Affirming the Racial Divide?

The Political Consequences of Affirmative Action in Brazil

Laura Pérez Cervera

Queen Mary University of London

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Motivation

- Race-targeted affirmative action policies widely used to redress historical inequalities across racial groups, but particularly divisive
  - e.g. banned in some US states, riots in India over special tribal status
- Redistribution across racial groups $\rightarrow \uparrow$ racial identity $\rightarrow \uparrow$ racial tensions
- I focus on **Racial Voting**: explanatory role of race in voting decisions
  - $+$ $\uparrow$ political representation of the targeted (Chattopadhyay and Duflo, 2004; Pande, 2003)
  - inefficient allocation of public resources and $\downarrow$ candidate competence (Burgess et al., 2015; Banerjee and Pande, 2007)

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This Paper

- I study the **first nationwide racial affirmative action policy in Brazil**: the Law of Quotas (2012)
  - reservation of 50% of vacancies in federal universities to a combination of public high-school, low-income, and non-white students
- Diff-in-Diff setting with differential **local exposure to the policy**, leveraging on pre-policy enrolment across municipalities
- **Education**: enrolment in federal universities, 2010-2018
- **Racial voting**: municipality and ballot box results from federal elections, voters' demographics, and predicted candidates' race, 2006-2018
  - Do voters increase preferences for same-race candidates?
  - Do they trade-off other policy dimensions (economic, competence)?

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Racial Inequalities in Brazil & Attempts to Solve Them

- Largest recipient of enslaved Africans during Atlantic Slave Trade era
- Centuries of racial mixing and European migration $\rightarrow$ "racial democracy"
- Today: 51% non-white (mixed-race, Black, and Indigenous), 48% Whites and 1% Asian, but
  - $\hookrightarrow$ pronounced racial disparities (Paixão, 2008)
  - $\hookrightarrow$ few government initiatives that explicitly tackled them
- Affirmative action policies implemented in some universities from 2003, but confined to few individual initiatives
- In 2012 the government (PT) unified the system of quotas in public tertiary education with the **Law of Quotas**

The Law of Quotas

- Approved in August 2012 and implemented in the 2013 academic year
- For each program in federal universities:
  - Reservation of 50% of vacancies to public high-school, low-income, and/or non-white students
  - Percentage of racial quotas based on the racial composition of the university's state ▸ diagram
  - Universities could introduce the quotas progressively until 2016
- To benefit from the quota, students had to directly apply to a program through a reserved seat (lower admission cut-offs)
- Recurrent complaints of fraudulent behavior of White students $\rightarrow$ "Comissões de Heteroidentificação" from 2015
- Polarizing policy in the Brazilian Congress ▸ more

▸ Implementation ▸ Commissions

Main Datasets

Education

- **Census of Higher Education Microdata**, 2010-2018: universe of students enrolled in tertiary education + program information (individual-level)
- **Implementation of Quotas**, 2010-2018, from Mello (2022) and the centralized application platform, SISU

Politics

- **Electoral data** at municipality and ballot box level ($\sim$ 350 voters) from TSE, 2006-2018
- **Electorate demographics** from Census 2010 at the census tract level
- **Race of candidates**: classified according to phenotypical traits using ballot box pictures + Multi-label image classification AutoML model ▸ more

Local Exposure to Racial Quotas

- Predicted share of racial quotas allocated to each municipality, according to the pre-policy enrolment of students across universities

- Formally:

$$q_{mt} = \sum_{u} \left(\frac{s_{mu}}{s_u} \times \frac{Q_{ut}}{pop_m^{18-24}} \right)$$

where

- s_{mu} = students from m enrolled in federal university u in 2010
- s_u = students enrolled in u in 2010
- Q_{ut} = advertised vacancies reserved to non-whites in u in year t
- pop_m^{18-24} = population in m from 18 to 24 y.o. in 2010

▸ Stats

Regression Model

- Municipality-level analysis over the period 2010-2018/2006-2018
- Estimating equation:

$$y_{mt} = \beta q_{mt} + X'_m \gamma_t + \alpha_m + \alpha_{st} + \varepsilon_{mt}$$

where

- y_{mt} = educational/political outcome in municipality m in year t
- q_{mt} = exposure to racial quotas in m at t
- X_m = municipality controls at baseline
- α_m and α_{st} are municipality and state x year FE, respectively
- ε_{mt} = error term

- **Identification assumption**: pre-policy enrolment patterns across federal universities are exogenous to changes in the outcome of interest

A.1 Enrolment in Federal Universities

$\Delta q_{mt} = 0.003 \rightarrow \Delta$Enrolment in NW Munic. $= 27\%$ wrt baseline

Dep. var.: Enrolment rate	All		White		Non-white		W/ Racial Quota	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Exposure to NW Quotas	-0.0500*	-0.0797***	2.2471	2.0784	1.9853	1.4813	1.1232	0.6768
	(0.0299)	(0.0259)	(1.6107)	(2.0385)	(1.5187)	(1.9056)	(0.6932)	(0.6312)
x Above Median Share NW Pop.		0.0854***		0.4856		1.4505		1.2845*
		(0.0278)		(2.1892)		(2.1891)		(0.6873)
Avg Dep var	.001	.001	.025	.025	.023	.023	.009	.009
Municipalities	4,965	4,965	4,965	4,965	4,965	4,965	4,965	4,965
Observations	44,685	44,685	44,685	44,685	44,685	44,685	44,685	44,685

The dependent variable is enrolment to any federal university, defined as number of students that enrolled in a federal university over the size of the population aged 18 to 24 in 2010. All regressions are weighted by population aged 18 to 24 in municipalities in 2010. Robust standard errors clustered by microrregions are reported in parenthesis. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

B.1 Preferences for Same-Race Candidates

$$\Delta q_{mt} = 0.003 \rightarrow \Delta \text{Vote Black Candidate} = 0.0168 \rightarrow \uparrow 20\% \text{ wrt baseline}$$

Dep var: Share of votes	Non-white		Mixed-Race		Black	
	(1)	(2)	(3)	(4)	(5)	(6)
Exposure to NW Quotas	0.0341	0.9909	-0.1405	-0.4546	0.1747	-5.8788**
	(3.3619)	(3.5807)	(2.4579)	(2.5120)	(1.5243)	(2.8424)
× $\mathbb{1}\{\text{Non-white Pop.} > \text{Median}\}$		-2.5976				
		(2.5371)				
× $\mathbb{1}\{\text{Mixed-Race Pop.} > \text{Median}\}$				0.7662		
				(1.6793)		
× $\mathbb{1}\{\text{Black Pop.} > \text{Median}\}$						5.6081***
Avg Dep var	.222	.222	.131	.131	.091	.091
Municipalities	4,965	4,965	4,965	4,965	4,965	4,965
Observations	19,860	19,860	19,860	19,860	19,860	19,860

