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Statement for the

Senate Special Committee on Aging

Hearing on

# Retirement Planning: Do We Have a Crisis in America? Results From the EBRI-ERF Retirement Security Projection Model

Jan. 27, 2004

by
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Temple University and EBRI Fellow

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Sen. Craig, Sen. Breaux, and members of the Committee. I am Jack VanDerhei, Temple University and research director of the EBRI Fellows' Program. It is my pleasure to appear before you today.

## Background

The ability of future cohorts of retirees to have broadly defined levels of retirement security has been the focus of several congressional hearings as well as countless public policy analyses in the past. In recent years, there have been several reasons to revisit earlier studies and conclusions. Perhaps foremost among these is the long-term evolution away from "traditional" defined benefit pension plans to individual-account defined contribution retirement plans, such as the 401(k) (at least in the private sector).[1] In addition to transferring investment risk from the employer to employee, this evolution has also resulted in many employees increasing their exposure to longevity risk as well as being put in a situation where they may make one or more of a number of choices that would adversely impact their eventual retirement income. Moreover, those employees who remain active participants within the defined benefit plan system may have already had unexpected modifications to the type of plan sponsored by the employer. Recent legal actions and lack of legislative clarity and/or regulatory guidance may suppress future activity in this regard; however, projecting future benefit accruals may prove problematic even for those employees still participating in a traditional form of final-average defined benefit plans.

While several studies have attempted to project retirement income and wealth, there have been few attempts to reconcile their results with the uncertain amount and duration of retiree expenditures. Moore and Mitchell (1997) estimated how much Health and Retirement Study (HRS) respondents ages 51 to 61 would need to save from the current year until retirement assuming they wanted to preserve preretirement consumption levels after retirement. They found that the savings requirement for the median family would be 7 percent of compensation if the retirement age were 65. As expected, they found tremendous heterogeneity among families with respect to the required savings rate. Another approach was followed by Engen, Gale, and Uccello (1999) using both HRS and the Survey of Consumer Finances (SCF). Using a theoretical model, the authors estimated the ratio of a household's wealth to its earnings as benchmarks to evaluate savings adequacy. Using intermediate wealth measures, the authors estimated that 59.7 percent of the SCF households exceeded the simulated median wealth-to-earnings ratio in 1992. While this model includes the capacity for sensitivity analysis on an ad hoc increase in simulated retirement needs and/or life expectancy, there is no attempt to empirically estimate the incidence, duration or cost of potentially catastrophic medical costs.

## EBRI/Milbank Study for Oregon, Kansas and Massachusetts

The Employee Benefit Research Institute (EBRI) and the Milbank Memorial Fund, working with the governor of Oregon, set out to see if the necessary retirement security analysis could be undertaken on a state-specific basis and undertook an initial study on the future retirees of Oregon. The results, released in 2001, made it clear that there is a significant shortfall and that major decisions lie ahead if the state's population is to have adequate resources in retirement. Subsequent to the release of the Oregon study, it was decided that the approach could be carried to other states as well. Kansas and Massachusetts were chosen as the second and third states for analysis. Results of the Kansas study were presented to the state's Long-Term Care Services Task Force on July 11, 2002, and the results of the Massachusetts study were presented on Dec. 1, 2002.

The Employee Benefit Research Institute's Education and Research Fund (EBRI-ERF) Retirement Security Projection Model was used to estimate the accrued benefits earned and assumed to be retained by defined benefit participants as well as the annual retirement income that could be produced from the balances of any defined contribution plan, cash balance plan, and/or individual retirement account (IRA) of the states' residents at Social Security normal retirement age. We added to this amount the expected retirement income from Social Security under current law as well as under two reform options. In an attempt to provide an approximation of the aggregate amount of additional money that would be needed to provide basic expenditures, we estimated the deficits that are likely to be produced by comparing projected retirement income with projected retirement expenses (both deterministic and stochastic) over the simulated lifetime of each future retiree. These deficits approximate the additional money that would be required in addition to the retirement income and wealth already projected from defined benefit and defined contribution retirement plans, IRAs, Social Security, and (under some of the output) liquidation and/or annuitization of housing net worth to cover the projected expenses of maintaining the families' economic standard of living. The present value of any deficits were accumulated annually and then averaged for all retirees in the same birth cohort and gender/family categories.

The model was expanded so that it could be national in scope and initial estimates were published in the November 2003 *EBRI Issue Brief* ("Can America Afford Tomorrow's Retirees: Results From the EBRI-ERF Retirement Security Projection Model") and was discussed at a day-long EBRI policy forum ("Assessing Future Retirement Security With the Results of the EBRI/ERF Retirement Income Projection Model") held Dec. 4, 2003.[2] In an attempt to make the results easier to comprehend, the primary output metric was changed to one that represents the additional percentage of compensation that each simulated observation would need to save (in addition to the other components already modeled) from 2003 until the time they retired. The entire distribution of outcomes was arrayed and charts displaying median compensation percentages were created for each cohort for a variety of confidence levels and assumptions regarding Social Security and liquidation of housing equity. Additional analysis was conducted to show the probability of retirement security if each individual would save an additional 5 percent of compensation for the remainder of his or her working career.

