

# Misfortune and Mistake:

## The Financial Conditions and Decision-Making Ability of High-Cost Loan Borrowers

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# Motivation

- ▶ Use of controversial forms of credit widespread and rising
  - ▷ Payday loans
  - ▷ Deposit advance products
  - ▷ Vehicle title loans
- ▶ Distinguished by low-income users, high fees, cycles of debt
  - ▷ Clients are disproportionately banked but poor
  - ▷ 2-week payday loan with a \$15 per \$100 fee  $\approx$  APR of 400%
  - ▷ CFPB says 80% of US payday loans are, in effect, rolled over

# Motivation

- ▶ Opponents see the loans as predatory
  - ▷ Take advantage of poor decision-making
  - ▷ Lending to those they know will struggle to pay back
- ▶ Motivates various regulations
  - ▷ Interest rate limits
  - ▷ Mandatory underwriting
  - ▷ Cooling off periods
  - ▷ Limits on attempts to withdraw from borrower's bank account

# Motivation

- ▶ Major regulation now paused or being reconsidered
- ▶ Proponents argue the loans are appropriately designed and meet important needs
  - ▷ Fees are justified by risk
  - ▷ Costs of default on other obligations are worse
  - ▷ Living for today need not be a mistake

# Identification Problem

- ▶ Is demand for payday loans due to “misfortune” or “mistake”?
- ▶ Imperfect choices are usually hard to identify
  - ▷ Unobserved constraints, preferences, or beliefs can justify many behaviors as optimal

# This paper

- ▶ Address identification problem by linking administrative and experimental data
- ▶ Administrative
  - ▷ Bank records from financial aggregator in Iceland
  - ▷ Reveal the financial circumstances and behaviors of individuals (“misfortune”)

# This paper (Cont.)

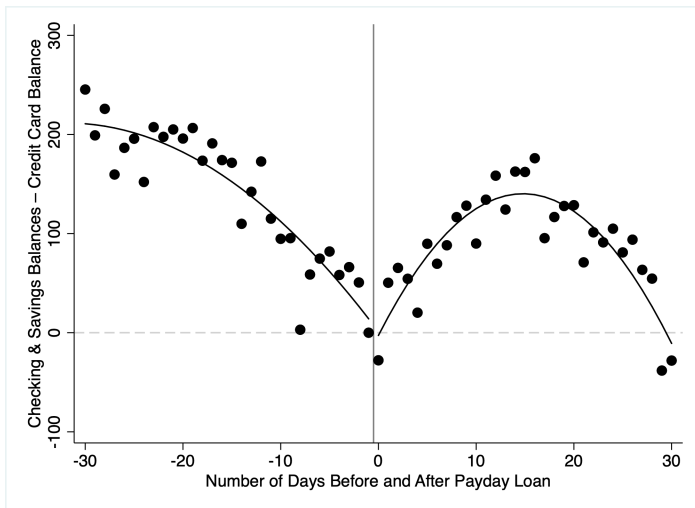
- ▶ Experimental
  - ▷ Online survey of aggregator users
  - ▷ Choices under risk and intertemporal allocations of money
  - ▷ Experimental variation reveals preferences and
  - ▷ inconsistency with utility maximization or dominance principles (“mistakes”)
- ▶ Decision-making ability (DMA) is measured by consistency with these normative properties

# The Administrative Data

- ▶ Financial aggregator in Iceland
  - ▷  $\approx$  50,000 users, 20% of the population over age 16
- ▶ Data from 2011-2017 for 12,747 “well-linked”
  - ▷ Payday loans
  - ▷ Income
  - ▷ Spending
  - ▷ Liquidity
    - ▷ Balances of checking, savings, and credit card accounts
    - ▷ Overdraft and credit card limits
  - ▷ Non-sufficient funds (NSF) charges
- ▶ 5.6% took a payday loan, average loan size is \$244



