Credit Union Expansions: A Fork in the Road for Local Banks?

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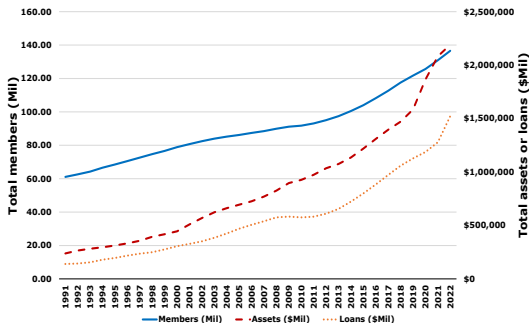
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Motivation

- Fast-growing trend of the CU system in the U.S. (1991 - 2023)

- Membership base has more than doubled (147 million as of 2023:Q4)
- Aggregate size of CU assets has grown $9x$ ($2.26 trillion as of 2023:Q4) whereas that of commercial banks has grown $7x$ (Data source: NCUA, Flow of Funds)

Motivation

- CUs are becoming more systematically important
- The largest CU - Navy FCU - has about $171 billion in assets and 13.5 million members

CREDIT UNIONS

The biggest credit union gets even larger

By Ken McCarthy   July 25, 2023, 5:05 p.m. EDT   3 Min Read

Navy Federal added 1.2 million members during the past year – more than the total membership of all but five credit unions in the U.S. *Adobe stock*

Research question

- **Our questions**
    - **How do banks react to the expansion of CUs, in particular Federal CUs?**
    - **How does FCU expansion affect the competitive landscape in consumer credit markets?**
    - **More generally: How do banks compete with <u>informed</u> entrants?**

- In our setting
    - CUs and small commercial banks focus on local markets (informed lenders)
    - Heterogeneity among commercial banks' (large vs. small) responses

Preview of findings

- Facing the expansion of FCUs, small banks and large banks responded differently
    - **Small banks** – (↑) deposit rates (↓) loan rates to defend market share, and default risk (↑)
    - **Large banks** shift away from CU competition – (↓) costly lending, do not adjust deposit rates so (time) deposits (↓), withdraw from CU-heavy markets and information-intense lending
- Consistent with an information channel
- Credit provision to low-income borrowers improved
- CU expansions accelerated geographic segmentation in consumer credit markets

Overall Patterns

- Bank-CU substitution patterns
    - x-axis: equal-sized quintile bins of counties sorted on changes in bank per million population (from 2012 to 2020)
    - y-axis: the averages of the change in FCU per million population for these quintile bins
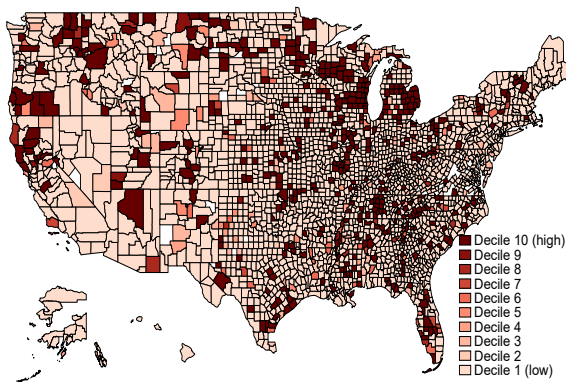
Identification challenges
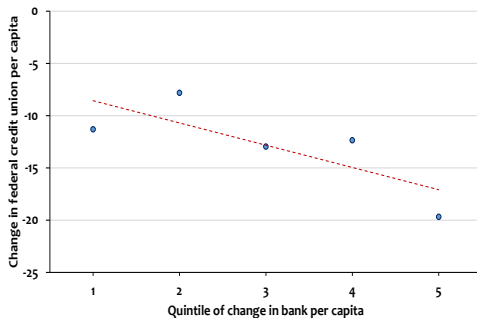
- Key challenges in identifying the causal effect of changes in competition in consumer credit market

  - Entry/exits of lenders are <u>endogenous</u>

  - Disentangling credit <u>supply and demand</u>
    - The economic conditions driving consumer defaults, and thus lender losses, can also reduce loan demand

  - Monetary policy shocks usually affect <u>all</u> lenders (banks and CUs) at once

Our solution

- FCU expansion under 2017 NCUA deregulation
  - Expanded the definition of local community: within MSA $\rightarrow$ CSA with $\leq$ 2.5 million population
  - Offer more flexibility and convenience in expanding membership in an FCU
  - and more...

Our solution

- FCU expansion under 2017 NCUA deregulation
    - Expanded the definition of local community: within MSA → CSA with ≤ 2.5 million population
    - Offer more flexibility and convenience in expanding membership in an FCU
    - and more...
- Timeline
    - **Oct 27, 2016** – NCUA Board approves comprehensive changes to FOM regulations (allowing more individuals to become CU members)
    - **Feb 6, 2017** – Became effective
    - The most significant and comprehensive change in CU regulation since 2010, allowed CUs to expand

FCU expansion

- Changes of federal credit unions' footprint, 2014 - 2019
  - The changes in the number of branches per capita by county and the county-level changes are sorted into deciles.

