

Misfortune and Mistake:

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

Leandro Carvalho
University of Southern
California

Arna Olafsson
Copenhagen Business
School, DFI & CEPR

Dan Silverman
Arizona State University &
NBER

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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
- ▶ 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

- ▶ Difficult to advance the debate
- ▶ Major regulation now paused or being reconsidered
- ▶ 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

- ▶ Addresses identification problem by linking administrative and experimental data
- ▶ Linked experimental and administrative data is rare in research that seeks to understand the fundamentals of economic behavior through financial data
- ▶ No other study has linked experimental economic data to comprehensive and high-frequency bank data at the individual level
 - ▷ Spin-off projects that (1) link experimental data of spouses to administrative data containing information about their entire personal finances and (2) relate measures of DMA to (a) knowledge of policy rates and monetary transmission and (b) differential monetary transmission

This paper (Cont.)

- ▶ Administrative Data
 - ▷ Bank records from financial aggregator in Iceland
 - ▷ Reveal the financial circumstances and behaviors of individuals (“misfortune”)
- ▶ Experimental Data
 - ▷ Online survey of aggregator users (8,913 email invitations, 1,701 (19.8%) completed)
 - ▷ Financial incentives deposited to bank account
 - ▷ 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
- ▶ The advantages of using Icelandic data include
 - ▷ Icelanders (almost) never use cash
 - ▷ App is marketed through banks and we have a fairly representative sample
 - ▷ Income and spending are pre-categorized
 - ▷ App is for information purposes only (no transaction functionalities)

The Administrative Data (cont.)

- ▶ Data from 2011-2017 for 12,747 “well-linked” users
 - ▷ 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

Comparison of Survey Sample to Population

	Participants	Population
Female	47%	50%
Age	43.5	45.3
Labor Income	4,343	4,153
<i>Family Composition</i>		
Spouse	29%	28%
Single	23%	42%
Spouse and children	43%	25%
Single and children	6%	5%
<i>Highest Degree Obtained</i>		
Mandatory education	9%	39%
Journeyman's examination	4%	5%
Master of a certified trade	3%	6%
Matriculation examination	11%	8%
Tertiary education	8%	15%
Technical degree	5%	2%
Bachelor	30%	15%
Master	30%	7%
Ph.D.	2%	1%
Other	0%	3%

Payday Loans - Online Interface

The screenshot shows the 1909 website's loan application interface. The header is blue with the 1909 logo and navigation links. The main content area is white and features a large '1909' logo at the top. Below the logo, there are two numbered steps: '1 Upphæð láns:' (Loan amount) and '2 Niðurstaða' (Result). The 'Upphæð láns:' section has a dropdown menu set to '20.000 kr lán'. The 'Lengd láns:' section has three radio buttons for '15 dagar', '22 dagar', and '30 dagar', with '30 dagar' selected. Below these are four rows of loan details: 'Kostnaður:' (6.016 kr), 'Ástí:' (3.444,8 %), and 'Samtals:' (26.836 kr). At the bottom, there are two small links and a large blue button labeled 'SENDA UMKÖN'.

