A Randomized Controlled Trial Varying Unconditional Cash Transfer Amounts in the United States

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With many thanks to our partner non-profit organization

PEP
April 1, 2022

Motivation

In the year following the start of the pandemic, U.S. federal government sent economic stimulus checks

Spent $800 billion

- Over 5x California’s entire budget for 2020

https://www.irs.gov/statistics/soi-tax-stats-coronavirus-aid-relief-and-economic-security-act-cares-act-statistics
National Association of State Budget Officers, Summaries of Fiscal Year 2020 Proposed Executive Budgets, 2 April 2019.

Evidence that cash transfers can be effective in low-income countries

- E.g., consumption, children's health, psychological well-being
  (e.g.: Baird, et al., 2011; Baird, et al., 2019; Bastagli, et al., 2016, Handa, et al., 2018; Haushofer & Shapiro, 2016; Robertson, et al., 2013)

However:

- Effects are not universally positive (e.g.: Andersen, et al., 2021; Berge, et al., 2015; Field & Maffioli, 2021; Hussam, et al., 2021; Prencipe, et al., 2021)
- Surprisingly little is known about their effectiveness in high-income countries (Dwyer, et al., Forthcoming)
  - Very expensive
  - A dollar does not go as far!

Open questions

1. How much money do you need to give for cash transfers to “work”?

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$600 to $2,000?

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1 How much money do you need to give for cash transfers to “work”?

“$600 is simply not enough… We need $2,000 stimulus checks.” (1/10/21)

‘Good enough’ or ‘train wrecks’? Economists, pundits weigh in on $2,000 stimulus checks

Even after Sen. McConnell blocked a bill to increase stimulus payments Tuesday, the debate continues.

By Samuel Benson | @sambbenson | Dec 29, 2020, 10:56am MST

ECONOMIC POLICY JOE BIDEN CORONAVIRUS

A $2,000 Check Is a Good Start, but Struggling Americans Need $2,000 Every Month

“I am asking Congress to … increase the ridiculously low $600 to $2,000…” (12/22/20)

Coronavirus

A $600 Stimulus Check Is Not Enough—Twitter Users Want the U.S. Government to Know That

#LetThemEatCake is trending on Twitter right now.

$1,400 stimulus payments would help keep 20 million adults afloat through July, report shows

Published Thu, Feb 18 2021•9:00 AM EST • Updated Thu, Feb 18 2021•11:57 AM EST

Open questions

1. How much money do you need to give for cash transfers to “work”?
2. Assuming some amount would be enough…
    - Which outcomes would it shift?
    - Through what mechanisms?
    - For how long?

This study

Randomize people in poverty to receive **$0 (Control), $500,** or **$2,000**

- Unconditional cash transfer (UCT; “no strings attached”)

Examine the effects:

- On financial, psychological, cognitive capacity, physical health outcomes
- Over time: 1 week to 3 months after cash

Preregistration & pre-analysis plan: socialscienceregistry.org/trials/6149

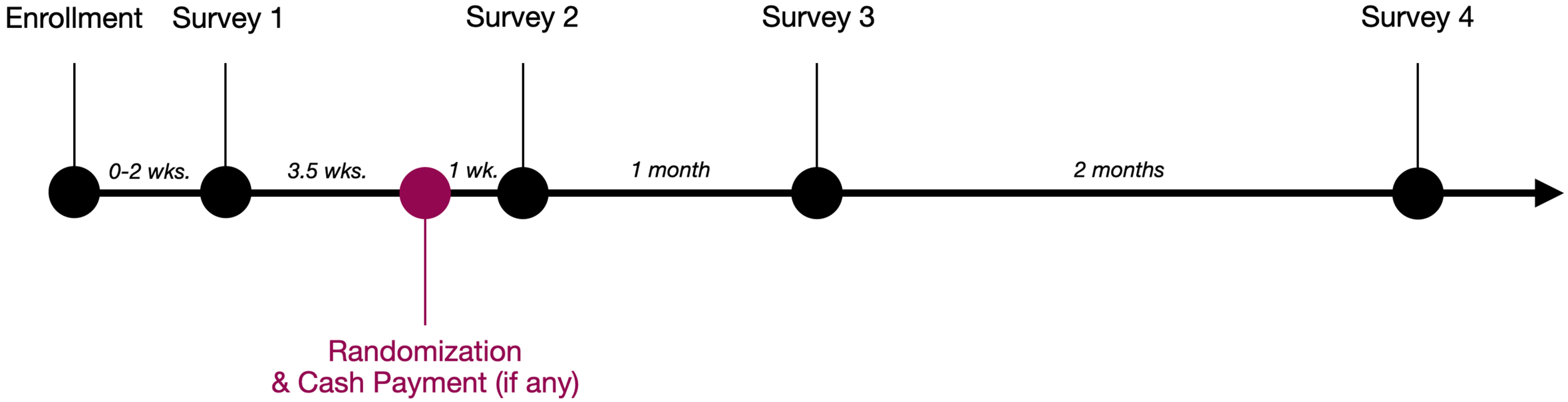
Preview of results

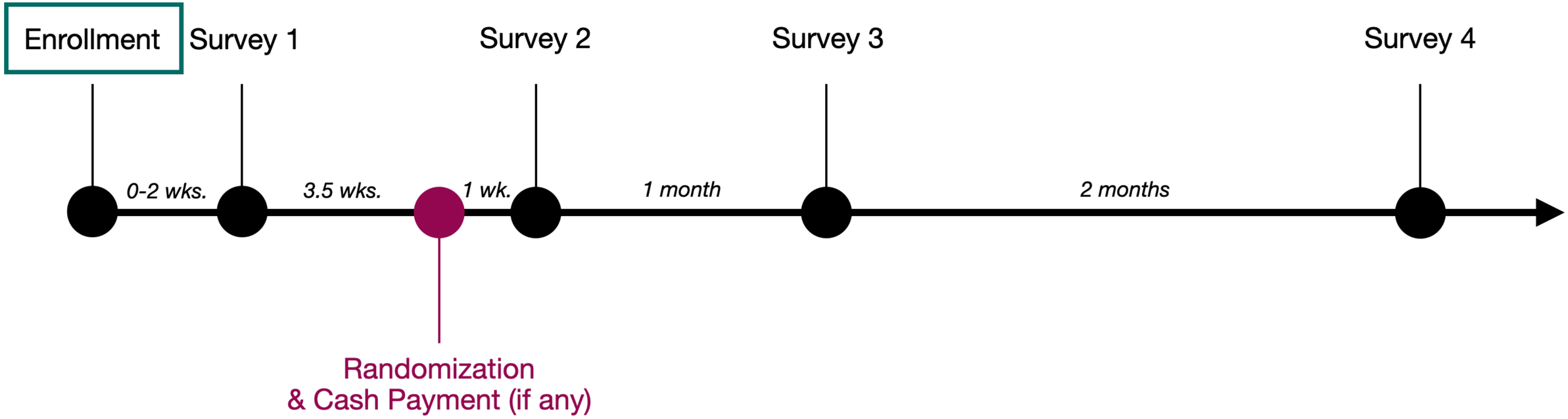
1. Both the $500 and $2,000 UCTs increased spending for a couple weeks

2. But, no evidence that either cash amount improved the survey outcomes

    - Most specifications:
        - Cash groups are *worse* than Control
        - No differences between the two cash amounts

Methods


Enrollment
Survey 1
Survey 2
Survey 3
Survey 4
0-2 wks.
3.5 wks.
1 wk.
1 month
2 months
Randomization
& Cash Payment (if any)



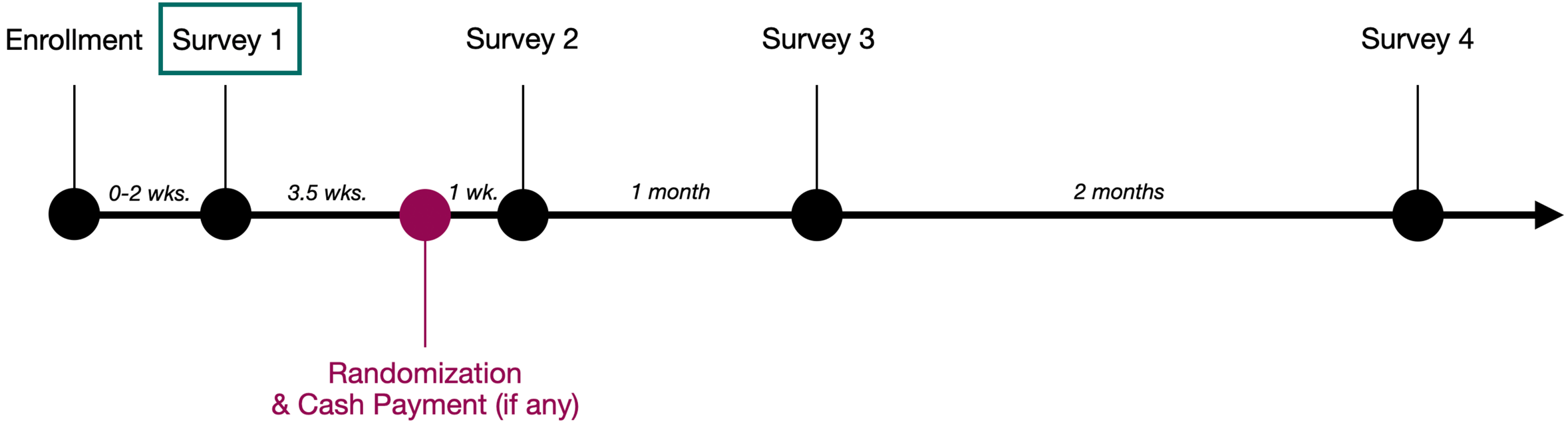
Enrollment

In the U.S.

Recruited through our partner non-profit organization

July 2020 to May 2021

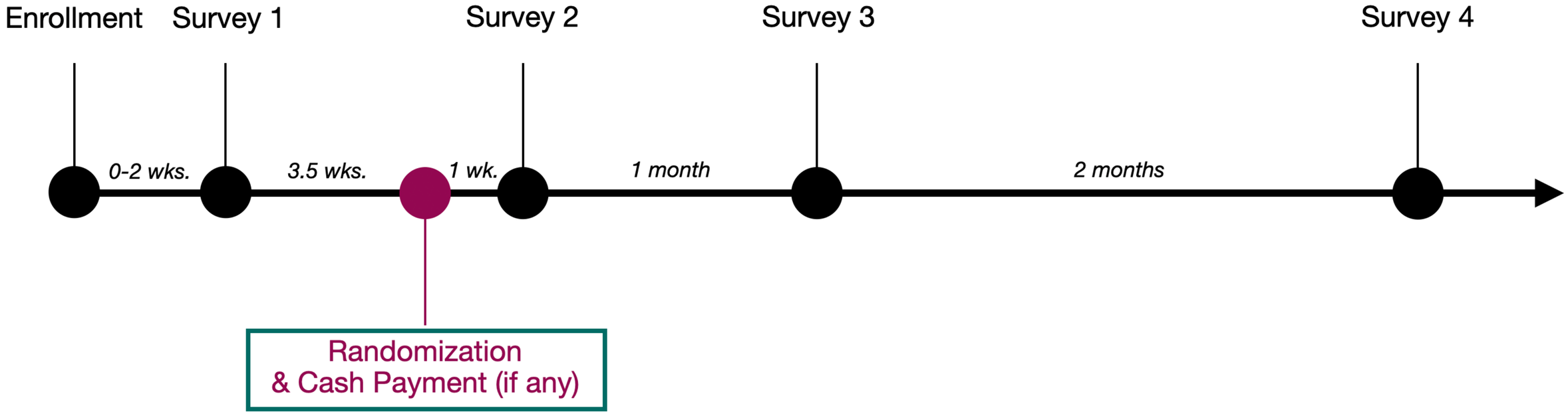
Paid up to $100 for survey completions



Survey 1

Baseline survey (before any intervention)

