Brick-and-Mortar Financial Institutions and Regional Borrowing: Do Branch Closures Leave Money on the Table?

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FDIC Insured Banks + Branches by County Type, 1987–2022
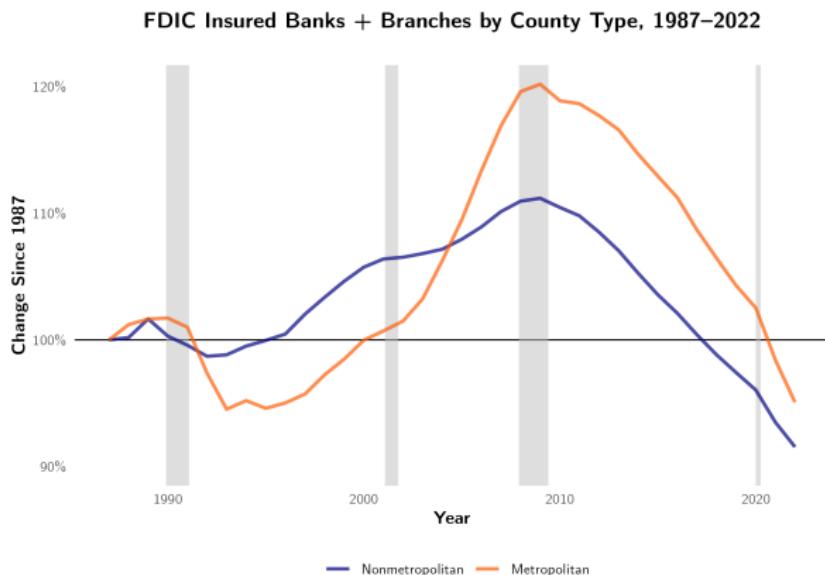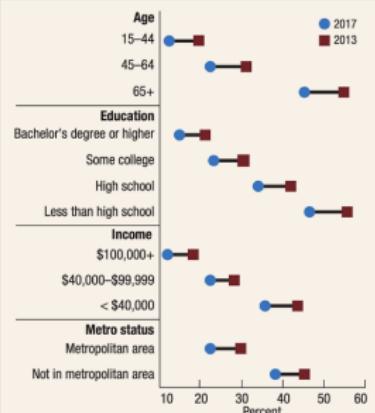
Figure 4. Branch as most frequently used method of accessing an account

Setting The Stage

"Brick-and-mortar branches provide tangible benefits to consumers, especially in low- and moderate-income neighborhoods...The idea is that a physical presence is key because the bank has to interact repeatedly with the community to develop the necessary relationships."

- Ergungor and Moulton (2011)

"...the loss of independent local banks has led to a small business credit constraint in non-metropolitan economies."

- Carpenter et al. (2020)

"The loss of relational lending, which sustained lending between local banks and local small business startups, has the potential to significantly limit future start-ups in rural America."

- Mencken and Tolbert (2016)

"While online banking is widespread, there is still a need for in-person services at a brick-and-mortar location when it comes to applying for loans and other more personalized financial services. And when it comes to face-to-face meetings with bank tellers and loan officers, session participants emphasized the importance of personal relationships."

- Minneapolis Fed rural "listening sessions" report (2018)

"Small businesses still depend on in-person banking services despite the proliferation of online alternatives, and the shrinking of branch networks threatens local economic activity that is key to wealth-building in marginalized communities."

- National Community Reinvestment Coalition report (2022)

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Multi-Stage Research Agenda

- **Exploratory**: What are the local and regional characteristics associated with a lack of access to physical lending institutions? (under review)

- **Descriptive**: What is the relationship between bank branch closure and regional borrowing activity?

  We are here!

- **Causal**: What is the impact of a bank branch closure on local entrepreneurship (i.e., new business startups and/or expansion of existing businesses)?

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This Study

- **What**: observe relationship between annual net change in branches and small business loan volume (and *where* is this relationship stronger/weaker regionally?)

