Black Political Representation, Regulatory Credit Access, and Mortgage Lending

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Motivation

- Racial wealth gap still as large as in the 1950s (Kuhn et al., *JPE* 2020; Derenoncourt et al., WP 2022). Details
- White renters exhibit a much higher propensity to become home owners than black renters, all else equal (Charles and Hurst, *REStat* 2002).
- Homeownership rates for black households have fallen every decade for the last 30 years. (Goodman and Mayer, *JEP* 2018).
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- Question: What are the effects of electing African-American mayors on mortgage lending outcomes for black households?

- Identification: Regression discontinuity design (RDD) exploiting exogenous variation in black election winners.

- Finding: Share of mortgage lending to black households increases by 11%.
  - Pronounced effects for low-income neighborhoods and banks subject to tigher regulations.

- Mechanism? Difference-in-Discontinuity (DiDisc) design shows that local politicians interact with a regulation on fair credit access, the Community Reinvestment Act (CRA):
  - Positive and significant differential effect on the share of mortgages to black households living in CRA eligible neighborhoods.
  - Credit quality improves.
  - Banks' CRA performance scores slightly improve.

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Contribution to the literature

- Minority households and credit access.
  - Agarwal et al. (*JFE*, 2014); Agarwal et al. (WP, 2016); Bayer et al. (*RFS*, 2018); Bayer et al. (*AEJ:EP*, 2016); Charles and Hurst (*REStat*, 2002); Munnell et al. (*AER*, 1996); Bartlett et al. (JFE, 2022)

  ⇒ This paper shows that a shift in political leadership impacts the importance of race in mortgage lending decisions.

- Local political leadership and urban policy
  - Ferreira and Gyourko (*JPubE*, 2014); Vogl (*JPubE*, 2014); Ferreira and Gyourko (*QJE*, 2009); Hopkins and McCabe (*APR*, 2012); Lee et al. (*QJE*, 2004)

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- Political economy of the mortgage market
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Data and Descriptives

Mayoral elections data

- **Total**: 1990-2014; 1,083 elections; 200 cities with more than 25,000 people (Ferreira & Gyourko, 2011)
- Name, party affiliation and vote totals of the mayor and runner-up. → augment race for each candidate and more recent elections.
- **RD sample**: 328 interracial elections in 129 cities between 1990 and 2014.
  ▸ SumStats I ▸ SumStats II ▸ SumStats III

Mortgage data

- Data on mortgage applications and originations from Home Mortgage Disclosure Act (HMDA).
- Applicant, Bank and Loan information. ▸ Details
- 1990-2016, property location at the ctract level. ▸ Ctracts

Control variables

- Demographic data from Census and FFIEC.
- If decennial frequency, most recent pre-treatment controls.

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RDD - Method

$$M_{p,c} = \alpha_0 + \beta_1 Black_p + P(\gamma, margin_p) + X'_{p,c}\tilde{\delta} + \epsilon_{p,c},$$
$$\forall\ margin_c \in (\text{cutoff} - h, \text{cutoff} + h),$$

Variables:

- Outcome: log and share of mortgages to black hh during first term in ctract c.
- Score: $margin_c$ = vote percentage (black) minus vote percentage (white) $\rightarrow$ standardized score.
- Treatment: $blackwin_c$ = dummy equal 1 (0) if black candidate won (lost) election t in city c.

Estimation

- Polynomial order: asymptotic mean squared error based optimality criterion by Pei et al. (2022).
- Bandwidth: MSE-optimal bandwidth algorithm by Calonico et al. (2014) or Imbens and Kalyanaraman (2012).
- Robust bias correction (Calonico et al., 2014)
- Weighting: triangular.

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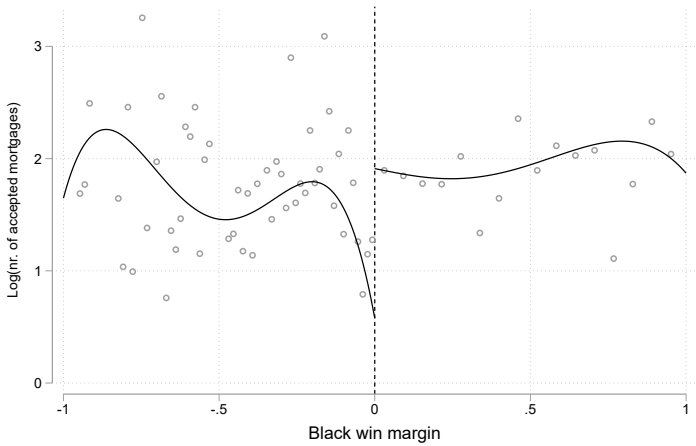
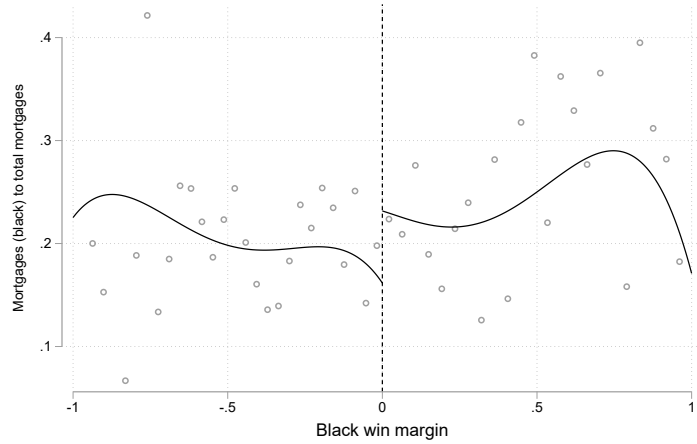
Regression Discontinuity Plot

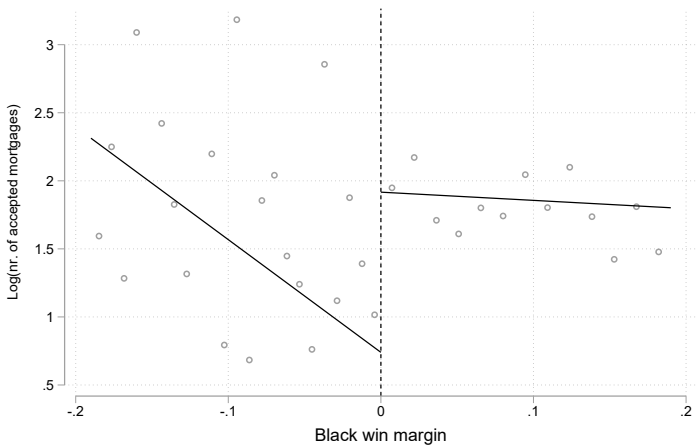
Post-election mortgage origination increases



