

## How Retirement Readiness Varies by Gender and Family Status: A Retirement Savings Shortfall Assessment of Gen Xers

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

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### AT A GLANCE

Measuring retirement security — or retirement income adequacy — is an extremely important topic. In recent years, there has been an increasing emphasis on the retirement income adequacy of widows and single women. EBRI's Retirement Security Projection Model<sup>®</sup> (RSPM) can assess the size of households' retirement deficit by modeling Retirement Savings Shortfalls (RSS). In this *Issue Brief*, an RSPM<sup>®</sup> module classifies households by the following gender and marital statuses: single female, widow, single male, and widower. Key findings are:

- The retirement deficit — or additional savings required to meet basic needs in retirement — is higher for both widows and single females:
  - The average RSS is \$18,476 per individual for married households where the female dies first (widowers).
  - The average RSS is \$22,783 for married households where the male dies first (widows).
  - The average RSS is \$37,690 for single males.
  - The average RSS is \$72,883 for single females.
- When households for which no shortfall is projected are excluded from the analysis, the average size of the shortfall is \$76,896 for widows vs. \$82,937 for widowers. Single females in the lowest pre-retirement wage quartile have an average RSS of \$110,412 vs. those in the highest quartile with an average RSS of only \$28,951. For single males, the gender discrepancy in average RSS goes from \$29,736 for those in the lowest wage quartile to \$12,465 for those in the highest quartile.
- Not only are single females more likely to have retirement deficits, their retirement deficits are likely to be significantly larger than those of other cohorts.
  - Single females are the only cohort with at least 50 percent of households having a deficit.
  - The median RSS for this group is \$19,900.
  - 10 percent of single females have an RSS of at least \$222,592.
- Nearly half (48 percent) of single females at the lowest income quartile have at least a \$100,000 RSS (connoting serious potential financial complications in retirement).
  - This compares to a third (33 percent) of single males and 42 percent of widows.

- Even in the highest income quartile 13 percent of single females have an RSS of at least \$100,000, vs. 7 percent for single males, 4 percent for widows, and 3 percent for widowers.
- Lack of eligibility for participation in a defined contribution (DC) plan significantly increases savings shortfalls.
  - Single females with no future eligibility in a DC plan have an average RSS of \$97,325 vs. the \$24,486 average RSS of those with at least 21–30 years of future eligibility.
  - The average RSS is \$39,016 worse for single females than for single males with no future DC plan eligibility.
  - The discrepancy in average RSS between widows and widowers with no future DC plan eligibility is \$6,529.
- In contrast, future eligibility in DC plans can dramatically reduce serious potential financial complications in retirement.
  - 42 percent of female households with no future DC plan eligibility have an RSS of at least \$100,000 compared with 11 percent of those with 21–30 years of future eligibility.
  - 13 percent of widows with no future DC plan eligibility have an RSS of at least \$100,000, vs. 3 percent with 21–30 years of future eligibility.
- Auto portability — where a participant’s account from a former employer’s retirement plan would be automatically combined with their active account in a new employer’s plan — can also have a large impact.
  - For those with 21–30 years of future DC eligibility, auto portability reduces average RSS by 21 percent for single females to as much as 38 percent for widowers.

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 authors and should not be ascribed to the officers, trustees, or other sponsors of EBRI, 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. “How Retirement Readiness Varies by Gender and Family Status: A Retirement Savings Shortfall Assessment of Gen Xers.” *EBRI Issue Brief*, no. 471 (Employee Benefit Research Institute, January 17, 2019).

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# How Retirement Readiness Varies by Gender and Family Status: A Retirement Savings Shortfall Assessment of Gen Xers

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## Introduction

Measuring retirement security — or retirement income adequacy — is an extremely important topic. 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. After conducting studies for Oregon, Kansas, and Massachusetts, a national model — the EBRI Retirement Security Projection Model<sup>®</sup> (RSPM) — was developed in 2003, and in 2010 it was updated to incorporate several significant changes, including the impacts of defined benefit (DB) plan freezes, automatic enrollment provisions for 401(k) plans, and the recent crises in the financial and housing markets.<sup>1</sup>

Previously,<sup>2</sup> EBRI published extensive analysis from RSPM<sup>®</sup> that focused on the EBRI Retirement Readiness Ratings<sup>™</sup> (RRRs) — the probability that households will *not* run short of money in retirement. While knowing the percentage of households who will be at risk for inadequate retirement income is important for public policy analysis, perhaps more important is knowing just how large the accumulated deficits are likely to be. This *Issue Brief* expands on earlier analysis<sup>3</sup> by providing an assessment of retirement readiness via the Retirement Savings Shortfalls (RSS) — the size of the deficits that households are simulated to generate in retirement. Although EBRI has always provided breakouts for gender/family status at retirement age,<sup>4</sup> in the past they were limited to single male, single female, and married. Given the increasing emphasis on the retirement income adequacy of widows and single women in recent years,<sup>5</sup> a new RSPM<sup>®</sup> module was prepared for this publication to allow us to bifurcate the results of married households at retirement age into those in which the male dies first and those in which the female dies first.

The publication starts with a brief overview of RSPM<sup>®</sup> and then presents the average RSS values for Gen Xers<sup>6</sup> broken out by gender and family status, as well as by pre-retirement wage quartiles and years of future eligibility for participation in defined contribution (DC) plans. Distributional analysis of the RSS values is then discussed. This is followed by an analysis of auto portability on RSS. Conclusions are offered in the final section.

## EBRI Retirement Security Projection Model<sup>®</sup>

One of the basic objectives of RSPM<sup>®</sup> is to simulate the percentage of the population at risk of not having retirement income adequate to cover average expenses and uninsured health care costs (including long-term-care costs) at age 65 or older throughout retirement in specific income and age groupings. RSPM<sup>®</sup> 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 pre-retirement compensation they will need in terms of additional savings in order to have a 50, 70, or 90 percent probability of retirement income adequacy.

A previous EBRI publication<sup>7</sup> describes how households are tracked through retirement age and how their retirement income/wealth is simulated for the following components:

- Social Security.
- DC balances.
- Individual retirement account (IRA) balances.
- 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 if 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.

