House Committee on Education and the Workforce
Subcommittee on Health, Employment, Labor, and Pensions

Hearing on:

"Retirement Security: Challenges Confronting Pension Plan Sponsors, Workers, and Retirees"

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Submitted Testimony by

Jack VanDerhei, Ph.D.
Research Director
Employee Benefit Research Institute (EBRI)
www.ebri.org

"Retirement Security: Challenges Confronting Pension Plan Sponsors, Workers, and Retirees"

By Jack VanDerhei, EBRI

Introduction

Since 2003, EBRI has been producing national estimates of retirement income adequacy through its Retirement Security Projection Model® (RSPM). Prior publications using this model have focused on quantifying the relative likelihood that various cohorts will be "at risk" of having inadequate retirement income and estimating the additional amount of savings these households would need to undertake each year until age 65 to have a 50, 70, or 90 percent probability of a "successful" retirement outcome. Unfortunately, many of these cohorts (especially those very close to retirement age, those in the lowest preretirement income quartile and those with limited attachment to employer-sponsored retirement plans) would require an additional savings rate that would be too large to be feasible (in many cases more than 25 percent of compensation annually).

In VanDerhei and Copeland (June 2011), RSPM is modified to allow retirement at ages other than 65 and assess the value of deferring retirement age for increasing the probability of retirement income adequacy. This testimony starts with a review of RSPM and the Retirement Readiness Ratings used to measure those "at risk." It then reviews some of the major findings from the 2010 version of RSPM and discusses how the model was updated and modified to produce the 2011 version.

At that point, RSPM simulations are presented showing the percentage of households with adequate retirement income for retirement ages varying from 65 to 84. Alternative simulations are run to show the impact of increasing the probability of a successful retirement income from 50 percent to 70 percent and then to 80 percent.

Once the value of deferring retirement age has been demonstrated for various preretirement income quartiles, the value of participation in defined contribution plans after age 64 is analyzed.

Brief Description of RSPM

One of the basic objectives of RSPM is to simulate the percentage of the population that will be "at risk" of having retirement income that is inadequate to cover basic expenses and pay for uninsured health care costs for the remainder of their lives once they retire.[1] However, the EBRI Retirement Readiness Rating™ 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 compensation they would need in terms of additional savings to have a 50, 70, or 90 percent probability of retirement income adequacy.

The appendix to VanDerhei and Copeland (June 2011) describes how households (whose heads are currently ages 37–63) are tracked through retirement age, and how their retirement income/wealth is simulated for the following components:

- Social Security.
- Defined contribution balances.
- Individual retirement account (IRA) balances.
- Defined benefit annuities and/or lump-sum distributions.
- Net housing equity.[2]

A household is considered to run short of money in this model if aggregate resources in retirement are not sufficient to meet aggregate minimum retirement expenditures, which are 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). 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 calculations, and other ad hoc thresholds.

The version of the model used in VanDerhei and Copeland (July 2010) assumes all workers retire at age 65 and immediately begin to withdraw money from their individual accounts (defined contribution and cash balance plans, as well as IRAs) whenever the sum of their basic expenses and uninsured medical expenses exceed the after-tax[3] annual income from Social Security and defined benefit plans (if any). If there is sufficient money to pay expenses without tapping into the tax-qualified individual accounts,[4] the excess is assumed to be invested in a non-tax-advantaged account where the investment income is taxed as ordinary income.[5] The individual accounts are tracked until the point at which they are depleted; if the Social Security and defined benefit payments are not sufficient to pay basic expenses, the entity is designated as having "run short of money" at that time.

Brief Review of Previous Results From the 2010 Retirement Security Projection Model

The definition of "at risk" of inadequate retirement income depends to a large extent on the type of model used to analyze the various contingencies. For example, some studies project retirement income and wealth to a particular age, and then simply compare the annuitized value of the various components with a threshold based on some type of replacement rate analysis.[6] While this is a useful metric to determine what percentage of the households being studied will achieve certain benchmarks, it is difficult (if not impossible) to accurately integrate the concepts of longevity risk, post-retirement investment risk, and uninsured post-retirement health care risk in such a formulation.

The EBRI Retirement Readiness Rating,™ as well as other results in VanDerhei and Copeland (June 2011), are based on an updated version of RSPM. As explained briefly below (and in much more detail in the appendix to VanDerhei and Copeland (June 2011)), this model was originally developed in 2003 to provide detailed micro-simulation projections of the percentage of preretirement households "at risk" of having inadequate retirement income to finance basic retirement expenditures, as well as uninsured retiree health care expenses (including nursing home care). This model benefits greatly from having access to administrative records on tens of millions of 401(k) participants,[7] dating back in some cases to 1996, to permit simulating the accumulations under the most important component (but also the most complicated in terms of modeling) of future wealth generated by the employer-sponsored retirement system. These household projections are combined with the other components of retirement income/wealth (such as Social Security, defined benefit annuities and lump-sum distributions, IRA rollovers, non-rollover IRAs, and net housing equity) at retirement age, and run through 1,000 alternative retirement paths to see what percentage of the time the households "run short of money" in retirement. The present value of the deficits generated in retirement are also computed and divided by the accumulated remaining wages of the household to provide a percentage of compensation that would need to be saved in each year (in addition to any employee contributions simulated to be made to defined contribution plans and/or IRAs) to provide alternative probabilities of adequate retirement income.

While knowing the percentage of households that are "at risk" (as well as their composition by age, income levels, and level of participation in defined contribution plans) is obviously valuable, it does nothing to inform policymakers, employers, or workers of how much additional savings is required to achieve the desired probability of success.

Similar to the concepts applied in VanDerhei and Copeland (2003), the analysis in VanDerhei and Copeland (2010) also models how much additional savings would need to be contributed from 2010 until

age 65 (the baseline retirement assumption) to achieve adequate retirement income 50, 70, and 90 percent of the time for each household. While this concept may be difficult to comprehend at first, it is important to understand that a retirement target based on averages (such as average life expectancy, average investment experience, average health care expenditures in retirement) would, in essence, provide the appropriate target only if one was willing to settle for a retirement planning procedure with approximately a 50 percent "failure" rate. Adding the 70 and 90 percent probabilities allows more realistic modeling of a worker's risk aversion.

Baseline by Age Cohort

Figure 1 provides the baseline analysis for the 2010 Retirement Readiness Ratings in terms of the percentage of the population simulated to be "at risk" for three age cohorts:[8]

- Early Boomers (born between 1948–1954, now ages 57–63).
- Late Boomers (born between 1955–1964, now ages 47–56).
- Generation Xers (born between 1965–1974, now ages 37–46).

