

The Online Payday Loan Premium

January 2022

Jialan Wang, University of Illinois at Urbana-Champaign & NBER

Co-authors:

Filipe Correia, University of Georgia

Peter Han, University of Illinois at Urbana-Champaign

Thanks to the research team: Renhao Jiang, Peichen Li, Yunrong Zhou, Hejia Liu, Kevin Tzeng, Kashish Mehta, Raja Gajula, Matthew Boyd, Yiheng Yang, and Kunal Bagali

Payday Loans: Short-term + Small Dollar Credit

- Small amounts - \$300-500
- High fees
 - Advertised in dollars per hundred, not APR
 - Typical fees between \$10-20 per hundred for 14-30 days, > 300% APR
 - Fee is same regardless of contract length
- Competitive market?
 - High fixed costs + high default rates

→ Can online technology lower prices?

Findings: Online Loans are More Expensive

1. Online payday loans are 100-140% APR more expensive than storefront loans
2. Online premium not explained by loan or customer characteristics, differences in pricing models, or traditional credit scores
3. At least partially attributable to default risk
4. Consumers with both types of loans are much more likely to default on online loans

Clarity Data

Two Loan-Level Samples from Clarity

Clarity

- Subprime credit bureau covering 63 million consumers
- ~8% market share of storefront and ~23% of online payday as of 2017
- Inquiries – application date, loan type, income, age, months at address
- Tradelines – origination date, loan type, loan terms, performance

Random Clarity sample

- 1 million random consumers from 2013 to 2017
- 366k consumers with payday inquiries → 66k with originated loans

Credit visible sample

- 35k payday borrowers matched to random 1% sample of U.S. population with Experian credit reports (Gies Consumer and small business Credit Panel, aka GCCP)

Inquiry Information Is Self-Reported

2. EMPLOYMENT INFORMATION

Company Name		Job Title	
Are You an Active Military?	-- Select --	Months Employed	-- Select --
Driver's License Number	Letters/Numbers only	Driver's License State	-- Select --
Income Type	-- Select --	How Often Are You Paid?	-- Select --
What Is Your Next Paydate?	MM/DD/YYYY	What Is Your Second Next Paydate?	MM/DD/YYYY
Net Monthly Income	Only a number e.g. 3000	Are You a Homeowner?	-- Select --
Months at Address?	-- Select --		

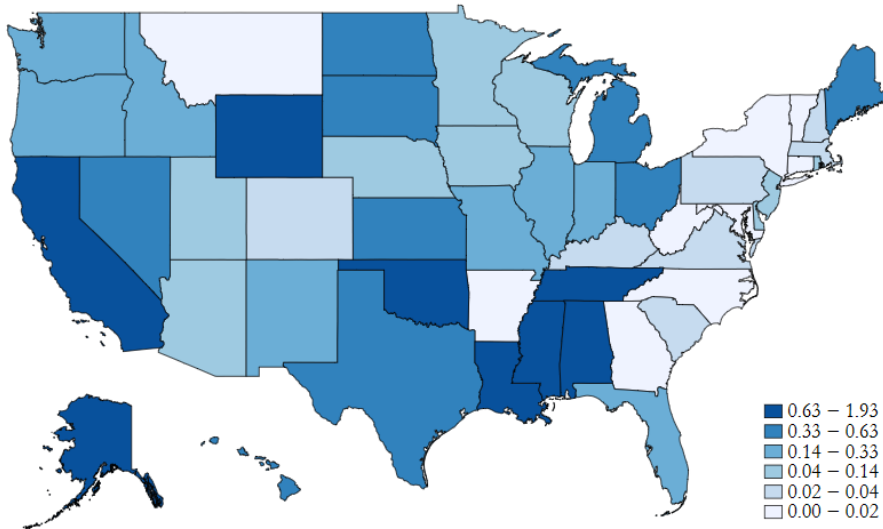
3. FINANCIAL INFORMATION

Bank Direct Deposit	-- Select --	ABA/Routing Number	
Account Number		Account Type	-- Select --
Bank Account Months	-- Select --		