1909

1 Upphæð láns:

2 Niðurstaða

Upphæð láns: 20.000 kr lán

Lengd láns: 15 dagar 22 dagar 30 dagar

Kostnaður: 6.016 kr

Ástí: 3.444,8 %

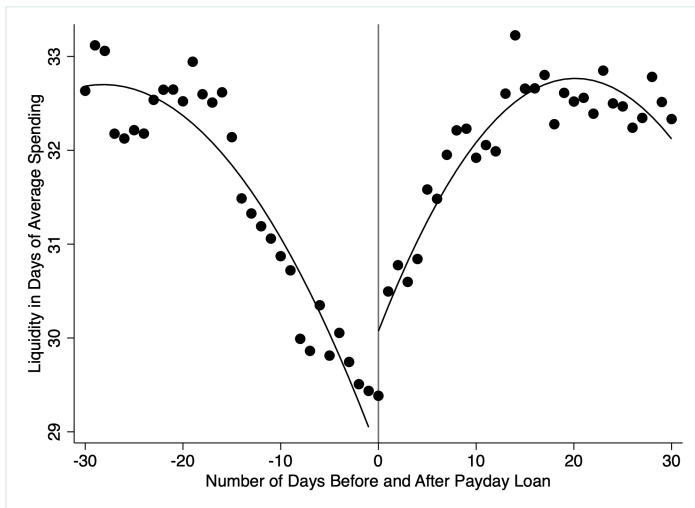
Samtals: 26.836 kr

[Þú hefur verið lánaður af Commerce 2000 ÁG og samþykkið þú](#)

[Þú hefur verið lánaður af 1909 og samþykkið þú](#)

SENDA UMKÖN

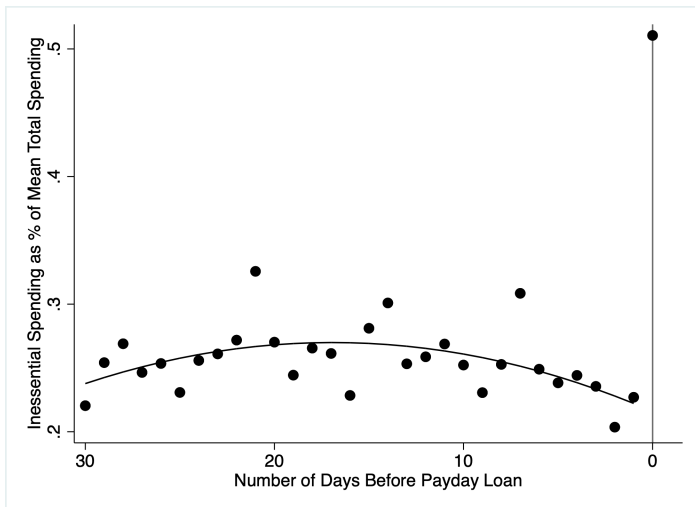
Misfortune: Liquidity



Misfortune: Liquidity

		<i>Percentiles</i>				
	Mean	10th	25th	50th	75th	90th
<i>CheckingBalance + OverdraftLimit</i> (1)	5	0	0	1	4	13
<i>SavingsBalance</i> (2)	11	0	0	0	0	10
<i>CreditCardLimit - CreditCardBal.</i> (3)	10	0	0	0	7	29
(1) + (2)	16	0	0	1	8	30
(1) + (2) + (3)	26	0	1	5	23	61

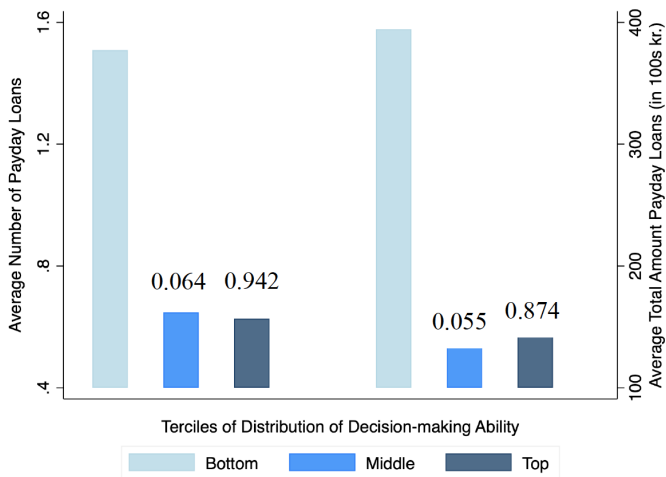
Misfortune?: Non-Urgent Spending



The Survey Data

- ▶ Experiments: Risk, Ambiguity, and Intertemporal Choice
- ▶ 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

