From Nest Egg to Seed Capital: Retirement Security and New Business Formation Among Older Workers

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RAND  Duke, NBER, Swedish House of Finance

RAND Behavioral Finance Forum
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How are retirement and entrepreneurship related?

• Entrepreneurship important among older workers

• Most new businesses founded by people who leave paid employment to start a business

• Connections between retirement security and entrepreneurship
  
  – **Labor**:  
    - Entrepreneurship/self-employment as a way to postpone, transition and/or fund retirement

  – **Finance**:  
    - Retirement savings as a form of startup capital
Rollovers as Business Startups (ROBS)

- Empirically challenging to get the full picture of the extent to which retirement savings are being used to start businesses.
  - But one exception: ROBS

- A ROBS transaction allows entrepreneurs to take their 401(k) savings from their previous employer and make a tax-free rollover into a new business that they start.

- Not technically a leakage from 401(k), but a once well-diversified retirement portfolio is now invested in a single business

- May allow access to capital for certain types of individuals who might otherwise be unable to start a business

- May allow older workers to postpone retirement and pursue “lifestyle entrepreneurship”
Today’s talk

• What types of people use ROBS to fund a new business?
  – Demographics, other funding sources, reasons for starting a business
  – Proprietary data from a financial services firm survey of small business owners

• What types of businesses are being started?
  – Size, growth rates, success rates
  – Dept of Labor / IRS Form 5500 filings in addition to small business owner survey
Small Business Owner Survey Data

• Financial services firm that helps entrepreneurs secure financing for new businesses
  – ROBS: responsible for about half of all transactions in the market
  – SBA loans
  – Other loans (unsecured, portfolio)

• Two waves of an annual survey of current clients
  – n=1,398 of whom 773 used a ROBS transaction
  – Each year, invite a pool of about 6000 clients and potential clients to participate
  – Data from November 2017, 2018
Demographics of Small Business Owners

- Under 50: 50% Non-ROBS Owners, 26% ROBS Owners
- 50 and older: 50% Non-ROBS Owners, 74% ROBS Owners
- High school/GED/Associate’s: 51% Non-ROBS Owners, 28% ROBS Owners
- Bachelor or more: 49% Non-ROBS Owners, 72% ROBS Owners
- Caucasian, non-Hispanic: 35% Non-ROBS Owners, 77% ROBS Owners
- Non-Caucasian and/or Hispanic: 65% Non-ROBS Owners, 23% ROBS Owners
Reasons for Starting a Business

What factors influenced your decision to go into business for yourself?

<table>
<thead>
<tr>
<th>DV=Indicator for ROBS financed</th>
<th>Without Demographic Controls</th>
<th>With Demographic Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push Factors</td>
<td>0.230***</td>
<td>0.191***</td>
</tr>
<tr>
<td></td>
<td>(0.019)</td>
<td>(0.021)</td>
</tr>
<tr>
<td>Pull Factors</td>
<td>-0.026*</td>
<td>-0.014</td>
</tr>
<tr>
<td></td>
<td>(0.016)</td>
<td>(0.017)</td>
</tr>
<tr>
<td>Observations</td>
<td>1,398</td>
<td>1,398</td>
</tr>
<tr>
<td>Pseudo $R^2$</td>
<td>0.0844</td>
<td>0.209</td>
</tr>
</tbody>
</table>

Push factors is the sum of “Dissatisfaction,” “Laid off,” and “Not ready to retire”. Pull factors is the sum of “Be My Own Boss,” “Opportunity,” and “Passion”. Point estimates are reported as marginal probabilities.

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Other Sources of Funding

Financing sources are dummy variables for whether respondent used that kind of financing source. Point estimates are reported as marginal probabilities.

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
How Large Are ROBS Businesses?

Median household retirement savings, among those who have any retirement savings is 100K for those in their 50s.

Average total capital for new business is 90K.
What Types of People Use a ROBS Transaction?

The proto-typical entrepreneur behind a ROBS transaction is:

- a well educated mid- to late-50s white male or white couple,
- who typically puts in excess of $175,000 of retirement wealth,
- and not infrequently adds leverage from SBA loans,
- because they were laid off, dissatisfied with the corporate environment, or not ready to retire,
- to buy a franchise or existing business.
Form 5500 Data

• Employer or Plan Administrator of a pension or welfare benefit plan covered by ERISA must file Form 5500

• For retirement plans, employers report details on the retirement plan, including number of participants, and whether the plan offers employer securities.

