Psychology and Economics

14.13 Lecture 19: Defaults, nudges, and frames

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Some housekeeping

- So far in the course
  - Preferences
  - Beliefs
- Now: non-standard decision-making
- Five more lectures!
  - Lecture 19: Frames, Defaults, Nudges, and Mental Accounting
  - Lecture 20: Malleability and Inaccessibility of Preferences
  - Lecture 21: Poverty through the Lens of Psychology
  - Lecture 22: Happiness and Mental Health (special surprise guest lecturer!)
  - Lecture 23: Policy and Paternalism

401(k) savings

- What are 401(k) savings?
  - Most common voluntary savings vehicle in the US
  - Set aside money for retirement
  - Choice of contribution rate, and asset allocation (stocks/bonds)
- Other features of 401(k) savings accounts
  - Penalty for early withdrawal
  - Company often pay matching contribution up to threshold.
  - Tax deferral: pay (usually lower) marginal tax rate during retirement

Patterns of 401(k) investment (Choi et al., 2005)

- 2/3 of employees believe that they are saving too little.
- 1/4 of these intend to raise their savings in the next 2 months.
- Almost nobody follows through.
- Reported under-savers have low savings rates.
- Similar patterns in other surveys

'Standard' economics tools to increase savings

- Financial incentives: vary employer matching contribution
- Provide additional choices
- Financial education

- None of these tools are (very) effective.

Why participate in 401(k) savings schemes?

- What are (potential) costs of non-participation?
  - Foregone tax benefits
  - Foregone employer match
  - Foregone consumption smoothing
- Why do companies care?
  - Non-highly compensated employees don't save enough.
  - IRS non-discrimination tests of pension plans

Madrian and Shea (2001): Background

- Large, publicly traded Fortune 500 health care company
- Can enroll in 401(k) savings plan any day by:
  - Filling out enrollment form, or
  - calling the 401(k) record keeper.
- Small direct transaction costs of starting/changing 401(k) allocation
- 50 percent matching contribution for first 6%
  - If an employee chooses 4%, company pays an additional 2%.
  - If an employee chooses 10%, company pays an additional 3%.
  - Employees first eligible after one year of employment (before change).

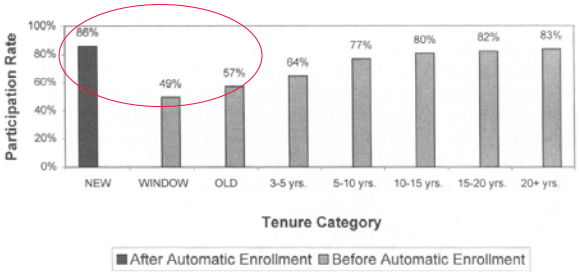
Discontinuity of 401(k) plan defaults based on date of hire

TABLE II
EMPLOYEE COHORTS FOR COMPARATIVE ANALYSIS

	OLD	WINDOW	NEW
Dates of hire[a]	4/1/1996 to 3/31/1997	4/1/1997 to 3/31/1998	4/1/1998 to 3/31/1999
First eligible to participate in 401(k) plan	One year after date of hire	4/1/1998	Date of hire
First eligible for employer match	One year after date of hire	One year after date of hire	One year after date of hire
Automatically enrolled in 401(k) plan	No	No	Yes
Default contribution rate	None	None	3 percent
Default fund allocation	None	None	Money market fund

- Key difference across cohorts: enrollment default
  - OLD and WINDOW: no-enrollment default
  - NEW: enrollment default
- First eligibility
  - OLD: one year after hire
  - WINDOW: starting 4/1/1998
  - NEW: immediate
- Plans are otherwise identical

Participation rates in 401(k) by June '99 (one year after change)



- Prior to automatic enrollment, participation increased with tenure.
- Highest participation rate for employees hired under automatic enrollment