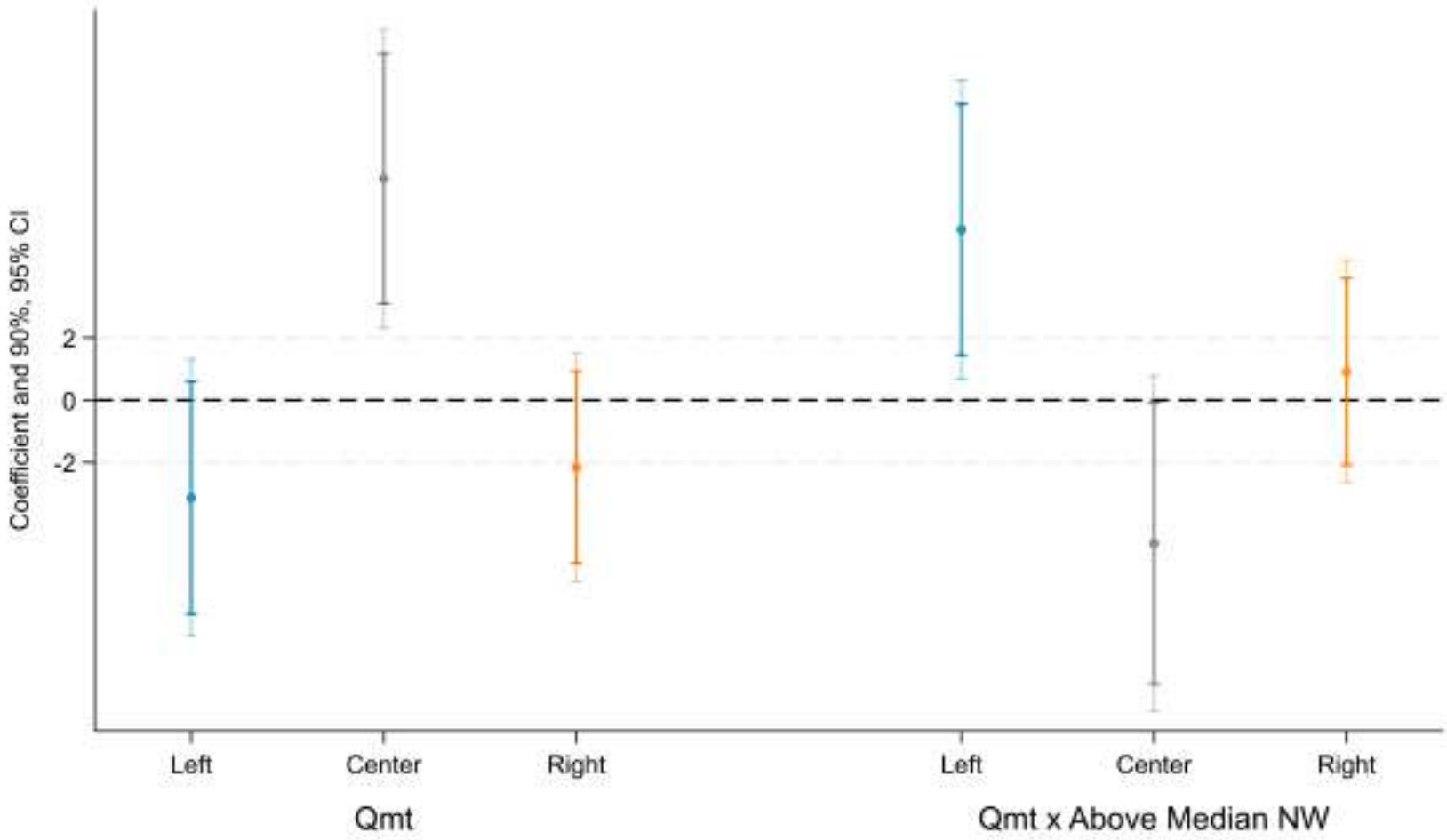
The dependent variable is the vote share to candidates by their race, as predicted by the AutoML model. Vote share is defined as votes to candidates divided by total votes. All regressions are weighted by the number of eligible voters. Robust standard errors clustered by microregions are reported in parenthesis. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

B.2 Preferences for Same-Race Candidates, by Ideology

Dep var: Share of votes	Mixed-Race				Black			
	Left	Center	Right	PT	Left	Center	Right	PT
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Exposure to Non-white Quotas	0.7068	0.3703	-1.4263	0.0061	-1.2166	1.6261*	-2.3655***	-1.8502**
	(2.0572)	(1.0263)	(1.4223)	(1.7108)	(0.9508)	(0.9717)	(0.8668)	(0.8365)
× $\mathbb{1}\{\text{Mixed-Race Pop.} > \text{Median}\}$	2.1907	-1.4466*	0.1237	0.3533				
	(1.8055)	(0.8413)	(0.8491)	(0.9677)				
× $\mathbb{1}\{\text{Black Pop.} > \text{Median}\}$					1.8435**	-0.7553	1.9297***	1.6148**
					(0.7694)	(0.6013)	(0.6085)	(0.6639)
Avg Dep var	.04	.042	.026	.026	.024	.011	.029	.014
Municipalities	4,965	4,965	4,965	4,965	4,965	4,965	4,965	4,965
Observations	19,860	19,860	19,860	19,860	19,860	19,860	19,860	19860

The dependent variable is the vote share to candidates by their race, as predicted by the AutoML model. Parties are classified along the left-right spectrum according to Zucco and Power (2021). Vote share is defined as votes to candidates divided by total votes. All regressions are weighted by the number of eligible voters. Robust standard errors clustered by microrregions are reported in parenthesis. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

B.3 Ideological Shift across Racial Groups



▸ Stance quotas

B.4 Candidates Competence

- Candidate competence measured as having tertiary education

Dep. var.: Share of votes	(1)	(2)
Exposure to NW Quotas	-0.5098	-0.1770
	(2.7342)	(2.9028)
$\times$ $\mathbb{1}\{\text{Non-white Pop.} > \text{Median}\}$		-0.9428
		(3.1104)
Avg Dep Var	.746	.746
Municipalities	5,492	5,492
Observations	21,968	21,968

The dependent variable is the vote share to candidates reporting having tertiary education in TSE. Vote share is defined as votes to candidates divided by total votes. All regressions are weighted by the number of eligible voters. Robust standard errors clustered by microrregions are reported in parenthesis. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Robustness Tests

- Pre-trends ▸ education ▸ politics
- Confounding educational policies ▸ SISU
- Ideological shift, controlling for income ▸ go
- Determinants of LoQ implementation ▸ go

Conclusion

- This paper proposes a trade-off of racial affirmative action:
  $\hookrightarrow$ accelerating the representation of minorities vs $\uparrow$ racial divisions
- I study an unintended political consequence of race-targeting affirmative action: whether it fosters racial voting
- Setting: racial quotas implemented in Brazilian federal universities under the Law of Quotas in 2012
- I document that the expansion of racial quotas
  - increased preferences for same-race candidates, and
  - fostered an ideological realignment across racial groups in federal elections
- Next steps: ballot-level analysis, continue exploring trade-offs

THANK YOU!

Contact info:
laura.perezcervera@qmul.ac.uk
lauraperezcervera.weebly.com
@lauraperezcerv

Law of Quotas - Federal University of Pernambuco (UFPE)

- Racial composition of PE: 68% non-white

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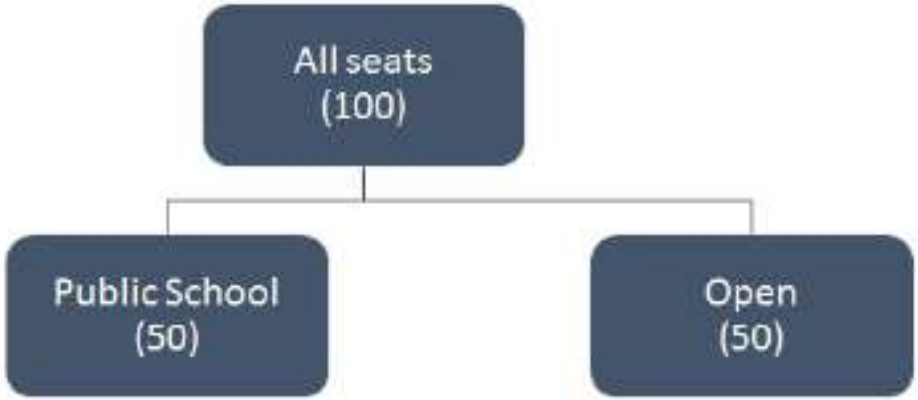