In 2010, nearly one-half (47.2 percent) of the oldest cohort (Early Boomers) are simulated to be at risk of not having sufficient retirement income to pay for "basic" retirement expenditures as well as uninsured health care costs. The percentage at risk drops for the Late Boomers (to 43.7 percent) but then increases slightly for Generation Xers to 44.5 percent.

For purposes of historical comparisons, the 2003 Retirement Readiness Ratings are also included in Figure 1. The Retirement Readiness Ratings show there has been a significant decrease in the "at-risk" levels for all three groups between 2003 and 2010, with the largest decrease (12.9 percentage points) experienced by the Gen Xers. The major reason for the large magnitude of these decreases is attributed to the projection of future defined contribution account balances (which would have the largest impact on the youngest group). The 2010 Retirement Readiness Ratings fully reflect the trend to auto-enrollment, auto-escalation of contributions, and QDIAs as a result of PPA and subsequent regulations. While some plans had already adopted auto-escalation at the time of the 2003 model, the percentage of workers affected was minimal and hence not included in the simulations.

Baseline by Preretirement Income Groups

Although the 2010 Retirement Readiness Ratings show relatively little change in "at-risk" probability by age cohort, Figure 2 shows a significant impact of the relative level of preretirement income.[9] In this case, households in the lowest one-third when ranked by age-specific preretirement income are simulated to be "at risk" 70.3 percent of the time, while the middle-income group has an "at-risk" percentage of 41.6 percent. This figure drops to 23.3 percent for the highest-income group.

Again for historical comparisons, the 2003 Retirement Readiness Ratings by income group are included in Figure 2. Both the middle- and high-income cohorts experience a 16 percentage point decrease, while the low-income cohort has a Retirement Readiness Rating that decreases by only 9 percentage points between 2003 and 2010. While this may appear counterintuitive at first given the huge positive impact of auto-enrollment and auto-escalation of contributions on the low income (VanDerhei and Copeland, 2008 and VanDerhei, April 2010), Figure 8 in VanDerhei and Copeland (2010) demonstrates how far many of the lower-income cohorts are from the point they will no longer be classified as "at risk."

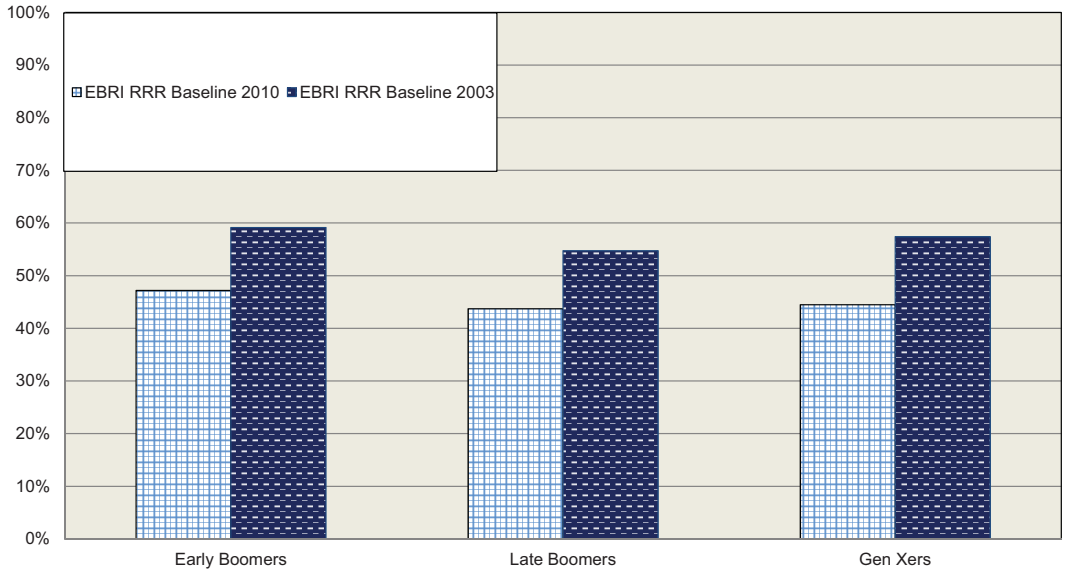
Baseline by Future Years of Eligibility in a Defined Contribution Plan

One of the advantages of a national retirement income adequacy model based on micro-simulation data such as RSPM is the ability to correlate statistics such as the "at-risk" percentages with other outcomes for the simulated households. Figure 3 provides an example of the large extent to which "at-risk" percentages are associated with the years of future eligibility in defined contribution plans. The "at-risk"

Figure 1

Baseline EBRI Retirement Readiness Rating™ (RRR)

Percentage of population "at risk" for inadequate retirement income, by age cohort (baseline assumptions)

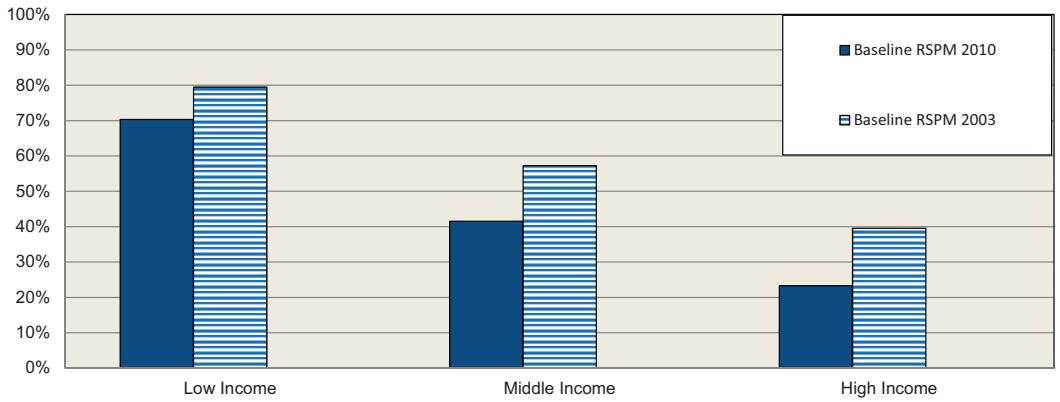


Sources: EBRI Retirement Security Projection Model™ versions 100504e and 100708e.

