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

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Background

- Controversial forms of credit
 - 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, effectively, rolled over

Background

- Opponents see the loans as predatory
 - Take advantage of poor decision-making
 - Lending to those they know can't pay back
- Motivates various regulations
 - Interest rate limits
 - Mandatory underwriting
 - Cooling off periods
 - Limits on of attempts to withdraw from borrower's bank account

Background

- Implementation of some regulation now paused or being reconsidered
- Loan proponents argue they are appropriately designed and meet important needs
 - Fees are justified by risk
 - Costs of default on other obligations are worse
 - Among those obtaining loans, the loan is presumably beneficial
 - Living for today is not a mistake

Identification Problem

- Is demand for payday loans is 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

Administrative

- Bank records from Iceland made available by financial aggregator
- Describe in detail the financial circumstances and behavior of individuals ("misfortune")

This Paper (Cont.)

Experimental

- Online survey of a subset of aggregator users
- Multiple choices under risk and multiple intertemporal choices
- Experimental variation is rich enough to measure consistency with utility maximization ("mistake")
- Call consistency with utility maximization *decision-making ability (DMA)*
- Relate payday loan demand to measures of DMA and measures of constraints and preferences

The Administrative Data

- Meniga, financial aggregator in Iceland
 - \approx 50,000 users, about 20% of Iceland's population over age 16
- Data from 2011-2017 for 12,747 "well-linked"
 - Payday loans
 - □ Income
 - □ Liquidity
 - o Balances of checking, savings, and credit card accounts
 - Overdraft and credit card limits
 - □ Non-sufficient funds (NSF) charges
- 5.6% took a payday loan. Median (average) amount of \$200 (\$244)

Misfortune: Liquidity



Misfortune: Liquidity

				Percentile	S	
	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

Misfortune?: Non-Urgent Spending



The Survey Data

- Meniga sent email with invitation and link to online survey
- 8,913 emails successfully delivered. 1,701 (19.8%) completed survey
- 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



	Low	DMA in	dividua	ls play o	outsized	d role in	market	
	P_{i}	ercentile d	of Decision	n-Making	Quality L) istributio	n	
10th	20th	30th	40th	50th	60th	70th	80th	90th
28%	53%	56%	62%	69%	78%	81%	90%	99%

Payday Loans, DMA, Preferences, and Liquidity





		Numb	er of Payday	Loans	
DMA	-0.21		-0.16	-0.15	-0.12
	(0.08)		(0.08)	(0.07)	(0.06)
Liquidity		-0.49	-0.48	-0.47	-0.47
		(0.09)	(0.09)	(0.09)	(0.08)
Impatience				0.02	0.02
				(0.04)	(0.04)
Present Bias				0.06	0.06
				(0.07)	(0.07)
Risk Aversion					0.07
					(0.06)

Payday Loans, DMA, Preferences, and Liquidity

Interactions between Misfortune and Mistake



Non-Sufficient Funds Charges and Decision-Making Ability



Conclusions

- Large majority of borrowers is out of liquidity when loan is taken
- Important fraction of loan is spent, however, on non-urgent items.
- Payday borrowers exhibit substantially lower decision-making ability
 - 28% of payday loan dollars lent to bottom 10% of DMA distribution
 - 53% lent to the bottom 20%
- Relationship is not explained by financial circumstances, time or risk preferences
- It is mirrored by relationship between DMA and accrual of NSF fees, an unambiguous "mistake"
- · Both misfortune and mistake thus seem important
- Non-urgent spending suggests cooling off might help those most prone to mistake.

		Number of P	ayday Loans	
DMA * Liquidity		0.06 (0.02)	0.06 (0.02)	0.06 (0.02)
DMA	-0.16 (0.08)	-0.16 (0.08)	-0.15 (0.07)	-0.12 (0.06)
Liquidity	-0.48 (0.09)	-0.47 (0.09)	-0.46 (0.08)	-0.46 (0.08)
Impatience			0.02 (0.04)	0.02 (0.04)
Present Bias			0.06 (0.07)	0.07 (0.07)
Risk Aversion				0.07 (0.05)

Interactions between Misfortune and Mistake

EXTRA

The financial aggregation app



The financial aggregation app

Your Profile Users	Accounts Categor	les Notifications	Rules Offers	Terms & Conditions		
Edit accounts						
	nes of cards and accounts or d	elete them from your profile	Please note that when you	u delete an account or a car	rd, all transactions fro	
	Add a new acco	unt or credit card		0		
	Add a new acco	unt of creat card		0		
	Select a bank/issuer:	ant of creat card		0		
Add a new account / can	Select a bank/issuer			AMERICAN EXPRESS		
Add a new account / can User: amavarder@gmail.c Current Wallet, current and che	Select a bank/issuer:	- τιαπότοσκί mpbanκί	SAVESJÓDURINN	AMERICAN EXPRESS Other banks		
Add a new account / can User: amavarder@gmail.c Current Wallet, current and che adatreikning	Select a bank/issuer	- τιtendibenki mpbanki		AMERICAN EXPRESS Other banks	Edi	

The Experiments: Choice Under Risk



The Experiments: Intertemporal Choice

0 0 0 +



Decision-making Quality



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

Decision-making Quality

Violating Montonicity 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.