Required



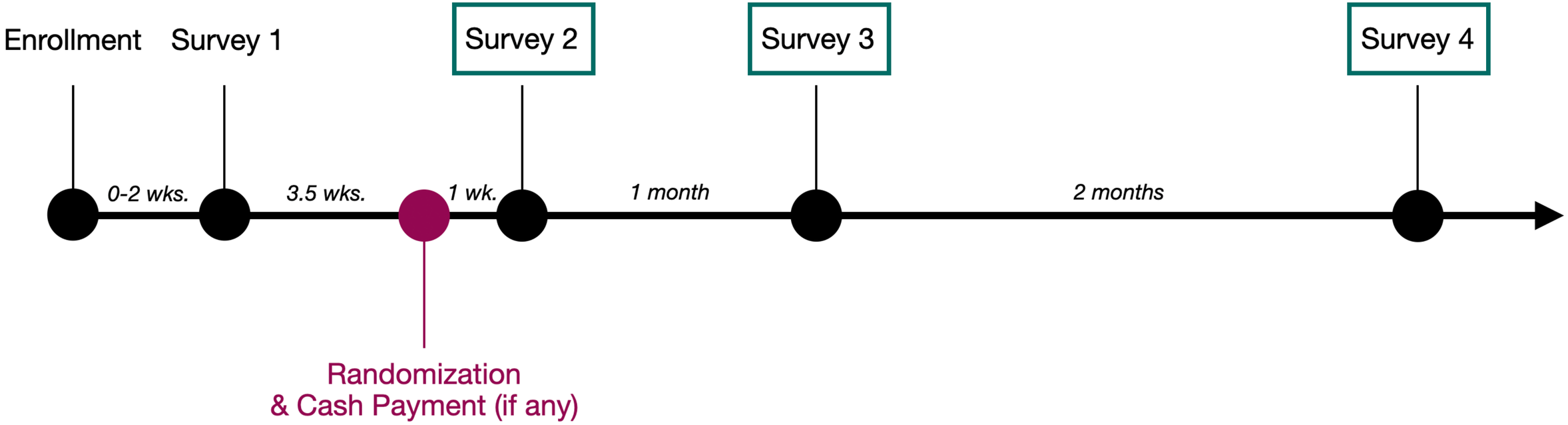
Control
N=3,170

$500 Group
N=1,374

1/2 month of total HH income

$2,000 Group
N=699

2 months of total HH income



Post-treatment surveys

- *Survey 2*: 1 week after cash payment
- *Survey 3*: ~1 month
- *Survey 4*: ~3 months

Financial	Psychological	Cognitive Capacity	Health
Savings	Agency	Raven's matrices	General health
Employment	Living best life	Money "on the mind"	Sleep
Work performance	Positive mental health	Memory	Food security
Work satisfaction	Happiness		Diet
Earned income	Anxiety		Exercise
Subjective fin. well-being	Loneliness		
Credit constraints	Depression		

Analytical approach

Because we have many variables…

- Index for each outcome category (Anderson, 2008)
- Multiple hypothesis testing corrections
  (Benjamini-Hochberg FDR and Westfall-Young FWER)

Intent-to-treat

All preregistered

Administrative data

100% of sample

- **UCT and survey payment deposits**

45% of sample

- **Bank account balances**
  - 1 snapshot per day
  - ~357,000
- **Financial transactions**
  - Amount
  - Category (e.g., Food/Drink, Healthcare, Bank Fee)
  - Description (e.g., McDonald's, The Children's Dental Place, insufficient fund fee)
  - ~851,000

Results

Participants

N = 5,243

Median annual HH income in 2019: $20k
For median HH size of 4

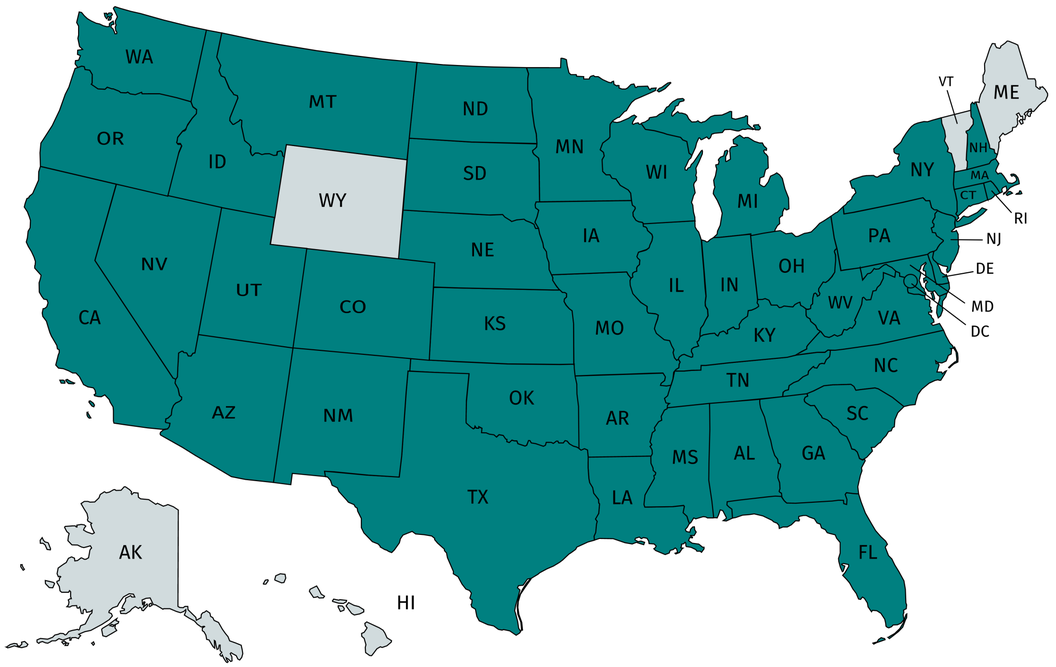
Majority women (83%)

Majority Black (56%)

Majority parents (81%)

Majority single (57%)

