

# Local lending specialization and monetary policy

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# Main results

- **Findings:**

1. When Fed funds rate ↓, banks increase mortgage lending growth by more in markets where they are more specialized (where they lent more in the past)
2. After decrease in Fed funds rate:
  - a) Markets with more exposure to specialized banks experience higher increase in aggregate mortgage supply and house price growth
  - b) Banks increase their average specialization growth

## Theory – Summary 1/2

- **Theoretical model based on heterogeneous market-specific lending costs**
- **Assumptions:**
  - Each borrower needs  $L$  units to invest in asset that generates  $Y$  units
  - Monopolistic bank's funding cost  $R_0$  (monetary policy rate)
  - When lending to borrower  $i$  with characteristic  $x_i$ , bank incurs cost  $x_i^{\beta_j}$
  - $\beta_j$  measures marginal lending cost in market  $j$  (lower with more information)

$$\textbf{Threshold: } Y - LR_0 - x_i^{\beta_j} = 0 \quad \rightarrow \quad \hat{x} = (Y - LR_0)^{\frac{1}{\beta_j}}$$

➤ Bank's loan supply in market  $j$ :  $L\hat{x}_j$

## Theory – Summary 2/2

### Main theory result:

**When:**  $\beta_A < \beta_B$  **it holds that**  $\frac{\frac{dL\hat{x}_A}{dR_0}}{L\hat{x}_A} < \frac{\frac{dL\hat{x}_B}{dR_0}}{L\hat{x}_B} < 0$

- Bank increases lending relatively more in market in which it has larger presence in response to decrease in safe rates

# Theory – Comments: Alternative mechanism / Risk-shifting 1/4

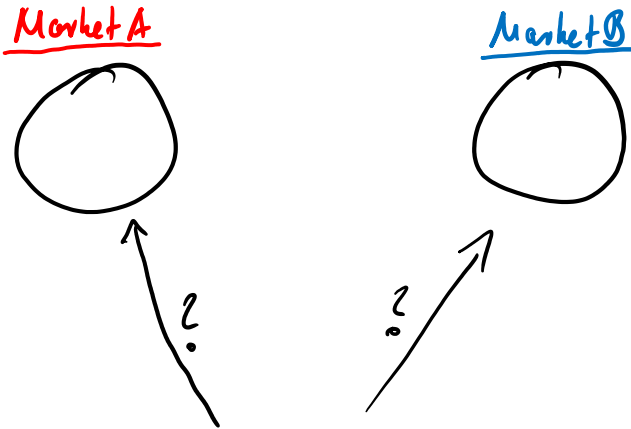
- **Alternative mechanism also consistent with empirical results:**

- **Risk-shifting**

- **How?:**

- Lower interest rates → lower net interest margin (NIM) – e.g., Busch & Memmel (2017) and Claessens et al. (2018)
  - Bank's franchise value of unit of deposits (Drechsler et al., 2017):  
*“expected time to deposit withdrawal” x “average NIM”*
  - Lower NIM → lower franchise value
  - Lower franchise value → higher risk-taking – e.g., Keeley (1990) and Hellmann, Murdock & Stiglitz (2000)

# Theory – Comments: Alternative mechanism / Risk-shifting 2/4



- **High franchise value:**
  - Invest in Market B to reduce default risk through diversification

- **Low franchise value:**
  - Invest in Market A to max. value derived from government guarantee

Assets	Liabilities
80 €	90 €
Market A	Debt
20 €	10 €
Market B	Equity

## Theory – Comments: Alternative mechanism / Risk-shifting 3/4

- Authors use physical distance between loan markets and bank's headquarter as proxy for informational distance (i.e., higher marginal lending costs)
- **However:** Lower physical distance to headquarter likely correlated with bank's pre-existing exposure
  - Difficult to tell apart both mechanisms
- **Idea:** Focus on mortgages that are originated to sell (rules out risk-shifting)
- **Could be informative:** Compare changes in composition of mortgages originated to sell versus mortgages originated to hold after rate change

## Theory – Comments: Alternative mechanism / Risk-shifting 4/4

- Important to understand driver of bank behavior in response to rate change for policy implications (maybe extend in this direction):
  - Driven by risk-taking: BAD
  - Driven by lower marginal lending costs: (somewhat) GOOD



