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Will Boomer and Gen X Women be Able to Afford Retirement at Age 65? Evidence from the 2012 EBRI Retirement Security Projection Model®

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Introduction

A recent report by the United States Government Accountability Office (GAO, July 2012) found that women age 65 and over had less retirement income on average and had higher rates of poverty when compared to men. While this finding has important public policy ramifications for those already at conventional retirement ages, simulation analysis with respect to women younger than age 65 provides useful information for what current trends portend in terms of their future retirement income adequacy as well as what factors within the current voluntary retirement plan system may be most effective in improving their likelihood of affording retirement at age 65.

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® (RSPM)—was developed in 2003, and in 2010 it was updated to incorporate several significant changes, including the impacts of defined benefit plan freezes, automatic enrollment provisions for 401(k) plans, and the recent crises in the financial and housing markets.¹ EBRI has recently updated RSPM for changes in financial and real estate market conditions as well as underlying demographic changes and changes in 401(k) participant behavior since January 1, 2010 (based on a database of 23 million 401(k) participants). This testimony provides a comparative analysis of single males and single females in the Boomer and Gen X cohorts using EBRI Retirement Readiness Ratings™ as well as the Retirement Savings Shortfalls.²

EBRI Retirement Readiness Ratings™

Figure 1 compares the Retirement Readiness Ratings™ for 2003 and 2012.³ The EBRI Retirement Readiness Ratings™ measure the percentage of simulated life paths in retirement that are at risk of inadequate retirement income.⁴ A household's simulated lifepath in retirement is considered to be at-risk in the baseline version of the model if its aggregate resources in retirement are not sufficient to meet aggregate minimum retirement expenditures, defined as a combination of deterministic expenses from the Consumer Expenditure Survey (as a function of income) as well as 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 picked up by Medicaid). The resources in retirement are assumed to consist of Social Security (status quo benefits for the baseline version of the simulation); account balances from defined contribution plans; individual retirement accounts (IRAs) and/or cash balance plans; annuities or lump-sum distributions from defined benefit plans; and net housing equity (in the form of a lump-sum distribution at the point that other financial resources are exhausted). This version of the model is constructed to simulate "basic" retirement income adequacy; however, alternative versions of the model allow similar analysis for replacement rates and other thresholds.

When the EBRI Retirement Readiness Ratings™ were simulated in 2012 for Early Baby Boomers (individuals born between 1948–1954), Late Baby Boomers (born between 1955–1964) and Generation Xers (born between 1965–1974), between 32 and 36 percent of the simulated lifepaths for retired single

males were projected to lack adequate retirement income for basic retirement expenses plus uninsured health care costs. However, when the same simulations were performed for single females for these age cohorts the results were significantly worse: between 57 and 62 percent of the simulated lifepaths for retired single males were projected to lack adequate retirement.

The 2012 results are an improvement from the 2003 results: some 3-6 percentage points for single males and 2-7 percentage points for single females. The improvement over the last nine years is largely due to the fact that in 2003, very few 401(k) sponsors had implemented automatic enrollment (AE) provisions and that the participation rates among the lower-income employees (those most likely to be at risk) were quite low.⁵ The Pension Protection Act of 2006 contained provisions encouraging plan sponsors to adopt auto-enrollment.

Previous research by EBRI has demonstrated that one of the most important factors contributing to retirement income adequacy for the Boomers and Gen Xers is eligibility to participate in employment-based retirement plans.⁶ VanDerhei (August 2011) provides information on how the relative value of the defined benefit plan accruals impact retirement income adequacy, while Figure 2 provides similar information for eligibility in defined contribution plans for Gen Xers in 2012. In the latter case, the number of future years that workers are eligible to participate in a defined contribution plan makes a tremendous difference in their at-risk ratings. For example, according to the simulation results, single male Gen Xers with no future years of eligibility would run short of money in retirement 47 percent of the time, whereas only 13 percent of those with 20 or more years of future eligibility would run short. The magnitude of the results for single females are even more striking: single female Gen Xers with no future years of eligibility would run short of money in retirement 74 percent of the time, decreasing all the way to 25 percent for those with 20 or more years of future eligibility.