Map Back

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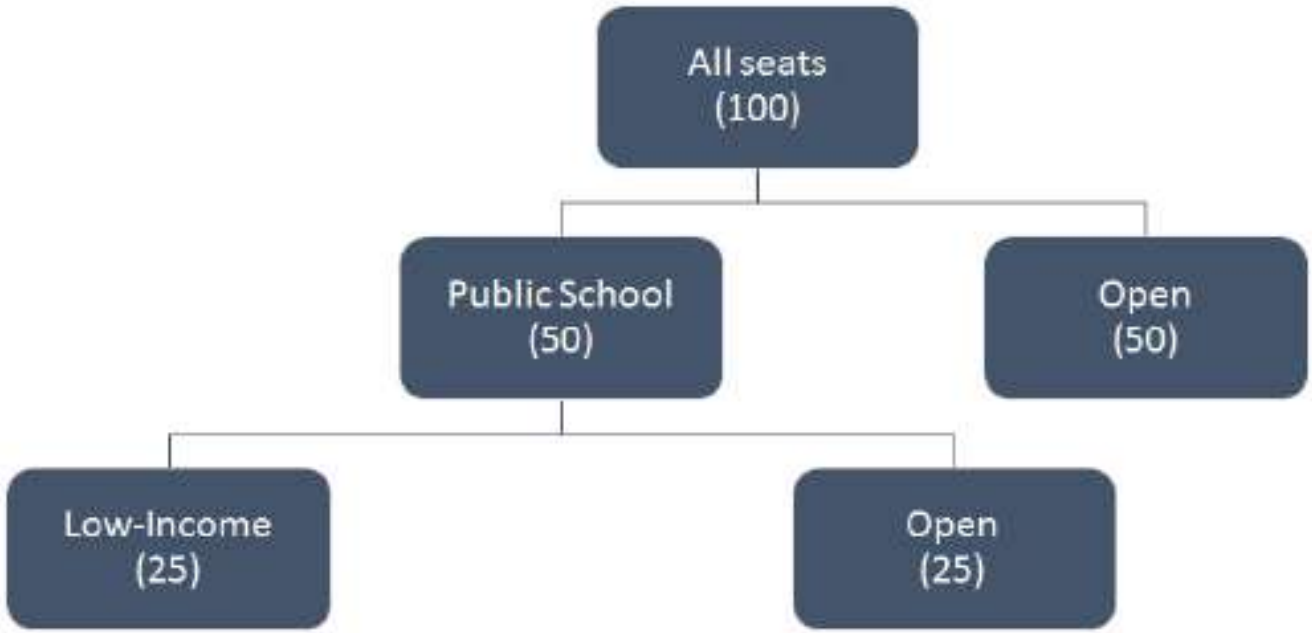

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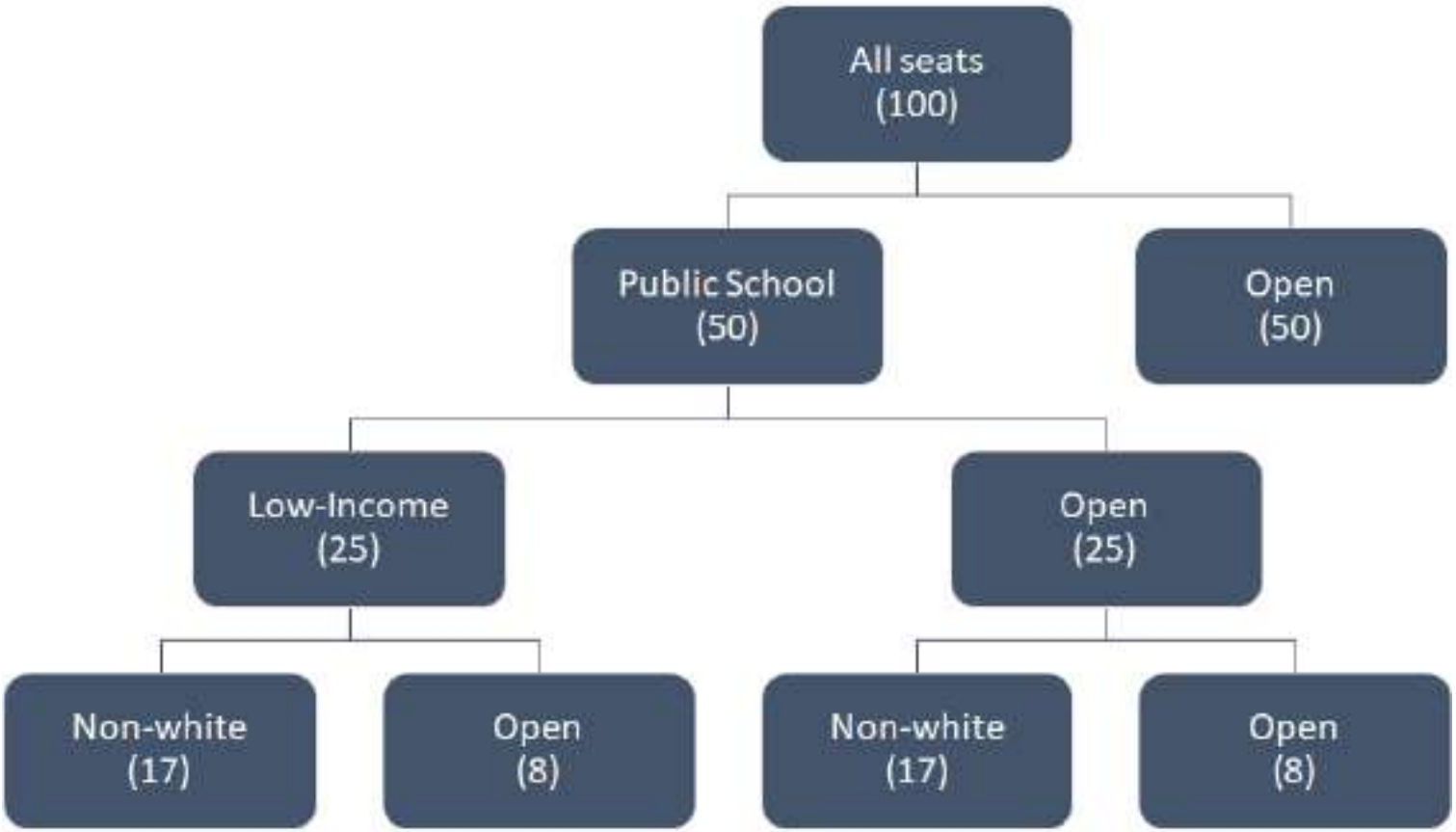

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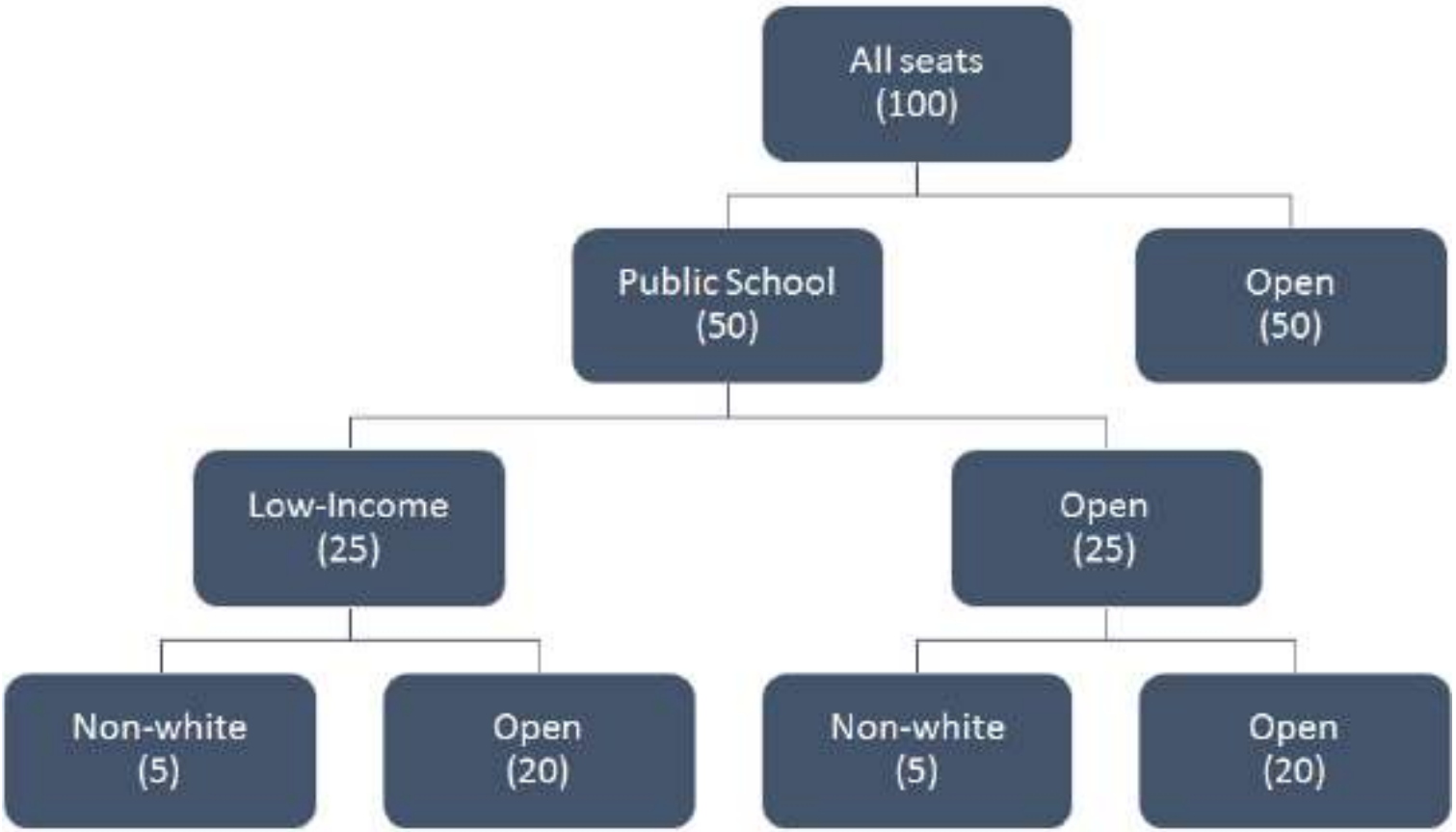
LoQ - Federal University of Santa Catarina (UFSC)