Figure 2

Impact of Income Group on At-Risk* Probability

Percentage of population "at risk" for inadequate retirement income, by age-specific remaining career income group (baseline assumptions)

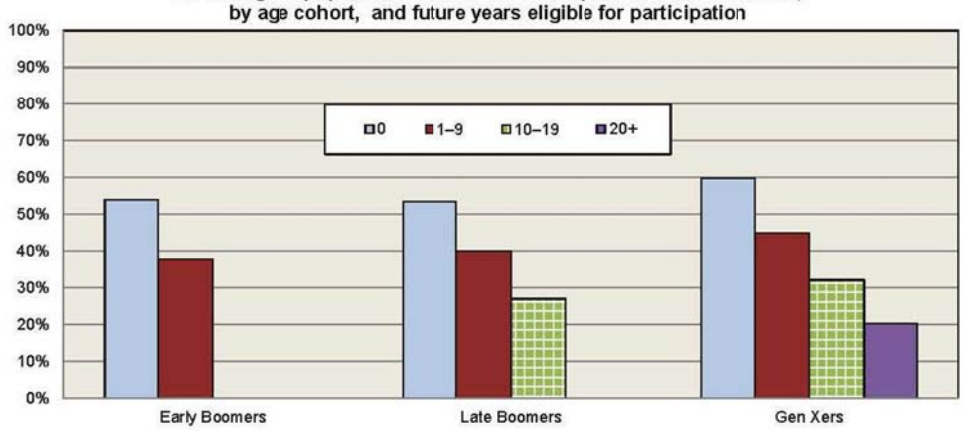


Source: EBRI Retirement Security Projection Model® versions 100504e and 100708e.
* An individual or family is considered to be "at risk" in this version of the model if their aggregate resources in retirement are not sufficient to meet aggregate minimum retirement expenditures defined as a combination 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 (in some cases) net housing equity (either in the form of an annuity or as 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 ad hoc thresholds.

percentages are categorized for each of the three age cohorts into one of the following levels, based on future years of eligibility (whether or not the employee actually chose to participate in a VE plan or opted out of an AE plan):

- Zero years of future eligibility.
- 1–9 years.
- 10–19 years.
- 20 or more years.

Figure 3
Impact of Age and Future Years Eligible for Participation in a Defined Contribution Plan on At-Risk* Probabilities



Source: EBRI/ERF Retirement Securily Projection Model® version 100504e.
* An individual or family 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 retiremen 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 (in some cases) net housing equity (either in the form of an annuity or as 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 ad hoc thresholds.

Given their current ages and the assumption under the runs in VanDerhei and Copeland (2010) that everyone retires at age 65, Early Boomers obviously can be in only one of the first two levels. When the results for this age cohort are bifurcated by future eligibility in a defined contribution plan, the difference in the "at-risk" percentages is quite large (16 percentage points), even after at most nine years of future eligibility. Late Boomers and Gen Xers are able to have significantly larger future periods of time eligible to participate in a defined contribution plan and therefore the differences are much larger. Late Boomers with no future eligibility are simulated to have an "at-risk" level 26 percentage points larger than those with 10–19 future years of eligibility. Gen Xers obviously have the largest differential (40 percentage points): Those with no future years of eligibility have an "at-risk" level of 60 percent, compared with only 20 percent for those with 20 or more years of eligibility.

Analyzing the Importance of Retirement Age

Previous EBRI research into retirement income adequacy analyzed the percentage of households at risk for insufficient retirement income as well as how much more at-risk households would need to save to

achieve adequacy for a specified percentage of simulated retirements. Figures 20−22 in VanDerhei and Copeland (2010) present additional savings (expressed as a percentage of compensation) needed to achieve various probabilities of success for retirement age at 65. Unfortunately, the results for many combinations of age/income cohorts would be too high to be feasible.

If additional savings will not be sufficient for some households, it is possible that they may defer retirement age instead. The next section of this report will explore the likely impact on retirement income adequacy of taking this action, but it should be stressed that deferring retirement age will not always be feasible. For example, health problems of either the worker or the spouse may prevent this from happening or a suitable job for the worker's skills may not be available. The Retirement Confidence Survey has consistently found that a large percentage of retirees leave the work force earlier than planned, and 45 percent of retirees reported in 2011 that they were in this situation.[10]

Prior to analyzing the impact of deferring retirement age, the 2010 version of the RSPM was updated with financial market information to January 1, 2011, and several employee behavior assumptions were updated from industry studies. A new subroutine was added to the 2011 version of the RSPM that would allow the expansion of the household's accumulation period (i.e., the time in the work force prior to retirement) to be expanded beyond age 65. Unfortunately, this required the need for many wage and benefit assumptions for very elderly workers in areas where empirical data are quite limited. Therefore, this analysis starts with a set of assumptions that would be most favorable to deferring retirement age:[11]

Wages:
- No age/wage curves were assumed to exist after age 64; instead, it was assumed that the worker's wages grow at average national wage growth.

Job change, disability, unemployment:
- This was assumed to not take place after age 64.

Nursing home or home health care expenses for the worker:
- It was assumed that these costs are not incurred prior to retirement.

Defined contribution plans:
- In terms of employee contributions, it was assumed that the age 64 participating status and contribution rate is continued until retirement age. Implicitly, this means that any employee in an AE plan with auto-escalation has the escalation feature turned off at age 65.
- For employer contributions, match rates are assumed to remain constant and nonelective contributions continue at the age 64 contribution rate.

Social Security:
- Initial receipt is deferred until the earlier of retirement age or age 70.[12]

The Impact of Deferring Retirement Age on Retirement Income Adequacy

Figure 4 shows the value of deferring retirement age for Baby Boom and Gen X households assuming that a 50 percent probability of "success" is sufficient (where success is defined as not running short of money in retirement). For the lowest preretirement income quartile, only 29.6 percent of these households would have sufficient resources to not run short of money in retirement 50 percent of the time; however, this increases to 34.6 percent if retirement is deferred until age 67 and 46.5 percent if retirement is deferred until age 69. The incremental increase in the percentage of households in the lowest preretirement income quartile having at least a 50 percent probability of success levels off for several years (in large part due to the elimination of the delayed retirement credits under Social Security) but then picks up again after age 75. Approximately one-half (49.1 percent) of the lowest preretirement income quartile households retiring at age 75 would have at least a 50 percent probability of success, but that increases to 61.7 percent at age 80 and 90.2 percent at age 84.