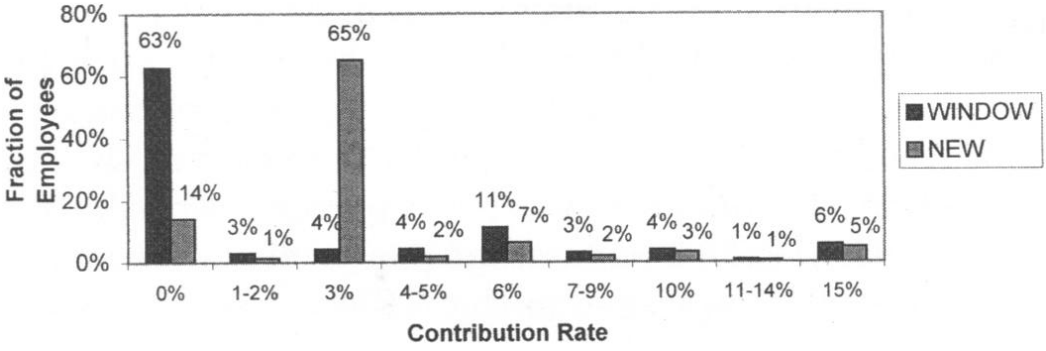
Largest impact among low-compensation workers

TABLE IV
THE EFFECTS OF AUTOMATIC ENROLLMENT AND IMMEDIATE ELIGIBILITY ON 401(k) PARTICIPATION

	Automatic enrollment		Immediate eligibility	
	Participation rate of Window cohort on 6/30/98	Participation rate of New cohort on 6/30/99	Participation rate of Old cohort on 6/30/98	Participation rate of Window cohort on 6/30/99
Overall	37.4%	85.9%	48.7%	49.4%
Gender				
Male	42.3	85.7	56.1	55.9
Female	35.9	86.0	46.3	47.4
Race/ethnicity				
White	42.7	88.2	53.4	54.4
Black	21.7	81.3	30.7	32.6
Hispanic	19.0	75.1	27.8	34.5
Other	46.2	85.2	55.0	62.9
Age				
Age <20	—	73.6	25.0	33.3
Age 20–29	25.3	82.7	36.7	36.9
Age 30–39	37.2	86.3	47.9	50.3
Age 40–49	47.3	90.1	54.9	58.0
Age 50–59	51.8	90.0	64.3	64.3
Age 60–64	60.0	86.0	60.6	70.0
Compensation				
<$20K	12.5	79.5	20.0	21.2
$20–$29K	24.5	82.8	31.7	35.3
$30–$39K	42.2	88.9	50.1	55.4
$40–$49K	51.0	91.8	61.6	64.5
$50–$59K	61.6	92.8	70.2	75.2
$60–$69K	59.7	94.7	79.2	75.1
$70–$79K	57.9	91.5	76.3	71.6
$80K+	68.3	94.2	76.3	82.6
Sample size	N = 4249	N = 5801	N = 3275	N = 4247

- 401(k) default effects are larger among poorer workers.
- Is this mechanical? Or are the poor more prone to default effects?
  - Financial sophistication
  - Information
  - Attention/bandwidth (Mullainathan and Shafir, 2013)

Majority keeps default contribution rate...



...and asset allocation.

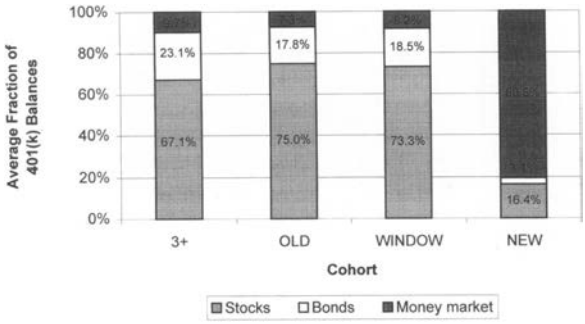


FIGURE III
401(k) Asset Allocation by Cohort

- Share of assets invested in stocks varies dramatically by cohort:
  - OLD: 75%
  - WINDOW: 73%
  - NEW: 16%
- Lower long-run return to investing in money market

Summary of main results

- 40 to 50 percent of individuals follow the default plan
  - (1a) 401(k) participation rate (yes/no)
  - (1b) Contribution rate and asset allocation
- 'Suggested choice' not very attractive unless default
  - WINDOW cohort resembles OLD cohort.
  - WINDOW cohort does *not* follow NEW cohort's default (could have been perceived as choice suggested by the company).
- Results very robust – see survey by Choi et al. (2005)

What explains default effects?

