



Bank Competition and Entrepreneurial Gaps: Evidence from Bank Deregulation

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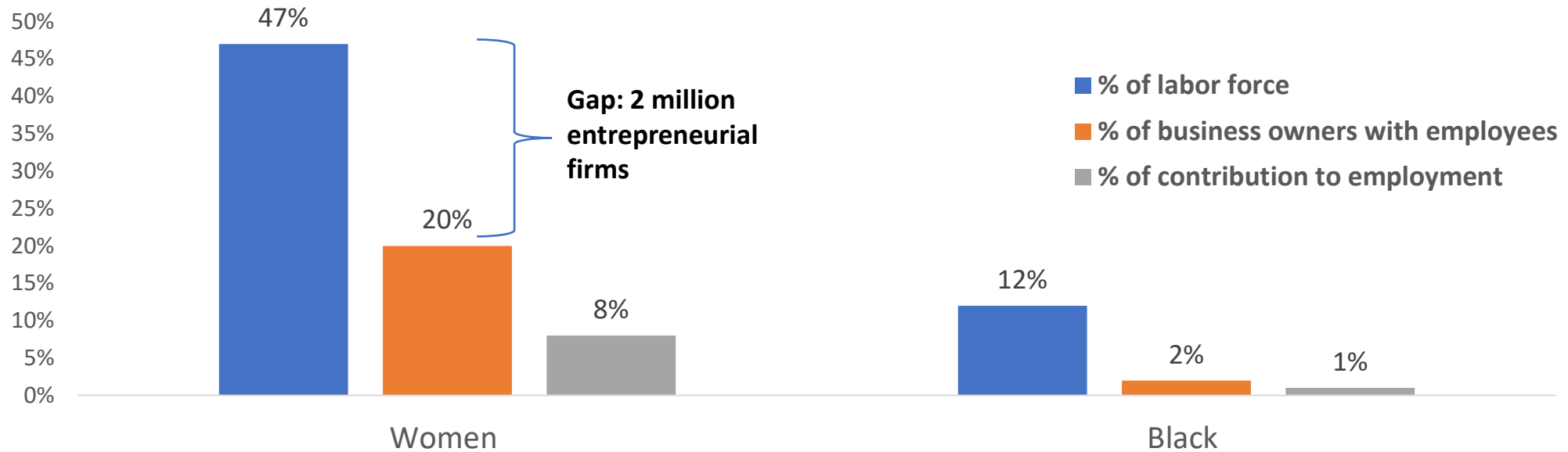




Motivation: Entrepreneurial Gaps

- Entrepreneurship boosts economic growth by driving job creation and innovation
- Reducing the entrepreneurial gaps may drive economic growth and reduce inequality
 - Ideally, if the number of firms owned by women were proportional to their distribution in the labor force, numerous entrepreneurial firms and jobs would be added to the U.S. economy

Gender and Racial Gaps (Source: 2018 Annual Business Survey)





Motivation: Bank Loans and Entrepreneurial Gaps

- Financial frictions may cause entrepreneurial gaps
 - The most important factor that determines the success of minority-owned firms: Startup capital (Fairlie and Robb, 2010)
 - Capital structure: Bank loans (Robb and Robinson, 2014)
 - Minorities and women are disadvantaged groups in the lending market (Asiedu, Freeman, and Nti-Addae, 2012; Fairlie, Robb, and Robinson, 2022)
 - Higher rejection rates and borrowing costs
 - Reasons: discrimination (bias), information asymmetry





My Paper:

- **Becker's discrimination theory:** Competition can reduce discrimination by increasing the cost of discrimination in the labor market
- **Research question:** Examines whether bank competition reduces the gaps in entrepreneurship
- Exploits **staggered interstate deregulation law changes** and builds state-level bank deregulation index (Rice and Strahan, 2010)
 - The Riegle-Neal Interstate Banking and Branching Efficiency Act (IBBEA)
 - The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act)
- Develop a new measure of discrimination using textual analysis