Given that the other preretirement income quartiles will start with a larger percentage of households achieving the 50 percent probability of success threshold in Figure 4, there will be less dramatic impacts (in terms of the additional households satisfying the thresholds). Focusing on the highest preretirement income threshold, 89.1 percent already have at least a 50 percent probability of success by age 65. This value increases to 94.5 percent by age 69 but then levels off for several years before finally reaching 98.4 percent age at 84.

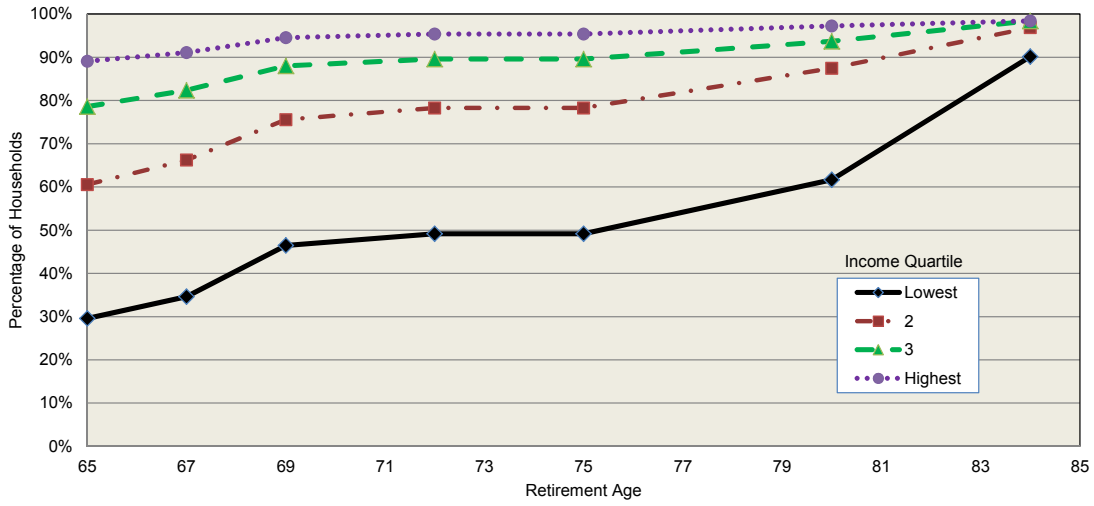
The value of deferring retirement age on retirement income adequacy for the second and third preretirement income quartiles falls between these two extremes. In both cases, though, a significant percentage of the households that do not meet the 50 percent success threshold by age 65 will meet it if they defer retirement age until 69. For example, 39.4 percent of the households in the second preretirement income quartile do not meet the 50 percent success threshold at age 65, but that number decreases to 24.4 percent at age 69. In other words, 38 percent of the households not able to satisfy the threshold at age 65 will be able to satisfy it by age 69. The results are even more dramatic for the third preretirement income quartile, with 44 percent of these households that were not able to satisfy the threshold at age 65 being able to satisfy it by age 69.[13]

Figure 5 provides a similar analysis, although in this case the threshold for success increases to having adequate retirement income for at least 70 percent of the simulated life paths in retirement. As expected, each of the four lines from the Figure 4 will fall, given that fewer households will be able to meet the more stringent threshold at any specific retirement age. Only 6.0 percent of the households in the lowest preretirement income quartile will meet this new threshold of success (compared to 29.6 percent under the 50 percent threshold). By deferring retirement to age 69, 14.9 percent of these households would meet the 70 percent threshold (or an additional 9 percent of these households that had not met the threshold at age 65 would meet it by age 69). A total of 39.2 percent of the households in the lowest preretirement income quartile would meet the 70 percent threshold by age 84. A total of 23.5 percent of the households in the second preretirement income quartile would be able to satisfy the 70 percent threshold if they retired at age 65. This value increases to 36.5 percent at age 69 (or an additional 17 percent of these households that had not met the threshold at age 65 would meet it by age 69). A total of 49.1 percent of the households in the third preretirement income quartile would be able to satisfy the 70 percent threshold if they retired at age 65. This value increases to 60.5 percent at age 69 (or an additional 22 percent of these households that had not met the threshold at age 65 would meet it by age 69). A total of 75.9 percent of the households in the highest preretirement income quartile would be able to satisfy the 70 percent threshold if they retired at age 65. This value increases to 81.1 percent at age 69 (or an additional 30 percent of these households that had not met the threshold at age 65 would meet it by age 69).

Figure 6 provides a similar analysis, although in this case the threshold for success increases to having adequate retirement income for at least 80 percent of the simulated life paths in retirement. Less than 1 percent of the households in the lowest preretirement income quartile will meet this threshold. By deferring retirement to age 69, 1.3 percent of these households would meet the 80 percent threshold (or less than 1 percent of these households that had not met the threshold at age 65 would meet it by age 69). A total of 10.3 percent of the households in the second preretirement income quartile would be able to satisfy the 80 percent threshold if they retired at age 65. This value increases to 15.3 percent at age 69 (or an additional 6 percent of these households that had not met the threshold at age 65 would meet it by age 69). A total of 33.2 percent of the households in the third preretirement income quartile would be able to satisfy the 80 percent threshold if they retired at age 65. This value increases to 40.6 percent at age 69 (or an additional 11 percent of these households that had not met the threshold at age 65 would meet it by age 69). A total of 61.2 percent of the households in the highest preretirement income quartile would be able to satisfy the 80 percent threshold if they retired at age 65. This value increases to 68.7 percent at age 69 (or an additional 19 percent of these households that had not met the threshold at age 65 would meet it by age 69).

