Racial Discrimination in the Auto Loan Market

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The auto loan market is incredibly important, and yet it's opaque to regulators and researchers.

➢ Auto loans are the most widely used form of installment credit by U.S. households (>100 million borrowers)

➢ Market is less regulated and less transparent than other consumer credit markets
- May reduce the cost of discriminatory practices
- Generates concern among regulators
  - 2013 – CFPB issued Special Bulletin, and fined Ally Financial $98 million for charging minorities higher interest rates

➢ We know alarmingly little about the existence/prevalence of discrimination in this market

Academic studies of discrimination in auto lending are lacking.

Charles, Hurst, and Stephens (AER P&P 2008)

➤ Black borrowers pay higher interest rates than whites – estimated 75th percentile is 1.34 percentage points higher

Caveats:

➤ Based on Survey of Consumer Finances (2,725 white and 320 Black borrowers)

➤ Data do not contain credit scores

➤ Can't examine loan approval rates or default rates

Why do we know so little?

Data limitations – auto lenders do not report application/loan level data

We construct a novel dataset to test for lending discrimination.

Credit Bureau Data

➢ 1% nationally representative panel

➢ Rich set of financial variables:

    Hard credit checks (loan applications), new lines of credit, credit scores, delinquencies, etc.

Home Mortgage Disclosure Act (HMDA) Data

➢ Covers 95% of all mortgage applications and loans (only small rural lenders exempt - details)

➢ Contains borrower demographics:

    Race/ethnicity, sex, income, etc.

We link these databases based on 6 detailed characteristics of originated mortgages

➢ Match works well - uniquely match 69% of mortgages from the credit bureau data

➢ End result is a credit bureau dataset with demographics added for a panel of 79,000 homeowners from 2005-2017

Defining Lending Discrimination

➢ We strive to isolate discrimination rooted in biased preferences (Becker (1957, 1993)) or biased beliefs like stereotypes (Bordalo et al. (2016)):

   → Lenders forgo some profitable contracts with minorities

   → Loans to marginal minority borrowers are more profitable

Need to distinguish this from:

➢ Omitted variable bias:

   Minority status may be correlated with unobservable factors that lower creditworthiness

➢ Statistical discrimination (Phelps (1972)):

   Lenders maximize profits by using race to proxy for info that is unobservable (even to them) ...

   i.e., use beliefs about minorities *on average* as a stand-in for info about the *individual*

Testing for Lending Discrimination

Approach 1: Do minorities have lower credit approval rates?

- Lower minority approval rates could reflect OVB or statistical discrimination

Approach 2: Do minorities pay higher interest rates?

- Higher rates for minorities could reflect OVB or statistical discrimination

Approach 3: Are loans to marginal minority borrowers more profitable?

- Test whether minorities default less, *ceteris paribus*. This "outcome test" (Becker (1957, 1993)) is the most stringent test for discrimination
  - OVB likely works against finding discrimination
  - Statistical discrimination should not generate lower default rates for minorities

We find strong evidence of discrimination in auto lending.

Minorities…

➢ Face 1.5 percentage point reduction in approval rates… crowds out 80,000 loans/year

➢ Pay interest rates 70 basis points higher than comparable white borrowers

➢ Default *less*, controlling for borrower and loan characteristics

Results are larger…

➢ In cases where loan officers have more discretion

➢ In states where racial biases are more prevalent

➢ In areas with less competition among lenders

Anti-discrimination Enforcement Policy Analysis:

➢ A CFPB policy initiated in 2013, but halted in 2018, was effective in reducing interest rate discrimination by nearly 60%

Minority auto loan applicants face lower approval rates.