## Accumulation Phase of EBRI Model

The EBRI-ERF model is based on a six-year time series of administrative data from more than 10 million 401(k) participants and more than 30,000 plans, as well as a time series of several hundred plan descriptions used to provide a sample of the various defined benefit and defined contribution plan provisions applicable to plan participants. In addition, several public surveys based on participants' self-reported answers (the Survey of Consumer Finances [SCF], the Current Population Survey [CPS], and the Survey of Income and Program Participation [SIPP]) were used to model participation, wages, and initial account balance information.

This information is combined with U.S. Department of Labor Form 5500 data to model participation and initial account balance information for all private-sector defined contribution participants, as well as contribution behavior for non-401(k) defined contribution plans. Asset allocation information is based on previously published results of the EBRI/ICI Participant-Directed Retirement Plan Data

Collection Project and employee contribution behavior to 401(k) plans is provided by an expansion of a method based on both employee demographic information as well as plan matching provisions.

A combination of Form 5500 data and self-reported results were also used to estimate defined benefit participation models; however, it appears information in the latter is rather unreliable with respect to estimating current and/or future accrued benefits. Therefore, a database of defined benefit plan provisions for salary related plans was constructed to estimate benefit accruals.

Combinations of self-reported results were used to initialize IRA accounts. Future IRA contributions were modeled from SIPP data, while future rollover activity was assumed to flow from future separation from employment in those cases in which the employee was participating in a defined contribution plan sponsored by the previous employer. Industry data are used to estimate the relative likelihood that the balances are rolled over to an IRA, left with the previous employer, transferred to a new employer, or used for other purposes.

## Defined Benefit Plans

A stochastic job duration algorithm was estimated and applied to each individual in the EBRI-ERF model to predict the number of jobs held and age at each job change. Each time the individual starts a new job, the EBRI-ERF model simulates whether or not it will result in coverage in a defined benefit plan, a defined contribution plan, both, or neither. If coverage in a defined benefit plan is predicted, time series information from the Bureau of Labor Statistics (BLS) is used to predict what type of plan it will be.

While the BLS information provides significant detail on the generosity parameters for defined benefit plans, preliminary analysis indicated that several of these provisions were likely to be highly correlated (especially for integrated plans). Therefore, a time series of several hundred defined benefit plans per year were coded to allow for assignment to the individuals in the EBRI-ERF model.

Although the Tax Reform Act of 1986 at least partially modified the constraints on integrated pension plans by adding Sec. 401(l) to the Internal Revenue Code, it would appear that a significant percentage of defined benefit sponsors have retained Primary Insurance Amount (PIA)-offset plans. In order to estimate the offset provided under the plan formulae, the EBRI-ERF model computes the employee's Average Indexed Monthly Earnings, Primary Insurance Amount, and covered compensation values for the birth cohort.

## Defined Contribution Plans

***Initial Account Balances***—Previous studies on the EBRI/ICI Participant-Directed Retirement Plan Data Collection Project have analyzed the average account balances for 401(k) participants by age and tenure. Recently published results show that the year-end 1999 average balance ranged from $4,479 for participants in their 20s with less than three years of tenure with their current employer to $198,595 for participants in their 60s who have been with the current employer for at least 30 years (thereby effectively eliminating any capability for IRA rollovers).

Unfortunately, the EBRI/ICI database does not currently provide detailed information on other types of defined contribution plans nor does it allow analysis of defined contribution balances that may have been left with previous employers. The EBRI-ERF model uses self-reported responses for whether an individual has a defined contribution balance to estimate a participation model and the reported value is modeled as a function of age and tenure.

***Contribution Behavior***—Previous research on employee contribution behavior to 401(k) plans has often been limited by lack of adequate data. This is primarily due to the types of matching formulae utilized by sponsors. While these formulae are often complicated due to the desire of sponsors to provide sufficient incentives to non-highly compensated employees to contribute in order to comply with technical nondiscrimination testing, this complexity makes it virtually impossible to appropriately analyze the employee's behavior if one is forced to observe either aggregate plan data or use information on the plan contribution formulae provided by the participant.

With the exception of studies based on administrative data, employee contribution behavior is typically assumed to be a function of employee demographic data and perhaps an employee's estimate of the employer matching rate or a proxy based on Form 5500 data. However, a significant amount of the employee contribution behavior appears to be determined by plan-specific provisions. For example, the percentage of employees contributing up to either the maximum amount of compensation matched, the 402(g) limit, or the plan maximum was studied by EBRI in 1996. It would appear that well over 50 percent of the employee contribution is explained by these "corner points," which would not be picked up in the data described above.

Recently, EBRI provided preliminary findings[3] introducing new methodology to expand the usefulness of modeling these data, as well as a better understanding of contribution behavior by 401(k) plan participants. We utilize a sequential response regression model to allow for the differing incentives faced by the employees at various levels of contributions. Based on findings from 137 distinct matching formulae, we have estimated a behavioral model that is able to control for the tendency of employers to substitute between the amount they match per dollar of employee contribution and the maximum percentage of compensation they are willing to match. We decompose employee contribution behavior into a series of 1 percent of compensation intervals and therefore are able to model not only the marginal incentives to contribute at that interval but also the "option value" that making the contribution at that interval provides for the employee.

