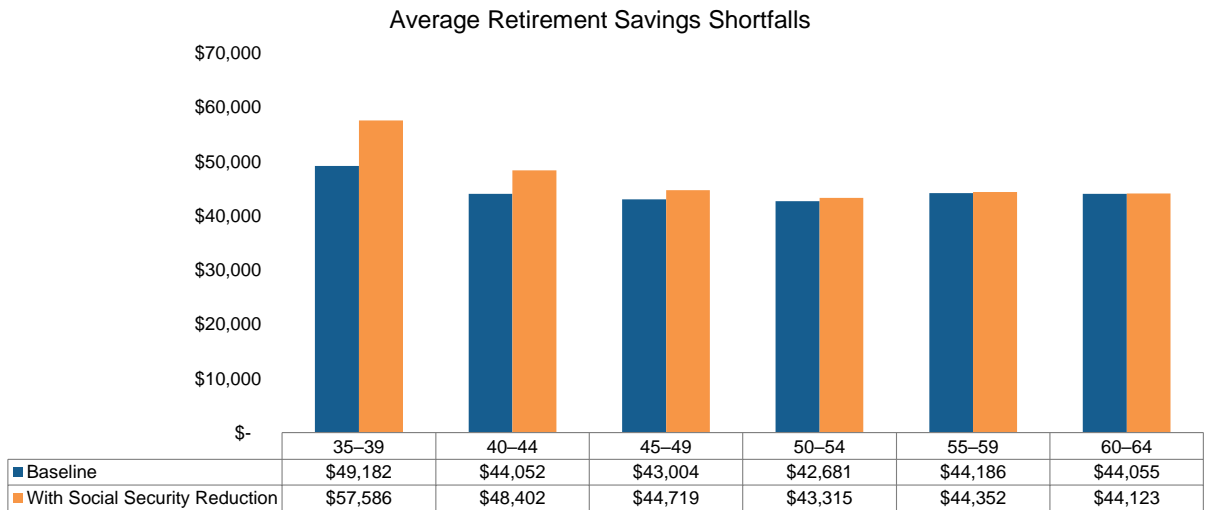
The baseline version of the model used for this analysis assumes all workers retire at age 65; that they immediately begin drawing benefits from Social Security and defined benefit plans (if any); and, to the extent that the sum of their expenses and uninsured medical expenses exceed the projected, after-tax 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.

Figure 2 shows the impact of reduced Social Security benefits on households' projected retirement deficits.<sup>13</sup> For the youngest age cohort (ages 35–39), reduced Social Security benefits increase the average projected deficit by 17 percent — from \$49,182 to \$57,586. For those ages 40–44, the deficit increases 10 percent (from \$44,052 to \$48,402); for those ages 45–49 it increases 4 percent (from \$43,004 to \$44,719); and for those ages 50–54 it increases just 1 percent (from \$42,681 to \$43,315). The average deficit for households above age 55 increases by less than 1 percent.

### Retirement Plan Eligibility

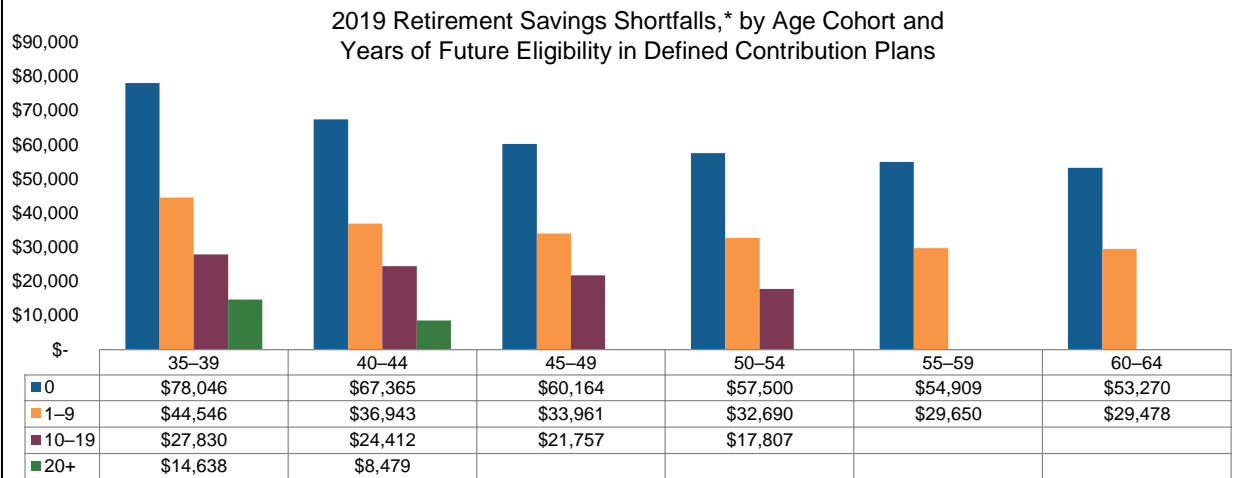
Eligibility for participation in a defined contribution (DC) plan can have a significant impact on reducing savings shortfalls. Figure 3 considers all workers (both eligible and ineligible) and gives the average individual retirement income deficits by the number of future years of eligibility for coverage 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.

