

Social Effects in Financial Decisions

Ethan M.J. Lieber ¹ William Skimmyhorn ²

¹University of Notre Dame

²United States Military Academy

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Introduction: Financial Decisions and Social Groups

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 - 14% federal savings plan participants cite peers as top factor in decision (TSP, 2013)
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 - 78% of millennials base financial habits on their peers' (AICPA, 2013)
- Policy groups emphasizing potential importance of social groups in financial education
 - CFPB: leveraging peer networks best practice in financial program
 - ACFC: encourages peer discussions as complements to financial education

Introduction: Our Question

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- Study context: Army soldiers effectively randomized to social groups
- Four financial decisions:
 - Retirement savings
 - Life insurance purchase
 - Army Emergency Relief (charity)
 - Combined Federal Campaign (charity)

- Identify social effects in an “organic” setting
 - Suggestive literature regressing individual's choices on peers' current choices (e.g. Hong et al. 2004, 2005; Wu et al., 2004)

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 - Suggestive literature regressing individual's choices on peers' current choices (e.g. Hong et al. 2004, 2005; Wu et al., 2004)
 - Experiments provide information on peers' choices and show impacts on individuals' financial choices (e.g. Duflo & Saez, 2003; Frey and Meier, 2004; Shang & Croson, 2009; Beshears et al. 2015; Cai et al., 2015)

- Charitable giving:
 - Army Emergency Relief (AER)
 - Non-profit to help soldiers and their families with financial challenges
 - Army supports AER with annual campaign
 - Combined Federal Campaign (CFC)
 - Enables federal employees to donate to thousands of charities
 - Army supports CFC campaign in similar manner as AER campaign

Background: Financial Outcomes We Study

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 - Soldiers automatically enrolled in the maximum coverage (\$400 k)
 - Premium is \$0.07 per \$1,000 of coverage

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- These were all financial outcomes available to us for study

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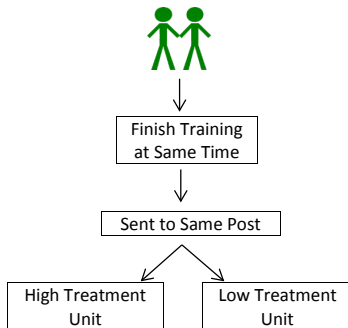
- Soldiers live and work on posts
- A post is divided into units (our social groups)
 - Units operate independently of each other on a post
 - Army builds the unit into a team:
 - Share barracks
 - Have physical training together
 - Eat meals together at dining facility
 - Share work and leisure schedule

Background: Assignment of Soldiers to Units

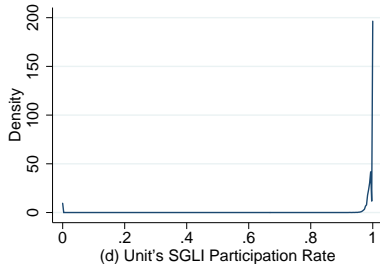
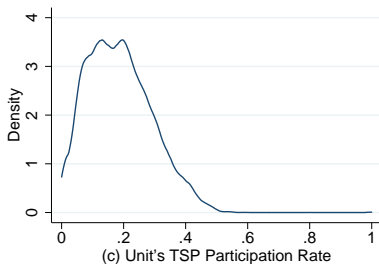
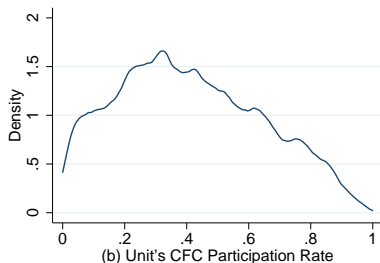
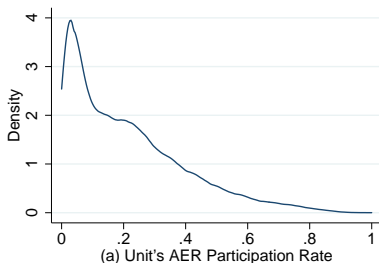
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Background: Participation in Programs



- Army administrative data from 2005-2013
- Restricted to men in combat units just finishing training