Retirement Savings Shortfalls

The aggregate deficit number, taking into account current Social Security retirement benefits and the assumption that net housing equity is utilized "as needed," is currently estimated to be \$4.3 trillion for all Baby Boomers and Gen Xers.⁷ However, while trillion-dollar deficits are useful in focusing attention on this problem, they do little to help policy makers understand exactly *where* these deficits are coming from.⁸

Figure 3 depicts Retirement Savings Shortfalls (RSS) by age cohort, as well as marital status and gender, for both Baby Boomers and Gen Xers. The RSS provide information on average individual retirement income deficits. These numbers are present values at age 65, and represent the additional amount that individuals would 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 for those on the verge of retirement (Early Boomers) is \$34,000 for single males and \$65,000 for single females. Even though the present values are defined in constant dollars, the RSS for both genders increase for younger cohorts, largely due to the assumption that health care-related costs will increase faster than the general inflation rate.

While the RSS values in Figure 3 may appear to be relatively small considering they represent the sum of present values that may include decades of deficits, it is important to remember that only a fraction of the simulated lifepaths modeled were considered to be "at risk." In other words, the average RSS values represented in Figure 3 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 4 shows that the values for Early Boomers is \$95,000 for single males and \$105,000 for single females. In sum, when

looking only at households with a projected shortfall, the average shortfall is larger—sometimes considerably so.

Appendix: Brief Chronology of RSPM

The original version of RSPM was used to analyze the future economic well-being of the retired population at the state level. EBRI and the Milbank Memorial Fund, working with the governor of Oregon, set out in the late 1990s to see if this situation could be addressed for the state. That analysis (VanDerhei and Copeland, 2001) focused primarily on simulated retirement wealth with a comparison to ad hoc thresholds for retirement expenditures.

Subsequent to the release of the Oregon study, it was decided that the approach could be applied to other states as well. Kansas and Massachusetts were chosen as the next states for analysis. Results of the Kansas study were presented to the state's Long-Term Care Services Task Force on July 11, 2002 (VanDerhei and Copeland, July 2002), and the results of the Massachusetts study were presented on Dec. 1, 2002 (VanDerhei and Copeland, December 2002). With the assistance of the Kansas Insurance Department, EBRI was able to create Retirement Readiness Ratings™ based on a full stochastic decumulation model that took into account the household's longevity risk, post-retirement investment risk, and exposure to potentially catastrophic nursing-home and home-health-care risks. This was followed by the expansion of RSPM and the Retirement Readiness Ratings™ to a national model and the presentation of the first micro-simulation retirement-income-adequacy model, built in part from administrative 401(k) data at the EBRI December 2003 policy forum (VanDerhei and Copeland, 2003). The basic model was subsequently modified for testimony for the Senate Special Committee on Aging in 2004 to quantify the beneficial impact of a mandatory contribution of 5 percent of compensation (VanDerhei, January 2004).

In an analysis to determine the impact of annuitizing defined contribution and IRA balances at retirement age, VanDerhei and Copeland, 2004, were able to demonstrate that for a household seeking a 75 percent probability of retirement income adequacy, the additional savings that would otherwise need to be set aside each year until retirement to achieve this objective would decrease by a median amount of 30 percent. Additional refinements were introduced in 2005 to evaluate the impact of purchasing long-term care insurance on retirement income adequacy (VanDerhei, 2005).

The model was next used in March of 2006 to evaluate the impact of defined benefit freezes on participants by simulating the minimum employer-contribution rate that would be needed to financially indemnify the employees for the reduction in their expected retirement income under various rate-of-return assumptions (VanDerhei, March 2006). Later that year, an updated version of the model was developed to enhance the EBRI interactive Ballpark Estimate® worksheet by providing Monte Carlo simulations of the necessary replacement rates needed for specific probabilities of retirement-income adequacy under alternative-risk-management treatments (VanDerhei, September 2006).

RSPM was significantly enhanced for the May 2008 EBRI policy forum by allowing automatic enrollment of 401(k) participants with the potential for automatic escalation of contributions to be included (VanDerhei and Copeland, 2008). Additional modifications were added in 2009 for a Pension Research Council presentation that involved a "winners/losers" analysis of defined benefit freezes, and the enhanced employer contributions provided to defined contribution plans at the time the defined benefit plans were frozen (Copeland and VanDerhei, 2010).

