

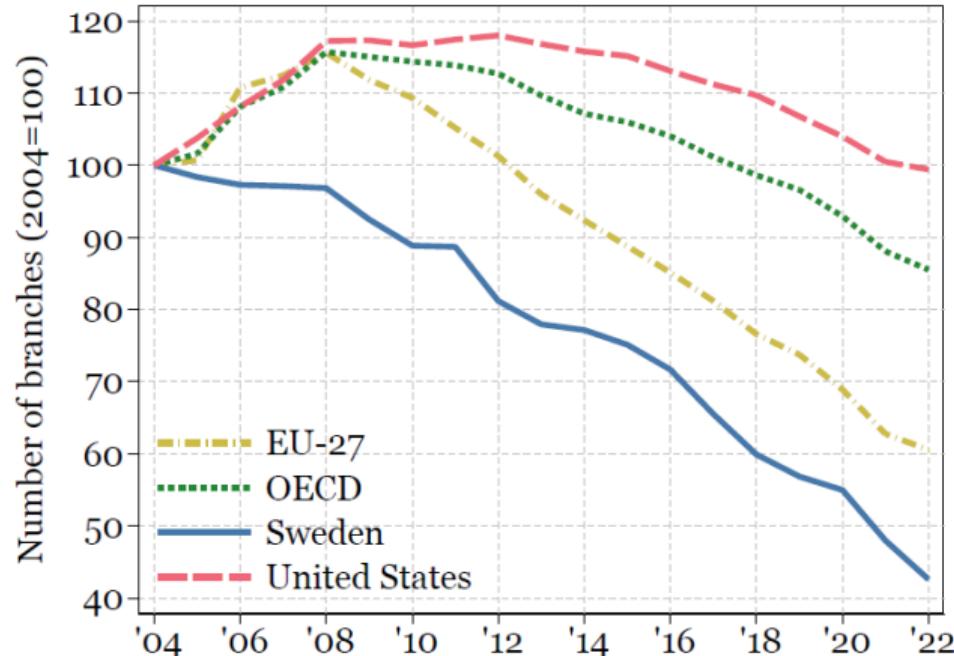
Discussion of:
The Decline of Bank Branching

Rajesh P. Narayanan, Dimuthu Ratnadiwakara, Philip E. Strahan

Shohini Kundu
UCLA Anderson
CEPR

Bank Branches Across the World (2004-2022)

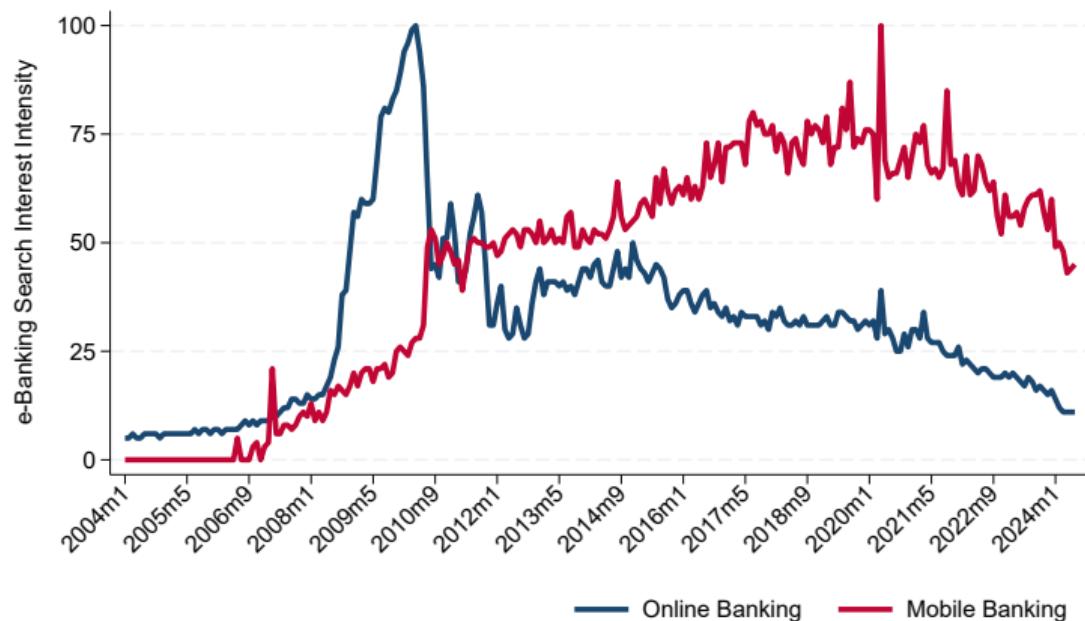
Decline in branching is a worldwide phenomenon...