- Racial composition of SC: 20% non-white



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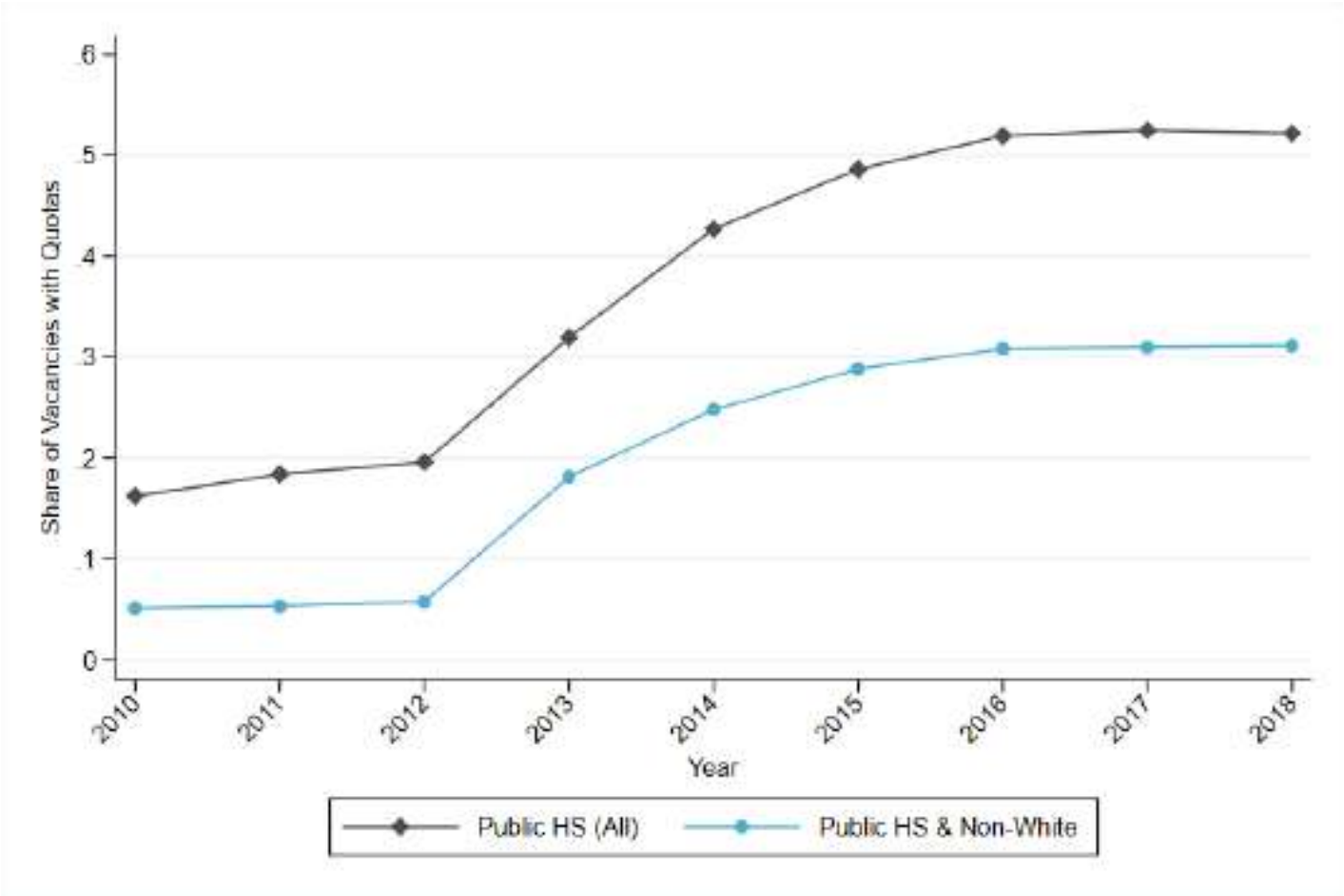
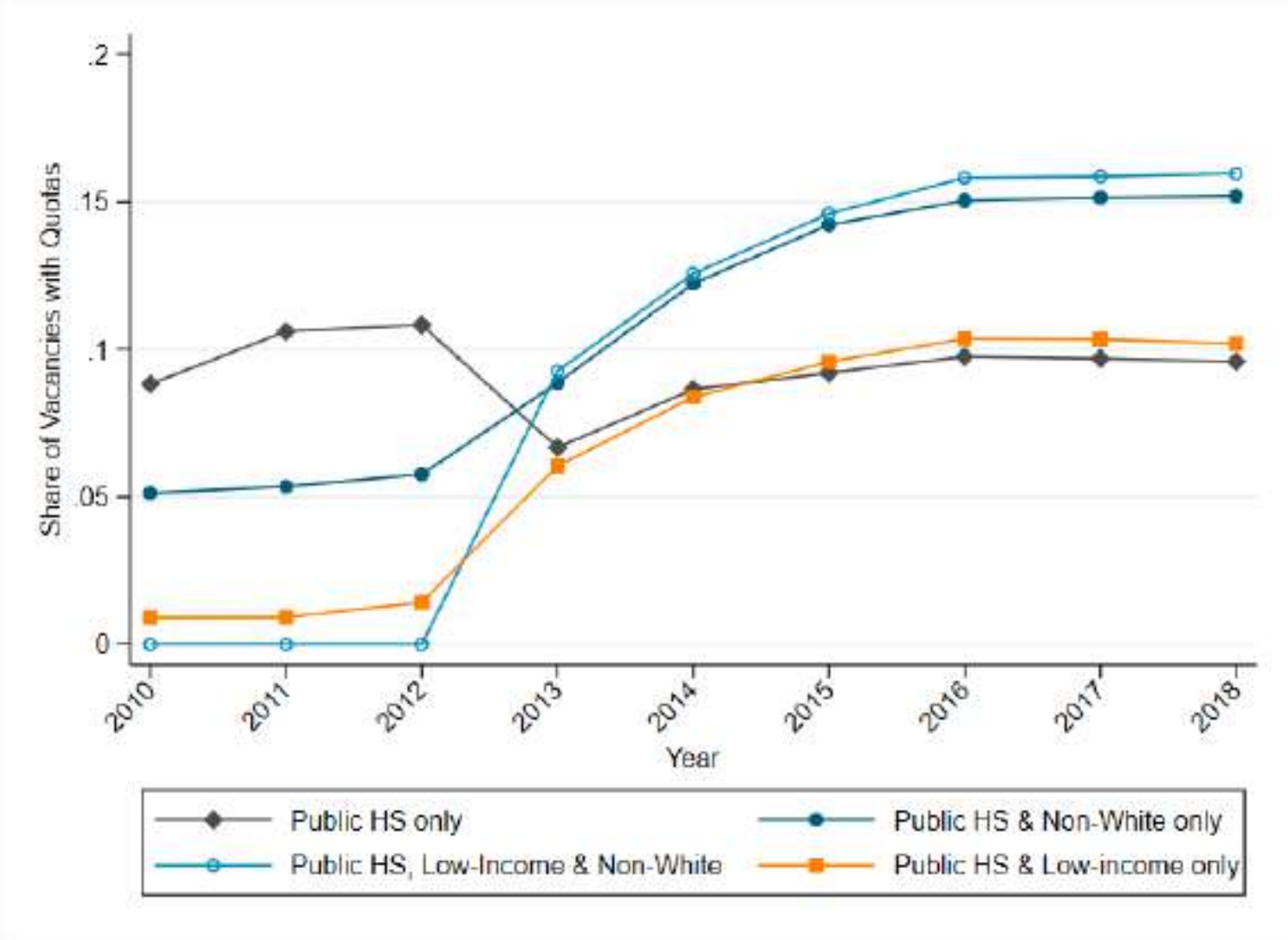
Law of Quotas Implementation