Figure 4

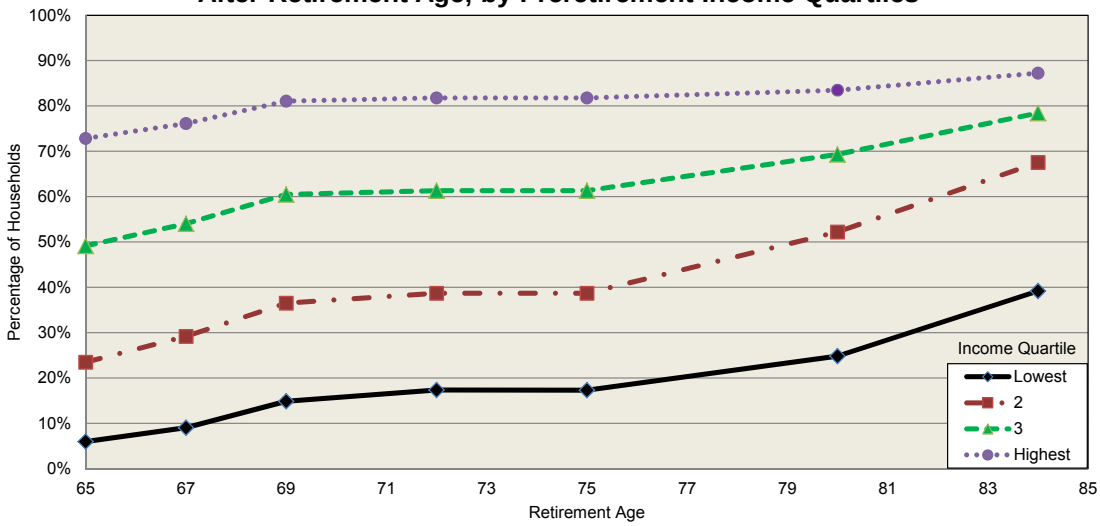
Percentage of Baby Boom and Gen X Households Simulated to Have Adequate* Retirement Income for at Least 50% of Simulated Life Paths After Retirement Age, by Preretirement Income Quartiles



Source: EBRI Retirement Security Projection Model® version 110410i.
* An individual or family is considered have"adequate" retirement income in this version of the model if their aggregate resources in retirement are 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 (in some cases) net housing equity (either in the form of an annuity or as 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 ad hoc thresholds.

Figure 5

Percentage of Baby Boom and Gen X Households Simulated to Have Adequate* Retirement Income for at Least 70% of Simulated Life Paths After Retirement Age, by Preretirement Income Quartiles



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The Value of Participating in a Defined Contribution Plan After Age 64

Given the current baseline assumptions of no job change after age 64, the importance of participating in a defined contribution plan after age 64 could be substantial. This is investigated in Figures 7, 8, and 9 by bifurcating several combinations of retirement age and preretirement income quartiles into those participating in a defined contribution plan after age 64 and those that are not and computing the differences in the percentages. Figure 7 provides the analysis for the 50 percent probability of success threshold. In this case, the numbers are largest for age 65 and decline to differences of 6 percentage points or less for age 84. However, two points must be considered when interpreting these results. First, the differences at age 65 are not due to additional accumulations after age 65, but to the fact that to have participated in a defined contribution plan at 65 means that the household must have been a participant at age 64 (and likely for several years prior to that time, depending on the simulated tenure for the last job). Second, the absolute differences for values at age 84 would be expected to be quite small given that the aggregated results at that age in Figure 4 are all over 90 percent.

Figures 10, 11 and 12 are used to deal with the second point above. Instead of taking the simple difference (for each combination of retirement age and preretirement income quartile) of percentage of households satisfying the threshold success probability assuming a defined contribution plan minus the percentage of households satisfying the threshold success probability assuming no defined contribution plan, a ratio was computed where this difference is the numerator and the denominator is the value (1- percentage of households satisfying the threshold success probability assuming no defined contribution plan). In essence, this value can be conceptualized as the ratio of those households NOT satisfying the threshold probability of success without a defined contribution plan that are able to satisfy it with a defined contribution plan.

For example, when the 29.6 percent aggregate value for the lowest preretirement income quartile at retirement age 65 is bifurcated for a 50 percent success rate, the corresponding values are 35.2 percent for those participating in a defined contribution plan and 21.4 percent for those not participating in a defined contribution plan. This difference of 13.8 percent is the value of the first bar in Figure 7. When the 13.8 percent is divided by the percentage of these households without a defined contribution plan who have NOT satisfied the 50 percent success threshold (100 percent – 21.4 percent = 78.6 percent) the resulting ratio is 13.8 percent/78.6 percent, or 17.6 percent (the first bar in Figure 10). This relative value for the lowest preretirement income quartile increases for each retirement age modeled in Figure 10 (22.6 percent at age 69, 27.6 percent age 75, and 44.3 percent at age 84). Given that larger percentages of higher preretirement income quartile households satisfy the 50 percent threshold, the same absolute increase in percentage of households satisfying the threshold as a result of defined contribution participation after age 64 will result in a larger relative increase. This is exactly what is found in Figures 10 through 12 as the relative values for each retirement age are monotonically increasing with an increase in preretirement income quartile.

Figure 11 provides results from a similar analysis to Figure 10; however, the threshold in this case is set at 70 percent. The relative increase in each case is smaller than it was for the 50 percent threshold but the overall trends are similar. Figure 12 repeats this analysis with an 80 percent threshold. Again, the relative increases are smaller than in the previous analyses but with similar overall trends.

Figure 6

Percentage of Baby Boom and Gen X Households Simulated to Have Adequate* Retirement Income for at Least 80% of Simulated Life Paths After Retirement Age, by Preretirement Income Quartiles

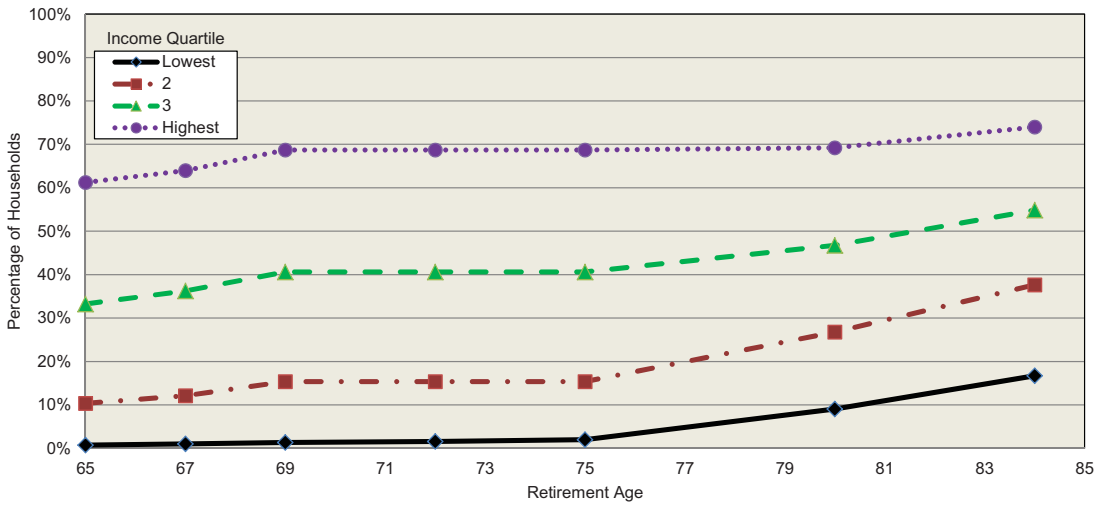

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Figure 7

Value of DC Participation After Age 64: Increase in the Percentage of Baby Boom and Gen X Households Simulated to Have Adequate* Retirement Income for at Least 50% of Simulated Life Paths After Retirement Age, by Preretirement Income Quartiles