Dataset

- Bank deregulation index (1994-2021): Westlaw
- Bank outcomes:
 - Bank branch information (1994-2021) : FDIC
 - Complaints against banks (2012-2021): CFPB
- Entrepreneurship outcomes:
 - Entrepreneurship (1990-2019): Survey of Income and Program Participation (SIPP)
 - **Comprehensive:** Demographic characteristics, job status, firm characteristics, financing conditions
 - **Longitudinal:** At each panel, SIPP tracks around 30,000 individuals for around 36 months
 - Data coverage: Eleven panels (1990, 1991, 1992, 1993, 1996, 2001, 2004, 2008, 2014, 2018, 2019), 326,809 individuals
 - Filter for age: 22-60 years old





Preview of Main Results I: Bank Outcomes

- Bank deregulation can reduce gaps in the quantity and quality of banking services:
- **Quantity of banking services and financial inclusion**
 - **Before deregulation:** Minority communities have lower branch density
 - **After deregulation:** (1) Branch density in minority communities increases (2) Increased branch density translates into financial inclusion of minorities
- **Quality of banking services:**
 - **Before deregulation:** Minority communities receive low-quality banking service measured by the number of complaints filed to the CFPB
 - **After deregulation:** Quality of banking services in minority communities improves
- **Discrimination:**
 - Develop a **new measure** of discrimination using textual analysis
 - Deregulation **reduces** complaints about discrimination because of intensified competition





Preview of Main Results II: Entrepreneurship Outcomes

- Bank deregulation can reduce entrepreneurial gaps:
- **Business formation:**
 - In fully deregulated states, the gender and racial gap can be reduced by 39% and 70%
- **Startup capital:**
 - Minority and female entrepreneurs can raise more **secured business debt and home equity loans** after deregulation
- **Business performance:**
 - The gaps in business performance are reduced by bank deregulation





Bank Deregulation Index: IBBEA

- I rely on two acts to capture **staggered** state-level bank deregulation changes: IBBEA (1994) and Dodd-Frank Act (2010)
- The Riegle-Neal Interstate Banking and Branching Efficiency Act (IBBEA) of 1994
 - Following its passage, banks outside the state may be allowed to open branches across state lines without permission
 - **Staggered changes:** States are allowed to use the four provisions contained in IBBEA to restrict or increase the cost of out-of-state entry
 - **Deregulation index = 4 – number of barriers**
 - 0 = fully regulated ; 4 = fully deregulated

Provisions in IBBEA	Subtract one from the index if
Minimum age requirement for target bank of interstate acquirers	The minimum age requirement is three years old or more
State permission of de novo interstate branching	Not permitted
State permission of interstate branching by acquiring a single branch or portions of an institution	Not permitted
Statewide deposit cap on branch acquisitions	Less than 30%