	Full Sample			Subprime Borrowers	Prime Borrowers
	Credit Approval (Auto) (1)	Credit Approval (Auto) (2)	Credit Approval (Auto) (3)	Credit Approval (Auto) (4)	Credit Approval (Auto) (5)
Demographics					
Minority	−4.465***	−1.480***	−1.661***	−2.375***	−0.840***
	(0.289)	(0.259)	(0.332)	(0.399)	(0.271)
Minority X Hispanic			0.328		
			(0.410)		
R-Squared	0.047	0.085	0.085	0.105	0.047
Observations	218,300	214,534	214,534	68,494	146,036

Table 4

Sample: All borrower-years containing auto loan applications in our Matched Panel, 2005-2017

Controls:

Demographics: Sex, Age, Income

Financial Health: Credit Score, Total Debt, Debt to Income Ratio, Past Due Debt

ZIP Code Characteristics: Per Capita Income, Population Density, % Bachelors Degree, % Commute Using Car

State-by-Year FE, and indicators for time relative to the link

Note: Column 1 omits the financial health controls

Racial disparities are larger where racial biases are more prevalent.
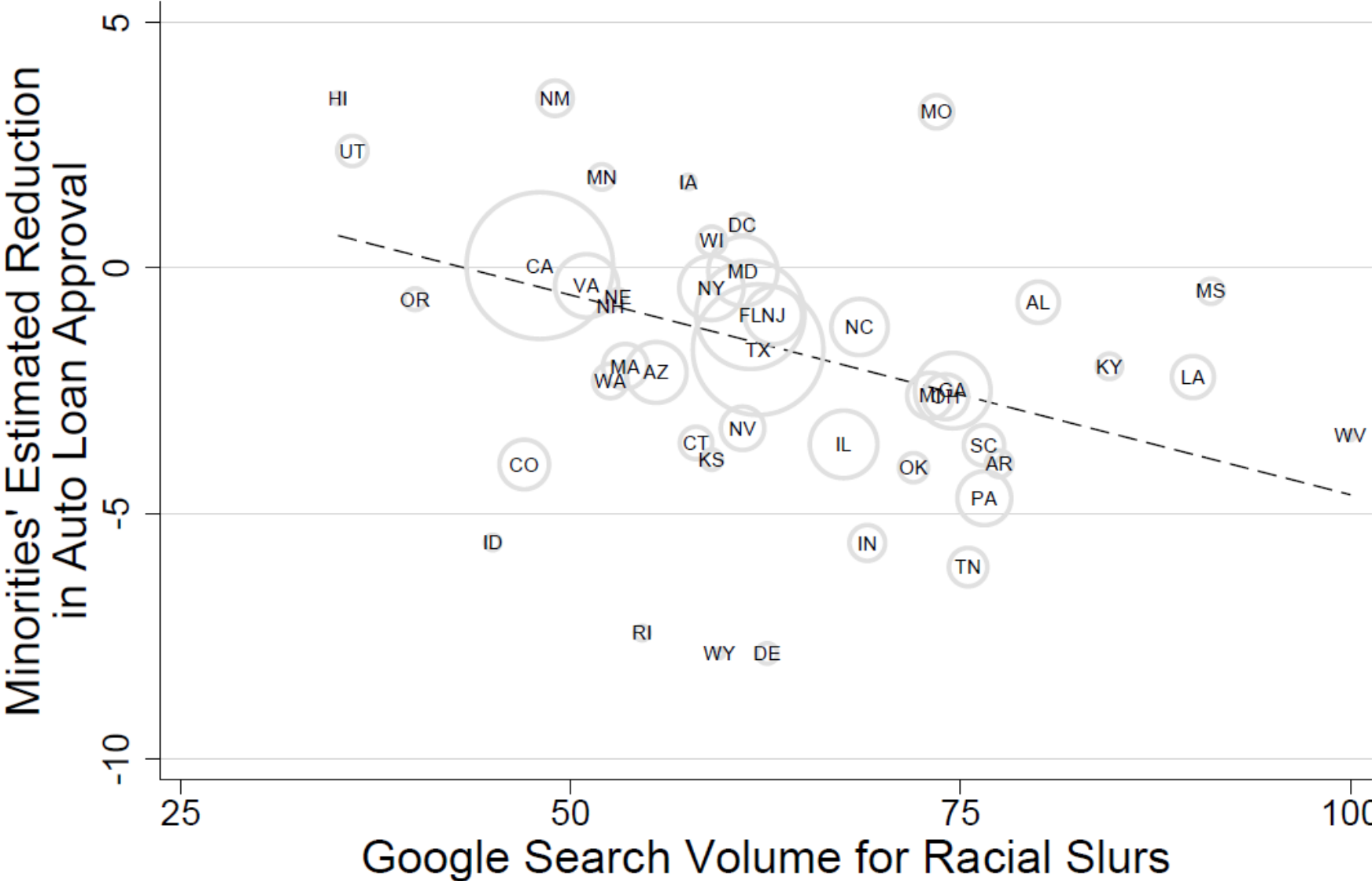
We estimate and plot $State_i$ x Minority effects.

