Credit Union Expansions: Implications for Credit Access in Low-Income Areas

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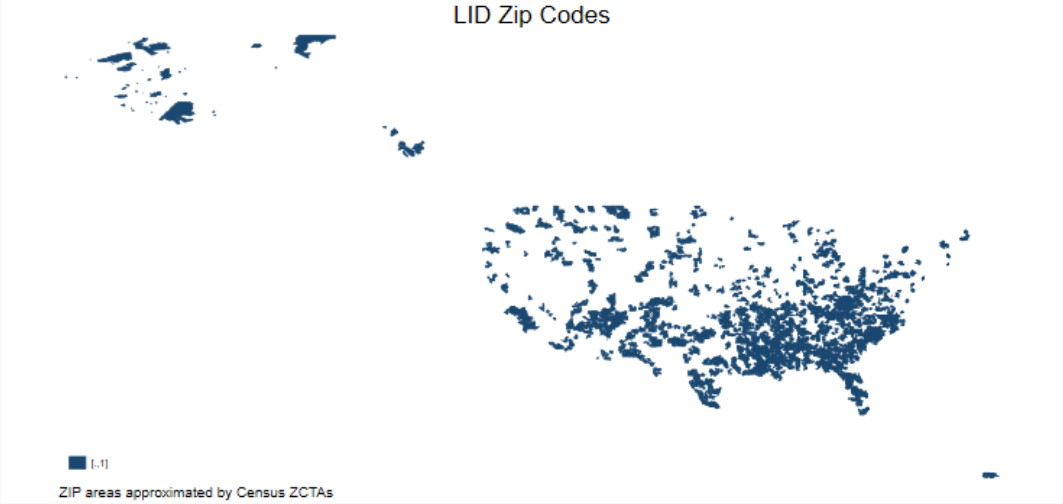
What This Paper Asks

- **Today:** Do credit unions improve borrower outcomes in low-income-designated areas?
- **Not today, but in paper:** How much of the difference in borrower outcomes can be explained by credit unions exploiting informational advantages unavailable to other lenders?
- Focus on two key tools for consumption smoothing $\rightarrow$ credit cards and small-dollar loans

Motivation

- Individuals making 80% or below median income are relatively more likely to have negative income shocks (source: PSID 1997-2015)
  - Need ways to smooth consumption $\rightarrow$ small dollar loans and credit cards
- The National Credit Union Administration (NCUA) classifies Low-Income Designated (LID) Areas as geographies where over half of the population makes 80% or below the national median household income
- LID credit unions receive reduced regulations and other benefits
  - These reduced regulations allow them to be more observably similar to banks $\rightarrow$ more feasible to compare borrower outcomes in these areas
- The intent of the LID policy is to increase access to credit for these populations. **Does it work?**

LID Zipcodes



Preview of Results

- Conditional on recent borrower history, credit unions
  - Reduce delinquency for all borrowers
  - Increase credit limit for super-prime borrowers
- Results are monotonic in credit score
  - Non-prime borrowers have largest reductions in delinquency
  - Super-prime borrowers have largest increases in credit limits

Relevant Institutional Details

- Credit union borrowers are more likely to be near a physical branch
- Banks and National Credit Companies more likely to offer balance transfers on credit cards
  - Balance transfers temporarily reduce delinquency
  - Solution: measure outcomes 21 months after origination
  - Results are robust to reducing this to 12 months

Data

Equifax Analytic Dataset

- 10% random and anonymous panel of credit reports in the United States
- Dataset covers 2005 to 2025
  - Take further random samples for computation time
- Panel is loan-month level with borrower-id and lender-type indicators

Call Report Data

- NCUA Call Reports for credit union branch locations
- FDIC Call Reports for bank branch locations

Empirical Strategy

Goal: Estimate the credit union effect on delinquency and credit limits
Problem: Selection
Solution:

- Match borrowers who open a credit union account with similar borrowers who open a non-credit union account
- Difference-in-Difference model with new credit union account as the treatment

Matching

- Borrowers are grouped based on quarterly origination date and the previous year of credit scores
- Credit scores are put into 10 point buckets and averaged over the quarter
- Matching on these score buckets allows me to control for the smoothed trajectory of a person's credit score
- **Assumption: borrowers within each group are the "same" borrower**

Full Sample vs Matched Data

	Full Sample		Matched Sample	
	mean	sd	mean	sd
Distance to nearest branch (miles)	5.13	7.99	5.35	8.15
Credit score	662.90	85.96	684.15	85.37
Estimated Income ($1000s)	37.07	15.14	38.33	15.34
Credit limit	2963.87	4053.08	3193.52	4214.89
Year	2017.09	5.35	2017.28	5.11
% Overused credit cards	34.30	46.64	41.56	48.58
Age of oldest account bucket	2.91	1.08	3.03	1.07
Current age bin	3.79	1.58	4.04	1.63
Fraction with mortgage	0.32	0.47	0.33	0.47
% with credit union lender	33.90	47.34	40.85	49.16
% with both lender	0.39	6.27	0.27	5.22
% small dollar	34.39	47.50	41.87	49.33
% credit cards	65.88	47.41	58.36	49.30
% both	0.27	5.19	0.23	4.75
Observations	1492509		463614	