- **Priors**: association between branch closures and decreased loan activity is likely quite small, but in the aggregate nontrivial; over time, the availability and popularity of digital banking options likely weakens that relationship

- **So What?**: Is money being left on the table? Prospective entrepreneurs most likely to disengage from borrowing in the absence of a physical lender are often members of marginalized groups for whom self-employment could have the highest positive impact.

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Empirical Approach

- Intense data cleaning $\rightarrow$ 25 year panel

- Two-way fixed effects, not causally identified

- Major hurdle to causality is endogeneity of closure decisions

- Model subsets: metro/nonmetro & pre-/post-2007
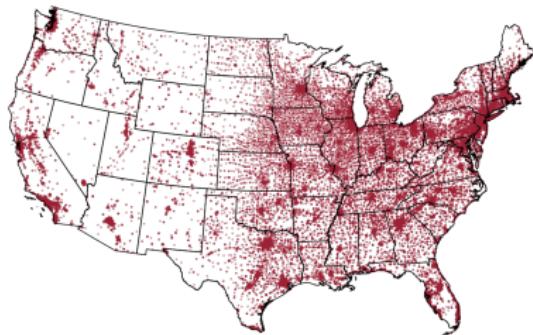
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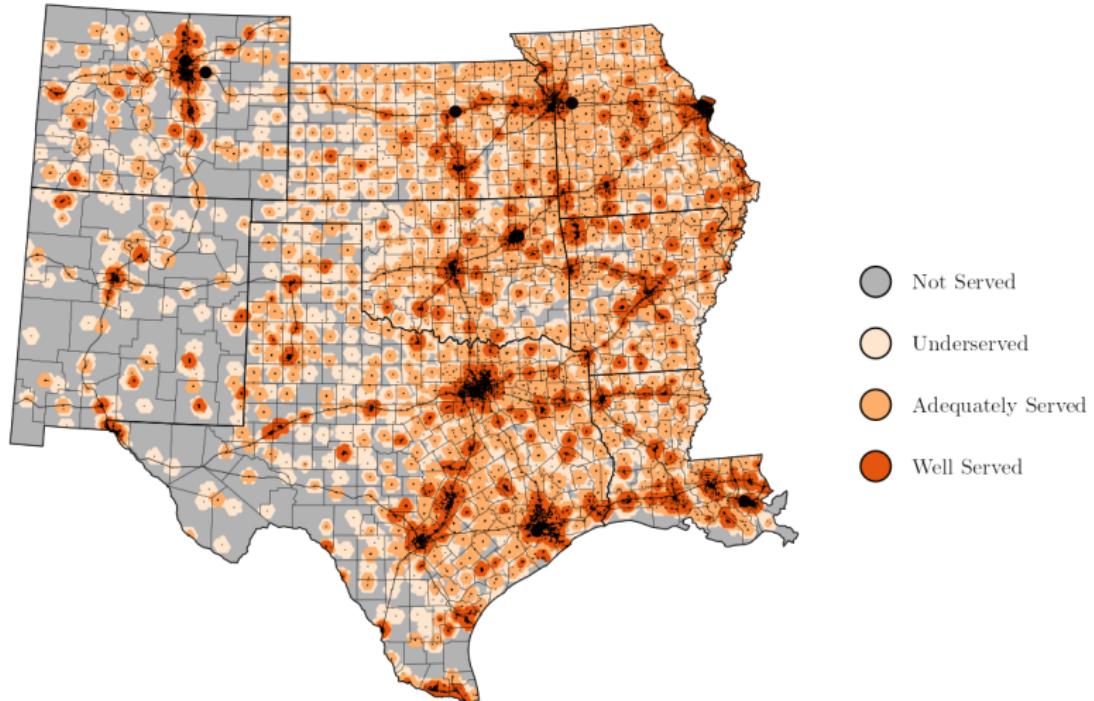
Institution Type
- 🔴 Bank
- 🔵 Credit Union
- 🟢 Farm Credit Lender
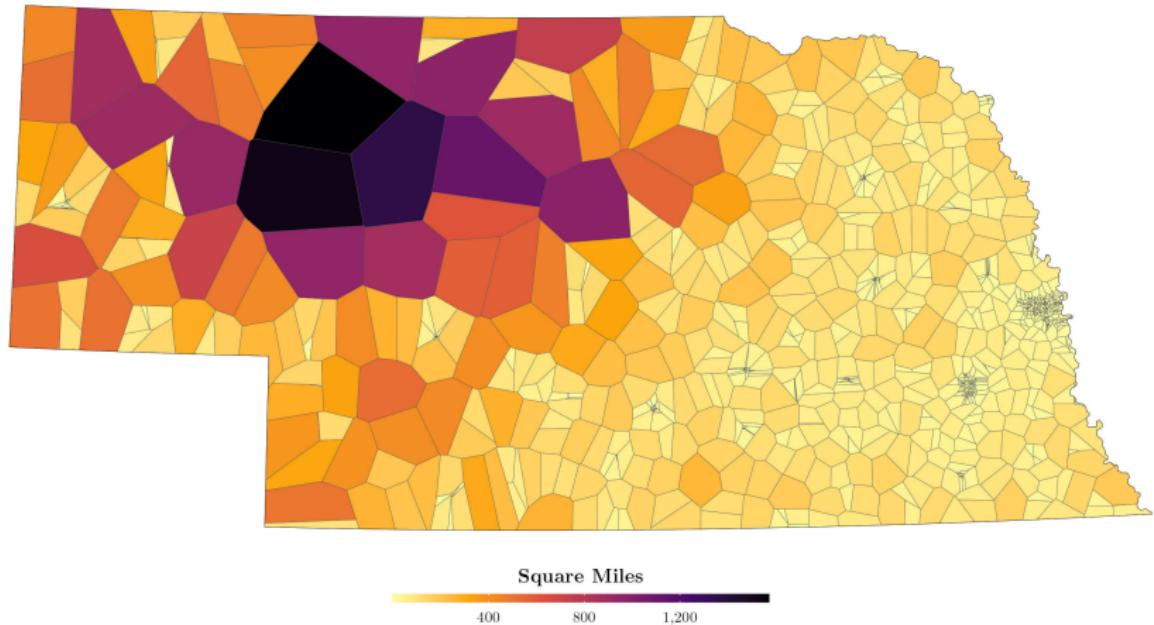
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Legend:
- Not Served
- Underserved
- Adequately Served
- Well Served