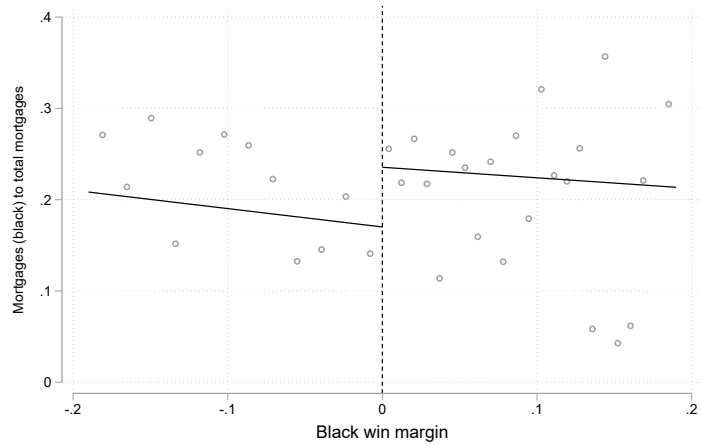
(a) ln(mortgages) - global sample



(b) $\frac{Mortgages(black)}{Total\ mortgages}$ - global sample



(c) ln(mortgages) - local sample



(d) $\frac{Mortgages(black)}{Total\ mortgages}$ - local sample

Positive RD Treatment Effect on Mortgage Origination

If a black candidate won, mortgage lending increases by 3 p.p. (15%)

	Log(accepted mortgages)			$\frac{Mortgages(black)}{Total\ mortgages}$		
	(1)	(2)	(3)	(4)	(5)	(6)
Black win	1.423***	0.819***	0.558***	0.092***	0.083***	0.031***
	(0.043)	(0.074)	(0.066)	(0.006)	(0.012)	(0.008)
Obs	105,180	105,180	105,180	105,180	105,180	105,180
Eff. Obs	105,180	45,524	45,524	105,180	45,863	45,863
Covariates	Yes	No	Yes	Yes	No	Yes
Polynomial order	Cubic	Linear	Linear	Cubic	Linear	Linear
Bandwidth	1	0.17	0.17	1	0.18	0.18

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- Effect Heterogeneity

  Larger effects for **low-income** neighborhoods and banks facing **tighter regulation** by the Community Reinvestment Act.

Validity and Robustness

- Robustness
  - **Bandwidth and polynomial order sensitivity**: insensitive to different bandwidth choices. ▸ Figure ▸ Benchmark
  - **Dynamics**: most effects show up in the second year.

- Validity
  - **McCrary (2008) test**: p-value of 0.28 failing to reject the null hypothesis of no difference in the density of treated and control observations at the cutoff. ▸ E-RDD ▸ G-RDD
  - **Party affiliation**: Robust to conducting a sample split based on same-party versus opposite-party candidates. ▸ Table
  - **Pre-election trends**: no significant effects of close election results on pre-election share of mortgages to black hh. ▸ Table
  - **Balanced covariate checks**: no discontinuity of pre-treatment control variables around the cutoff at the city-level but at the census tract level. ▸ Ctract ▸ City

The Community Reinvestment Act (CRA, 1977)

Fair lending law for equitable access to credit

- **Goal**: incentivizes financial institutions to help meet the credit needs of lower-income people and areas, consistent with safe and sound banking practices.

- **Enforcement**: No classic compliance-sanction enforcement scheme:
  1. Complex examination and ratings system (regulators "visit" 2-6 years).
     ▸ CRA performance
  2. Large banks large banks implement "CRA special lending programs" (CSLP) through distinct departments. Third parties help to identify prospective borrowers via special outreach or marketing activities (Avery et al., 2000).

- **Compliance incentives**:
  1. Formation of public opinion (disclosure of CRA and ratings evaluations.).
  2. CRA performance problem can induce regulator to deny applications for mergers, acquisitions, and branch openings.

- **Local Politicians**:
  1. 70 big city mayors petition in response to Trumps attempt to streamline CRA.
  2. Examiners conduct interviews with city council members or mayors.

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Difference-in-Discontinuity estimator

Grembi et al. (2016)

- Covariate imbalance: exploit time-series variation in mortgage outcomes around election by $Post_{pt}$ dummy interaction.
- Channel: exploit spatial variation by CRA_{pc} dummy interaction.(CRA eligibility = 80% MSA median family income.
)

$$
\begin{aligned}
Mortgage_{pct} = \alpha &+ \beta_2 Margin_{pt} + Black_{pt}[\beta_1 + \beta_2 Margin_{pt}] \\
&+ Post_{pt}[\beta_4 + \beta_4 Margin_{pt} + Black_{pt}(\beta_3 + \beta_3 Margin_{pt})] \\
&+ CRA_{pc}[\gamma_1 + \gamma_2 Margin_{pt} + Black_{pt}(\gamma_3 + \gamma_1 Margin_{pt}) \\
&+ Post_{pt}[\delta_1 + \delta_2 Margin_{pt} + Black_{pt}(\delta_3 + \delta_4 Margin_{pt})]] + \epsilon_{pct}.
\end{aligned}
$$

$$
\forall\ Margin_{pt} \in (\text{cutoff} - h^*, \text{cutoff} + h^*),
$$

$\rightarrow$ Interaction effect between black mayors and the Community Reinvestment Act.

Difference-in-Discontinuity interaction effects

12.5% differential gains in mortgage outcomes in CRA eligible neighborhoods

	$\frac{Mortgages(black)}{Total\ \ mortgages}$					
	Bank type					
	All	CRA	Non-CRA	All	CRA	Non-CRA
	(1)	(2)	(3)	(4)	(5)	(6)
DiDisc	0.023***	0.031***	0.021***	0.005	0.008	0.012
	(0.005)	(0.006)	(0.007)	(0.006)	(0.006)	(0.008)
DiDisc x CRA				0.035***	0.046***	0.018
				(0.012)	(0.013)	(0.016)
Obs	51,964	51,964	51,964	51,964	51,964	51,964
Polynomial order	1	1	1	1	1	1
Bandwidth	0.18	0.18	0.18	0.18	0.18	0.18
P-val SUR			0.21			0.09

Further Results

- **Placebo test**
  - Only banks subject to the CRA react, not placebo lenders that face no regulatory constraints (credit unions and independent mortgage lenders).
  - Among CRA lenders, commercial bank react most which are also most prone to CRA lending incentives (Avery et al., 2000).
- **CRA performance scores**
  - Weak statistical evidence that CRA scores improve in cities where black candidates won by a narrow margin.
- **Credit quality**
  - Loan-to-income ratios decline implying that ex-ante credit quality improves. ▸ Figure
  - Driven by smaller loan amounts while income is unchanged.
- **Credit demand versus supply**
  - Credit demand directed towards specific bank types.
  - Bank-level DiDisc regressions allow for census tract times year effects.
  - Positive and significant effects on the share of mortgages to black households.

Conclusion

- This paper finds that black mayors lead to higher mortgage origination by banks towards black households (low income neighborhoods and banks subject to the CRA).
- Interaction between black mayors and the CRA increases share of mortgages to black households.

→ A shift in political power on the local level can affect lenders' incentives to comply with regulations on fair lending practices and ultimately affect the availability of housing credit to minorities without impairing financial stability.