Amberg and Becker (2024)

Banking Trends: Digital Transformation

1.) Google search intensity for terms like “mobile banking” and “online banking” increased from an index of 17 in 2009 to 75 in 2022



Banking Trends: Shifts in Consumer Preferences

2.) Shift in perceptions of safety regarding mobile banking

Table 7. How safe do you believe people's personal information is when they use mobile banking?

Percent, except as noted

| Response | 2013 | 2014 | 2015 |
|-----------------------|-------|-------|-------|
| Very safe | 6 | 7 | 8 |
| Somewhat safe | 32 | 34 | 35 |
| Somewhat unsafe | 25 | 25 | 24 |
| Very unsafe | 18 | 19 | 18 |
| Don't know | 17 | 15 | 15 |
| Number of respondents | 2,341 | 2,603 | 2,244 |

Federal Reserve Board Consumers and Mobile Financial Services Survey (2016)

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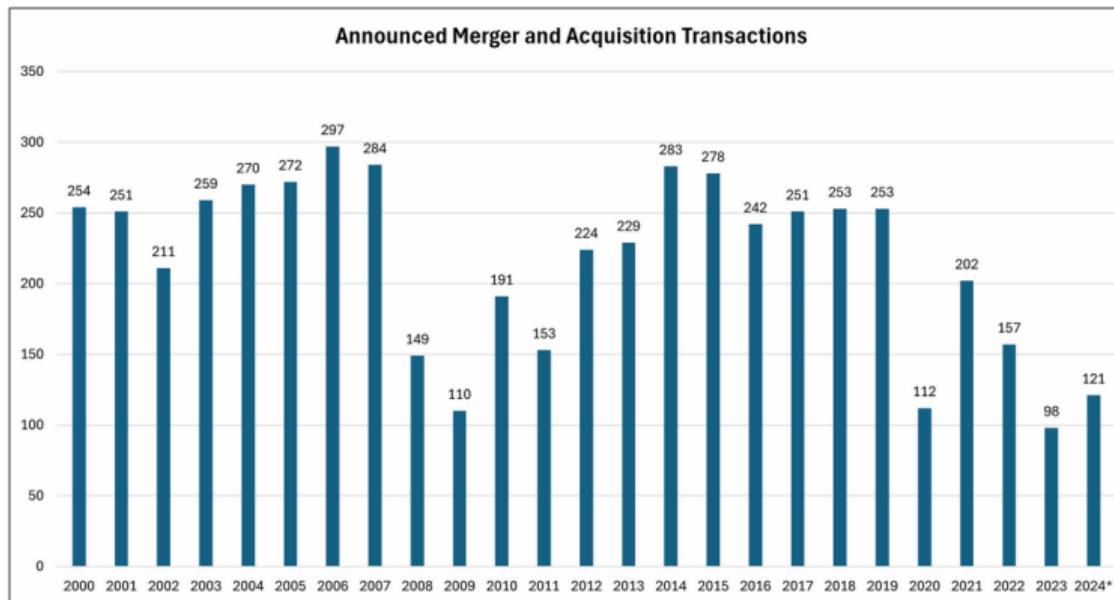
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Banking Trends: Consolidation in the Banking Industry

