Challenges of Retirement in the Future Economy

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Updates

- For updates on this analysis see [www.bit.ly/updates_to_VanDerhei_ISCEBS_presentation](http://www.bit.ly/updates_to_VanDerhei_ISCEBS_presentation)
Outline of Presentation

• Brief overview of the simulation model (RSPM)
• 2019 RSPM results
  • Probability of a successful retirement by age
  • Average retirement deficits by various factors
  • Impact of Social Security reductions
• Plan/coverage enhancements
• Guaranteed income for life
• Impact of open MEPs on retirement deficits
• Impact of state-specific automatic IRAs on retirement deficits
• Impact of the gig only economy on retirement income adequacy
• Appendices
  • A: Statistics on gig only workers
  • B: Impact of federal auto-IRA
  • C: More information on the simulation model
EBRI Retirement Security Projection Model (RSPM)

- **Accumulation phase**
  - Simulates retirement income/wealth for households currently ages 35-64 from defined contribution, defined benefit, IRA, Social Security and net housing equity
    - Pension plan parameters coded from a time series of several hundred plans.
    - 401(k) asset allocation and contribution behavior based on individual administrative records
      - Annual linked records dating back to 1996
      - More than 27 million employees in 110,000 plans
    - More than 25 million IRA accounts owned by 20 million unique individuals

- **Retirement phase**
  - Simulates 1,000 alternative life-paths for each household, starting at 65
  - Deterministic modeling of costs for food, apparel and services, transportation, entertainment, reading and education, housing, and basic health expenditures.
  - Stochastic modeling of longevity risk, investment risk, nursing facility care and home based health care.

- **Produces the following output metrics:**
  - Retirement Readiness Rating (RRR) = Percentage of simulated life-paths that do NOT run short of money in retirement
  - Retirement Savings Shortfalls (RSS) = Present value of deficits for those who run short of money in retirement

For a list of approximately 45 studies using RSPM please see: bit.ly/ebri-rspm-new
Probability of a Successful Retirement by Age


<table>
<thead>
<tr>
<th>Age Cohort</th>
<th>2014</th>
<th>2019</th>
<th>2019 With Social Security Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>35–39</td>
<td>56.7%</td>
<td>57.9%</td>
<td>52.0%</td>
</tr>
<tr>
<td>40–44</td>
<td>58.4%</td>
<td>60.3%</td>
<td>56.8%</td>
</tr>
<tr>
<td>45–49</td>
<td>58.7%</td>
<td>60.6%</td>
<td>59.0%</td>
</tr>
<tr>
<td>50–54</td>
<td>58.3%</td>
<td>60.3%</td>
<td>59.5%</td>
</tr>
<tr>
<td>55–59</td>
<td>56.7%</td>
<td>58.3%</td>
<td>58.0%</td>
</tr>
<tr>
<td>60–64</td>
<td>57.1%</td>
<td>57.8%</td>
<td></td>
</tr>
</tbody>
</table>

### Average Retirement Savings Shortfalls

**Baseline**
- 35–39: $49,182
- 40–44: $44,052
- 45–49: $43,004
- 50–54: $42,681
- 55–59: $44,186
- 60–64: $44,055

**With Social Security reduction**
- 35–39: $57,586
- 40–44: $48,402
- 45–49: $44,719
- 50–54: $43,315
- 55–59: $44,352
- 60–64: $44,123

Average Retirement Deficits For Those With a Deficit

Average 2019 Retirement Savings Shortfalls* for Those Households With a Deficit, by Age Cohort


* The Retirement Savings Shortfalls (RSS) are determined as a present value of retirement deficits at age 65.

Deficits by Age and Pre-retirement Income

2019 Retirement Savings Shortfalls,* by Age Cohort and Preretirement Income Quartile

<table>
<thead>
<tr>
<th>Quartile</th>
<th>35–39</th>
<th>40–44</th>
<th>45–49</th>
<th>50–54</th>
<th>55–59</th>
<th>60–64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest Quartile</td>
<td>$104,805</td>
<td>$101,578</td>
<td>$108,914</td>
<td>$106,036</td>
<td>$107,328</td>
<td>$115,410</td>
</tr>
<tr>
<td>Second Quartile</td>
<td>$56,276</td>
<td>$41,506</td>
<td>$44,123</td>
<td>$44,203</td>
<td>$44,047</td>
<td>$53,724</td>
</tr>
<tr>
<td>Third Quartile</td>
<td>$28,316</td>
<td>$21,533</td>
<td>$19,429</td>
<td>$17,029</td>
<td>$18,934</td>
<td>$24,182</td>
</tr>
<tr>
<td>Highest Quartile</td>
<td>$13,852</td>
<td>$8,176</td>
<td>$5,641</td>
<td>$4,465</td>
<td>$4,667</td>
<td>$5,570</td>
</tr>
</tbody>
</table>

* The Retirement Savings Shortfalls (RSS) are determined as a present value of retirement deficits at age 65.

