

# Are Borrowers Paid to Repay? Payday Effect in FinTech Lending

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# Brief Summary

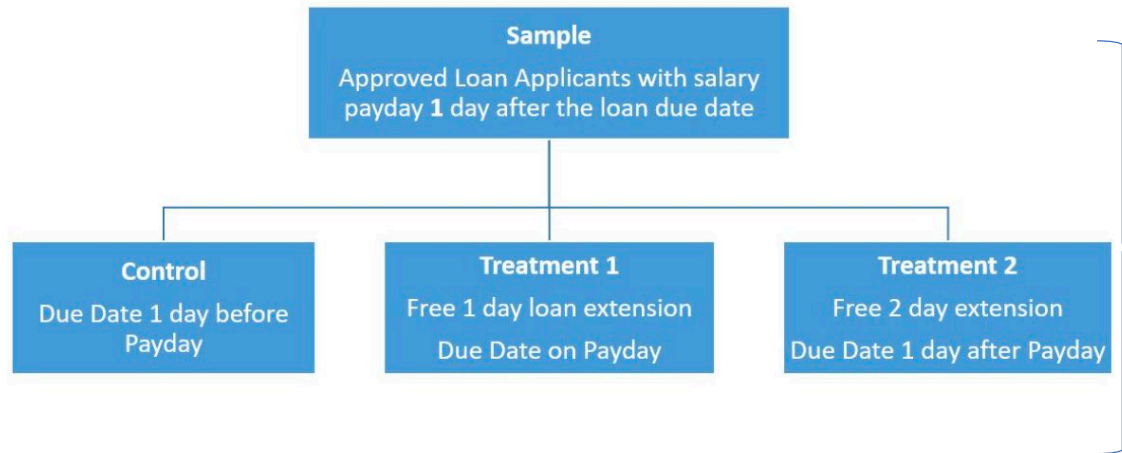
- Research Question: Can contract design affects borrowers' repayment behavior?
  - Aligning loan due day with salary payday improves repayment behavior
- Experimental Design
  - A field experiment conducted in Indonesia using a large online lending platform.
  - Sample of approved loans to control for selection bias
  - Randomly selected borrowers receive loan extensions to align due dates with payday
  - Placebo subjects included to capture income effect only
  - Policy Relevant: How can FIs alter contract design to expand credit access and lower defaults?

# Main Findings

- Aligning loan maturity date with salary payout reduces the likelihood of overdue loans.
  - Treatment effects on overdue rates: 5.6% reduction for loans overdue, 4.3% reduction for overdue by one day, and 5.9% reduction for loans overdue by 1-7 days
- Payday Effect on Repayment Dates: Loans maturing after borrowers' actual salary payout dates are 27% more likely to receive repayment
- Heterogeneous Effects of Payday Alignment
  - Stronger treatment effects for small-sized loans, low credit rating borrowers, and those with past overdue records
  - Repeated borrowers respond more strongly to payday alignment.

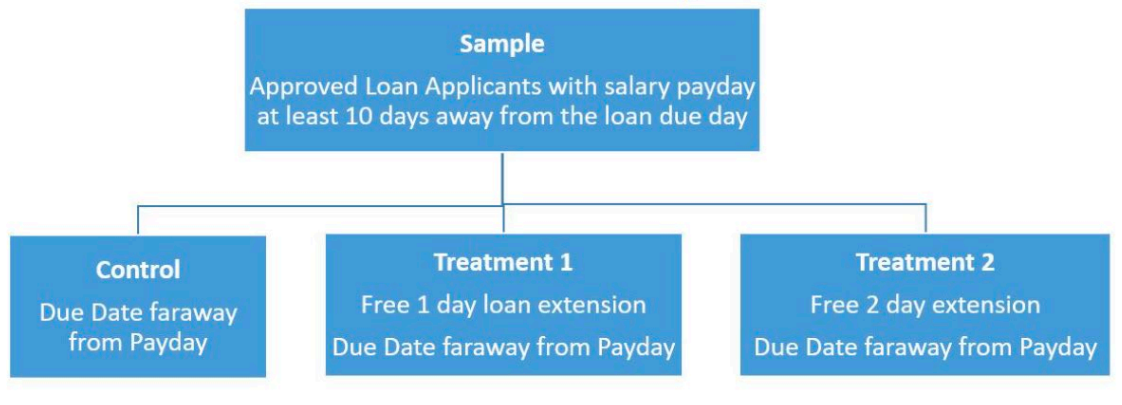
# Research Design

Panel A: Match Group



First Difference: Treatment – Control  
for Match Group

Panel B: Placebo Group



Second Difference: Treatment – Control  
for Placebo Group

**Treatment Effect:** First Difference –  
Second Difference

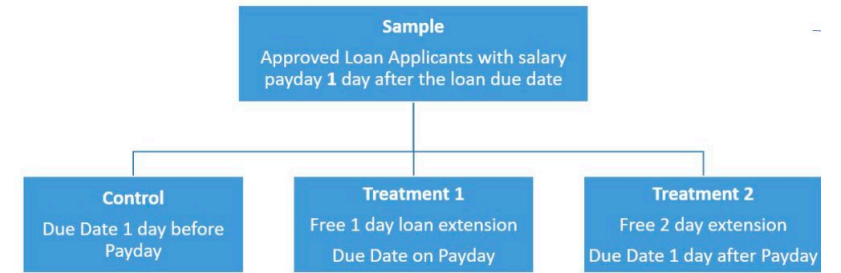
# Research Design

Difference-in-differences setup:

$$y_{l,t} = \alpha_t + \beta \text{Treatment}_{lt} \times \text{Match}_l + \gamma \text{Treatment}_{lt} + \zeta \text{Match}_l + X'_l + \epsilon_{l,t}$$

Why should extending the loan maturity date beyond salary payday affect repayment?