**Figure 2**  
**Average Retirement Deficits, by Age; With and Without Reductions in Social Security Benefits (Starting in 2034)**



Source: EBRI Retirement Security Projection Model® version 3461.

**Figure 3**  
**Average Retirement Deficits, by Age and Future Eligibility for Defined Contribution (DC) Plans**



Source: EBRI Retirement Security Projection Model® version 3459.

\* The Retirement Savings Shortfalls (RSS) are determined as a present value of retirement deficits at age 65.

## Coverage Enhancements

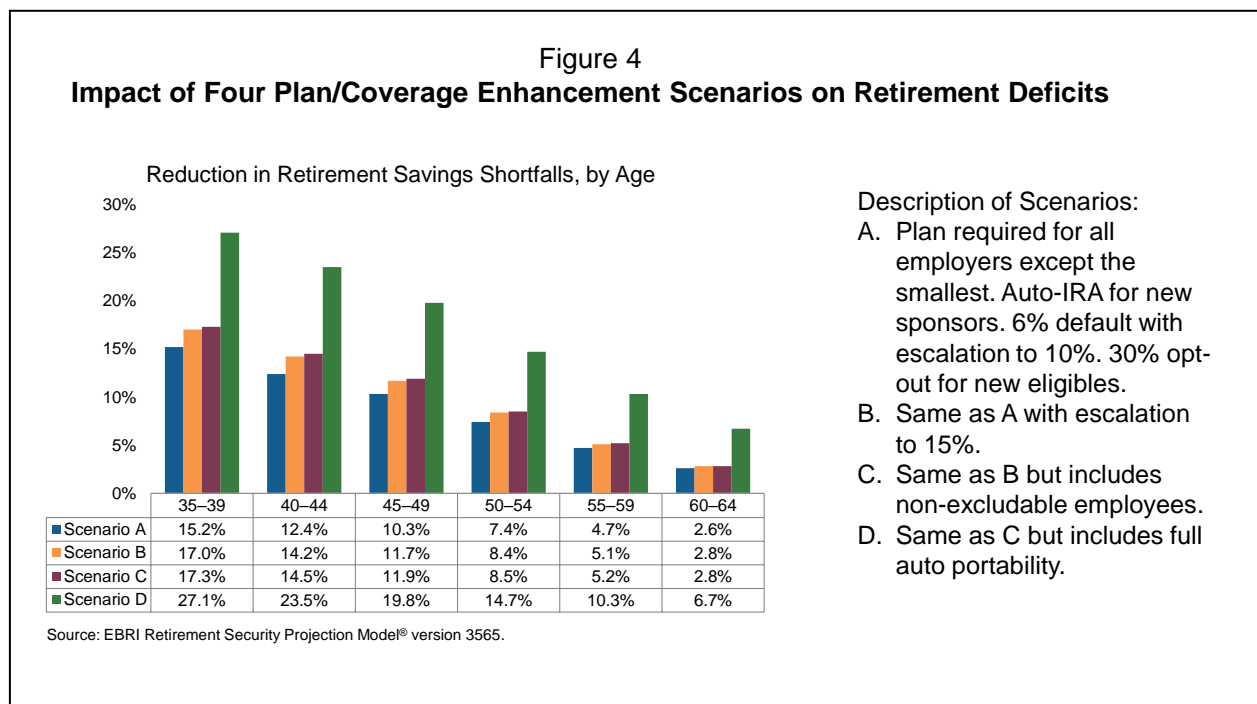
Figure 4 shows the reduction in retirement deficit by age for three different coverage enhancements.