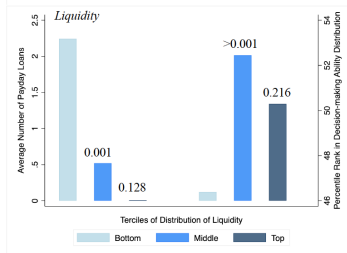
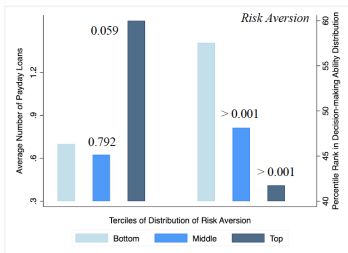
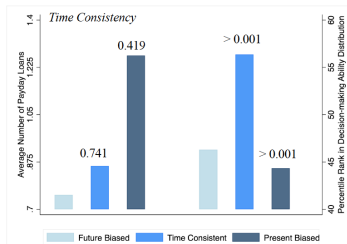
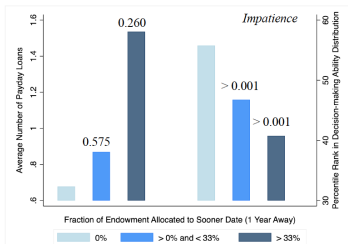


Low DMA individuals play outsized role in market

Percentile of Decision-Making Quality Distribution

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

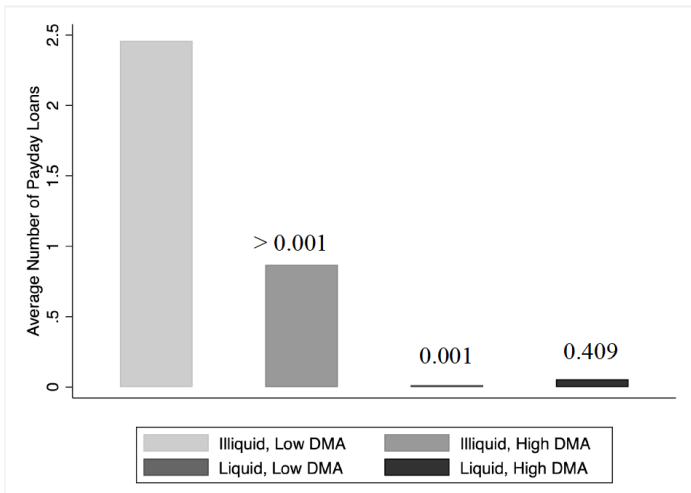
Payday Loans, DMA, Preferences, and Liquidity



Payday Loans, DMA, Preferences, and Liquidity

	<i>Number of Payday Loans</i>			
<i>DMA</i>	-0.21 (0.08)	-0.17 (0.07)	-0.16 (0.07)	-0.16 (0.07)
<i>Liquidity</i>		-0.49 (0.09)	-0.48 (0.09)	-0.47 (0.08)
<i>Impatience</i>			0.04 (0.06)	0.04 (0.06)
<i>Present Bias</i>			0.07 (0.07)	0.07 (0.07)
<i>Risk Aversion</i>				0.00 (0.06)

Interactions between Misfortune and Mistake



Interactive Effects of Liquidity and DMA

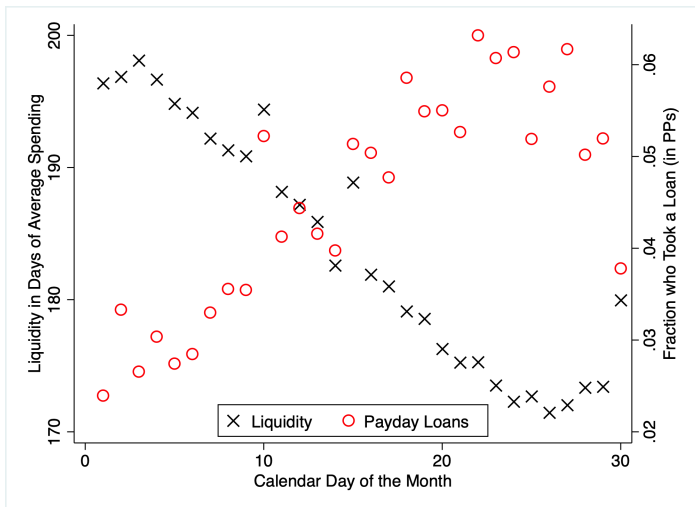
<i>Number of Payday Loans</i>				
<i>DMA</i> × <i>Liquidity</i>		0.07	0.07	0.07
		(0.02)	(0.02)	(0.02)
<i>DMA</i>	-0.17	-0.18	-0.16	-0.16
	(0.07)	(0.07)	(0.07)	(0.07)
<i>Liquidity</i>	-0.48	-0.47	-0.46	-0.46
	(0.09)	(0.09)	(0.08)	(0.08)
<i>Impatience</i>			0.03	0.03
			(0.04)	(0.06)
<i>Present Bias</i>			0.07	0.07
			(0.07)	(0.07)
<i>Risk Aversion</i>				0.00
				(0.07)