Square Miles

400   800   1,200

What Did We Learn?

- Exploratory paper shed light on spatial access to physical lenders.

- "Deserts" are a misnomer. Except for *actual* deserts (like AZ or NV), most people have access to a nearby bank.

- Rather than a desert/non-desert binary, a better way of thinking about bank access is relative level of service (spectrum that includes not served, underserved, and served)

- The *region* (or commute shed) is a more appropriate unit of analysis than the tract/neighborhood.

- **Next question to ask**: when places lose/gain service from brick-and-mortar financial institutions, does small-business borrowing change?
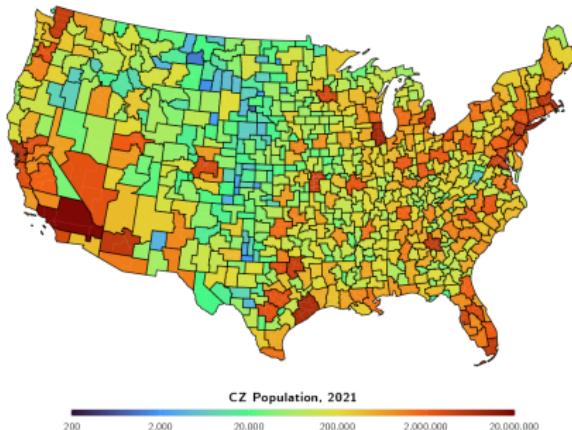
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Spatial Unit of Analysis

CZ Population, 2021

200 2,000 20,000 200,000 2,000,000 20,000,000

- Most counties are too small to capture the geographic extent to which an individual is willing to travel to access financial services (small business loans ≠ fresh food)