Difference-in-Differences

$$Y_{it} = \beta \text{CU}_i \times \text{Post}_t + \gamma \text{CU}_i + \delta \text{Post}_t + \mathbf{X}'_{it}\theta + \alpha_{g(i)} + \varepsilon_{it}$$

- Y_{it} is either the borrower's credit limit or delinquency rate at time t
- CU_i is a dummy equal to one if the consumer originated a credit union loan or credit card account
- Post_t is a dummy equal to one if $t > 0$
- $\mathbf{X}'_{it}$ is a vector of borrower and loan level characteristics
  - estimated income, credit limit (when Y_{it} =delinquency rate), delinquency rate (when Y_{it} =credit limit), number of credit card and small dollar accounts, and loan-term fixed effects
- Match-level fixed effects, $\alpha_{g(i)}$, are absorbed
- ε_{it} are clustered at the match level

Results: All Loans

	(1) Superprime	(2) Prime	(3) Nonprime	(4) Superprime	(5) Prime	(6) Nonprime
	Delinquency rate (%)			Credit Limit ($1000s)		
Credit limit ($1000s)	-0.00310***	-0.0961***	-0.227***			
	(0.000779)	(0.00383)	(0.0137)			
Estimated income ($1000s)	-0.000620	-0.00940***	-0.176***	0.146***	0.195***	0.165***
	(0.000405)	(0.00173)	(0.00739)	(0.00268)	(0.00238)	(0.00329)
Credit union flag	-0.0141	0.250***	0.370*	0.542***	-0.0928	-0.197***
	(0.0141)	(0.0780)	(0.209)	(0.0979)	(0.0565)	(0.0397)
Post period	0.360***	2.962***	8.343***	-0.196***	1.379***	0.314***
	(0.0236)	(0.0835)	(0.180)	(0.0605)	(0.0419)	(0.0304)
Credit union flag	**-0.0957***	**-1.663***	**-4.218***	**1.063***	**-0.0148**	**-0.0203**
× Post period	**(0.0581)**	**(0.113)**	**(0.218)**	**(0.0954)**	**(0.0506)**	**(0.0338)**
Number of accounts	0.0397***	0.419***	-0.986***	6.835***	4.378***	1.840***
	(0.00890)	(0.0257)	(0.0543)	(0.0440)	(0.0350)	(0.0218)
Delinquency (%)				-0.0297***	-0.0322***	-0.00617***
				(0.00708)	(0.00111)	(0.000324)
_cons	0.0131	1.700***	24.06***	-6.752***	-7.914***	-5.033***
	(0.0256)	(0.0889)	(0.332)	(0.164)	(0.129)	(0.133)
N	1042239	1436203	1523017	1042239	1436203	1523017

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Adding Location Data: Does Distance Matter?

	(1) Superprime	(2) Prime	(3) Nonprime	(4) Superprime	(5) Prime	(6) Nonprime
	Delinquency rate (%)			Credit Limit ($1000s)		
Credit limit ($1000s)	-0.00300***	-0.101***	-0.232***			
	(0.000831)	(0.00413)	(0.0145)			
Estimated income ($1000s)	-0.000924**	-0.0101***	-0.175***	0.145***	0.193***	0.163***
	(0.000373)	(0.00190)	(0.00774)	(0.00288)	(0.00246)	(0.00344)
Credit union flag	-0.0149	0.252***	0.346	0.459***	-0.0763	-0.200***
	(0.0159)	(0.0842)	(0.219)	(0.101)	(0.0592)	(0.0404)
Post period	0.360***	2.933***	8.358***	-0.209***	1.402***	0.316***
	(0.0239)	(0.0855)	(0.186)	(0.0609)	(0.0428)	(0.0314)
Credit union flag	**-0.0965**	**-1.631*** **	**-4.186*** **	**1.106*** **	**-0.0360**	**-0.00982**
× Post period	**(0.0592)**	**(0.117)**	**(0.226)**	**(0.0955)**	**(0.0515)**	**(0.0347)**
Number of accounts	0.0406***	0.433***	-0.957***	6.789***	4.337***	1.840***
	(0.00966)	(0.0273)	(0.0570)	(0.0450)	(0.0363)	(0.0223)
Distance to nearest branch	**0.00166**	**-0.000535**	**-0.00365**	**-0.0000217**	**-0.00958*** **	**-0.00454** **
	(0.00126)	**(0.00419)**	**(0.0105)**	**(0.00404)**	**(0.00324)**	**(0.00200)**
Delinquency (%)				-0.0271***	-0.0322***	-0.00621***
				(0.00720)	(0.00114)	(0.000335)
_cons	0.0154	1.781***	24.02***	-6.667***	-7.736***	-4.961***
	(0.0274)	(0.0969)	(0.351)	(0.177)	(0.133)	(0.137)
N	958772	1323073	1406937	958772	1323073	1406937