# Misfortune: Liquidity



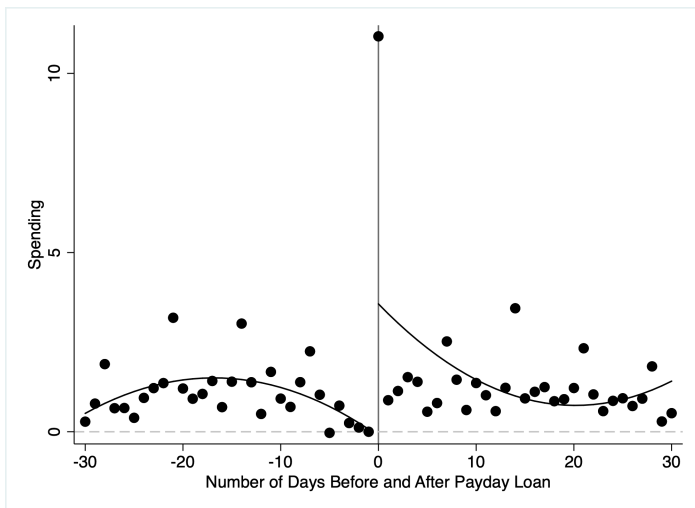
# Misfortune: Liquidity

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	<i>Percentiles</i>					
	Mean	10th	25th	50th	75th	90th
Checking Balance + Overdraft Limit (1)	273	0	0	32	190	745
Savings Balance (2)	466	0	0	0	1	531
Credit Card Limit - Credit Card Bal. (3)	541	0	0	7	352	1,750
(1) + (2)	740	0	2	58	384	1,276
(1) + (2) + (3)	1,280	0	28	244	1,149	3,323

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# Misfortune?: Non-Urgent Spending



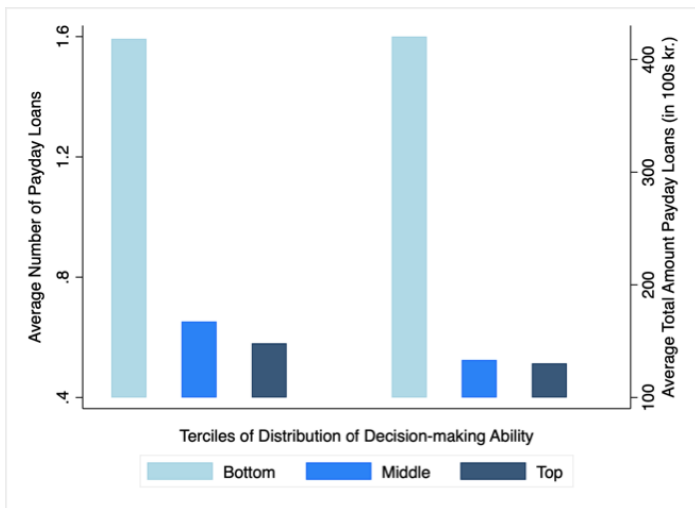
# The Survey Data

- ▶ 8,913 email invitations delivered, 1,701 (19.8%) completed
- ▶ Experiments
  - 1 Risk
  - 2 Ambiguity
  - 3 Intertemporal Choice
- ▶ Financial incentives deposited to bank account
- ▶ Brief questionnaire (e.g., education)

# The Survey Data (Cont.)

- ▶ Decision-Making Ability
  - 1 Risk: Consistency with utility maximization & monotonicity
  - 2 Ambiguity: Consistency with utility maximization
  - 3 Intertemporal Choice: Consistency with utility maximization
- ▶ Measures of impatience and present bias from intertemporal choice task
- ▶ Measure of risk aversion from risk choice task

# Payday Loans and Decision-Making Ability



# Low DMA individuals play outsized role in market

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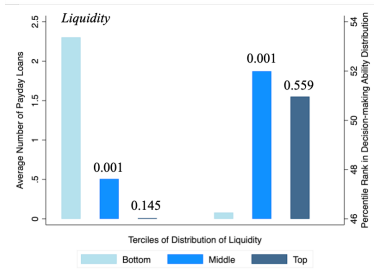
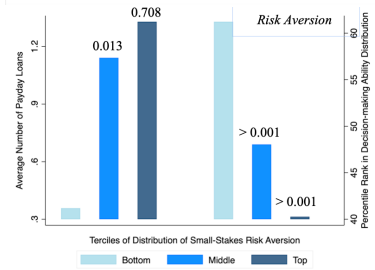
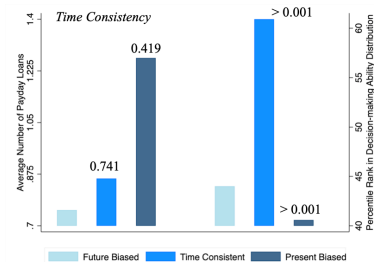
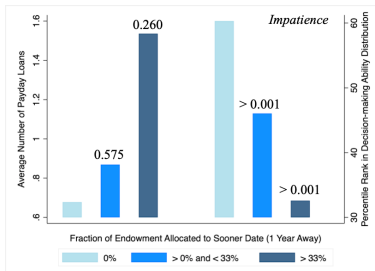
*Percentile of Decision-Making Quality Distribution*