Scenario A assumes all employers are required to offer DC plans, save those with fewer than 10 employees. This analysis assumes that all new plans would be auto-IRAs with a 6 percent default contribution rate that escalates by 1 percent per year until it reaches 10 percent of pay. Based on experience observed from OregonSaves,<sup>14</sup> a 30 percent opt-out is assumed for all new eligibles.

As expected, the youngest age cohort (35–39) would have the largest benefit — a 15.2 percent decrease in retirement deficit — since they would be exposed to the enhanced coverage for a longer period of time. Those in the 40–44 age cohort are simulated to have a 12.4 percent reduction in deficit and those 45–49 are simulated to have a 10.3 percent reduction in deficit. Cohorts over 50 are also simulated to have reductions in retirement deficits; however, the reductions are less than 10 percent.

Scenario B is similar to Scenario A but with a cap on auto-escalation of 15 percent of pay. In this case, the youngest cohort (those ages 35–39) is simulated to have a 17.0 percent reduction in retirement deficit, while those in the 40–44 age cohort are simulated to have a 14.2 percent reduction in deficit. Those ages 45–49 are simulated to have an 11.7 percent reduction in deficit, while cohorts over age 50 are also simulated to have reductions in retirement deficits that are less than 10 percent.

Scenario C is similar to Scenario B, except that all non-excludable employees are covered.<sup>15</sup> In this case, the youngest cohort (those ages 35–39) is simulated to have a 17.3 percent reduction in retirement deficit, while those in the 40–44 age cohort are simulated to have a 14.5 percent reduction in deficit. Those 45–49 are simulated to have an 11.9 percent reduction in deficit, while cohorts over age 50 are simulated to have reductions in retirement deficits that are less than 10 percent.





## Auto Portability

Finally, in Scenario D of Figure 4, we analyze the impact of auto portability on retirement deficits. Auto portability is designed to retain DC assets within the retirement system and reduce “leakage” from cashouts upon employment termination. This is important because studies have found that cashouts are the most significant form of leakage from DC plans, especially among workers with low plan balances.<sup>16</sup> As such, Scenario D assumes that upon termination, participants in Scenario C would have the account from their former employer automatically combined with their active account in a new employer’s plan.<sup>17</sup>

When auto portability is in place, the youngest cohort (those ages 35–39) is simulated to have a 27.1 percent reduction in retirement deficit, while those in the 40–44 age cohort are simulated to have a 23.5 percent reduction in deficit and those 45–49 are simulated to have a 19.8 percent reduction in deficit. Those in the 50–54 age cohort are simulated to have a 14.7 percent reduction in deficit, and those 55–59 are simulated to have a 10.3 percent reduction in deficit. Cohorts over age 60 are also simulated to have reductions in retirement deficits; however, the reductions are less than 10 percent.

## Guaranteed Income for Life

Longevity risk would not be as much of a factor if all retirement income was taken in the form of an annuity — either as a real annuity such as Social Security or a nominal annuity such as a private-sector defined benefit plan. However, given that only a very small percentage of defined contribution and IRA balances are currently annuitized, and that a substantial percentage of defined benefit accruals are eligible for a lump-sum distribution, the prospect of “outliving” this portion of their retirement wealth is a very real risk for many future retirees. Previous EBRI research examined the impact of longevity risk on retirement income adequacy by relative longevity quartiles.<sup>18</sup> It found that the additional savings required for those on the verge of retirement (Early Boomers) vary from \$7,188 (per individual) for those in the quartile with the lowest relative longevity to \$81,811 for those in the quartile with the greatest relative longevity. Overall, the deficit for those in the greatest relative longevity quartile averages 14.8 times those in the lowest relative longevity quartile.