Contribution behavior for defined contribution plans other than 401(k) plans is estimated from self-reported responses to public survey data.

***Investment Returns***—Although the EBRI-ERF model has been designed to generate investment rates of return on a stochastic basis, for purposes of this analysis we are presenting the results obtained from running it in a deterministic mode. We adopt the same asset-specific rates of return that were used in the Social Security Administration's Model of Income in the Near Term (MINT) model.[4]

## Retiree Expenditures

The expenditures used in the model for the elderly consist of two components—deterministic and stochastic expenses. The deterministic expenses include those expenses that the elderly incur from a basic need or want of daily life, while the stochastic expenses in this model are exclusively health-event related—e.g., an admission to a nursing home or the commencement of an episode of home health care—that occur only for a portion, if ever, during retirement, not on an annual basis.

## Deterministic Expenses

The deterministic expenses are broken down into seven categories—food, apparel and services (dry cleaning, haircuts), transportation, entertainment, reading and education, housing, and basic health expenditures. Each of these expenses is estimated for the elderly (65 or older) by family size (single or couple) and family income (less than $15,000, $15,000 to $29,999, and $30,000 or more in 2002 dollars) of the family/individual.

The estimates are derived from the 2000 Consumer Expenditure Survey (CES) conducted by the Bureau of Labor Statistics of the U.S. Department of Labor. The survey targets the total noninstitutionalized population (urban and rural) of the United States and is the basic source of data for revising the items and weights in the market basket of consumer purchases to be priced for the Consumer Price Index. CES data provide detailed data on expenditures and income of consumers, as well as the demographic characteristics of those consumers. The survey does not provide state estimates, but it does provide regional estimates. Thus, the estimates are broken down into four regions— Northeast, Midwest, South, and West—to account for the differences in the cost of living across various parts of the country. Consequently, an expense value is calculated using actual experience of the elderly for each region, family size, and income level by averaging the observed expenses for the elderly within each category meeting the above criteria. The housing expenses are further broken down by whether the elderly own or rent their home. The basic health expenditure category has additional data needs in addition to those in the CES.

***Health***—The basic health expenditures are estimated using a somewhat different technique and are comprised of two parts. The first part uses the CES as above to estimate the elderly's annual health expenditures that are paid out-of-pocket or are not reimbursed (covered) or at least not fully reimbursed by Medicare and/or private Medigap health insurance, e.g., prescription drugs.

The second part contains insurance premium estimates, including Medicare Part B premiums, and is not income related. All of the elderly are assumed to participate in Part B, and the premium is determined annually by the Medicare program and is the same nationally. For the Medigap insurance premium, we assume all of the elderly purchase a Medigap policy. A regional estimate is derived from a 2000 survey done by Weiss Ratings Inc. that received average quotes for three popular types of Medigap policies (A, F, and J) in 47 states and the District. The estimates are calculated from the three policy types averaged over the states in the respective regions to arrive at the estimate for each region.

This approach is taken for two reasons. First, sufficient quality data do not exist for the matching of retiree medical care (as well as the generosity of and cost of the coverage) and Medigap policy use to various characteristics of the elderly. Second, the health status of the elderly at the age of 65 is not known, let alone over the entire course of their remaining life. Thus, by assuming everyone has a standard level of coverage eliminates trying to differentiate among all possible coverage types as well as determining whether the sick or healthy have the coverage. Therefore, averaging of the expenses over the entire population should have offsetting effects in the aggregate.

The total deterministic expenses for elderly individuals or families are then the sum of the value in all the expense categories for family size, family income level, and region of the individual or family. These expenses make up the basic annual (recurring) expenses for the individual or family. However, if the individual or family meet the income and asset tests for Medicaid, Medicaid is assumed to cover the basic health care expenses (both parts), not the individual or family. Furthermore, Part B premium relief for the low-income elderly (not qualifying for Medicaid) is also incorporated.

## Stochastic Expenses

The second component of health expenditures is the result of simulated health events that would require long-term care in a nursing home or home-based setting for the elderly. Neither of these simulated types of care would be reimbursed by Medicare because they would be for custodial (not rehabilitative) care. The incidence of the nursing home and home health care and the resulting expenditures on the care are estimated from the 1999 National Nursing Home Survey (NNHS) and the 2000 National Home and Hospice Care Survey (NHHCS). NNHS is a nationwide sample survey of nursing homes, their current residents and discharges that was conducted by the National Center for Health Statistics from July through December 1999. The NHHCS is a nationwide sample survey of home health and hospice care agencies, their current and discharge patients that was conducted by the National Center for Health Statistics from August through December 2000.

For determining whether an individual has these expenses, the following process is undertaken. An individual reaching the Social Security normal retirement age has a probability of being in one of four possible assumed “health” statuses: 1) Not receiving either home health or nursing home care, 2) Home health care patient, 3) Nursing home care patient, 4) Death, based upon the estimates of the use of each type of care from the surveys above and mortality. The individual is randomly assigned to each of these four categories with the likelihood of falling into one of the four categories based upon the estimated probabilities of each event. If the individual does not need long-term care, no stochastic expenses are incurred. Each year, the individual will again face these probabilities (the probabilities of being in the different statuses will change as the individual becomes older after reaching age 75 then again at age 85) of being in each of the four statuses. This continues until death or the need for long-term care.

