Time to Repay or Time to Delay? The Effect of Having More Time Before a Payday Loan is Due

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What is a Payday Loan?

- Payday loans are short-term, high-interest loans; most borrowers are subprime

- Example: $300 principal, 18% finance charge of $53 for 14 days$\Rightarrow$450% APR

- Have to show proof of income but no traditional credit check

- Payday Loans are typically due on the borrower's next pay day

- Borrowers often roll loans over, repaying the interest each time and fall into debt traps

- 1.5% of all households estimated to have used a payday loan (around 2 million households) in 2019

Research Question

Question

- Does giving someone longer to repay a loan without any additional charges (a "grace period") improve the likelihood that they repay?

Policy Relevance

- Would increasing minimum duration of payday loans reduce rollover costly behavior?

What we do

- In this paper, we study this question both empirically and theoretically
    - an empirical answer: grace periods do NOT have much impact on repayment behavior
    - build and calibrate a simple model to rationalize our empirically findings

## Literature's Perspectives on Payday Loans
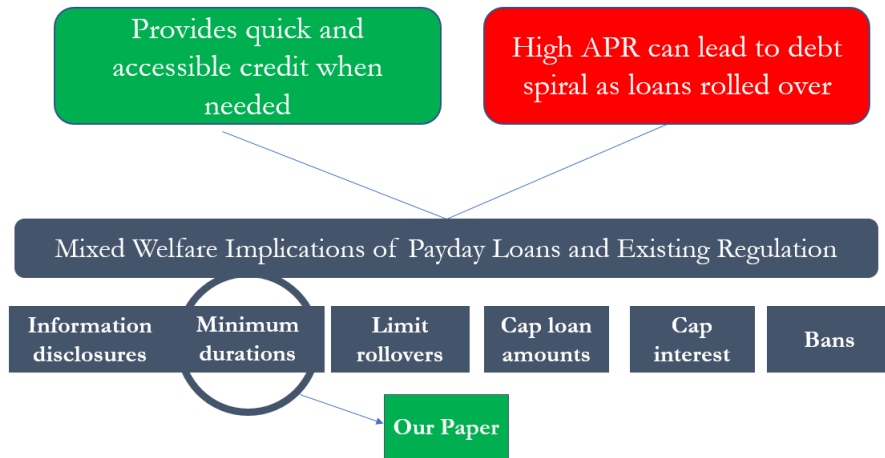
Exploit a Discontinuity in First Loan Duration

- 7 day minimum loan duration by payday loan law of Texas

  - Loans are due on incoming payday

  - But, if next payday is within the 7-day minimum, loan is due on the payday after

  - Generates sharp differences in time borrowers have before their first due date around the 7-day minimum threshold

- Example:

  - Arrive to get the first loan 7 days before a payday: 7-day loan

  - Arrive to get the first loan 6 days before a payday: 20-day loan

  - No additional finance charges needed for the longer loan: a free two-week extension ("a grace period")
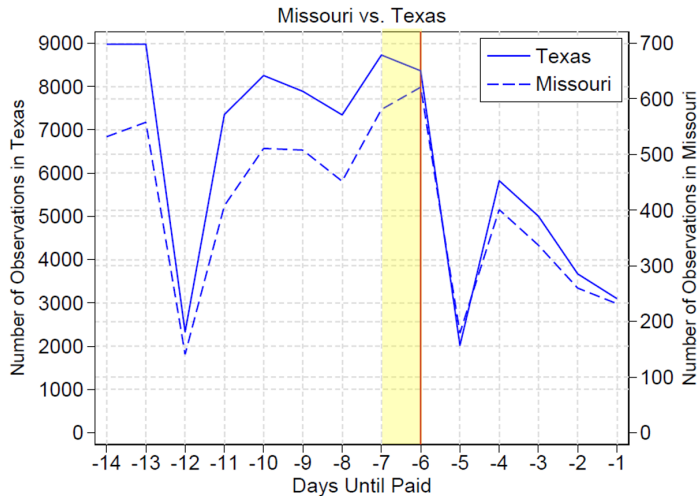
Loan Length Discontinuity
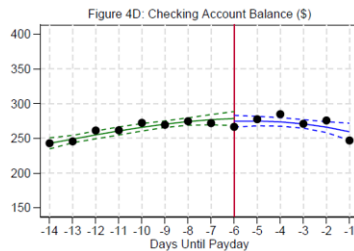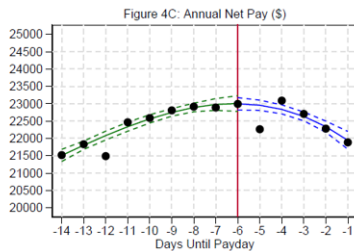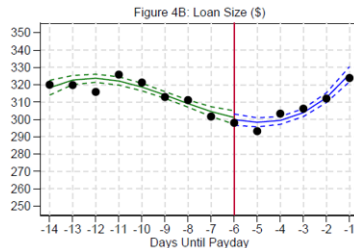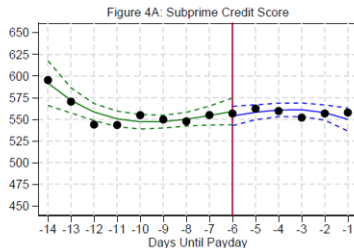

Figure 2: Loan Length
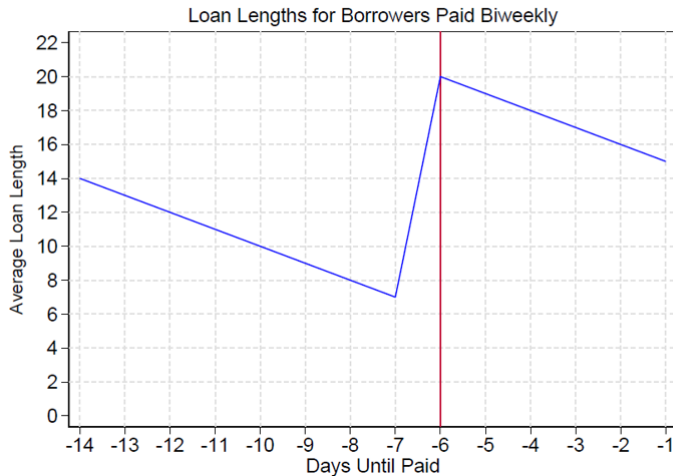
Manipulation around the Cut-off?

Figure 3: Loan Origination around the Cut-off

Changing Borrower Characteristics around the Cut-off?

Figure 4: Key Control Variables around the Cut-off

Figure 4A: Subprime Credit Score

Figure 4B: Loan Size ($)

Figure 4C: Annual Net Pay ($)

Figure 4D: Checking Account Balance ($)

Changing Borrower Characteristics around the Cut-off?

Table 2: Control Variables as Outcomes for Borrowers Paid Biweekly

	(1)	(2)	(3)
	Mean	Grace (Six Days until Payday)	Sample Size (Restricted to 6 and 7 days before payday)
Subprime Credit Score	555.94	1.79	15,491
		(3.41)	
Loan Amount	$299.93	−3.62*	15,491
		(2.18)	
Net Pay	$22,940.35	103.21	15,491
		(147.25)	
Account Balance	$269.39	-5.34	15,491
		(6.87)	
Direct Deposit	0.78	-0.003	15,491
		(0.01)	
Age	36.19	0.28*	15,480
		(0.16)	
Female	0.63	0.02	7,396
		(0.01)	
Black/Hispanic	0.77	0.01	7,358
		(0.01)	
Homewoner	0.38	-0.01	8,072
		(0.01)	