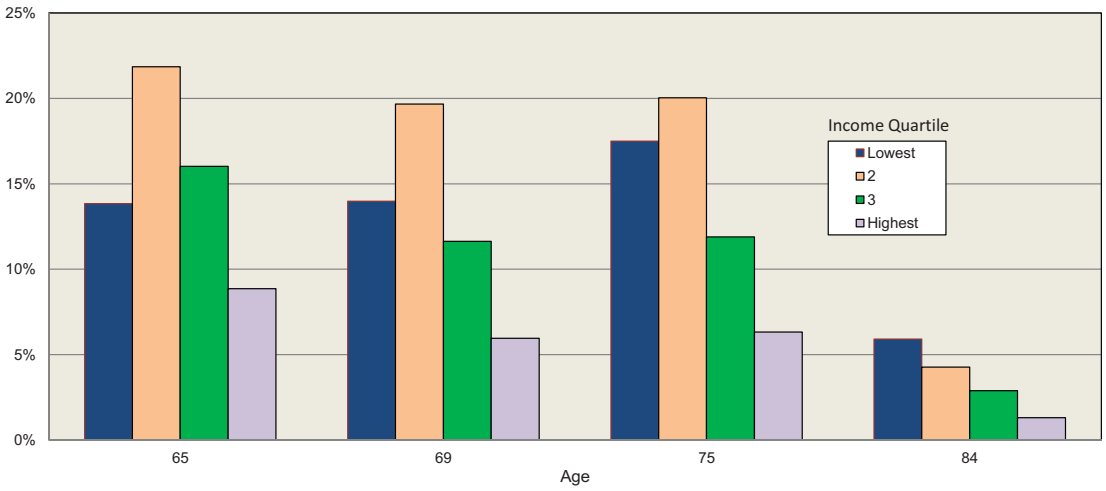

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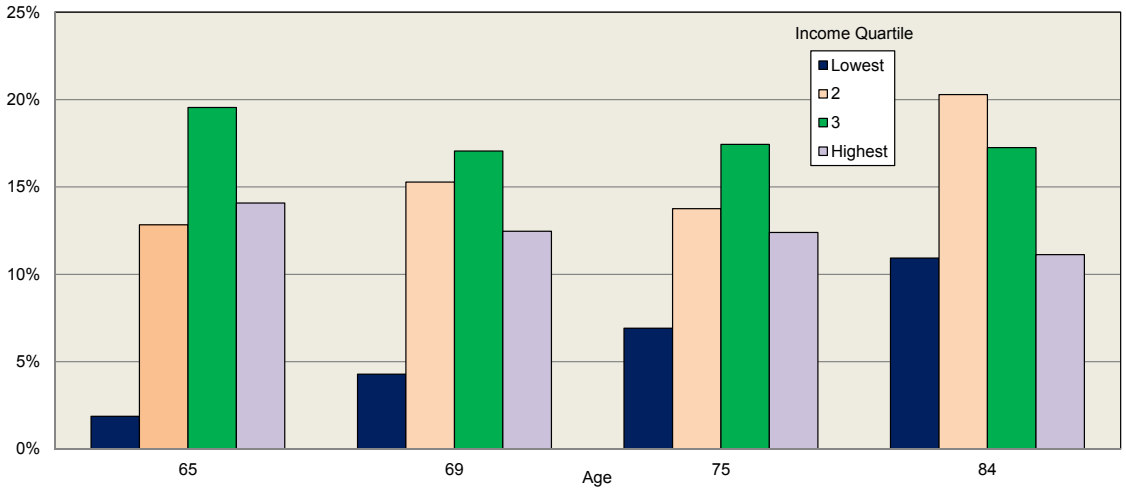
Figure 8

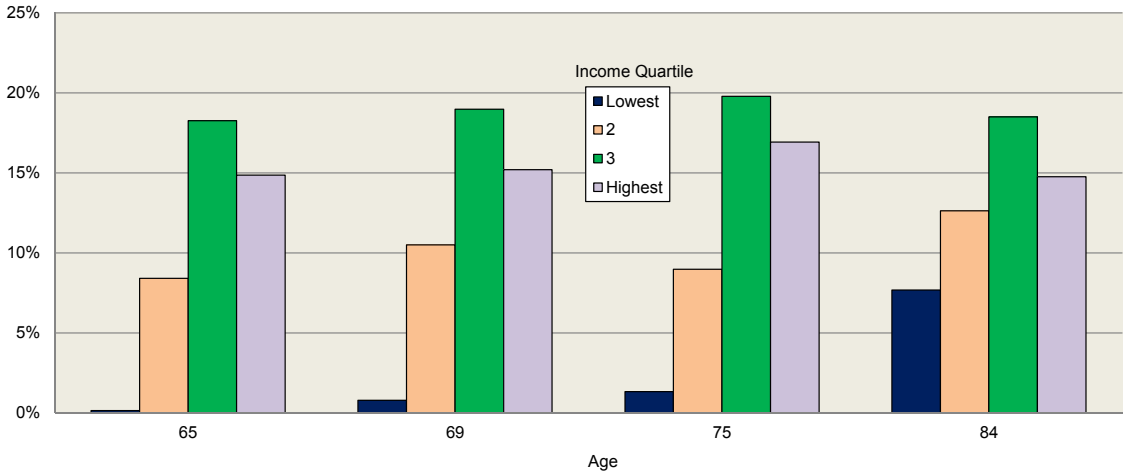
Value of DC Participation After Age 64: Increase in the Percentage of Baby Boom and Gen X Households Simulated to Have Adequate* Retirement Income for at Least 70% of Simulated Life Paths After Retirement Age, by Preretirement Income Quartile



Source: EBRI Retirement Security Projection Model® version110410i.
* An individual or family is considered have "adequate" retirement income in this version of the model if their aggregate resources in retirement are 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 (in some cases) net housing equity (either in the form of an annuity or as 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 ad hoc thresholds.