- **Commuting Zone**: area which shares a common market, developed by USDA Economic Research Service in the 1980s to better delineate local economies

- CZs are mutually exclusive & collectively exhaustive, comprised of existing counties (easy to aggregate county-level data)

- Unlike core-based statistical areas (e.g., MSAs), CZs encompass rural areas

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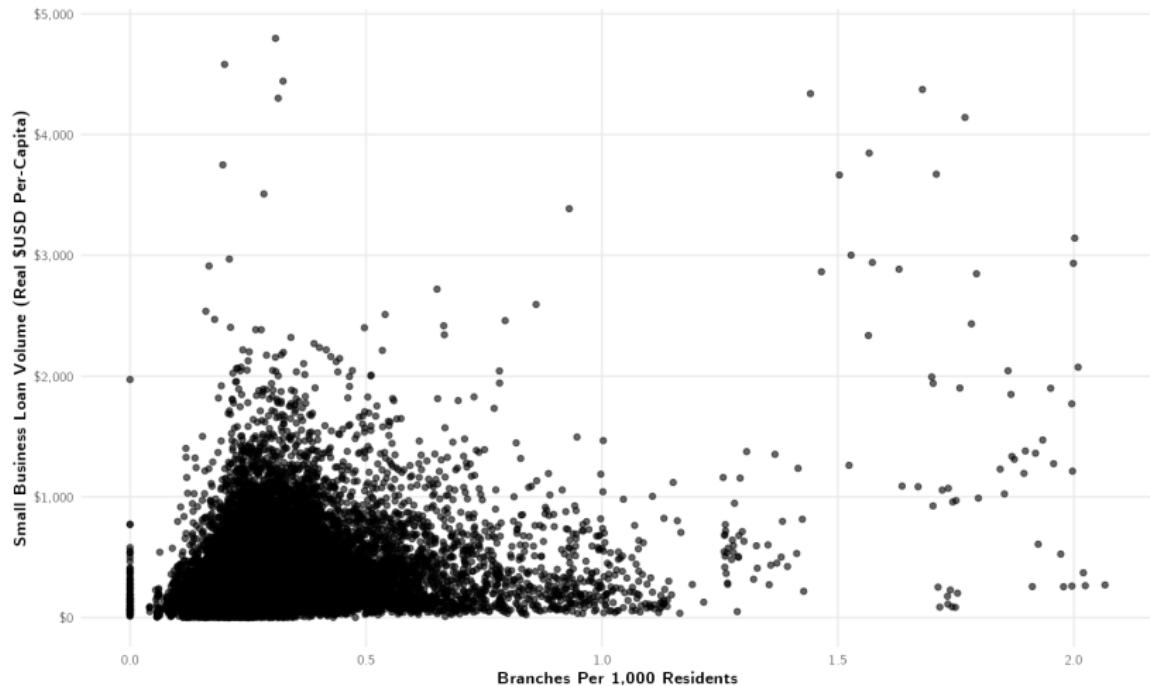
Key Data Sources

- **FDIC Summary of Deposits**: provides geographic location and a first/last year of existence (as well as a variety of other geographic and financial performance data)

- **FFIEC Community Reinvestment Act**: provides number and $ amount of small business loans by county

- **BEA County Profiles**: provides time-varying (annual) data on population, income, and employment $\rightarrow$ account for observed region-level changes during our data period.