Correlation between $State_i$ x Minority effects and the state's Racial Slur GSV is -0.49 (p-value = 0.001)

Figure 1

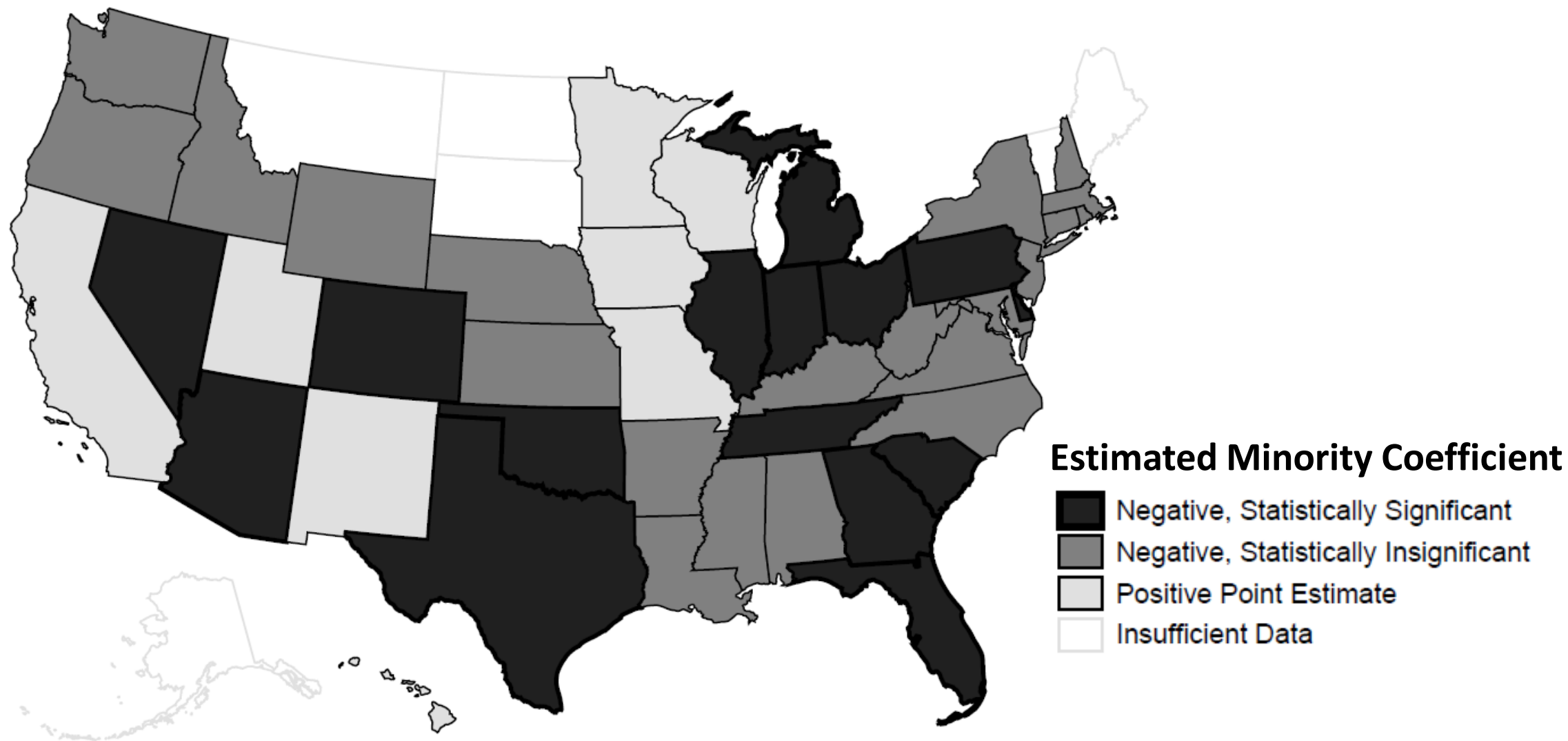# Evidence of discrimination is strongest in the Deep South, the Ohio River Valley, and the Southwest.