• ROBS plans can be identified by their size, whether they offer employer securities, and their plan name. (fewer than 3 participants, Not an ESOP)
Prevalence of ROBS businesses, by year

New 5500 ROBS filings each year (2009-2016)
How Large are ROBS Businesses?

Qualified Employer Securities at Initial Filing

- 2009: 61,005
- 2010: 77,437
- 2011: 418,157
- 2012: 535,810

25th %, Median, Mean, 75th %, 95th %
The Returns to Entrepreneurship

- Mean return: -21%
- Median return: -7%
- About 1 in 5 outperforms the S&P 500 (average annual return of 8%)
Growth of ROBS Businesses

By 2014, the bottom 3 decile firms in 2009:
- Failed: 35.0%
- Bottom 3: 27.4%
- Middle: 9.8%
- Top 3: 27.8%

By 2014, the top 3 decile firms in 2009:
- Failed: 18.4%
- Bottom 3: 12.4%
- Middle: 25.1%
- Top 3: 44.1%
Survival Rates of ROBS Businesses

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent Surviving at Least 2 Years</th>
<th>Percent Surviving at Least 3 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>78.0%</td>
<td>67.9%</td>
</tr>
<tr>
<td>2010</td>
<td>74.6%</td>
<td>64.3%</td>
</tr>
<tr>
<td>2011</td>
<td>77.9%</td>
<td>67.7%</td>
</tr>
<tr>
<td>2012</td>
<td>80.5%</td>
<td>70.1%</td>
</tr>
<tr>
<td>2013</td>
<td>78.9%</td>
<td>66.6%</td>
</tr>
<tr>
<td>2014</td>
<td>77.6%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
What Types of Firms are Started with ROBS?

- Number of firms started with ROBS is growing over time.
- Amount of capital used to start a ROBS firm is increasing over time.
- But there is wide variance in amount of capital used to start a ROBS firm.
- The variance grows over firm lifespan.
- About 30 percent of firms fail within 3 years.
Conclusions

• Our goal is to shed first light on an understudied source of financial capital for entrepreneurs and understand its broader implications for retirement security.

• Some business owners who use ROBS are probably better off than if they had remained in traditional employment
  – They delay retirement while working a job they are passionate about
  – Their wealth accumulates over time

• But some are undoubtedly worse off
  – Failure rates are similar to other types of startup activity
  – Considerable retirement savings could be lost
Target Date Funds and Portfolio Choice in 401(k) Plans

Olivia S. Mitchell, Wharton School
Stephen P. Utkus, Vanguard

Special thanks to Yu Yong, Wharton School, for exceptional research assistance
Motivation

• Historic model of 401(k) portfolio choice emphasized supremacy of individual choice in portfolio construction – “be your own money manager”!

• From 2000: in response to concerns over poor portfolio construction and financial illiteracy, sponsors began to introduce target-date funds (TDFs) as a form of all-in-one portfolio with two unique elements: (1) retirement year labeling; (2) equity risk reduction with age feature (glidepath).

• 2007: regs under 2006 Pension Protection Act encouraged TDFs as default investments for auto-enrollment (as one of three qualified default investment alternatives or QDIAs).

• Previous work evaluated impact of automatic enrollment and money market default investments in a handful of large firms (e.g., Madrian and Shea, 2001).

• We examine dissemination of TDFs in 880 401(k) plans covering 1.2MM participants, in both voluntary enrollment (VE) and automatic enrollment (AE) settings.
Prevalence of TDFs in 401(k) plans

401(k) TDF assets (in billions)

Our data set and approach

- Twelve-month event-time window
- Sample: 880 plans with 1.2MM participants introducing TDFs between Jan 2003-June 2015. Data from Vanguard (anonymized/restricted-access).
- Evaluation metrics: TDF adoption and portfolio characteristics by:
  - Existing employees versus new entrants
  - Voluntary enrollment versus (new hire) auto enrollment
Adoption effects: Probability of pure TDF investor

- **Active choice effect**
  - VE plans:
    - Existing EEs: 3.9%
    - New Entrants: 14.5%
  - (New hire) AE plans:
    - Default effect: 75.9%

- **Endorsement effect**
  - (New hire) AE plans:
    - Existing EEs: 14.1%
Portfolio effects: Actual equity share