Also in 2009 a new subroutine was added to the model to allow simulations of various styles of target-date funds for a comparison with participant-directed investments (VanDerhei, 2009). In April 2010, the model was completely re-parameterized with 401(k) plan-design parameters for sponsors that had adopted automatic-enrollment provisions (VanDerhei, April 2010). A completely updated version of the national model was produced for the May 2010 EBRI policy forum and used in the July 2010 *Issue Brief* (VanDerhei and Copeland, 2010).

The new model was used to analyze how eligibility for participation in a defined contribution plan impacts retirement income adequacy in September 2010 (VanDerhei, September 2010). It was also used to compute Retirement Savings Shortfalls for Baby Boomers and Generation Xers in October 2010 (VanDerhei, October 2010a).

In October 2010 testimony before the Senate Health, Education, Labor and Pensions Committee on "The Wobbly Stool: Retirement (In)security in America," the model was used to analyze the relative importance of employer-provided retirement benefits and Social Security (VanDerhei, October 2010b).

In February 2011, the model was used to analyze the impact of the 2008–2009 crisis in the financial and real estate markets on retirement income adequacy (VanDerhei, February 2011).

An April 2011 article introduced a new method of analyzing the results from the RSPM (VanDerhei, April 2011). Instead of simply computing an overall percentage of the simulated life paths in a particular cohort that would not have sufficient retirement income to pay for the simulated expenses, the new method computed the percentage of households that would meet that requirement more than a specified percentage of times in the simulation.

As explored in the June 2011 *EBRI Issue Brief*, the RSPM allowed retirement-income adequacy to be assessed at retirement ages later than 65 (VanDerhei and Copeland, June 2011).

In a July 2011 *EBRI Notes* article (VanDerhei, July 2011), it provided preliminary evidence of the impact of the "20/20 caps" on projected retirement accumulations proposed by the National Commission on Fiscal Responsibility and Reform.

The August 2011 *EBRI Notes* article (VanDerhei, August 2011) evaluated the importance of defined benefit plans for households, assuming individuals retire at age 65, while demonstrating the impact of defined benefit plans in achieving retirement income adequacy for Baby Boomers and Gen Xers.

Finally, EBRI's September 2011 Senate Finance testimony (VanDerhei, September 2011) analyzed the potential impact of various types of tax-reform options on retirement income adequacy. This was expanded in the November 2011 *EBRI Issue Brief* (VanDerhei, November 2011) and a new set of survey results were added to the model in the March 2012 *EBRI Notes* article (VanDerhei, March 2012).

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Endnotes

¹ A full description of the EBRI Retirement Security Projection Model® (RSPM) is provided in Appendix A of VanDerhei and Copeland (July 2010). A chronology of its development and utilization is included in the appendix to this testimony. See VanDerhei (February 2011) for additional detail on the impact of the 2008–2009 crises in the financial and real estate markets on retirement income adequacy.

² See VanDerhei (October 2010) for more detail.

³ In previous EBRI publications, the baseline version of RSPM was based on the assumption that households did not use any net housing equity to finance their retirement expenditures. However, two additional alternatives were also included in the sensitivity analysis. Under the first, each household was assumed to purchase a reverse annuity mortgage at age 65 with the proceeds from the simulated net housing equity. Under the second, households with homes at age 65 were assumed to remain in them until such point that they were no longer able to afford their simulated retirement expenses with their Social Security and defined benefit benefits (if any) after the depletion of their defined contribution and IRA balances. Although the original baseline provided information on the retirement income adequacy potential for households without relying on net housing equity, it has the disadvantage of not quantifying the recent and rather volatile changes in the real estate market. Consequently, EBRI modified its choice of baseline to the second alternative described above (net housing equity used “as needed”) and is using similar scenarios in its comparison to the 2003 RSPM results.

⁴ The baseline version of RSPM assumes individuals retire at age 65. However, given that an increasing percentage of current workers state their intentions to defer retirement beyond age 65 (Helman, Copeland, and VanDerhei, 2012), EBRI has recently modified RSPM to compute Retirement Readiness Ratings™ for retirement ages greater than 65. See VanDerhei and Copeland (2011) for more details.