Soldiers' Demographics ($N \approx 82,000$)		
	Mean	Standard deviation
White	0.683	0.465
High school degree	0.860	0.347
College degree or more	0.048	0.214
Age	23.150	4.662
AFQT score	58.287	19.237
Married	0.289	0.453
AER	0.238	0.426
CFC	0.362	0.481
TSP	0.235	0.424
SGLI	0.839	0.368

- Regression analog of balance tests:
 - Regress treatment on soldiers' characteristics
 - Find no relationships between observables and treatments

Checking Exogeneity of Unit Assignments

- Regression analog of balance tests:
 - Regress treatment on soldiers' characteristics
 - Find no relationships between observables and treatments
- Placebo test:
 - Regress future treatment on soldiers' choices in training
 - Find very small point estimates, not significant

- We will estimate equations of the form

$$y_{iut} = \pi_0 + \pi_1 \bar{Y}_{ut-1} + z_{iut-1} \pi_2 + \varphi_{jrpt} + \varepsilon_{iut}$$

y_{iut} is soldier's choice 12 months after arriving at unit

\bar{Y}_{ut-1} is unit's participation rate in month before soldier arrives

z_{iut-1} are soldier's demographics

φ_{jrpt} are job by rank by post by month-year fixed effects

- Three primary concerns with social effects models (Manski, 1993):
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$$y_{iut} = \pi_0 + \pi_1 \bar{Y}_{ut-1} + Z_{iut-1} \pi_2 + \varphi_{jrpt} + \varepsilon_{iut}$$

- Our specification circumvents these problems:
 - Soldier not at unit yet \Rightarrow can't affect \bar{Y}_{ut-1}
 - Period t shock not correlated with \bar{Y}_{ut-1}
 - Soldiers effectively randomized to units

Results

	AER	CFC	TSP	SGLI
Unit participation rate	0.133** (0.059)			
Implied s.d. Δ	10.3%			
Observations	81,666			
Adjusted R-squared	0.135			
Job x rank x post x month-year FE	yes			
Demographics	yes			
Peer participation rate std. dev.	0.184			
Sample mean	0.238			

Results

	AER	CFC	TSP	SGLI
Unit participation rate	0.133** (0.059)	0.130*** (0.050)		
Implied s.d. Δ	10.3%	8.4%		
Observations	81,666	81,927		
Adjusted R-squared	0.135	0.201		
Job x rank x post x month-year FE	yes	yes		
Demographics	yes	yes		
Peer participation rate std. dev.	0.184	0.233		
Sample mean	0.238	0.362		

Results

	AER	CFC	TSP	SGLI
Unit participation rate	0.133** (0.059)	0.130*** (0.050)	0.051 (0.085)	-0.018 (0.026)
Implied s.d. Δ	10.3%	8.4%	2.2%	-0.3%
Observations	81,666	81,927	81,666	81,666
Adjusted R-squared	0.135	0.201	0.192	0.959
Job x rank x post x month-year FE	yes	yes	yes	yes
Demographics	yes	yes	yes	yes
Peer participation rate std. dev.	0.184	0.233	0.104	0.148
Sample mean	0.238	0.362	0.235	0.839

Threats to estimated coefficients

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	AER at		
	3 months	6 months	12 months
Unit participation rate	0.004 (0.017)	0.052** (0.022)	0.133** (0.059)

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 - Marital status
 - Race
 - AFQT scores
 - Other demographics
- Can not reject null impact on \$ amounts
- Including women has little impact on results

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 - Promotional campaigns make AER & CFC common topic of conversation
 - Choices in AER and CFC are made publicly → observable

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 - 1: Have to know what social group doing to be affected
 - Promotional campaigns make AER & CFC common topic of conversation
 - Choices in AER and CFC are made publicly → observable
 - 2: Choice architecture
 - Explicit default option for life insurance
 - Implicit default for retirement savings

- Well identified evidence of social effects in financial decisions
 - Find positive impacts for AER and CFC
 - No impacts for retirement savings or life insurance

- Well identified evidence of social effects in financial decisions
 - Find positive impacts for AER and CFC
 - No impacts for retirement savings or life insurance
- Calls to harness peer effects in financial education:
 - Results suggest little social effect if
 - Social groups' actions not known
 - Default options in place

Thanks!