**Marginal age gradient effects:**

- **Pure:** + 26pts
- **Mixed:** + 11pts
- **Non TDF:** + 11pts

* >55 v. <35
Portfolio outcomes: Marginal effects (annualized)

<table>
<thead>
<tr>
<th></th>
<th>Return</th>
<th>Risk</th>
<th>Sharpe Ratio</th>
<th>NSR/TV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure TDF</td>
<td>2.4%</td>
<td>1.1%</td>
<td>NS</td>
<td>-27.0%</td>
</tr>
<tr>
<td>Mixed TDF</td>
<td>1.7%</td>
<td>1.0%</td>
<td>NS</td>
<td>-13.0%</td>
</tr>
</tbody>
</table>

Mean

- Return: 5.4%
- Risk: 9.5%
- Sharpe Ratio: 0.5
- NSR/TV: 21%
<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Pure TDF</th>
<th>Mixed TDF</th>
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</thead>
<tbody>
<tr>
<td>β (Market)</td>
<td>0.636</td>
<td>0.135</td>
<td>0.090</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+21%</td>
<td>+14%</td>
</tr>
<tr>
<td>β (Default)</td>
<td>0.247</td>
<td>0.101</td>
<td>0.050</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+41%</td>
<td>+20%</td>
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<tr>
<td>β (Term)</td>
<td>0.080</td>
<td>0.072</td>
<td>0.040</td>
</tr>
<tr>
<td></td>
<td></td>
<td>+90%</td>
<td>+50%</td>
</tr>
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</table>

- Marginal effects from β(SMB), β(HML) and β(UMD) much smaller
- Results consistent with low-cost indexed nature of TDFs we study (could differ for actively managed TDFs)
Conclusions

• Three distinct behavioral effects associated with dissemination of TDFs: (i) strong default effect; (ii) active choice effect, and (iii) endorsement effect.

• TDF investors take on more risk, on average, and conform to a well-defined equity risk-reduction glidepath with age (relative to non TDF investors).

• Portfolios of 401(k) investors will increasingly mirror those of the plan TDF series. In our data, this means increased market, default and term exposures and substantially lower idiosyncratic risk.

• TDF dissemination is altering fundamental nature of portfolio choice in 401(k) plans by design: shifts critical portfolio decisions from individual savers to plan sponsor and TDF manager.

• This transformation continues: over half of Vanguard participants (52%) invested only in a single TDF in 2018 (Young, 2019).
Serenity Now, Save Later: Evidence on Retirement Savings Puzzles from a 401(k) Field Experiment

Saurabh Bhargava
Associate Professor of Economics
Department of Social and Decision Sciences
Carnegie Mellon University

Lynn Conell-Price
Post-Doctoral Fellow
The Wharton School of Business
Four empirical puzzles in US retirement savings

1. **Employees Save Too Little** – Majority of US working households fail to reach retirement savings benchmarks – especially low earning households (NIRS 2013)

2. **Intention & Action Gap** – Surveyed individuals are aware of low savings, would like to save, in many cases intend to save in near future, but fail to do so, usually until retirement approaches (Laibson 2010)

3. **Power of Defaults & Inertia** – Introduction of 401(k) automatic enrollment has sharply raised program participation despite little change to the economic costs of enrollment (people satisfied ex-post) (Madrian & Shea 2001; Choi et al. 2002; Choi et al. 2004)

4. **Money of the Table** – Despite auto-enrollment, a significant share of eligible employees continue to decline 401(k) (about 15%), in some cases sacrificing valuable matching incentives (median 3%, Vanguard 2016). Low participation and contribution elasticity with respect to match size.

**What psychological frictions might explain these anomalies?**
Several behavioral frictions have been advanced to explain puzzles

1. Low Retirement Literacy
   - Employees may underestimate required spending in retirement, or savings needed to achieve spending target

2. Employee Confusion
   - Employees may underestimate the generosity of plan match, or be confused about their plan eligibility

3. Present-Focused Preferences
   - Employees may delay enrollment because they privilege disutility from immediate (psychological) costs of enrollment over its delayed benefits in retirement

Despite much research on employee savings, there is little causal evidence disentangling explanations
Part I. Overview of Present Research
Serenity Now – Research Overview

How do employees decide whether, and how much, to save in their 401(k) and how can such insight help employers to improve the design of 401(k) plans?