For those that have a resulting status of home health care or nursing home care, their duration of care is simulated based upon the distribution of the durations of care found in the NNHS and NHHCS. After the duration of care for a nursing home stay or episode of home health care, the individual will have a probability of being discharged to one of the other three statuses based upon the discharge estimates from NNHS and NHHCS, respectively. The stochastic expenses incurred are then determined by the length of the stay/number of days of care times the per diem charge estimated for the nursing home care and home health care, respectively, in each region.

For any person without the need for long-term care, this process repeats annually. The process repeats for individuals receiving home health care or nursing home care at the end of their duration of stay/care and subsequently if not receiving the specialized care again at their next birthday. Those who are simulated to die, of course, are not further simulated. As with the basic health care expenses, the qualification of Medicaid by income and asset levels is considered to see how much of the stochastic expenses must be covered by the individual to determine the individual’s final expenditures for the care. Only those expenditures attributable to the individual—not the Medicaid program—are considered as expenses to the individual and as a result in any of the “deficit” calculations.

## Total Expenditures

The elderly individual or families’ expenses are then the sum of their assumed deterministic expenses based upon their demographic characteristics plus any simulated stochastic expenses that they may have incurred. In each subsequent year of life, the total expenditures are again calculated in this manner. The base year’s expenditure value estimates excluding the health care expenses are adjusting annually using the assumed general inflation rate of 3.3 percent from the 2001 OASDI Trustees Report, while the health care expenses are adjusted annually using the 4.0 percent medical consumer price index that corresponds to the June 2002–June 2003 level.

## Results

The primary objective of this analysis is to combine the simulated retirement income and wealth with the simulated retiree expenditures to determine how much each family unit would need to save today (as percentage of their current wages) to maintain a pre-specified “comfort level” (i.e., confidence level) that they will be able to afford the simulated expenses for the remainder of the lifetime of the family unit (i.e., death of second spouse in a family). We report these savings rates by age cohort, family status (at retirement), and gender. Six five-year birth cohorts are simulated. The oldest group was born in the period 1936 to 1940 inclusive while the youngest group was born in the period 1961 to 1965 inclusive. Three combinations of gender/family status at retirement were reported: family, single male, and single female. In addition, the relative income was reported by estimating lifetime income quartiles (from 2002 though retirement age) for each of the 18 combinations of birth cohort and gender/family status at retirement.

It is important to note that within each of the groups modeled there will undoubtedly be significant percentages in the zero category as well as those at levels beyond which anyone could reasonably assume more than a de minimis number of individuals could possibly save. We account for these situations in two ways. First, we report medians for each of the groups. In other words, the numbers presented in Figures A and B provide a number representing the estimate for the 50th percentile when ranked by percentage of compensation. Second, we limit the reported values to 25 percent of compensation under the assumption that few, if any, family units would be able to contribute in excess of this percentage on a continuous basis until retirement age.

It is also important to note that these percentages merely represent savings that need to be generated in addition to what retirement income and/or wealth is simulated by the model. Therefore, if the family unit is already generating savings for retirement that is not included in defined benefit or defined contribution plans, IRAs, Social Security and/or net housing equity, that value needs to be deducted from the estimated percentages.

After the retirement income and wealth was simulated for each family unit, we simulated 1,000 observations (from retirement age until death of the individual for single males and single females or the second person to die for families) and computed the present value of the aggregated deficits at retirement age. At that point, we rank ordered the observations in terms of the present value of the deficits and determined the 75th and 90th percentiles of the distribution. Next we determined the future simulated retirement income accumulated to retirement age and used this information to determine the percentage of compensation that would need to be saved to have sufficient additional income to offset the present value of accumulated deficits for the 75th and 90th percentiles of the distribution.

Figure A (pg. 13) shows the median percentage of compensation that must be saved each year until retirement for a 75 percent confidence level when combined with simulated retirement wealth, assuming current Social Security benefits and that housing equity is never liquidated.

For example, all median gender/family combinations in the first two income quartiles for the oldest birth cohort are at the 25 percent of compensation threshold. For those in the highest income quartile for this birth cohort, the percentages of compensation needed to be saved are 23.8 percent for singe females, 13.9 percent for single males, and 6.1 percent for families.

Figure B (pg. 14) shows the median additional savings required to provide retirement adequacy for a 90 percent confidence level (9 out of 10 simulated life paths). In this case, nearly all of the gender/family status at retirement combinations for the first three income quartiles of the earliest birth cohort are at the threshold (the median for families in the third quartile is estimated at 24.8 percent of compensation). Those in the highest income quartile for this birth cohort all have requirements that would prove difficult if not impossible to implement: median single females are estimated to now need to save more than 25 percent of compensation, single males 22.1 percent of compensation, and families 10.1 percent of compensation.

