



CEGA

Center for Effective Global Action

# Does Poverty Lower Productivity?

Psychology & Economics of Poverty Convening

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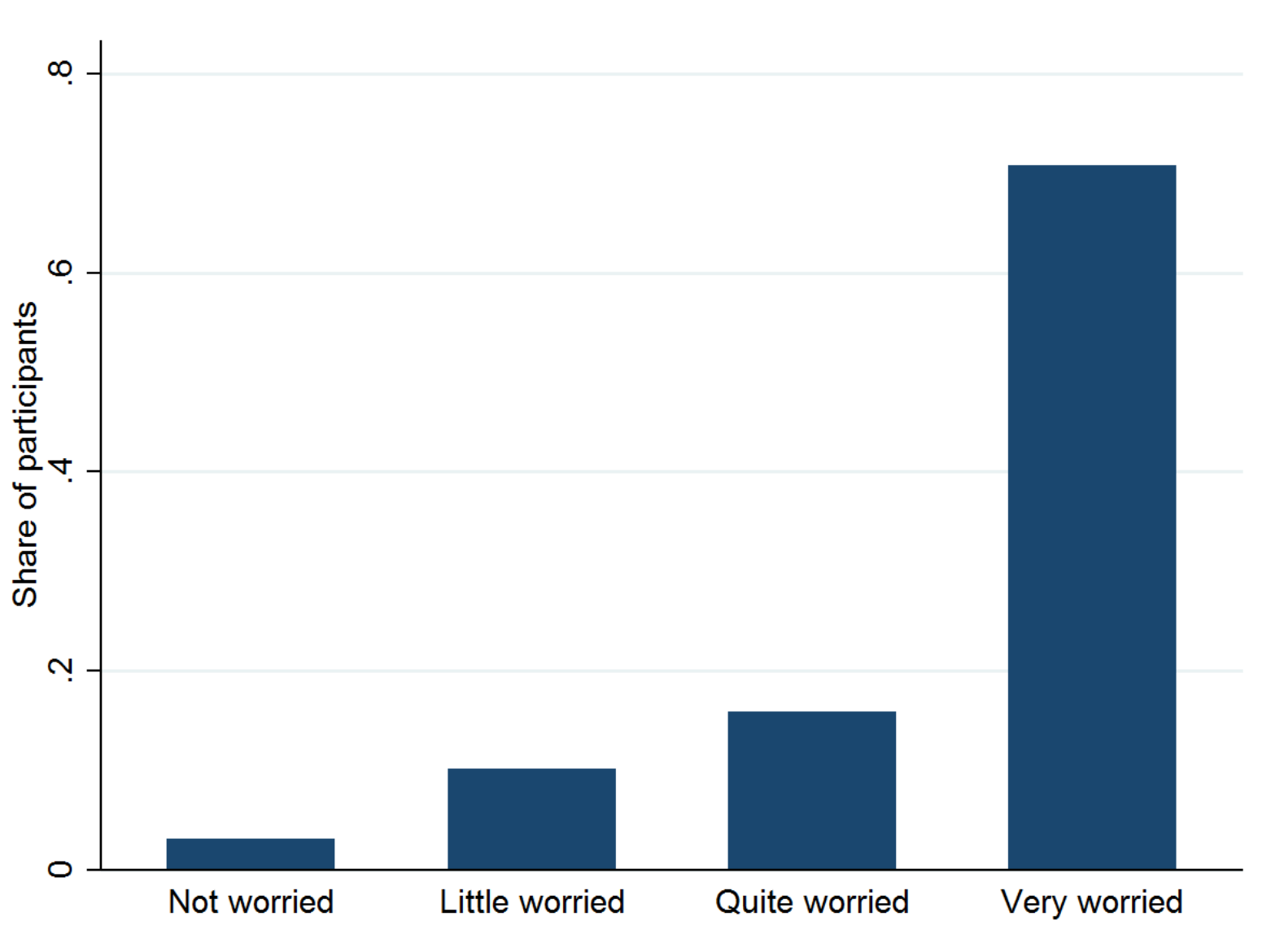


# Poverty and Attentional Load

- Idea: poverty has adverse psychological effects
  - Financial vulnerability imposes mental tax
- Links between poverty and cognition/decision-making
  - Mullainathan Shafir (2013); Haushofer Fehr (2014); Mani et al. (2013); Chemin et al. (2013); Carvalho et al. (2016)
  - New work: this conference!
  - Existing evidence: lab measures (e.g. Ravens)
- Test for effects on field behavior: productivity
  - If cognitive effects matter, may expect them to show up here



# How worried are you about your finances?



N=352 rural workers, Odisha, India. Data collected by authors.