→ In contrast to Akey et al. (*JFE*, 2021) political protection hypothesis whereby lenders feel protected by the election of powerful politicians and comply less to costly fair lending regulation.

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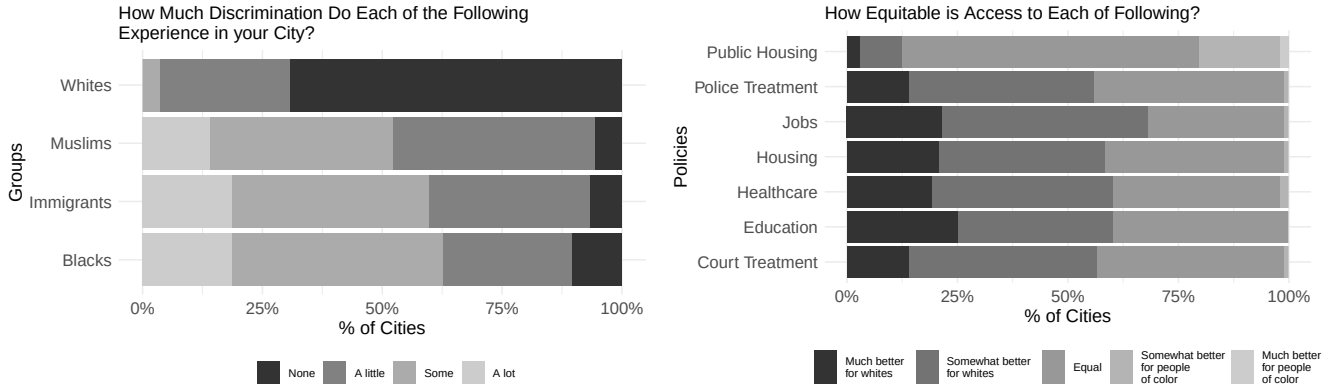
Thank you for your attention!

How U.S. Mayors Think About Racial Inequality?



Notes: Levine-Einstein et al. (2020)

- 23% only a little discrimination against black people in their city.
- 10% no discrimination at all.
- 20% blacks face "a lot" of discrimination in their cities.
- remainder blacks face "some" discrimination.

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Appendix – Summary statistics I

	Cities			
	All	Election	Interracial Election	Close Election
	(1)	(2)	(3)	(4)
Population	61,262	128,911	339,475	376,191
% White	76	71	52	51
% Black	11	15	34	35
% Homeownership	62	56	47	47
% West	5	23	13	14
% South	6	24	42	44
% Midwest	6	27	26	23
% Northeast	6	26	19	20
Median Family Income	54,306	51,822	43,805	44,445
Median House value	144,988	137,192	116,340	121,805
% Poverty Share	11	13	18	18
Nr Cities (Places)	3,965	914	127	80

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Appendix – Summary statistics - RDD

	Obs.	Mean	S.D.
(A) Outcome variables			
Nr. of mortg. (black)	95,380	11.64	22.27
ln(mortgages, black)	95,380	1.47	1.38
Mortg. (black)/Total mortg.	95,380	0.21	0.25
Mortg. (black)/Total mortg. (high income ctracts)	44,677	0.13	0.20
Mortg. (black)/Total mortg. (low income ctracts)	50,675	0.28	0.27
ln(mortgages, black, high income ctracts)	44,677	1.36	1.39
ln(mortgages, black, low income ctracts)	50,675	1.56	1.37
ln(mortgages, black, CRA banks)	95,380	1.08	1.20
ln(mortgages, black, non-CRA banks)	95,380	0.88	1.12
Mortg. (black)/Total mortg. (CRA banks)	94,348	0.20	0.26
Mortg. (black)/Total mortg. (non-CRA banks)	91,271	0.23	0.28
(B) Explanatory variable			
Black win margin	328	0.00	0.00
(C) Covariates			
ln(median household income)	95,380	10.34	0.52
Share of employed population %	95,380	48.93	10.63
Share of college education %	95,380	15.69	14.53
Share of population 65+ %	95,380	11.60	5.67
Mayor Democrat Share	210	0.83	0.37

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Data and Descriptives II

Census tracts

- Established by the Census Bureau.
- ZIP code sub-units.
- Roughly equivalent to a neighborhood to analyze populations.
- Encompass people between 2,000 to 8,000 people.

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Appendix – Dynamic RD details

ITT

- Effect of experimentally manipulating one election outcome without controlling the city's behavior in subsequent years. It incorporates the effects of BM operating through intermediate variables.
- Identify each (c,t) combination with an election.
- Pooling observations from two years before through six years after the election.
- Uniquely identified observations: c, t, τ

TOT

- $\theta_\tau^{TOT} = \theta_\tau^{ITT} - \sum_{h=1}^{\tau} \pi_h \theta_{\tau-h}^{TOT}$
- Estimate coefficients θ_τ^{ITT} and π_h and solve for dynamic TOT effects using equation above.
- Standard errors are obtained by the delta method.

One-step

- TOT estimates are imprecise at long lags.
- $M_{c,t,\tau} = \sum_{\tau=0}^{\bar{\tau}} \theta_\tau^{TOT} black_{c,t-\tau} + m_{c,t-\tau}\alpha_\tau + P(\beta_\tau, bvote_{c,t}) + \kappa_t + \gamma_c + \epsilon_{c,t}$

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Appendix – HMDA Features and Data Selection

Features

- **Applicant** information (income, race, sex, rate spread, property location and dwelling type).
- **Bank** information (type, name, type of purchaser).
- **Loan** information (application amount, denial reason, type, purpose, occupancy).

Selection procedure

- **Race**: keep only "White" and "Black" or "African-American" loan applications.
- **Type**: keep only "Conventional" and "FHA-insured" loans. Drop "Veterans Administration", "Farm Service Agency" or "Rural Housing Service" loans.
- **Purpose**: select only home purchase loans, no refinance or home improvement loans.
- **Owner-occupancy**: keep only owner-occupied loans.
- Keep banks which had at least one African-American loan application.
- Calculate outcome variables at the bank-level.