### Will Individuals Be Able to Save Enough on Their Own (Over and Above What is Already Modeled)?

Figure C (pg. 15) provides another way of illustrating which cohorts may be the most vulnerable to inadequate financial resources in retirement. This figure starts with the baseline scenario described above (current Social Security benefits and no liquidation or annuitization of net housing equity) and assumes that each worker contributes an additional 5 percent of compensation from 2003 until retirement age to supplement his or her Social Security and tax-qualified retirement plans. The percentage of each cohort estimated to have sufficient retirement income and/or wealth to cover the simulated retirement expenses described earlier is displayed. For example, approximately 30 percent of the simulated life paths for the lowest income quartile for those in the 1936−1940 birth cohort would be expected to have sufficient retirement resources. However, at least 85 percent of the simulated life paths for the third or fourth income quartiles for those in the 1961−1965 birth cohort would be sufficient. This is in large part due to the fact that the younger cohorts will have additional years to accumulate the additional 5 percent of compensation. For each birth cohort, the lower income quartiles are in more risk of insufficient retirement income than their higher paid counterparts. Moreover, single females tend to exhibit more vulnerability than single males while families are typically the least vulnerable.

## Alternative Scenarios

It is important to note that the analysis presented in the three figures above is limited to the baseline assumptions with respect to future Social Security benefits and liquidation of housing equity. Specifically we have assumed the current statutory benefits will continue to be paid regardless of the estimated funding difficulties. In VanDerhei and Copeland (2003), we ran two reform scenarios designed to ensure 75-year solvency of the program. Under the first alternative, benefits were reduced.[5] Under the second alternative, both the Social Security normal retirement age and the tax rates were increased.[6] As expected, the estimated deficits increased under both alternative scenarios, especially for the younger birth cohorts.

Moreover, in our baseline analysis above we assumed that retirees would not use their net housing equity to supplement their retirement income in any way (including housing equity loans). In VanDerhei and Copeland (2003) we estimate two additional responses. Our second scenario assumed any net housing equity is annuitized at retirement. Given the stochastic nature of the analysis we were also able to model a third scenario where we assume that housing equity is not liquidated until the time it is first needed to mitigate an annual deficit. At that point we assume any residual value is invested in the same manner as an individual account retirement plan. The relative impact of the second scenario was relatively minor; however, the third scenario had a much more dramatic impact, reducing the annual deficits for 2003 by 23 percent.

## Conclusions

We have purposely structured many of our assumptions to provide conservative estimates of the amounts that would be needed to be saved while employees are working to alleviate any deficits. For example, we have assumed in this version of the model that all employees continue to work until Social Security normal retirement age, even though there has been a long-term trend toward earlier retirement (albeit one that seems to be reversing in recent years). We have also assumed that individual account balances are “self-annuitized” over a period of time that expands the individual and/or family life expectancy by five years, even though there appears to be limited evidence that this type of buffer is actually contemplated by retirees as a risk-reduction device.

Even with these conservative biases built in, the numbers appear troubling for some age cohorts and almost fatalistic for others. The good news is that if many of the younger cohorts begin saving a reasonable amount to supplement their Social Security and qualified retirement plans now, they have a good chance of providing themselves with reasonable assurance that they will at least be able to cover basic retirement expenditures. However, changes in public policy and additional resources from families and charities would be required to provide adequate retirement income for retirees with greater longevity who suffer serious and persistent chronic disease. Our estimates include both the status quo for Social Security benefits as well as two reform scenarios that would decrease benefits for future generations.

As we continue our simulation efforts with this model, we hope to pursue other public policy avenues relevant to economic security for retirees. For example, we hope to be able to integrate empirical data on long-term care insurance purchases into the model within the next year that will allow us to determine the impact of these policies on an individual's prospects for adequate retirement income, as well as the potential benefits to federal and state governments via the likely reduction in Medicaid expenditures.

Both for individuals and for public policymakers, being able to quantify the extent of the impending shortfall in basic retirement income adequacy has obvious implications. For those lucky enough to be young and disciplined at saving, getting started now is likely to assure them a comfortable retirement. Since there are many who are old (or nearing retirement age) and in the lower-income brackets, public resources are likely to be called upon either directly or indirectly to deal with their inability to finance their old age. Knowing the extent of the future problem will at least enable policymakers to try to prepare to deal with these issues when they arrive.

## References

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_____. "The Changing Face of Private Retirement Plans." *EBRI Issue Brief* no. 232 (April 2001).

## Witness Disclosure Statement, pursuant to Clause 2(g)(4) of Rule XI of the Rules of the House:

- **The Witness:**
  Jack VanDerhei is a faculty member at Temple University's School of Business and Management (Department of Risk, Insurance, and Healthcare Management), and also is Research Director of the Employee Benefit Research Institute (EBRI) Fellows' Program, Washington, DC. EBRI is a private, nonprofit, nonpartisan public policy research organization based in Washington, DC. Founded in 1978, its mission is to contribute to, to encourage, and to enhance the development of sound employee benefit programs and sound public policy through objective research and education. EBRI does not lobby and does not take positions on legislative proposals.

- **The Organization:**
  The Education and Research Fund (ERF), established in 1979, performs the charitable, educational, and scientific functions of the Institute. EBRI-ERF is a tax-exempt organization (under IRC Sec. 501(c)(3)) supported by contributions and grants. EBRI-ERF is not a private foundation (as defined by IRC Sec. 509(a)(3)).