Balance across treatment groups



Responsiveness

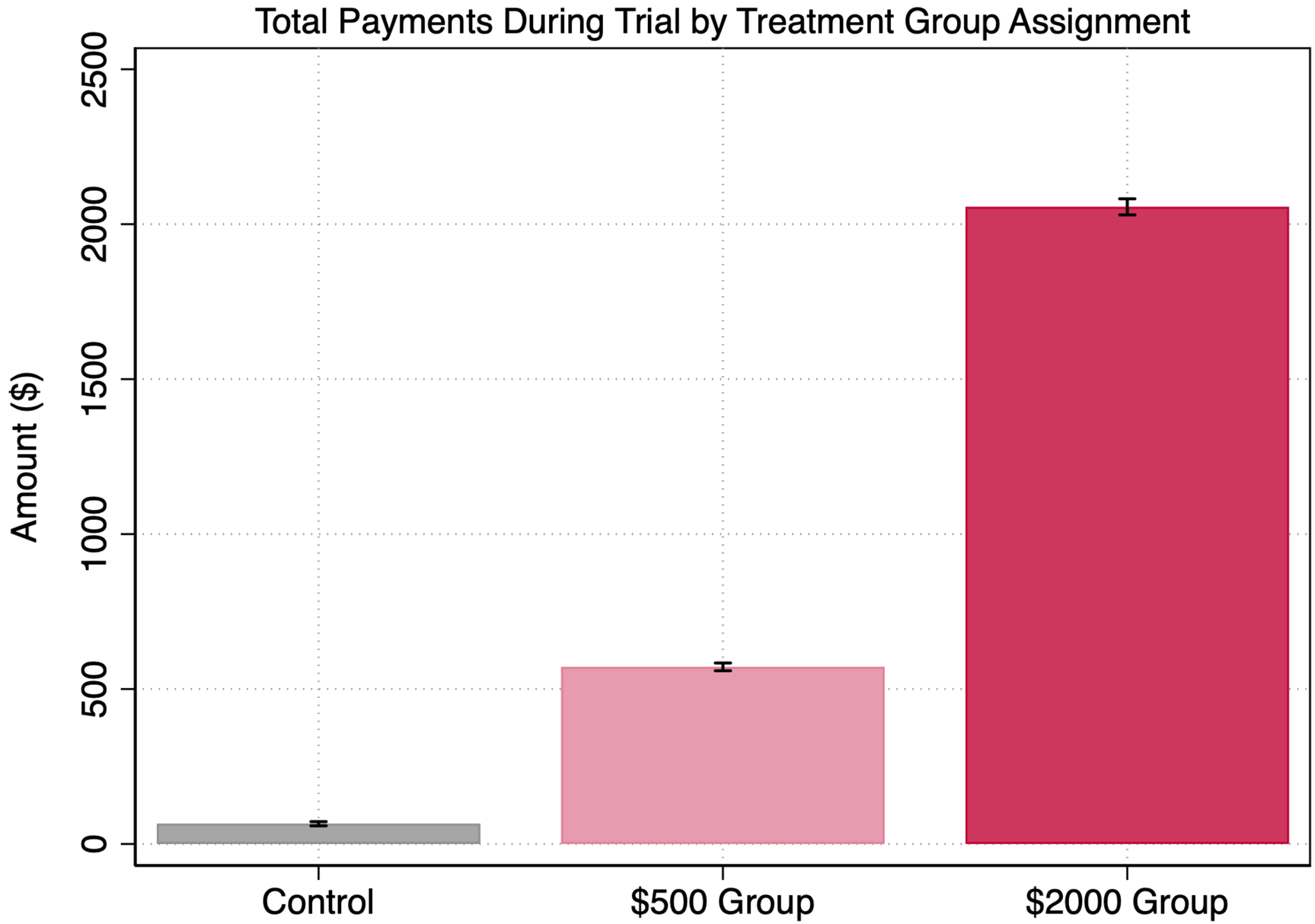
Total survey responses = 16,747

Missing post-treatment data on 12-17% of participants

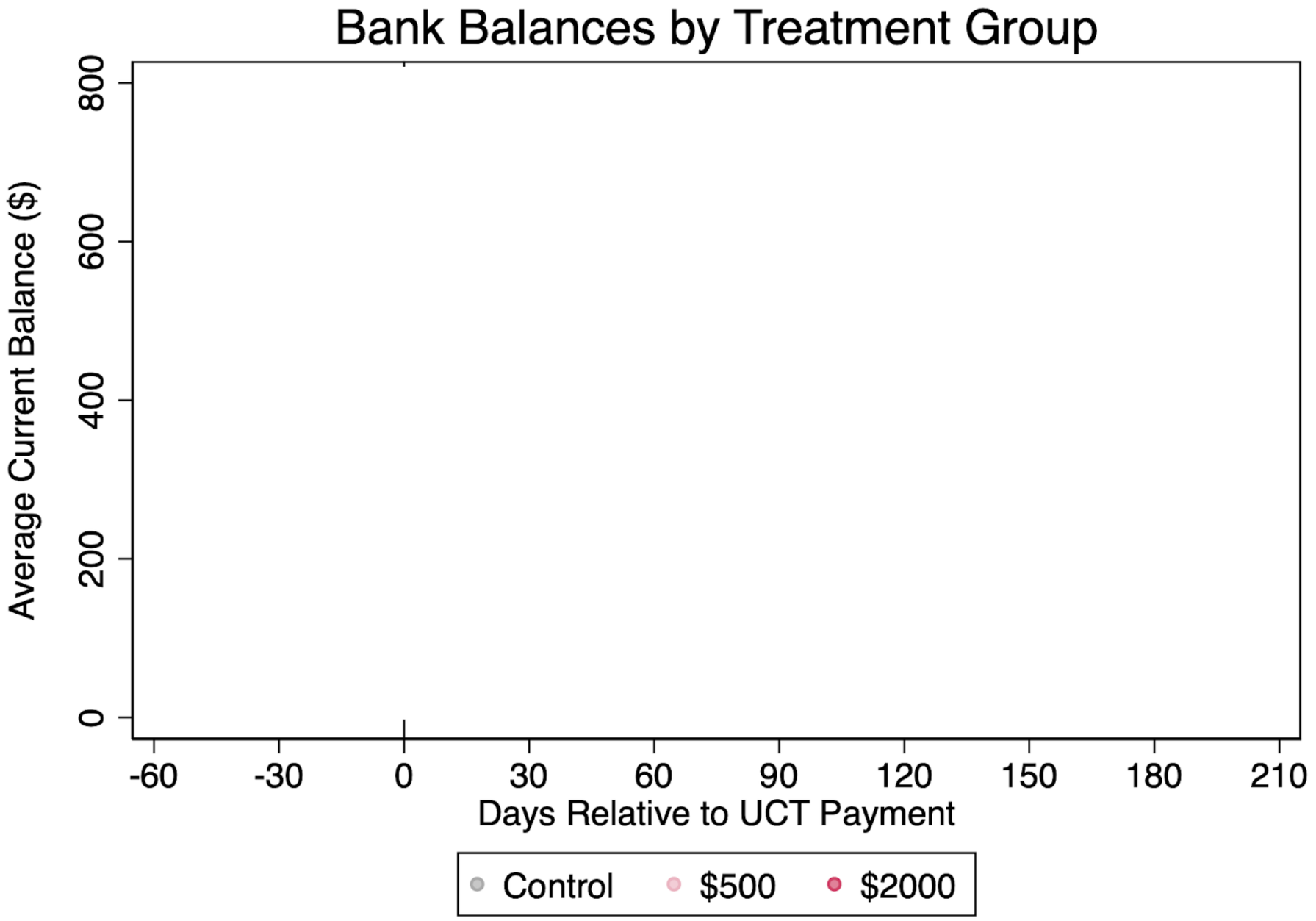
Average number of post-treatment surveys answered (out of 3):

- Control: 1.8
- $500 group: 2.3
- $2,000 group: 2.2

People were paid according to treatment group assignment

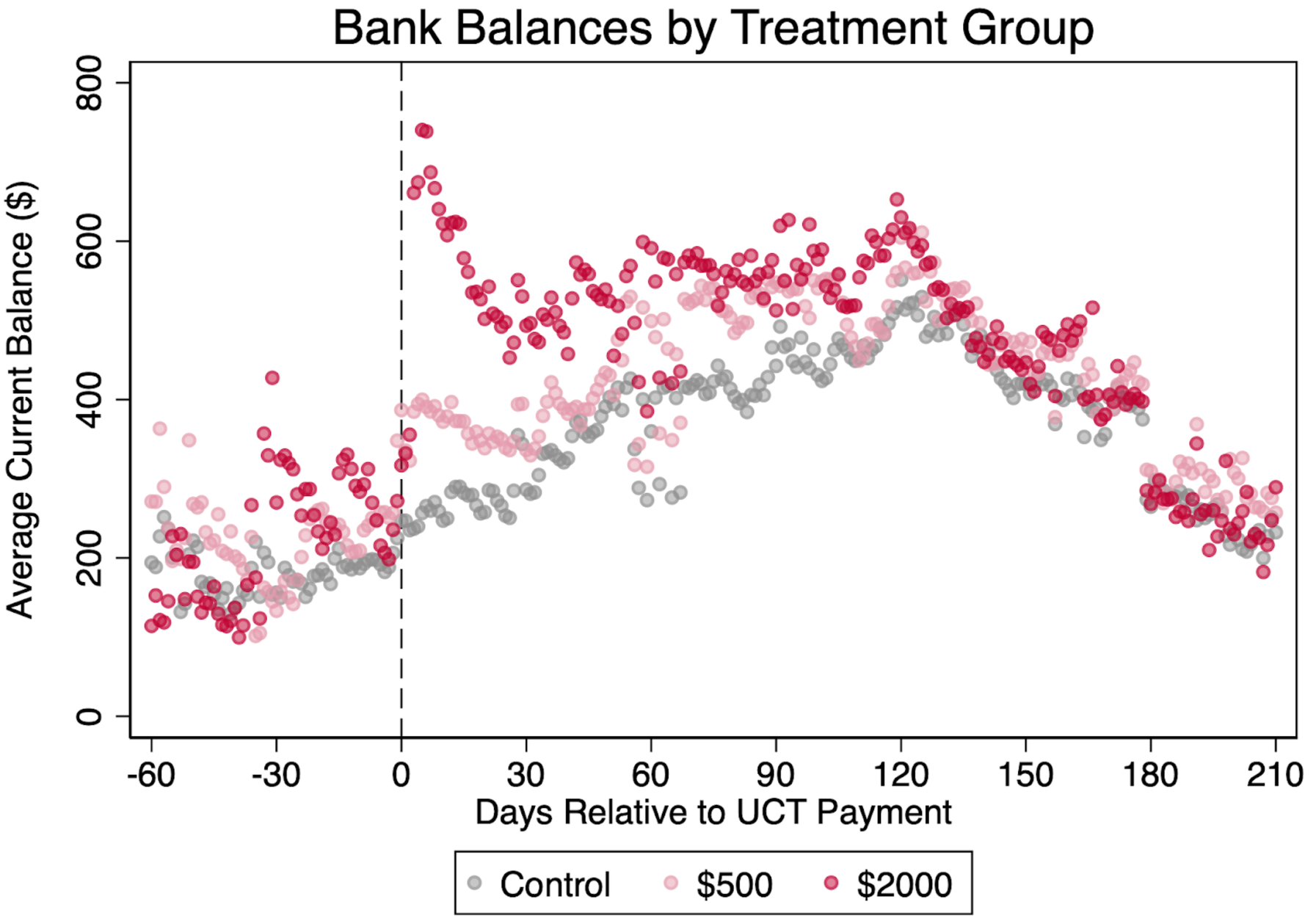


ControlN=3,002. 500GroupN=1,354. 2000GroupN=689. Data include all successful payments made between the day the first survey was sent and the closing day of the last survey. Error bars denote 95% CIs.



ControlN=1,180; 500GroupN=671; 2000GroupN=358. TotalSnapshots=310,456. Bank balances are winsorized at 90%. X-axis denotes days in relation to when the participant's wave received its UCT.

UCTs increased bank balances for 2-4 weeks



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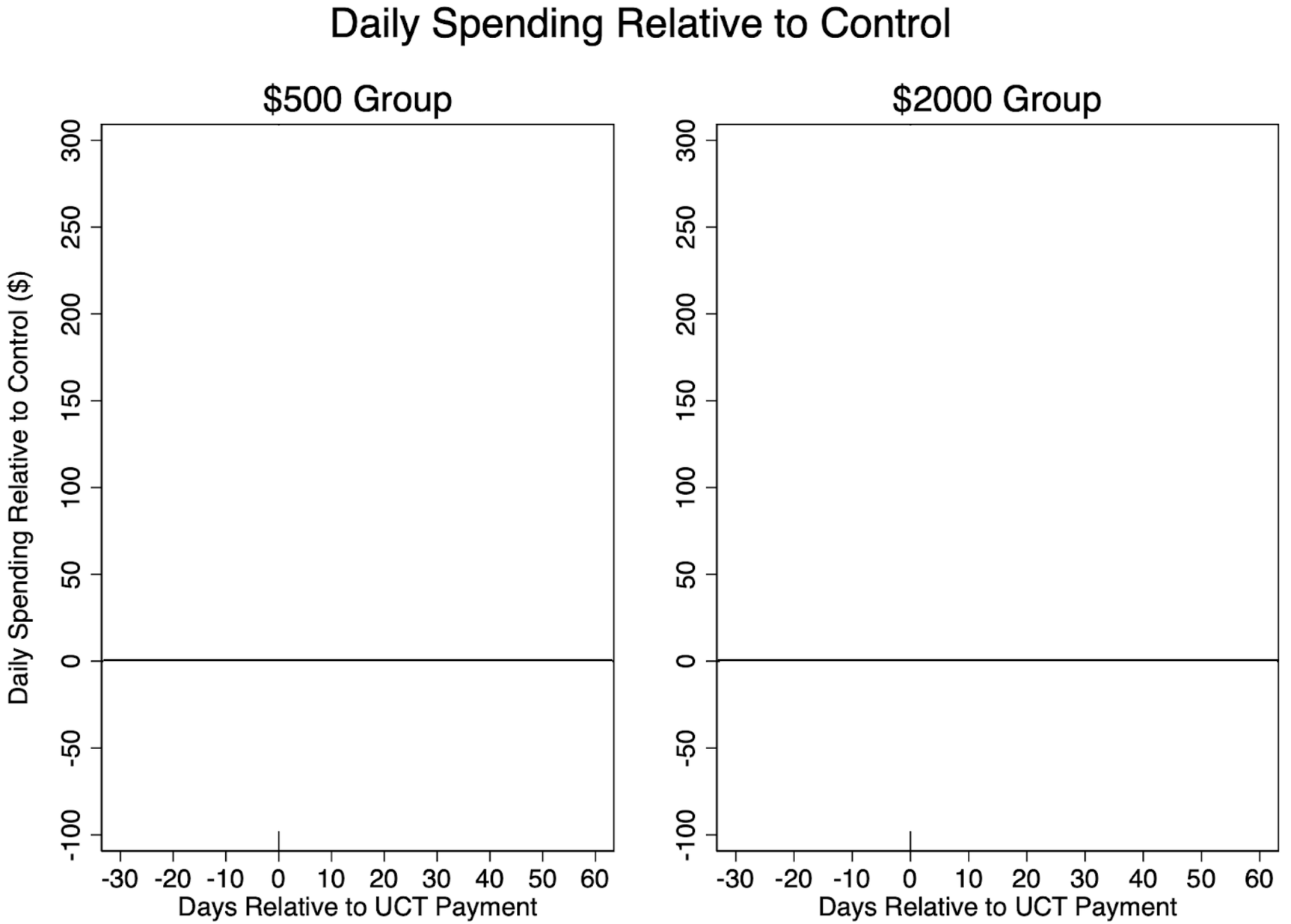
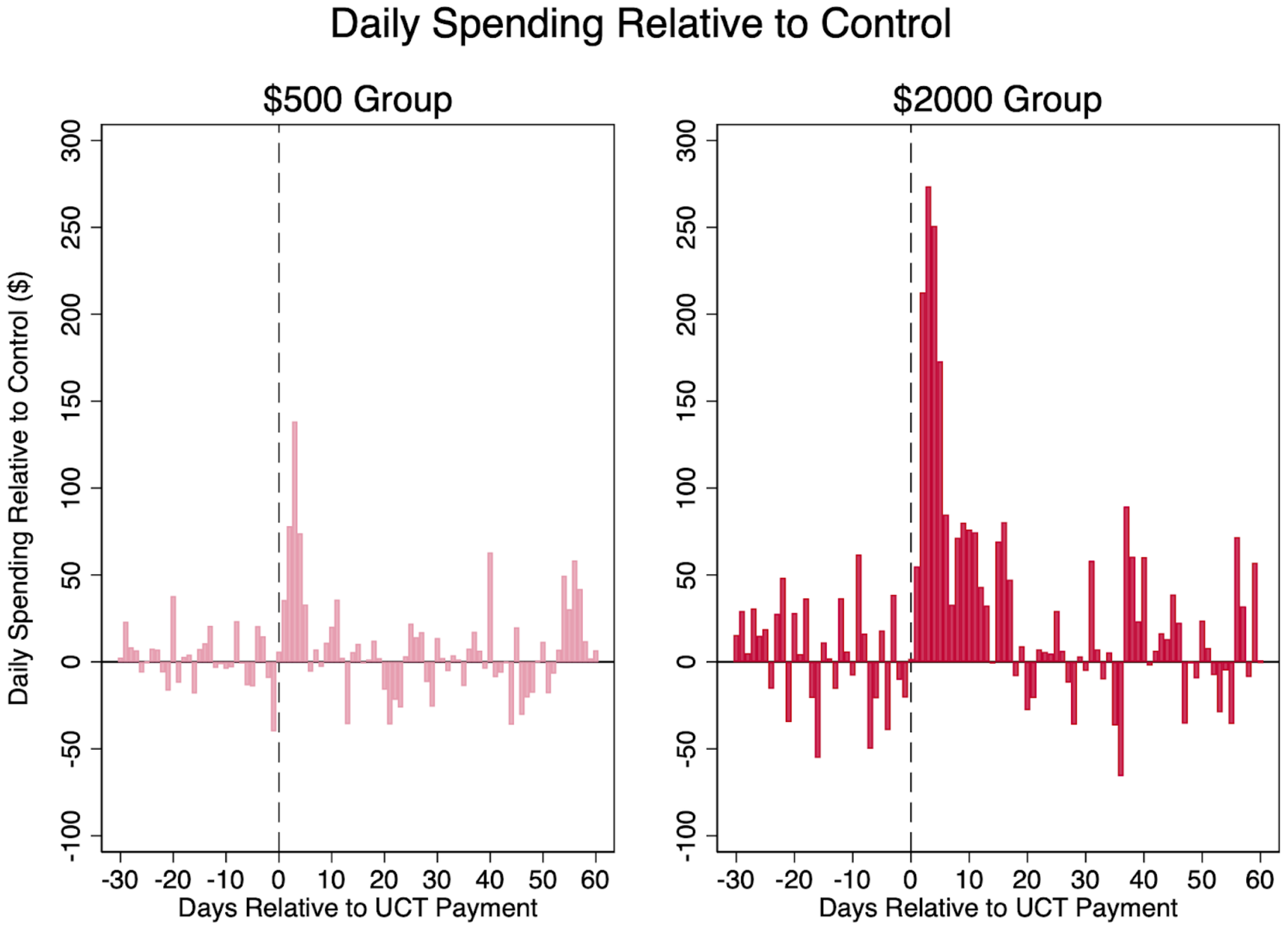