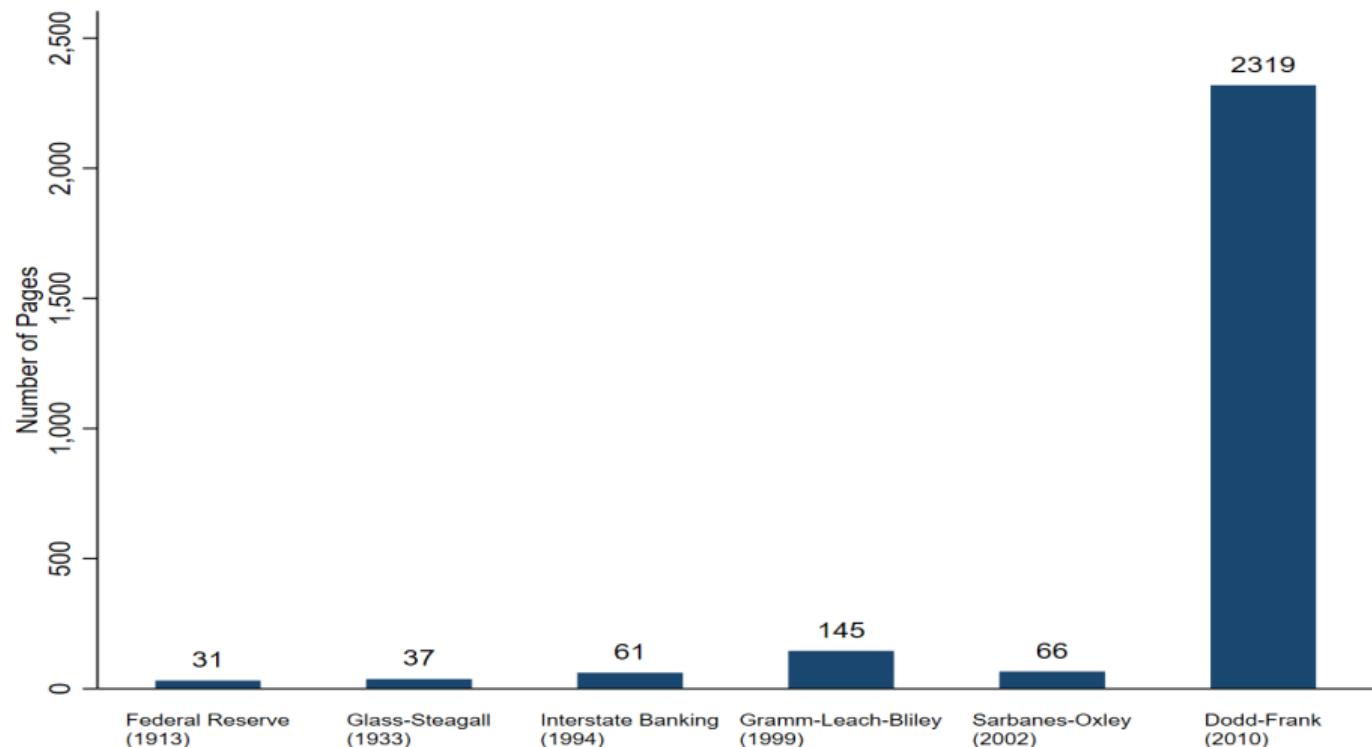
3.) # of FDIC-insured institutions declined from 10,883 in 1994, and further declined to 4,649 in 2023.



Discussant's calculations; Wilary Winn (2025)