  EBRI-ERF has a number of programs:

  American Savings Education Council
  Choose to Save® Education Program
  Defined Contribution Research Program Fellows Program
  Health Confidence Survey Program
  Health Security/Quality Research Program
  Policy Forums
  Retirement Confidence Survey Program
  Retirement Security Research Program
  Social Security Research Program
  Education Programs—Policy Forums, Briefings, Round Tables
  Publication Programs—printed and online
  *EBRI Issue Briefs*, *EBRI Notes*, *EBRI Databook on Employee Benefits*,
  *EBRI Health Benefits Databook*, *Fundamentals of Employee Benefit Programs*, *Policy Studies*

- **Contracts:**
  EBRI does not have any contracts with the federal government in 2003, and did not in 2002 or 2001.

## Endnotes

1 See *EBRI Issue Briefs* no. 249, "An Evolving Pension System: Trends in Defined Benefit and Defined Contribution Plans" (September 2002); no. 232, "The Changing Face of Private Retirement Plans" (April 2001); and no. 190, "Defined Contribution Plan Dominance Grows Across Sectors and Employer Sizes, While Mega-Defined Benefit Plans Remain Strong: Where We Are and Where We Are Going" (October 1997).

2 See *EBRI Issue Brief* no. 266 (February 2004), "Americans' Future Retirement Security: Implications of the EBRI-ERF Retirement Security Projection Model" (forthcoming).

3 Jack VanDerhei and Craig Copeland, "A behavioral model for predicting employee contributions to 401(k) plans." *North American Actuarial Journal* (First Quarter, 2001).

4 MINT assumes a CPI growth rate of 3.50 percent, a real rate of return for stocks of 6.98 percent, and a real rate of return for bonds of 3.00 percent. It subtracts 1 percent from each of the stock and bond real rates of return to reflect administrative cost (See Eric Toder et al., *Modeling Income in the Near Term: Projections of Retirement*

*Income Through 2020 for the 1931–1960 Birth Cohorts, Final Report*, SSA Contract No: 600-96-27332 (Washington, DC: The Urban Institute, 1999).

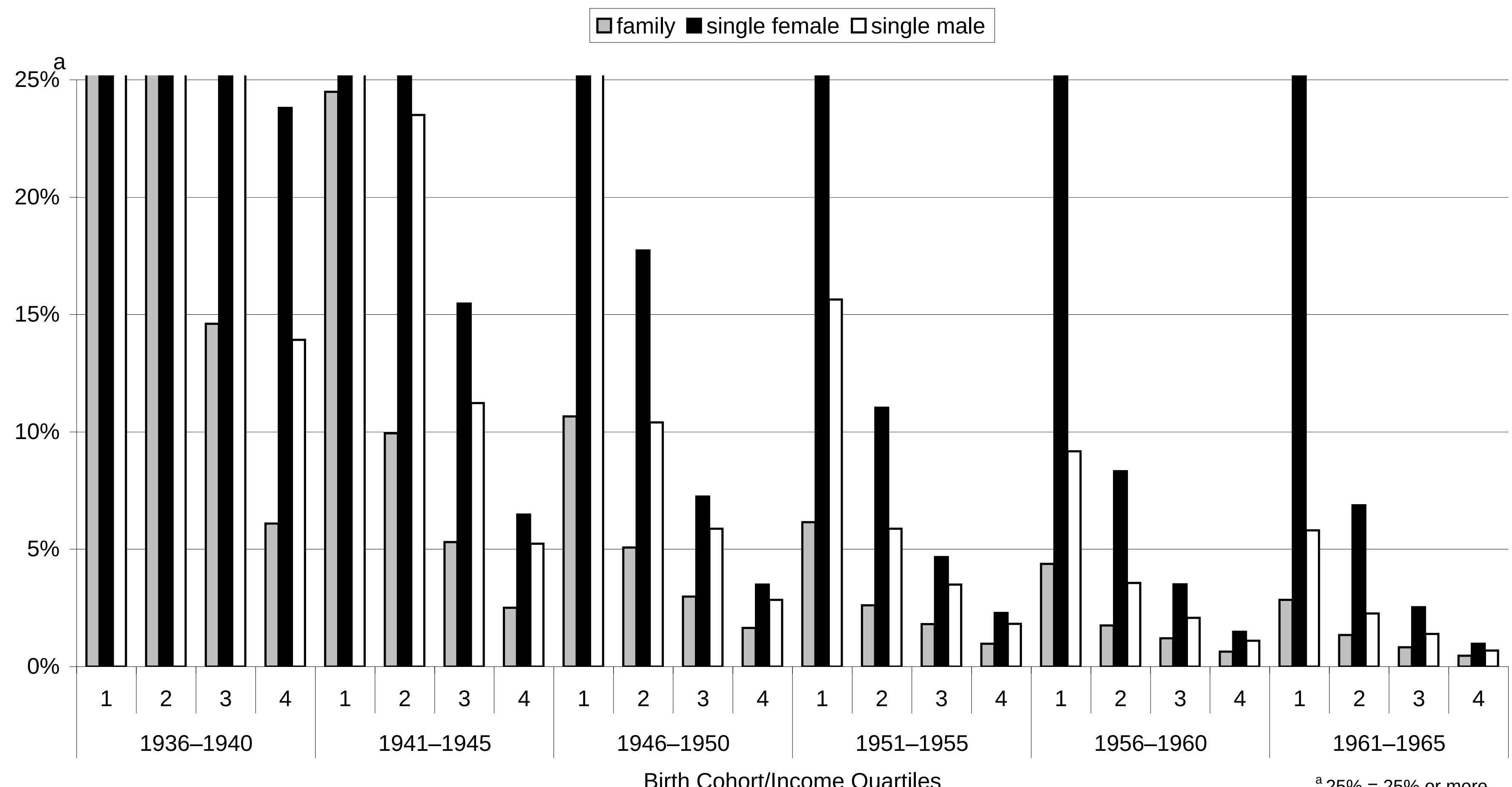
[5] This scenario involves gradually reducing the benefits of those starting to receive retirement and survivor's benefits. The reduction starts immediately and reaches 10 percent of present law benefits in 2010, 15 percent in 2016, and 22 percent in 2022.