▸ By type ▸ Implementation ▸ LoQ Enrolment ▸ Targeted ▸ Vacancies ▸ ENEM ▸ Back

Law of Quotas, by type



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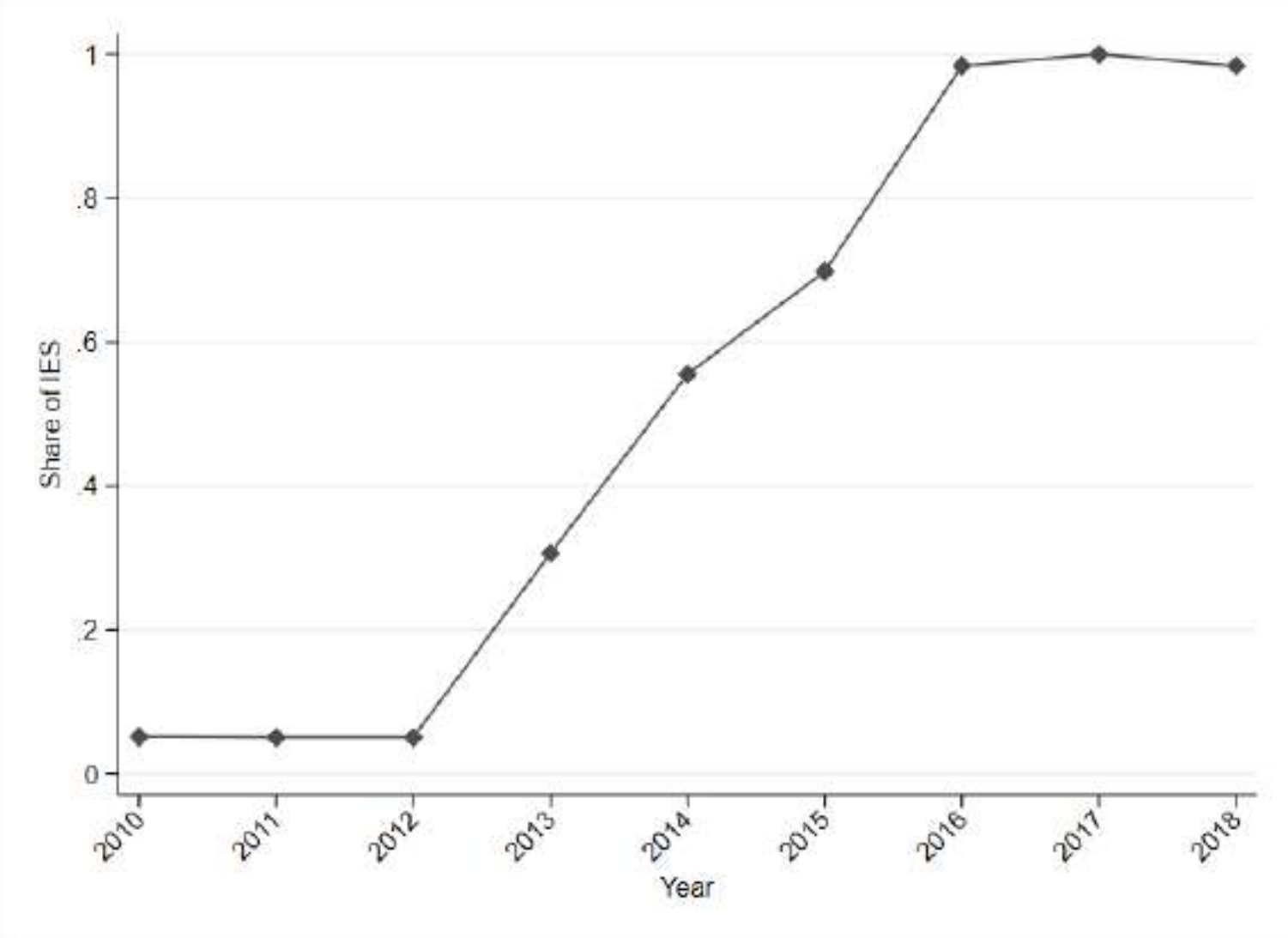
Full Implementation of Racial Quotas



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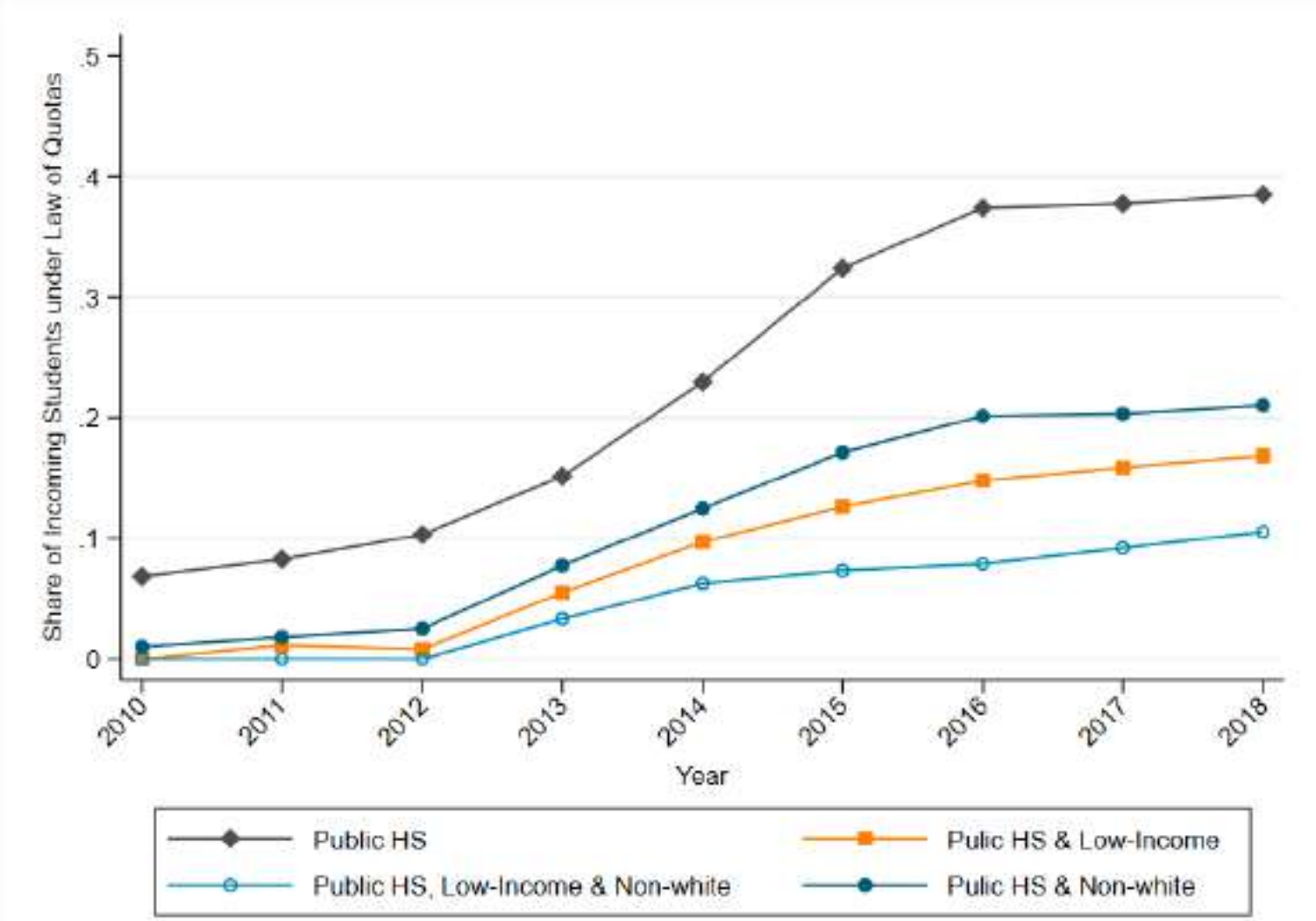
Enrolments under the Law of Quotas



