The Importance of Default Options for Retirement Saving Outcomes: Evidence from the United States

John Beshears, Harvard University
James J. Choi, Yale University
David Laibson, Harvard University
Brigitte C. Madrian, University of Pennsylvania

October 14, 2005
Introduction: Should Defaults Impact Economic Outcomes?

- Standard neoclassical theory: If transactions costs are small, defaults should not matter.
- In practice, defaults have sizeable effects:
  - Organ donation
  - Car insurance
  - Car purchase options
  - Consent to receive e-mail marketing
  - Savings outcomes
Outline

● U.S. retirement savings institutions
● Empirical evidence on saving and defaults
  ● Savings plan participation
  ● Contributions
  ● Asset allocation
  ● Pre-retirement cash distributions / leakage
  ● Decumulation/annuitization
● Explaining the impact of defaults on saving
● The role of public policy when defaults matter
U.S. Retirement Saving Institutions

- **Social Security**
  - While employed, workers and firms make contributions
  - Benefits determined by formula tied to earnings history
    - Benefits formula progressive
    - Inflation indexed
    - Workers can begin claiming benefits at age 62
    - Higher benefits if workers delay claiming until later
    - Benefits paid until death; surviving spouse gets reduced benefit
  - In practice, Social Security replaces ~40% of pre-retirement earnings
  - No private account component
U.S. Retirement Saving Institutions

- Employer sponsored defined benefit pensions
  - Benefits determined by formula typically tied to age, tenure and earnings
  - Benefits typically paid as an annuity, but may be option for lump sum payout
  - Move away from defined benefit pensions → defined contribution savings plans
    - Lower administrative costs
    - Less financial risk to companies
U.S. Retirement Saving Institutions

- Employer sponsored defined contribution savings plans (e.g. 401(k))
  - Benefits determined by
    - Elective employee contributions
    - Employer match
    - Asset allocation
    - Market performance
  - Benefits typically paid as a lump-sum distribution
    - Option for periodic and variable distributions
    - Some employers offer the option to purchase annuity
U.S. Retirement Saving Institutions

- Personal savings accounts (e.g. IRA)
  - Benefits determined by
    - Elective individual contributions
    - Asset allocation
    - Market performance
  - Direct contributions allowed as well as rollovers from employer sponsored savings plan
Motivation

- U.S. Savings Institutions
  - Low Social Security replacement rate
  - Shift from defined benefit to defined contribution/IRA savings plans
- Increased individual responsibility for savings outcomes
- How can we ensure adequate retirement savings when individuals are primarily responsible for the outcome?
Defaults and Savings Outcomes

- Institutionally specified defaults
  - Savings plan participation
  - Contributions
  - Asset allocation
  - Pre-retirement cash distributions / leakage
  - Decumulation / annuitization
- “Elective” defaults
Participation Defaults: Automatic Enrollment

- Standard enrollment: opt-in
- Automatic enrollment: opt-out
  - Employer specifies default contribution rate and asset allocation
  - Employees have pre-specified time period (e.g., 30 days) to opt-out

- Company A
  - December 2000: 3% + money market fund
    - New hires going forward
    - Currently non-participating employees
  - October 2001: 6% + money market fund
    - New hires going forward
FIGURE 1. Automatic Enrollment for New Hires and Savings Plan Participation: Company A

Tenure (months)

Fraction ever participated

- Hired and observed before automatic enrollment
- Hired under automatic enrollment (3% default)
- Hired under automatic enrollment (6% default)
FIGURE 2. Automatic Enrollment for Existing Non-Participants and Savings Plan Participation: Company A

- Hired before and observed before automatic enrollment
- Hired before but observed after automatic enrollment
FIGURE 3. Automatic Enrollment for New Hires and the Distribution of 401(k) Contribution Rates: Company A (15-24 months tenure)

- Hired under automatic enrollment (6% default)
- Hired under automatic enrollment (3% default)

Contribution Rate

Fraction of Employees

0% 1-2% 3% 4-5% 6% 7-10% 11-15%

Company A (15-24 months tenure)
FIGURE 4. Automatic Enrollment for Existing Hires and the Distribution of 401(k) Contribution Rates: Company A (25-48 months tenure)

- **Initial participation before automatic enrollment**
- **Initial participation after automatic enrollment or never participated**

Contribution Rate:
- 0%
- 1-2%
- 3%
- 4-5%
- 6%
- 7-10%
- 11-15%

Match Threshold:
- 60

Fraction of Participants
**TABLE 1**
Automatic Enrollment and Asset Allocation Outcomes

<table>
<thead>
<tr>
<th>ynthesis Hired after automatic enrollment</th>
<th>Hired before automatic enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(15-24 months tenure)</td>
</tr>
<tr>
<td>3% default</td>
<td>6% default</td>
</tr>
<tr>
<td>Any balances in default fund</td>
<td>34%</td>
</tr>
<tr>
<td>All balances in default fund</td>
<td>26%</td>
</tr>
<tr>
<td>100% default fund + default contribution rate</td>
<td>18%</td>
</tr>
</tbody>
</table>
Asset Allocation Defaults