Decile 10 (high)
Decile 9
Decile 8
Decile 7
Decile 6
Decile 5
Decile 4
Decile 3
Decile 2
Decile 1 (low)

- Growth is widely spread across the nation, but not uniform.

Identification strategy

- Cross-sectional variation in FCU exposure in 2015Q4, *FCU fraction$_{t-5}$*
    - FCU's HMDA mortgage application share in a local lending market (county)
- Exclusion restriction: Plausibly exogenous to loan demand and other local economic characteristics changes driven by the rule change
    - FCU exposure is extremely sticky

- Continuous difference-in-differences (DID) approach

$$FCU\ fraction_{t-5} \times Post$$

- Treatment variable is measured by a <u>continuous</u> quantity rather than as an indicator
  - Estimate effects of aggregate economic shocks by exploiting regional variations (Bartik 1991, Card 1992, Blanchard, Katz, Hall, and Eichengreen 1992, Goldsmith-Pinkham, Sorkin, and Swift 2020)
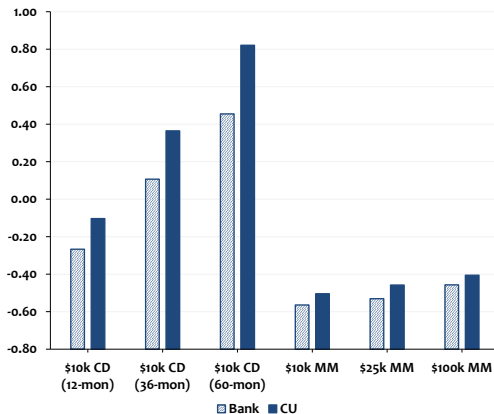
Data sources

- CU balance sheet & branch data: Credit Union Call Reports
- Bank balance sheet data: Call Reports
- Bank branch data: National Information Center (NIC)
- Bank branch deposits: FDIC Summary of Deposits (SOD) data
- Branch- and product-level deposit and loan rates: Ratewatch
- Small business lending data: SBA 7(a) loans
- Mortgage data: HMDA, Fannie, Freddie
- County characteristics: BEA, FHFA
- Baseline sample period: 2014–2019

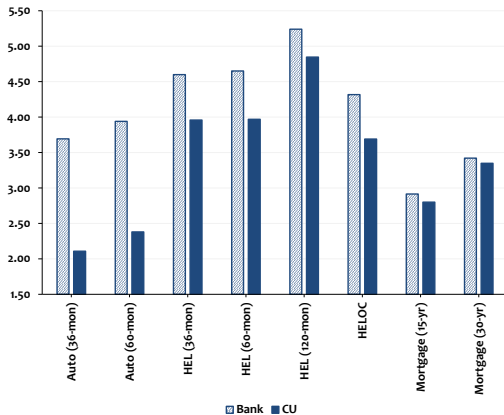# Banks' competitive responses (Large vs. Small): Balance sheets

Dep. Var.	(1) Log Assets	(2) Capital /Assets	(3) Loans /Assets	(4) Small loans ≤ $250k /Assets	(5) Small loans ≤ $1mil /Assets	(6) Savings deposits /Assets	(7) Time deposits /Assets	(8) NPL /Loans	(9) Mortgage NPL /Loans	(10) Mortgage charge-offs /Loans
Panel A. Small banks										
FCU fraction × Post	0.089*	-0.003	-0.019	-0.005***	-0.017***	0.007	-0.019*	0.007***	0.006***	0.002**
	(0.052)	(0.004)	(0.015)	(0.002)	(0.005)	(0.016)	(0.012)	(0.003)	(0.002)	(0.001)
Observations	63,114	63,066	63,114	56,946	56,946	63,102	63,102	63,101	63,063	63,063
Adj. R2	0.992	0.899	0.939	0.936	0.939	0.936	0.946	0.745	0.758	0.216
Panel B. Large banks										
FCU fraction × Post	-1.562	0.128	-0.098	-0.011*	-0.037*	0.053	-0.298	-0.086	-0.080	0.044
	(1.212)	(0.116)	(0.552)	(0.005)	(0.021)	(0.390)	(0.275)	(0.086)	(0.125)	(0.049)
Observations	508	508	508	494	494	508	508	508	508	508
Adj. R2	0.994	0.908	0.920	0.949	0.968	0.985	0.952	0.675	0.778	0.366
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year-quarter FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

- (Col 1 - 3) Small bank total assets increase, whereas the leverage structure remain stable
- (Col 8 - 10) Small banks loan origination quality deteriorated
- Not much of significant change among large banks