- Mechanisms
  - What drives default effects?
  - Under which conditions do defaults have effects?
- Potential candidates
  - Awareness
  - Implicit endorsement
  - Inattention/memory
  - Present bias (+ naivete)
- Blumenstock et al. (2018) investigate underlying reasons of default effects
  - Similarly large impacts of defaults on savings choices in Afghanistan
  - Evidence (most) consistent with present bias and cognitive costs of thinking through different savings scenarios.

Is automatic enrollment optimal?

- Default effects not informative of optimal saving plans.
  - Is OLD cohort under-saving?
  - Is NEW cohort over-saving?
  - Do we want employers to provide automatic enrollment?
- Automatic enrollment lowers contribution rate, conditional on participating.
  - Seems to make some people save *less*.
  - May even decrease overall savings after a few years.
    - Lower contribution rates due to default
    - More conservative asset allocation
- How can we learn about people's optimal choices?

Carroll et al. (2009): Active choice

- Large Fortune-500 Company, financial services industry. Comparison between:
  - Before: active choice within 30 days of hire (paper-based) [ACTIVE]
  - After: no-enrollment default (phone-based)
- ACTIVE resembles NEW in Madrian and Shea (2001) (markedly differs from OLD).
  - Suggests Madrian and Shea (2001) default alleviated under-saving.
- Effect of default mostly disappears after three years.
  - But no catch-up in levels
  - Moreover, individuals change employers frequently.
  - Chetty et al. (2014) find long-run impact on savings in Denmark.

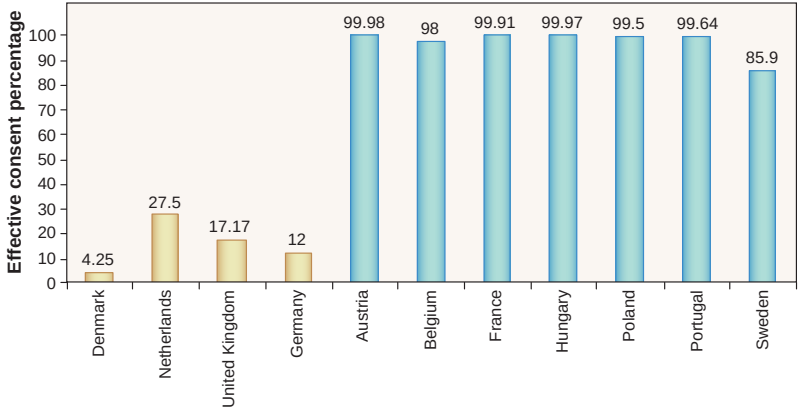
A Cautionary Tale: Cronqvist and Thaler (2004)

- Privatization of Social Security in Sweden in 2000
  - 456 funds, 1 default fund (chosen by government)
- Year 2000: Choice of default is discouraged with massive marketing campaign.
  - Among new participants, 43.3 percent chooses default
- Year 2003: End of marketing campaign.
  - Among new participants, 91.6 percent chooses default
- Portfolio actively chosen in 2000 does *worse* than default.
  - Active choice less attractive if consumers are less financially sophisticated.
  - See also Bhargava, Loewenstein and Sydnor (2015).
  - Handel (2013): another setting in which active choice seems to lower welfare.

What is the optimal decision regime?

- Active choice vs. defaults
  - Consumer heterogeneity makes active choice more attractive.
  - But active choice only improves outcomes if consumers choose what is good for them (which may not be the case).
- (How) can we ensure that defaults don't make some people worse off?
  - Some people might over-save (and have credit-card debt).
  - One option: information + active choice
- Popular alternative: auto-escalation
  - Thaler and Benartzi's (2004) SMART plan
  - Automatic increase of savings over time (using future raises)
  - No reductions in (today's) paycheck
  - Addresses present bias and loss aversion

Other settings: organ donations (Johnson and Goldstein, 2003)



Effective consent rates, by country. Explicit consent (opt-in, gold) and presumed consent (opt-out, blue).