- Automatic Enrollment
- Company match in employer stock (Choi, Laibson and Madrian, 2005b)
- Private account component of Swedish Social Security system (Cronqvist and Thaler, 2004)
  - Enrolled at the transition: one-third of assets in default fund
  - Subsequent enrollees: 90% of assets in default fund
Pre-Retirement Cash Distributions

- What happens to savings plan balances when employees leave their jobs?
  - Employees can request a cash distribution or roll balances over into another account
    - Balances >$5000: default is stay with former employer
    - Balances <$5000: default is cash distribution
  - For employees with balances <$5000, 70% receive a cash distribution (Choi et al. 2002, 2004a and 2004b)
  - When employees receive small cash distributions, balances typically consumed (Poterba, Venti and Wise 1998)
Post-Retirement Distributions

- Social Security
  - Joint and survivor annuity (reduced benefits)
- Defined benefit pension
  - Annuity
  - Lump sum payout if offered
- Defined contribution savings plan
  - Lump sum payout
  - Annuity if offered
Defined Benefit Pension Annuitization

- Annuity income and economic welfare of the elderly
  - Social Security replacement rate relatively low on average
  - 17% of women fall into poverty after the death of their spouse (Holden and Zick 2000)
- For married individuals, three distinct annuitization regimes
  - Pre-1974: no regulation
  - ERISA I (1974): default joint-and-survivor annuity with option to opt-out
  - ERISA II (1984 amendment): default joint-and-survivor annuity, opting out required notarized permission of spouse
Defined Benefit Pension
Annuitization

- Effect of joint-and-survivor default on annuitization

  - Pre-1974: Less than half of married men have joint-and-survivor annuity
  - Post-1984 amendments: joint-and-survivor annuitization increases 10 to 25 percentage points (Saku 2001)
Elective Defaults: Save More Tomorrow

- Conceptual Idea
  - Get employees to commit today to automatic contribution rate increases in the future

- Implementation in one company:
  - Employees met individually with a financial planner, who in most cases recommended an increase in the 401(k) contribution rate
  - Some employees were willing to raise their contribution rates at that time (Group A)
  - Most employees were not willing to raise their contribution rates at that time (Group B)
  - These latter individuals were given the option to sign-up for automatic 3% 401(k) contribution rate increases to coincide with future annual pay raises
The Effect of SMT® on 401(k) Savings

<table>
<thead>
<tr>
<th></th>
<th>401(k) Contribution Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before meeting with planner</td>
</tr>
</tbody>
</table>

**GROUP A**
- Willing to save more now: 4.4% to 8.6% (+4.4%)
- Not offered SMarT

**GROUP B**
- Unwilling to save more now: 3.5% to 13.6% (+10.1%)
- Offered SMarT

Source: Benartzi and Thaler (2004); Utkus and Young (2004)
Elective Defaults: Quick Enrollment

- Conceptual Idea
  - Simplify the savings plan enrollment decision by giving employees an easy way to elect a pre-selected contribution rate and asset allocation bundle

- Implementation at Company B
  - New hires at employee orientation: 2% contribution rate invested 50% money market / 50% stable value
  - Existing non-participants: employee selects contribution rate invested 50% money market / 50% stable value

- Implementation at Company C
  - Existing non-participants: 3% contribution rate invested 100% in money market fund
FIGURE 5. Quick Enrollment and Savings Plan Participation: Companies B and C

- **Before Quick Enrollment**
  - Company B: 9%
  - Company C: 6%

- **After Quick Enrollment**
  - Company D: 34%
  - Company E: 16%

- Company D: 4 months after baseline
- Company E: 4 months after baseline
Explaining the Impact of Defaults: Complexity

  - 38% of respondents report that they have little or no financial knowledge
  - 40% of respondents believe that a money market fund contains stocks
  - Two-thirds of respondents don’t know that it is possible to lose money in government bonds
  - Respondents on average believe that employer stock is less risky than a stock mutual fund
  - Two-thirds report that they would be better off working with an investment advisor than managing investments solo
Explaining the Impact of Defaults: Complexity

- Typical defined contribution savings plan task:
  - Pick contribution rate: options 1% to 15%
  - Pick asset allocation: 10-15 funds
  - → Myriad of total options

- Complexity → delay
  - Savings literature: each additional 10 funds → 1.5 to 2.0 percentage point decline in participation (Iyengar, Huberman and Jiang 2004)
Explaining the Impact of Defaults: Complexity

- Automatic enrollment and Quick Enrollment both decrease dimensionality of the decision-making task → participation increases
- Participation increases larger under automatic enrollment than with Quick Enrollment → the effect of automatic enrollment due to more than just reduced complexity
Explaining the Impact of Defaults: Present-Biased Preferences