## Theory – Comments: “Alternative” mechanism / Fixed costs 1/2

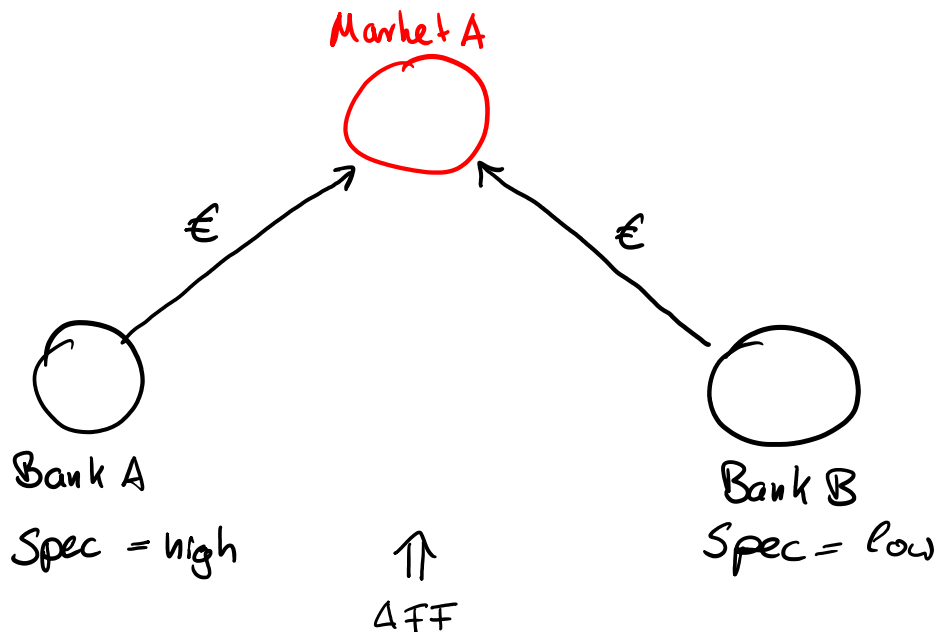
- **Really information advantage between counties?**
  - Standard retail mortgages: how much soft information is involved (fintechs on rise)?
  - Does ability to gather info depend on whether mortgage applicant is from county A or B?
- **Differences in fixed vs variable cost structure can also lead to lending cost heterogeneity!**
- **Consider 2 banks in same market:**
  - Bank A: 100 branches; 1000 loan officers; 1000 other staff
  - Bank B: 10 branches; 100 loan officers; 100 other staff
- When interest rates are higher and demand low, larger branch network might be underutilized → **free “capacity”**

## Theory – Comments: “Alternative” mechanism / Fixed costs 2/2

- When interest rates ↓ → mortgage demand ↑
- Likely huge economics of scale of having large branch network / → cost discontinuities when scaling up mortgage lending without large branch network
- Bank A can easily scale up (only marginal lending costs), while Bank B would need to open new branches, hire more staff, etc. (high setup costs)
- **Suggestions:**
  - Employ data on banks’ branches by county (could still be information advantage, not cost structure)
  - Use information on fintechs; online lenders without physical presence; cost structure should not differ across counties, nor should soft information depend on county

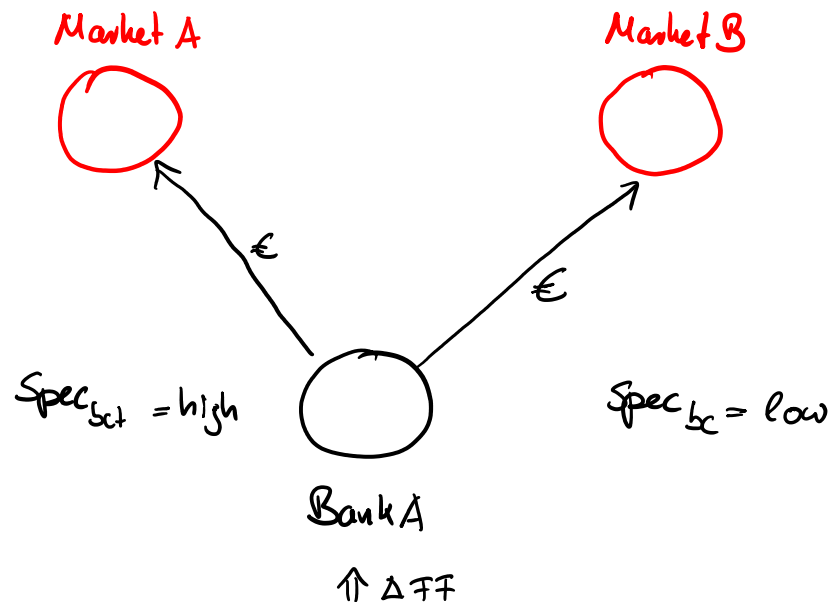
# Empirics – Identification strategy 1/2

- **Data: Mortgage data from FFIEC HMDA database**
- **Main identification strategy:**
  1. Comparing new mortgage lending growth originated by different banks facing different levels of local specialization in same market and year



## Empirics – Identification strategy 2/2

- **Data: Mortgage data from FFIEC HMDA database**
- **Main identification strategy:**
  2. Comparing new mortgage lending growth originated by same bank in different markets where it faces different levels of local specialization