Other examples of powerful defaults

- Organ donations (Do defaults save lives?)
- Voter registration (Oregon automatic voter registration)
- Green energy (Experiment in Germany)

- What is a nudge?
- Cass Sunstein: *A nudge is a a feature of the social environment that affects people's choices without imposing coercion or any kind of material incentive.*
  - Defaults
  - Simplification
  - Information/disclosure
  - Warnings
  - Reminders
  - Uses of social norms
  - Increases in ease and convenience
  - Framing of choices (e.g. gains vs. losses)
  - ...

Behavioral interventions in the health domain

- Individuals and society have (often) aligned goals
  - Individuals want behavioral change.
    - Improve diet
    - Increase physical activity
    - Stop smoking
    - Get vaccinated
    - Use less energy
    - ...
  - Societal costs of obesity, smoking, etc.
- But individuals often fail to follow through.
  - Education and information interventions often ineffective
  - Can nudges help align intentions and actions?

Example of free intervention: flu shot communication

- Study by Milkman et al. (2011)
- Control group: normal (informational) mailing
- Treatment 1: normal mailing + make a date plan
- Treatment 2: normal mailing + make date + time plan

Control condition

Employees informed of the dates/times of workplace flu clinics

Date plan condition

Employees invited to choose a concrete DATE for getting a flu vaccine

Employees informed of the dates/times of workplace flu clinics

Date + time plan condition

Employees invited to choose a concrete DATE AND TIME for getting a flu vaccine

Employees informed of the dates/times of workplace flu clinics

Impact on flu shot adherence


[Company Name] IS HOLDING A FREE FLU SHOT CLINIC.

Flu shots will be available on site at the [location of relevant free flu shot clinic] at the following times:

Monday, October 26th	7:00 am – 3:30 pm
Wednesday, October 28th	7:00 am – 3:30 pm
Friday, October 30th	7:00 am – 3:30 pm
Tuesday, November 3rd	7:00 am – 3:30 pm
Thursday, November 5th	7:00 am – 3:30 pm

Flu shot letter

33.0%


[Company Name] IS HOLDING A FREE FLU SHOT CLINIC.

Many people find it helpful to make a plan for getting their shot. You can write yours here:

_____ , _____ _____
(day of the week) (month) (day)

Flu shots will be available on site at the [location of relevant free flu shot clinic] at the following times:

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Flu shot letter + date plan

34.6%


[Company Name] IS HOLDING A FREE FLU SHOT CLINIC.

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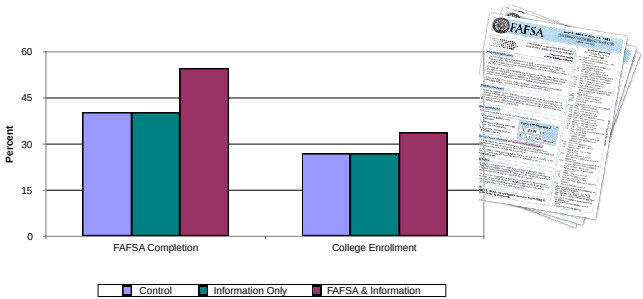
Flu shot letter + date plan + time plan

37.2%

Signing up for Fafsa (Bettinger, Long, Oreolopolos & Sanbonmatsu 2009)



- Free additional assistance in completing and filing application for college financial aid increased college enrollment.
- Impact of Fafsa simplification equivalent to impact of several thousand dollar education subsidy
- Read more about this HERE.

Nudge carefully

- Minor interventions ('nudges') can have large impact.
- Nudges can often achieve unambiguous improvements.
- But challenges remain.
  - Which of the many possible nudges should we choose?
  - Are we making some people worse off?
  - Should everyone save for retirement?
  - Should everyone go to college?
  - Do nudges make people feel bad?
  - Which self should we respect?
- Will get back to these issues in the last lecture (policy)

Next lecture

- Lecture 20 (Wednesday, April 29): Malleability and inaccessibility of preferences
  - Please read Ariely et al. (2003), Sections I through IV

References used in this lecture I

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