Theoretical Model Predictions

- We first write down a canonical consumption/saving dynamic model

- In the model, a borrower starts with an initial balance of payday loan

- The borrower maximizes her utility by choosing consumption and repayment over 14-day pay cycles

- Two identical borrowers except: one has 20 days before first due date (grace) v.s. one has only 7 (non-grace)

- Prediction: grace borrower repay significantly more on first due date than non-grace

- Key intuition: consumption-smoothing incentives drive grace borrower to make consumption sacrifices to save over their grace period

Theoretical Model Predictions—Graphical

Figure 1B: Fraction of Initial Loan Repaid over Time w/ $\delta_y = 0.75$
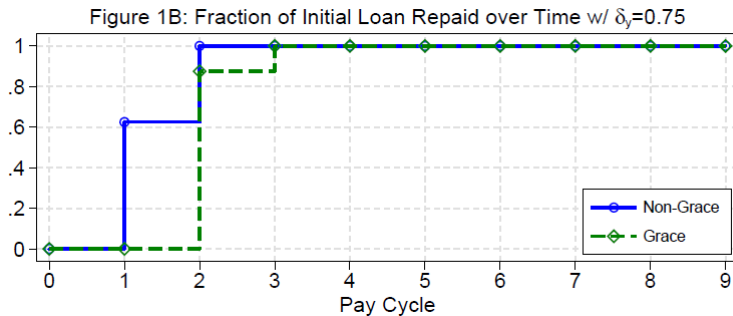
Main Regression Model and Results

$$y_i = \alpha + \beta_1 \, Grace_i + X_i + e_i$$

where $Grace_i$ is the indicator of having a longer loan

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Table 3: Regression Results

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|	Biweekly Sample (Sample Restricted to Origination Date Six and Seven Days until Payday)			
	(1)	(2)	(3)	(4)
	Principal paid on first due date	Rolled over some of the loan at the first due date	Number of effective rollovers in loan spell	Total finance charges paid in loan spell
Mean	$88.84	0.64	2.98	$208.55
Grace	-4.04	-0.01	-0.35***	-16.82***
	(3.12)	(0.01)	(0.08)	(5.19)
Other Controls	Yes	Yes	Yes	Yes
N	15,491	15,491	14,073	14,073
R^2	0.13	0.07	0.05	0.08

Results in Perspective

Figure 7: Outcomes for Borrowers Paid Biweekly
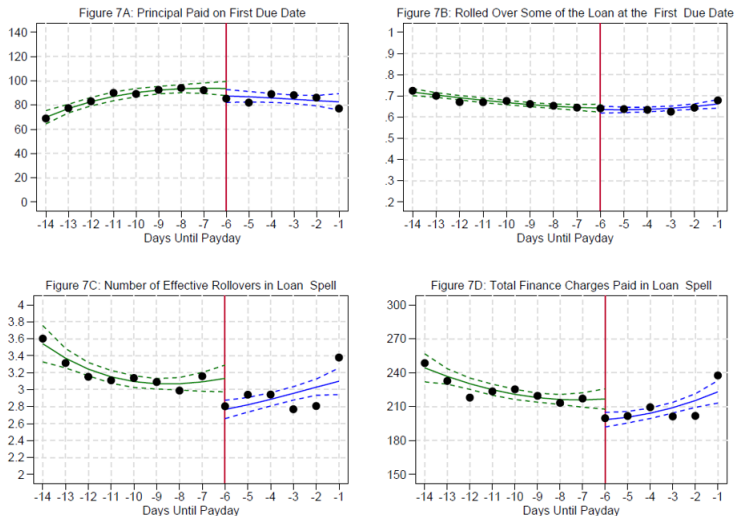
Results in Perspective