We test 4 candidate frictions for savings puzzles w/ field experiment, linked-survey, administrative data

1. Low Retirement Literacy
2. Plan Confusion
3. Present Focus
[4. Enrollment Complexity]

Employee Survey let’s us “score” every employee based on how severely they suffer from each of the frictions

Field Experiment lets us test whether experimentally reducing each friction improves average savings well as savings of those employees suffering most severely from a particular bias
We worked with a large US firm with a diverse population of employees

- Fortune 200 US firm with over 45,000 benefit-eligible full-time employees
- 401(k) recently instituted automatic enrollment w/ default of 4 percent
- We target eligible employees earning less than $100k and contributing less than 10 percent to 401k – including universe of those contributing less than 4 percent

**Generous Match**

- Employer matches contributions 100% up to 4% eligible pay
- Minimum annual match of $2k conditional on 4% contribution
- Effective match ranges from 100 to 500%

Median employee in our sample stood to earn a potential $1.25 match for every marginal dollar of additional 401(k) contribution

Yet, in invitation sample (n=4719), only 51% of employees participated in plan and 23% took full advantage of match
Research Design – Employee Survey

- In July 2016, we invited 4,719 employees to participate in confidential “Employee Workplace Feedback Survey”
  - Sponsored by firm, surveys advertised as 10 to 15 minutes
  - Restricted to benefit eligible, full-time employees, with salary <$100k, contributing < 10 percent
- N = 1,332 completed surveys [N = 1,112 proceed to Field Experiment]
Field study embedded within survey to measure employee-specific frictions

Survey Measures

1. Low Retirement Literacy
   - Retirement beliefs
   - Knowledge of target savings
   - Financial literacy test

2. Employee Confusion
   - Knowledge of eligibility
   - Estimate of plan match generosity

3. Present-Focus
   - MPL in context of effort task
   - Intent to save in the near future
In July 2016, we invited 4,719 employees to participate in confidential “Employee Workplace Feedback Survey”
- Sponsored by firm, surveys advertised as 10 to 15 minutes
- Restricted to benefit eligible, full-time employees, with salary < $100k, contributing < 10 percent

- N = 1,332 completed surveys [N = 1,112 proceed to Field Experiment]

Employees then randomized to one of several experimentally varying modules promising a retirement assessment
- **Low Savers**: Universe of employees contributing from 0 to 3% (N = 3,719)
- **Moderate Savers**: Random sample of employees contributing between 4 to 10% (N = 1,000)
Field Experiment Web-Flow

Respondents were promised an evaluation of their retirement preparedness.

If you choose to change your contribution rate, we will guide you through the simple steps on the next page – it takes seconds.

What would you like to contribute to your 401(k)?
If you do not want to change your contribution rate now, just leave the box below blank.

**Contribution Rate (%):**
Field study embedded within survey to measure employee-specific frictions

1. Low Retirement Literacy
   - Retirement beliefs
   - Knowledge of target savings
   - Financial Literacy Test

2. Employee Confusion
   - Knowledge of eligibility
   - Estimate of plan match generosity

3. Present-Focus
   - MPL in context of effort task
   - Intent to save in the near future

Survey Measures

Experimental Treatment

Specific Savings Guidance
Screenshots of Experimental Treatments

1 Savings Guidance - Personalized Recommendation

Your Personal Retirement Evaluation
You should **take action now** to get on track for a financially secure retirement.

This evaluation is based on your age, salary, current savings, average market performance, and a retirement age of 65.

We recommend that you **increase** your 401(k) contribution rate to: **4%**
Field study embedded within survey to measure employee-specific frictions

<table>
<thead>
<tr>
<th>1. Low Retirement Literacy</th>
<th>Survey Measures</th>
<th>Experimental Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Retirement Beliefs</td>
<td>Specific Savings Guidance</td>
</tr>
<tr>
<td></td>
<td>Knowledge of target savings</td>
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<td>Financial Literacy Test</td>
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<thead>
<tr>
<th>2. Employee Confusion</th>
<th>Survey Measures</th>
<th>Experimental Treatment</th>
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<tbody>
<tr>
<td></td>
<td>Knowledge of eligibility</td>
<td>Clarification of Plan Match</td>
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<td></td>
<td>Estimate of plan match generosity</td>
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<tr>
<th>3. Present-Focus</th>
<th>Survey Measures</th>
<th>Experimental Treatment</th>
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<tbody>
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<td></td>
<td>MPL in context of effort task</td>
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<td>Intent to save in the near future</td>
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</table>
2 Clarification of Plan Match