ControlN=1,129; 500GroupN=621; 2000GroupN=337. Total Person-SpendingDays=56,147.
Spending is winsorized at 90%.

Spending increased in the 2 weeks after UCT payment

- $500 group:
  - $26/day
- $2,000 group:
  - $82/day



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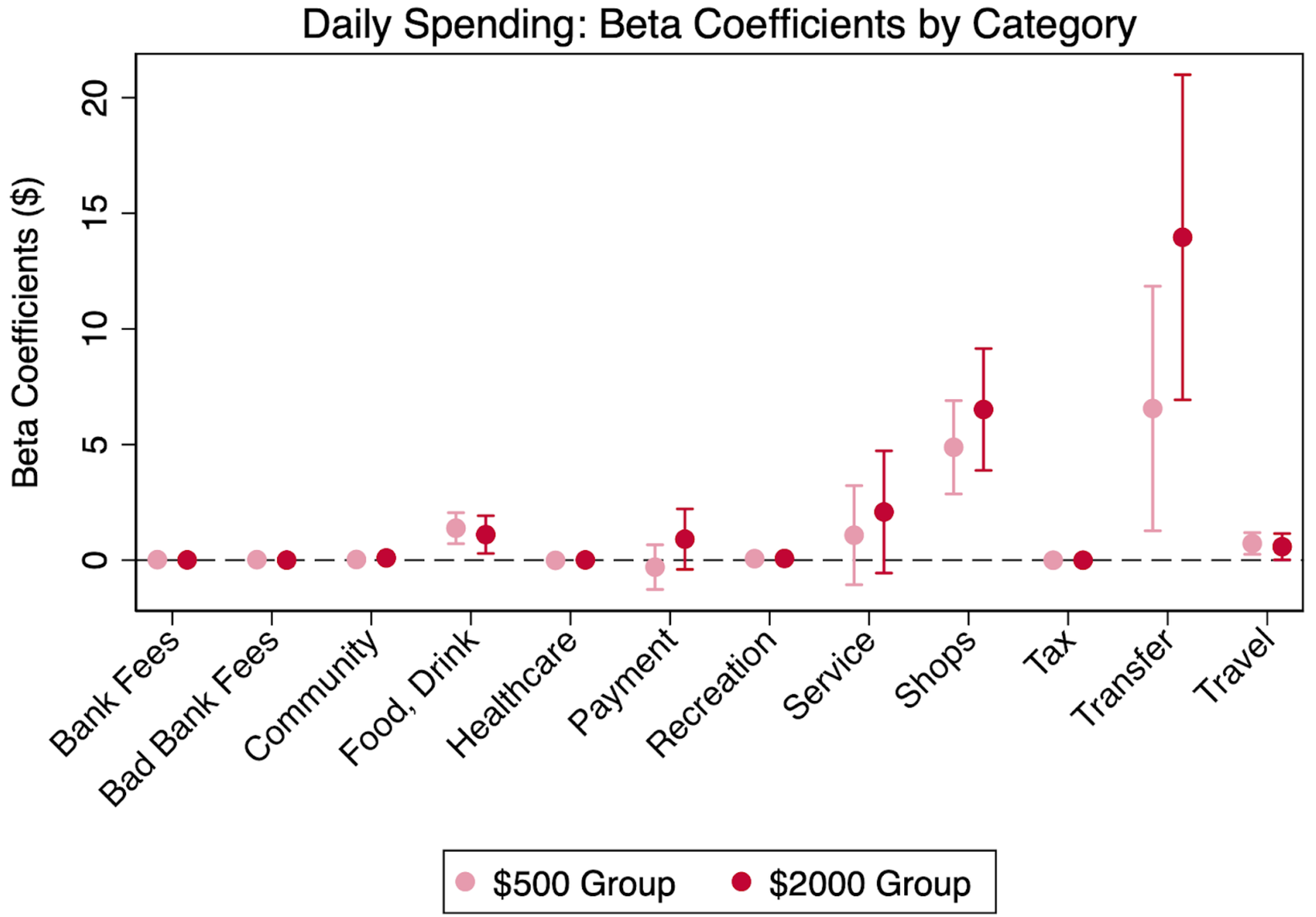
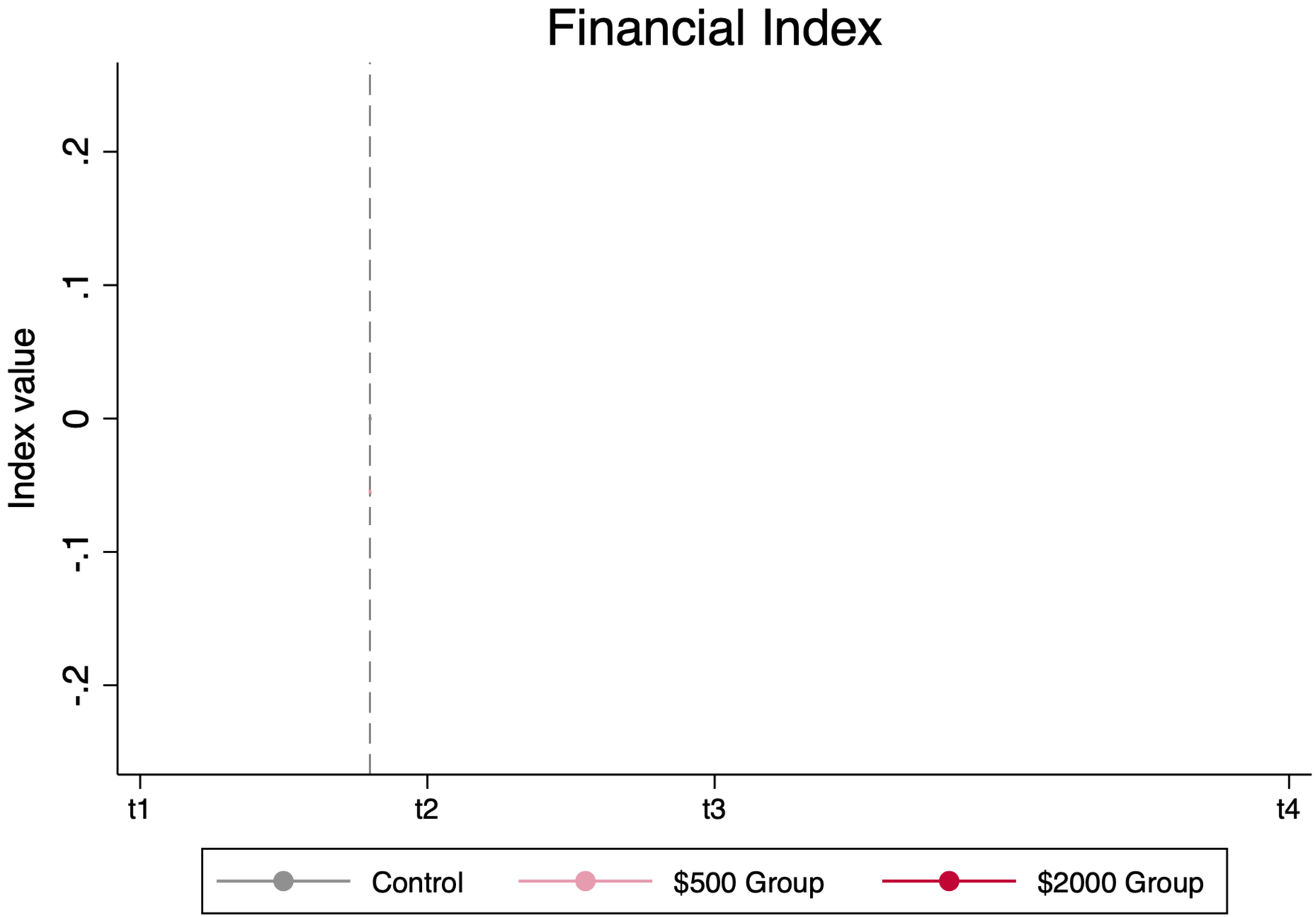


ControlN=1,085; 500GroupN=607; 2000GroupN=330. TotalDebits=364,239. Average daily spending by category during the trial period (between when the participant's wave received its UCT and the final day of the final survey). Spending amounts winsorized at 90%. Beta coefficients are from regressing average daily spending over the trial period on both treatment group dummies with robust SEs. Error bars denote 95% CIs.