Figure 2

Race matters more in areas with racial biases and with less competition among lenders.

	Credit Approval (Auto) (1)	Credit Approval (Auto) (2)
Minority	−0.906***	−1.268***
	(0.254)	(0.255)
Minority X High Racial Bias State	−1.910***	
	(0.443)	
Minority X Low Banking Competition		−0.728*
		(0.424)
Low Banking Competition		0.214
		(0.207)
R-Squared	0.085	0.085
Observations	214,534	214,534

Table 5

Same sample and controls as previous table.

A falsification test shows that these patterns are absent from credit card lending (which is automated).

	CC Limit Inc. (1)	CC Limit Inc. (2)	CC Limit Inc. (3)
Minority	38.23	−10.44	110.36
	(73.09)	(84.07)	(85.54)
Minority X High Racial Bias State		181.61	
		(154.99)	
Minority X Low Banking Competition			−234.78
			(145.53)
Low Banking Competition			74.16
			(72.00)
R-Squared	0.075	0.075	0.075
Observations	124,601	124,601	124,601

Table 6

➤ Sample: People applying for credit cards or limit increases, during the **same borrower-year** as their auto loan application.

➤ Controls: Same as auto credit approval tests.

Minorities pay higher interest rates on auto loans than comparable white borrowers.

	APR (1)	APR (2)	APR (3)	APR (4)
Demographics and Interaction Terms				
Minority	1.600***	0.704***	0.442***	0.614***
	(0.169)	(0.117)	(0.084)	(0.110)
Minority X High Racial Bias State			0.805***	
			(0.166)	
Minority X Low Banking Competition				0.293
				(0.208)
Low Banking Competition				0.052
				(0.065)
R-Squared	0.255	0.440	0.441	0.441
Observations	25,531	25,523	25,523	25,523

Table 8

Controls:

New: Loan Term Indicators, Loan Amount, Auto Loan to Income Ratio, Auto Debt Share, Origination Month Indicators

All from Previous Tests: Demographics, Financial Health, ZIP Code Characteristics, State-by-Year FE, and indicators for time relative to the link

Note: Column 1 omits the financial health controls

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Next, we implement the toughest test.

Any concerns about OVB should cut both ways:

➢ If minorities are less creditworthy than the econometric model predicts, they should **default more.**

Becker (1957, 1993) "outcome test":

➢ Test whether loans to marginal minority borrowers are more profitable than loans to marginal white borrowers.

➢ In practice, researchers test whether minorities **default less**, *ceteris paribus.*

Ceteris paribus, minorities *default less.*

	Full Sample	Subprime Borrowers	Prime Borrowers
	Auto Loan Default	Auto Loan Default	Auto Loan Default
	(1)	(2)	(3)
Demographics			
Minority	−0.237	−2.337**	0.288
	(0.397)	(1.125)	(0.345)
R-Squared	0.096	0.173	0.054
Observations	10,509	2,005	8,480

Table 9

Controls:

New: Auto Loan Interest Rate

All from Previous Tests: Loan Characteristics, Demographics, Financial Health, ZIP Code Characteristics, State-by-Year FE, and indicators for origination month and time relative to the link

Other loan profitability factors cannot explain our results.

➢ Prepayment risk is *higher* for White borrowers.

➢ What about differences in recovery rates?

  ▪ Assume the recovery rate for **White** borrowers is **58%** (average for prime borrowers)

  ▪ Assume the recovery rate for **minorities** is **0%** (cars can't be repossessed or are worthless)

  → Calibration shows even this could not explain the magnitude of our interest rate results.

➢ Remember, any other profitability factors would have to be able to explain the cross-sectional variation in our results.