## Retirement Savings Shortfalls by Marital Status and Gender

Figure 1 depicts Retirement Savings Shortfalls by marital status and gender for Gen Xers.<sup>8</sup> The RSS provide information on average individual retirement income deficits. These numbers are present values (in 2014 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 lifepath, could be a relatively short period or could last decades). The additional savings required vary from \$18,476 (per individual) for married households where the female dies first and \$22,783 for married households where the male dies first to \$37,690 for single males and \$72,883 for single females.

The RSS values in Figure 1 may appear to be relatively small considering they represent the sum of present values that may include decades of deficits. However, it is important to note that less than half (43 percent) of the simulated lifepaths modeled will run short of money in retirement.<sup>9</sup> In other words, the average RSS values represented in Figure 1 are reduced by the inclusion of simulated retirement lifepaths that will *not* run short of money. Looking only at those situations where shortfalls are projected, Figure 2 shows that the values for Gen Xers vary from \$76,896 (per individual) for married households where the male dies first and \$82,937 for married households where the female dies first to \$128,417 for single males and \$131,674 for single females.<sup>10</sup>

## Impact of Pre-Retirement Income

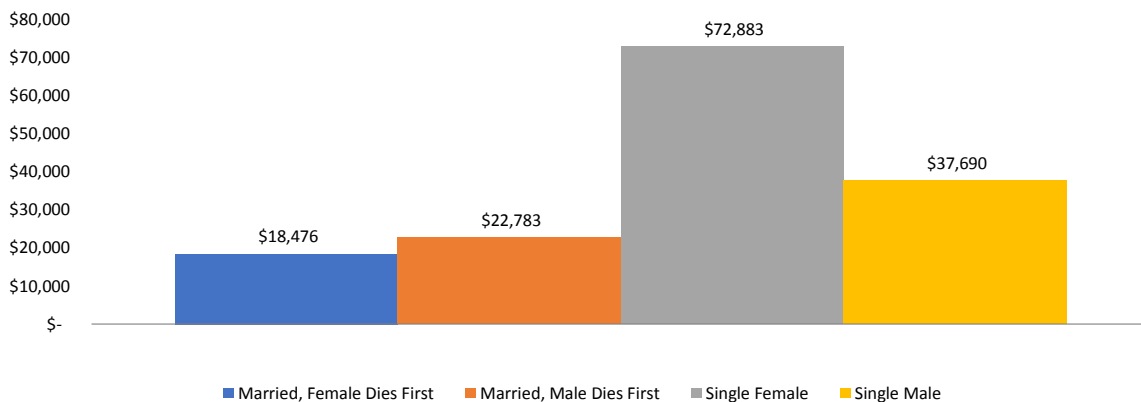
The results in Figure 1 show significant gender disparities in terms of retirement deficits. For single households, females have an average deficit that is nearly twice the size of that of males. Figure 3 shows that some of this disparity can be explained by controlling for relative levels of pre-retirement income.<sup>11</sup> Focusing on the RSS values for a single female, we see that those in the lowest pre-retirement wage quartile have an RSS of \$110,412, but that decreases rapidly for single females with higher relative levels of pre-retirement wage: those in the second quartile have an RSS of \$72,673, while those in the third quartile have an RSS of \$46,208 and those in the highest quartile have an RSS of only \$28,951. Compared with the deficits simulated for single male households, the gender discrepancy goes from \$29,736 for those in the lowest wage quartile to \$26,058 for those in the second quartile, \$15,181 for those in the third quartile, and \$12,465 for those in the highest quartile.<sup>12</sup>

For households who are married at retirement age, widows have an average deficit \$4,308 greater than widowers. However, when considering comparisons by wage quartiles, we are able to see how the relative deficits of widows vs.

widowers depend to a large extent on the pre-retirement wage quartiles. Whereas the differences for both the third and highest quartiles are less than \$3,000, widows in the second quartile have an average RSS that is \$7,782 greater than widowers, and the difference for average RSS for married couples in the lowest wage quartile is \$18,650.

## Figure 1 Average Retirement Deficits by Marital Status and Gender

Means of Retirement Savings Shortfalls for Gen Xers by marital status and gender  
(includes bifurcation for sequence of death for married)

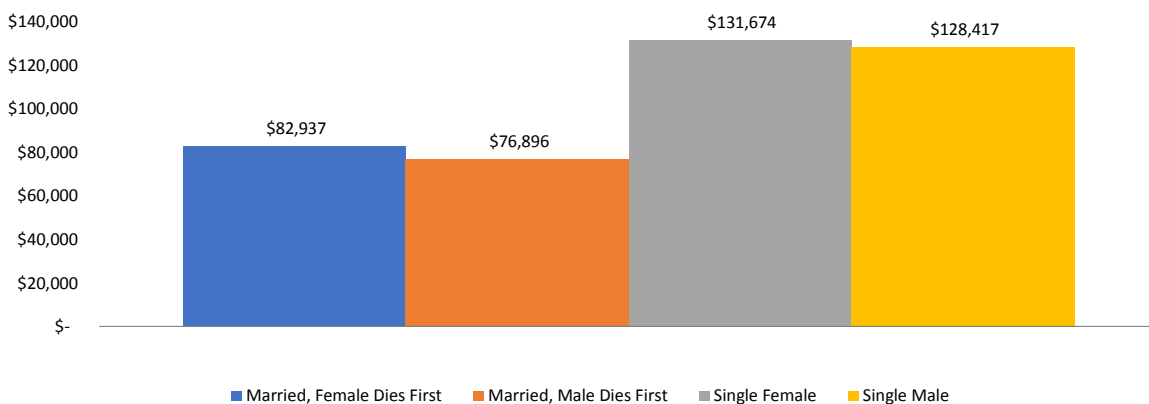


Source: EBRI Retirement Security Projection Model, Version 3449

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## Figure 2 Average Retirement Deficits for Those With a Deficit

Means of Retirement Savings Shortfalls for Gen Xers by marital status and gender  
(includes bifurcation for sequence of death for married)

