



SMALLER BANKS, SMARTER LENDING? EVIDENCE FROM THE COMMERCIAL REAL ESTATE MARKET

Eva Steiner (Penn State), **Alexei Tchisty (Cornell)**, and Atlas Wu (Cornell)

Community Banking Research Conference

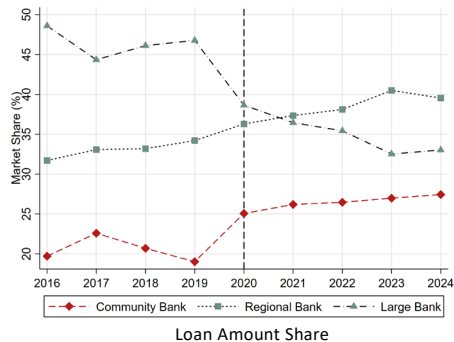
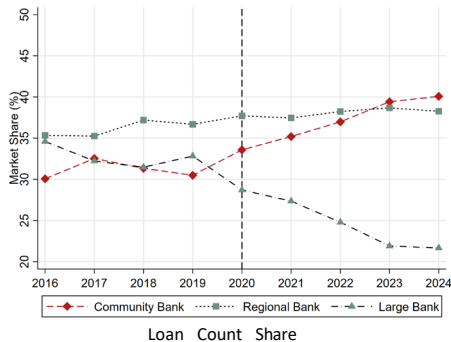
October 6–7, 2026





Background

- Community banks play a disproportionately large and growing role in CRE lending (?).
- Only** community banks witness a reversal and increasing trend in CRE lending around Covid.





Research Question

What, How, and So What?

- **What** are the lending behaviors of community banks during and after Covid?
 - Changes in lending activities
 - Changes in business model





Research Question

What, How, and So What?

- **What** are the lending behaviors of community banks during and after Covid?
 - Changes in lending activities
 - Changes in business model
- **How** do community banks gain market share during and after Covid?
 - Competition with large banks
 - Local information advantage





Research Question

What, How, and So What?

- **What** are the lending behaviors of community banks during and after Covid?
 - Changes in lending activities
 - Changes in business model
- **How** do community banks gain market share during and after Covid?
 - Competition with large banks
 - Local information advantage
- **So What** is the lending quality of community banks during and after Covid?
 - Non-performing, modified, and REO loans
 - Foreclosures
 - Operating performance of underlying properties





MAIN RESULTS

- **What:** Community banks increase CRE lending during and after Covid.
 - ▶ They increase their CRE lending, especially to hotels and retails.
 - ▶ They maintain their business model without geographical expansion.





MAIN RESULTS

- **What:** Community banks increase CRE lending during and after Covid.
 - ▶ They increase their CRE lending, especially to hotels and retails.
 - ▶ They maintain their business model without geographical expansion.
- **How:** Community banks gain market share by competing with large banks.
 - ▶ Community banks do so only when there is local knowledge advantage.





MAIN RESULTS

- **What:** Community banks increase CRE lending during and after Covid.
 - ▶ They increase their CRE lending, especially to hotels and retails.
 - ▶ They maintain their business model without geographical expansion.
- **How:** Community banks gain market share by competing with large banks.
 - ▶ Community banks do so only when there is local knowledge advantage.
- **So What:** The lending behaviors of community banks translate into superior lending quality.
 - ▶ Lower share of “bad” loans
 - ▶ Less likely to result in foreclosure
 - ▶ Stronger operating performance





INSTITUTIONAL BACKGROUND

- Community Banks (?)
 - ▶ More than just size, measured by total assets
 - ▶ loan-to-asset ratio, core deposits-to-assets ratio, and geographic presence, among others





INSTITUTIONAL BACKGROUND

- Community Banks (?)
 - ▶ More than just size, measured by total assets
 - ▶ loan-to-asset ratio, core deposits-to-assets ratio, and geographic presence, among others
- Large Banks
 - ▶ Those with at least \$100 billion in assets at anypoint during 2016–2024





INSTITUTIONAL BACKGROUND

- Community Banks (?)
 - ▶ More than just size, measured by total assets
 - ▶ loan-to-asset ratio, core deposits-to-assets ratio, and geographic presence, among others
- Large Banks
 - ▶ Those with at least \$100 billion in assets at anypoint during 2016–2024
- Regional Banks
 - ▶ In between





A MODEL OF BANKING COMPETITION

SET UP

- Agents of type θ repay loans with probability θ and default with $1 - \theta$.
- θ is distributed according to the state of the economy n : $F(\theta, n) = \theta^n \Rightarrow f(\theta, n) = n\theta^{n-1}$.
 - ▶ An increase in n results in an increase in the number of high quality (θ) borrowers.
- All agents live in an area with one **small local bank** and many **large out-of-area banks**.