[6] Under this reform alternative, the normal retirement age continues its increase from 65 to 67 but at a faster pace than under current law. Thereafter, the normal retirement age is indexed to longevity (currently assumed to be one month every two years). An increase from 10.6 percent to 12.35 percent in 2030 and to 13.50 percent in 2050 of the OASI tax rate completes the proposal.

Figure A

**Percentage of Added Compensation That Must Be Saved Annually Until Retirement For a 75% Chance of Covering Basic Retirement Expenses**

(assumes current Social Security and housing equity is never liquidated)



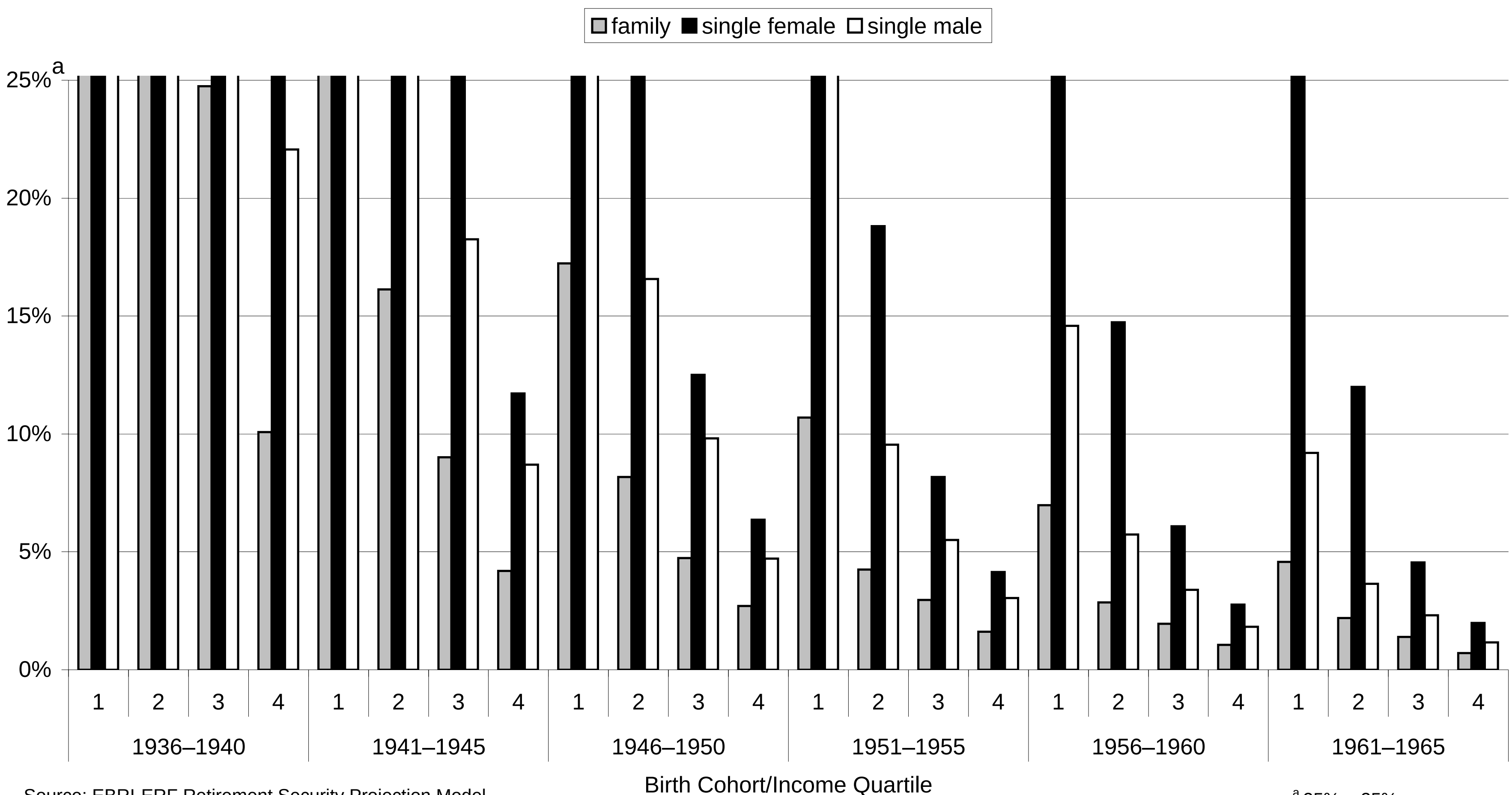

Source: EBRI-ERF Retirement Security Projection Model.