### Annuity Assumptions

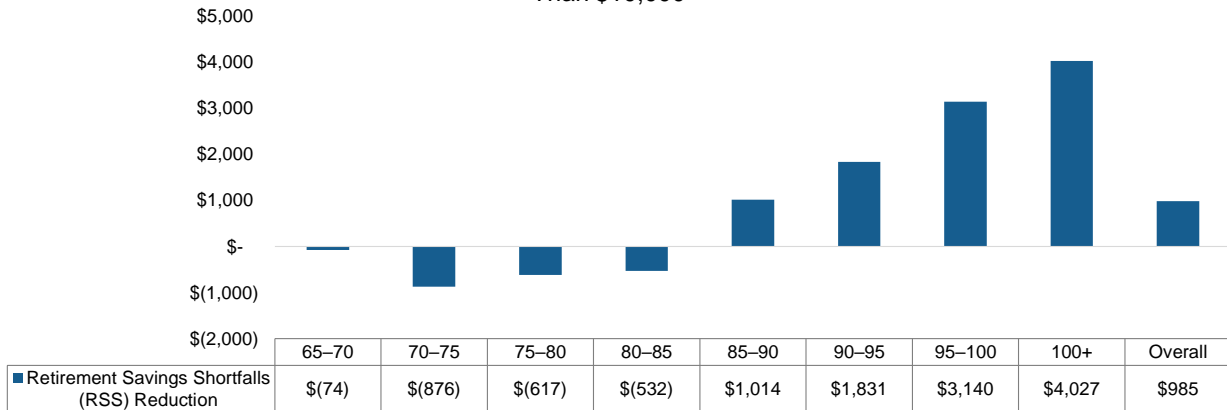
Given the need to convert the DC account balance to a nominal annuity, the choice of an annuity purchase price is an essential assumption. One obvious choice would be to determine the rate at which a 65-year-old would be able to convert a lump-sum distribution to a nominal annuity in today’s market. However, these rates are currently above average from a time-series perspective and could bias the results for individuals who will not reach age 65 for several years. The analysis in Figure 5 uses an implied annuity purchase price for a time when bond rates were closer to historical norms to provide a better benchmark.

So what might the impact be of having half of all 401(k) or 403(b) plan distributions taken in the form of guaranteed income for life at age 65?<sup>19</sup> For purposes of this determination, average-annuity-rate data for different age groups and genders from 1986–2013 were obtained,<sup>20</sup> and the gender-specific prices at age 65 are regressed against Moody’s AAA Corporate Bond yields and a time dummy (to control for changes in life expectancy over this period of time). Using the regression coefficients and multiplying by the maximum value of the time variable (viz., today) and the average corporate bond rate during that time period (6.85 percent), the benchmark annuity purchase prices are determined to be 11.61 for males and 12.34 for females.

The results in Figure 5 show the change in average retirement deficits by age at simulated death. For those who die prior to age 85, there is an *increase* in retirement deficit: those who die 5 years into retirement (by age 70) are projected to have a \$74 average increase.<sup>21</sup> The average increase in deficits for those who die between 70 and 75 is \$876. The increase gradually scales down to \$617 for those who die between ages 75 and 80 and to \$532 for those who die between ages 80 and 85.

**Figure 5**  
**Impact of Guaranteed Income for Life on Retirement Deficits**  
**FOR THOSE WHO UTILIZE THE PROVISION**

Average Retirement Deficit Reductions by Age at Death From Assuming 50% of 401(k) Balances Used to Purchase Single Premium Immediate Annuity at Age 65 at Annuity Purchase Price Based on Historical Average for Discount Rates; Excludes Balances Less Than \$10,000



Source: EBRI Retirement Security Projection Model<sup>®</sup> version 3568.