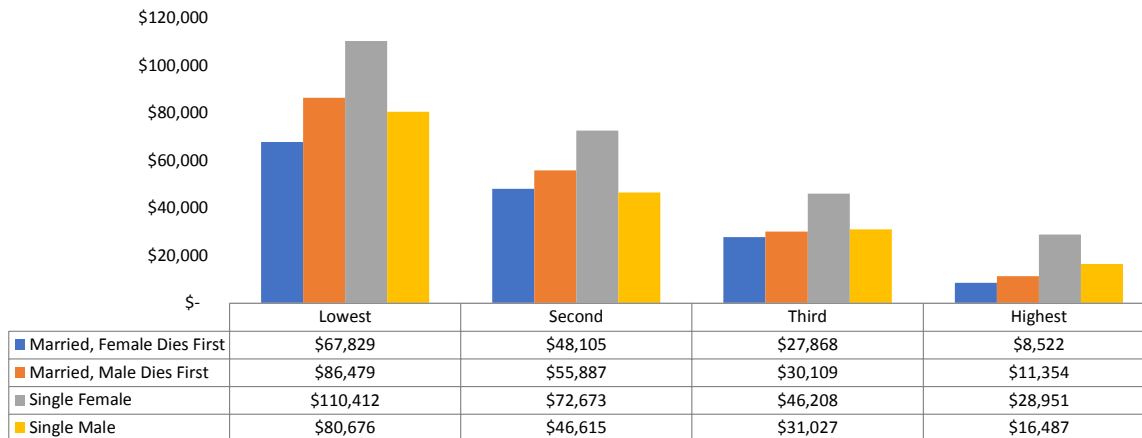


Source: EBRI Retirement Security Projection Model, Version 3449

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## Figure 3 Retirement Deficits by (Pre-Retirement) Wage Quartiles

Means of Retirement Savings Shortfalls for Gen Xers by age-specific pre-retirement income quartile, marital status, and gender (includes bifurcation for sequence of death for married)



Source: EBRI Retirement Security Projection Model, Version 3449

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### Impact of Defined Contribution Plan Eligibility

Eligibility for participation in a defined contribution plan can have a significant impact on reducing these savings shortfalls. Figure 4 shows the average individual retirement income deficits by the number of future years eligible for coverage in a defined contribution retirement plan for Gen Xers. The deficit values for single females 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 \$97,325. That shortfall decreases substantially for those with 1–10 years of future eligibility, to \$68,891, and even further to \$48,990 for those with 11–20 years of future eligibility. Single female Gen Xers fortunate enough to have 21–30 years of future eligibility in those programs have their average shortfall at retirement reduced to only \$24,486.

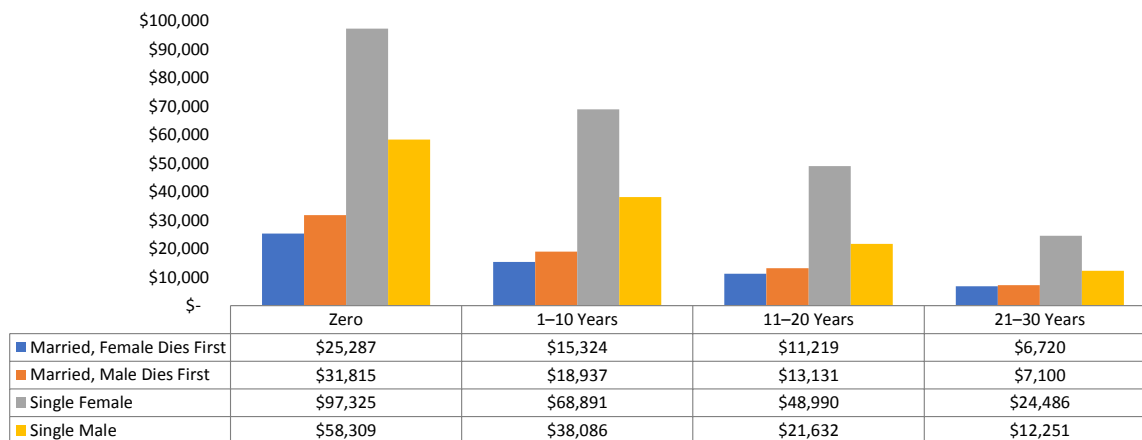
Comparing single male and single female households, the difference in RSS is \$39,016 worse for single females with no years of future eligibility, \$30,805 worse for those with 1–10 years of future eligibility, \$27,358 worse for those with 11–20 years of future eligibility, and \$12,235 worse for those with 21–30 years of future eligibility in those programs.

For households who are married at retirement age, when comparisons by years of future eligibility for a defined contribution plan are made, the discrepancy in RSS between widows and widowers is \$6,529 for those with no years of future eligibility, \$3,613 for those with 1–10 years of future eligibility, \$1,912 for those with 11–20 years of future eligibility, and only \$380 for those with at least 21–30 years of future eligibility in those programs.



## Figure 4 Retirement Deficits by Future Years of Defined Contribution Eligibility

Means of Retirement Savings Shortfalls for Gen Xers by future years of defined contribution eligibility, marital status, and gender (includes bifurcation for sequence of death for married)



Source: EBRI Retirement Security Projection Model, Version 3449

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### Distribution of Retirement Savings Shortfalls for Gen Xers

Figure 5 provides a more detailed way of looking at the earlier results by showing the distribution of RSS (per individual) for Gen Xers by gender and family status.

#### Single Females Vs. Other Cohorts

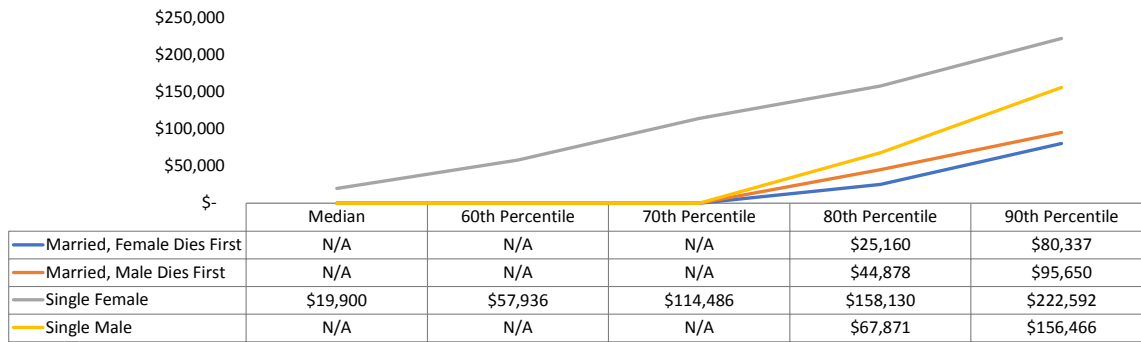
This chart illustrates how dramatically different the situation of single females is compared to that of every other cohort. In short, not only are single females more likely to have retirement deficits, their retirement deficits are likely to be significantly larger than those of other cohorts. Namely, only for single females are at least 50 percent of the households with a deficit, with a median deficit of \$19,900. Forty percent of single females have an RSS of at least \$57,936, 30 percent have an RSS of at least \$114,486, 20 percent have an RSS of at least \$158,130, and 10 percent have an RSS of at least \$222,592.