Banking Trends: Regulatory Changes

4.) Rising compliance costs for banks post-GFC



Banking Trends: Low-Interest Rate Environment

5.) Low-interest rate environment affects deposit franchise value



Literature Linking these Phenomena

- **Digital transformation:** e.g., Haendler (2023); Jiang, Yu, & Zhang (2023); Erel et al. (2023); Koont, Santos, & Zingales (2024); Koont (2024); Kundu, Muir, & Zhang (2024)
- **Consumer preferences:**
e.g., Kahn, Pennacchi, and Sopranzetti (1999); Becker (2007); Han, Park, and Pennacchi (2015); Doerr, Kabbas, & Ongena (2023)
- **Bank competition:** e.g., Vives (2010); Corbae & Levine (2023); Drechsler, Savov, & Schnabl (2021)
- **Regulatory changes:** e.g., Demsetz and Strahan (1997); Jayaratne and Strahan (1998); Berger, Demsetz and Strahan (1999); Strahan (2003); Morgan Rime, and Strahan (2004); Rice and Strahan (2010); Buchak, Matvos, Piskorski, & Seru (2023); Kundu and Vats (2025)
- **Low interest rate environment:** e.g., Heider, Saidi, & Schepens (2019); Eggertsson, Juelsrud, Summers, & Wold (2020); Ulate (2021); Abadi, Brunnermeier, & Koby (2022); Balloch and Koby (2022); Supera (2022); Sarto and Wang (2023)

The Decline of Branch Banking

Key Findings

- Banks close branches where **deposit franchise value (DF)** is low, driven by:
 - Financially sophisticated customers (young, educated, investors)
 - Large banks respond more aggressively to deposit franchise value decline
 - Lending factors have minimal explanatory power for branch closures
 - COVID-19 pandemic accelerated closures through widespread digital adoption

Innovations:

- New branch-level DF measure and usage of cell phone data (visits/distance)

Policy Implications:

- IO of banks is now driven by technology, not deregulation (as in the 1980s)
- Tech reduces spatial frictions and erodes DF
- Branch networks likely to continue shrinking in sophisticated markets

Demographic Proxy Problem

Q. What drives bank closures?

Demographic Proxy Problem

Q. What drives bank closures?

A. Demographics drive branch closures through deposit pricing sensitivity

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- ④ Finally show these values predict branch closures

Demographic Proxy Problem: Step 1

Bank-Level Model

$$\beta_i = \gamma_1 \sum \gamma_t^k D_{i,t}^k + \eta_t HHI_{i,t} + \text{Other Controls} + \epsilon_{i,t}$$

- Authors observe bank-level deposit pricing sensitivity (β) during rate cycles
- Regress β on demographic variables of areas where banks have branches:
 - Age
 - Education
 - Income
 - Stock market participation

Demographic Proxy Problem: Step 2

Branch-Level Assignment

- Take coefficients (γ_1, γ_2 , etc.) from bank-level model
- Apply to branch-level demographics to predict branch-level β
- Calculate branch-level Deposit Franchise Value (DF) using:

$$DF = [1 - \beta - \frac{c}{r^P} \times (1 - \frac{1}{(1 + r^P)^{10}})]$$

where c is assumed to be 0, r^P is the long-term interest rate, assumed to be 2.5%

Demographic Proxy Problem: Step 3

Closure Prediction

- Regress branch closure on branch-level DF:

$$\text{Closure} = f(\text{DF}, \text{controls})$$

- Find DF strongly predicts closures

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But this creates a circular relationship!

Demographics \Rightarrow DF \Rightarrow Closures

OR

Demographics Closures

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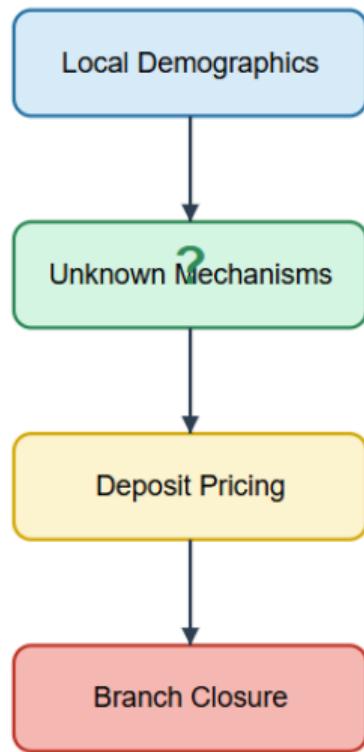
OR

Demographics \Rightarrow Other Factors \Rightarrow Closures?

