The Effect of Minority Bank Ownership on Minority Credit

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The views here are ours and do not reflect those of the Conference of State Bank Supervisors or the Federal Reserve.

Questions

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- There is significant interest in promoting minority bank ownership.
  - Regulators, corporations, and governments.

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U.S. Department of the Treasury
Office of Public Affairs

Press Release: September 21, 2022
Contact: Treasury Public Affairs, Press@Treasury.gov

Biden-Harris Administration Announces Over $8.28 Billion in Investments in Community Development Financial Institutions and Minority Depository Institutions through the Emergency Capital Investment Program

▸ FDIC ▸ Corporations ▸ Big banks

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  - Regulators, corporations, and governments.
- Despite this interest, we know little about the effect of minority banks on minorities.
- This paper addresses two questions:
  1. **Does minority bank ownership expand minority access to mortgage credit?**
  2. **If so, what economic mechanism drives the observed effect?**

Data

Data

- Answering our questions requires **linked data** that, up to now, **did not exist**.
  - **Banks:** minority ownership.
  - **Borrowers:** loan, demographic, and risk characteristics; location.
  - **Loan officers:** demographic characteristics, branch location.

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- It also requires crystal clear definitions.

Data

Definitions

- *Minority groups:* NH Asian/Black and Hispanic categories from OMB Directive 15.
  - Broad categories, but provide well-defined standard consistent across datasets.
  - Exclude Native category due to small size and unique laws/geographies.
- *Minority banks:* 51% threshold to overcome inconsistency across regulators, excluding
  - Minority board and market definitions,
  - Multiracial and woman categories.

Data

- **Issues:** lack micro data/power, measurement error, etc.
- **Approach:** collection process using commercial, confidential, partnership data.
- **Collection examples:**
  - **Multiple new sources:** requests invoking FOIA, confidential Fed, LinkedIn.
  - **Tools:** race algorithms using pictures (balanced FAR) and names + locations (BIFSG).
  - **IDs:** loan officer license IDs, new bank IDs.
- **Outcome:** the first comprehensive micro dataset where we observe
  - **Borrower** X, in **bank** Y, with **loan officer** Z.
  - Each agent's race and other characteristics.
  - Over 30 years.

Data

$\Longrightarrow$ Near universe banks and minority borrowers

Agents	**Key information**	**Coverage**	**Period**	**Sources**
Banks	Minority ownership Bank IDs	Universe	1940-2022	FOIAs, partnerships
Borrowers	Loan charcs. Demographics Micro location Bank IDs	Near universe	1990-2021	P-HMDA, Avery file

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$\Longrightarrow$ Near universe banks and minority borrowers with their credit risk + loan officers.

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Banks	Minority ownership Bank IDs	Universe	1940-2022	FOIAs, partnerships
Borrowers	Loan charcs. Demographics Micro location Bank IDs	Near universe	1990-2021	P-HMDA, Avery file
Borrowers	Credit risk Loan officer IDs	Near universe	2018-2021	C-HMDA, Avery file
Loan officers	Inferred race/ethnicity Loan officer IDs	Universe	2012-2021	CSBS, LinkedIn, ...

Observational design

Observational design

Ideal experiment comparing approval rates between Asian **borrowers** i:

- Randomly assigned to Asian and non-Asian **banks** j.

Observational design

Fixed-effect strategy comparing approval rates between Asian **borrowers** i:

- Going to Asian and non-Asian **banks** j of the same size.
- Applying for mortgages with the same characteristics.
- Same demographic characteristics.
- Same **census tract** k and **year** t.

$$Asian\ Approval_{ijkt} = \alpha_k + \alpha_t + \beta\, Asian\ Bank_{jkt} + \gamma X_{ijkt} + \xi_{ijkt}.$$

Details

Observational design

Main threat: Non-random matching producing an overestimated ownership effect.

1. Selection on **observables**:
   - More creditworthy Asian borrowers in Asian banks.
   - Asian loan officer effect > 0 + mostly Asian loan officers in Asian banks.
     - Jiang et al., Frame et al. 2022 + this paper.

   $\Rightarrow$ **Approach:** Credit risk and loan officer data.

2. Selection on **unobservables**.

   $\Rightarrow$ **Approach:** Show Oster's $\delta > 1$.

▸ Overestimation

Observational design

Loan officer data

- **Goal:** create **accurate** race data on the universe of loan officers.
  - Want to minimize measurement error, which underestimates minority loan officer effect.
- **Approach:** Race algorithms
  1. Using 400K names and locations from **confidential CSBS NMLS**: BIFSG.
     - Extremely low prediction accuracy for Blacks because White $\approx$ Black names.
  2. Using 85K loan officers' headshots from **TWG**, **BrightData**, and **LinkedIn**: Balanced FAR.