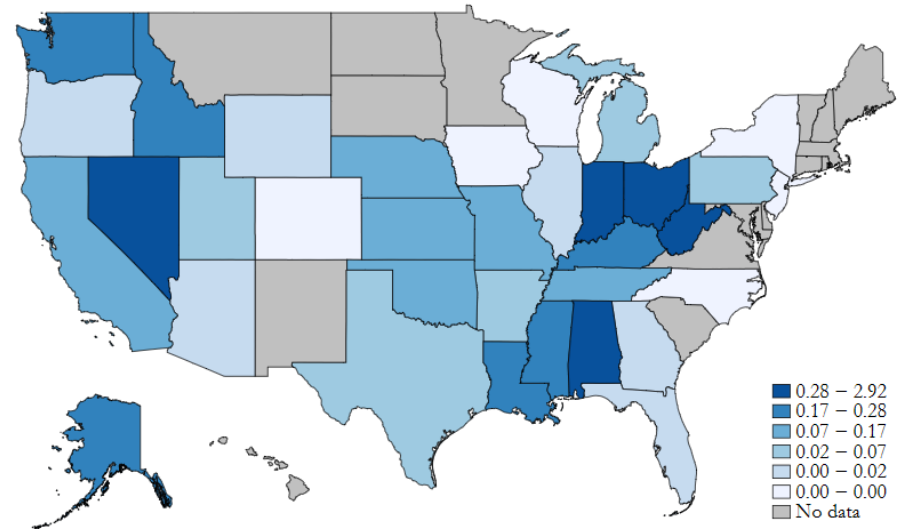
Source: <https://greendayonline.com/online-loan-application/>

Clarity Provides Nationwide Coverage

Online



Storefront



Random Clarity Sample
loans / 1000 population

We Infer Prices from Loan Terms

Direct calculation

$$APR = \frac{365}{\text{Loan Maturity}} \times \frac{\text{Repayment} - \text{LoanAmount}}{\text{LoanAmount}}$$

$$\text{Cost per \$100} = 100 \times \frac{\text{Repayment} - \text{LoanAmount}}{\text{LoanAmount}}$$

Imputation method for defaulted loans

Match defaulted loans to median price of similar non-defaulted loans by origination month, loan type, state, zipcode, and terciles of loan and borrower characteristics

Descriptive Results

Summary Stats: Unconditional Prices are 137% APR Higher Online

	Online	Storefront
Loan Amount (\$)	316	456
Repayment Amount (\$)	303	490
Loan Maturity (days)	20	19
Default rate	9%	4%
APR	434%	297%
Cost per \$100 (\$)	19.5	12.4
# of Loans	217,596	119,094
# of Unique Borrowers	49,877	17,484

Random Clarity Sample

Summary Stats: Online Borrowers **Not** Clearly Higher Risk on Observables

	Online	Storefront
Owens Home	19%	5%
Age	39.9	47.3
Months at Address	29.5	25.6
Net Monthly Income	2849	1970
# of Loans	217,596	119,094
# of Unique Borrowers	49,877	17,484

Random Clarity Sample

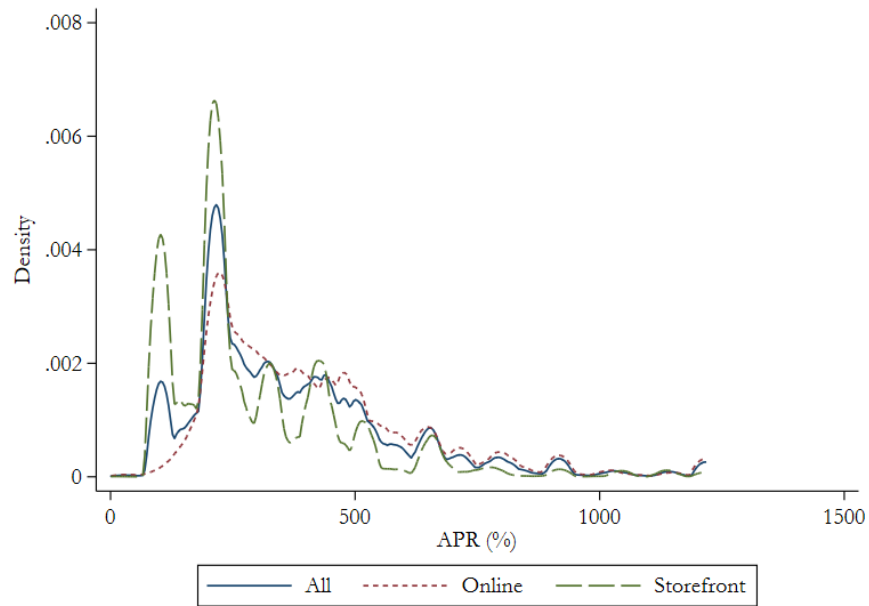
Summary Stats: Online Borrowers **Not** Clearly Higher Risk on Observables