# This Paper

- Field experiment with low income manufacturing workers
- Test for direct relationship between financial constraints and productivity
- Mechanism? Test for attentional (cognitive) constraints as contributing mechanism

# Design: Key Ingredients

- Setting: Cognitive load has potential to affect productivity and earnings
- Core test: Do financial constraints affect productivity?
- Mechanism: Role of changes in cognition?



# Setting

- Low-skill manufacturing
  - Infrastructure from Breza, Kaur, Shamdasani (2018)
  - Disposable plates: constructed by stitching together sal leaves
  - Partner with local contractors (set training and quality standards), output sold in local wholesale market
- 408 workers employed full-time over 2 weeks
  - Seasonal contract jobs (common during agricultural lean seasons)
  - Primary source of earnings
- Piece rates for production
  - Flat base wage for attendance + piece rate



# Making Disposable Plates

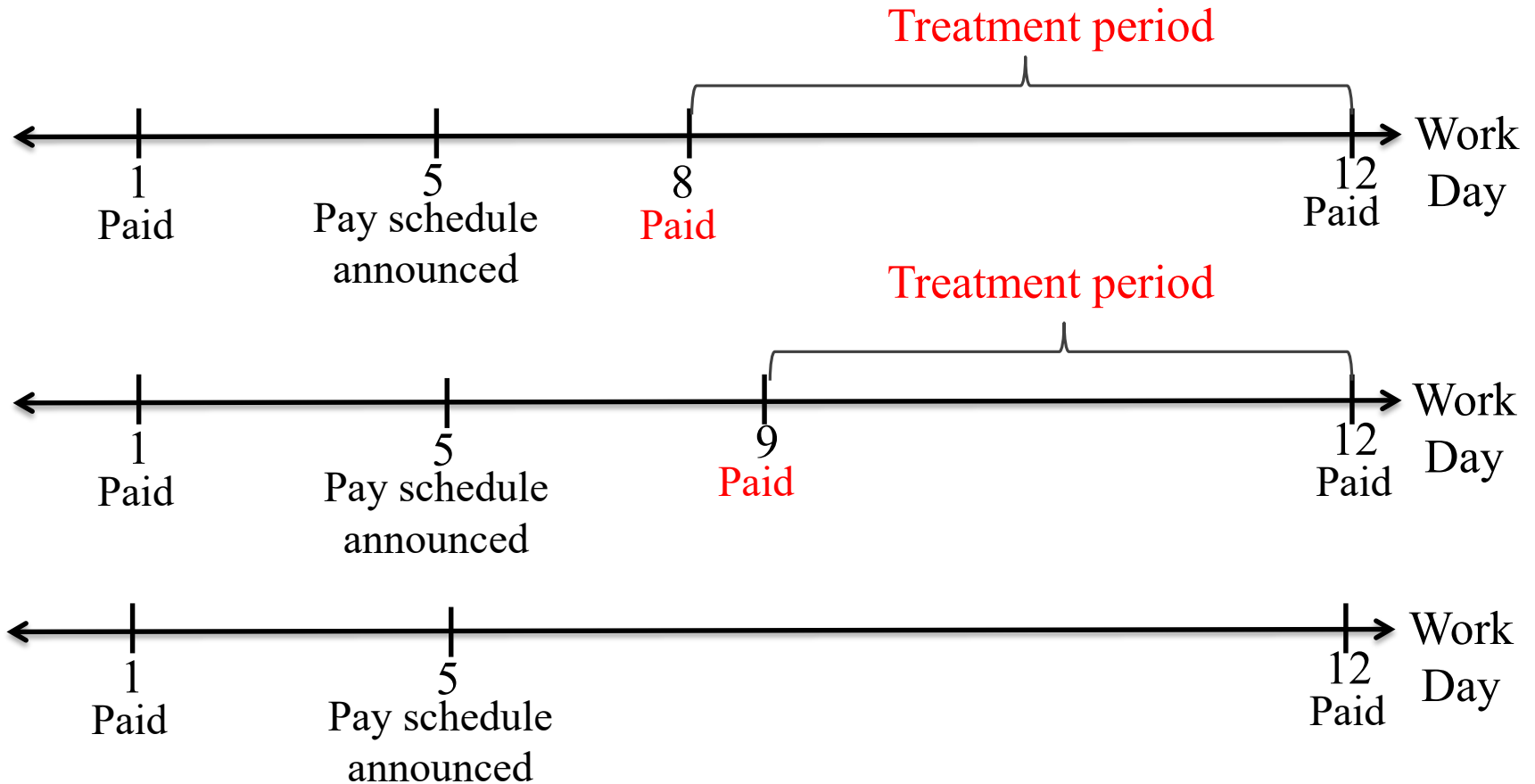


# Design: Key Ingredients

- Setting: Cognitive load has potential to affect productivity and earnings
- Core test: Do financial constraints affect productivity?
  - Exogenously induced reduction in financial constraints (via timing of earnings payout)
  - Varies constraints, holding fixed other components of wealth
- Mechanism: Role of changes in cognition?