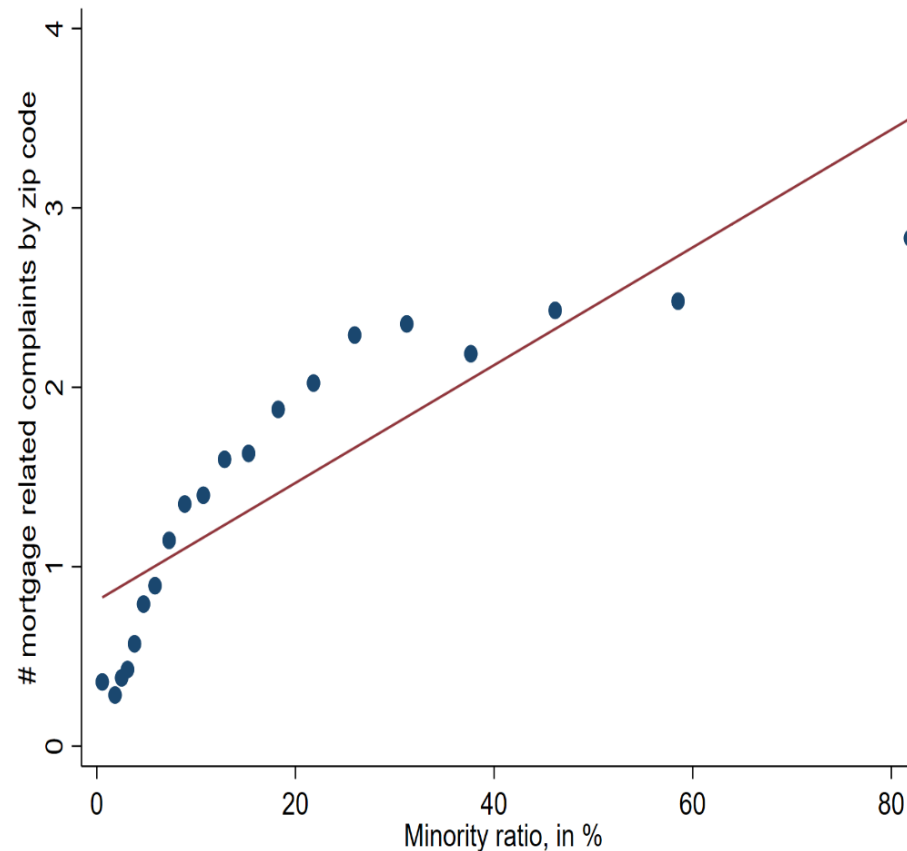
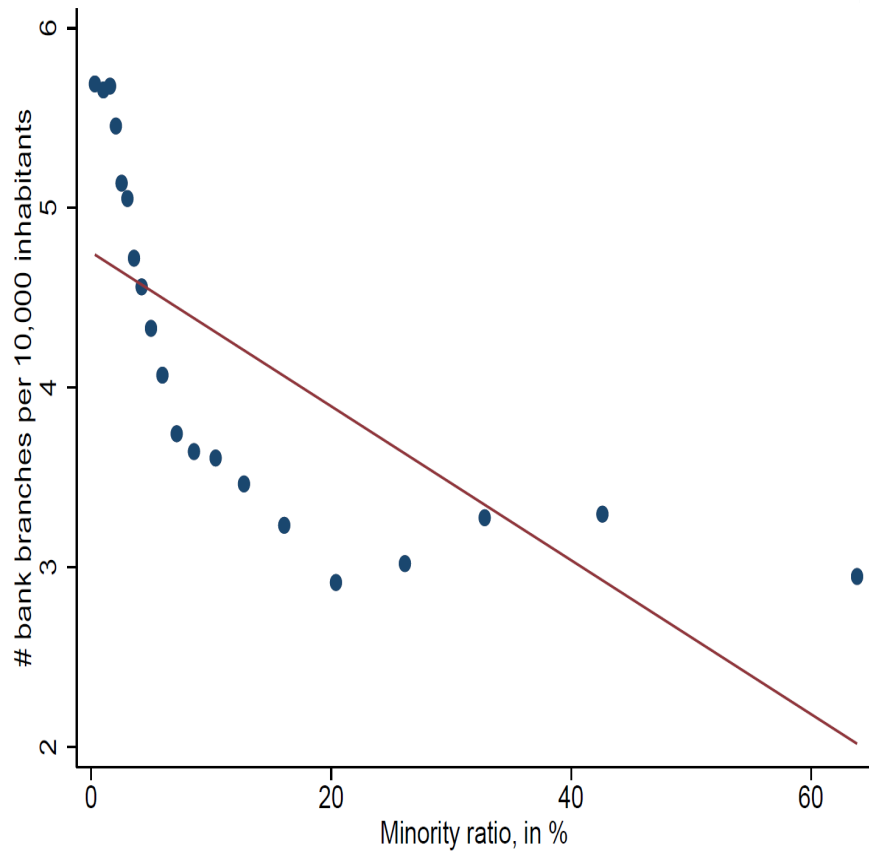
Bank Deregulation Index: Dodd-Frank Act

- The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act)
 - **One-time shock:** Section 613 of the Dodd-Frank Act allows out-of-state banks to establish a de novo branch into any other state as if they were chartered in that state, effective in 2010
 - **Timing is seemingly exogenous:**
 - **Cause:** Great Recession
 - **Nationwide act:** Beyond the control of state government and thus plausibly exogenous to the local economic conditions and entrepreneurial financing need
 - **Impact states differently:** The Dodd-Frank Act only affects states that do not allow de novo branching before the Dodd-Frank Act
 - **Measurement:** Add one to the bank deregulation index if a state does not allow de novo branching before the Dodd-Frank Act





Minority Communities Are Underserved by Banks



- **Quantity:** Minority communities have lower quantity of branch coverage (county level)
- **Quality:** Minority communities have more mortgage-related complaints (zip code level)
- **Data:** Census, FDIC, and CFPB