Average Retirement Deficits by Age and Future Eligibility for DC Plans

2019 Retirement Savings Shortfalls,* by Age Cohort and Years of Future Eligibility in Defined Contribution Plans


* The Retirement Savings Shortfalls (RSS) are determined as a present value of retirement deficits at age 65.

PLAN/COVERAGE ENHANCEMENTS
Impact of Four Plan/Coverage Enhancement Scenarios on Retirement Deficits

Description of Scenarios:
A. Plan required for all employers except the smallest. Auto IRA for new sponsors. 6% default with escalation to 10%. 30% optout for new eligibles.
B. Same as A with escalation to 15%.
C. Same as B but includes non-excludable employees
D. Same as C but includes full auto-portability

GUARANTEED INCOME FOR LIFE
Impact of Guaranteed Income for Life on Retirement Deficits FOR THOSE WHO UTILIZE THE PROVISION

Average retirement deficit reductions by age at death from assuming 50% of 401(k) balances used to purchase SPIA at age 65 at annuity purchase price based on historical average for discount rates; excludes balances less than $5,000

IMPACT OF OPEN MEPS ON RETIREMENT DEFICITS
Open MEPs are simulated to result in a significant reduction in retirement deficits for those who would have spent a considerable portion of their work career without eligibility for an employer sponsored retirement plan.

Percentage reduction in retirement deficits for those currently 35-39 as a result of benefitting from an Open MEP for all years that they are not eligible for another type of employer-sponsored retirement plan.

Distribution of years in the workforce without eligibility for an employer sponsored retirement plan (baseline):

- Lowest quartile: 3.5%
- Second: 11.7%
- Third: 23.2%
- Highest quartile: 26.7%

IMPACT OF STATE-SPECIFIC AUTOMATIC IRAS ON RETIREMENT DEFICITS
OregonSaves Parameters

- **Does my contribution rate increase over time?**
  - Yes, your contribution rate automatically increases by 1 percent each year, until it reaches 10 percent, unless you opt out of automatic increases.

- **Can I choose a different savings rate than 5 percent?**
  - Yes, you can choose a savings rate of as little as 1 percent and as much as 100% of your gross pay, at 1 percent increments and up to annual Roth IRA contribution limits. Please note that contributions are made post-tax, and your employer can't deduct more than the amount of available compensation after they have made any other payroll deductions that have higher preference as required by law. You can make changes to your contribution rate online or by phone.

- **Is the contribution made pre-tax or post-tax?**
  - For Roth IRAs, contributions are made on a post-tax basis.

- **Is there a limit to how much I can contribute?**
  - Yes, contribution limits for Roth IRAs are set by the federal government. For 2018, you can save up to $5,500 per year if you're younger than 50 and $6,500 per year if you're 50 or older, as long as you have that much in compensation and are under certain income levels based on your modified adjusted gross income.

- ASSUMING NO SIZE EXEMPTION FOR CURRENT RUNS

Source: https://www.oregonsaves.com/home/overview/faqs.html
Reduction in Average Retirement Savings Shortfalls, by Age, from Introducing OregonSaves as a Function of Various Assumptions

<table>
<thead>
<tr>
<th>Age</th>
<th>Scenario a</th>
<th>Scenario b</th>
<th>Scenario c</th>
<th>Scenario d</th>
</tr>
</thead>
<tbody>
<tr>
<td>35-44</td>
<td>12.7%</td>
<td>10.4%</td>
<td>16.1%</td>
<td>11.6%</td>
</tr>
<tr>
<td>45-54</td>
<td>13.6%</td>
<td>10.8%</td>
<td>15.5%</td>
<td>10.7%</td>
</tr>
<tr>
<td>55-64</td>
<td>6.1%</td>
<td>4.5%</td>
<td>4.8%</td>
<td>4.8%</td>
</tr>
</tbody>
</table>

Source: RSPM version 2258
Scenario descriptions:
- a, no optout, no auto escalation
- b, 25 percent optout, no auto escalation
- c, 25 percent optout initially, auto escalation up to 10 percent, no opt out on escalation
- d, 25 percent optout initially, auto escalation up to 10 percent, opt out on escalation and reduction from initial 5 percent from VanDerhei (2007)