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Validity: Covariate checks

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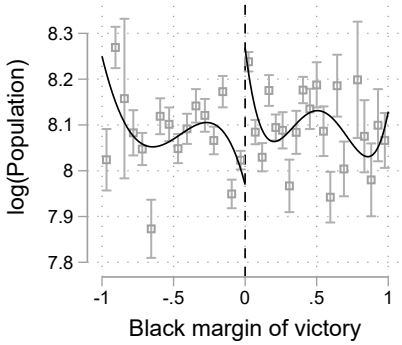
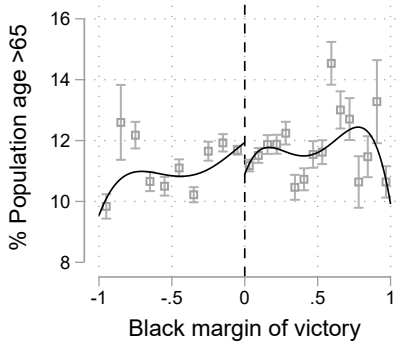
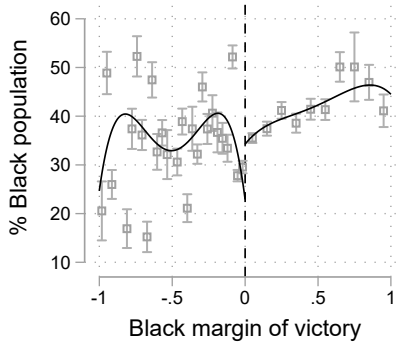
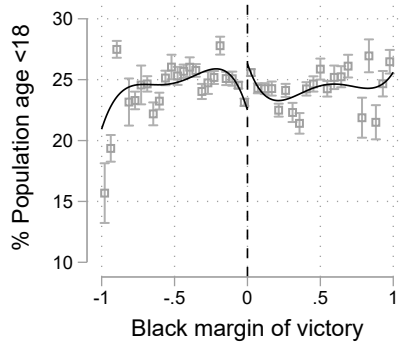
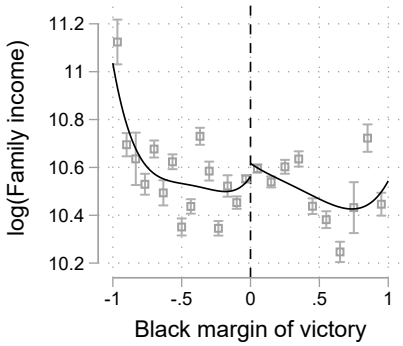
Ctract level

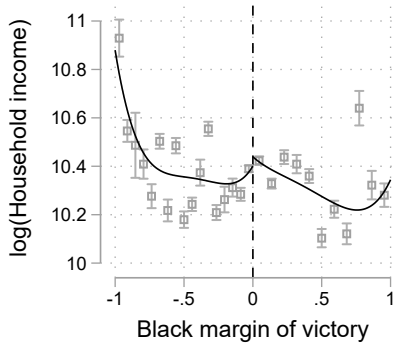


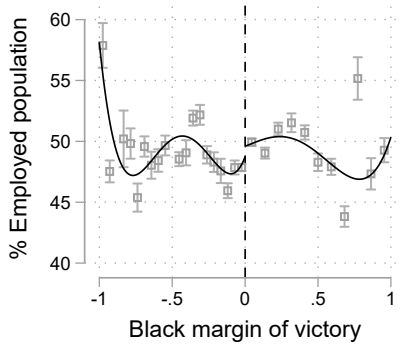


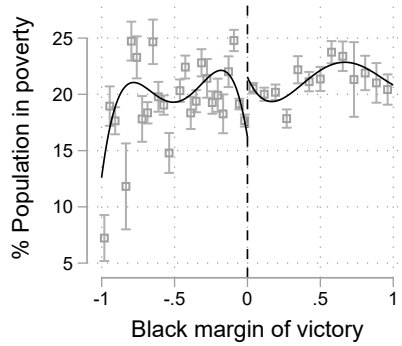


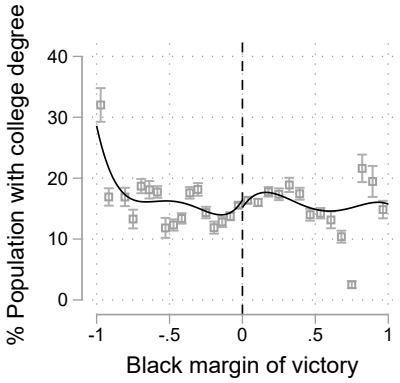












Validity: Covariate checks

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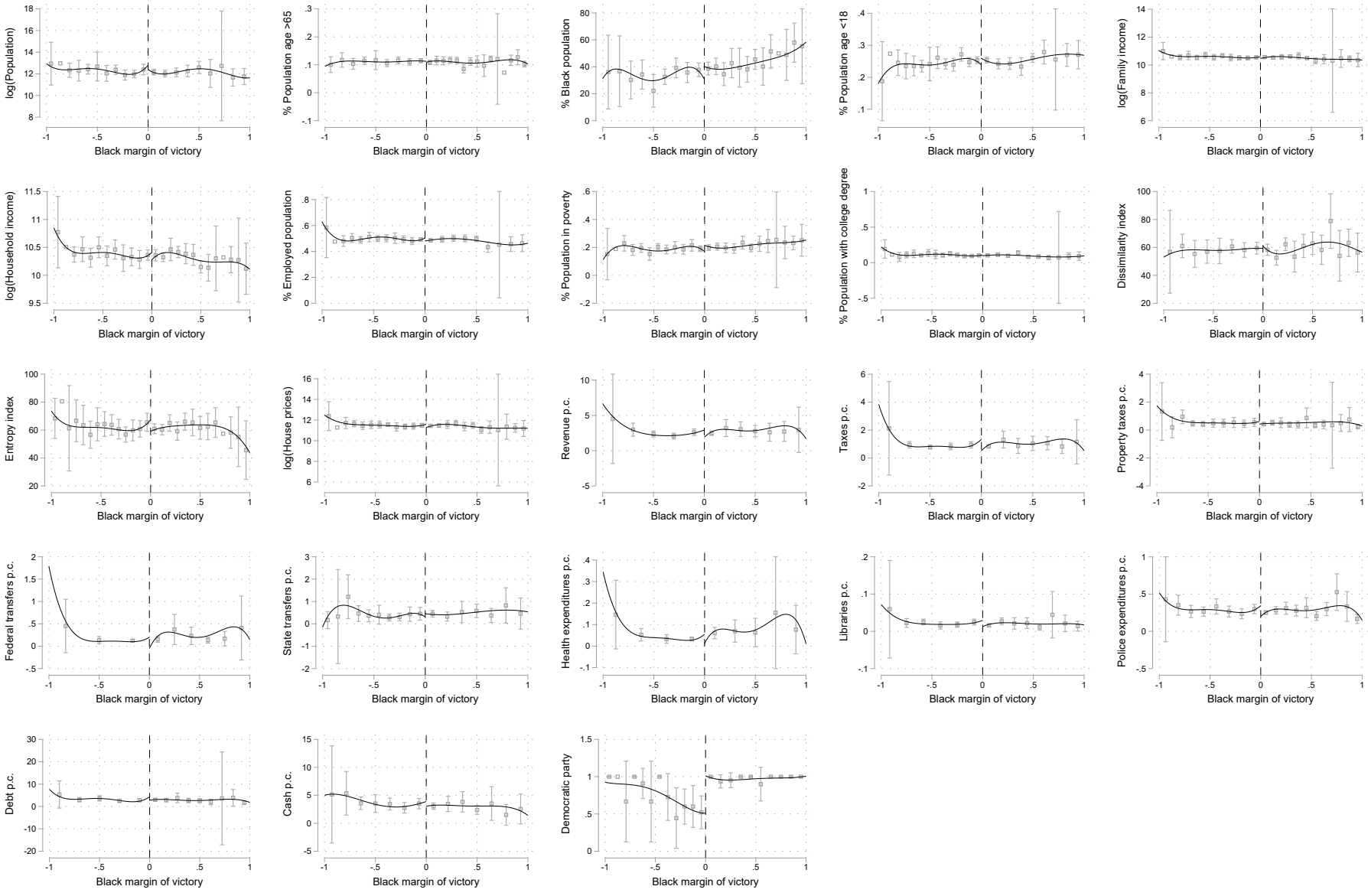
City level