# Cash Treatment

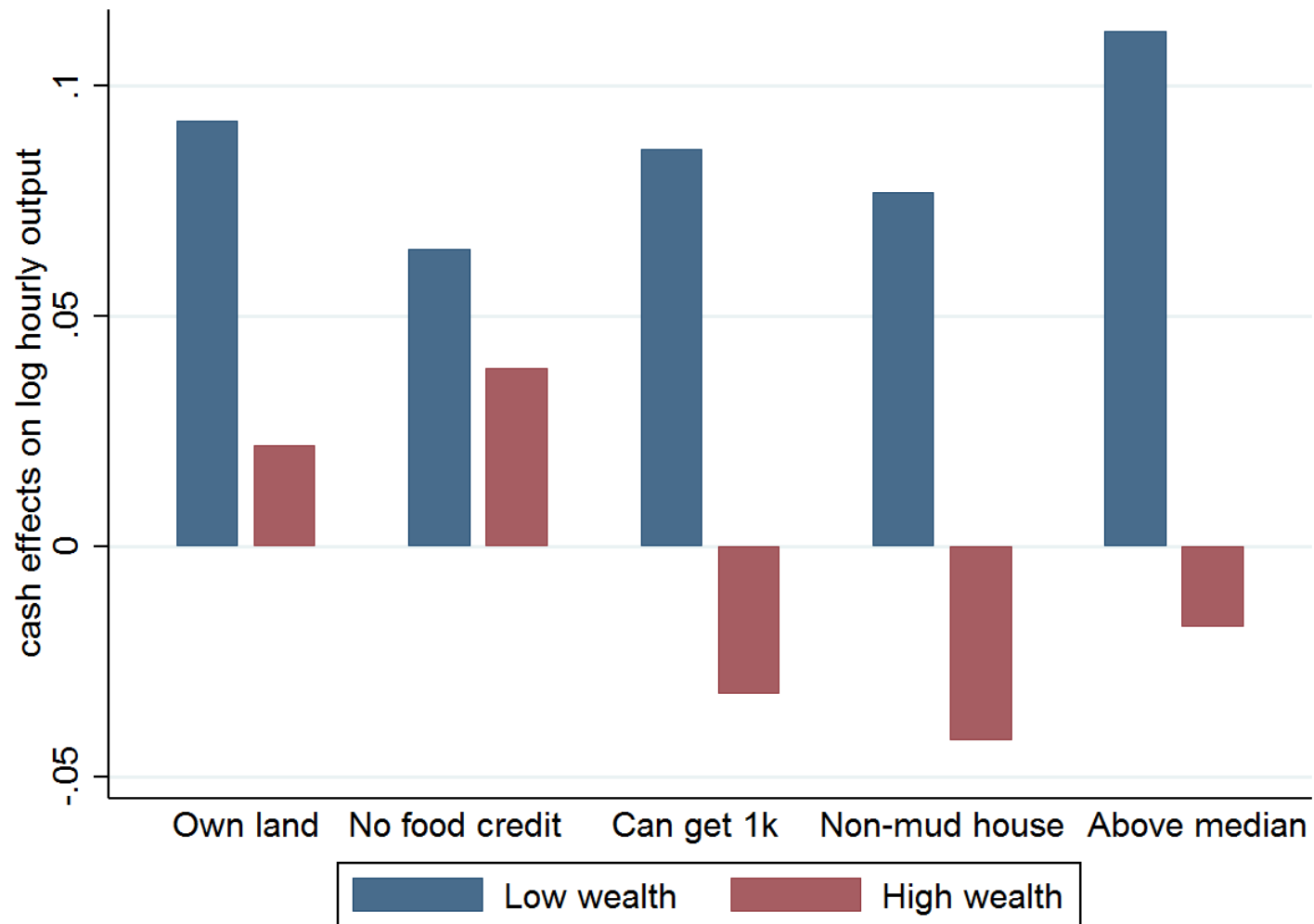


- Payments in evenings (only for amount earned till date)
- Build trust with day 1 payment
- Residual earnings paid on final day

# Cash Effects on Productivity

- Cash payment should relieve financial stress
  - Amounts to almost a month's worth of wage earnings
  - Within two days after pay, 58% of the early cash group pays off loans (18% for the late cash group)
- The hourly output of the early cash group increases by 5% more after pay, compared to the late pay group ( $p < 0.05$ )
