Projections of future retirement income security

A project of the EBRI Education and Research Fund and the Milbank Memorial Fund

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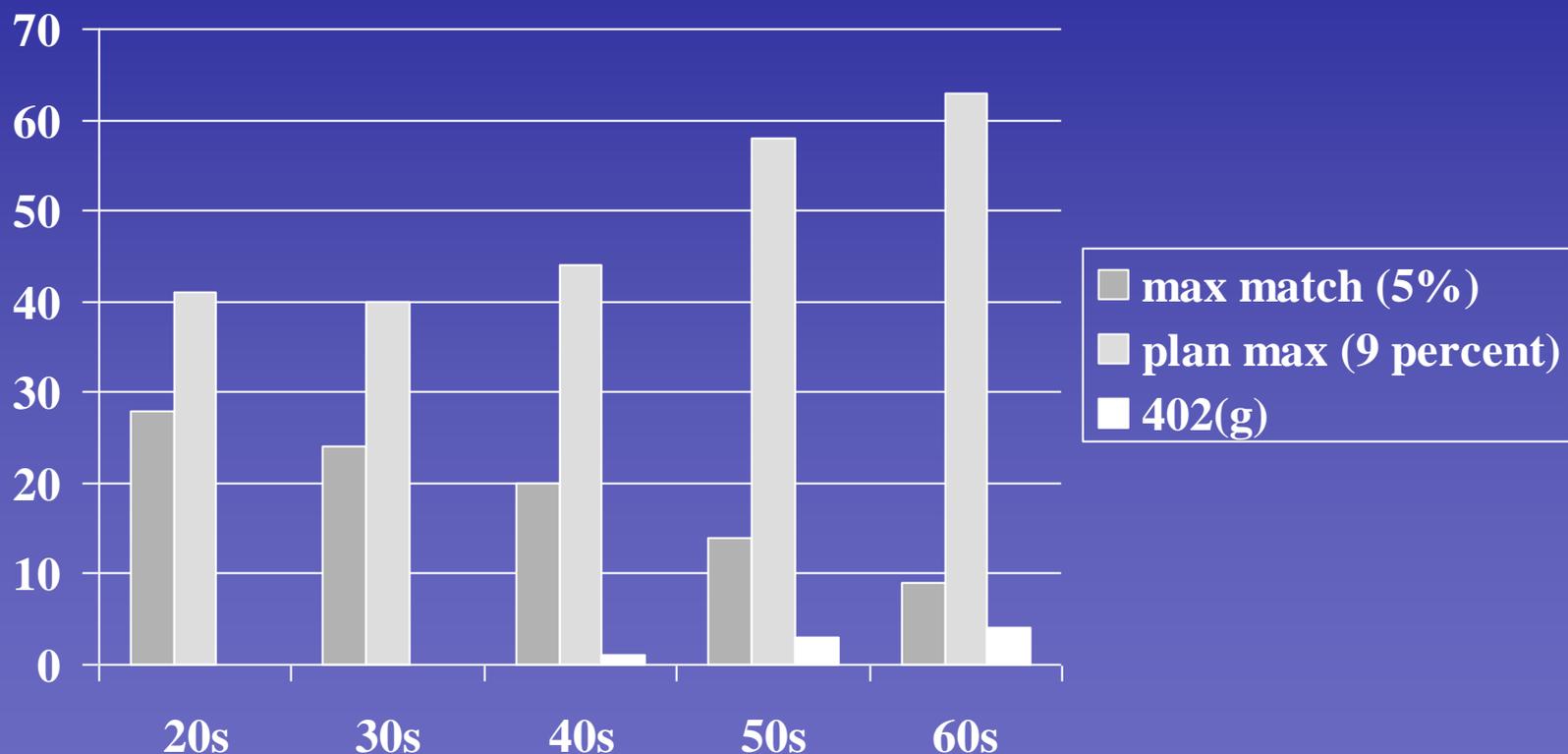Primary Analysts:

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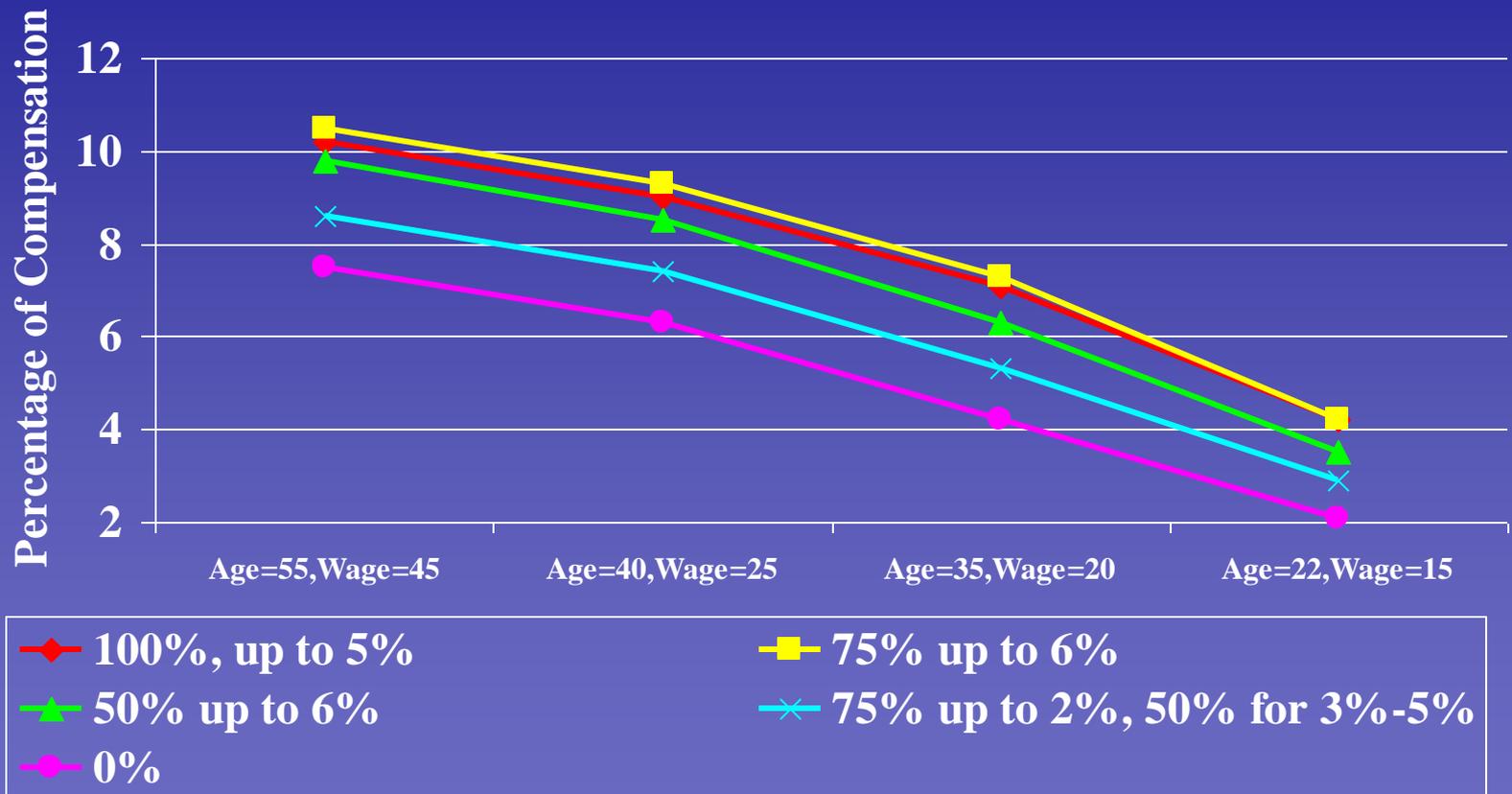# Modeling innovations in the EBRI/ERF Retirement Security Projection Model

o Pension plan parameters coded from a time series of several hundred plans

o 401(k) asset allocation and contribution behavior based on individual administrative records