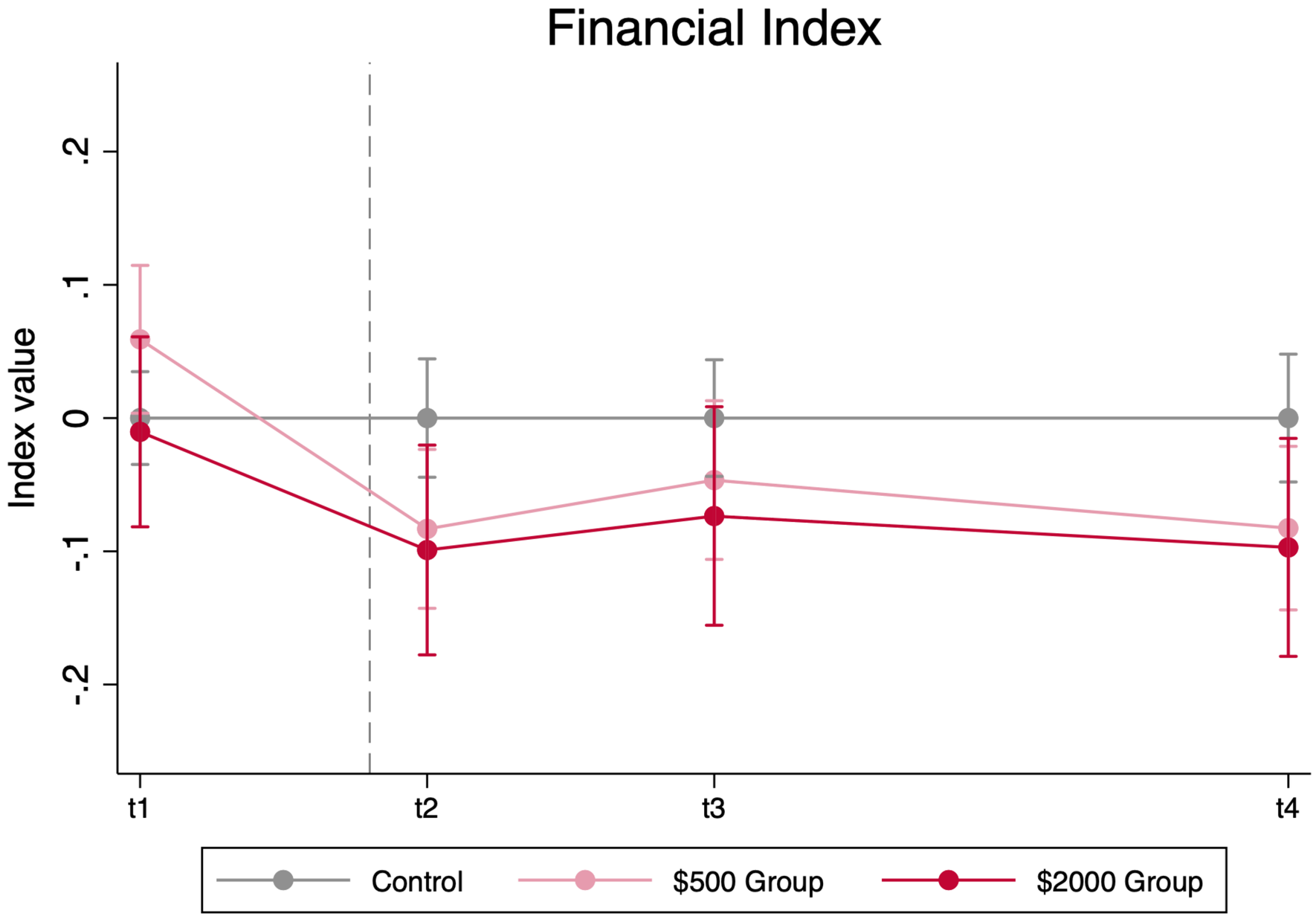
Summary so far

1. Both the $500 and $2,000 UCTs increased spending for a couple weeks



- Savings
- Employment
- Work performance
- Work satisfaction
- Earned income
- Subjective fin. well-being
- Credit constraints

ControlN=3,170; 500GroupN=1,374; 2000GroupN=699; total surveys=15,514. Vertical dashed line indicates intervention. Error bars denote 95% CIs.



Savings

Employment

Work performance

Work satisfaction

Earned income

Subjective fin. well-being

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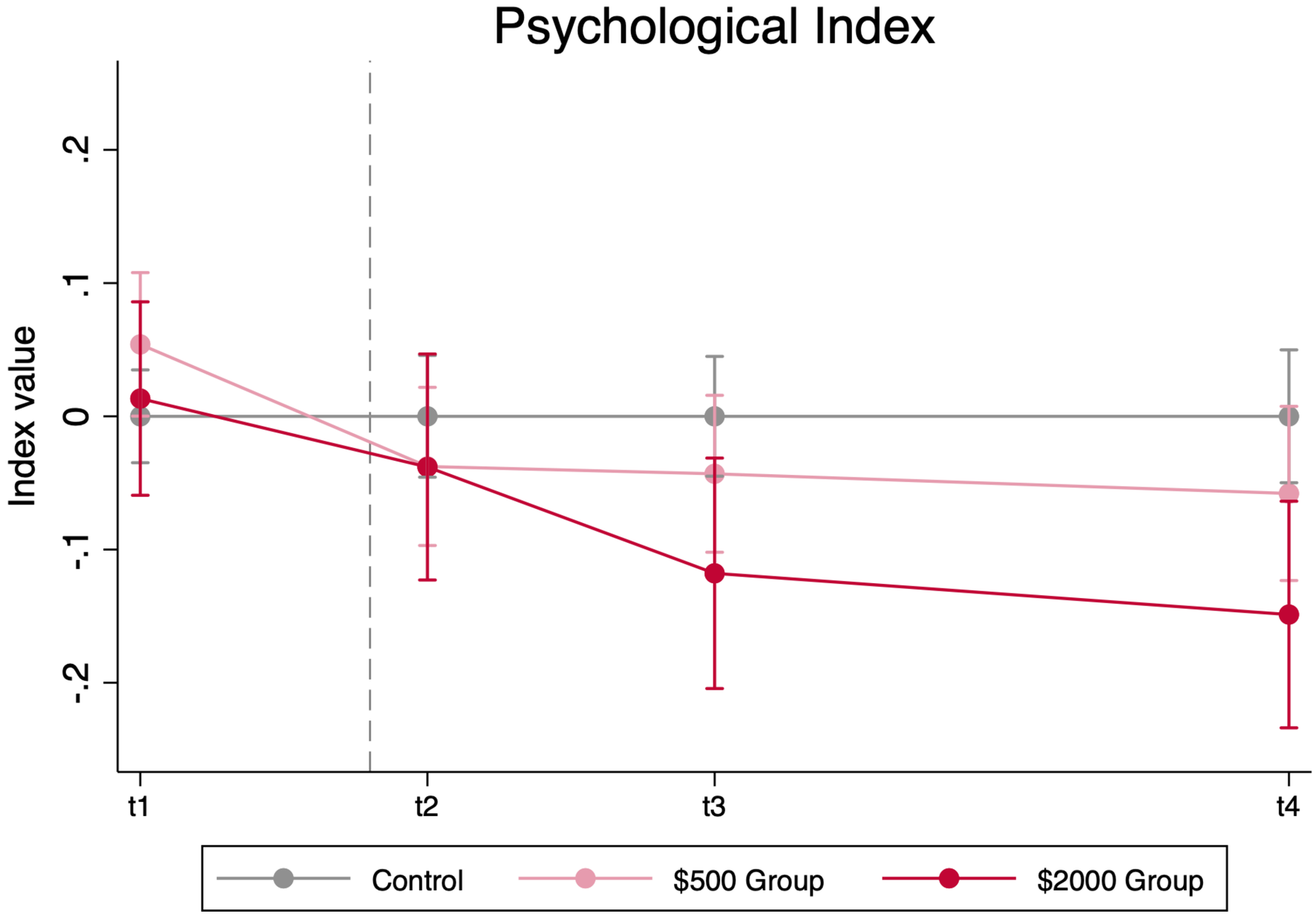
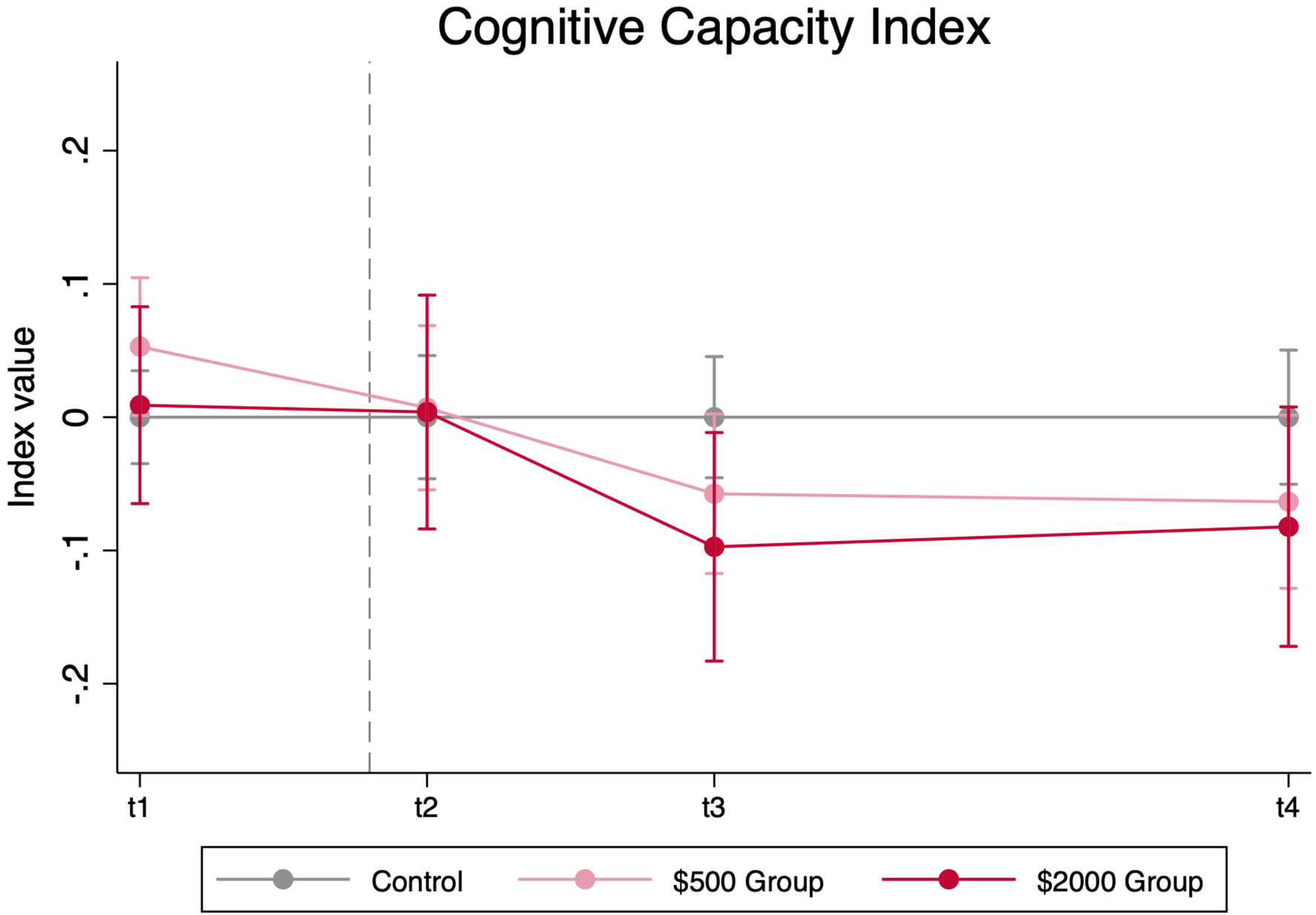


- Agency
- Living best life
- Positive mental health
- Happiness
- Anxiety
- Loneliness
- Depression

ControlN=3,169; 500GroupN=1,373; 2000GroupN=699; total surveys=15,020. Vertical dashed line indicates intervention. Error bars denote 95% CIs.