For the other three gender/family categories, at least 70 percent of the households have no deficits. For single males, 20 percent have an RSS of at least \$67,871 and 10 percent have an RSS of at least \$156,466. For married households where the male dies first, 20 percent have an RSS of at least \$44,878 and 10 percent have an RSS of at least \$95,650. For married households where the female dies first, 20 percent have an RSS of at least \$25,160 and 10 percent have an RSS of at least \$80,337.

Appendix figures 1 through 4 show the degree to which the distributional analysis of the retirement deficits for the four gender/family categories varies by the age-specific pre-retirement income quartile of the household. Appendix figures 5 through 8 show the degree to which the distributional analysis of the retirement deficits for the four gender/family categories varies by future years of defined contribution plan eligibility.

## Figure 5 Decile Analysis (No Breakouts)

Decile analysis of Retirement Savings Shortfalls for Gen Xers by marital status and gender  
(includes bifurcation for sequence of death for married)



Source: EBRI Retirement Security Projection Model, Version 3449

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### Serious Potential Financial Complications

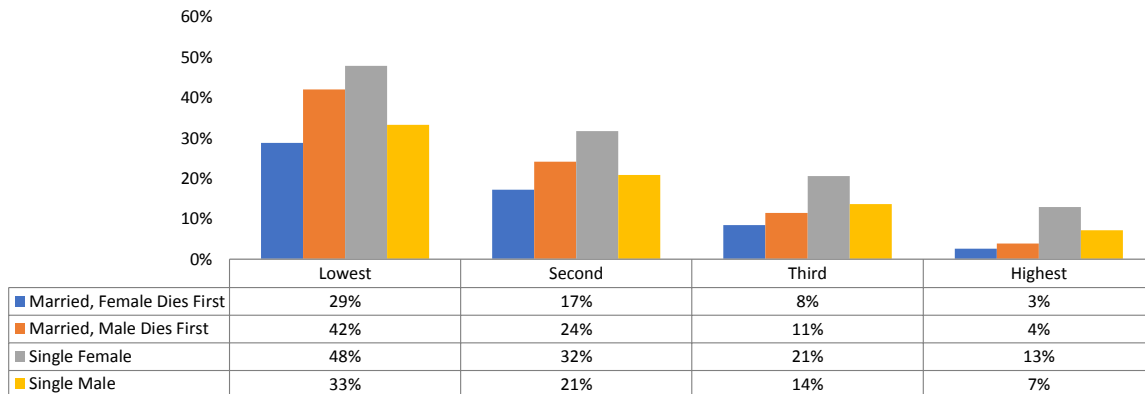
To examine the percentage of Gen Xer households with serious potential financial complications, we use as our proxy an RSS per individual of at least \$100,000. Figure 6 shows the percentage of households who fall into this range as a function of age-specific pre-retirement income quartile. We see that 48 percent of single females at the lowest income quartile fall into this range, as opposed to only 33 percent of single males, while 42 percent of married households where the male dies first have an RSS of at least \$100,000 vs. only 29 percent for married households where the female dies first. For the second income quartile, these numbers decrease to 32 percent for single females vs. 21 percent for single males and 24 percent for widows vs. 17 percent for widowers. For the third income quartile, the respective figures are 21 percent for single females vs. 14 percent for single males and 11 percent for widows vs. 8 percent for widowers. This situation improves substantially for those in the highest income quartile: 7 percent for single males, 4 percent for widows, and 3 percent for widowers. Thirteen percent of single females, however, are projected to have serious financial complications even in the highest wage category.

### Importance of Future DC Plan Eligibility

Figure 7 shows the particular importance that defined contribution plan eligibility can have on reducing the proportion of single female households with potentially serious financial considerations. Again, the percentage of households who have an RSS of at least \$100,000 is given as a function of future years of defined contribution plan eligibility. We see that 42 percent of single females with no years of future eligibility fall into this range as opposed to only 25 percent of single males, while 13 percent of married households where the male dies first have an RSS of at least \$100,000 vs. only 9 percent for married households where the female dies first. For those with 1–10 years of future eligibility, these numbers decrease to 30 percent for single females vs. 17 percent for single males and 8 percent for widows vs. 4 percent for widowers. For those with 11–20 years of future eligibility, the respective figures are 22 percent for single females vs. 10 percent for single males and 4 percent for widows vs. 4 percent for widowers. For those with 21–30 years of future eligibility: 11 percent for single females vs. 5 percent for single males and 3 percent for widows vs. 1 percent for widowers.

## Figure 6 Retirement Deficits Greater Than \$100,000 (Per Individual) by Wage

Percentage of Gen Xer households with Retirement Savings Shortfalls > \$100,000 per individual by age-specific pre-retirement income quartile, marital status, and gender (includes bifurcation for sequence of death for married)

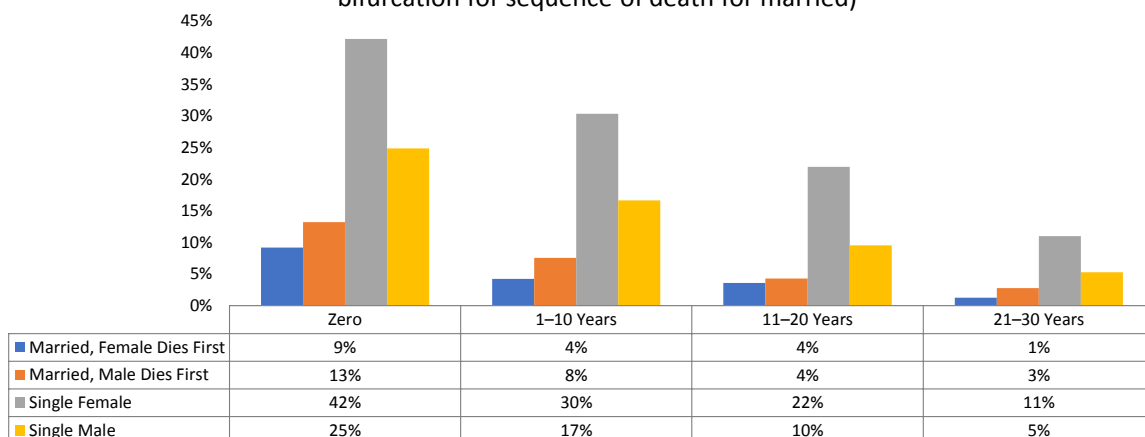


Source: EBRI Retirement Security Projection Model, Version 3449

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## Figure 7 Retirement Deficits Greater Than \$100,000 (Per Individual) by DC Eligibility