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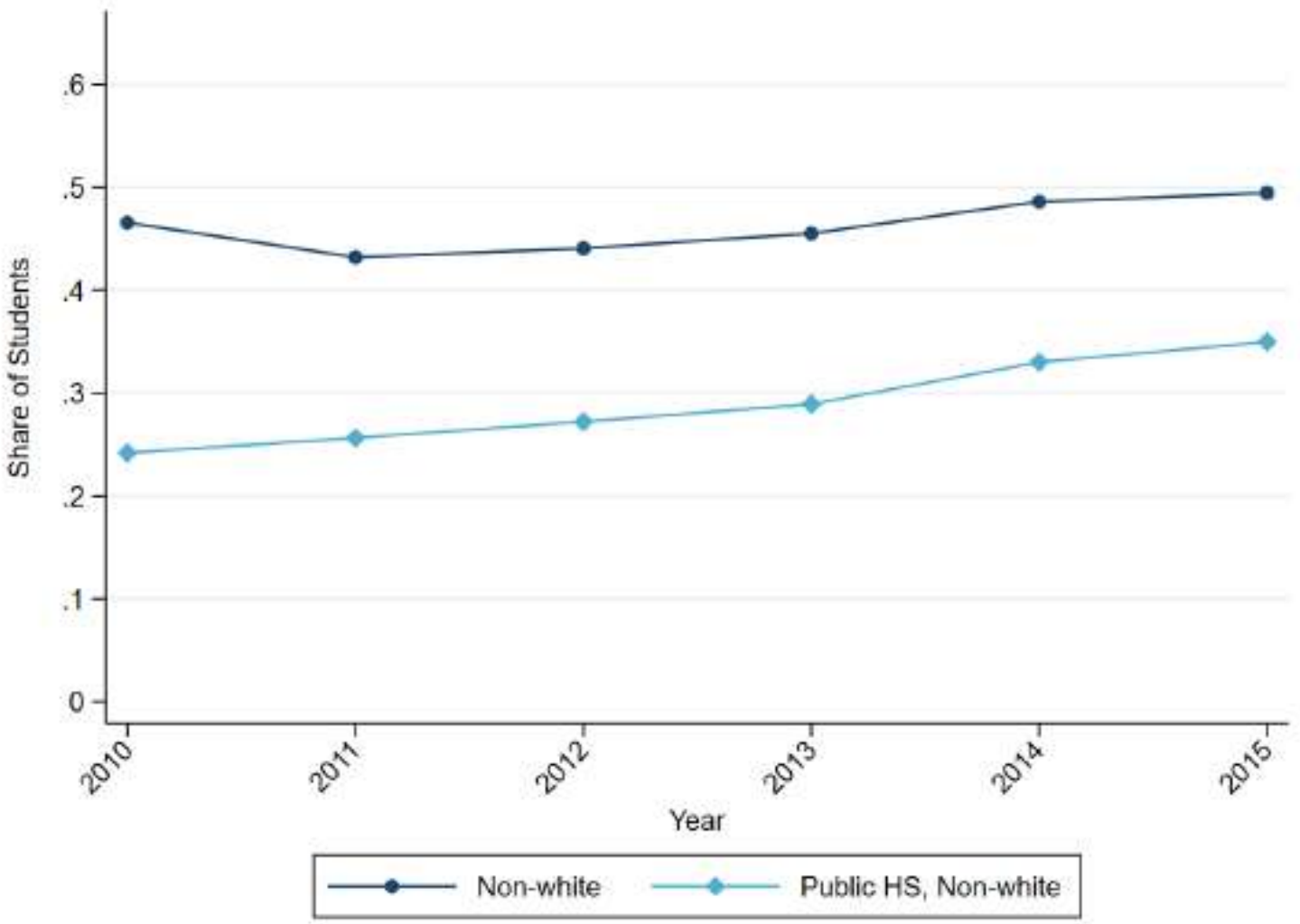
Targeted Individuals in Federal Universities



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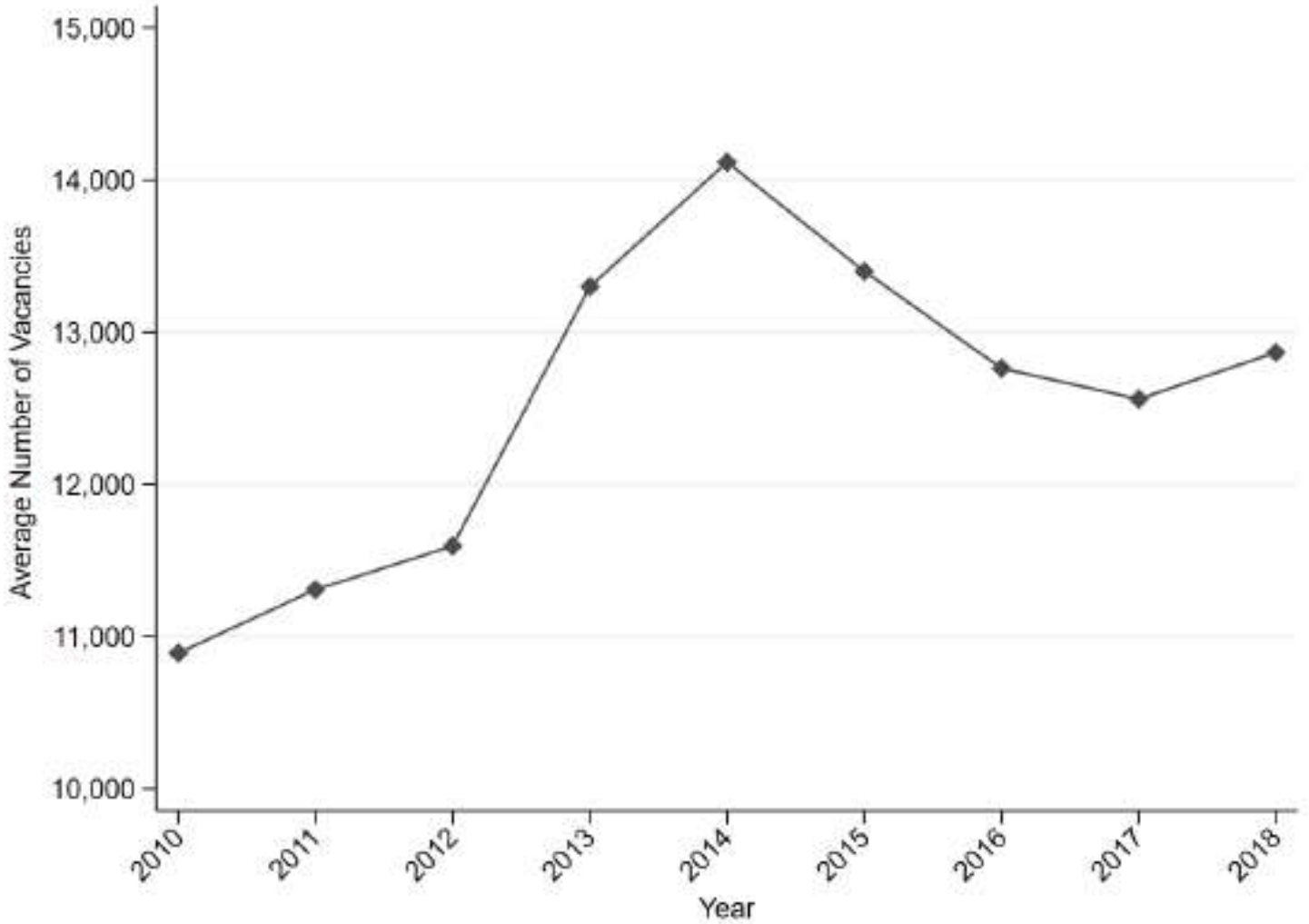
Average Vacancies in Federal Universities