Policy Analysis:
In 2013, the CFPB sharply increased its anti-discrimination enforcement.

Direct auto lending: apply for loan at a bank, credit union, etc.

Indirect auto lending: car dealership employee helps arrange financing with a third party

➢ March 2013 – CFPB issued a Special Bulletin warning <u>indirect</u> (mostly non-bank) auto lenders they were liable for <u>interest rate</u> discrimination

➢ December 2013 – CFPB & DOJ fined Ally Bank $98 million for charging minorities higher interest rates

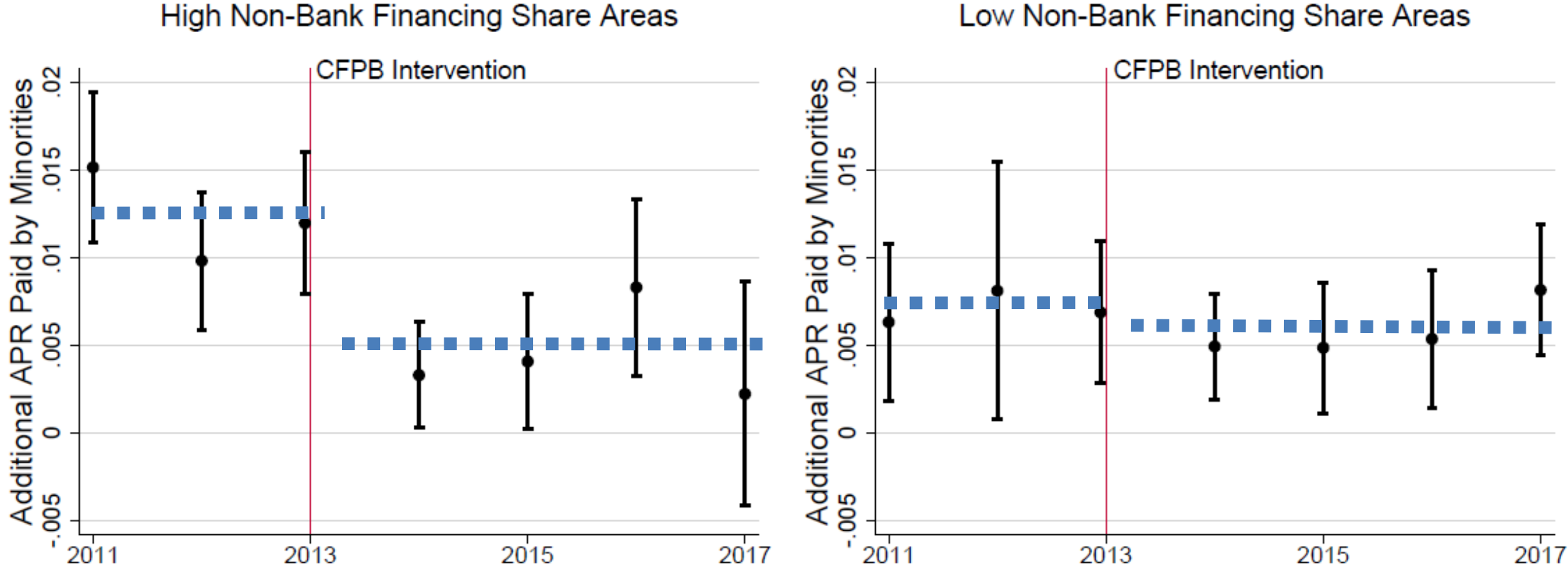# The CFPB's 2013 enforcement initiative reduced discrimination at the non-bank lenders it targeted.

Figure 3

Increased oversight reduced discrimination.

2013 CFPB Initiative:

➤ Overall, it led to a 60% reduction in the additional APR paid by minorities (from 84bps to 35bps)

➤ Had no effect on approval rates for minorities... suggesting that the additional interest minorities were paying wasn't necessary to make the loans viable

➤ This is the first analysis of the market-wide impact of the CFPB's initiative

➤ Important, because CFPB oversight is controversial:
The 2013 Bulletin used to spearhead the CFPB's efforts was repealed in 2018

Thank You!