**Figure 6:** Average Fraction of Initial Debt Repaid
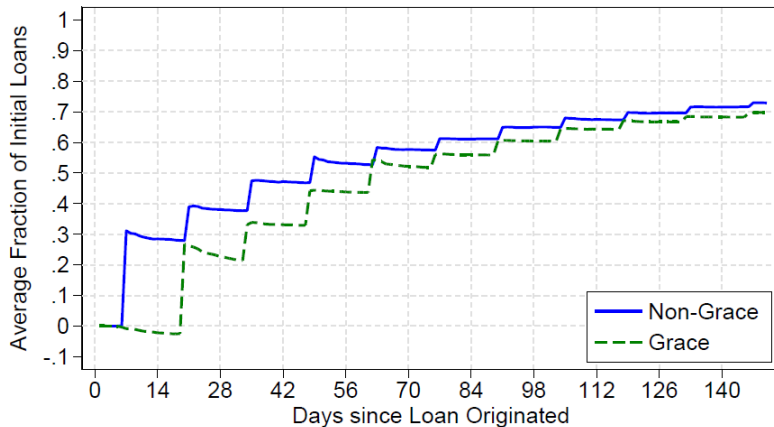
Result Robustness

- Similar results when focus on the first loan someone takes out (less likely to understand the day cut-off)

- Consistent results when accounting for borrower heterogeneity according to:
  - Debt-income ratio
  - Income, credit score, checking account balance
  - Gender, race, age

- Perform the same analysis on borrowers paid semi-monthly and get similar findings

Calibrated Model

- To rationalize our empirical findings, we calibrate a variant of the baseline model that features:
  - Naive present focus borrowers
  - Cross-sectional income heterogeneity
  - Idiosyncratic income risks
  - Inattention to income risks
  - Non-strategic default on loans

- We end up with parameter values for naive present focus and income risks that are consistent with existing literature

- Key intuitions:
  - Naive present focus induces procrastination to make consumption sacrifices during grace period
  - Inattention to income risks kills precautionary saving motive

Calibrated Model Results

Figure 11A: Avg. Frac. of D^0 Repaid--Data
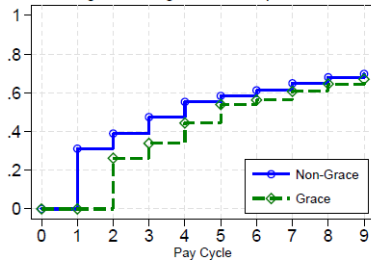
Figure 11B: Avg. Frac. of D^0 Repaid---Model
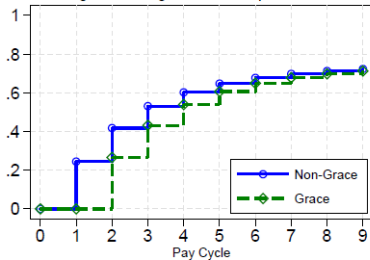
Figure 11C: Avg. Frac. of D^0 Bounced Check--Data
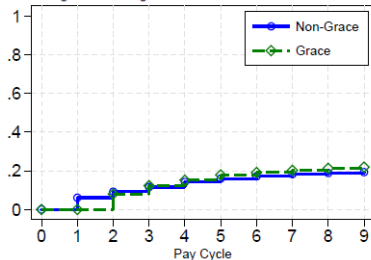
Figure 11D: Avg. Frac. of D^0 Bounced Check--Model
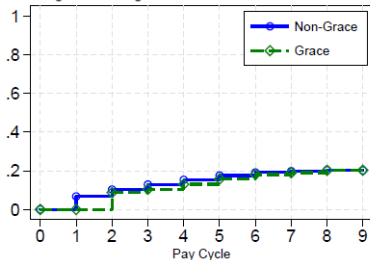
Policy Implications

- Extending the time someone has to repay a payday loan have little to no effect on repayment behavior

- In the areas where we find positive effects, economic magnitudes are small

- Naive present focus may explain our empirical findings

- Payday loan borrower may benefit more from policies that create regular repayment paths, such as minimum repayment plans, rather than just unconstrained time to repay