A MODEL OF BANKING COMPETITION

SET UP

- Agents of type θ repay loans with probability θ and default with $1 - \theta$.
- θ is distributed according to the state of the economy n : $F(\theta, n) = \theta^n \Rightarrow f(\theta, n) = n\theta^{n-1}$.
 - ▶ An increase in n results in an increase in the number of high quality (θ) borrowers.
- All agents live in an area with one **small local bank** and many **large out-of-area banks**.
- Large banks
 - ▶ Underwrite loans based on the publicly available information θ
 - ▶ Cost of Capital = 0
 - ▶ Set interest rate $r_L(\theta)$





A MODEL OF BANKING COMPETITION

SET UP

- Agents of type θ repay loans with probability θ and default with $1 - \theta$.
- θ is distributed according to the state of the economy n : $F(\theta, n) = \theta^n \Rightarrow f(\theta, n) = n\theta^{n-1}$.
 - ▶ An increase in n results in an increase in the number of high quality (θ) borrowers.
- All agents live in an area with one **small local bank** and many **large out-of-area banks**.
- Large banks
 - ▶ Underwrite loans based on the publicly available information θ
 - ▶ Cost of Capital = 0
 - ▶ Set interest rate $r_L(\theta)$
- Small bank
 - ▶ Higher cost of capital ρ
 - ▶ Perfect screening signal, either good or bad
 - ▶ Set interest rate r_S





A MODEL OF BANKING COMPETITION

- Assuming perfect competition among large banks $\Rightarrow r_L(\theta) = 1 - \theta$





A MODEL OF BANKING COMPETITION

- Assuming perfect competition among large banks $\Rightarrow r_L(\theta) = 1 - \theta$
- Small banks serve markets in which $r_L(\theta) > r_S \Rightarrow \theta < 1 - r_S$.
 - ▶ This segment is perceived as **high-risk** by large banks.





A MODEL OF BANKING COMPETITION

- Assuming perfect competition among large banks $\Rightarrow r_L(\theta) = 1 - \theta$
- Small banks serve markets in which $r_L(\theta) > r_S \Rightarrow \theta < 1 - r_S$.
 - ▶ This segment is perceived as **high-risk** by large banks.
- In an equilibrium,
 - ▶ The large banks originate loans for all agents with $\theta \geq 1 - r^*(n)$.
 - ▶ Small bank selectively approves loans for agents with $\theta < 1 - r^*(n)$.
 - ▶ Optimal interest rate: $r^*(n) = \frac{1+(n+1)\rho}{n+2}$
 - ▶ Corresponding profit: $\pi^*(n) = \frac{n}{n+1}(r^*(n) - \rho)(1 - r^*(n))^{(n+1)}$





A MODEL OF BANKING COMPETITION

- Total number of loans originated by **large banks**: $V_L(n) = 1 - F(1 - r^*(n), n) = 1 - (1 - r^*(n))^n$.
- Total number of loans originated by **small bank**: $V_S(n) = \int_0^{1-r^*} \theta f(\theta, n) d\theta = \frac{n}{n+1} (1 - r^*(n))^{n+1}$.





A MODEL OF BANKING COMPETITION

- Total number of loans originated by **large banks**: $V_L(n) = 1 - F(1 - r^*(n), n) = 1 - (1 - r^*(n))^n$.
- Total number of loans originated by **small bank**: $V_S(n) = \int_0^{1-r^*} \theta f(\theta, n) d\theta = \frac{n}{n+1} (1 - r^*(n))^{n+1}$.
- The share of **small bank loans**: $S(n) \equiv \frac{V_S(n)}{V_S(n) + V_L(n)}$
 - ▶ A function of the state of the economy n
 - ▶ $S(n)$ strictly decreases in n





A MODEL OF BANKING COMPETITION

- Total number of loans originated by **large banks**: $V_L(n) = 1 - F(1 - r^*(n), n) = 1 - (1 - r^*(n))^n$.
- Total number of loans originated by **small bank**: $V_S(n) = \int_0^{1-r^*} \theta f(\theta, n) d\theta = \frac{n}{n+1} (1 - r^*(n))^{n+1}$.
- The share of **small bank loans**: $S(n) \equiv \frac{V_S(n)}{V_S(n) + V_L(n)}$
 - ▶ A function of the state of the economy n
 - ▶ $S(n)$ strictly decreases in n
- **The market share of the small bank loans increases as the economic environment becomes more risky.**





A MODEL OF BANKING COMPETITION

- Taking the derivative of the small bank's interest rate: $\frac{\partial r^*(n)}{\partial n} = -\frac{1-p}{(n+2)^2} < 0$.
 - ▶ In a riskier economy (n decreases), the small bank maximizes its profit by raising its interest rate.