Banks' competitive responses (Large vs. Small): Spreads

Panel A. Deposits	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.	Deposit rate spread (=deposit rate - FF rate)					
Product	CD $10k (12-month)			CD $10k (36-month)		
Lenders	Banks			Banks		
	All	Small < $100b	Large ≥ $100b	All	Small < $100b	Large ≥ $100b
FCU fraction × Post	0.241***	0.433***	0.079*	0.160**	0.385**	-0.024
	(0.073)	(0.159)	(0.045)	(0.078)	(0.172)	(0.043)
Observations	56,190	38,584	17,562	53,935	36,361	17,530
Adj. R2	0.973	0.959	0.987	0.969	0.955	0.979
Lender × Year-quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Lender × County FE	Yes	Yes	Yes	Yes	Yes	Yes

Panel B. Loans	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.	Loan rate spread (=loan rate - FF rate)					
Product	HELOC			Mortgage (15-year)		
Lenders	Banks			Banks		
	All	Small < $100b	Large ≥ $100b	All	Small < $100b	Large ≥ $100b
FCU fraction × Post	-0.614*	-2.362**	-0.327	-0.319*	-1.345*	-0.138
	(0.361)	(0.938)	(0.391)	(0.176)	(0.784)	(0.146)
Observations	8,189	3,225	4,945	3,508	1,410	2,089
Adj. R2	0.952	0.861	0.957	0.885	0.861	0.894
Lender × Year-quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Lender × County FE	Yes	Yes	Yes	Yes	Yes	Yes

- Small banks aggressively adjust deposit and loan prices to defend market share

Banks' competitive responses (Large vs. Small): Information-based competition

- GSE mortgage origination by small and large banks after FCU expansion
- GSE-eligible loans are less information intense (Loutskina and Strahan 2009, 2011)

Dep. Var. Loan sample Region	(1) Purchase	(2) Refinance	(3) GSE indicator Purchase HQ county Yes	(4) No	(5) Refinance HQ county Yes	(6) No
Small bank × Post × High FCU%	0.010	0.009	-0.022	0.006	-0.029*	0.015**
	(0.007)	(0.008)	(0.018)	(0.006)	(0.017)	(0.007)
Large bank × Post × High FCU%	0.030***	0.019**	-0.020	0.024***	-0.045	0.021***
	(0.008)	(0.007)	(0.035)	(0.007)	(0.074)	(0.007)
Observations	10,488,412	15,205,164	1,465,911	9,022,476	1,841,383	13,363,755
Adj. R2	0.416	0.399	0.431	0.409	0.444	0.384
Loan size decile FE	Yes	Yes	Yes	Yes	Yes	Yes
Income decile FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Lender × County FE	Yes	Yes	Yes	Yes	Yes	Yes

- Large banks are more likely to issue GSE-eligible loans, shifting away from information-based lending.

Consumer welfare

- Overtime, bank-CU substitution leads to market segmentation
- Long-term effects: as CUs push out large banks and gain market power, what are the consumer credit implications?
- Credit redistribution have implications of credit provision and the cost of access to financial services (Philippon 2015)

Low-income borrowers

- Loan-level HMDA application

Dep. Var.	(3)	(4)	(7) Denied	(8)
Loan sample	Purchase	Refinance	Purchase	Refinance
FCU × Post × Income quartile 1			-0.013** (0.006)	-0.024*** (0.005)
FCU × Post × Income quartile 2			-0.004 (0.006)	-0.014*** (0.005)
FCU × Post × Income quartile 3			-0.009 (0.005)	-0.014*** (0.005)
FCU fraction × Post × Income quartile 1	-0.044** (0.017)	-0.029* (0.017)		
FCU fraction × Post × Income quartile 2	-0.010 (0.013)	-0.006 (0.012)		
FCU fraction × Post × Income quartile 3	-0.004 (0.011)	-0.002 (0.011)		
Observations	2,675,553	2,675,315	2,727,758	2,727,529
Adj. R2	0.0360	0.0704	0.0507	0.102
Borrower controls	Yes	Yes	Yes	Yes
Loan amount quintile FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
County FE	Yes	Yes	Yes	Yes
Lender FE		Yes		Yes

- Mortgage credit availability to low-income borrowers improved

Conclusion

- Facing an increase in the FCU exposure, small banks and large banks behaved differently
  - **Small banks** – (↑) deposit rates (↓) loan rates to defend market share, and default risk (↑)
  - **Large banks** shift away from CU competition – (↓) costly lending, do not adjust deposit rates so (time) deposits (↓), withdraw from CU-heavy markets and information-intense lending
- CUs fill the void left by large banks' withdrawal, and they lend more to underserved communities
- Our <u>information channel</u> is different from the bank regulation literature