Figure 9

Value of DC Participation After Age 64: Increase in the Percentage of Baby Boom and Gen X Households Simulated to Have Adequate* Retirement Income for at Least 80% of Simulated Life Paths After Retirement Age, by Preretirement Income Quartile



Source: EBRI Retirement Security Projection Model® version110410i.
* An individual or family is considered have "adequate" retirement income in this version of the model if their aggregate resources in retirement are 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 (in some cases) net housing equity (either in the form of an annuity or as 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 ad hoc thresholds.

Summary and Conclusion

The EBRI Retirement Security Projection Model® (RSPM) was developed in 2003 to provide an assessment of national retirement income prospects. The model was updated in 2010 using more recent data and incorporating retirement plan changes (e.g., auto-enrollment, auto-escalation of contributions, and diversified default investments resulting from the Pension Protection Act of 2006) as well as updates for financial market performance and employee behavior (based on a database of 20 million 401(k) participants). The model produced Retirement Readiness Ratings for age and income cohorts to determine what percentage of households would likely be "at risk" of having inadequate retirement income. Since the genesis of this project in the late 1990s, the model had always assumed a retirement age of 65. While there was abundant evidence of many individuals retiring earlier (e.g., as soon as they became eligible for Social Security retirement benefits at age 62), the model was constructed to measure the household's probability of retirement income adequacy if this temptation were avoided and retirement deferred to age 65. However, even with this admittedly optimistic assumption, the results in both 2003 and 2010 showed that the median additional percentage of compensation that would be required for retirement income adequacy at more than a 50 percent probability would exceed 25 percent of compensation annually (until age 65) for many age/income combinations.

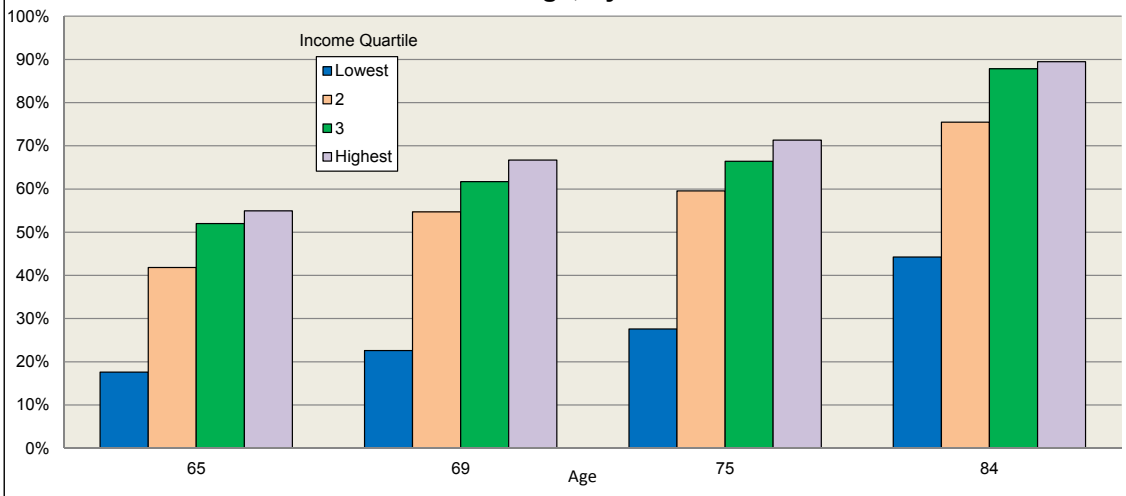
As a result, the 2011 version of RSPM added a new feature that would allow households to defer retirement age past age 65[14] in an attempt to determine whether retirement age deferral is indeed sufficiently valuable to mitigate retirement income adequacy problems for most households (assuming the worker is physically able to continue working and that there continues to be a suitable demand for his or her skills). The answer, unfortunately, is not always "yes," even if retirement age is deferred into the 80s. Using the threshold of retirement income adequacy described above (essentially sufficient retirement income to pay for basic retirement expenses and uninsured medical costs for the entire retirement period), RSPM baseline results indicate that the lowest preretirement income quartile would need to defer retirement age to 84 before 90 percent of the households would have a 50 percent probability of success. Although a significant portion of the improvement takes place in the first four years after age 65, the improvement tends to level off in the early 70s before picking up in the late 70s and early 80s. Households in higher preretirement income quartiles start at a much higher level, and therefore have less improvement in terms of additional households reaching a 50 percent success rate as retirement age is deferred for these households.

The problem with using a 50 percent probability of success, of course, is that the household is in a position where they will "run short of money" in retirement one chance out of two. While most households (at least those that are cognizant of these risks) are likely to have a risk aversion level that would make this untenable, switching to a higher probability of success will significantly reduce the percentage of households capable of satisfying the threshold at any given retirement age. For example, if the success rate is moved to a threshold of 70 percent, only 2 out of 5 households in the lowest-income quartile will attain retirement income adequacy even if they defer retirement age to 84. Increasing the threshold to 80 percent reduces the number of lowest preretirement income quartile households that can satisfy this standard at a retirement age of 84 to approximately 1 out of 7.

One of the factors that makes a major difference in the percentage of households satisfying the retirement income adequacy thresholds at any retirement age is whether the worker is still participating in a defined contribution plan after age 65. The increase in the percentage of households that are predicted to have adequate retirement income as a result of defined contribution participation varies by retirement age, preretirement income quartile and probability of retirement income adequacy, but this factor results in at least a 10 percentage point difference in the majority of the retirement age/income combinations investigated. The results are even more striking when the value of defined contribution participation after age 64 is viewed as the relative increase in the percentage of households simulated to have adequate retirement income (see Figures 10−12).