Validity: Party affiliation

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Table: RD effect on mortgage outcomes - party affiliation

	Log(accepted mortgages)			
	(1)	(2)	(3)	(4)
Black win	1.579***	1.342***	0.840***	1.001***
	(0.02)	(0.00)	(0.00)	(0.00)
Obs	92,590	92,590	92,590	92,590
Eff. Obs	92,590	34,746	34,746	34,746
Covariates	Yes	No	Yes	Yes
Democrat control	Yes	No	Yes	No
Polynomial order	Cubic	Linear	Linear	Linear
Bandwidth	100.00	0.17	0.17	0.17

Note: This table presents regression discontinuity treatment effects based on local polynomial regressions using the rdrobust command in Stata. The assignment variable is the black vote margin defined as the difference in the vote share of the black candidate and the vote share of the white competitor. The bandwidth is calculated by the mean-squared-error (MSE) bandwidth selector Calonico et al. (2014). The polynomial order describes the functional form of the assignment variable. The dependent variable is the log of total number or volume of accepted mortgages in a respective census tract pooled in the first term. Standard errors are in parentheses and refer to cluster-robust nearest neighbor variance estimation at the city-level. The covariates are all measured in the election-year and consist of: log(population), percentage of minority population, the percentage of median MSA family income and the share of persons at age 65+. The democrat control variable is one for Democratic mayors and zero for Republican mayors. ***p ¡ .01, **p ¡ .05, *p ¡ .1

Validity I: Manipulation/validity test

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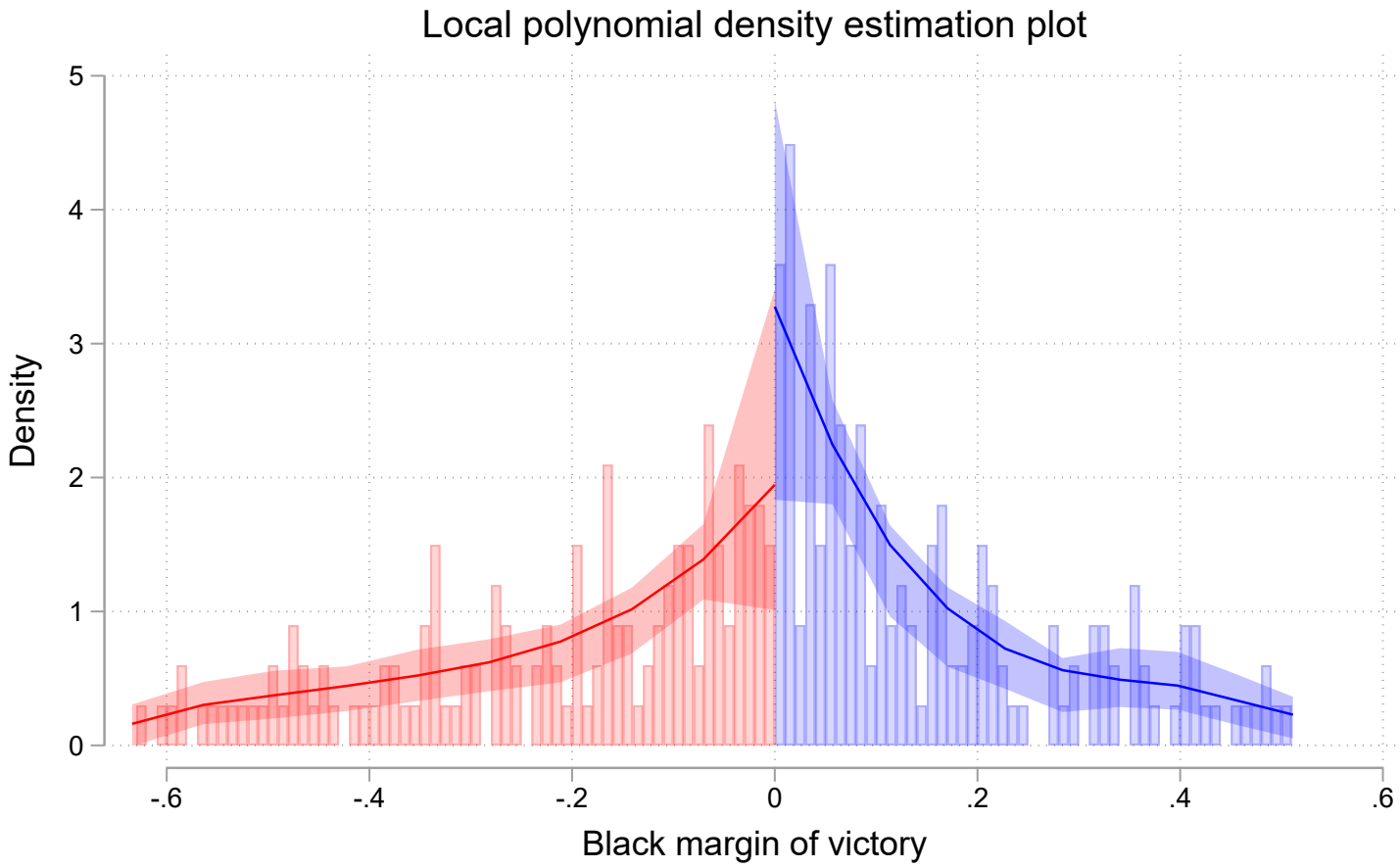

Notes: The usual as-if-random assumption is not necessary, only the continuity assumption is required for the identification of average causal effects at the discontinuity threshold. Close elections context: postelection manipulation, including election fraud, rather than incumbents' structural advantages in campaign resources, are needed for the violation of this assumption. (De la Cuesta and Imai, 2016). Eggers et al. (2015) show that pre-election sorting behavior very unlikely (campaigns would need to be able to predict vote shares with extreme precision).