Percentage of Gen Xer households with Retirement Savings Shortfalls > \$100,000 per individual by future years of defined contribution eligibility, marital status, and gender (includes bifurcation for sequence of death for married)



Source: EBRI Retirement Security Projection Model, Version 3449

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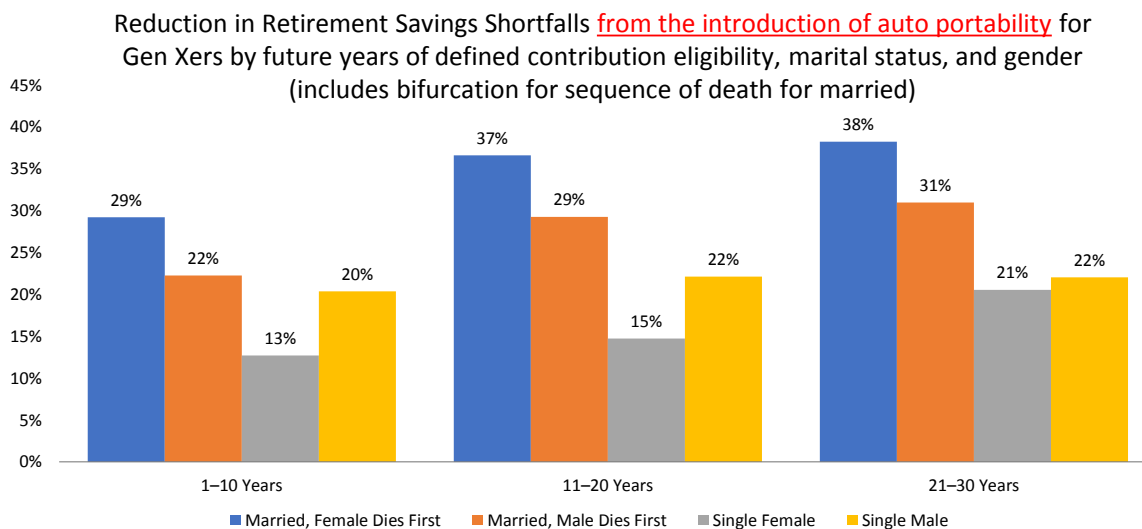
## The Impact of Auto Portability

One of the primary objectives in the development of EBRI's Retirement Security Projection Model<sup>®</sup> was to provide a tool that could be used to analyze how various public policy and plan design changes would impact retirement deficits. We have recently analyzed the impact of the Automatic Retirement Plan Act of 2017 (ARPA) proposal on retirement deficits,<sup>13</sup> the impact of adopting auto portability,<sup>14</sup> and the interaction of auto portability with ARPA.<sup>15</sup>

With auto portability, a participant's account from a former employer's retirement plan would be automatically combined with their active account in a new employer's plan. This would help keep the DC assets in the retirement system and — in theory — 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>

Figure 8 shows the impact of auto portability (in isolation) on retirement deficits for the same four gender/family categories. Similar to Figure 4, the analysis is displayed as a function of years of future eligibility for defined contribution plans; however, in this case households with no future years of eligibility are excluded. Even for the case where households have only 1–10 future years of eligibility, Figure 8 shows significant decreases in retirement deficits. The decreases range from 13 percent for single females to 29 percent for married households where the female dies first. As expected, the level of the decreases becomes more significant for those with more years of future eligibility. For households with 21–30 years of future eligibility, the decreases range from 21 percent for single females to 38 percent for married households where the female dies first.

**Figure 8**  
**Impact of Auto Portability by DC Eligibility**



Source: EBRI Retirement Security Projection Model, Versions 3449 and 3451

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## Summary and Conclusion

For several years, EBRI has documented a significant gender difference in individual IRA balances. For year-end 2015 data, the average balance for females ages 65–69 is only \$162,888 compared with \$269,697 for males, and the median balance is \$65,156 for females compared with \$102,919 for males. For individuals 70 or older the average balance for females is only \$162,491 compared with \$289,292 for males, and the median balance is \$66,085 for females compared with \$110,927 for males.<sup>17</sup>

This is extremely useful information to analyze potential gender differences in retirement income adequacy for current retirees. However, to truly understand the different financial risks that women and men face in retirement, it is important to incorporate differences in Social Security, defined benefit plan access, defined contribution plan access, net housing equity, and expenditures in retirement. Regarding the latter, both those that can be readily planned on an annual basis as well as those that will take place only periodically — if at all — but could be financially catastrophic, such as a prolonged stay in a nursing home, should be considered. Moreover, gender differences for future cohorts of retirees may look very different than those seen for current retirees given the changes in labor force participation for females in the last several decades.

This *Issue Brief* analyzed the likely gender differences for both single and married households for Gen Xers. We found that, while single females have by far the largest potential retirement deficit, married households where the male dies first also face a higher deficit than married households where the female dies first or single male households. Further analysis revealed that much of the gender difference for single and married households can be explained by pre-retirement wage quartiles or future years of defined contribution eligibility; however, females — both single and widowed — continue to have larger deficits even after the controls are applied.