Figure 10

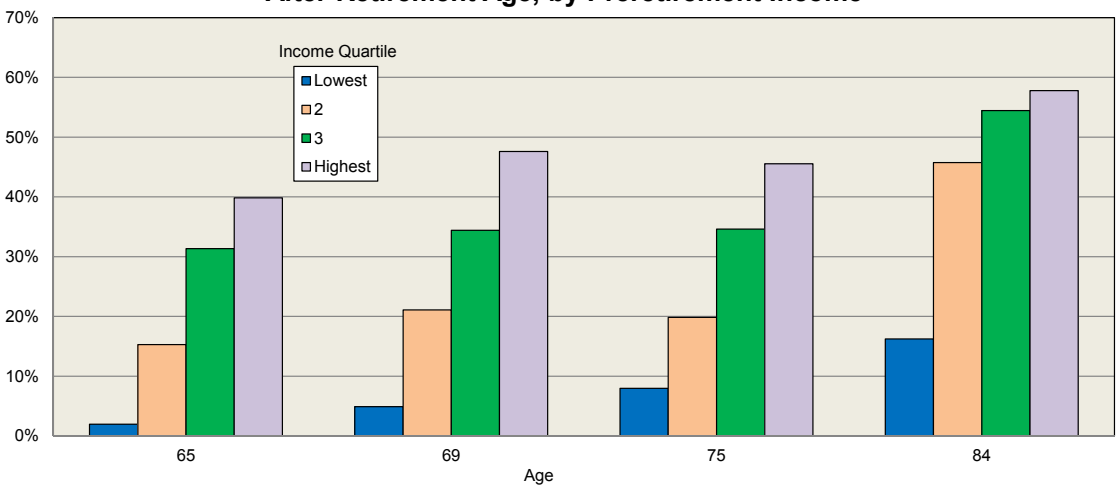
Value of DC Participation After Age 64: Relative Increase in the Percentage of Baby Boom and Gen X Households Simulated to Have Adequate* Retirement Income for at Least 50% of Simulated Life Paths After Retirement Age, by Preretirement Income



Source: EBRI Retirement Security Projection Model® version 110410i.
* An individual or family is considered have "adequate" retirement income in this version of the model if their aggregate resources in retirement are 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 (in some cases) net housing equity (either in the form of an annuity or as 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 ad hoc thresholds.

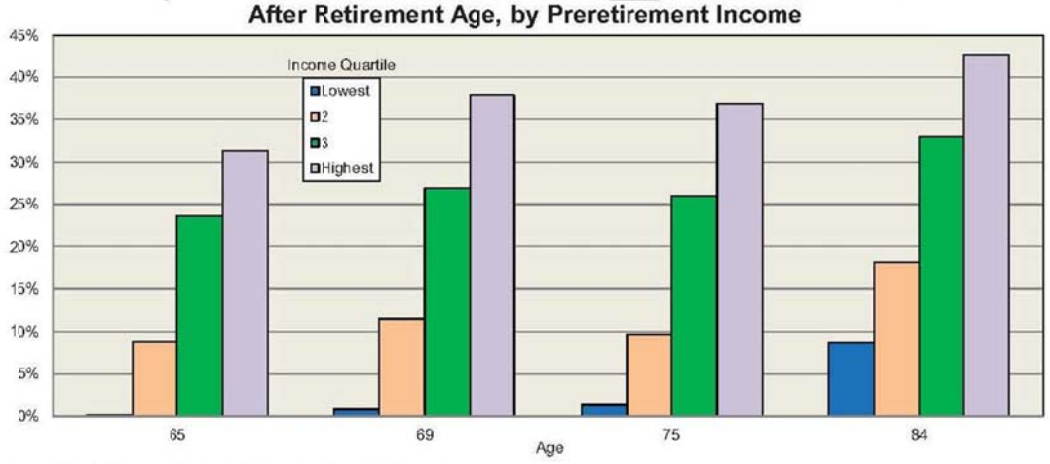
Figure 11

Value of DC Participation After Age 64: Relative Increase in the Percentage of Baby Boom and Gen X Households Simulated to Have Adequate* Retirement Income for at Least 70% of Simulated Life Paths After Retirement Age, by Preretirement Income



Source: EBRI Retirement Security Projection Model® version 110410i.
* An individual or family is considered have "adequate" retirement income in this version of the model if their aggregate resources in retirement are 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 (in some cases) net housing equity (either in the form of an annuity or as 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 ad hoc thresholds.

Figure 12
Value of DC Participation After Age 64: Relative Increase in the Percentage of Baby Boom and Gen X Households Simulated to Have Adequate* Retirement Income for at Least 80% of Simulated Life Paths After Retirement Age, by Preretirement Income



Source: EBRI Retirement Security Projection Model® version110410i.
* An individual or family is considered have "adequate" retirement income in this version of the model if their aggregate resources in retirement are 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 heath 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 (in some cases) net housing equity (either in the form of an annuity or as 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 ad hoc thresholds.

In conclusion, this *Issue Brief* used the RSPM to provide an initial estimate of just how valuable deferring retirement age might be in terms of retirement income adequacy for Baby Boomers and Gen Xers. Given the paucity of data with respect to many wage and benefit conditions for workers beyond age 65, several assumptions with little empirical verification were needed to produce the initial results. In most cases,[15] the assumptions made were optimistic in terms of their impact on the value of deferring retirement age. Therefore, the percentages of households with adequate retirement income in Figures 4–6 should be seen as a best-case estimate, especially at the more advanced retirement ages.

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Endnotes

[1] The nominal cost of these expenditures increases with component-specific inflation assumptions. See the appendix to VanDerhei and Copeland (June 2011) for more details.

[2] Net housing equity is introduced into the model in three different mechanisms (explained below).

[3] IRS tax tables from 2010 are used to compute the tax owed on the amounts received from defined benefit plans and Social Security (with the percentage of Social Security benefits subject to federal income tax proxied as a function of the various retirement income components) as well as the individual account withdrawals.

[4] Roth IRA and 401(k) accounts are not used in this version of the model but will be incorporated into a forthcoming EBRI publication.

[5] Capital gains treatment is not used in this version of the model.

[6] See VanDerhei (September 2004) for a description of the various approaches to benchmarking retirement income needs.

[7] For a description of the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project, see the November 2010 EBRI Issue Brief and ICI Perspective, at www.ebri.org/publications/ib and www.ici.org/research/perspective

[8] This allows simulations for those ages 36–62 in 2010. In previous work with this model (VanDerhei and Copeland, 2003), workers between the ages of 38 and 67 in 2003 were simulated.

[9] Preretirement income in RSPM 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.

[10] Helman, Copeland, and VanDerhei (2011)

[11] Many of these assumptions will be relaxed in future work.

[12] Social Security benefits are increased by a certain percentage (depending on date of birth) if retirement is deferred beyond Social Security Normal Retirement Age. The benefit increase no longer applies after the worker reaches age 70.

[13] Similar calculations for the other two preretirement income quartiles are: 24 percent for the lowest quartile and 50 percent for the highest quartile.

[14] A future version of the model will include the ability to model retirement ages prior to Medicare eligibility.

[15] The obvious exception is that housing equity was not included in the baseline runs for this analysis. A future EBRI publication will focus on the importance of this component of potential retirement income.