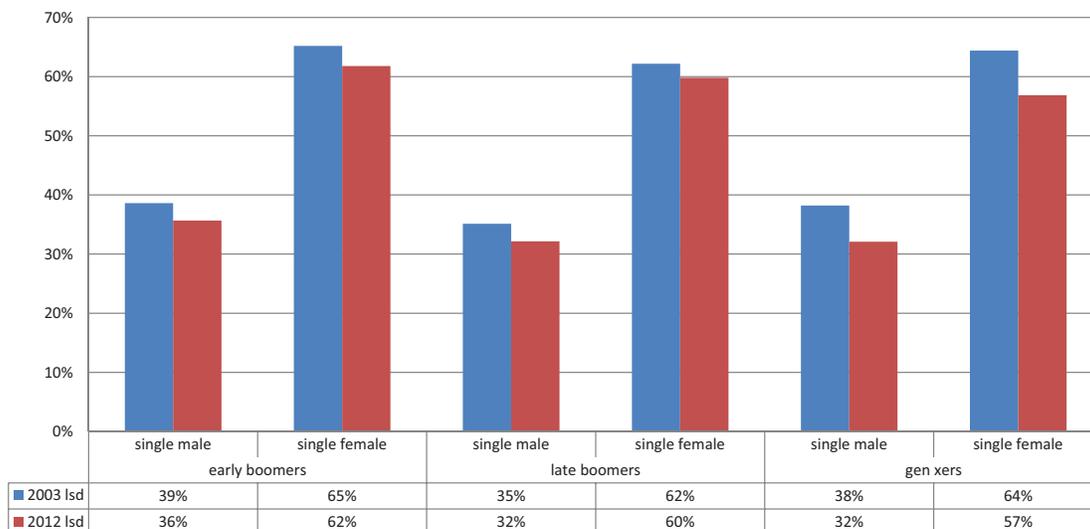
⁵ With the adoption of AE in the past few years, the participation rates for lower income employees enrolled in these types of 401(k) plans have often increased to values in excess of 80 percent. See VanDerhei (April 2010) for a comparison of simulated 401(k) accumulations at retirement age under automatic enrollment vs. voluntary enrollment broken out by income quartile.

⁶ While it is true that years of future participation in a defined contribution plan would have a more direct association with retirement income adequacy than the years of future eligibility for participation, the latter metric was chosen to illustrate the importance of working for an employer that sponsors such a plan. Even if an employer sponsors a defined contribution plan, eligible employees may choose not to participate for some or all of the years that they are eligible. The distinction between these two measurements will be explored in more detail in a future *EBRI Notes* article.

⁷ This number is somewhat smaller than the \$4.6 trillion reported in VanDerhei (October 2010); however, the baseline assumptions used in the 2010 analysis did not provide for the utilization of net housing equity to improve retirement income adequacy. When the 2012 analysis is repeated with the same assumptions as used in 2010, the aggregate deficit actually increases to \$4.8 trillion.

⁸ Unfortunately one of the most significant components of Retirement Savings Shortfalls (RSS) comes from an exposure that faces most retirees but very few choose to actively address. VanDerhei (October 2010) provides a first-order approximation of the impact of the stochastic nature of the nursing home and home health care expenses on the RSS values by age cohort, gender and marital status. Adding this nursing home and home health care expense increases the average individual RSS for married households by \$25,317. Single males experience an average increase of \$32,433 while single females have an increase of \$46,425. A precise evaluation of the impact would involve a comparison of the values supplemented with the premiums required to fully insure the financial consequence of nursing home and home health care expenses. For an example of this comparison with a different output metric, see VanDerhei (2005).

