Motivated saving: The impact of projections on retirement saving intentions

George Smyrnis[#]
Hazel Bateman*
Isabella Dobrescu*
Ben R. Newell*
Susan Thorp[#]

#University of Sydney
*UNSW Sydney

Motivation: Saving and information framing

Experiment and sample

Results

Many plan participants retire with low savings.

US retirement age households:

- Median retirement balances <$120K (EBRI 2016)
- 70% have pension cover

Australian retirement age households:

- Median retirement balances < $110K (ASFA 2015)
- 80%+ have pension cover

“Nudge” more saving?
“Boost” more saving?

Can participants figure out how much they need to save?

- Defined contribution funds report current balances
- Difficult to make compounding forecasts
- Super funds avoid “implicit guarantees”

Regulators encourage plans to give **projections**

Project … Lump sum? Income stream? Both?

- Mathematical equivalence is not always psychological equivalence
- Retirement plan field study: planning information + income projection ➡ higher saving next period (Goda et al. 2014)
- Savers are more sensitive to *income streams* than to equivalent *lump sums* at low-moderate wealth (Goldstein et al. 2016)

Research questions

- Are participants motivated to save when they see
  1. Current balance only?
  2. Current balance + projected lump sum?
  3. Current balance + projected income stream?
  4. Current balance + projected income stream and lump sum?

- Does motivation change over a sequence of decisions?

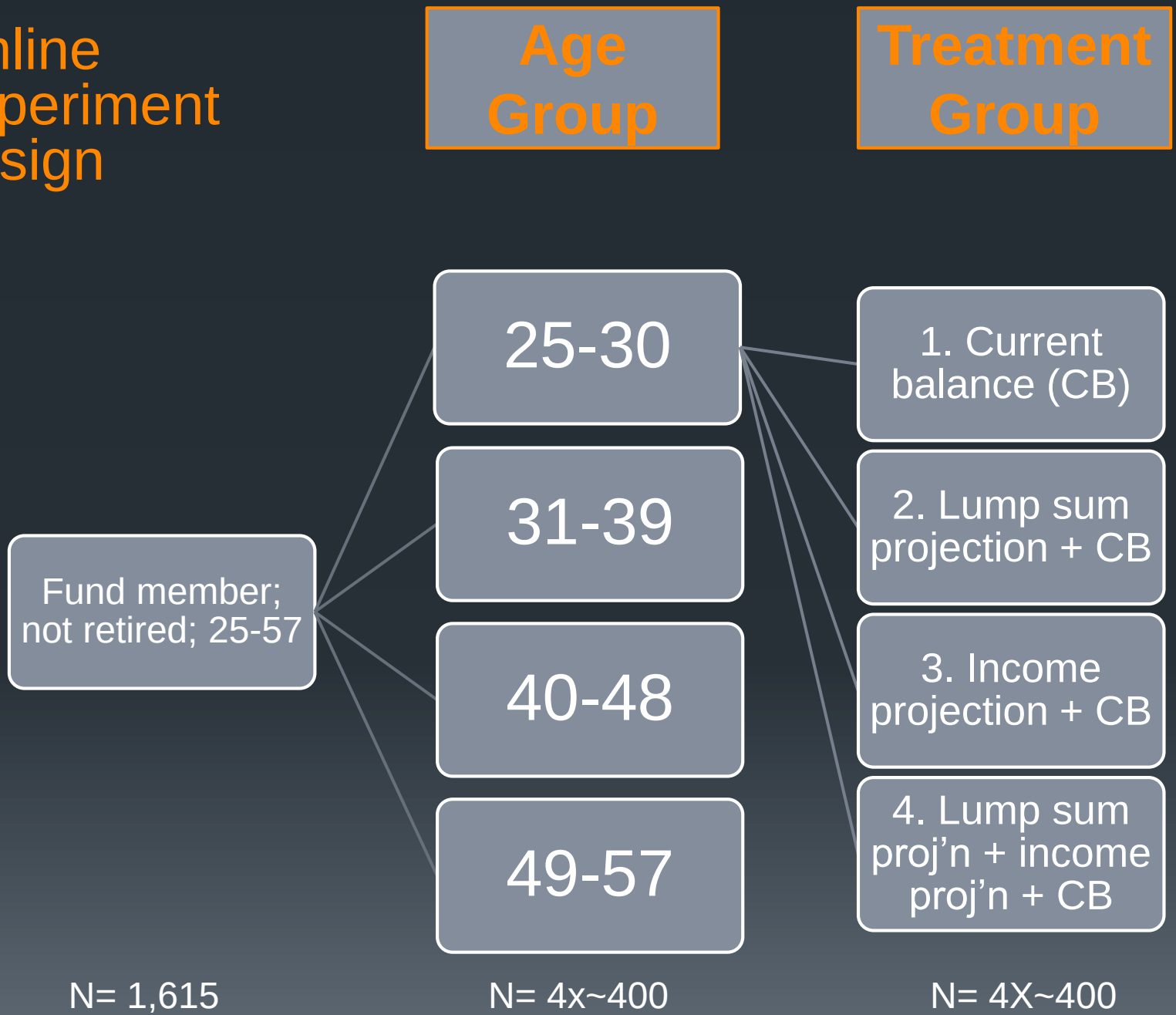
- Any heterogeneous effects?