IMPACT OF THE GIG ONLY ECONOMY ON RETIREMENT INCOME ADEQUACY

NB: gig = gig only throughout this presentation unless otherwise noted
Simplifying Assumptions for Today’s Presentation

- Baseline probability for access to employer-sponsored retirement plans by gig only = 16 percent
  - Converted to function of age and income
  - Converted to conditional probability to control for access as a result of:
    - Previous employment
    - Spousal account
- Job change probabilities are the same for gig only and traditional workers
- Transition matrix from gig only to full-time
  - Currently random but need to put in additional scenarios
    - E.g., certain percentage will follow “once a gig worker always a gig worker”
- Gig economy starts in 2018
Sensitivity Analysis

• The next two slides will explore the impact on gig only workers on NATIONAL retirement income adequacy measures going forward
  • Not limited to retirement income adequacy of gig only workers
• Analyze the impact of varying:
  • The probability that gig workers have access to employer sponsored retirement plans
  • The total contribution rate for gig workers (as a percentage of the simulated rate for traditional workers)
Impact of Varying the Probability that Gig Workers Have Access to Employer Sponsored Retirement Plans

Change in Net Retirement Savings Surpluses

<table>
<thead>
<tr>
<th>Current Age</th>
<th>35-39</th>
<th>40-44</th>
<th>45-49</th>
<th>50-54</th>
<th>55-59</th>
<th>60-64</th>
</tr>
</thead>
<tbody>
<tr>
<td>No gig workers have access</td>
<td>-7.0%</td>
<td>-4.3%</td>
<td>-2.6%</td>
<td>-1.3%</td>
<td>-0.5%</td>
<td>-0.2%</td>
</tr>
<tr>
<td>Access = f(age, income)</td>
<td>-4.0%</td>
<td>-2.8%</td>
<td>-1.4%</td>
<td>-0.8%</td>
<td>-0.3%</td>
<td>-0.1%</td>
</tr>
</tbody>
</table>

Source: EBRI Retirement Security Projection Model® Versions 3370 and 3356
Impact of Varying the Total Contribution Rate For Gig Workers (As a Percentage of the Simulated Rate for Traditional Workers)

<table>
<thead>
<tr>
<th>Current Age</th>
<th>35-39</th>
<th>40-44</th>
<th>45-49</th>
<th>50-54</th>
<th>55-59</th>
<th>60-64</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 percent</td>
<td>-4.0%</td>
<td>-2.8%</td>
<td>-1.4%</td>
<td>-0.8%</td>
<td>-0.3%</td>
<td>-0.1%</td>
</tr>
<tr>
<td>50 percent</td>
<td>-5.6%</td>
<td>-3.8%</td>
<td>-2.0%</td>
<td>-1.1%</td>
<td>-0.4%</td>
<td>-0.2%</td>
</tr>
<tr>
<td>25 percent</td>
<td>-6.3%</td>
<td>-4.3%</td>
<td>-2.3%</td>
<td>-1.2%</td>
<td>-0.5%</td>
<td>-0.2%</td>
</tr>
</tbody>
</table>

Source: EBRI Retirement Security Projection Model® Versions 3370, 3377 and 3356 (this assumes that the probability that gig workers have access to employer sponsored retirement plans = f(age, income)
Key Takeaways

- Aggregate retirement deficit for all households ages 35-64 = $3.8 trillion (2019 dollars)
  - Averages relatively constant across age cohorts unless Social Security benefits are reduced
  - Future years of eligibility for defined contribution plans can decrease averages as much as 5.5 times for youngest cohort
- Plan enhancements
  - Expanding coverage to all but the smallest employers will reduce average deficits by 15% for the youngest cohort
  - Increasing escalation from 10% to 15% and expanding to all non-excludable employees will reduce deficits an additional 1-2% for the youngest cohort
  - Adding full auto-portability will reduce deficits by an additional 10% for the youngest cohort
- Guaranteed income for life (excluding balances less than $5,000)
  - Overall decrease in retirement deficits of $985 per individual utilizing the option
- Open MEPs
  - Decrease retirement deficits by 27% for the youngest cohort who would have spent a considerable portion of their work career without eligibility for an employer sponsored plan (top quartile)
- OregonSaves
  - Best estimate for those ages 35-44 = 11.6 percent reduction in retirement deficits
- The potential impact of the gig economy on national retirement income adequacy will depend on several factors
Appendix
APPENDIX A:
STATISTICS ON GIG ONLY WORKERS
Gig Participation by Generation

Thinking about your current employment and/or sources of individual income, which of the following currently applies to you? (Gig only defined as “works independently, earning income within gig economy”)