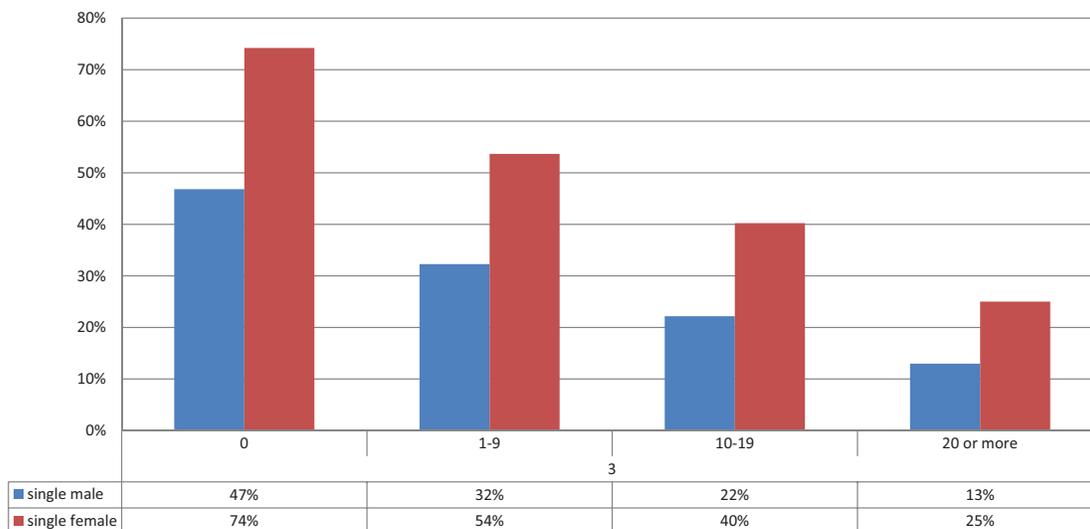
Figure 1: Improvement of at-risk* ratings from 2003-2012 by age cohort and gender



Source: EBRI Retirement Security Projection Model,* Version 120201.

* An individual is considered to be at-risk in this version of the model if their aggregate resources in retirement are not sufficient to meet aggregate minimum 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 expenses (at least until the point they are picked up by Medicaid). The resources in retirement will consist of Social Security (either status quo or one of the specified reform alternatives), account balances from defined contribution plans, IRAs and/or cash balance plans, annuities from defined benefit plans (unless the lump-sum distribution scenario is chosen), and net housing equity (in the form of a lump-sum distribution). This version of the model is constructed to simulate "basic" retirement income adequacy; however, alternative versions of the model allow similar analysis for replacement rates, standard-of-living and other thresholds. For additional detail, see: VanDerhei, J., Copeland, C. (July 2010). [The EBRI Retirement Readiness Rating:™ Retirement Income Preparation and Future Prospects](#). EBRI Issue Brief.

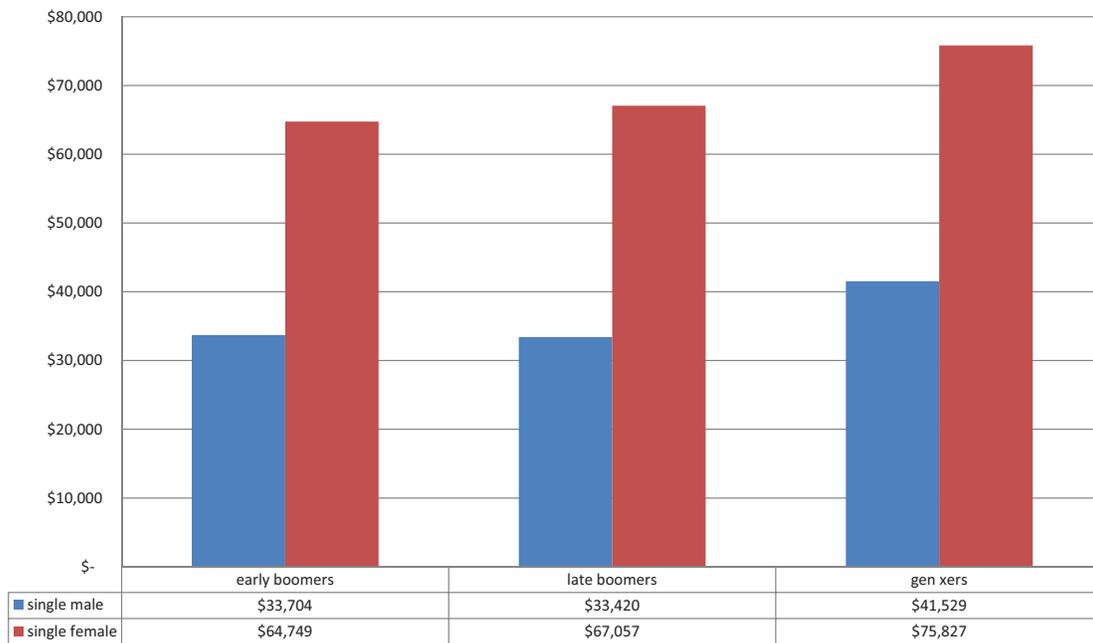
Figure 2: Impact of future years of 401(k) eligibility on 2012 at-risk* ratings for Gen Xers by gender



Source: EBRI Retirement Security Projection Model,* Version 120201.