Motivation: Saving and information framing

Experiment and sample

Results

Online experiment design



Participants choose % of “left over” income to save.

Information about your account

- current balance
- e.g., 45-54 years
- $**65,600**

What percentage of left over income will you save this year?

$10,900

- 0%
- 25%
- 50%
- 75%
- 100%
- Custom amount

Participants choose % of “left over” income to save.

Information about your account

- current balance
- **$65,600**
- estimated **balance** at 67yrs
- $**286,400**

What percentage of left over income will you save this year?

- 0%
- 25%
- 50%
- 75%
- 100%
- Custom amount

Participants choose % of “left over” income to save.

Information about your account

- current balance
- $**65,600**
- estimated **annual payment** for 25 years from 67 yrs
- $**16,400**

What percentage of left over income will you save this year?

- 0%
- 25%
- 50%
- 75%
- 100%
- Custom amount

Participants choose % of “left over” income to save.

Information about your account

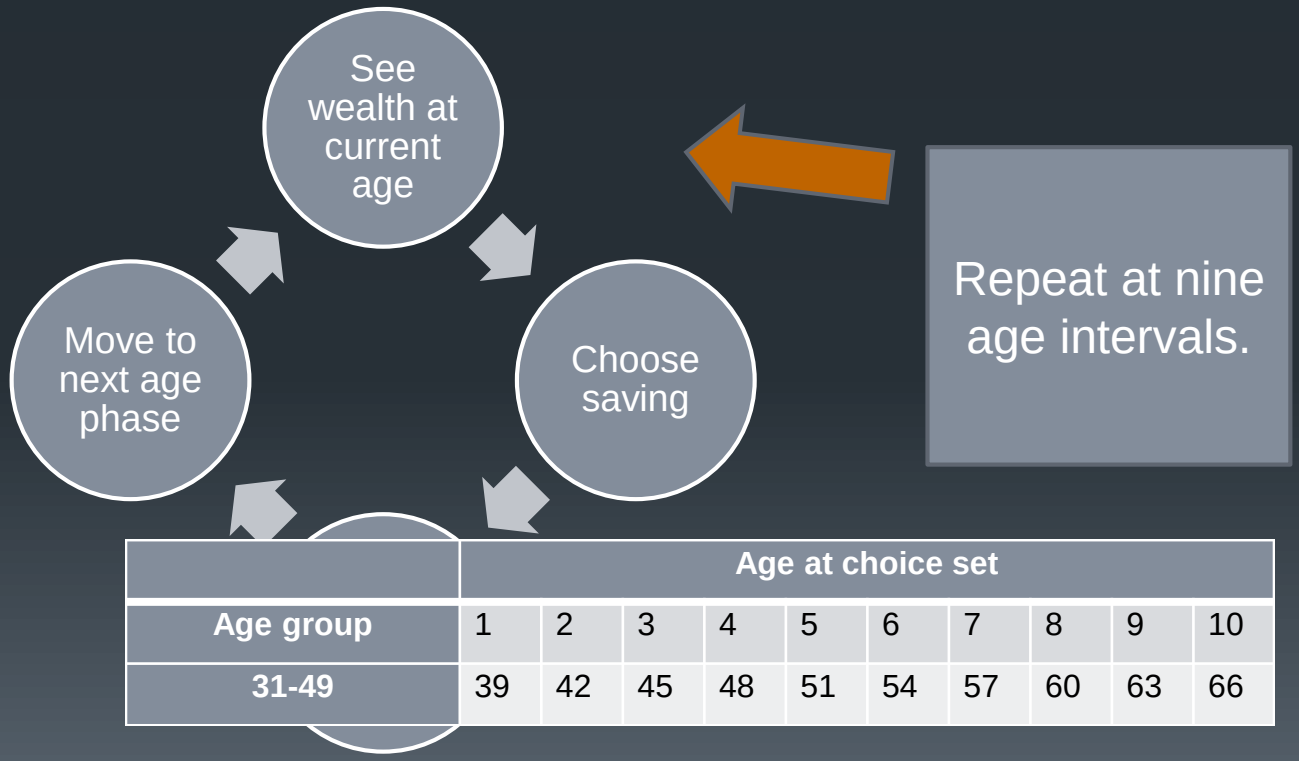
- current balance
- **$65,600**
- estimated balance **$286,400**
- estimated annual payment
- **$16,400**

What percentage of left over income will you save this year?