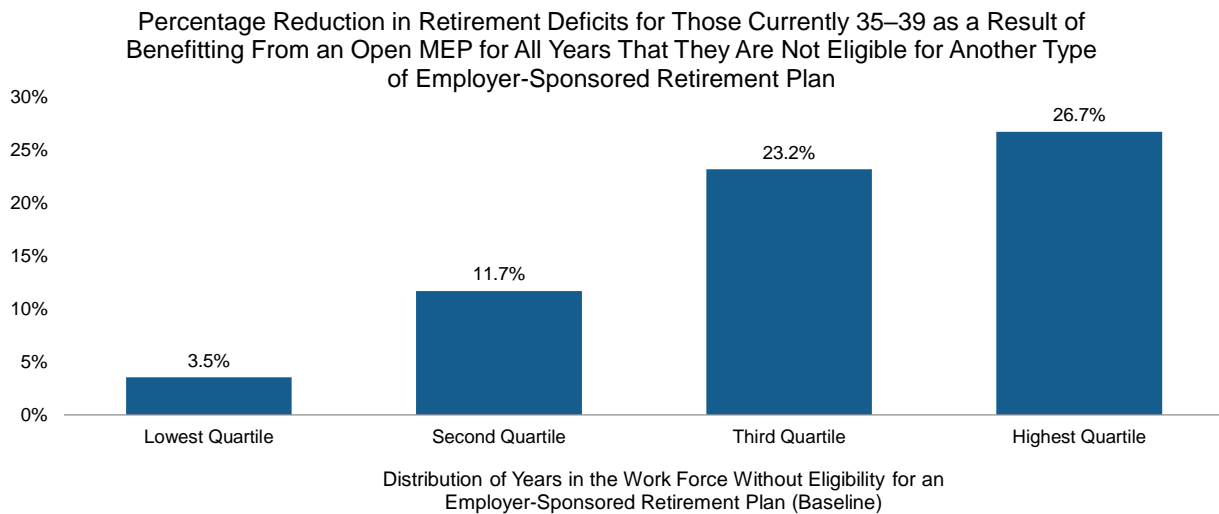
For those who die after age 85, however, the purchase of a single premium immediate annuity with 50 percent of the 401(k) or 403(b) account balance provides *reductions* in average retirement deficits. For those who die between ages 85 and 90, the average retirement deficit decreases by \$1,014. The reductions in average retirement deficits increase substantially for those who die at later ages: \$1,831 for those who die between 90 and 95, \$3,140 for those who die between 95 and 100, and \$4,027 for those who die after age 100.

Overall, the impact of using 50 percent of the 401(k) or 403(b) balance to buy a single premium immediate annuity at age 65 is to decrease retirement deficits by \$985.

## Open MEPs

The potential impact of open MEPs on retirement income adequacy is heavily dependent upon plan sponsor adoption of such retirement vehicles.<sup>22</sup> Rather than make assumptions about adoption, EBRI models a scenario in which all workers currently ages 35–39 benefit from the availability of an open MEP for all years during which they might not be eligible for another type of employer-sponsored retirement plan (under the baseline assumptions). Workers are divided into four quartiles according to their lack of eligibility (Figure 6). For example, those in the lowest “lack of eligibility” quartile are workers who are eligible for an employer-sponsored retirement plan for all future years in their working career as well as those who lack only a few years of eligibility. As expected, the percentage reduction in retirement deficits from the introduction of open MEPs for these individuals is de minimis (3.5 percent). However, the second quartile is simulated to have an 11.7 percent reduction in retirement deficit from open MEPs, while the third quartile is simulated to have a 23.2 percent reduction. Individuals in the highest quartile (where the most lack eligibility) are simulated to have a 26.7 percent reduction in average retirement deficit.

**Figure 6**  
**Open Multiple Employer Plans (MEPs) Are Simulated to Result in a Significant Reduction in Retirement Deficits for Those Who Would Have Spent a Considerable Portion of Their Work Career Without Eligibility for an Employer-Sponsored Retirement Plan**



Source: EBRI Retirement Security Projection Model<sup>®</sup> version 3437.

## Impact of Required Minimum Distribution Requirement

In general, individuals have to start taking withdrawals from their IRA or retirement plan account when they reach age 70½.<sup>23</sup> The required minimum distribution (RMD) for any year is the account balance as of the end of the immediately preceding calendar year divided by a distribution period from the IRS’s “Uniform Lifetime Table.” There have been suggestions lately to modify this provision by moving back the start date from age 70½ and/or modifying the distribution period to reflect updates in the mortality table.