▸ Details

Observational design

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- Applying for mortgages with
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  - Loan officers with the same race.
- Same demographics and credit risk.
- Same **census tract** k and **year** t.

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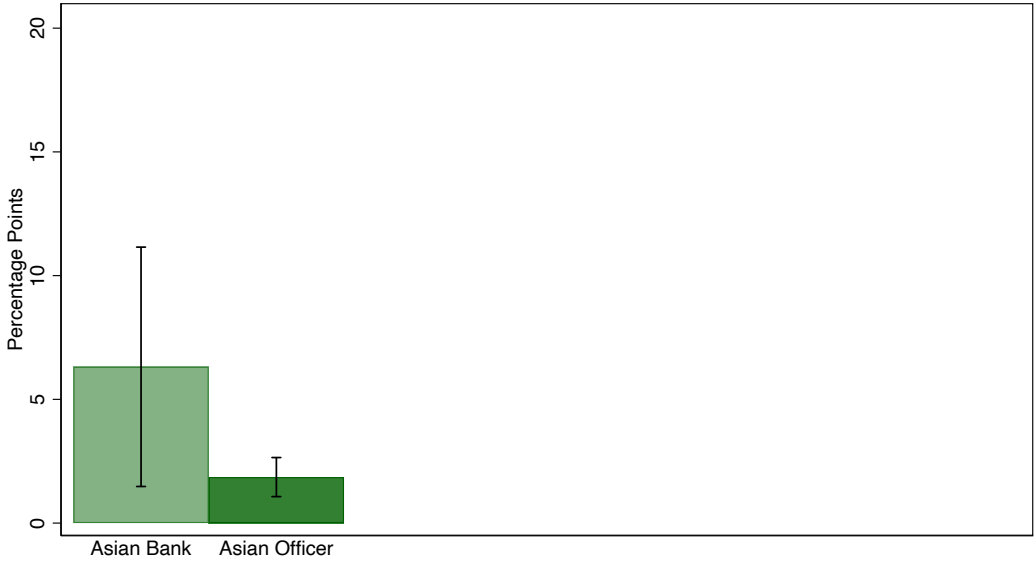
Observational design



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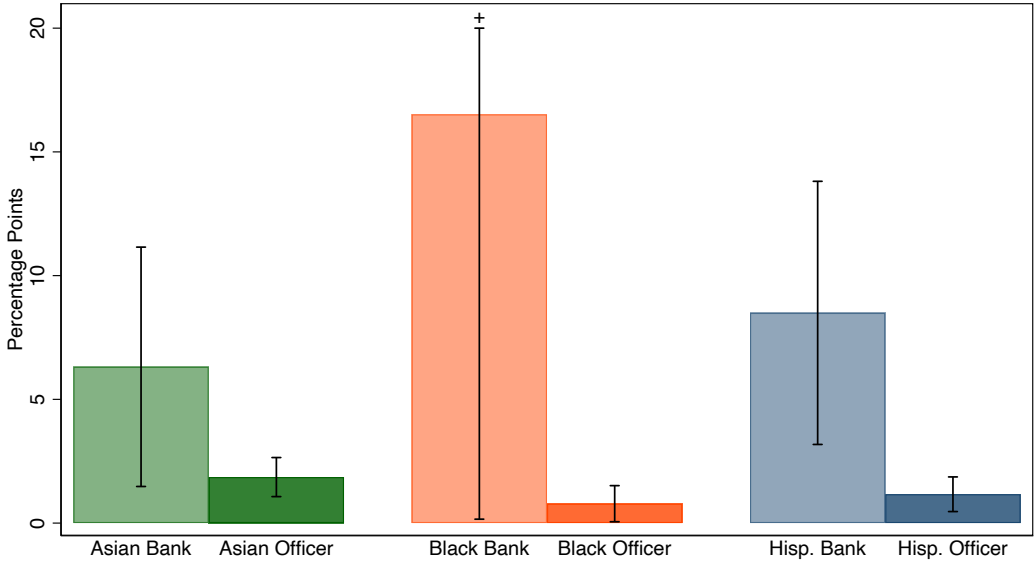

Difference-in-differences design

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  1. Non-random bank-borrower matching.
  2. Credit expansion via reduced info. asymmetry or reallocation via cream-skimming?