+ Personalized Recommendation
Field study embedded within survey to measure employee-specific frictions

<table>
<thead>
<tr>
<th>1. Low Retirement Literacy</th>
<th>Survey Measures</th>
<th>Experimental Treatment</th>
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<tbody>
<tr>
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<td>Specific Savings Guidance</td>
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<td>Knowledge of targetsavings</td>
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<td>Financial Literacy Test</td>
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<thead>
<tr>
<th>2. Employee Confusion</th>
<th>Survey Measures</th>
<th>Experimental Treatment</th>
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<tr>
<td></td>
<td>Knowledge of eligibility</td>
<td>Clarification of Plan Match</td>
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<tr>
<td></td>
<td>Estimate of plan match generosity</td>
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</table>

<table>
<thead>
<tr>
<th>3. Present-Focus</th>
<th>Survey Measures</th>
<th>Experimental Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MPL in context of effort task</td>
<td>Small Financial Reward (vs. Clarification of Plan Match)</td>
</tr>
<tr>
<td></td>
<td>Intent to save in the near future</td>
<td></td>
</tr>
</tbody>
</table>
Small Immediate Reward
($10 Gift Card)

+ Personalized Recommendation
+ Clarification of Plan Match

Screenshots of Experimental Treatments

If you choose to change your contribution rate, we will guide you through the simple steps on the next page — it takes seconds.

To encourage you to think about your financial future, we will email you a $10 Amazon Gift Card if you take action today.

What would you like to contribute to your 401(k)?
If you do not want to change your contribution rate now, just leave the box below blank.

Contribution Rate (%):
Part II. Results by Candidate Explanation
Explanation #1 – Low Retirement Literacy

Recommended Savings Rates for Employee Sample and Actual Savings
(Local regression smoothing w/ 95% CI, inclusive of non-savers and match)

Can Inaccurate Beliefs Explain the Savings Gap?
**Explanation #1 – Low Retirement Literacy**

**Recommended Savings Rates for Employee Sample and Actual Savings**
(Local regression smoothing w/ 95% CI, inclusive of non-savers and match)

---

**Can Inaccurate Beliefs Explain the Savings Gap?**

Adjusting actuarial savings recommendations with employee beliefs regarding savings inputs does not meaningfully close the savings gap (particularly for younger employees)
Employee Share Increasing 401(k) Contributions by Experimental Condition

Do employees save more after a personalized savings recommendation?

Recommendations did not lead many employees to increase contributions.

(Recommendations did improve accuracy of beliefs)

Carnegie Mellon University
Does plan confusion contribute to low savings?

- Nearly all employees knew the plan’s default contribution rate.
- About 40% of employees underestimated (or did not know) generosity of the plan match.
- But... experimentally clarifying generosity of the match did not meaningfully increase engagement (even among those underestimating the match).
Unexpected dimension on confusion – erroneous belief in enrollment

Panel B. Employee Confusion after Adjusting for Inattention, Exaggeration

<table>
<thead>
<tr>
<th>Confused Share of Non-Participants</th>
<th>401(k) Non-Participants</th>
<th>401(k) Non-Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inaccurately reporting participation</td>
<td>Inaccurately reporting full match take-up</td>
</tr>
<tr>
<td>Confused Share of Non-Participants</td>
<td>0.36</td>
<td>0.19</td>
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<tr>
<td>Confused Share of Non-Participants</td>
<td>0.30</td>
<td>0.15</td>
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<tr>
<td>Confused Share of Non-Participants</td>
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<td>Confused Share of Non-Participants</td>
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<tr>
<td>Confused Share of Non-Participants</td>
<td>0.35</td>
<td>0.15</td>
</tr>
<tr>
<td>Confused Share of Non-Participants</td>
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<td>0.16</td>
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<tr>
<td>Confused Share of Non-Participants</td>
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<td>0.16</td>
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<tr>
<td>Confused Share of Non-Participants</td>
<td>0.35</td>
<td>0.15</td>
</tr>
<tr>
<td>Confused Share of Non-Participants</td>
<td>0.25</td>
<td>0.10</td>
</tr>
</tbody>
</table>

Carnegie Mellon University
Do employees delay savings due to present bias?