- 0%
- 25%
- 50%
- 75%
- 100%
- Custom amount

Estimates follow regulation: 3% real growth, today’s dollars, fees and contributions from past 12 months

Choice set information updates after each saving decision.



	Age at choice set									
Age group	1	2	3	4	5	6	7	8	9	10
31-49	39	42	45	48	51	54	57	60	63	66

Motivation: Saving and information framing

Experiment and sample

Results

How does information framing affect the first saving decision?

- Test relative sensitivity to lump sums v. income
- Test relative sensitivity to one projection v. both
- Nests Goldstein et al. (2016) and Goda et al. (2014)

- Income sensitivity related to *reference dependence:*
  - Retirement income looks low relative to current income

In a one-shot choice, income stream projections lead to slightly more saving than lump-sum projections…

…but **both** income and lump sum projections lead to more savings than either projection alone

Percentage increase in retirement balance from first choice. *Marginal effect over current balance condition p<0.1 *; p<0.05 **; p<0.01***	
Projected lump sum	0.19*
Projected 25 yr income	0.20**
Projected lump sum and income	0.27***

Information treatment effects are stronger for younger respondents.

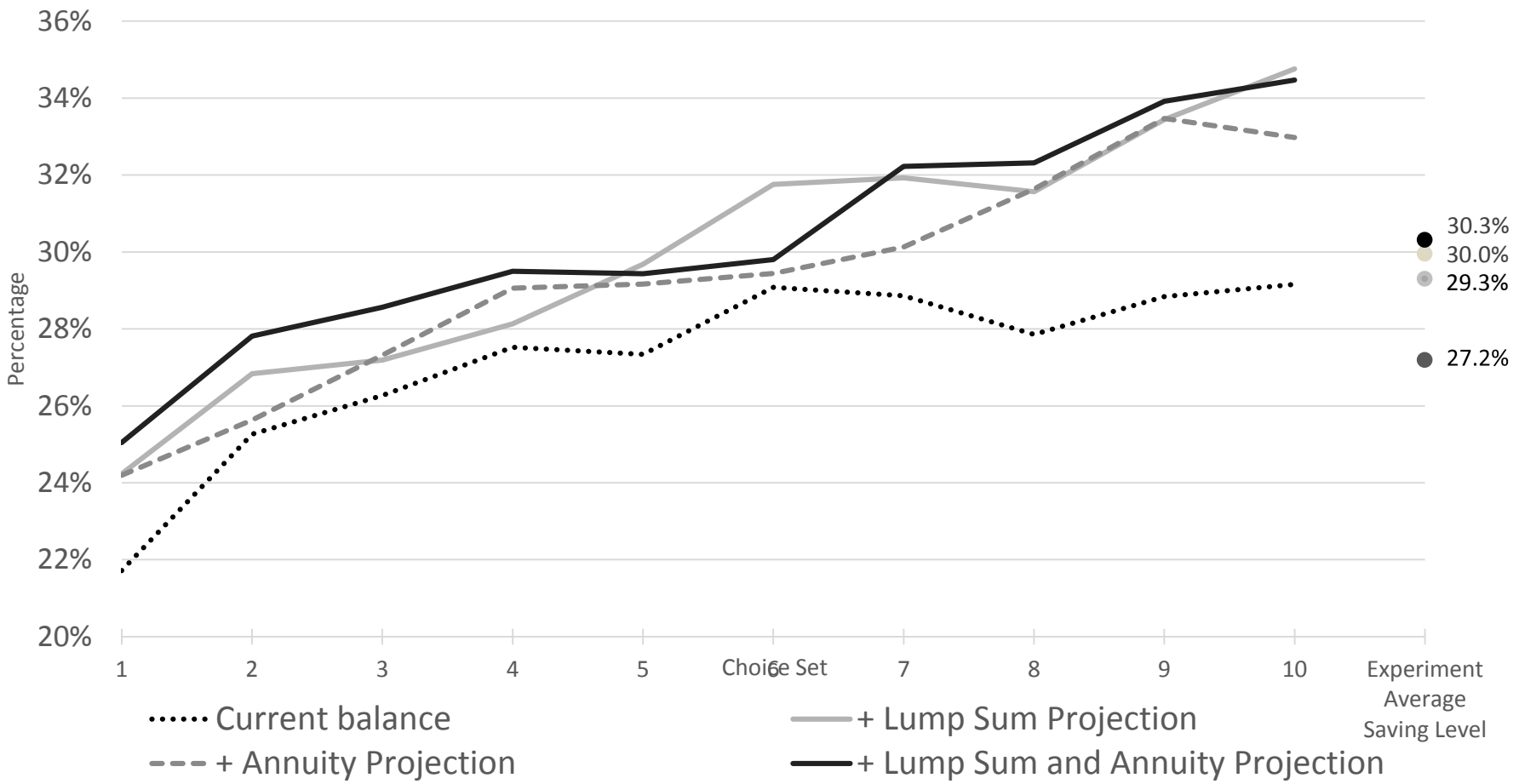
Income sensitivity is enhanced by lump sum information.