- In particular, the positive effect of cash is concentrated in those participants with lower wealth measures

# Cash Effects by Wealth



Notes: N=22,470 worker-hours. Round\*workhour, calendar hour, and experience day fixed effects. Standard errors clustered by worker.

# Design: Key Ingredients

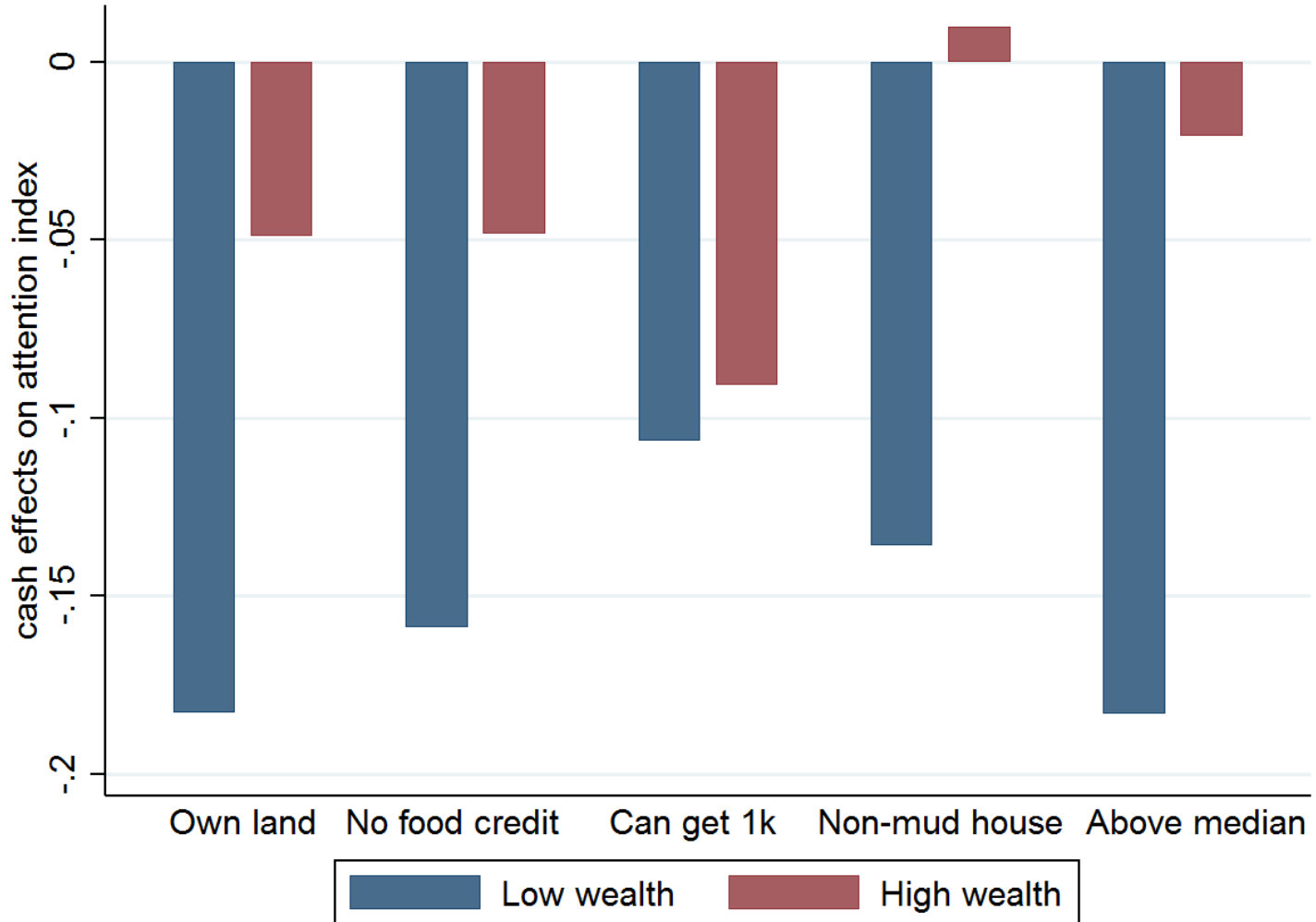
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- Mechanism: Role of changes in cognition?
  - Measure attentional mistakes in production
  - Induce focus on finances through salience exercise