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10th	20th	30th	40th	50th	60th	70th	80th	90th
28%	53%	56%	62%	69%	78%	81%	90%	99%

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# Payday Loans, DMA, Preferences, and Liquidity





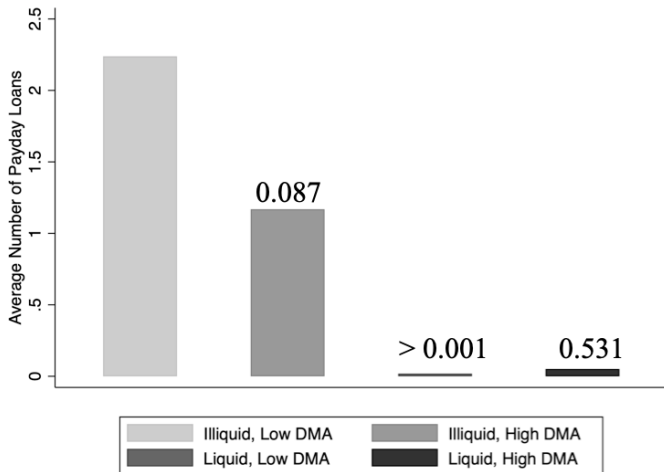
# Payday Loans, DMA, Preferences, and Liquidity

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	<i>Number of Payday Loans</i>			
DMA	-0.21 (0.08)	-0.16 (0.08)	-0.15 (0.07)	-0.12 (0.06)
Liquidity		-0.49 (0.09)	-0.48 (0.09)	-0.47 (0.08)
Impatience			0.02 (0.04)	0.02 (0.04)
Present Bias			0.06 (0.07)	0.06 (0.07)
Risk Aversion				0.07 (0.06)

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# Interactions between Misfortune and Mistake



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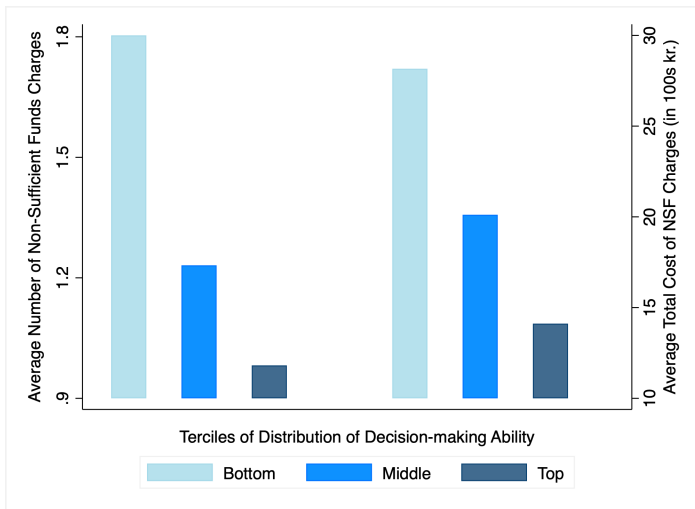
*Number of Payday Loans*


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DMA × Liquidity		0.06	0.06	0.06
		(0.02)	(0.02)	(0.02)
DMA	-0.16	-0.16	-0.15	-0.12
	(0.08)	(0.08)	(0.07)	(0.06)
Liquidity	-0.48	-0.47	-0.46	-0.46
	(0.09)	(0.09)	(0.08)	(0.08)
Impatience			0.02	0.02
			(0.04)	(0.04)
Present Bias			0.06	0.07
			(0.07)	(0.07)
Risk Aversion				0.07
				(0.05)

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# Non-Sufficient Funds Charges and Decision-Making Ability