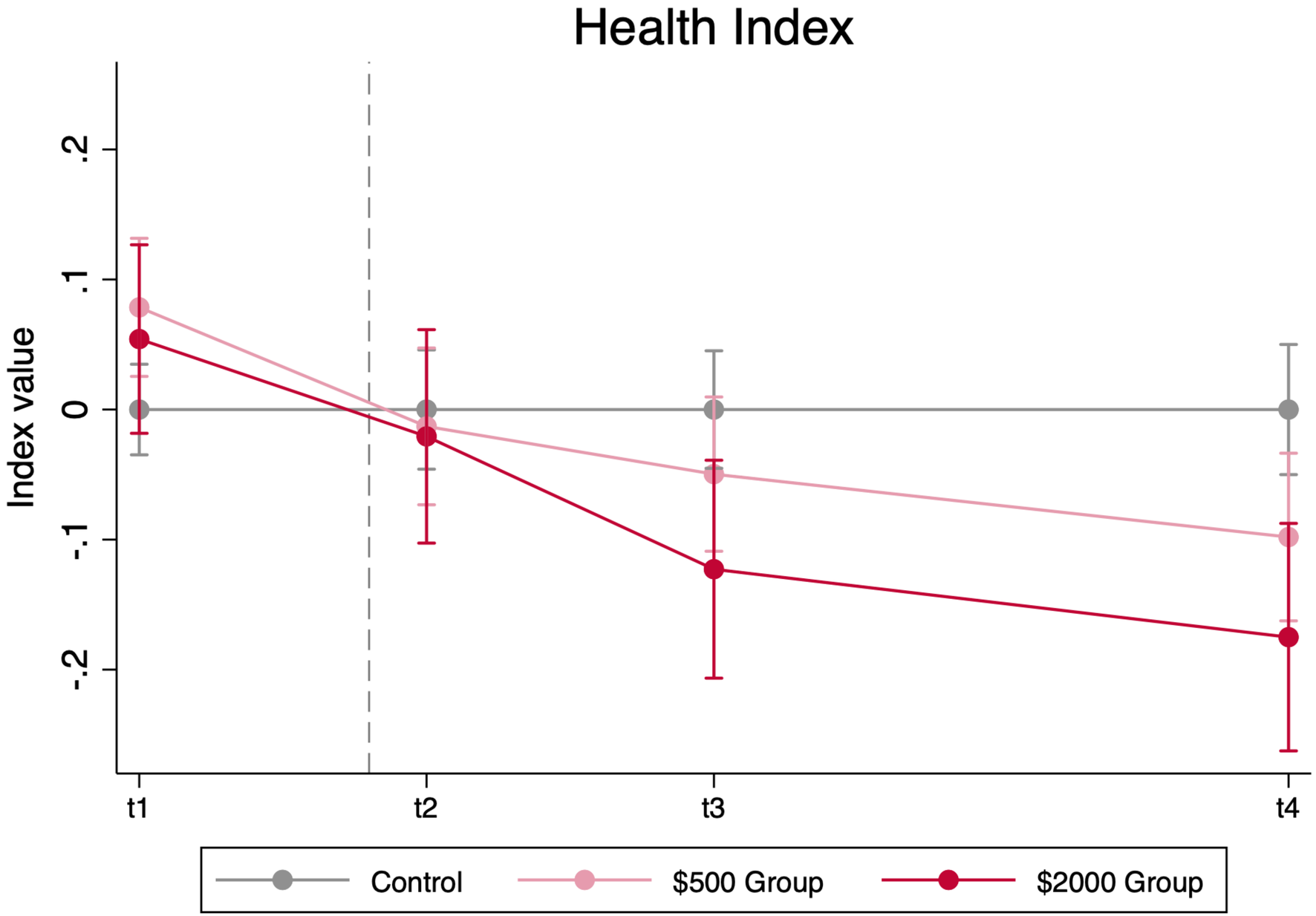


Raven's matrices

Money "on the mind"

Memory

ControlN=3,164; 500GroupN=1,371; 2000GroupN=699; total surveys=14,832. Vertical dashed line indicates intervention. Error bars denote 95% CIs.



General health

Sleep

Food security

Diet

Exercise

ControlN=3,168; 500GroupN=1,373; 2000GroupN=699; total surveys=14,949. Vertical dashed line indicates intervention. Error bars denote 95% CIs.

Robustness

Results are robust to:

- Alternative index constructions
- Including various fixed effects/covariates
- Only analyzing participants who answered all surveys
- Treatment-on-the-treated analysis (cash awareness)

Within-index heterogeneity

We categorize each item in the survey by its response scale:

- Objective *(e.g., "How many days did you…")*
- Subjective *(e.g., "How do you feel about…")*

We find mostly **null effects** of cash on the objective measures

And mostly **negative effects** of cash on the subjective measures

Summary so far

1. Both the $500 and $2,000 UCTs increased spending for a couple weeks

2. Null/negative effects of cash on financial, psychological, cognitive capacity, and health survey measures
   - No differences between the two cash amounts
   - Negative effects primarily driven by subjective outcomes

Possible Explanations

(1) **Strategic outcome reporting?**

Cash groups but not Control group distorted survey responses "downward" to show they need more cash? (Martinelli & Parker, 2009)

Tested through an embedded experiment (*N*=2,423) and correlational survey responses

Little/no evidence

(2) **Shifting reference points?**

Cash groups spent money quickly and compared their lives to a time when they had more?

Tested through an embedded experiment (*N*=2,474) and correlational survey responses

Little/no evidence

(3) **Differential responsiveness?**

Various imputations and bound calculations in progress

Cannot fully rule it out

But, **unlikely that this is the primary driver**

- E.g.: gap between missing Cash and missing Control participants would need to be 0.2 - 0.5 SDs to generate a NS positive effect of cash
- Or 0.4 - 0.7 SDs to generate a SS positive effect of cash

(4) **Saliency of needs and insufficiency of cash?**

Relative to the Control group:

- **Cash groups thought about money more** in hypothetical vignettes (Shah, et al., 2018; Cohen's d=0.13; p<0.001)
- Cash groups felt **more stressed by decision of how to spend their money** (Cohen's d=0.15; p<0.001)
- Cash groups felt **more overwhelmed/burdened by others' needs** (Portes, 1996; Cohen's d=0.11; p<0.001)
- When asked how they would spend a hypothetical $500 stimulus check, cash groups named more spending categories (Cohen's d=0.19; p<0.001), **suggesting that a larger number of needs were salient to them**

These variables **partially/fully mediate** effect of cash on index values

Summary

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   - Negative effects primarily driven by subjective outcomes

3. Negative effects *may* be driven by cash making needs (and the gap between resources and needs) more salient

Discussion

Discussion

Receiving insufficient cash may be a mixed blessing:

- Helps alleviate financial needs
- But can also produce emotional/cognitive burdens

Depending on which outcomes we care about, perhaps $2,000 is still not enough

- More money?
- “Cash plus”? (Little, et al., 2021; Roelen, et al., 2017, Sedlmayr, et al., 2020)

Thank you!

Questions/comments welcome:
ajaroszewicz@hbs.edu

Bonus slides

Summary

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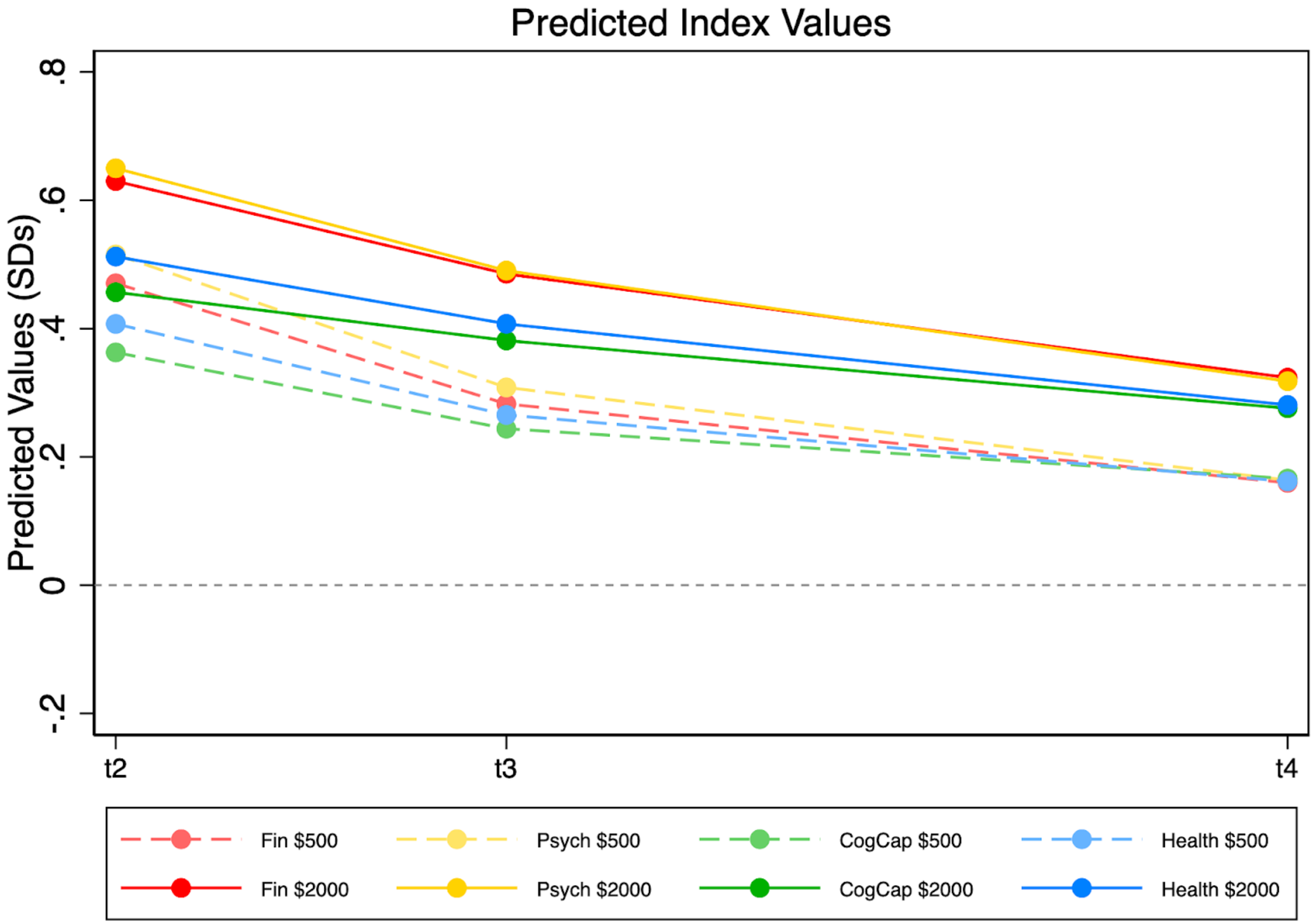
3. Negative effects *may* be driven by cash making needs (and the gap between resources and needs) more salient