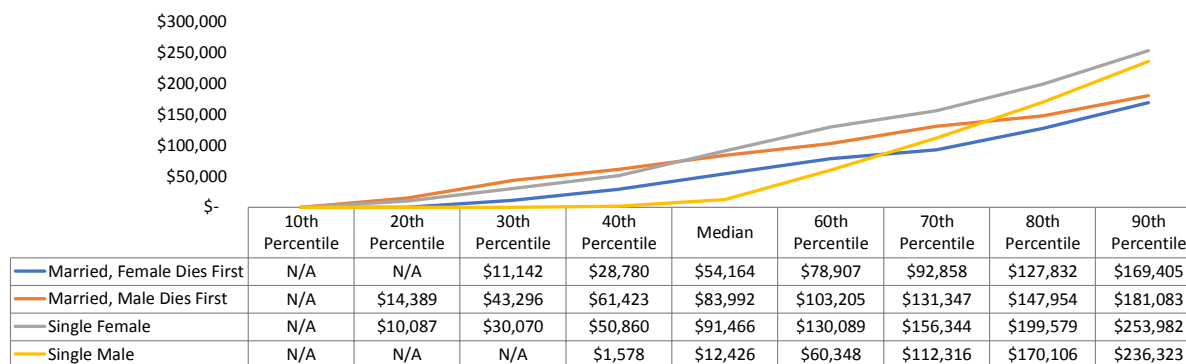
Serious potential financial complications in retirement, as defined by a retirement deficit of at least \$100,000 (per individual), were also far more likely to be experienced by single females and widows than their male counterparts. This difference was somewhat — but not entirely — mitigated when the Gen X cohort was eligible for future DC plan participation.

The final portion of this *Issue Brief* analyzed whether a particular public policy/plan design modification could make a significant dent in these retirement deficits. When we simulated the likely impact of a full auto portability scenario (starting in 2019), we found at least a double-digit percent reduction for all groups with future years of defined contribution plan eligibility, and for those with 21–30 years of eligibility, we found a 21 percent reduction in deficits for single females and a 31 percent reduction for widows.

Given the importance of this topic, EBRI plans to use this new bifurcation of married households (into eventual widows vs. widowers) to assess how future public policy proposals and plan design modifications will likely impact gender differences in retirement income adequacy for households who are married at the time of retirement as well as those who are single.

## Appendix Figure 1 Decile Analysis (by Pre-Retirement Income)

Decile analysis of Retirement Savings Shortfalls for Gen Xers by marital status and gender (includes bifurcation for sequence of death for married): lowest age-specific pre-retirement income quartile

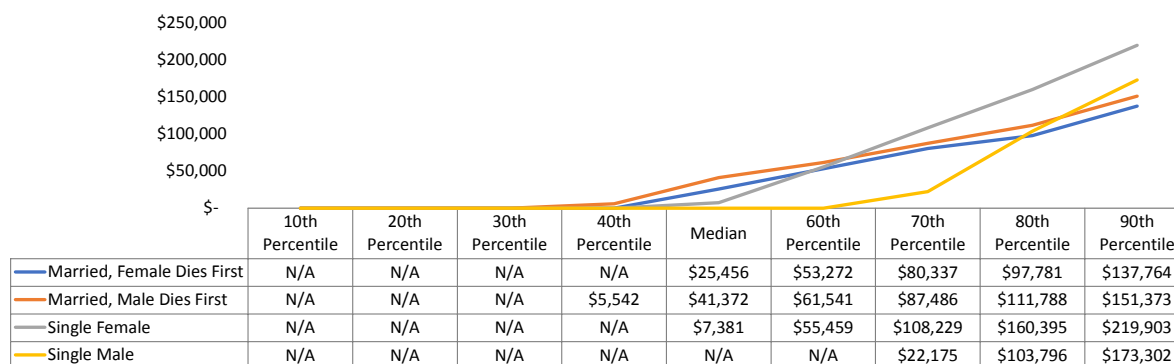


Source: EBRI Retirement Security Projection Model, Version 3449

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## Appendix Figure 2 Decile Analysis (by Pre-Retirement Income)

Decile analysis of Retirement Savings Shortfalls for Gen Xers by marital status and gender (includes bifurcation for sequence of death for married): second age-specific pre-retirement income quartile

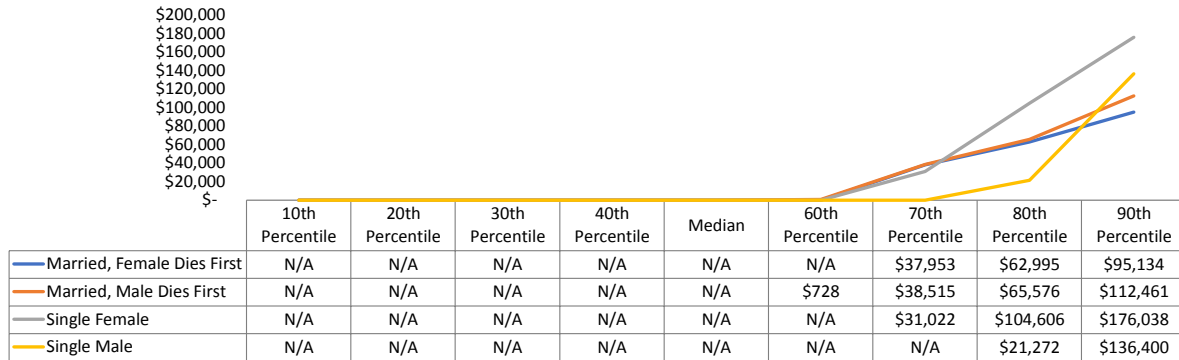


Source: EBRI Retirement Security Projection Model, Version 3449

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## Appendix Figure 3 Decile Analysis (by Pre-Retirement Income)

Decile analysis of Retirement Savings Shortfalls for Gen Xers by marital status and gender (includes bifurcation for sequence of death for married): third age-specific pre-retirement income quartile

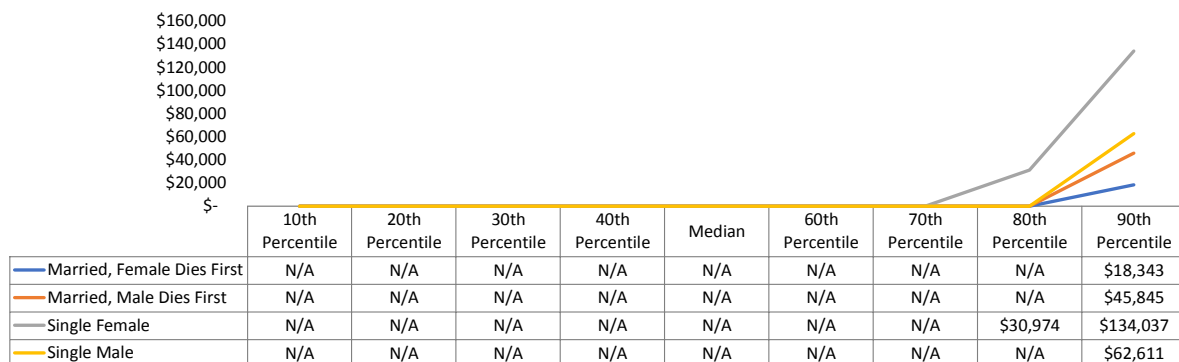


Source: EBRI Retirement Security Projection Model, Version 3449

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## Appendix Figure 4 Decile Analysis (by Pre-Retirement Income)