Employees **do not** save after being reminded of large, but delayed, plan match

A significant share of employees **do save** after being offered a small, immediate, $10 reward (even larger for moderate savings arm)
Are most severely biased employees differentially responsive to treatments?

Table 8.
Synthesis of Survey and Field Evidence on Psychological Frictions and Contribution Adjustment

<table>
<thead>
<tr>
<th>Psychological Friction</th>
<th>Baseline Incidence</th>
<th>Cross-Sectional Evidence</th>
<th>Average Experimental Treatment Effect</th>
<th>Low Bias</th>
<th>High Bias</th>
<th>Low-High Diff (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>E(ΔEnrollment</td>
<td>Friction)</td>
<td>Intervention</td>
<td>All Sample</td>
<td></td>
</tr>
<tr>
<td>1. Retirement Literacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biased Belief in Sufficiency of Contribution [1,0]</td>
<td>0.29</td>
<td>-0.23</td>
<td>Specific Guidance</td>
<td>0.02</td>
<td>0.01</td>
<td>0.00</td>
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<tr>
<td>Low Financial Literacy [1,0]</td>
<td>0.39</td>
<td></td>
<td>Specific Guidance</td>
<td>0.02</td>
<td>0.00</td>
<td>0.03</td>
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<tr>
<td>3. Plan Confusion</td>
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<td></td>
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<td>Underestimation of Plan Match [1,0]</td>
<td>0.20</td>
<td>-0.12</td>
<td>Match Clarification</td>
<td>0.01</td>
<td>0.01</td>
<td>0.03</td>
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<tr>
<td>Spurious Belief in Participation [1,0]</td>
<td>0.15</td>
<td>-0.36</td>
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<tr>
<td>4. Present-Focus</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present-Bias Inferred from MPL [1,0]</td>
<td>0.10</td>
<td>0.00</td>
<td>Reward</td>
<td>0.07</td>
<td>0.02</td>
<td>0.33</td>
</tr>
<tr>
<td>Near-Term Savings Intent [1,0]</td>
<td>0.21</td>
<td>-0.07</td>
<td>Reward</td>
<td>0.07</td>
<td>0.03</td>
<td>0.23</td>
</tr>
</tbody>
</table>

Treatments for literacy and confusion do not substantially help even those suffering from most severe bias – those scoring high on present-focus in lab are most helped by small financial reward.
Candidate Explanations for Low 401(k) Plan Engagement

1. Low Retirement Literacy
   - Widespread deficits in retirement literacy – but such deficits do not appear to explain adverse savings
   - Experimentally providing savings guidance does not increase average, or low literacy, engagement

2. Employee Confusion
   - Many employees underestimate match – but clarifying match does not improve engagement
   - Over 1/3 of non-participants mistakenly report they are enrolled – conservatively adjusting for potential inattention, exaggeration implies that 20%+ of non-participants may be confused about their enrollment

3. Present Focus
   - Savings not responsive to reminders of large, delayed, plan match – but non-trivial share of employees do respond small, immediate $10 reward (primary and secondary interventions)
   - Employees registering more highly on lab measures of present-bias more responsive to small reward
Part III. Why are employees present focused?
A new anxiety-based account of employee savings behavior

- Anxiety reflects a behavioral, cognitive, emotional response to threat or stress—affects decision-making in a variety of ways

- One reason for delayed enrollment, and intent to save in a few months, may be high proximal financial anxiety and belief that such anxiety will subside in a few months

- Small reward may engage employees because they construe enrollment as a means of achieving a reward—an emotion-based process—rather than an act of deliberative financial planning

- Suggestive evidence:
  - Our employees suffer from high proximal anxiety, large majority believes it will subside in 6 to 12 months
  - Employees suffering from high anxiety far more responsive to small financial reward

If anxiety-based account explains low enrollment, match take-up, it implies new lessons for how to optimally design retirement savings plans
Lessons for optimal design of savings policy

1. **Cultivate skills in budgeting and financial planning, focus on financial wellness** – employer investments in financial education may be less effective, exacerbate anxiety (most under-saving employees recognize they are under-saving)

2. **Simplify sprawling complexity of employee benefit program landscape** by clarifying current enrollment status, eligibility, deadlines – invest in an integrated enrollment portal across programs

3. **Fundamentally redesign employer-savings plan** to include an incentivized, highly liquid, serenity account to combat proximal anxiety which then transitions into tax-advantaged long-term retirement account (with auto-escalation)