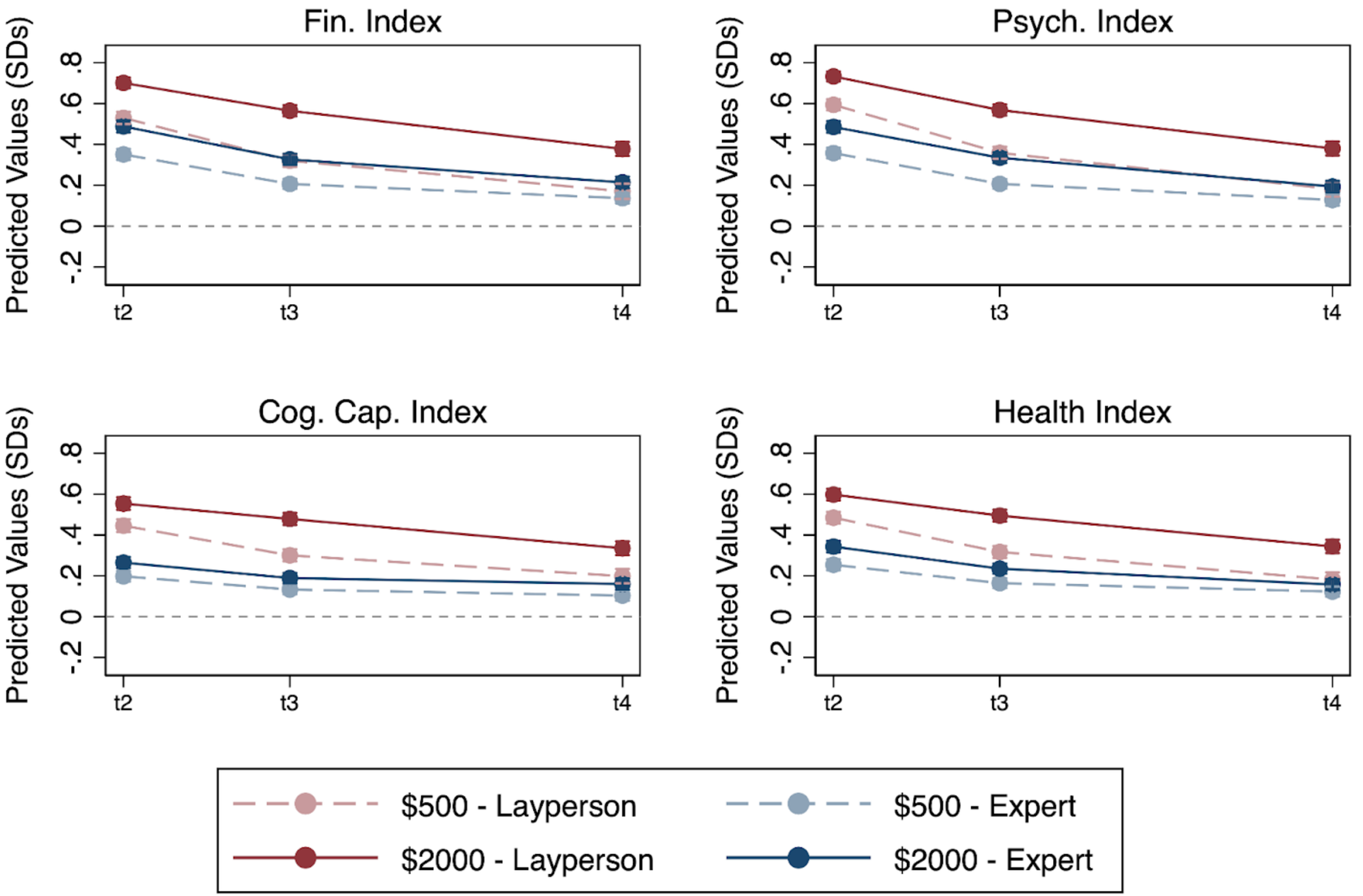
Prediction study

- Participants
    - **Expert sample:** Social scientists and policymakers (*N*=477) from Social Science Prediction Platform, academic listservs (e.g., ESA, SJDM), HKS newsletter, etc…
    - **Layperson sample:** Representative of US population (*N*=971)
- Predict effects of cash on the 4 survey indices, incentivized for accuracy
- Both laypeople and experts predicted:
    1. **Positive effects of both cash amounts on all indices at every time point**
    2. **More money > less money**
    3. **Small/medium effect sizes**
        - E.g., experts predict 0.3 - 0.5 SDs (depending on the index) for the $2,000 group one week after cash receipt



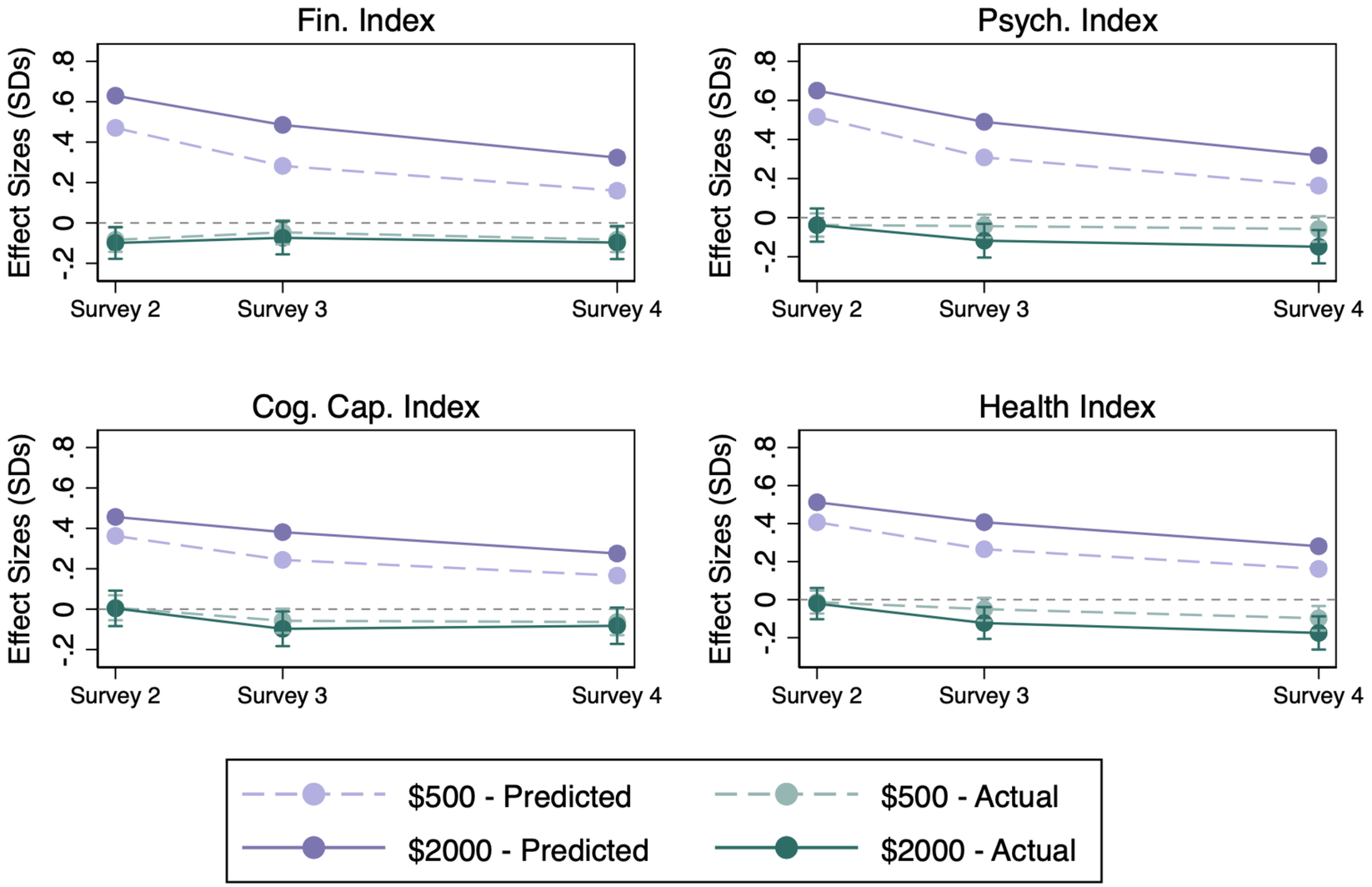
N=1,448. Predictions for the effectiveness of each treatment ($500 or $2,000) relative to the Control group (in SDs) for each index at each surveyed time point. CIs are omitted for graph readability.

Predicted Effect Sizes - Expert vs. Layperson

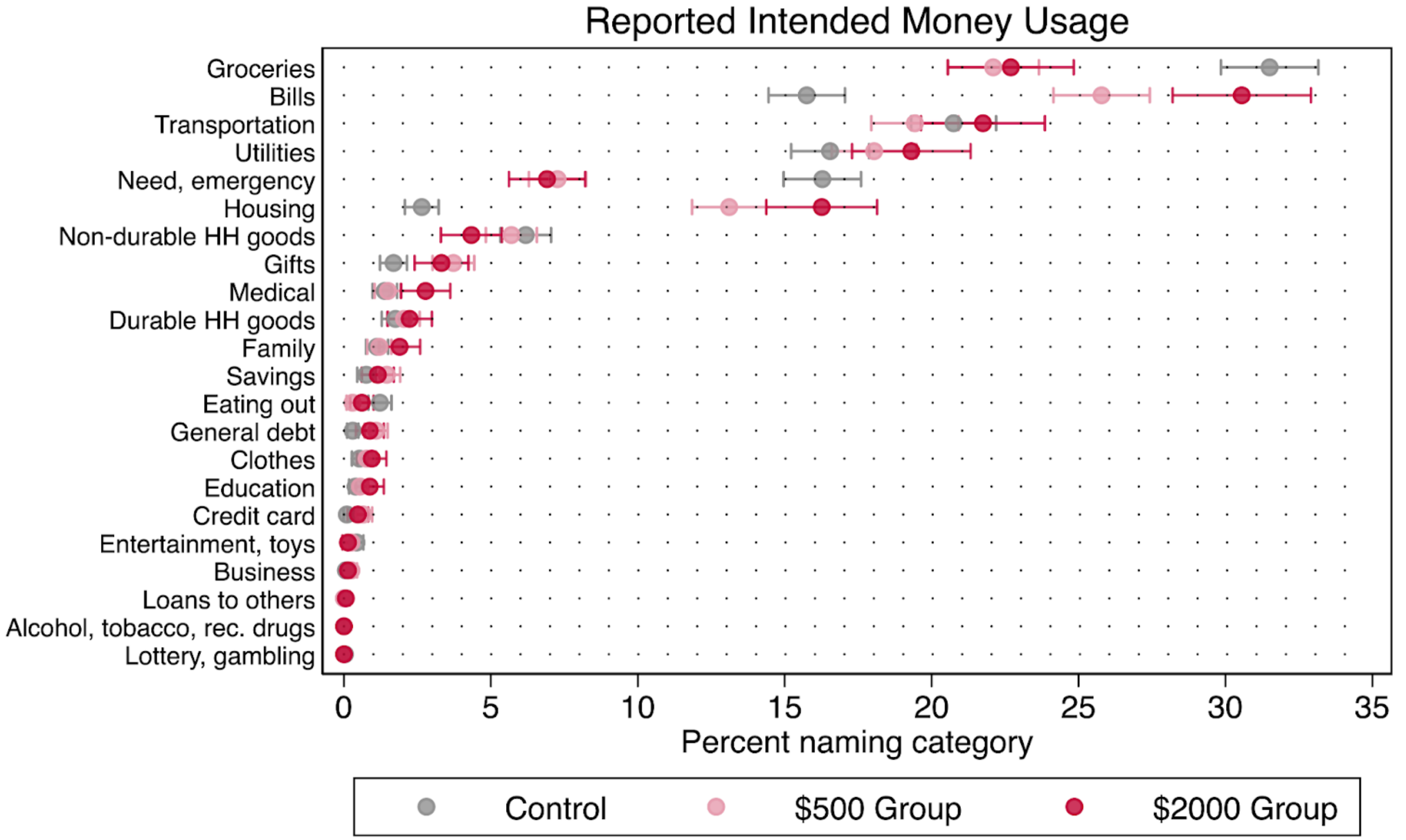


ExpertN=477. LaypersonN=971. Error bars denote 95% CIs.