# Attentional Mistakes

- Cognitively demanding production task
- Measure 3 markers of attentional errors
  1. Number of “double holes” (re-doing work due to an error)
  2. Number of leaves (doing more work than you need to)
  3. Number of stitches (doing more work than you need to)
- Findings
  - Early cash group makes fewer mistakes during the treatment period (0.1 std. dev. effect,  $p < 0.05$ )
  - These effects also driven by those with lower wealth

# Cash Effects on Attention



Notes: N=15,227 worker-hours. Round\*workhour, calendar hour, and experience day fixed effects. Standard errors clustered by worker.

# Design: Key Ingredients

- Setting: Cognitive load has potential to affect productivity and earnings
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# Financial Salience (Priming)

- Make worker finances salient: vignette and loan discussions
- Conceptually, 2 competing effects
  - Positive motivational effect: perceived return to effort higher (e.g. Karlan et al. 2016) → increase output
  - Negative cognition effect: increased focus on financial worries → decrease output
- Challenges
  - Could be potentially non-monotonic
  - What specifically is being “primed”: loans?
  - Fickleness of instrument (e.g. Kahneman 2012)



# Financial Salience (Priming)

- Design
  - Use variation in cash drops: salience before or after cash drop
  - Prediction: negative cognition effects larger before cash drop
- Implementation
  - At conclusion of salience discussions, worker is asked:  
“Suppose you needed to come up with a large amount for an emergency. How would you obtain the funds?”
- Findings are mixed
  - See motivational effects, variation by timing
  - We intended to prime on “poverty” but primed on loans

# Financial Salience (Priming)

Dependent variable: Log hourly production

	(1)	(2)	(3)	(4)	(5)
Salience	0.0315** (0.013)	0.0731*** (0.018)	0.0663*** (0.022)	0.0593** (0.026)	0.0282 (0.026)
Salience x Pre-cash		-0.0703*** (0.023)	-0.0517** (0.026)	-0.0591* (0.034)	-0.00808 (0.032)
Salience x High wealth index				0.0181 (0.037)	
Salience x Pre-cash x High wealth index				0.00434 (0.047)	
Salience x High loan amount					0.0932** (0.036)
Salience x Pre-cash x High loan amount					-0.117** (0.047)
Cash treatment controls?	No	No	Yes	Yes	Yes
R-squared	0.340	0.341	0.343	0.343	0.344
N	22523	22523	22523	22523	21137

Notes: High wealth index equals 1 if the worker's wealth index is above the median. High loan amount equals 1 if the worker has an above median value of outstanding loans (among the subset of loans he says he is worried about at baseline). Standard errors clustered by worker.

Findings are mixed: motivational effects, variation by timing

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Findings mixed: Intended to prime “poverty” but primed loans

# Conclusion

- Direct relationship between the experience of financial constraints and productivity
- Suggests that poverty itself may be detrimental for earnings
- Evidence for cognition as one mediating mechanism
  - Increases in productivity spurred through reductions in attentional errors
- Priming delivers suggestive, but mixed evidence
  - True variation in income is more reliable