Decile analysis of Retirement Savings Shortfalls for Gen Xers by marital status and gender (includes bifurcation for sequence of death for married): highest age-specific pre-retirement income quartile

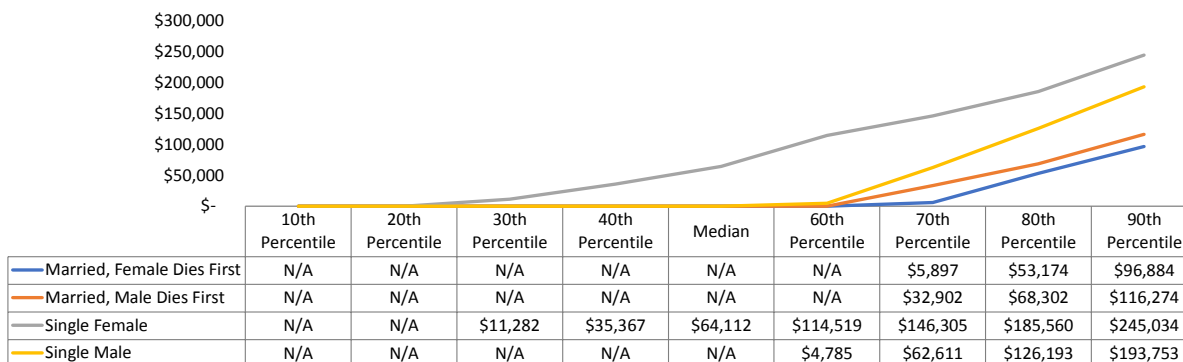


Source: EBRI Retirement Security Projection Model, Version 3449

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## Appendix Figure 5 Decile Analysis (by DC Eligibility)

Decile analysis of Retirement Savings Shortfalls for Gen Xers by marital status and gender (includes bifurcation for sequence of death for married): zero future years of defined contribution plan eligibility

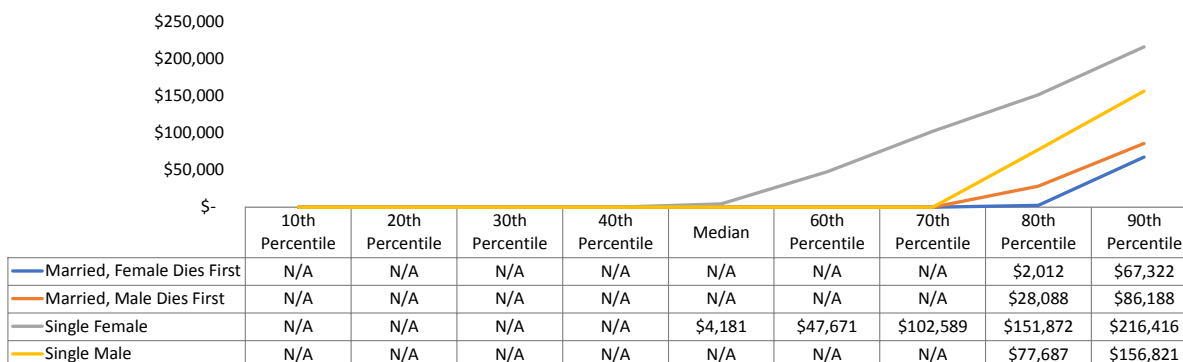


Source: EBRI Retirement Security Projection Model, Version 3449

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## Appendix Figure 6 Decile Analysis (by DC Eligibility)

Decile analysis of Retirement Savings Shortfalls for Gen Xers by marital status and gender (includes bifurcation for sequence of death for married): 1–10 future years of defined contribution plan eligibility



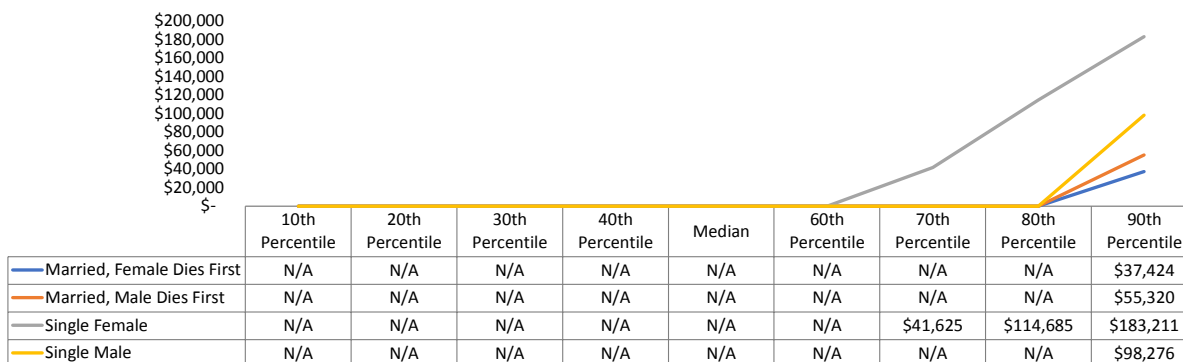
Source: EBRI Retirement Security Projection Model, Version 3449

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## Appendix Figure 7 Decile Analysis (by DC Eligibility)

Decile analysis of Retirement Savings Shortfalls for Gen Xers by marital status and gender (includes bifurcation for sequence of death for married): 11–20 future years of defined contribution plan eligibility