- Income reference?
  - Income projections provide replacement rates of 46% (25-30 yrs), 29% (31-39 yrs), 21% (40-48 yrs) and 20% (49-57yrs)
- Lump sum reference?
  - Popular reference is “$1M for retirement”
  - Lump sum projections fall short: by $500K (25-30 yrs) ; $760K (49-57 yrs).
- Projections are complementary
- Offer more information
- Provide two possible channels for reference dependence

How does information framing affect the sequence of saving decisions?

- New test of income sensitivity or wealth illusion
- Can feedback change saving intentions?
- Compare feedback from income and lump sum projections
- Compare dynamic savings paths.

Average percentage of discretionary income saved by treatment



Over successive choices, the combination of lump sum and income projections leads to more saving

…but the effects of income and lump sum projections separately are not statistically significant

Percentage increase in retirement balance after 10 choices. *Marginal effect over current balance condition p<0.1 *; p<0.05 **; p<0.01***	
Projected lump sum	0.78
Projected 25 yr income	0.59
Projected lump sum and income	0.94*

Higher saving if higher education, more knowledge of the retirement saving system, lower risk aversion, higher bequest intention, lower financial literacy.

Combined projections: reference dependence and positive feedback.

- Lump sum feedback is large relative to income
- Lump sum + income feedback = carrot + stick?
- Projections affect younger respondents more than older
  - Younger get the benefit of longer compounding periods

Growth in projections: 35 years; saves 100% of “left-over” income			
	Choice 1	Choice 5	Choice 10
Income projection	$22,200	$28,600	$30,900
Lump sum projection	$386,200	$497,700	$538,500

Information and opportunity raises saving.

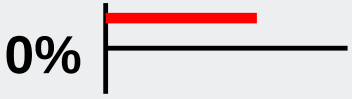
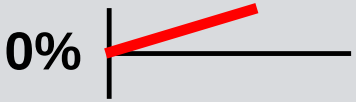
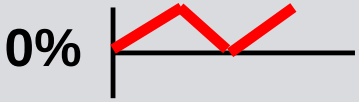
- Experiment: **79%** of respondents save extra at least once
- Official data: **24%** of super fund members make extra contributions

Official data: reasons for not contributing extra?

1. Can't afford to
2. Can't be bothered

- Experiment helps with both obstacles:
  - 1. Shows income and expenses
  - 2. Makes the choice immediate and easy

There are wide variations in patterns of saving.

	% of participants
	22%
	10%
	17%
	8%
	43%

Conclusion: *Funds that show members projections of retirement income **and** lump sums are likely to encourage higher average saving*

- Wealth illusion in one-shot choices
- Feedback matters over time
- Easy way to raise contributions + budget information helps
- Wide variation in saving intentions: boost better than nudge

Acknowledgements

This study was supported by Australian Research Council Linkage Project LP150100608 with partners UniSuper Ltd. We are grateful for the advice of Robbie Campo, John Sedawie and David Constable from Cbus. Corresponding author: Susan Thorp; Address: Room 539 Codrington Building H69, The University of Sydney, NSW 2006, Australia. Tel.: +61 2 90366354

E-mail addresses: gsmy3865@uni.sydney.edu.au (Smyrnis); h.bateman@unsw.edu.au (Bateman); dobrescu@unsw.edu.au (Dobrescu); ben.newell@unsw.edu.au (Newell); susan.thorp@sydney.edu.au (Thorp)

Account and income information set at population averages.

First choice set	45-54 years
Starting age	48 yrs
Annual gross income	$77,000
Annual net income	$60,400
Annual living expenses	$49,500
Income left over	$10,900
Current plan balance	$65,600
Estimated retirement balance	$286,400
Estimated 25 yr payment	$16,400

There are wide variations in patterns of saving.

	Always 0%	Always >0%	Rising	Falling	Both
Current balance	21.90%	11.20%	16.20%	8.20%	42.50%
Lump sum + CB	21.10%	10.60%	17.90%	9.30%	41.00%
Income + CB	21.50%	7.40%	16.30%	7.40%	47.30%
Income +lump sum + CB	21.40%	11.70%	17.20%	8.50%	41.30%
Age 25-30	16.90%	6.70%	16.60%	7.60%	52.20%
Age 31-39	21.30%	6.10%	14.80%	7.00%	50.80%
Age 40-48	21.20%	8.20%	17.10%	11.40%	42.00%
Age 49-57	25.70%	20.30%	19.50%	7.20%	27.20%