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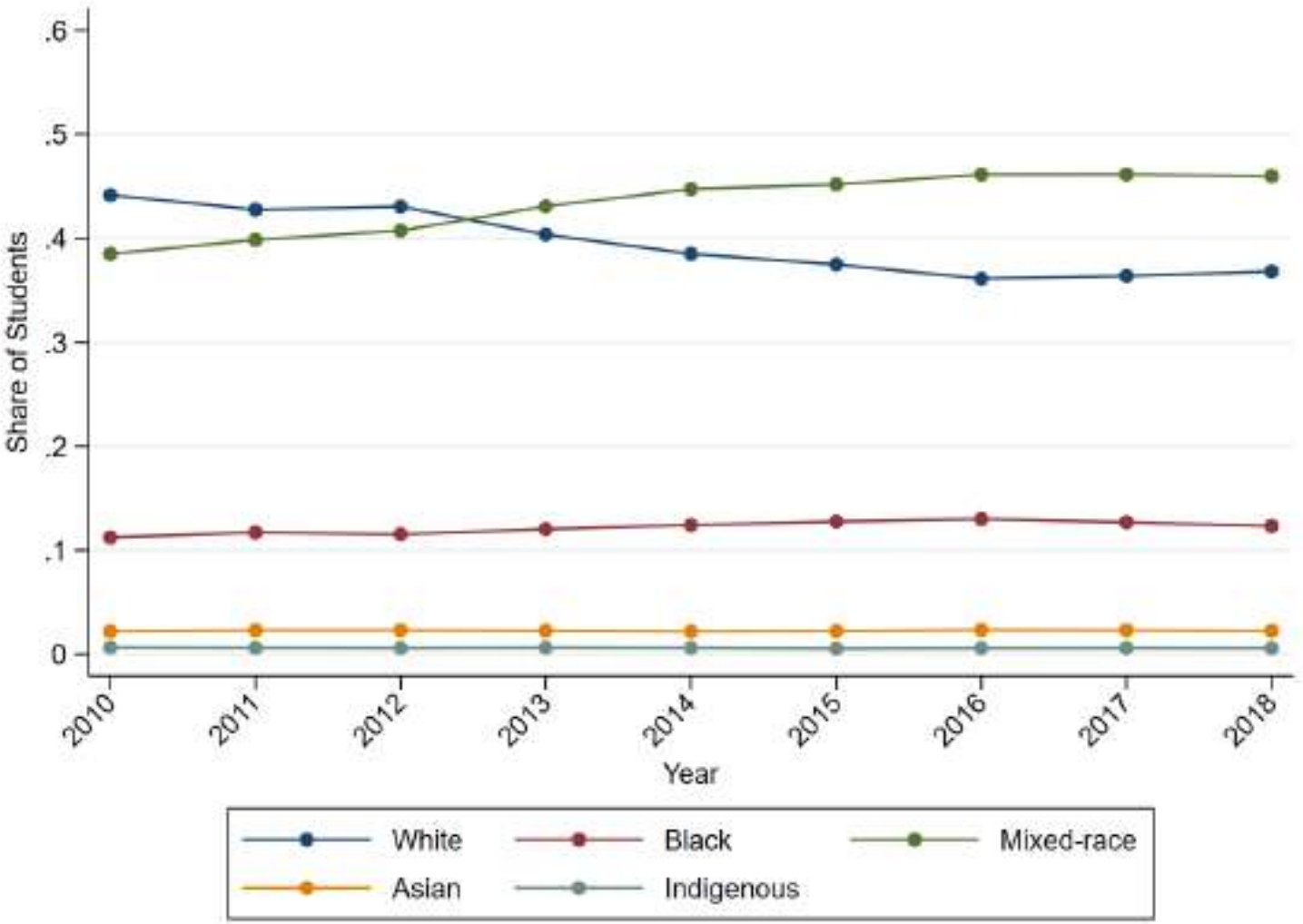
Number of ENEM Takers



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Racial Tribunals in Federal Universities

- Any student self-identifying as non-white is eligible for a racial quota
- Recurrent complains of fraudulent behavior of the (non-eligible) white students benefiting from these quotas
  - ↪ 4,000 complains between 2013 and 2020
- This lead to the creation of "Comissões de Heteroidentificação" from 2015
  - Panel of experts would determine if the student complied with the phenotipical traits of a non-white individual

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Racial Classification of Candidates

- **Multi-label image classification AutoML model** developed in Google's Vertex AI platform
  - Output: Pr(White) and Pr(Black)
  - Training sample: 3,000 candidates images from 2014 ballot pictures and self-reported race from TSE (stratified sampling)
  - Discretize Pr(White) into White, Black, and Mixed-race categories