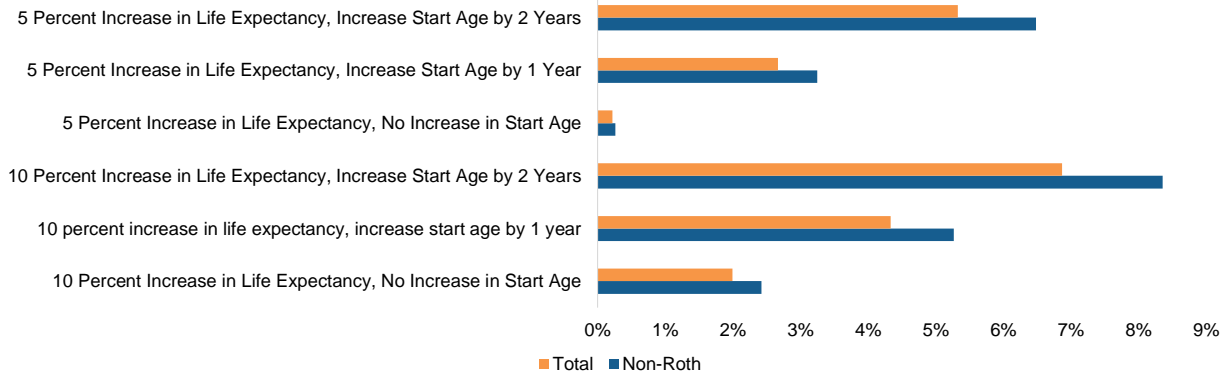
Figure 7 shows the decrease in IRA distributions for those ages 71–100 that would result from changing the RMD life expectancy and/or the starting date for taking RMDs. Results are shown for non-Roth accounts as well as total accounts. The analysis assumes a change in behavior only from those currently taking RMDs.

An ad hoc increase in life expectancy of 5 percent with no increase in the age provides relatively small decreases in the IRA distributions: 0.2 percent for total balances and 0.3 percent for the non-Roth balances. When the 5 percent increase in life expectancy is combined with a one-year increase in the starting age (to 71 ½), the decreases in IRA distributions are 2.7 percent (total) and 3.2 percent (non-Roth). When the 5 percent increase in life expectancy is combined with a two-year increase in the start age (to 72 ½), the decreases in IRA distributions are 5.3 percent (total) and 6.5 percent (non-Roth).

An ad hoc increase in life expectancy of 10 percent with no increase in the start age provides a 2.0 percent decrease in the IRA distributions for total balances and 2.4 percent for the non-Roth balances. When the 10 percent increase in life expectancy is combined with a one-year increase in the start age (to 71 ½), the decreases in IRA distributions are 4.3 percent (total) and 5.3 percent (non-Roth). When the 10 percent increase in life expectancy is combined with a two-year increase in the start age (to 72 ½), the decreases in IRA distributions are 6.9 percent (total) and 8.4 percent (non-Roth).

## Figure 7 Impact of Required Minimum Distribution Modifications

Decrease in 2016 Individual Retirement Account (IRA) Distributions for Those Ages 71–100 From Increasing the RMD Life Expectancy and/or the Start Date: Assumes Reaction Only From Those Currently Taking RMD



Source: EBRI Retirement Security Projection Model<sup>®</sup> version 3445.

## Conclusions and Future Research

The EBRI Retirement Security Projection Model<sup>®</sup> was developed to provide an assessment of national retirement adequacy prospects. The baseline analysis shows the current state of the employer-based retirement system and its ability to allow workers to sufficiently cover simulated expenses — including uninsured health expenses — during retirement. However, the model also has the flexibility to quantify the impact of potential changes to the retirement system on projected retirement deficits. In this case, we looked at several legislative and regulatory proposals, including ones geared to improve coverage, reduce plan leakage, increase utilization of guaranteed income for life solutions, and delay and/or reduce required minimum distributions.

We found that:<sup>24</sup>

- Expanding retirement plan eligibility by requiring a plan for all employers except those with fewer than 10 employees would make a substantial impact on the youngest employees simulated (ages 35-39), even though we assume that all new plans take the form of an auto-IRA with lower contribution limits and no employer contributions.
- Overall, a single premium immediate annuity purchased with 50 percent of the 401(k) or 403(b) balances at age 65 would decrease retirement deficits by \$985.
- Open MEPs are simulated to result in a significant reduction in retirement deficits for those who would have spent a considerable portion of their work career without eligibility for an employer-sponsored retirement plan.
- The one-time impact on distributions of increasing RMD life expectancy and/or the start date for taking RMDs would range from as small as 0.2 percent to as much as 8.4 percent.