- Millennial: 9%
- Generation X: 19%
- Baby Boomer: 11%
- Silent Generation: 5%

Source: T. Rowe Price (2018)
Summary Statistics: Gig Only vs. Full-time

- **Average annual income**
  - Gig only: $36,500
  - Full time: $62,700

- **Access to employer-sponsored retirement plans**
  - Gig only: 16%
  - Full time: 52%

Source: Prudential (2017)
Income Distribution for Gig Only Workers by Age

Source: Prudential (2017)
References

- Prudential, Gig Workers in America, 2017
- T. Rowe Price, Financial Attitudes & Behaviors Toward the Gig Economy, April 2, 2018
APPENDIX B: IMPACT OF A NATIONAL AUTO IRA
Percentage Point Improvement in Retirement Readiness Ratings (with LTC costs) by Age and Employer Size from Introducing Automatic IRA With No Size Exemption: Assumes NO Opt-out and 100 autocorrelation for employer size

Note:
Husband's Employer Size is Used to Categorize Employer Size for Married HH

Source: VanDerhei, Jack (June 2015), "Auto-IRAs: How Much Would They Increase the Probability of 'Successful' Retirements and Decrease Retirement Deficits? Preliminary Evidence from EBRI's Retirement Security Projection Model®", EBRI Notes
Reduction in Average Retirement Savings Shortfalls by Age from Introducing Automatic IRA: Assumes NO Opt-out

Source: VanDerhei, Jack (June 2015), "Auto-IRAs: How Much Would They Increase the Probability of 'Successful' Retirements and Decrease Retirement Deficits? Preliminary Evidence from EBRI’s Retirement Security Projection Model®", EBRI Notes
APPENDIX C: ADDITIONAL INFORMATION THE SIMULATION MODEL
When is a Household Considered to Run Short of Money In EBRI’s Simulation Model?

- If aggregate resources in retirement are not sufficient to meet average retirement expenditures
  - This version of the model is constructed to simulate retirement income adequacy
  - Alternative versions of the model allow similar analysis for replacement rates, standard-of-living calculations, and other ad hoc thresholds.

- The baseline version of the model used for this analysis assumes all workers:
  - Retire at age 65
  - That they immediately begin drawing benefits from Social Security and defined benefit plans (if any)
  - To the extent that the sum of their expenses and uninsured medical expenses exceed the projected after-tax annual income from those sources
    - They immediately begin to withdraw money from their individual accounts (defined contribution and cash balance plans, as well as IRAs).
When is a Household Considered to Run Short of Money? (continued)

• If there is sufficient money to pay expenses without tapping into the tax-qualified individual accounts
  • Those balances are assumed to be invested in a non-tax-advantaged account where the investment income is taxed as ordinary income.

• Individual accounts are tracked until the point at which they are depleted.
  • At that point, any net housing equity is assumed to be added to retirement savings in the form of a lump-sum distribution (not a reverse annuity mortgage (RAM)).

• If all the retirement savings are exhausted and if the Social Security and defined benefit payments are not sufficient to pay expenses, the household is designated as having run short of money at that point.
Retirement Deficits by Age and Longevity

2019 Retirement Savings Shortfalls,* by Age Cohort and Relative Longevity Quartile

* The Retirement Savings Shortfalls (RSS) are determined as a present value of retirement deficits at age 65.

Deficits by Age and Marital Status/Gender

2019 Retirement Savings Shortfalls, * by Age Cohort and Marital Status/Gender

<table>
<thead>
<tr>
<th></th>
<th>35–39</th>
<th>40–44</th>
<th>45–49</th>
<th>50–54</th>
<th>55–59</th>
<th>60–64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Widow</td>
<td>$22,692</td>
<td>$17,964</td>
<td>$15,703</td>
<td>$15,356</td>
<td>$15,083</td>
<td>$15,782</td>
</tr>
<tr>
<td>Widower</td>
<td>$19,413</td>
<td>$13,745</td>
<td>$12,268</td>
<td>$12,591</td>
<td>$12,416</td>
<td>$12,640</td>
</tr>
<tr>
<td>Single Female</td>
<td>$69,484</td>
<td>$63,251</td>
<td>$61,042</td>
<td>$58,964</td>
<td>$60,830</td>
<td>$62,127</td>
</tr>
<tr>
<td>Single Male</td>
<td>$36,266</td>
<td>$30,471</td>
<td>$26,452</td>
<td>$24,827</td>
<td>$27,002</td>
<td>$24,905</td>
</tr>
</tbody>
</table>

* The Retirement Savings Shortfalls (RSS) are determined as a present value of retirement deficits at age 65.