# Conclusion: Misfortune and Mistake Are Both Important

- ▶ Most borrowers are out of other liquidity when loan is taken but substantial fraction spend loans on non-urgent items.
- ▶ Borrowers have much lower decision-making ability
  - ▷ 28% of loan dollars lent to bottom 10% of DMA distribution
  - ▷ 53% lent to the bottom 20%
- ▶ Relationship not explained by financial circumstances, time or risk preferences and is mirrored in relationship between DMA and an unambiguous “mistake” (NSF)

# Conclusion: Policy Implications

- ▶ Policy that better equips consumers to avoid any harm from mistakenly choosing to take a high-cost loan may be justified
- ▶ Efforts at consumer protection should seek ways to avoid limiting trade in this market entirely
- ▶ Regulators ought to consider lighter forms of paternalism
  - ▷ Cooling off periods (supported by spending patterns)
  - ▷ Certification that the borrower understands a loan's terms

Thank you!

# The financial aggregation app

The image displays three screenshots of a financial aggregation app interface, showing user profile information, transaction history, and a feed of transactions.

### Edit Profile

Swisscom 17:44

Gender: Year of birth: 1984

Adults: Children: 0

House: Size in m<sup>2</sup>: 100

Bedrooms: Cars: 0

Bottom navigation: Life goals, Budget, Activity, Offers, More

### Transactions

Swisscom 17:49

WEDNESDAY, SEPTEMBER 16

- TAXI DAMIAN - 4,454 kr.  
Taxis & Public Transportation
- Metrostation Islands B - 713 kr.  
Planes, Trains and Automobile...

TUESDAY, SEPTEMBER 15

- Millifært: Tollstjóri 33,341 kr.  
Taxes (+ and -)

MONDAY, SEPTEMBER 14

- FOETEX FISKETORVET - 732 kr.  
Groceries

SUNDAY, SEPTEMBER 13

- NETTO AXEL HEIDESG - 78 kr.  
Groceries

SATURDAY, SEPTEMBER 12

- NETTO AXEL HEIDESG - 263 kr.

Bottom navigation: Life goals, Budget, Activity, Offers, More

### Feed

Swisscom 17:50

Search Refine

- Current 1,134,157 kr. >
- Credit cards - 183,924 kr. >
- Savings 9 kr. >
- Show Only Transactions >

SUNDAY, SEPTEMBER 20

- HOTEL TIROL S.A. - 54,809 kr.  
Hotels & Accomodation
- TAXI EDUARDO GAL... - 4,441 kr.  
Taxis & Public Transportation
- SCHWEIZ. BUNDES... - 1,162 kr.  
Planes, Trains and Autom...

Bottom navigation: Life goals, Budget, Activity, Offers, More



# The financial aggregation app

The screenshot displays the MENIGA app interface. At the top, the logo 'MENIGA' is visible on the left, and the user's email 'amavardar@gmail.com', a 'Logout' link, and a language selector set to 'English' are on the right. A navigation bar contains links for 'Home', 'Transactions', 'Budget', 'Reports', 'Life goals', 'Insights', 'Offers', and a 'Settings' button. Below this is a secondary navigation bar with tabs for 'Your Profile', 'Users', 'Accounts', 'Categories', 'Notifications', 'Rules', 'Offers', and 'Terms & Conditions'. The main content area is titled 'Edit accounts' and includes a brief instruction: 'Use this form to edit the names of cards and accounts or delete them from your profile. Please note that when you delete an account or a card, all transactions from that account/card will be deleted.' A blue button labeled 'Add a new account / card' is present. A modal window is open in the foreground, titled 'Add a new account or credit card' with a close button (X). The modal asks the user to 'Select a bank/issuer:' and provides a grid of options: Arion banki, Íslandsbanki, a red logo, AMERICAN EXPRESS, MasterCard, mpbanki, SPARISJÓÐURINN, and Other banks. The background interface is dimmed.

# Payday Loans - Online Interface

The screenshot shows the 1909 website's loan application interface. The header includes the 1909 logo, navigation links, and contact information. The main content area features a two-step process: 1. Upphæð láns (Loan amount) and 2. Niðurstaða (Result). The loan amount is set to 20,000 kr. The term is 30 dagar. The interest rate is 3.4448% and the total repayment is 26,885 kr. There are two small disclaimer links at the bottom and a 'SENDA UMKSON' button.