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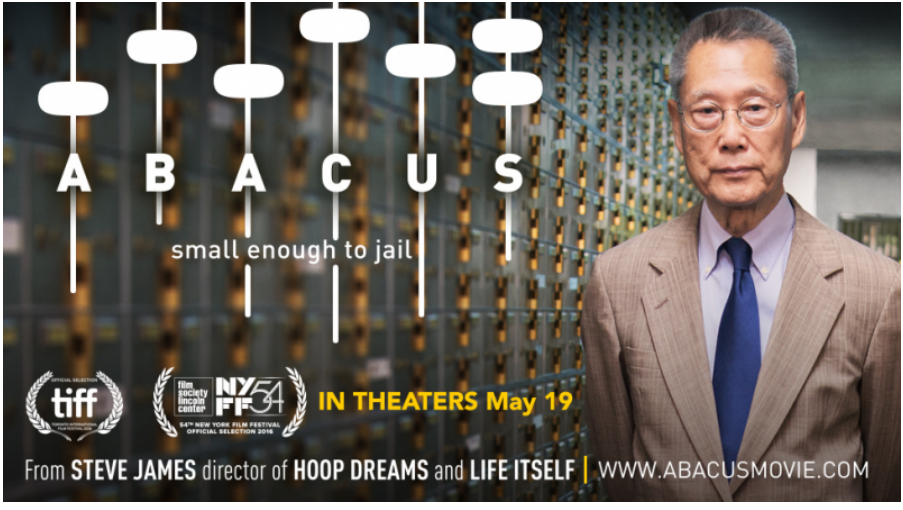
- **Approach:** DiD around bank failures and collapses caused by unexpected fraud cases.
  - Bank failures and collapses disrupt matching and exacerbate info. asymmetry.
  - Unexpected fraud cases are plausibly exogenous to local economic conditions.

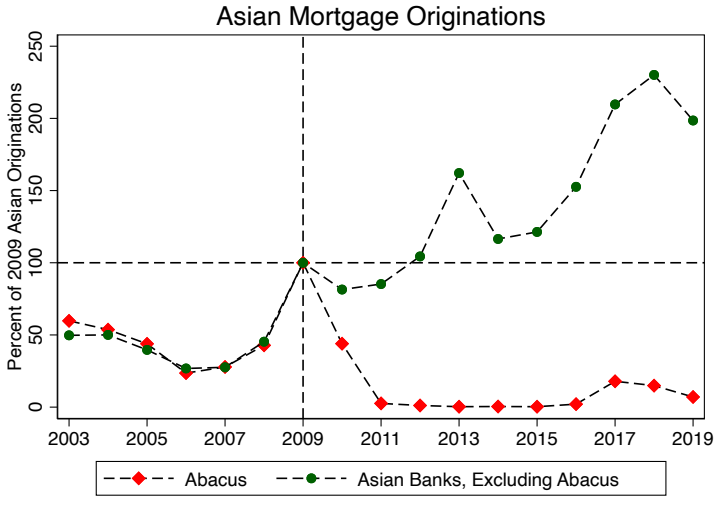
Difference-in-differences design



Difference-in-differences design

- **Bad apple** problem: the Sung sisters discovered a corrupt employee.
  - Employee Ken Yu requested bribes from customers.
  - The Sungs fired Yu + internal investigation + report to authorities.
- Abacus **unexpectedly collapsed** in 2010.
  - Manhattan DA investigation 2010-2012 $\Rightarrow$ 184 charges.
  - The Sung family focused on the legal case until its acquittal in 2015.
  - But investigation disrupted Abacus's main business: mortgage lending.

Difference-in-differences design



Difference-in-differences design

$$Approval_{ikt} = \alpha_k + \alpha_t + \sum_{y \neq 2009} \mathbb{1}_{t=y} \beta_y AbacusExposure_{k,2008} + \gamma X_{ikt} + \xi_{ikt}.$$

- Design exploits variation in Asian borrowers' reliance on Abacus pre collapse:

$$AbacusExposure_{k,2008} = \frac{AbacusAsianMortgages_{k,2008}}{AsianMortgages_{k,2008}}.$$

- **Treatment** group: Borrowers in exposed tracts, i.e., $AbacusExposure_{k,2008} > 0$.
- **Control** group: Borrowers in tracts with other Asian banks, $AbacusExposure_{k,2008} = 0$.

Difference-in-differences design

Identification assumptions:

- *No anticipation:*
  1. The Sungs were purportedly unaware of Yu's activities.
  2. No one anticipated the disproportionate DAO's response.
  3. Abacus and the Sungs were acquitted of all 184 charges.
  4. Sharp decline in Abacus's lending when investigation started.
- *Parallel trends:* smooth pretrends.
- *Homogeneity in gains from treatment* (Callaway et al. 2021):
  - Collapse caused by an unexpected and wrongful fraud case.

  $\Rightarrow$ Selection into treatment likely unrelated to potential outcomes.