# Empirics – Comments: “Forbidden comparisons”

**Chaisemartin & D'Haultfoeuille (2022) (and others):** When treatment effects are heterogeneous, and

1. when units are treated at different points in times and/or
2. when treatment is continuous

...coefficients may not represent weighted average of unit-level treatment effects

- **Problem comes from “forbidden” comparisons:**
  1. between units who are both already-treated (in your setting treatments occur frequently)
  2. between unit whose treatment increases more to unit whose treatment increases less (in your setting treatment is continuous)
- **These comparisons have significant drawbacks: e.g., potentially lead to coefficients having opposite sign of all individual-level treatment effects**

➤ Possible remedies: see de Chaisemartin et al. (2022)

## Empirics – Comments: Size of county 1/2

- **Population of U.S. counties varies between 10mn and 57**
- **Effects of interest rate changes on mortgage demand/supply could be different in urban versus rural counties**
  - e.g., houses in rural counties cheaper and mortgage demand less sensitive to cost of debt

## Empirics – Comments: Size of county 2/2

- Main measure in county-level analysis: counties' exposure to banks that are specialized in that market calculated as weighted average of

$$Spec_{bct} = \frac{A_{bct}}{A_{bt}}$$

➤  $Spec_{bct}$  likely higher for larger counties

- Thus, you are (maybe) comparing effect of interest rates on mortgage supply between urban and rural counties
- Potential remedy: Control for county size and its interaction with interest rate change

# Empirics – Comments: Magnitude / Joint effects 1/4

Table 2: Lending, Local Specialization, and Monetary Policy

	New mortgage lending growth			
	(1)	(2)	(3)	(4)
$\Delta FF \times Spec$	-0.0283*** (0.00293)	-0.0323*** (0.00253)	-0.0692*** (0.0136)	-0.0749*** (0.0148)
Spec	-0.0465*** (0.00632)	-0.0545*** (0.00666)	0.0412*** (0.00932)	0.0363*** (0.00960)
Observations	1,557,766	1,562,955	1,594,588	1,599,605
R-squared	0.424	0.383	0.177	0.131
Bank-Year FE	Y	Y	N	N
County-Year FE	Y	N	Y	N
Bank FE	N	N	Y	Y
County FE	N	N	N	Y
Year FE	N	N	N	Y
Fipszero FE	N	Y	N	Y
Cluster s.e.	Bank&County	Bank&County	Bank&County	Bank&County

- Why is coefficient for  $Spec_{bct}$  significant? Economic rationale?



## Empirics – Comments: Magnitude / Joint effects 2/4

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- From paper: “A one standard deviation increase in Spec (0.192) increases lending by 54.3 bps per 100 bps decrease in the Fed funds target rate”

$$54.3 = 0.543\% = 0.192 \times (-0.0283) \times (-100)$$

## Empirics – Comments: Magnitude / Joint effects 3/4

Table 1: Summary Statistics

	N	mean	sd
Panel A: Bank-county-level mortgage lending (HMDA and FDIC)			
New mortgage lending (mill. \$)	1,600,174	17.298	126.663
New mortgage lending growth	1,600,174	-0.115	0.710
Number of new mortgages	1,600,174	89.169	405.981
$\Delta FF$	1,600,174	-0.154	1.534
<i>Spec</i>	1,600,174	0.079	0.192
<i>MktSh</i>	1,600,174	0.035	0.070
Bank-HHI-Dep	1,025,741	0.226	0.083
C-HHI-Dep	1,599,973	0.239	0.131
Dist (miles)	1,391,438	524.286	631.917
Dist (log)	1,391,438	5.144	1.980

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➤ Joint effect positive when  $\Delta FF < -\frac{0.0465}{0.0283} = -1.6431$

## Minor comments

- **Setting allows to add Bank-county FE: absorbs all time invariant bank-county relationship heterogeneity**
- **How did bank specialization change over last decades? Does your paper help us understanding changes in pass-through of monetary policy?**
- **Paper related to Granja, Leuz, and Rajan (2022) JF**
  - *“Small distant loans are harder to make, so loan quality deteriorated. Surprisingly, such lending intensified as the Fed raised interest rates from 2004. Why?”*
  - Higher rates → bank deposits shift into competitive counties → banks recycle inflows into risky loans to distant uncompetitive counties

## Final thoughts...

- **Very good and interesting paper! Enjoyed reading it a lot**
- **Lending to riskier borrowers main focus when it comes to studying risk-taking in empirical banking, less so banks' portfolio concentration**
- **We need more papers like this; risk coming from concentrated exposures more important (in my view) than idiosyncratic lending to risky borrowers**
  - see Silicon Valley Bank, Signature Bank, etc.; investments in subprime mortgages, investments in periphery Euro sovereign bonds