A MODEL OF BANKING COMPETITION

- Taking the derivative of the small bank's interest rate: $\frac{\partial r^*(n)}{\partial n} = -\frac{1-\rho}{(n+2)^2} < 0$.
 - ▶ In a riskier economy (n decreases), the small bank maximizes its profit by raising its interest rate.
- Taking the derivative of the small bank's profit $\pi^*(n)$ with respect to n yields the following proposition.
- **The small bank's profitability increases as the lending environment becomes riskier.**





DATA

- **The Federal Deposit Insurance Corporation (FDIC)**
 - ▶ Bank-level information, including headquarter, branches, and community bank indicator





DATA

- **The Federal Deposit Insurance Corporation (FDIC)**
 - ▶ Bank-level information, including headquarter, branches, and community bank indicator
- **The Federal Financial Institutions Examination Council (FFIEC)**
 - ▶ Bank-level Call Reports, including bank financial information





DATA

- **The Federal Deposit Insurance Corporation (FDIC)**
 - ▶ Bank-level information, including headquarter, branches, and community bank indicator
- **The Federal Financial Institutions Examination Council (FFIEC)**
 - ▶ Bank-level Call Reports, including bank financial information
- **MSCI (Real Capital Analytics)**
 - ▶ Property-level and loan-level information





DATA

- **The Federal Deposit Insurance Corporation (FDIC)**
 - ▶ Bank-level information, including headquarter, branches, and community bank indicator
- **The Federal Financial Institutions Examination Council (FFIEC)**
 - ▶ Bank-level Call Reports, including bank financial information
- **MSCI (Real Capital Analytics)**
 - ▶ Property-level and loan-level information
- **Operating Performance Data**
 - ▶ Property-level leasing information for retail, industrial, and office from **Compstak**
 - ▶ Property-level leasing information for apartment from **Yardi Matrix**
 - ▶ Property-level operating performance information for hotel from **CBRE TREND**





RESULTS

WHAT

- Community banks significantly increase their CRE lending during and after Covid.

$$Comm. Bank_{i,p,t} = \alpha Covid_t + \sum_{m \in M} \delta_m Z^{m \in M} + \epsilon_{i,p,t}$$

	Comm. Bank	Comm. Bank	Comm. Bank	Comm. Bank
<i>Covid</i>	0.054*** (0.013)	0.039*** (0.012)	0.020** (0.009)	0.033** (0.015)
Property Controls	Yes	Yes	Yes	Yes
Loan Controls	Yes	Yes	Yes	Yes
Investor Controls	Yes	Yes	Yes	Yes
Bank Controls	Yes	Yes	Yes	Yes
Local Economic Controls	No	No	No	Yes
County FE	No	Yes	No	No
Property FE	No	No	Yes	Yes
S.E. clustered by	Bank	Bank	Bank	Bank
Mean Dep. Var.	0.328	0.328	0.324	0.321
R-squared	0.15	0.22	0.74	0.74
Observations	152,577	152,294	50,140	49,498

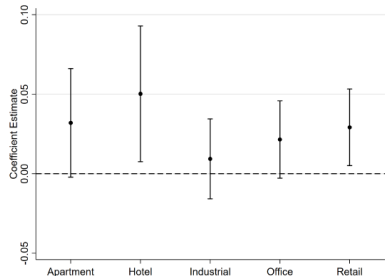




RESULTS

WHAT

- Community banks tend to finance more **hotel and retail properties** during and after Covid.
 - ▶ Hotels and retails suffered the most during the pandemic, which is an indication of risk.
 - ▶ Financing these types of properties requires superior local knowledge.



Coefficients of Interaction Terms between Property Types and Covid





RESULTS

WHAT

- Community banks **do not expand geographically** as they increase CRE lending.

$$Outcomes_{b,i,p,t} = \alpha_b + \beta_t + \gamma Comm. Bank_b \times Covid_t + \sum_{c \in C} \delta_c Z^{c \in C} + \epsilon_{b,i,p,t}$$

	Headquarter		Nearest Branch	
	Distance	Same MSA	Distance	Same MSA
<i>Comm. Bank # Covid</i>	0.046 (0.036)	-0.010 (0.007)	0.000 (0.053)	-0.008 (0.009)
Controls	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes
S.E. clustered by	Bank	Bank	Bank	Bank
Mean Dep. Var.	5.195	0.247	2.239	0.694
R-squared	0.54	0.49	0.54	0.42
Observations	149,531	149,531	149,211	149,211





RESULTS

How

- Community banks gain market share from large banks **only when financing new properties.**

$$Comm. Bank_{i,p,t} = \alpha Covid_t + \beta Prev. Large Bank_p + \gamma Covid_t \times Prev. Large Bank_p + \sum_{c \in C} \delta_c Z^{c \in C} + \epsilon_{i,p,t}$$