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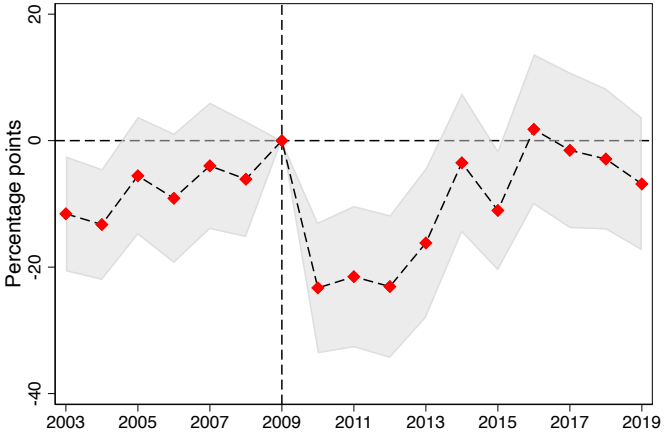

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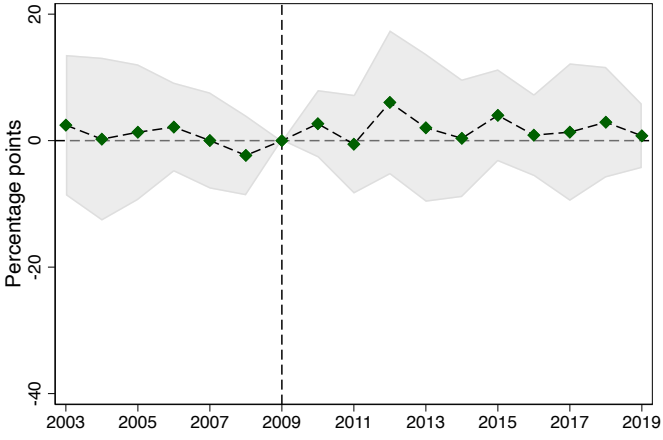
$$Black\ Approval_{ikt} = \alpha_k + \alpha_t + \sum_{y \neq 2009} \mathbb{1}_{t=y} \beta_y AbacusExposure_{k,2008} + \gamma X_{ikt} + \xi_{ikt}.$$

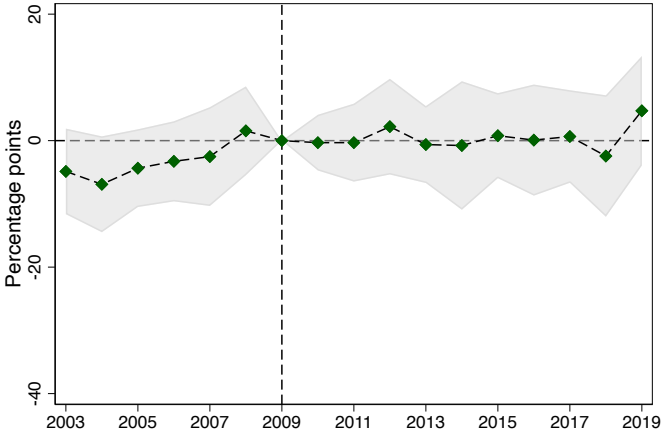


Difference-in-differences design

$$\textit{Hispanic Approval}_{ikt} = \alpha_k + \alpha_t + \sum_{y \neq 2009} \mathbb{1}_{t=y} \beta_y \textit{AbacusExposure}_{k,2008} + \gamma X_{ikt} + \xi_{ikt}.$$

Difference-in-differences design

$$\textit{White Approval}_{ikt} = \alpha_k + \alpha_t + \sum_{y \neq 2009} \mathbb{1}_{t=y} \beta_y \textit{AbacusExposure}_{k,2008} + \gamma X_{ikt} + \xi_{ikt}.$$



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Details

Default tests

Fixed-effects strategy comparing defaults of Asian and non-Asian borrowers:

- With the same Asian bank.
- With the same demographics and credit risk.
- With mortgages with the same characteristics.
  - Key: interest rate, sold mortgage.
- Originated by loan officers of the same race, in the same year.

$$Default_{ijt} = \alpha_j + \alpha_t + \beta\, Asian\ Borrower_{it} + \gamma X_{ijt} + \xi_{ijt}.$$

Default tests

	(1)	(2)	(3)	(4)
Asian Borrower	–1.201**	–1.292**		
	(0.348)	(0.362)		
Hispanic Borrower			0.259	–1.252
			(0.552)	(1.779)
Confidential Controls	No	Yes	No	Yes
Sample Banks	Asian	Asian	Hispanic	Hispanic
Default Mean	2.642	2.642	8.496	8.496
Observations	2,301	2,301	150	150
R-squared	0.042	0.053	0.203	0.250
Oster Statistic		–11.786		

▸ Marginal borrowers

Concluding remarks

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  1. It expands minority credit, its effect is large, and larger than min. loan officer effect.
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  1. It expands minority credit, its effect is large, and larger than min. loan officer effect.
  2. Information, not owners' preferences, seem to drive observed effects on credit access.

- We uncover these insights thanks to excellent **new linked data** we're now using to:
  - Study why organizational factors matter much more than individual ones.
  - Banks organization and governance: labor, management, and incentive contracts.