By quantifying the impact of potential changes, EBRI allows plan sponsors, providers, and policymakers to better understand their ramifications. This, in turn, can lead to better decision-making that affects the lives of millions of American workers.

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## Endnotes

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<sup>1</sup> For an excellent summary of the literature in this regard, see Mackenzie (forthcoming) and Bajtelsmit and Rappaport (2018).

<sup>2</sup> These include: the Retirement Enhancement and Savings Act, the Setting Every Community Up for Retirement Enhancement (SECURE) Act, and the Retirement Security and Savings Act. In addition, the Automatic Retirement Plan Act of 2017 is expected by many to be the basis for discussion of retirement reform in the House this year.

<sup>3</sup> VanDerhei (July 2011).

<sup>4</sup> VanDerhei, 15 Sept. 2011.

<sup>5</sup> VanDerhei (November 2011).

<sup>6</sup> VanDerhei (March 2012).

<sup>7</sup> VanDerhei (August 2013).

<sup>8</sup> VanDerhei (February 2014).

<sup>9</sup> VanDerhei (May 2017).

<sup>10</sup> VanDerhei (October 2017).

<sup>11</sup> VanDerhei (May 2018).

<sup>12</sup> RSPM® was derived from efforts in the late 1990s on behalf of certain states to determine whether their residents would have sufficient income when they reached retirement age. After conducting studies for Oregon, Kansas, and Massachusetts, a national model was developed in 2003. It was updated in 2010 to incorporate several significant changes, including the impacts of defined benefit (DB) plan freezes, automatic enrollment provisions for 401(k) plans, and the crises in the financial and housing markets. New versions of the model have been generated on a periodic basis since then to include updates for financial and real estate market performance, employee demographics, etc.

<sup>13</sup> The RSS values provide information on average individual retirement income deficits. These numbers are present values (in 2019 dollars) at age 65 and represent the additional amount that individuals will have to save by age 65 to eliminate their expected deficits in retirement (which, depending on the simulated life-path, could be a relatively short period or could last decades).

<sup>14</sup> For additional detail on OregonSaves, see VanDerhei (October 2018).

<sup>15</sup> The only employees not required to be covered are:

- Employees who have not attained age 21.
- Employees subject to a collective bargaining agreement.
- Nonresident aliens with no U.S.-source income.
- Employees until they have attained (1) a year of service (generally a year in which the employee has at least 1,000 hours of service), or (2) two consecutive years in which the employee has at least 500 hours of service.

<sup>16</sup> VanDerhei (June 2014).

<sup>17</sup> The impact of adding auto portability to the current defined contribution system was explored in VanDerhei (July 2018).

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<sup>18</sup> VanDerhei (February 2014) and VanDerhei (February 2015).

<sup>19</sup> Except in the case of a small employer with 100 employees or fewer. Accounts included in the analysis have at least \$10,000 and are fully vested.

<sup>20</sup> The information is from [immediateannuities.com](http://immediateannuities.com) and available at the following site: [www.annuityshopper.com/archives/](http://www.annuityshopper.com/archives/). The author would like to express his gratitude to K. Jeremy Ko for suggesting the data and to Hersh Stern for providing the data in an Excel file.

<sup>21</sup> The value is relatively small since most households with account balances greater than \$10,000 have sufficient resources that they will not run short of money in retirement within five years even though 50 percent of the current 401(k) or 403(b) balance was used to purchase a single premium immediate annuity.

<sup>22</sup> VanDerhei (October 2018).

<sup>23</sup> Roth IRAs do not require withdrawals until after the death of the owner.

<sup>24</sup> It should be noted that in most cases this analysis was devoted specifically to analyzing the present values of retirement deficits. While this output metric may be preferred for public policy analysis focusing on retirement income adequacy, it actually masks much of the impact of the scenarios analyzed in this *Issue Brief*. For example, in Figure 3, to the extent that a household was NOT simulated to run short of money in retirement under the baseline, increasing their access to an employer-sponsored defined contribution plan did not change their simulated RSS (it was still zero). EBRI has developed alternative output metrics (Retirement Savings Surplus and Net Retirement Savings Surplus) during its analysis of the Rothification proposals in 2017 and will apply them to these scenarios in a future *Issue Brief*.