Currently testing serenity account in the lab and hopefully in the field soon...
Thank you!

sbhar@andrew.cmu.edu
Discussion: Retirement Savings in 401(k) Plans

Gary Koenig
AARP Public Policy Institute

Rand BeFi
October 3, 2019
Preparing for Retirement: Workers’ Responsibilities

• Save Enough
• Invest Appropriately
• Manage Distribution of Assets

– **Obstacles**: Retirement/Investment Literacy, Plan Confusion, Excessive Complexity, Present-Focus, Uncertainty, Behavioral Biases
Defaults are Powerful, But Not Universal; Auto Enrollment often Comes with Additional Benefits

- Adoption of automatic enrollment rose from 15% in 2007 to 48% in 2018.
- Two-thirds of plans with AE have automatic deferral increases
- Nearly all (98%) plans with AE default to a TDF

DC plans with automatic enrollment by plan size, 2018

<table>
<thead>
<tr>
<th>Plan Size</th>
<th>Automatic Enrollment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALL</td>
<td>48%</td>
</tr>
<tr>
<td>&lt;500</td>
<td>31%</td>
</tr>
<tr>
<td>500-999</td>
<td>62%</td>
</tr>
<tr>
<td>1,000-4,999</td>
<td>69%</td>
</tr>
<tr>
<td>5,000+</td>
<td>67%</td>
</tr>
</tbody>
</table>

Source: Vanguard's How America Saves, 2019
Why Don’t More Companies Use Automatic Enrollment?

Reasons Companies Do Not Use Automatic Enrollment, 2015

- Satisfied with Participation Rates: 46%
- Corporate Philosophy: 40%
- Cost: 17%
- Added Administrative Work: 14%
- Other: 2%

Source: Plan Sponsor Council of America's 59th Annual Survey of Profit Sharing and 401k Plans
Serenity Now, Save Later: Evidence on Retirement Savings Puzzles from a 401(k) Field Experiment
Save Enough: Serenity Now, Save Later

• Explanations for Low 401K Plan Engagement:
  – Low Retirement Literacy: Present; No Evidence
  – Employee Confusion: Present; No Evidence
  – Present Focus: Yes

• Takeaways and Comments:
  – Nobody Cares about a Match…..
  – ……But a $10 Amazon Gift Card!
  – Anxiety ➔ a “Serenity Account” (incentivized, highly liquid, transitions to retirement account)
  – Financial Decisions are an “emotion-based process”

• More please….on anxiety model and serenity accounts.
Target Date Funds and Portfolio Choice in 401(k) Plans
Invest Appropriately: Target Date Funds

- **Key Points**
  - TDF are growing because of adoption of automatic enrollment
  - Responsibility for portfolio choice moving to professional TDF manager (picked by sponsor) should lead to better outcomes
  - **Active Choice Effect**: 3.9% => 14.5%
  - **Endorsement Effect**: 3.9% => 14.1%
  - **Default Effect**: 14.5% => 75.9%

**Adoption Effects: Pure TDF Investor**

<table>
<thead>
<tr>
<th>Effect</th>
<th>VE plans</th>
<th>(New hire) AE plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Choice Effect</td>
<td>3.9%</td>
<td>14.5%</td>
</tr>
<tr>
<td>Endorsement Effect</td>
<td></td>
<td>14.1%</td>
</tr>
<tr>
<td>Default Effect</td>
<td></td>
<td>75.9%</td>
</tr>
</tbody>
</table>

Opportunity: Re-enrollment of existing employees’ into TDF with Opt-Out Option
From Nest Egg to Seed Capital: Retirement Security and New Business Formation Among Older Workers
Distribution of Assets: From Nest Egg to Seed Capital

• Key Points / Summary
  – Insights on an understudied topic: Rollovers as Business Startups
  – Important Topic: How does self-employment and starting a new business at older ages affect retirement security….if use retirement savings?
  – The returns to entrepreneurship are not good for most
  – Distinction between “Push Factors” and “Pull Factors” is Fascinating

• Opportunities
  – Older Americans’ Self-Employment rates dominate younger cohorts.
  – Push-Pull Factors
  – Longer working lives?
Consumers’ Confidence Preparing for Retirement

Percentage Very or Somewhat Confident They Are Doing a Good Job Preparing Financially for Retirement, 2007 and 2017

Source: Employee Benefits Research Institute Retirement Confidence Survey, 2007 and 2017