But, there is no independent variation to test causality

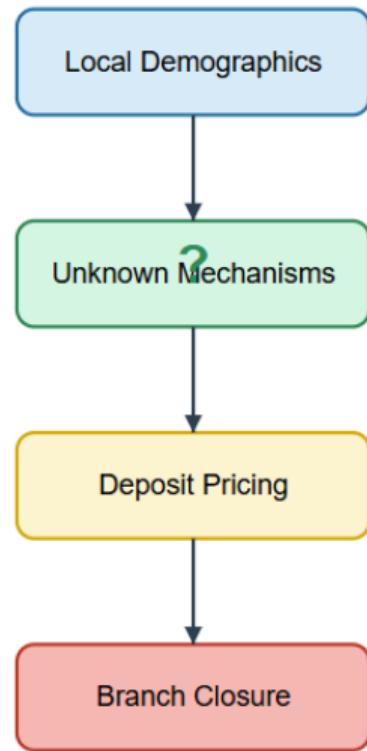
Demographic Proxy Problem: Circularity

Actual World



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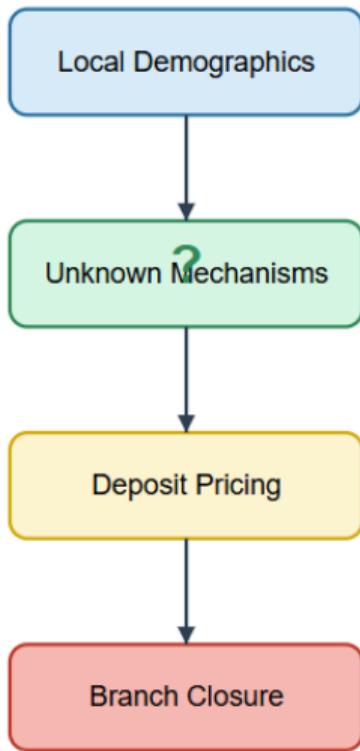


① Circular Logic

- ▶ Demographics assumed to affect pricing, then used to create pricing measure
- ▶ Cannot prove demographics work through pricing channel

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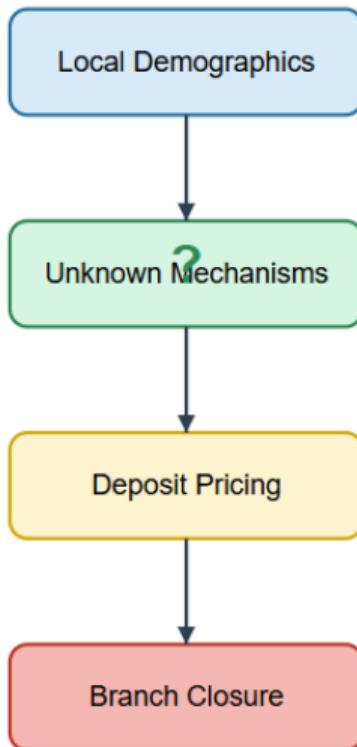
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② Mechanical Relation

- ▶ Branch-level DF is deterministically derived from demographics
- ▶ Finding correlation between DF and closure is almost guaranteed