	Online	Storefront
Vantage score	554	561
Unscoreable	21%	10%
Owns Home	24%	7%
Age	40.1	46.4
Months at Address	31.2	27.2
Net Monthly Income	2822	1920
# of Loans	132,520	56,393
# of Unique Borrowers	27,473	9,097

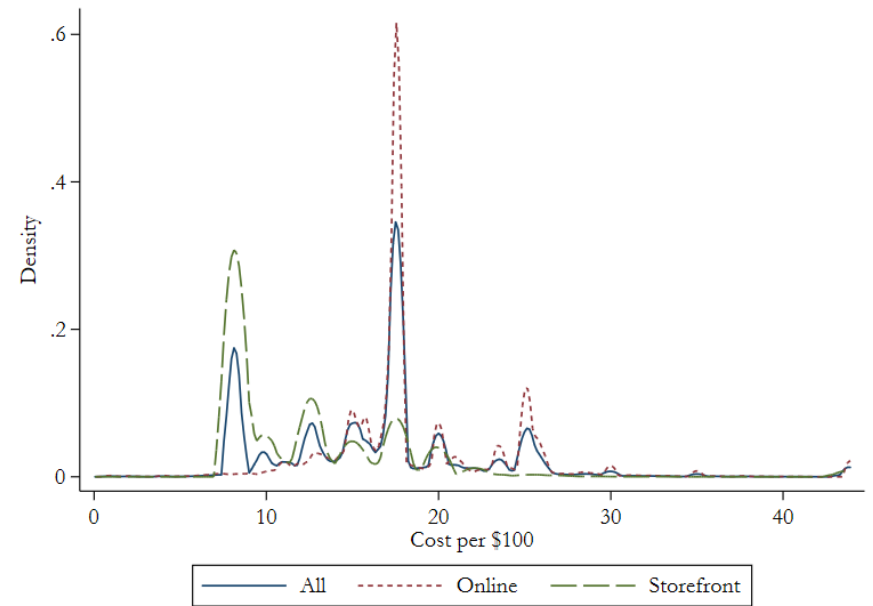
Credit Visible Sample

Discrete Pricing In Terms of Cost per \$100

APR

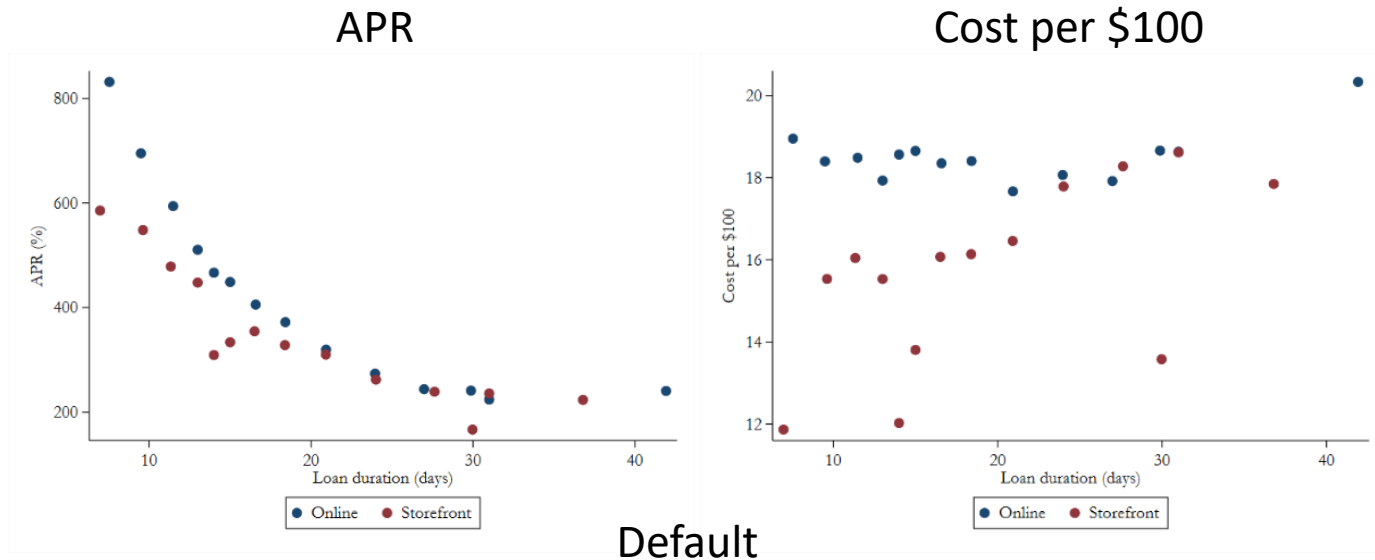


Cost per \$100

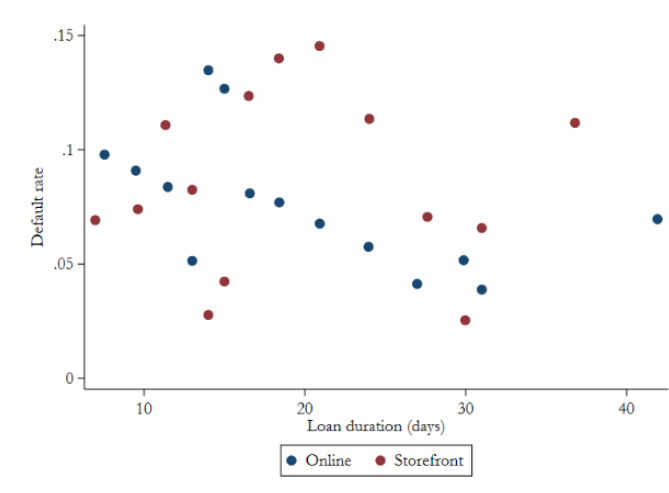


Random Clarity Sample

APRs Are Driven By Loan Duration

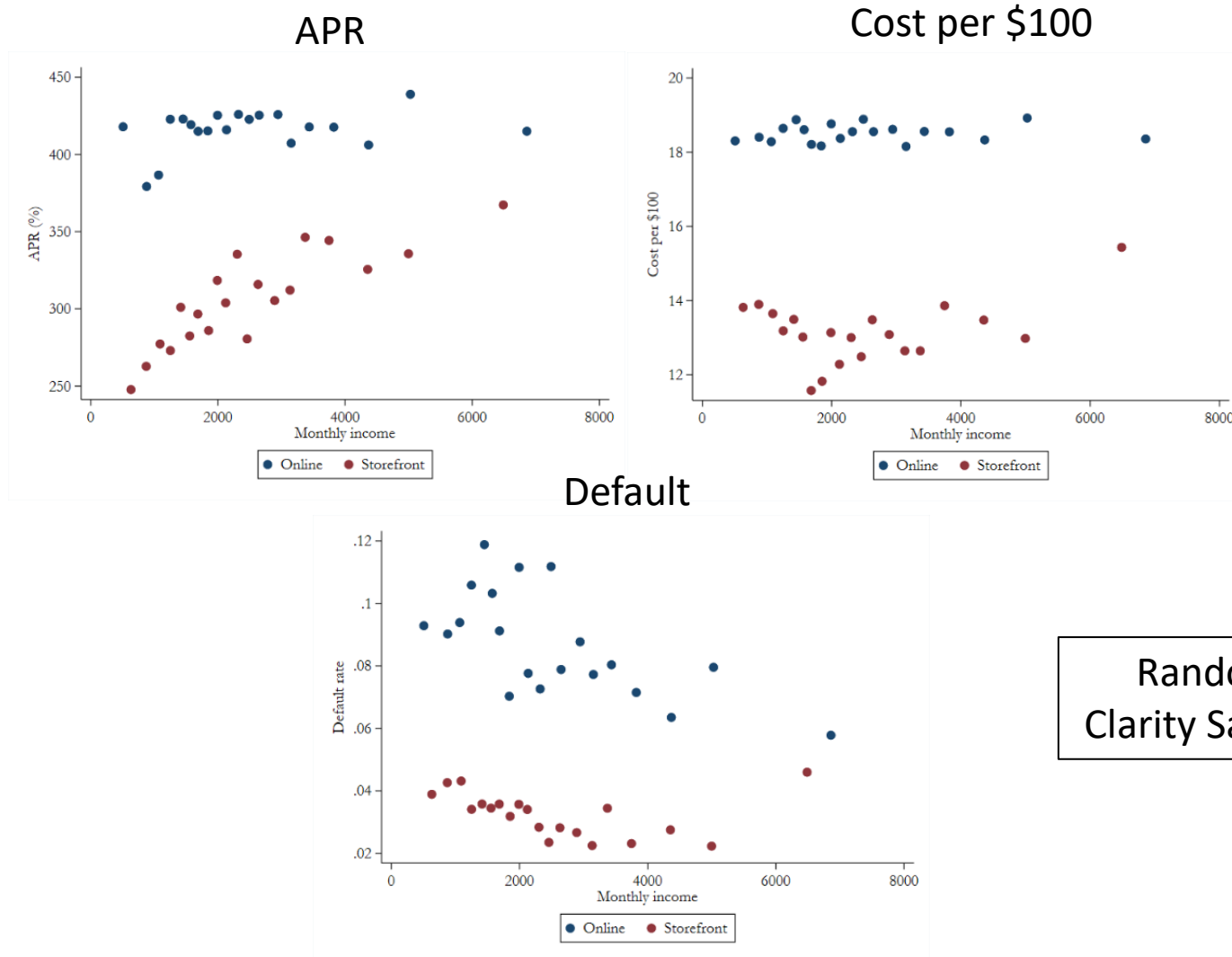


Default



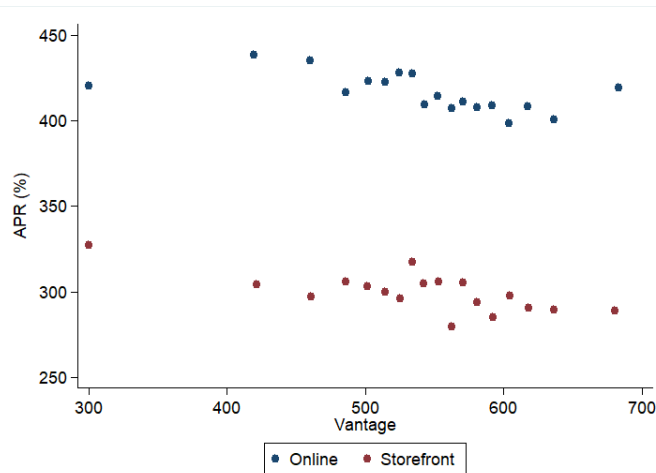
Random
Clarity Sample

Limited Risk-Based Pricing by Income

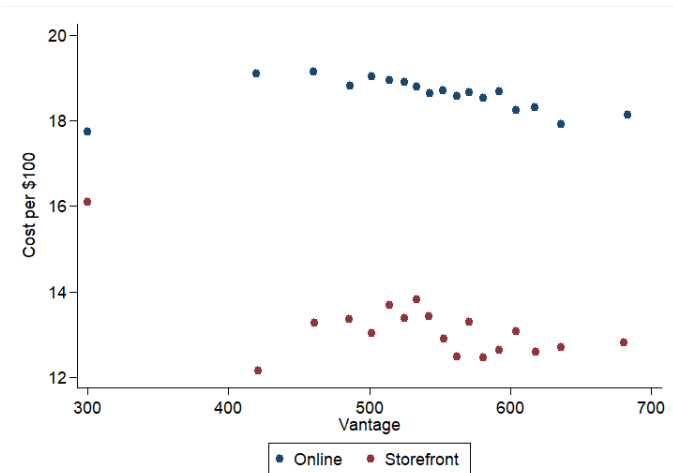


Limited Risk-Based Pricing by Vantage Score

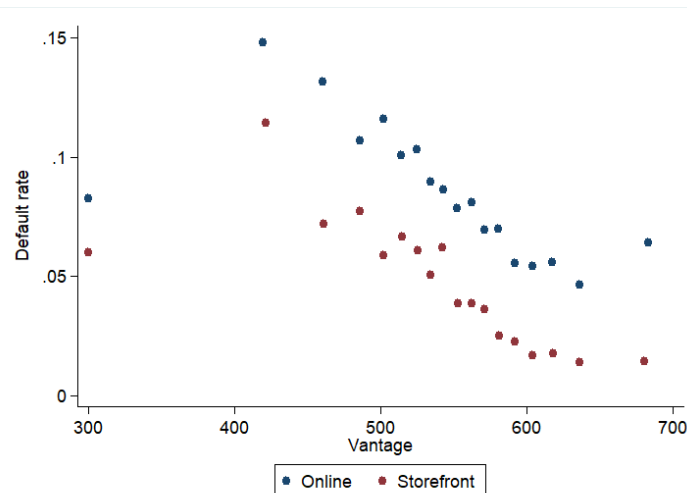
APR



Cost per \$100



Default



Credit Visible
Sample

Regression Analysis

Loan-level Regression Specification Saturating on All Observables

$$Y_{i,s,t} = \alpha_{i,s} + \alpha_t + \beta Online + X_{i,s,t} + \epsilon_{i,s,t}$$