High-Frequency Variation in Liquidity and DMA

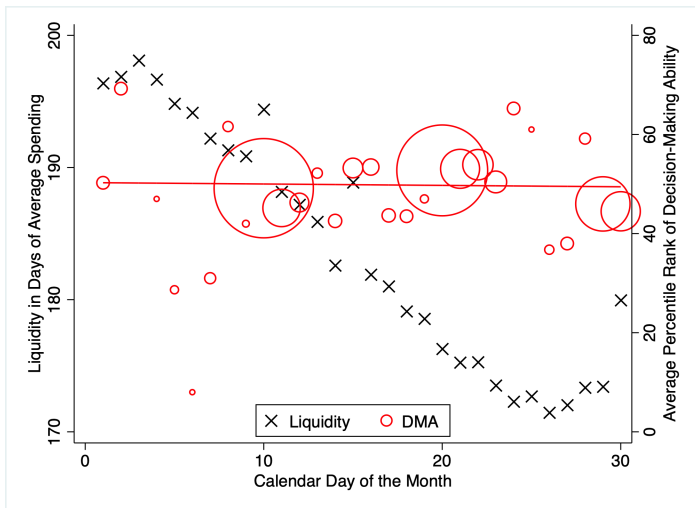
1 if Took a Payday Loan

<i>DMA</i>	-1.00 (0.41)	-0.99 (0.41)	-0.90 (0.38)	-0.88 (0.38)	-0.80 (0.36)	-0.89 (0.38)
<i>Liquidity in \$10,000s</i>		-0.80 (0.26)	-0.77 (0.24)	-0.76 (0.24)		
<i>IHS of Liquidity Pctile Rank of Liquidity Impatience</i>					-2.48 (0.66)	
			0.20 (0.23)	0.03 (0.19)	0.03 (0.19)	0.04 (0.19)
<i>Present Bias</i>			0.58 (0.38)	0.52 (0.38)	0.48 (0.38)	0.53 (0.39)
<i>Risk Aversion</i>				0.25 (0.30)	0.16 (0.30)	0.28 (0.30)

The Importance of Prior Mistakes



Scarcity Theories on Decision-Making Quality



Non-Sufficient Funds Charges and DMA

Number of NSF Charges

<i>DMA</i> ×				0.02	0.02
<i>Liquidity</i>				(0.03)	(0.03)
<i>DMA</i>	-0.23 (0.08)	-0.19 (0.08)	-0.17 (0.08)	-0.19 (0.08)	-0.17 (0.08)
<i>Liquidity</i>		-0.57 (0.09)	-0.55 (0.09)	-0.54 (0.09)	-0.55 (0.09)
<i>Impatience</i>					-0.37 (0.18)
<i>Present Bias</i>			0.20 (0.23)	0.03 (0.19)	0.03 (0.19)
<i>Risk Aversion</i>				0.25 (0.30)	0.16 (0.30)
					0.28 (0.30)