1909

Upphæð láns: 20.000 kr. lán

2 Niðurstaða

Lengd láns: 30 dagar

Kostnaður: 6.005 kr.

Ást: 3.4448 %

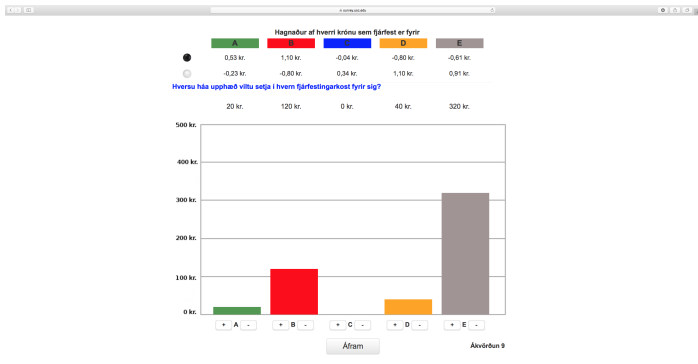
Gjalt: 26.885 kr.

[Eg hef leitt Lánaáttöðvur, eCommerz 2020, ÁG, og samþykki þá](#)

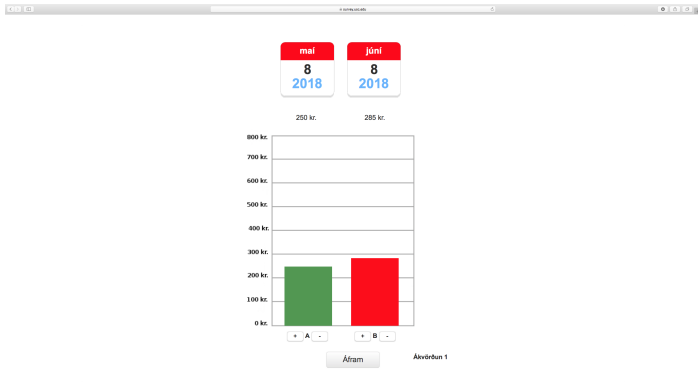
[Eg hef leitt \[U\] \[G\] - info og samþykki þá](#)

SENDA UMKSON

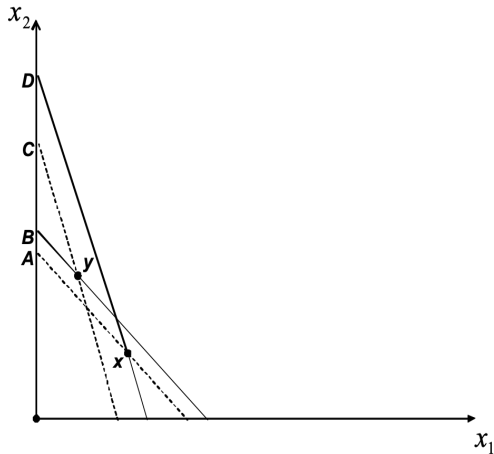
# The Experiments: Choice Under Risk



# The Experiments: Intertemporal Choice



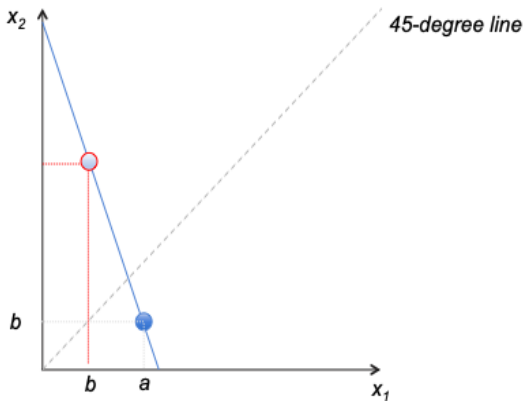
# Decision-making Quality



Literature offers several scores to measure degree of compliance with GARP. Classic is Afriat's CCEI

# Decision-making Quality

## Violating Monotonicity wrt FOSD



Polisson et al. (2018) offers revealed preference, score to measure degree of compliance with GARP and FOSD. Like Afriat's GARP measure it ranges from 0 to 1