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Summary of Results

- Credit union treatment **reduces 30+day borrower delinquency** by 0.096 pp for super-prime borrowers, 1.66 pp for prime borrowers, and 4.22 pp for non-prime borrowers
  - Average pre-period control group delinquency rates are 0.015%, 1.50%, and 9.778% respectively
- Credit union treatment **increases super-prime borrower credit limit** by $1063 and has no significant effect on prime and non-prime borrowers
  - Average pre-period control group credit limits are $11,821, $7,789, and $3,328 respectively
- Controlling for borrower distance to nearest branch does not change the results in any meaningful way
  - A 1-mile increase in distance reduces prime borrower credit limit by $9.58 and non-prime borrower credit limit by $4.54

Potential Mechanisms

- Lender side: Signals of borrower quality specific to in person banking and credit unions in general
  - Credit unions are community focused and more likely to interact in person
  - A stronger relationship with borrowers may lead to more signals of underlying borrower quality
  - The structural model focuses on this mechanism
- Borrower side: Additional utility cost of delinquency or default when you bank with a credit union
  - It may feel "worse" to default when you know your lender versus defaulting on online-only debt

Thanks!

Suggestions and feedback welcome: owilkinson@wisc.edu !

Results: just credit cards

	(1) Superprime	(2) Prime	(3) Nonprime	(4) Superprime	(5) Prime	(6) Nonprime
	Delinquency rate (%)			Credit Limit ($1000s)		
Credit limit ($1000s)	-0.00218**	-0.102***	-0.100***			
	(0.000950)	(0.00534)	(0.0251)			
Estimated income ($1000s)	-0.00105**	-0.0104***	-0.219***	0.139***	0.199***	0.222***
	(0.000420)	(0.00233)	(0.0164)	(0.00316)	(0.00356)	(0.00747)
Credit union flag	-0.0109	0.0859	-1.810***	0.491***	-0.198**	-0.276***
	(0.0102)	(0.111)	(0.454)	(0.115)	(0.0774)	(0.0927)
Post period	0.345***	2.985***	10.80***	-0.165**	1.646***	0.326***
	(0.0225)	(0.106)	(0.377)	(0.0672)	(0.0587)	(0.0798)
Credit union flag	-0.112**	-1.354***	-1.149*	1.115***	0.960***	0.667***
× Post period	(0.0513)	(0.175)	(0.596)	(0.114)	(0.0813)	(0.105)
Number of accounts	0.0393***	0.467***	-1.359***	6.719***	4.479***	1.999***
	(0.0112)	(0.0356)	(0.114)	(0.0516)	(0.0483)	(0.0431)
Delinquency (%)				-0.0211**	-0.0377***	-0.00366***
				(0.00927)	(0.00168)	(0.000894)
_cons	0.0222	1.449***	22.97***	-6.366***	-8.258***	-7.197***
	(0.0288)	(0.120)	(0.671)	(0.193)	(0.192)	(0.298)
N	736029	597066	240923	736029	597066	240923

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Results: just small dollar loans

	(1) Superprime	(2) Prime	(3) Nonprime	(4) Superprime	(5) Prime	(6) Nonprime
	Delinquency rate (%)			Credit Limit ($1000)		
Credit limit ($1000s)	-0.000528	-0.0317***	-0.122***			
	(0.0237)	(0.00759)	(0.0172)			
Estimated income ($1000s)	-0.000692	-0.00652**	-0.0353***	0.0453***	0.0370***	0.0337***
	(0.0108)	(0.00319)	(0.00337)	(0.0133)	(0.00495)	(0.00190)
Credit union flag	0.0914	-0.00206	-0.00177	-0.216	-0.304***	-0.205***
	(0.0661)	(0.0341)	(0.0375)	(0.165)	(0.0465)	(0.0178)
Post period	0.360	0.638***	2.419***	0.610***	0.462***	0.284***
	(0.246)	(0.0780)	(0.0804)	(0.176)	(0.0434)	(0.0158)
Credit union flag	-0.110	-0.0412	-0.459***	-0.0998	-0.291***	-0.133***
× Post period	(0.272)	(0.0998)	(0.0950)	(0.221)	(0.0541)	(0.0180)
Number of accounts	-0.0821	0.366***	0.206***	6.238***	2.531***	1.547***
	(0.364)	(0.123)	(0.0645)	(0.423)	(0.119)	(0.0493)
Delinquency (%)				-0.000390	-0.00806***	-0.00361***
				(0.0176)	(0.00135)	(0.000253)
_cons	0.106	-0.385*	0.419***	-6.106***	-2.137***	-1.416***
	(0.661)	(0.200)	(0.148)	(0.892)	(0.297)	(0.0968)
N	4267	63822	297477	4267	63822	297477

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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