   ◆ more than 10 million employees in 30,000 plans

o Housing equity modeled under three scenarios

o Stochastic modeling of nursing facility care and home based health care

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Employee contribution rates by age: Company A

Source: Yakoboski and VanDerhei, Contribution Rates and Plan Features: An Analysis of Large 401(k) Plan Data, EBRI Issue Brief (June 1996)

Predicted Employee Contributions for Selected Persons and Plans

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

Retirement income

o Limited to income produced by
  - Public and private retirement plans (including IRAs)
  - Social Security
  - Housing equity
o Assumes retirement income commences at Social Security normal retirement age
  - Purposely conservative with respect to reported deficits

Retirement "adequacy"

– Year-by-year comparison of

- Deterministic and simulated retirement expenditures vs.

- retirement income (for most defined benefit plans and Social Security) and

- account balances that may be spent as desired (defined contribution and cash balance plans and IRAs)

Retirement Expense Assumptions

o decomposed total expenditures for retirees into
  - those that are deterministic
    - food, apparel and services, transportation, entertainment, reading and education, housing, and basic health expenditures
  - those that are stochastic
    - home health care and nursing home care
o performed annual simulations on U.S. families with a retiree to determine if each retiree would:
  - require home health care,
  - enter a nursing home,
  - die, or
  - continue to survive without incurring any of these stochastic health costs.

Model output: simulated expenditure analysis

o modeled the health expenditures covered by Medicaid based on the federal Supplemental Security Income program resource and income standards

o computed the annual differential, if any, between the total expenses (less those covered by Medicaid) and the retirement income.

o If total net expenses are simulated to exceed the total retirement income for a year

◆ the households are assumed to spend down their individual account balances until the point at which they are exhausted.

o The present value of the annual deficits are then accumulated for each observation
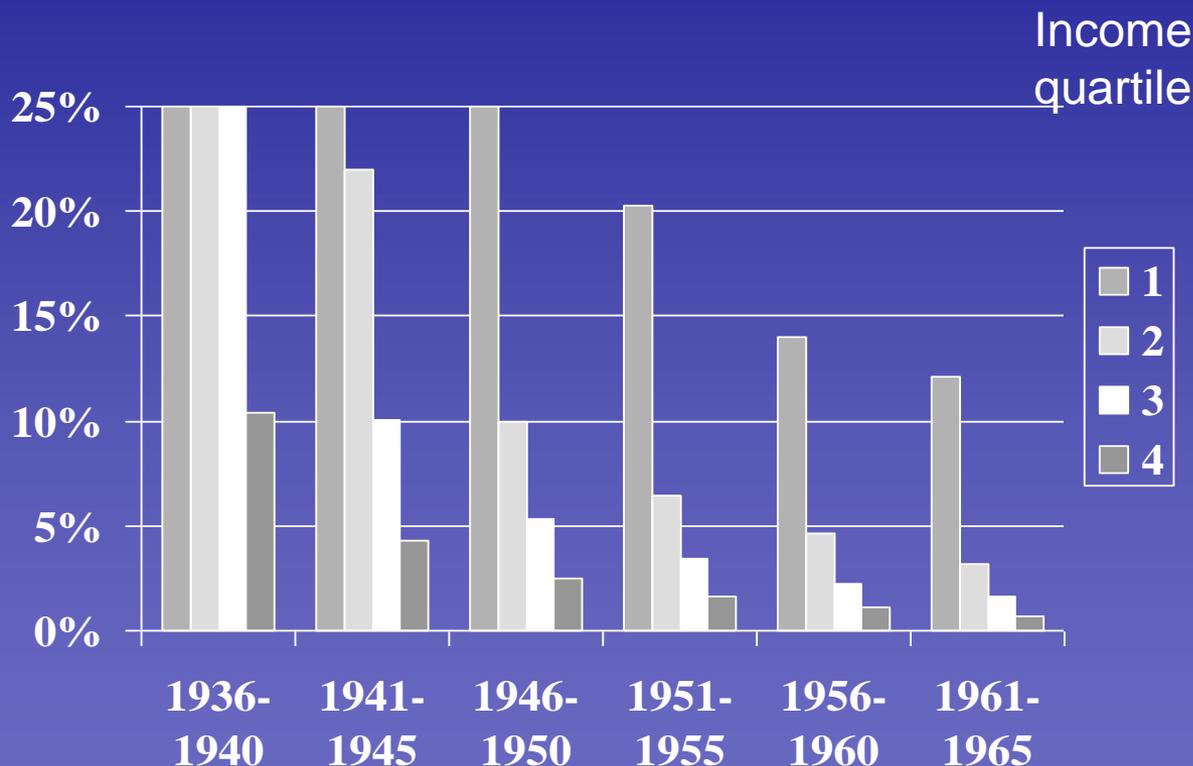
Housing equity assumptions