External Relevance

	<i>1 if Payday Loan</i>							
	Iceland	UAS	Iceland	UAS	Iceland	UAS	Iceland	UAS
<i>DMA</i>	-0.41 (0.19)	-0.53 (0.11)	-0.55 (0.20)	-0.55 (0.12)	-0.49 (0.20)	-0.39 (0.11)	-0.36 (0.20)	-0.42 (0.11)
<i>Risk Aversion</i>							0.53 (0.17)	0.16 (0.11)
<i>Log Income</i>					-0.17 (0.63)	-0.68 (0.26)	0.01 (0.62)	-0.66 (0.26)
<i>Years of Schooling</i>					-0.53 (0.19)	-0.08 (0.16)	-0.50 (0.19)	-0.79 (0.16)
<i>Female</i>			-1.31 (1.10)	2.47 (0.71)	-1.14 (1.13)	2.20 (0.71)	-1.55 (1.13)	2.10 (0.71)
<i>Age</i>			-0.14 (0.05)	-0.16 (0.03)	-0.14 (0.06)	-0.16 (0.03)	-0.17 (0.06)	-0.16 (0.03)
<i>Age²</i>						0.00 (0.11)		

Conclusion: Misfortune and Mistake Are Both Important

- ▶ Motivated by the debate regarding regulation of the high-cost credit market, this paper evaluates the relationship between financial circumstances, imperfect decision making, and the demand for high-cost credit
- ▶ Most borrowers are out of other liquidity when loan is taken but a substantial fraction not
- ▶ A 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 and 53% 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 m²: 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

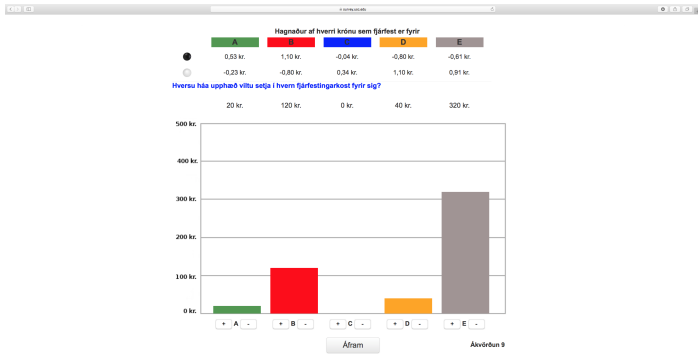
- HOTEL TIROL S.A. - 54,809 kr.
Hotels & Accomodation
- TAXI EDUARDO GAL... - 4,441 kr.
Taxis & Public Transportation
- SCHWEIZ. BUNDES... - 1,162 kr.
Planes, Trains and Autom...

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

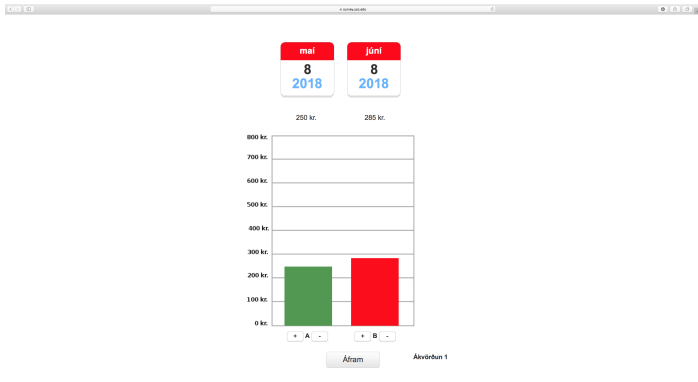
The financial aggregation app

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 dark teal navigation bar contains the following menu items: Home, Transactions, Budget, Reports, Life goals, Insights, Offers, and a yellow '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 sub-header 'Add a new account / card'. A modal window is open in the foreground, titled 'Add a new account or credit card' with a close button (X). The modal prompts the user to 'Select a bank/issuer:' and provides a grid of options: Arion banki, Íslandsbanki, a red stylized 'A' logo, AMERICAN EXPRESS, MasterCard, mpbanki, SPARISJÓÐURINN, and Other banks. The background interface is dimmed to show the modal.

The Experiments: Choice Under Risk



The Experiments: Intertemporal Choice



Misfortune?: Other Spending