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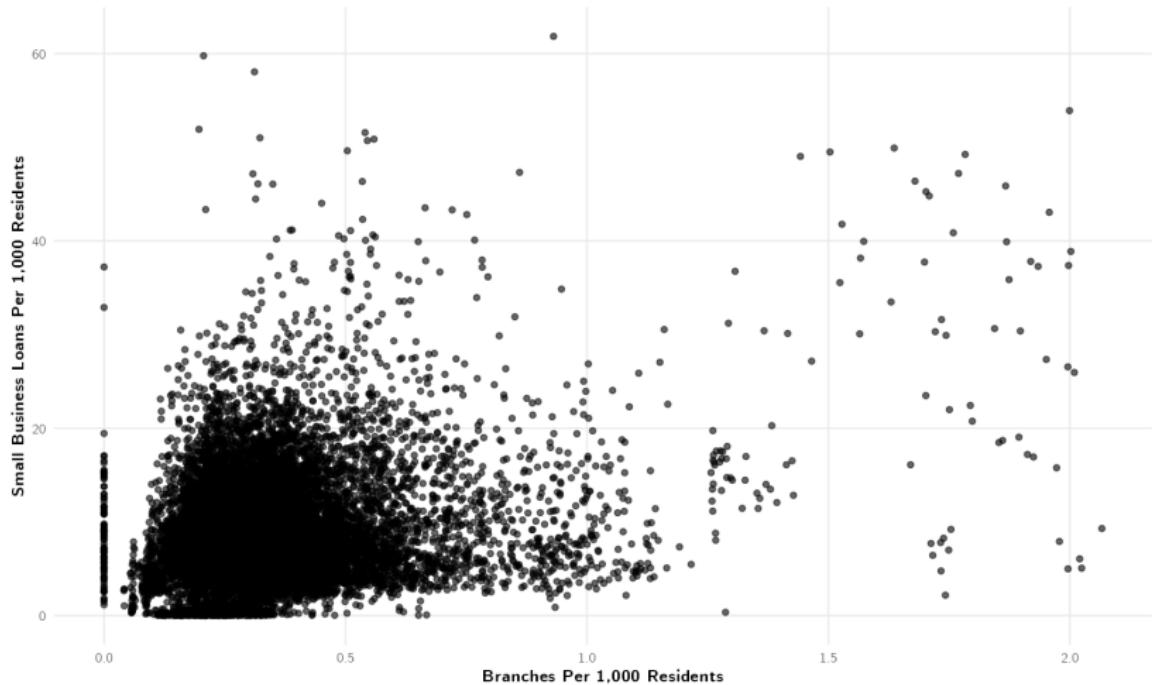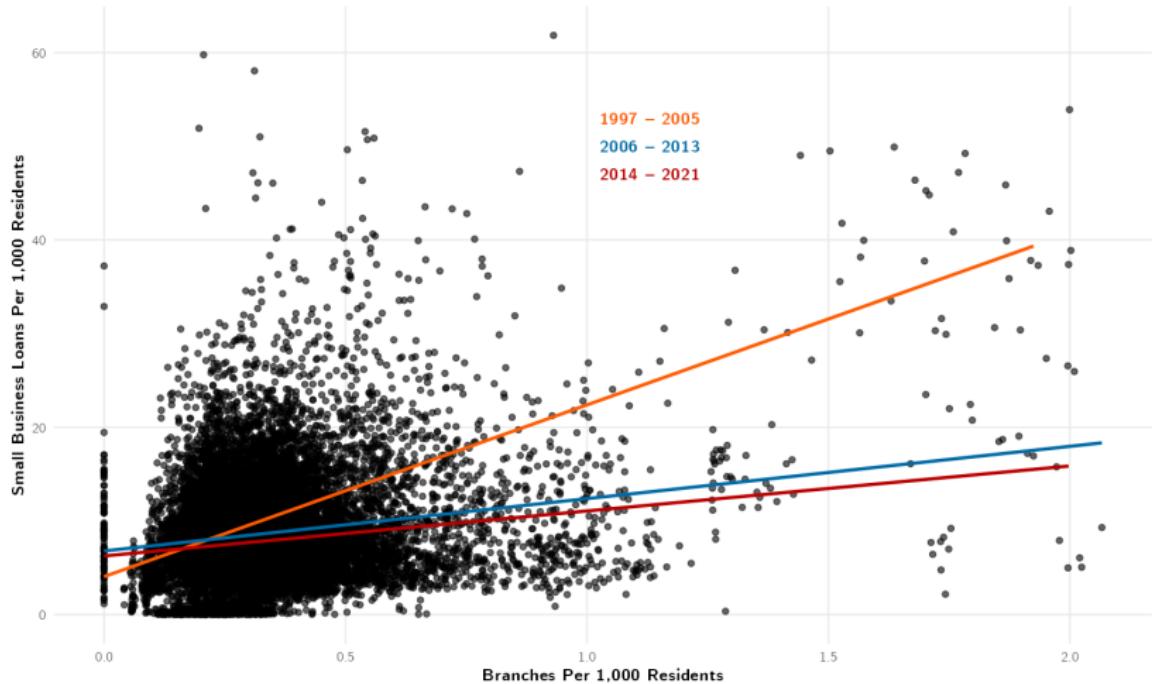
$$Y_{it} = x'_{it-1}\beta + \alpha_i + \delta_t + \epsilon_{it}$$