CRA RD Validity

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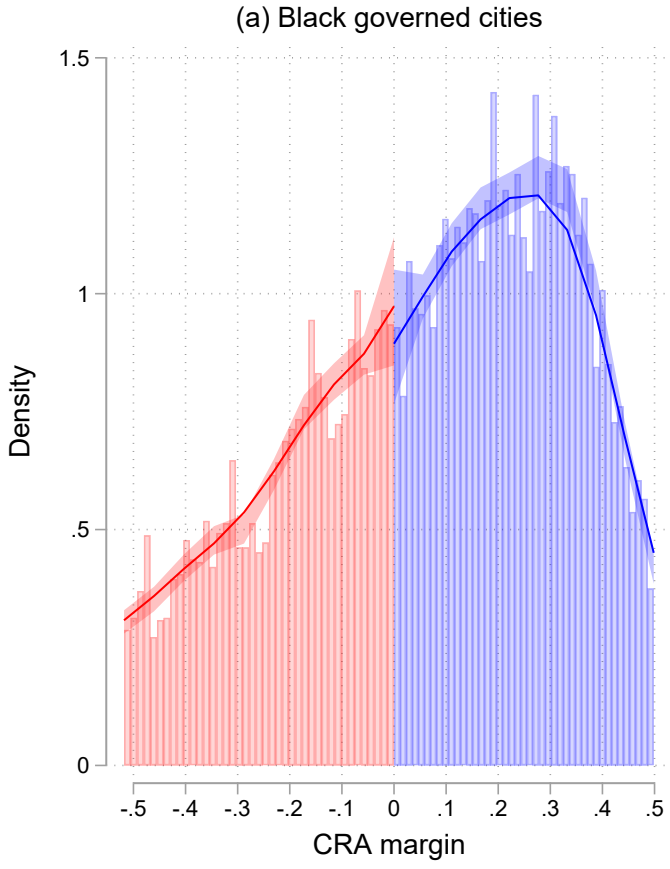
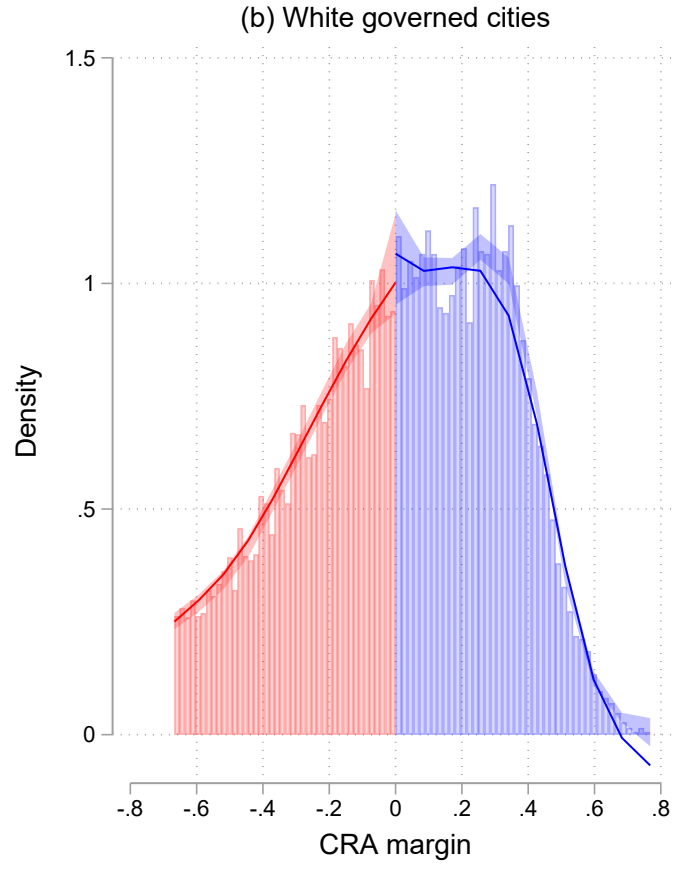
No discontinuity of the assignment variable



P-val bias-corrected density test: 0.46



P-val bias-corrected density test: 0.86

Differences in pre-election trends

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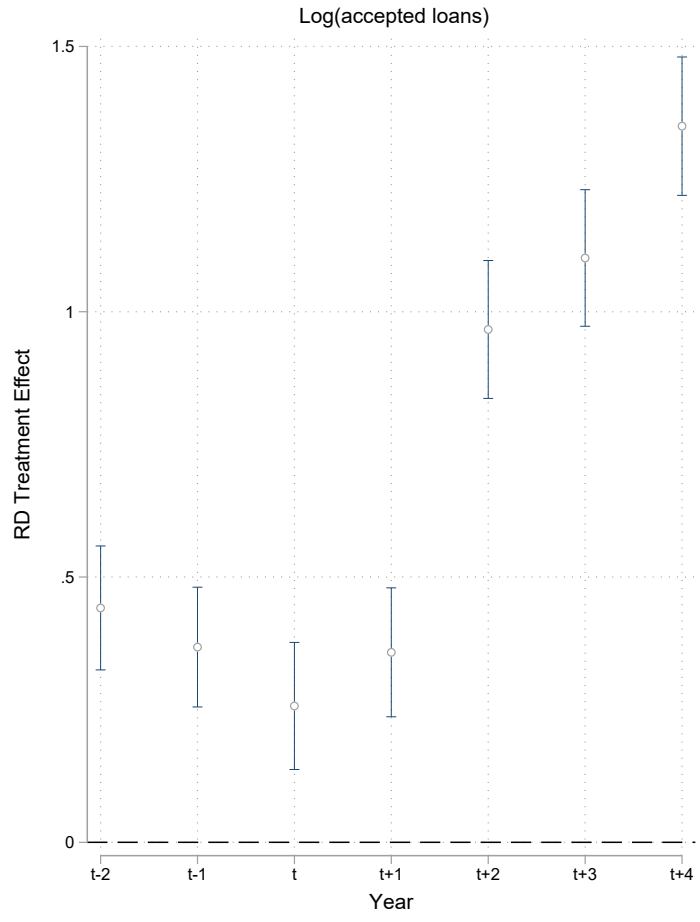
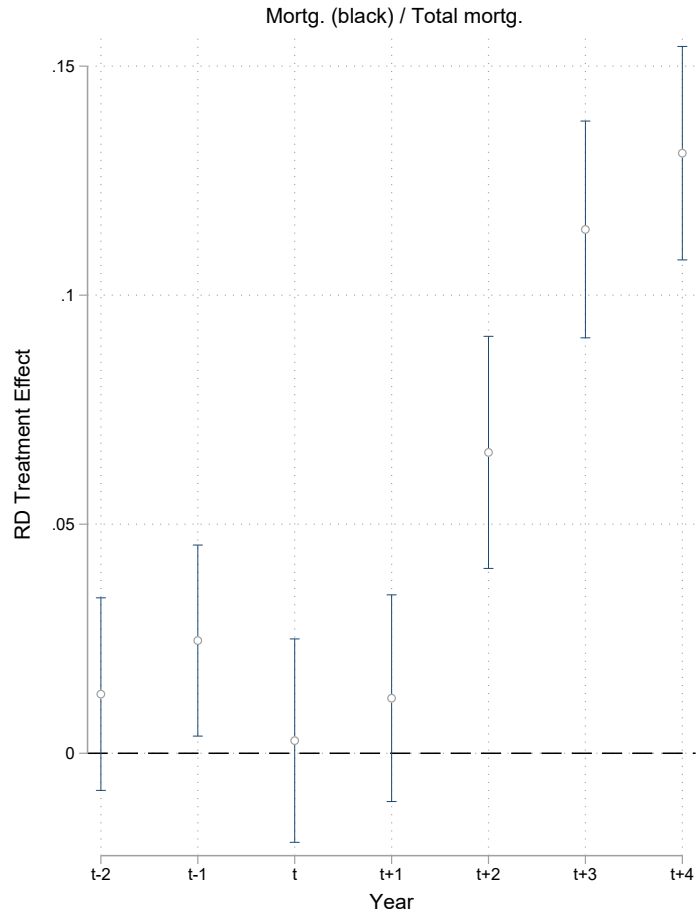
No concern about approximate randomness election indicator.