Bank Deregulation and Bank Services in Minority Communities

Categories	Quantity of bank services and financial inclusion		Quality of bank services	Discrimination
	(1)	(2)	(3)	(4)
Outcome variables	Log (branch density)	Dummy: open a bank account	Log (total number of complaints)	Log (total number of complaints about discrimination)
Deregulation index x minority community	0.029*** (0.011)	-	-0.054*** (0.019)	-0.028*** (0.007)
Deregulation index x minority individual	-	0.011** (0.004)	-	-
Dataset	FDIC	SIPP	CFPB	CFPB
Unit of observation	County	Individual	Zip code	Zip code

A one-unit increase in bank deregulation in minority community:

- 2.9% increase in the bank branch density
- 1.1% increase in the probability of opening a bank account
- 5.4% decrease in complaints
- 2.8% decrease in complaints about discrimination





An example of a complaint about discrimination

Date received	2021/1/28
Product	Mortgage
Subproduct	Conventional home mortgage
Issue	Applying for a mortgage or refinancing an existing mortgage
Company	BANK OF AMERICA, NATIONAL ASSOCIATION
State	PA
Zip code	19003
Submitted via	Web
Company response to consumer	Closed with monetary relief
Consumer complaint narrative	<p>I believe that I am being discriminated against because I disclosed my race as XXXX on Section X of the XXXX loan application. I would greatly appreciate it if this could be looked into to ensure that Bank of America didn't discriminate against me by showing that they also denied mortgage loans to people of other races, particularly XXXX people, with similar credit, income or debt-to-income ratio, savings, educational, and employment backgrounds as me.</p> <p>Quick summary of my background : I have excellent credit, my credit score is over XXXX. My 2 employment gaps greater than 30 days were related to school. I have a XXXX XXXX XXXX and currently in XXXX XXXX seeking a XXXX. I work full time as a mortgage loan advisor where I earn over {\$45000.00} annually. I have savings of {\$30000.00}. The house I was looking to purchase cost {\$180000.00}.</p>

Discrimination complaint: if the narrative includes the words “discrimination”, “unfair”, “inequity”, “prejudice”, “injustice” or other related words





Bank deregulation and entrepreneurship gaps

Categories	Business formation		Business funding	
Outcome variables	(1) Dummy: entrepreneur	(2) Log (secured business debt)	(3) Log (mortgage debt)	
Deregulation index x minority	0.003*** (0.001)	0.097*** (0.034)	0.245* (0.132)	
Deregulation index x woman	0.003** (0.001)	0.201* (0.090)	0.120 (0.138)	
Dataset	SIPP	SIPP	SIPP	
Unit of observation	Individual	Entrepreneur	Entrepreneur	

Additional results:

- Bank competition reduces the gaps in:
 - business performance and business equity
 - access to the Paycheck Protection Program (PPP) loans
- These effects are stronger in areas with high discrimination





Conclusion I

- In this paper, I took advantage of two important bank deregulation episodes to analyze the effect of access to finance on entrepreneurial gaps
- I find the following:
 - (i) Competition can reduce gender and racial gaps in entrepreneurship (business formation, business startup capital, business performance, and business equity)
 - (ii) Channels: Bank competition can improve the quantity and quality of services and reduce discrimination
- Policy implications:
 - Underscores the need for policy intervention aimed at financial inclusion for female and minority entrepreneurs in the entrepreneurial financing market





Conclusion II

- Takeaways: How to take advantage of the CFPB complaint database
 - Policy makers:
 - Detect and monitor discriminatory treatment using textual analysis method
 - Build a website to make complaints about discrimination easily available to customers
 - Educate and encourage consumers to file complaints to fight against discrimination
 - Filing a complaint is free and easy compared with lawsuit
 - Spillover effects: other customers can also benefit by being aware of discrimination
 - Bankers:
 - Market your bank (branch) if it has zero discrimination complaint to attract minorities
 - Monitor loan officers if they receive lots of discrimination complaints
 - Diversity matters: Minority loan officers are less likely to discriminate against minority borrowers (Frame et al. 2022; Jiang, Lee, and Liu 2022)
 - Consider rival's complaint information when making entry decision





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Thank you!