$Y_{i,s,t}$: APR, Cost / 100, Default rate

$\alpha_{i,s}$: State, zipcode, or consumer FEs

α_t : day of week, day of month, month, year FEs

$X_{i,s,t}$: deciles of loan duration, loan size, age, and income; categorical variables for housing status and pay frequency; # of inquiries per week; deciles of vantage score in credit visible sample

Online Premium + Default Gap Not Driven By Loan or Customer Characteristics

Random Clarity Sample (2013-2017)

Outcome:	APR	Cost / 100	Default
Storefront mean:	295	12.4	0.041
Online dummy	98.4	4.35	0.030
	(36.0)	(2.20)	(0.026)
	[0.009]	[0.053]	[0.253]
State Fixed Effects	Yes	Yes	Yes
R ²	0.534	0.582	0.138
N	336,690	336,690	336,690

Online Premium + Default Gap Not Driven By Loan or Customer Characteristics

Random Clarity Sample (2013-2017)

Outcome: APR

Storefront Mean: 295			
Online dummy	98.4 (36.0) [0.009]	110.3 (41.7) [0.011]	141.2 (54.3) [0.012]
Fixed Effects	State	Zip	Customer
R ²	0.534	0.615	0.775
N	336,690	332,937	305,775

Online Premium + Default Gap Not Driven By Loan or Customer Characteristics

Random Clarity Sample (2013-2017)

Outcome: Default

	Storefront Mean: 0.041		
Online dummy	0.030 (0.026) [0.253]	0.026 (0.032) [0.422]	0.084 (0.038) [0.032]
State Fixed Effects	Yes	No	No
Zipcode Fixed Effects	No	Yes	No
Consumer Fixed Effects	No	No	Yes
R ²	0.138	0.172	0.448
N	336,690	332,937	305,775

Online Premium + Default Gap Not Driven By Loan or Customer Characteristics

Credit Visible Sample (2013-2019)

Outcome:	APR	Cost / 100	Default
Storefront mean:	300	13.3	0.044
Online dummy	93.2	3.51	0.040
	(25.6)	(1.48)	(0.019)
	[0.001]	[0.022]	[0.038]
State Fixed Effects	Yes	Yes	Yes
R ²	0.531	0.541	0.120
N	188,913	188,913	188,913

Online Premium + Default Gap Not Driven By Loan or Customer Characteristics

Credit Visible Sample **with Vantage**

Outcome:	APR	Cost / 100	Default
Storefront mean:	300	13.3	0.044
Online dummy	93.2	3.52	0.040
	(25.6)	(1.48)	(0.019)
	[0.001]	[0.022]	[0.037]
State Fixed Effects	Yes	Yes	Yes
R ²	0.532	0.541	0.124
N	188,913	188,913	188,913

Conclusion

Online Payday Loans are Much More Expensive

1. Online payday loans are more expensive by ~100% APR even conditioning on loan and customer characteristics
2. Observable measures of credit risk explain defaults but not the online default gap
3. Customers with both types of loans are much more likely to default on online loans
4. Inherent differences in default risk is likely to explain at least part of the online premium

Potential next steps

- **Effects of regulation on prices, quantities, and risk**
 - State regulations
 - Operation Chokepoint (Baugh 2016)
 - Federal regulations (CFPB rule + rescission)
- **Interactions between payday and other markets**
 - Other subprime markets covered by Clarity
 - Traditional credit (Miller and Soo 2020)
- **Deeper understanding of online payday ecosystem**
 - Lead generation
 - Online advertising
 - Search + fraud