o Three different scenarios were modeled
  - Housing equity never liquidated
  - Housing equity annuitized at retirement
  - Housing equity is not liquidated until "needed" and then the residual value is not annuitized

Individual savings shortfalls for meeting basic expenses

o Definition of basic expenses

- ◆ basic living expenses and any expense associated with an episode of care in a nursing home or from a home health care provider

o Next two slides shows results by:

- ◆ Birth cohort

- ◆ Income quartile

  - ◆ Function of all future years of work, not just current year or year prior to retirement

o We assume individuals want a better than 50/50 chance of having "sufficient" retirement income to cover basic expenses

- ◆ Model both a 75 and 90 percent confidence level

Median Percentage of Compensation That Must Be Saved Each Year Until Retirement For a 75% Confidence Level For Funds To Cover Basic Expenses* When Combined With Simulated Retirement Wealth by Birth Cohort and Income Quartile

(Limited to 25%; assumes current Social Security and housing equity is never liquidated)

Income quartile

* Basic expenses = basic living expenses and any expense associated with an episode of care in a nursing home or from a home health care provider
Source: EBRI-ERF Retirement Security Projection Model.

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Median Percentage of Compensation That Must Be Saved Each Year Until Retirement For a 90% Confidence Level For Funds To Cover Basic Expenses* When Combined With Simulated Retirement Wealth by Birth Cohort and Income Quartile
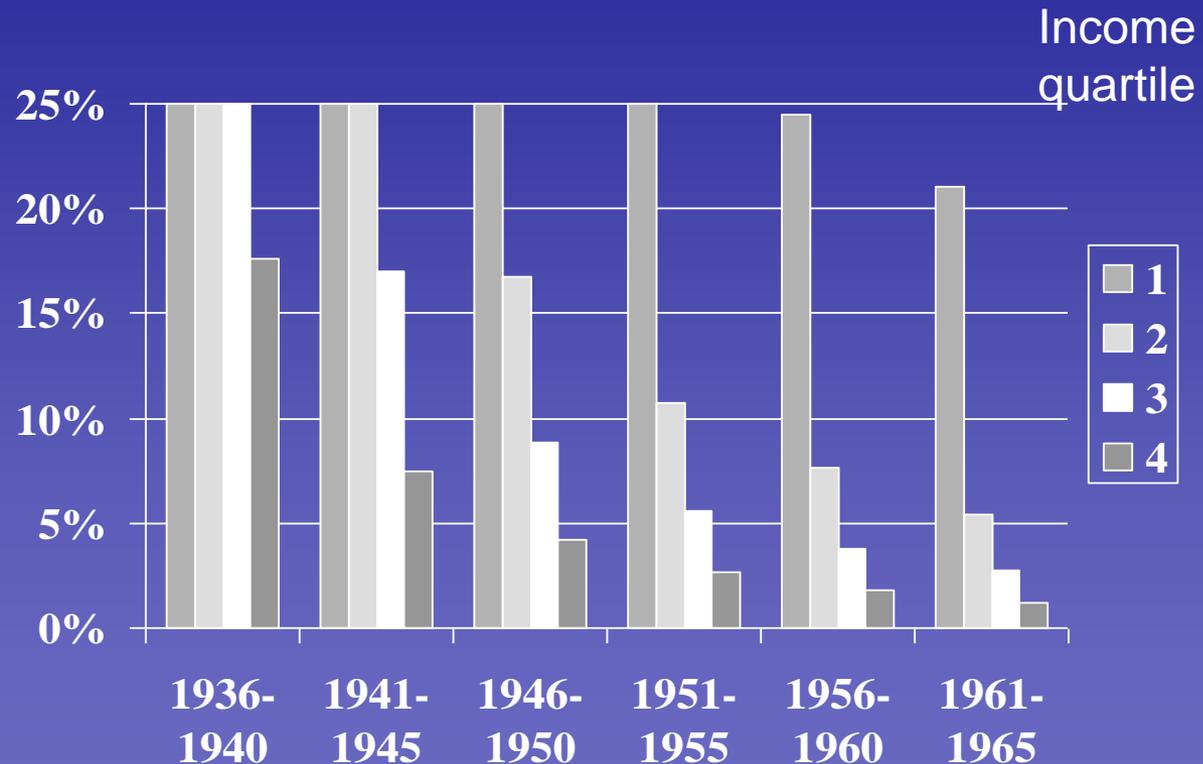(Limited to 25%; assumes current Social Security and housing equity is never liquidated)

* Basic expenses = basic living expenses and any expense associated with an episode of care in a nursing home or from a home health care provider
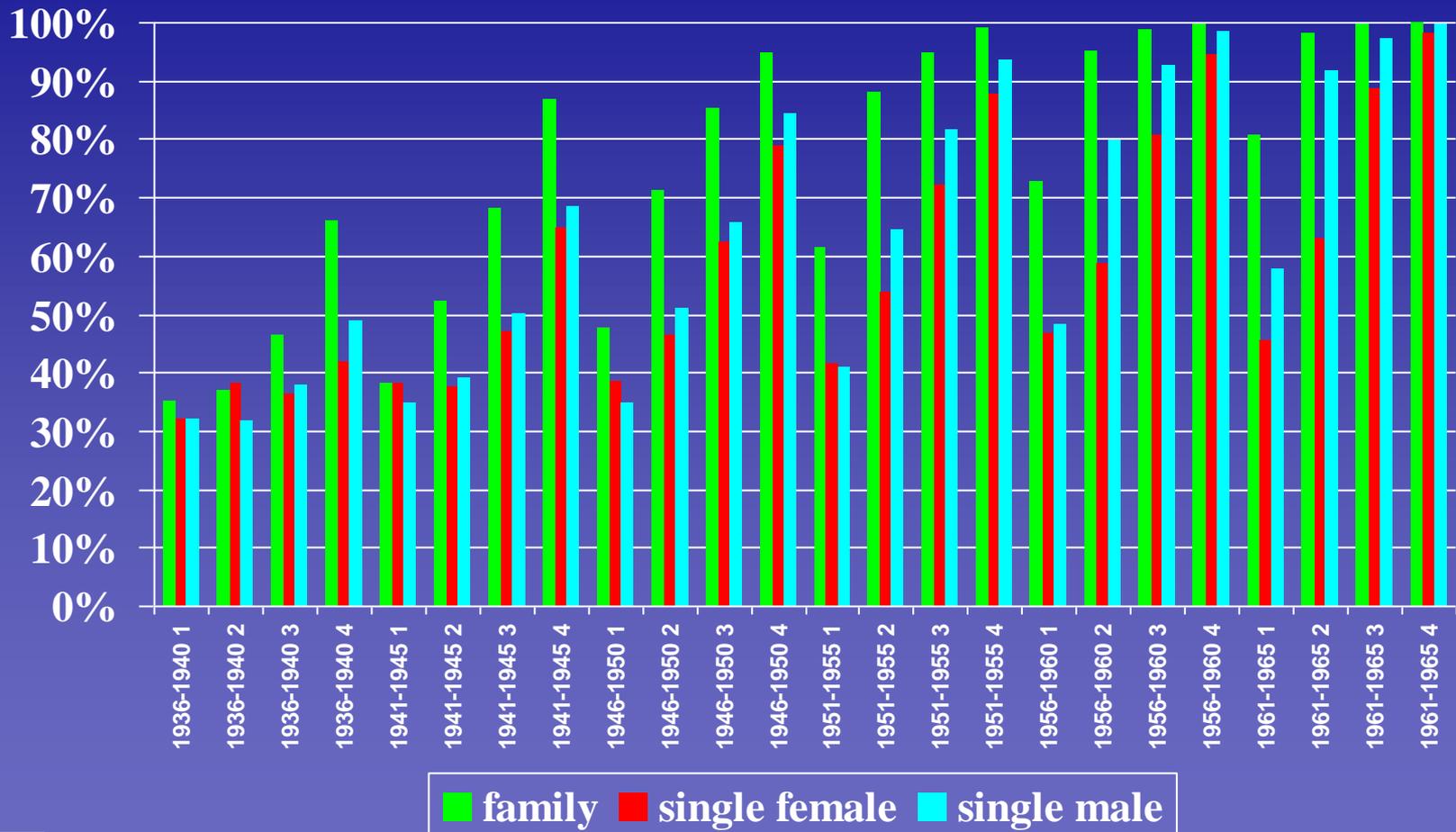Source: EBRI-ERF Retirement Security Projection Model.