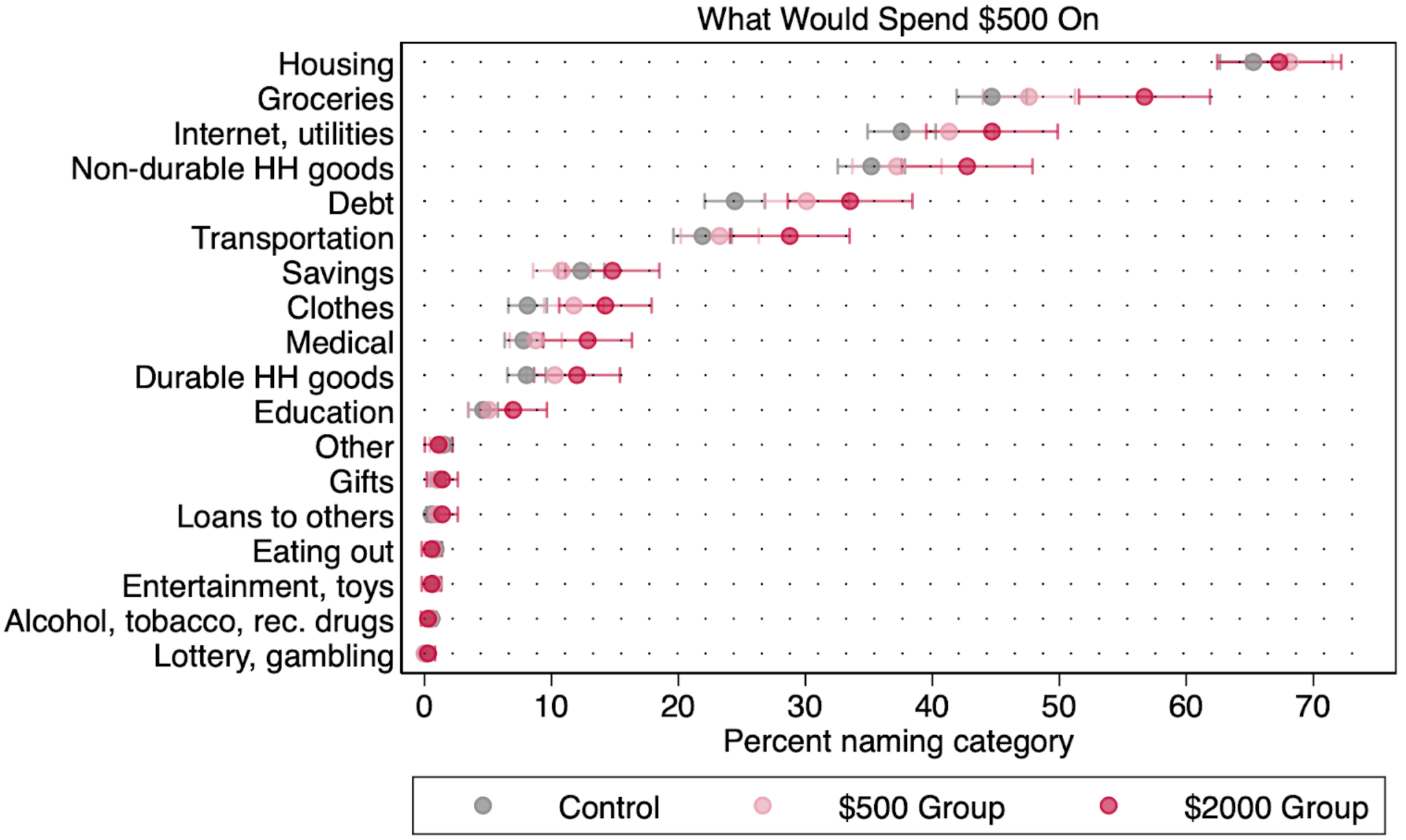
Actual vs. Predicted



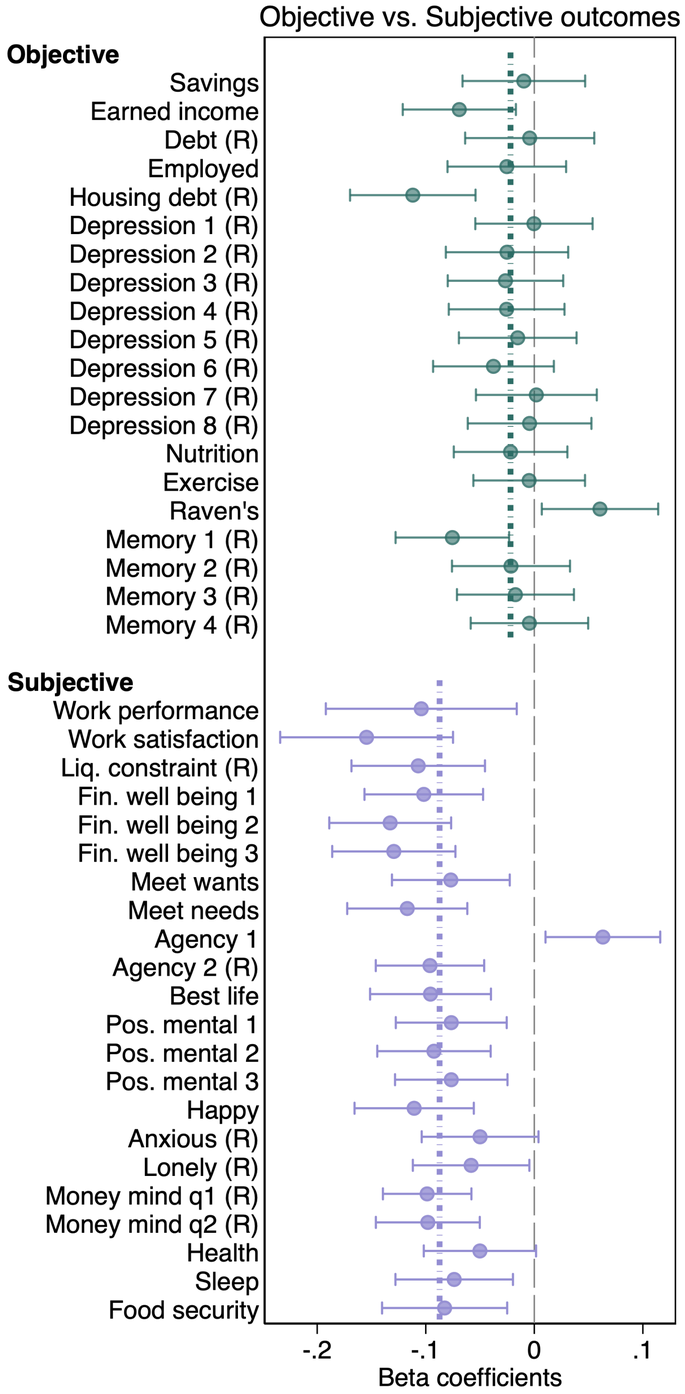
Prediction study: ExpertN=477; LaypersonN=971. Main study: ControlN=2,523; 500GroupN=1,238; 2000GroupN=613. Error bars denote 95% CIs.



ControlN=1,168; 500GroupN=905; 2000GroupN=463. Total responses=7,237. Participants' reported intentions of what money will be used for (submitted upon withdrawal from the online platform). Each response could be coded as multiple categories. Excludes the ``Other" category and missing values. ``HH"=``household", ``rec. drugs"=``recreational drugs." Circle denotes mean value, bars denote 95% CIs.

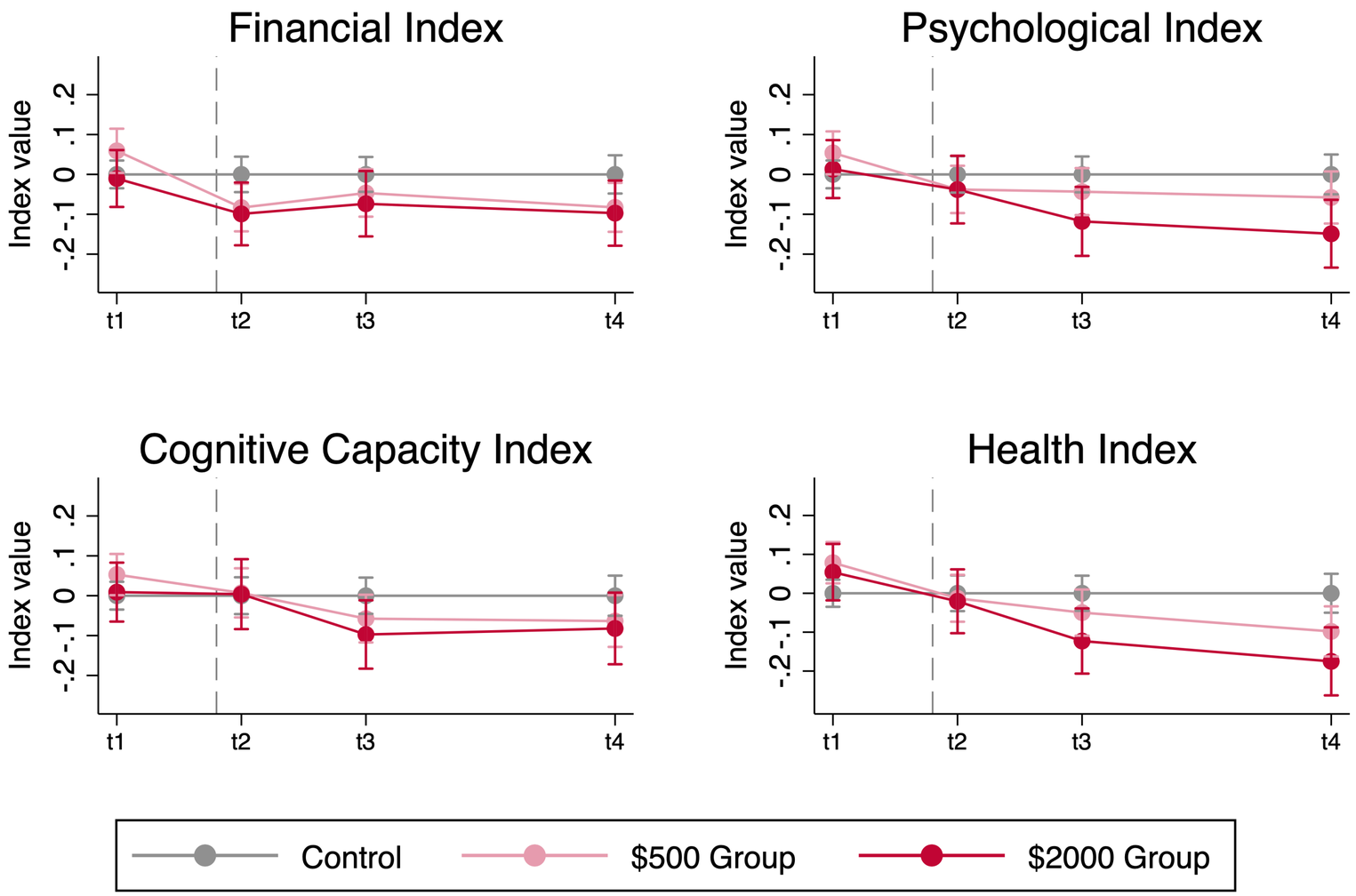


ControlN=1,256; 500GroupN=731; 2000GroupN=358. Responses to question: ``Imagine that the government decided to give everyone a $500 stimulus check. If you got this money today, what are the MAIN thing(s) you would spend the money on?" ``HH"=Household, ``rec. drugs" = recreational drugs. Circle represents mean value, bars denote 95% CIs.



N=10,271. Beta coefficients from separately regressing each survey variable written on the y-axis on a binary indicator for being in a cash group, collapsing across all post-treatment surveys and using robust SEs clustered at the participant level. The omitted category is the Control group. The top set of variables used objective response scales, while the bottom set used subjective response scales. Each variable is standardized into a Z-score to ensure comparability. Variables denoted with ``(R)" are reverse coded from the original survey data, such that higher values are always better in this graph. Error bars denote 95% CIs. The thicker vertical colored lines in the objective and subjective sections represent the means of the beta coefficients for those sections.

Survey Outcomes



Financial: ControlN=3,170; 500GroupN=1,374; 2000GroupN=699; total surveys=15,514. Psychological: ControlN=3,169; 500GroupN=1,373; 2000GroupN=699; total surveys=15,020. Cognitive Capacity: ControlN=3,164; 500GroupN=1,371; 2000GroupN=699; total surveys=14,832. Health: ControlN=3,168; 500GroupN=1,373; 2000GroupN=699; total surveys=14,949. Vertical dashed line indicates intervention. Error bars denote 95% CIs.