* An individual is considered to be at-risk in this version of the model if their aggregate resources in retirement are not sufficient to meet aggregate minimum 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 expenses (at least until the point they are picked up by Medicaid). The resources in retirement will consist of Social Security (either status quo or one of the specified reform alternatives), account balances from defined contribution plans, IRAs and/or cash balance plans, annuities from defined benefit plans (unless the lump-sum distribution scenario is chosen), and net housing equity (in the form of a lump-sum distribution). This version of the model is constructed to simulate "basic" retirement income adequacy; however, alternative versions of the model allow similar analysis for replacement rates, standard-of-living and other thresholds. For additional detail, see: VanDerhei, J., Copeland, C. (July 2010). [The EBRI Retirement Readiness Rating:™ Retirement Income Preparation and Future Prospects](#). EBRI Issue Brief.

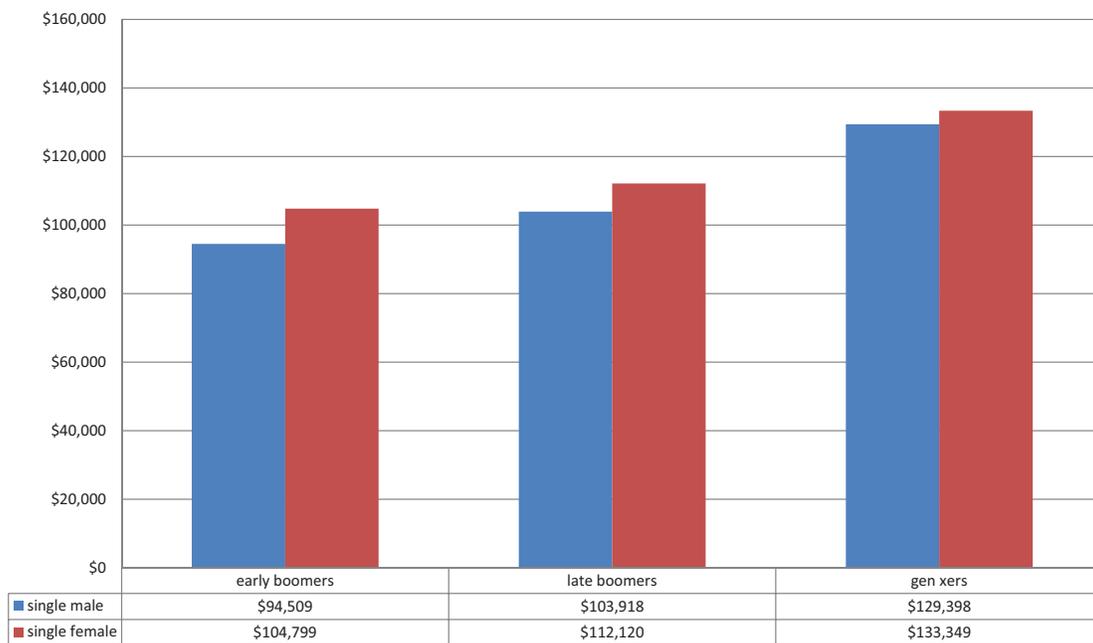
Figure 3: 2012 unconditional RSS* numbers by age cohort and gender



Source: EBRI Retirement Security Projection Model,® Version 120201.

*The Retirement Savings Shortfalls (RSS) are determined as a present value of retirement deficits at age 65. For additional detail, see: Jack VanDerhei, [Retirement Savings Shortfalls for Today's Workers](#), October 2010, Vol. 31, No. 10, EBRI Notes

Figure 4: 2012 conditional RSS* numbers by age cohort and gender



Source: EBRI Retirement Security Projection Model,® Version 120201.

*The Retirement Savings Shortfalls (RSS) are determined as a present value of retirement deficits at age 65. For additional detail, see: Jack VanDerhei, [Retirement Savings Shortfalls for Today's Workers](#), October 2010, Vol. 31, No. 10, EBRI Notes