Would an additional 5% of compensation be sufficient for most pre-retirees to have "sufficient" funds to cover basic expenses*?

- o Previous two slides only showed the medians for the various groups
- o Also showed results as a function of just age and income
  - ◆ See figures 2 and 3 in Issue Brief for results that include a breakout by gender/family status at retirement
- o Next slide shows the percentage of simulated life-paths in each cohort that would have "sufficient" retirement income if they saved 5 percent of compensation each year until retirement
  - ◆ This is in addition to any retirement income/wealth simulated in the mode

* Basic expenses = basic living expenses and any expense associated with an episode of care in a nursing home or from a home health care provider

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Percentage of Retirees Estimated to Have Sufficient Retirement Income/Wealth to cover Basic Expenses* by Saving 5% of Compensation Each Year From 2003 Until Retirement (Figure 20, page 24)
(assumes current Social Security benefits)

Legend: family (green), single female (red), single male (cyan)

X-axis categories: 1936-1940 1, 1936-1940 2, 1936-1940 3, 1936-1940 4, 1941-1945 1, 1941-1945 2, 1941-1945 3, 1941-1945 4, 1946-1950 1, 1946-1950 2, 1946-1950 3, 1946-1950 4, 1951-1955 1, 1951-1955 2, 1951-1955 3, 1951-1955 4, 1956-1960 1, 1956-1960 2, 1956-1960 3, 1956-1960 4, 1961-1965 1, 1961-1965 2, 1961-1965 3, 1961-1965 4

* Basic expenses = basic living expenses and any expense associated with an episode of care in a nursing home or from a home health care provider
Source: EBRI-ERF Retirement Security Projection Model.

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Aggregate Results

Simulated nominal annual deficits for population age 65 and over after Medicaid reimbursements by housing equity scenario

(Assuming status quo for Social Security benefits and that current retirees are similar to the oldest cohort of current workers)