Checking Exogeneity of Unit Assignments

- Regression analog of balance tests

$$\bar{Y}_{iut-1} = \beta_0 + z_{iut-1}\beta_1 + \varphi_{jrpt-1} + \varepsilon_{iut-1}$$

\bar{Y}_{iut-1} is unit's participation rate in month before soldier i arrives

z_{iut-1} are the soldier's demographic characteristics

φ_{jrpt-1} are fixed effects for combinations of job, rank, post, and date

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φ_{jrpt-1} are fixed effects for combinations of job, rank, post, and date

- If unit assignment as good as random, $\hat{\beta}_1$ should jointly be zero

Checking Exogeneity of Unit Assignments

	AER	CFC	TSP	SGLI
White	0.00113 (0.00184)			
High school degree	0.000958 (0.00197)			
College degree	1.32e-05 (0.00368)			
Age	6.60e-05 (0.00139)			
Age-squared	-4.58e-06 (2.50e-05)			
AFQT score	-8.13e-05* (4.72e-05)			
Married	0.00171 (0.00101)			
Observations	81,666			
R-squared	0.750			
Job x rank x post x month-year FE	yes			
p-value of F-stat	0.199			
Sample mean	0.210			

Checking Exogeneity of Unit Assignments

	AER	CFC	TSP	SGLI
White	0.00113 (0.00184)	0.000593 (0.00161)		
High school degree	0.000958 (0.00197)	-0.00337 (0.00360)		
College degree	1.32e-05 (0.00368)	0.00389 (0.00733)		
Age	6.60e-05 (0.00139)	-0.000721 (0.00197)		
Age-squared	-4.58e-06 (2.50e-05)	9.04e-06 (3.32e-05)		
AFQT score	-8.13e-05* (4.72e-05)	-2.53e-05 (5.44e-05)		
Married	0.00171 (0.00101)	0.00143 (0.00210)		
Observations	81,666	81,927		
R-squared	0.750	0.753		
Job x rank x post x month-year FE	yes	yes		
p-value of F-stat	0.199	0.196		
Sample mean	0.210	0.411		

Checking Exogeneity of Unit Assignments

	AER	CFC	TSP	SGLI
White	0.00113 (0.00184)	0.000593 (0.00161)	0.00105 (0.000743)	4.29e-05 (9.40e-05)
High school degree	0.000958 (0.00197)	-0.00337 (0.00360)	0.000506 (0.000530)	0.000113 (0.000212)
College degree	1.32e-05 (0.00368)	0.00389 (0.00733)	0.00206 (0.00154)	-0.000331 (0.000466)
Age	6.60e-05 (0.00139)	-0.000721 (0.00197)	-0.000891 (0.000548)	-4.91e-05 (0.000125)
Age-squared	-4.58e-06 (2.50e-05)	9.04e-06 (3.32e-05)	1.57e-05 (1.03e-05)	1.07e-06 (2.55e-06)
AFQT score	-8.13e-05* (4.72e-05)	-2.53e-05 (5.44e-05)	4.29e-06 (1.61e-05)	5.78e-07 (2.54e-06)
Married	0.00171 (0.00101)	0.00143 (0.00210)	-0.000198 (0.000768)	-3.12e-05 (0.000103)
Observations	81,666	81,927	81,666	81,666
R-squared	0.750	0.753	0.913	0.998
Job x rank x post x month-year FE	yes	yes	yes	yes
p-value of F-stat	0.199	0.196	0.392	0.929
Sample mean	0.210	0.411	0.187	0.971

Placebo Test

- Soldiers make choices on our four outcomes during training as well
- Check if soldier's choice in training related to future treatment

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	AER	CFC	TSP	SGLI
Unit participation rate	-0.023 (0.017)	0.004 (0.008)	0.017 (0.079)	-0.013 (0.025)
Observations	80,296	80,557	80,296	80,296
Adjusted R-squared	0.401	0.362	0.258	0.420
Job x rank x post x month-year FE	yes	yes	yes	yes
Demographics	yes	yes	yes	yes
Peer participation rate std. dev.	0.184	0.232	0.104	0.0770
Sample mean	0.103	0.113	0.179	0.988