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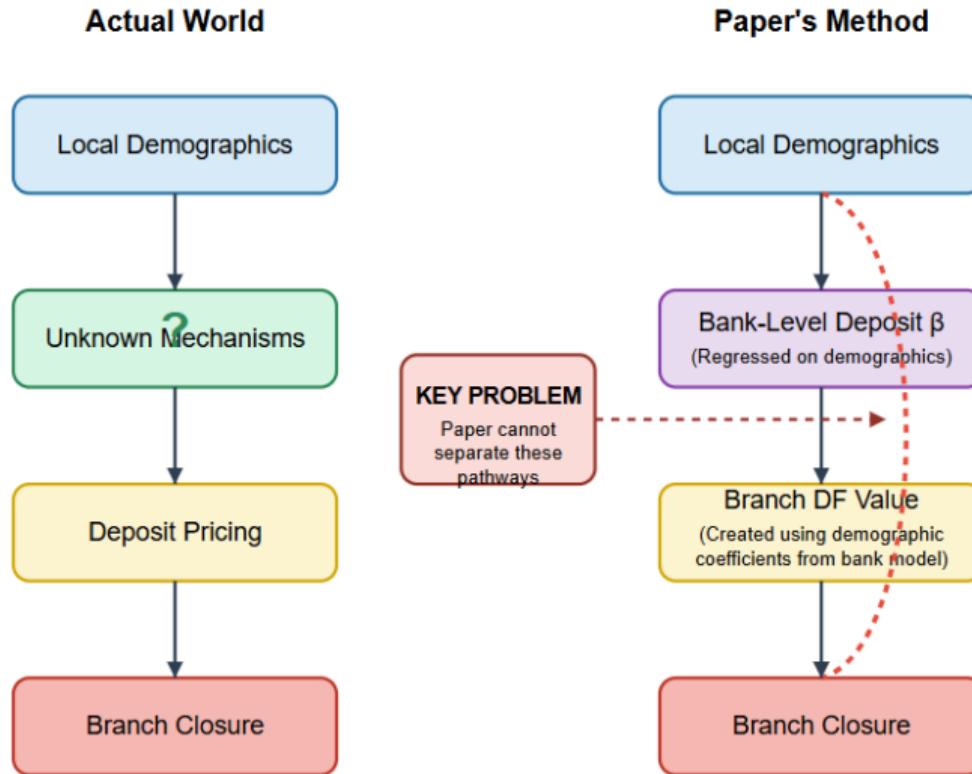
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③ Causal Pathway?

- ▶ Do demographics affect deposit pricing, which affects closures?
- ▶ Or do demographics directly affect closures through other channels? e.g., correlative unobservables, i.e., fintech/brokerage competition, local economic shocks, banking trends 1-5?
- ▶ Method cannot distinguish between these possibilities

Demographic Proxy Problem: Circularity



Savings Deposit Rates: 09/2024 – Kundu, Muir, Zhang (2024)

| Financial institution | APY | Minimum opening balance |
|-------------------------|-------|-------------------------|
| Citi Bank | 4.30% | \$0 |
| HSBC | 4.30% | \$1 |
| Marcus by Goldman Sachs | 4.25% | \$0 |
| Capital One | 4.25% | \$0 |
| Ally Bank | 4.00% | \$0 |
| TD Bank | 0.02% | \$0 |
| Chase | 0.01% | \$0 |
| U.S. Bank | 0.01% | \$25 |
| Wells Fargo | 0.01% | \$25 |
| Bank of America | 0.01% | \$100 |

- ① Large spread: 4.3%
- ② Applies more broadly than savings accounts

Emergence of Two Banks' Business Models: Kundu, Muir, and Zhang (2024)

① Growing Divergence within Banking Sector

High Rate Banks

- Fewer # of branches
- Shorter-maturity assets
- Higher lending spread and risk-taking
- Deposit beta increases

Low Rate Banks

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② Macro Implications:

- (1) Monetary policy transmission;
- (2) Banking sector's risk-maturity profile;
- (3) Regulatory design;
- (4) Potential for credit crunch

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② **Macro Implications:** (1) Monetary policy transmission; (2) Banking sector's risk-maturity profile; (3) Regulatory design; (4) Potential for credit crunch

③ **Theoretical Framework:** Emergence of e-banking services allows banks to access services without branches ⇒ impacts asset-liability management for high/low rate banks

Recommendation: Leverage Potential of Advan Data

Authors use a unique dataset that provides aggregated raw counts of visits to points of interest in the US, gathered from a panel of mobile devices.

- **Foot traffic:** Map actual customer flows vs. assumed geographic coverage
- **Cross-branch substitution:** Identify how customers reallocate visits when branches close
- **Visit duration patterns:** Analyze transaction vs. advisory visit differences by demographic groups
- **Competitive dynamics:** how visits change when competitor branches open/close nearby and quantify market share shifts

Conclusion

- Fundamental transformation currently taking place in the banking sector – important implications for the future of financial intermediation
- I really enjoyed reading the paper!!
- All the best ☺