- Y is either the number of small-business loans per-capita OR the real value of loans per-capita, in CZ i and year t

- $x'_{it-1}\beta$ is a set of time-varying variables describing the local economy in the previous year
  - net change in branches
  - employment rate
  - per-capita income
  - share of GDP in manufacturing/goods production (not implemented yet)

- α_i is the CZ fixed effect

- δ_t is the year fixed effect

- β is a vector of parameters to be estimated

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	(1) Loan \$ Per 1,000	(2) Loans Per 1,000
Net Change in Branches Per 10K	81.22***	0.03
	(4.545)	(0.060)
Lagged Employment Rate	1299.34***	6.59**
	(211.543)	(2.784)
Lagged Per-Capita Income	1.34**	0.01
	(0.645)	(0.008)
Logged Population	-128.33***	6.17***
	(37.630)	(0.495)
Observations	16,559	16,559
R^2	0.772	0.850

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

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Results, continued

	Loan $ Per 1,000		
	(1)	(2)	(3)
	All CZs	Metro CZs	Nonmetro CZs
Net Change in Branches Per 10K	81.22***	228.71***	9.51**
	(4.545)	(9.147)	(4.512)
Lagged Employment Rate	1299.34***	1013.40***	1438.85***
	(211.543)	(384.114)	(226.604)
Lagged Per-Capita Income	1.34**	-0.51	0.99
	(0.645)	(1.458)	(0.627)
Logged Population	-128.33***	287.03***	-407.50***
	(37.630)	(66.393)	(48.632)
Observations	16,559	7,853	8,706
R^2	0.772	0.817	0.655

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

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	Loan $ Per 1,000		
	(1)	(2)	(3)
	All Years	Pre-2007	2007 Onward
Net Change in Branches Per 10K	81.22***	95.79***	37.14***
	(4.545)	(11.095)	(2.802)
Lagged Employment Rate	1299.34***	-131.71	-394.43***
	(211.543)	(537.371)	(141.099)
Lagged Per-Capita Income	1.34**	-1.17	2.17***
	(0.645)	(2.814)	(0.457)
Logged Population	-128.33***	665.73***	-127.64***
	(37.630)	(156.503)	(40.210)
Observations	16,559	6,220	10,339
R^2	0.772	0.816	0.874

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

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Discussion

- **Preliminary Takeaways**:
  - Relationship between change in brick-and-mortar branches & small business loan activity is not zero!
  - Relationship stronger in metropolitan CZs and in pre-2007 years
  - Not causal, but *something* is going on. Value of brick-and-mortar branch may be worth a few additional small businesses.

- **Challenges**:
  - Understanding effect size (what is an appropriate loan $ per-capita to expect?)
  - Metro-nonmetro heterogeneity pokes hole in idea of rural areas needing more access than metro areas (other marginalized subsets to look at?)

- **Next steps**:
  - Link FDIC bank data & CRA loan data to distinguish small business loans originating from banks with/without a branch in the CZ
  - Add in time-varying industry controls (do regional economies w/stronger goods-producing sectors foster more startups than in services-heavy regions?)
  - Robustness: explore alternate specifications/functional forms (e.g., use counties instead of CZs, look only at Δ in *local* banks, etc.)

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Thank You!

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