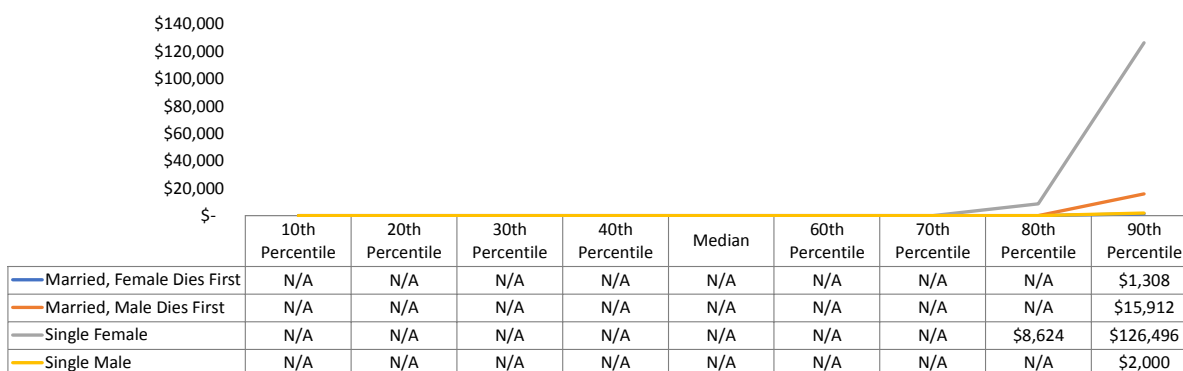


Source: EBRI Retirement Security Projection Model, Version 3449

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## Appendix Figure 8 Decile Analysis (by DC Eligibility)

Decile analysis of Retirement Savings Shortfalls for Gen Xers by marital status and gender (includes bifurcation for sequence of death for married): 21–30 future years of defined contribution plan eligibility



Source: EBRI Retirement Security Projection Model, Version 3449

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## References

- Copeland, Craig, "2015 Update of the EBRI IRA Database: IRA Balances, Contributions, Rollovers, Withdrawals, and Asset Allocation," *EBRI Issue Brief*, no. 438 (Employee Benefit Research Institute, Sept. 12, 2017).
- Rappaport, Anna, "Women and Post-Retirement Risks," Society of Actuaries, 2018.
- VanDerhei, Jack, "How Much Would Auto-Portability Help Retirement Reform Proposals to Reduce Retirement Deficits?" *EBRI Fast Facts* (September 2018).
- \_\_\_\_\_. "How Much Might Defined Contribution Savings Benefit From Auto Portability?" *EBRI Fast Facts* (July 2018).
- \_\_\_\_\_. "EBRI Retirement Security Projection Model<sup>®</sup>(RSPM) – Analyzing Policy and Design Proposals." *EBRI Issue Brief* (May 2018).
- \_\_\_\_\_. "Retirement Savings Shortfalls: Evidence from EBRI's Retirement Security Projection Model,<sup>®</sup>" *EBRI Issue Brief*, no. 410 (February 2015).
- \_\_\_\_\_. "The Impact of Leakages on 401(k) Accumulations at Retirement Age," ERISA Advisory Council, U.S. Department of Labor. Hearing on: Lifetime Participation In Plans, June 17, 2014.
- \_\_\_\_\_. "What Causes EBRI Retirement Readiness Ratings<sup>™</sup> to Vary: Results from the 2014 Retirement Security Projection Model,<sup>®</sup>" *EBRI Issue Brief*, no. 396 (Employee Benefit Research Institute, February 2014).
- \_\_\_\_\_. "A Post-Crisis Assessment of Retirement Income Adequacy for Baby Boomers and Gen Xers." *EBRI Issue Brief*, no. 354 (Employee Benefit Research Institute, February 2011).
- VanDerhei, Jack, and Craig Copeland. "The EBRI Retirement Readiness Rating:<sup>™</sup> Retirement Income Preparation and Future Prospects." *EBRI Issue Brief*, no. 344 (Employee Benefit Research Institute, July 2010).
- \_\_\_\_\_. "Can America Afford Tomorrow's Retirees: Results From the EBRI-ERF Retirement Security Projection Model<sup>®</sup>" *EBRI Issue Brief*, no. 263 (Employee Benefit Research Institute, November 2003).

## Endnotes

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<sup>1</sup>See VanDerhei (February 2011) for additional detail on the impact of the 2007–2009 crises in the financial and real estate markets on retirement income adequacy.

<sup>2</sup> VanDerhei (February 2014).

<sup>3</sup> VanDerhei (February 2015).

<sup>4</sup> See VanDerhei and Copeland (2003).

<sup>5</sup> Rappaport (2018) provides an excellent analysis of the gender differences in post-retirement risks.

<sup>6</sup> In this analysis, Gen Xers are defined as those born between 1965 and 1979.

<sup>7</sup> VanDerhei and Copeland (2010).

<sup>8</sup> The married vs. single classification is determined at the age of retirement (assumed to be age 65 in this version of the model). Please note that some of those classified as single at this point may have been married earlier but are now considered to be single as a result of the pre-retirement death of their spouse or divorce.

<sup>9</sup> VanDerhei (February 2014).

<sup>10</sup> The reason the unconditional RSS for single females in Figure 1 is so much larger than for single men while the differences for the conditional RSS in Figure 2 are much less substantial deals with the probability of running short of money in retirement. The probability is 56 percent for single females and only 30 percent for single males.

<sup>11</sup> Pre-retirement income in RSPM<sup>®</sup> is determined in a manner similar to the average-indexed-monthly-earnings computation for Social Security with the following modifications:

- All earned income is included up to the age of retirement (i.e., there is no maximum taxable wage base constraint, and the calculation terminates at retirement age).
- Instead of indexing for changes in average national wages, the model indexes based on assumed, after-tax rate of return based on asset allocations that are a function of the individual's age in each year.
- Percentile distributions are then established based on population statistics for each five-year age cohort.

<sup>12</sup> The results are a combination of the differences by wage group and the proportion in each group. The proportion of single females in each income group is: lowest, 38 percent; second, 22 percent; third, 23 percent; and highest, 16 percent. In contrast, the proportion of single males in each income group is: lowest, 17 percent; second, 20 percent; third, 27 percent; and highest, 36 percent.

<sup>13</sup> VanDerhei (May 2018).

<sup>14</sup> VanDerhei (July 2018).

<sup>15</sup> VanDerhei (September 2018).

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

<sup>17</sup> Gender differences also exist for ages prior to age 65, but these are much more likely to be supplemented by balances from defined contribution plans. See Copeland (2017).