[a] 25% = 25% or more.

Figure B

**Percentage of Added Compensation That Must Be Saved Annually Until Retirement For a 90% Chance of Covering Basic Retirement Expenses**

(assumes current Social Security and housing equity is never liquidated)

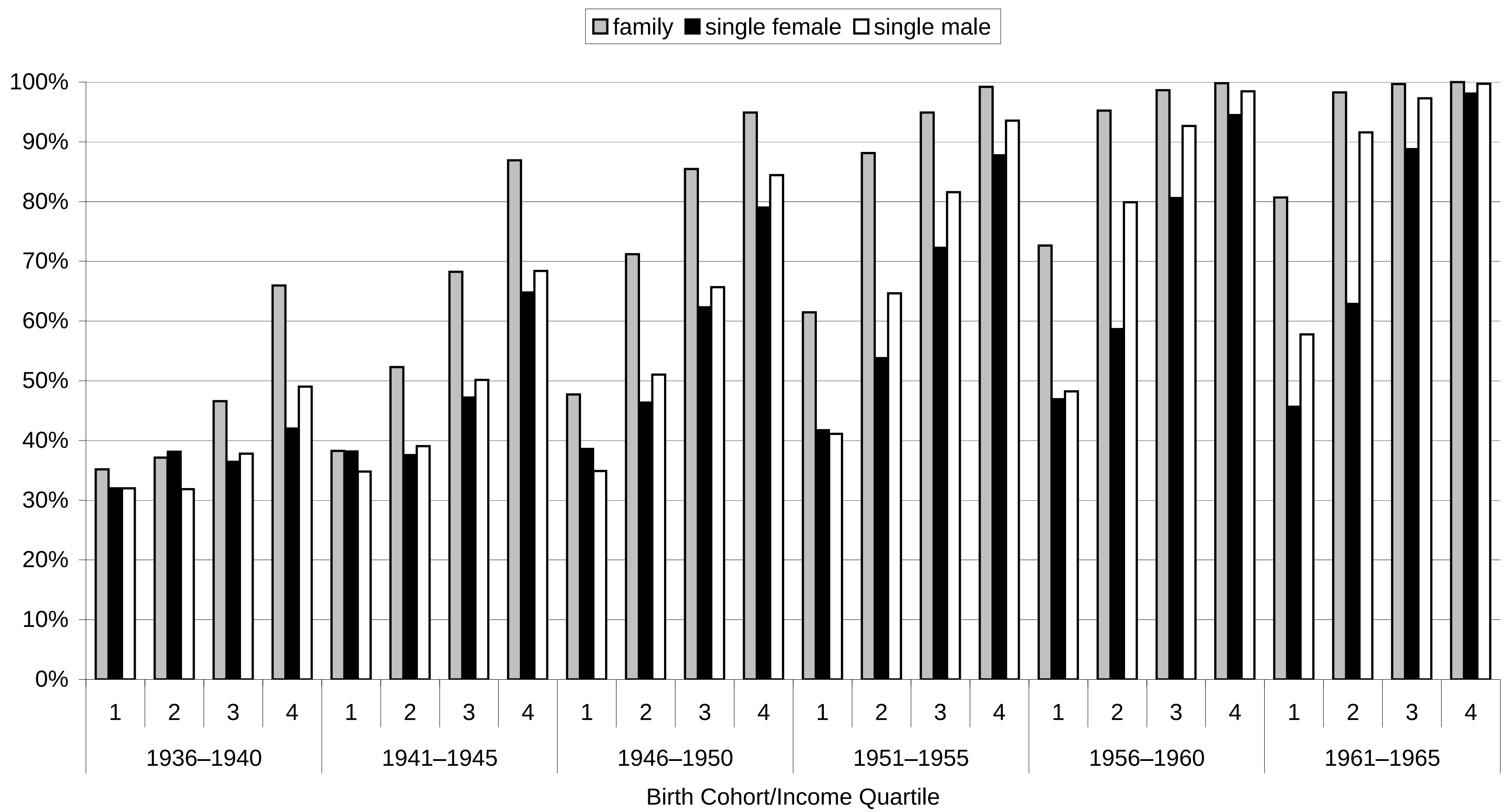



Source: EBRI-ERF Retirement Security Projection Model.

[a] 25% = 25% or more.

Figure C

**Percentage of Retirees Estimated to Have Sufficient Retirement Income/Wealth[a]**
**by Saving Additional 5% of Compensation Each Year From 2003 Until Retirement**
(assumes current Social Security benefits)




Source: EBRI-ERF Retirement Security Projection Model. Assumes current Social Security, and that housing equity is never liquidated. The model includes the possibility of chronic long-term home health care and nursing home expenses.