- “Income effect” – Interest-free increase in the loan term
- “Liquidity effect” – Borrowers have cash at the time of loan maturity
- Match Group: Income effect + Liquidity effect
- Placebo Group: Income effect
- Match – Placebo = Liquidity effect



# Theoretical underpinnings?

- Why should aligning loan maturity with salary payday affect repayment behavior?
- Let's assume that all borrowers are liquidity constrained
  - Both control and treatment pay back when they receive a paycheck
  - The control group will be 1 day overdue
  - The treatment group will be 0 days overdue
    - But this is just **mechanical** due to the extension of the loan
- Other than the mechanical effect, why should control and treatment differ?
  - Both control and treatment should eventually pay – all else equal
  - Saliency and self-control issues?
- Nailing the theoretical mechanisms can help guide the appropriate counterfactual.

# Understanding Main Results

Panel A: All Event Days			
	(1)	(2)	(3)
	<i>Overdue</i>	<i>DPD1</i>	<i>DPD1t7</i>
<i>Treatment*Match</i>	-0.056* (-1.77)	-0.043** (-1.99)	-0.059** (-2.33)
<i>Treatment</i>	-0.027 (-0.98)	-0.035** (-1.96)	-0.034 (-1.60)
<i>Match</i>	0.022 (0.93)	0.027 (1.63)	0.052*** (2.64)



Effect on overdue loans primarily manifests for DPD1



No treatment effect for placebo group => Income effect is negligible

- So, the treatment effect is primarily driven by the liquidity effect – which may be mechanical.
  - Should we expect any effect if **individuals are not liquidity constrained**?
- Placebo Group – Does not effectively control for the mechanical effect
  - Individuals can only repay when they receive salary
- **Potential Solution** –
  - **Net out the mechanical effect** while defining loans overdue
    - For control – define the loan as overdue only if the days overdue >1
  - Alternatively, compare the treatment effect for DPD1 and DPD2

# More analysis of Match Group

- Would be useful to understand the determinants of treatment effect for the match group

- Table A3

	(1)	(2)	(3)	(4)
	<i>Overdue</i>	<i>DPD1</i>	<i>DPD1t7</i>	<i>EarlyRepay</i>
<i>Treatment</i>	-0.068*** (-2.83)	-0.086*** (-4.50)	-0.083*** (-4.00)	0.203*** (6.05)



No difference between DPD1 and DPD7

- Table IA7

	(1)	(2)	(3)
	<i>DPD1</i>	<i>DPD2</i>	<i>DPD1t7</i>
<i>Extend2D*Match</i>	0.008 (0.24)	-0.038 (-1.47)	-0.050 (-1.09)
<i>Extend1D*Match</i>	0.075*** (5.67)	-0.033** (-2.59)	0.029 (0.90)



No incremental effect of extending loan by 2 days vs 1 day?

- Table IA8

	(1)	(2)	(3)
	<i>Early Repay</i>	<i>ER1</i>	<i>ER2</i>
<i>Extend2D*Match</i>	0.0100 (0.09)	0.0569 (0.94)	0.0200 (0.64)
<i>Extend1D*Match</i>	-0.0197 (-0.23)	0.0288 (0.47)	-0.00832 (-0.22)



Reconcile with evidence in Tables 5 and 6



# Role of Saliency of Loan Due Date?

- Individuals repay when they have cash, and the loan repayment date is salient.
- If loan repayment is not salient – individuals may spend their salary before the due date
- Alternate Match Group: Extend loans for some individuals by 7-14 days post the salary payday
- Compare behavior with Treated individuals in Match group
  - Loan due date is extended to be on or 1 day after salary payday
- Lack of Self-Control/Saliency implies –
  - Greater likelihood of repayment for Match group vs. alternate match group?
- Examine **at what point in time does the treatment effect dissipate?**
  - Loans due 1, 2, 3,.....14 days after salary payday

# Other Comments and Clarification

- If loans are repaid early, does it come as a cost of other, more important consumption?
  - How do we assess if the loan term redesign is welfare-enhancing?
- A loan maturing one day before the salary payday is also
  - 13 days after the previous salary payday if the salary is paid biweekly
  - 6 days after the previous salary payday if the salary is paid weekly
  - How should one think about this?
- Does the treatment affect the likelihood of default?
- Why focus on individuals with past loans?
- What is the definition of “targeted payday”?

# Overall

- The role of loan contract design on credit outcome is an important question
  - How can FIs alter contract design to expand credit access and lower defaults?
- This paper – a step in that direction
- This is the first early draft of the paper
- Pinning down the theoretical mechanism underlying the question will enrichen the analysis.
- Look forward to the revised version!