	Comm. Bank	Comm. Bank	Comm. Bank
<i>Covid</i>	0.080*** (0.019)	0.082*** (0.023)	0.078*** (0.020)
<i>Prev. Large Bank</i>	-0.246*** (0.058)	-0.113*** (0.030)	-0.303*** (0.070)
<i>Covid # Prev. Large Bank</i>	-0.034*** (0.012)	0.042* (0.024)	-0.043*** (0.014)
Controls	Yes	Yes	Yes
Sample	All	Sale	Refinance
MSA Location	All	All	All
Mean Dep. Var.	0.501	0.585	0.476
R-squared	0.63	0.60	0.65
Observations	27,600	6,406	21,194





RESULTS

How

- Community banks gain market shares only when bank HQ is in the **same MSA** as property.

$$Comm. Bank_{i,p,t} = \alpha Covid_t + \beta Prev. Large Bank_p + \gamma Covid_t \times Prev. Large Bank_p + \sum_{c \in C} \delta_c Z^{c \in C} + \epsilon_{i,p,t}$$

	Comm. Bank	Comm. Bank
<i>Covid</i>	0.028 (0.018)	0.094*** (0.027)
<i>Prev. Large Bank</i>	-0.160*** (0.060)	-0.095*** (0.030)
<i>Covid # Prev. Large Bank</i>	0.099** (0.045)	0.016 (0.025)
Controls	Yes	Yes
Sample	Sale	Sale
MSA Location	Same	Diff.

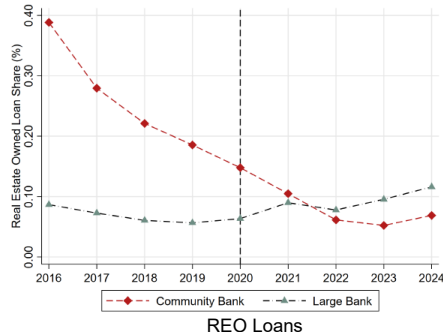
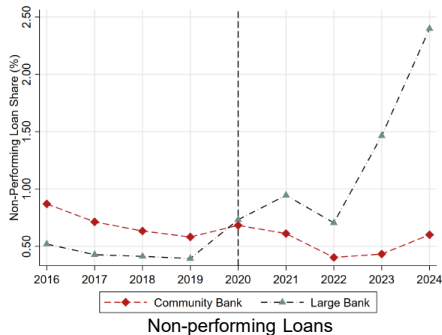




RESULTS

So WHAT

- Community banks show lower share of “bad” loans during and after Covid.





RESULTS

So WHAT

- Community banks finance **apartment** properties with stable operating performance.

	Occ.	Rent	Occ. Growth	Rent Growth
<i>Comm. Bank # Covid</i>	-0.005 (0.006)	-0.046 (0.072)	-0.003 (0.002)	0.002 (0.004)
Controls	Yes	Yes	Yes	Yes
Bank FE	Yes	Yes	Yes	Yes
Year-Quarter FE	Yes	Yes	Yes	Yes
S.E. clustered by	Bank	Bank	Bank	Bank
Mean Dep. Var.	0.950	2.192	0.001	0.045
R-squared	0.23	0.29	0.12	0.21
Observations	5,354	4,686	5,343	4,639





RESULTS

So WHAT

- Community banks finance **hotel** properties with better operating performance.

	Occ.	ADR	RevPAR	GOP Margin
<i>Covid</i>	-0.048 (0.038)	28.733* (15.760)	8.346 (11.315)	0.009 (0.020)
<i>Comm. Bank</i>	-0.024 (0.043)	26.490 (38.262)	24.366 (23.451)	-0.013 (0.046)
<i>Comm. Bank # Covid</i>	0.107** (0.051)	-31.946 (27.184)	-9.627 (18.311)	-0.000 (0.037)
Controls	Yes	Yes	Yes	Yes
Bank FE	No	No	No	No
Year-Quarter FE	No	No	No	No
S.E. clustered by	Bank	Bank	Bank	Bank
Mean Dep. Var.	0.657	186.843	123.345	0.357
R-squared	0.50	0.78	0.80	0.51
Observations	90	90	90	90





CONCLUSION

- ❶ Community banks increase their CRE lending activity during and after Covid without aggressive geographic expansion.
- ❷ Community banks compete with large banks only when they have **local knowledge advantage**.
 - ▶ The effect is not primarily driven by the wholesale withdrawal of large banks in CRE lending.
- ❸ Community banks lend to quality properties during and after Covid.
 - ▶ Properties are less likely to be in foreclosure.
 - ▶ Properties have better operating performance.
- ❹ Overall, our research highlights the **competitive advantage of community banks** in CRE lending, especially amid uncertain time.
 - ▶ Our results underscore the importance of community banks in supporting creditworthy borrowers during crises.





Thank You!!

Thank You!!