Notes: Pre- and post-election RD treatment effects.





Bandwidth and Functional Form Sensitivity

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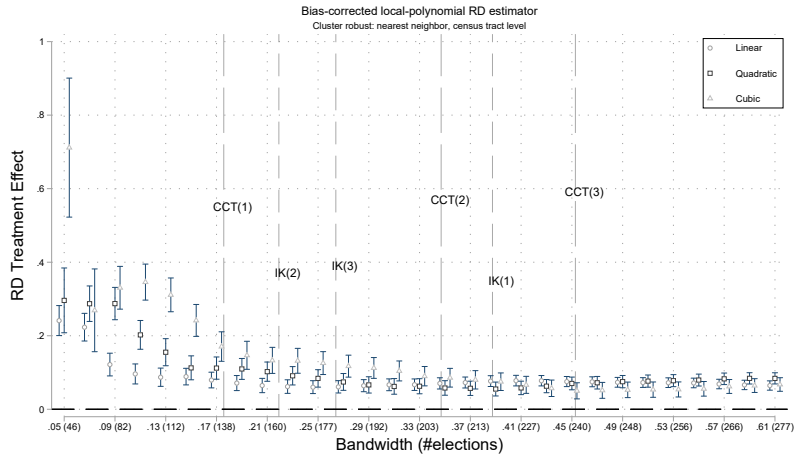
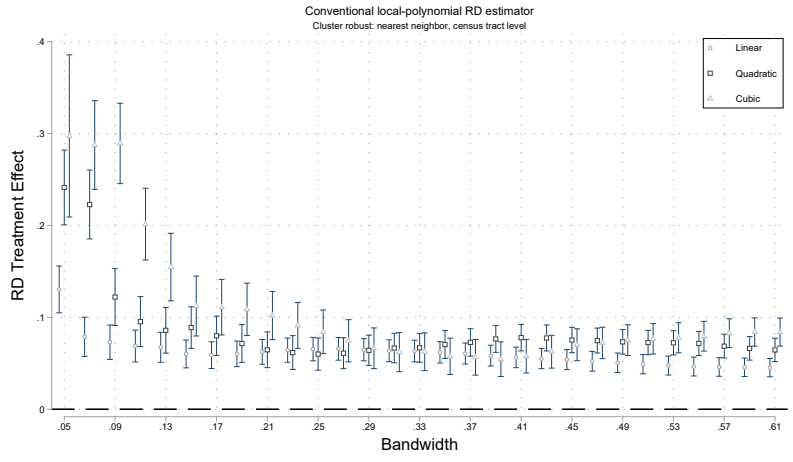
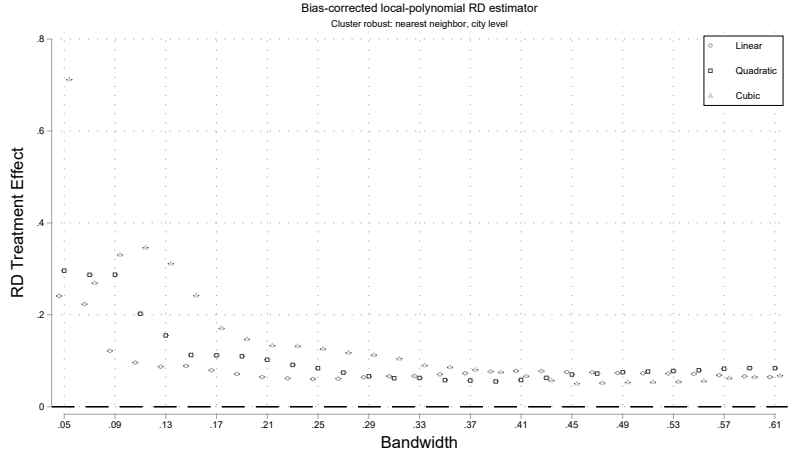
Mortg. (black) to total mortgages



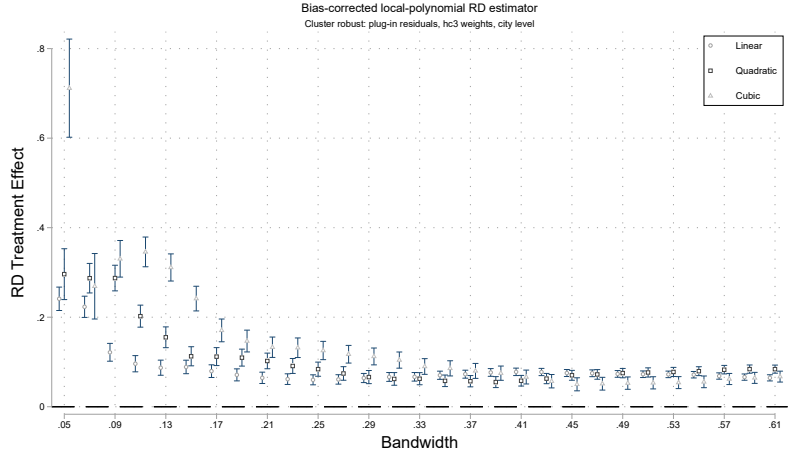
(a)



(b)



(c)



(d)

RD Specifications published in Top Journals

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Main Specification	Number of Papers	1999-2010	2011-2017
Local constant	11	8	3
Local linear	45	9	36
Local quadratic	6	1	5
Local cubic	5	4	1
Local quartic	2	2	0
Local 7th-order	1	1	0
Local 8th-order	1	0	1
Local (but did not mention)	5	0	5
Total local	76	25	51
Global linear	4	1	3
Global quadratic	4	0	4
Global cubic	11	5	6
Global quartic	4	2	2
Global 5th-order	1	0	1
Global 8th-order	1	0	1
Global (but did not mention)	1	0	1
Total global	26	8	18
Did not mention preferred specification	8	2	6
Total	110	35	75

Table: Pei, Card, Lee and Weber (2018) surveyed empirical RD papers published between 1999 and 2017 in the following leading journals: Amercican Economic Review, American Economic Journals, Econometrica, Journal of Political Economy, Journal of Business and Economic Statistics, Quarterly Journal of Economics, Review of Economic Studies, and Review of Economics and Statistics in our survey.