- Evidence
  - Participation rates under standard enrollment never exceed those under automatic enrollment
  - Employees forego employer match (Choi, Laibson, Madrian 2005a)
Explaining the Impact of Defaults: Endorsement

- The default as advice
- Evidence
  - Automatic enrollment and asset allocation of employees hired before automatic enrollment
  - Automatic enrollment and asset allocation of employees hired after automatic enrollment who move away from the default
  - Elective employer stock allocation in firms that do and do not match in employer stock
## Asset Allocation Outcomes of Employees not Subject to Automatic Enrollment

<table>
<thead>
<tr>
<th>Company D</th>
<th>Any balances in default fund</th>
<th>All balances in default fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hired before, participated before AE</td>
<td>13%</td>
<td>2%</td>
</tr>
<tr>
<td>Hired before, participated after AE</td>
<td>29%</td>
<td>16%</td>
</tr>
</tbody>
</table>
## Automatic Enrollment and Asset Allocation Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Any balances in default fund</th>
<th>All balances in default fund</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Company A</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hired before AE</td>
<td>9.8%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Hired after AE: non-default</td>
<td>86.1%</td>
<td>61.1%</td>
</tr>
<tr>
<td><strong>Company D</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hired before AE</td>
<td>18.2%</td>
<td>5.2%</td>
</tr>
<tr>
<td>Hired after AE: non-default</td>
<td>71.3%</td>
<td>30.8%</td>
</tr>
</tbody>
</table>
‘Optimal Defaults’

- Model of optimal savings plan enrollment/contribution rate default (Choi et al. 2005)

- Defaults matter for three reasons
  - Cost of opting-out of the default
  - Cost varies over time \(\rightarrow\) option value of waiting
  - Present-biased preferences \(\rightarrow\) delay

- Optimal default depends on two key parameters
  - The degree of heterogeneity in savings preferences
  - How large the tendency to procrastinate is
‘Optimal Defaults’

- Three classes of optimal defaults
  - Automatic enrollment
    - Optimal when employees have similar savings preferences (e.g. match threshold)
    - Limited expertise → tendency to procrastinate
  - Standard enrollment
    - Note: special case of automatic enrollment
    - Shared preference not to participate by many (e.g., high SS replacement rate of generous DB pension)
    - Heterogeneous preferences + no tendency to procrastinate
  - “Active Decision”—require individuals to take action
    - Optimal with heterogeneous preferences + tendency to procrastinate
- Key point: no single optimal default
Public Policy and Defaults: Swedish Social Security Personal Account Asset Allocation

- Swedish default vs. automatic enrollment
  - Many funds vs. only one fund
  - Well diversified across geography, sectors, assets
- Expense ratio
- Actual performance of those in the default fund exceeds that of those who elected their own asset allocation
Asset Allocation of the Swedish Social Security Personal Account Default Fund

- Swedish stocks, 17%
- International stocks, 65%
- Inflation-indexed bonds, 10%
- Hedge funds, 4%
- Private equity, 4%
Public Policy and Defaults: Annuitization

- Interesting aspects of the joint-and-survivor annuity default discussed earlier
  - Differentiated default: singles vs. marrieds
  - Annuity election irrevocable
  - Implicit deadline—must either accept or opt-out of the default before receiving pension payments

- Note
  - Largely homogenous preferences
  - Similarities to active decision approach
  - Reduced scope for procrastination
  - Those who do opt-out of joint-and-survivor annuity appear to have economically sound reasons for doing so (Johnson, Uccello and Goldwyn 2003)
Public Policy and Defaults: Annuitization

- Thinking more generally about retirement income annuitization and defaults
  - Understanding annuitization options is complicated for financial novices → strong endorsement effect likely
  - Taking a lump-sum is the only way to preserve option value
  - BUT, lump-sums → potential self-control problems

- Annuitization and defined contribution savings plans
  - Required annuitization?
  - Default annuitization option?
  - Active decision approach
Public Policy and Defaults: Pre-Retirement Cash Distributions

- Cash distribution default for balances of <$5000 → leakage from retirement savings
- Response: balances of $1000-$5000
  - Employers can maintain these balances
  - Employers can roll over into an IRA
- Default asset allocation for IRA rollover must preserve principal
Public Policy and Defaults: Match in Employer Stock

- Employer stock in defined contribution savings plan: little regulation
- Employer stock in defined benefit pension plan: strict 10% limit
- Strong evidence that employees misperceive the risks of employer stock (familiarity bias)
- Policy alternatives
  - Preclude employer stock from savings plans altogether (correlated risks)
  - Preclude employers from defaulting matching contributions into employer stock (e.g., preclude companies from choosing a single life annuity as a default for married individuals)
Conclusion

- Defaults are not neutral when it comes to savings outcomes
- Implications
  - Employers/institutions can enhance savings outcomes by establishing sensible defaults
  - Governments can regulate employers/institutions so as to encourage defaults that promote better outcomes
- Current public policies include examples of defaults that both help and hinder better savings outcomes