Appendix – CRA performance context

"*Performance context is a broad range of economic, demographic, and institution- and community-specific information that an examiner reviews to understand the context in which an institution's record of performance will be evaluated.*"
CRA Regulation - Part 345.21(b)

- Your institution's profile:
  - Asset size and financial information.
  - Year established.
  - Structure.
  - Business strategy.
  - Product offerings.
- Community profile:
  - Community needs.
  - Local market conditions.
  - Employment statistics and small business conditions.
- Assessment Area(s):
  - Geographic data.
  - Demographic data.
  - Economic conditions.
- Any CRA-related complaints received either by the institution or the regulators.

https://www.trupointpartners.com/blog/cra-performance-context

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Appendix – Racial inequalities in the US

- Bayer and Charles (QJE, 2017): persistent earnings differences for working-age men.
- Kuhn et al. (JPE, forthcoming)[1] : persistent and growing inequalities between black and white Americans (1949-2016):

1. **Income** disparities today are as big as they were in the pre-civil rights era (2016, black hh income = 50% income of white hh).
2. Racial **wealth** gap still as large as it was in the 1950s and 1960s (median black hh persistently has less than 12% f median white hh).
3. Features: 1. income from all sources; 2. observation equals hh to account for changes in marriage patterns, female labor force participation,transfers, education retirement decisions; 3. long-run evolution of wealth differentials.

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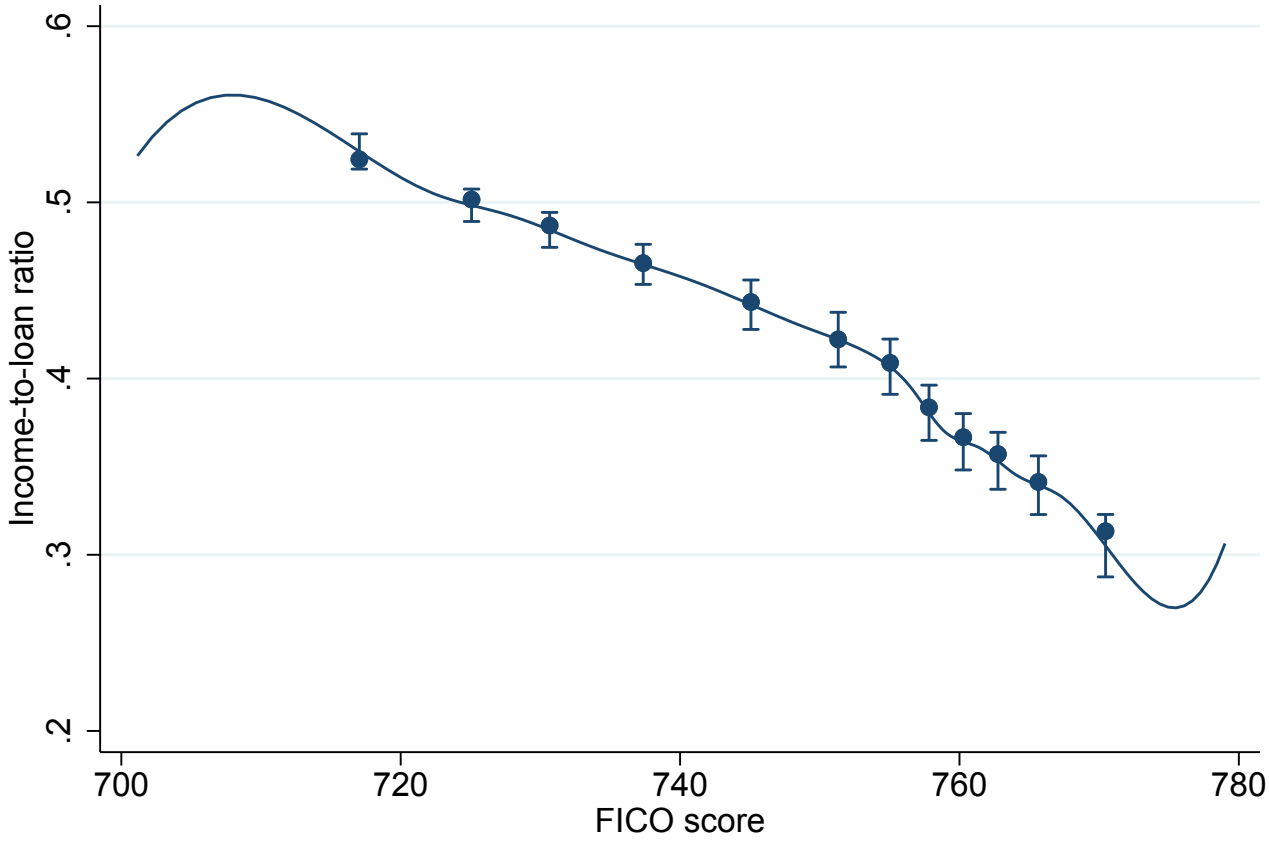
[1] **Income:** (wages and salaries, income from professional practice and self-employment, rental income, interest, dividends, transfer payments, as well as business and farm income); **Assets:** (liquid assets, housing, bonds, stocks and business equity, mutual funds, the cash value of life insurance, defined-contribution retirement plans, other real estate, and cars); **Debt:** (housing debt, car loans, education loans, and consumer loans); **Wealth:** (households' net worth = assets - debt.)

Appendix – Correlation b/w FICO scores and Lending Standards



Notes: Data-driven Binscatter Estimation Plot with Robust Inference Procedure
#MSAs=384; Period=2004-2016; time fixed effects

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CRA Special lending programs

FED Survey by Avery et al. (2000)

1. Third-parties were involved (75%):
   - activities that reduce cost and risk of default
   - grants for downpayment or other purposes
   - pre-loan education or counseling to loan applicants
   - help lenders to identify prospecitve borrowers
2. Inside bank activities
   - **alteration of customary underwriting criteria**: lower down payments, acceptance of alternative credit quality measurements such as rent or utility payment histories, lower cash reserve requirements, and higher debt-to-income ratios.
   - second review of loan applicants to determine qualifications
   - special outreach and marketing activities
   - waived or reduced fees
   - pre-loan education or counseling to applicants
   - reduced interest rates

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Racialized mortgage access

US-specific mortgage market developments

- Redlining
- Residential segregation induced by explicit federal state and local public policies (Rothstein, 2017)
- Racial or statistical discrimination before/after Civil Rights Act (audit studies on differential treatment in housing sales and rental market, statistical discrimination in mortgage lending).[2]

Economic frictions

- Asymmetric information, Statistical discrimination and Credit Rationing (signal extraction problem, statistical discrimination, adverse selection spiral, no lending at all in the remaining borrower pool).
- Information Externalities since mortgage market is dependent on a continuous series of comparable home sales (Lang and Nakamura, 1993).

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[2] Munnell et al., 1996; Bartlett et al., 2019; Yinger, 1993; Yinger, 1995.

Correlation between LTI ratios and ex-ante credit risk.

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