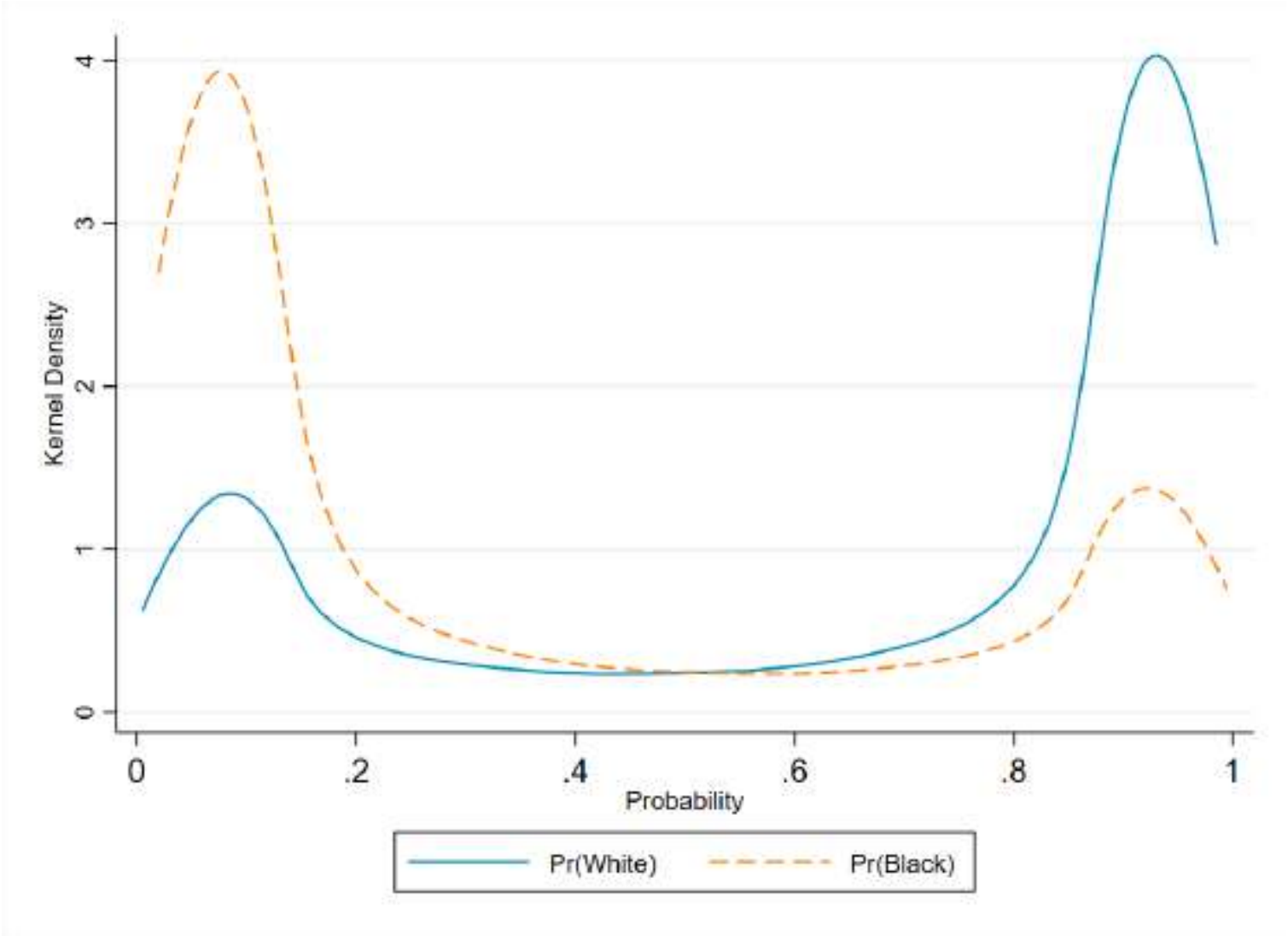
(a) black = 0.879

(b) white = 0.679

(c) white = 0.815

▸ Distribution ▸ Evaluation ◂ Back

Probability of each Racial Category



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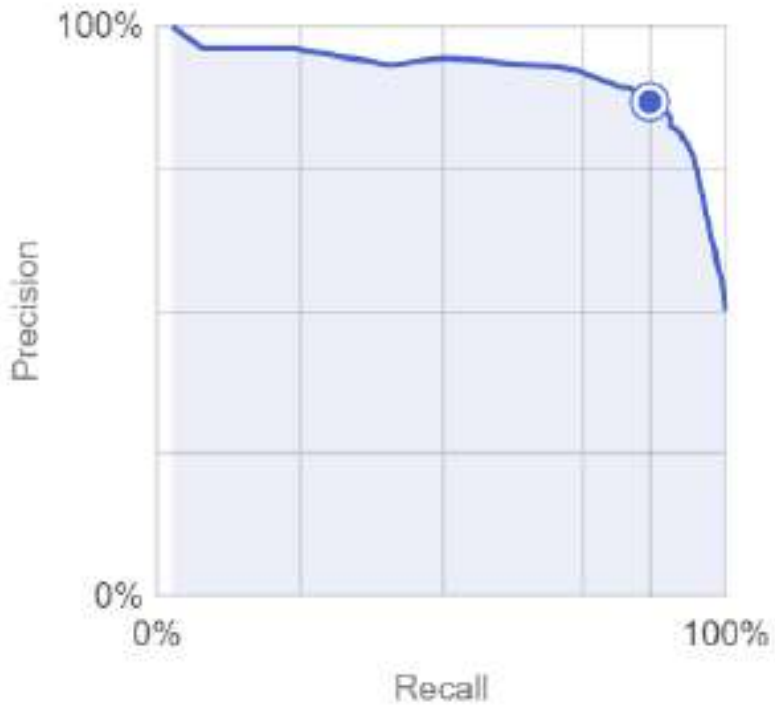
Evaluation of Model

(a) Metrics

Metric	Value	Range
Average precision (PR AUC)	0.914	0 - 1
Precision	0.867	0 - 1
Recall	0.867	0 - 1
Log loss	0.343	0 - ∞

Confidence threshold is 0.5.

(b) Precision-Recall



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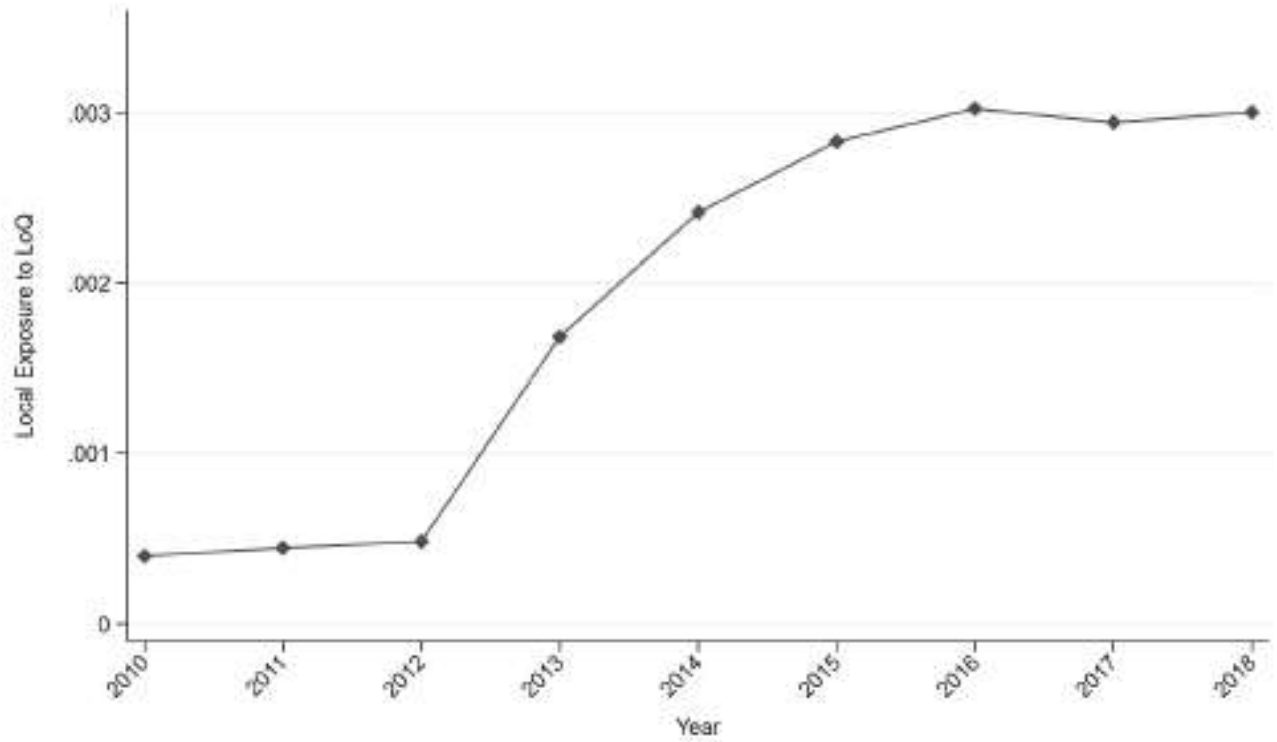
Summary Q_{mt}

	Mean	SD	Min	Max
Exposure to NW Quotas	0.002	0.004	0	0.123



▸ Int vs Ext ▸ Map ◂ Back

Intensive vs Extensive Margin

	Extensive Margin				Intensive Margin			
	Q_{mt}=0	Q_{mt} >0	Diff.	P-value	Q_{mt} <P50	Q_{mt} >P50	Diff.	P-value
Exposure to Non-white Quotas	0.000	0.002	0.002	0.000	0.000	0.004	0.003	0.000
Population Density	1.286	5.387	4.102	0.000	5.568	5.207	-0.361	0.030
Share of Women	0.480	0.511	0.030	0.000	0.510	0.511	0.002	0.090
Share non-whites	0.812	0.510	-0.302	0.000	0.516	0.503	-0.013	0.096
Racial fractionalization	0.289	0.424	0.135	0.000	0.427	0.421	-0.006	0.110
Literacy Rate	0.776	0.891	0.115	0.000	0.889	0.892	0.003	0.326
Share of Population 18-24	0.134	0.125	-0.009	0.000	0.126	0.124	-0.002	0.000
Monthly Median Nominal Income	355.824	424.654	68.831	0.002	416.586	432.539	15.953	0.055
Number of Schools	91.176	710.715	619.539	0.000	601.496	819.941	218.446	0.335
Share of Public HS students	0.987	0.826	-0.160	0.000	0.832	0.821	-0.011	0.108
High-School Enrolment	3.476	4.921	1.445	0.000	4.846	4.996	0.150	0.001
Average ENEM Grade (std.)	-0.722	0.003	0.725	0.000	-0.021	0.027	0.047	0.004
Enrolment in Federal Universities	0.000	0.007	0.007	0.000	0.004	0.010	0.006	0.000

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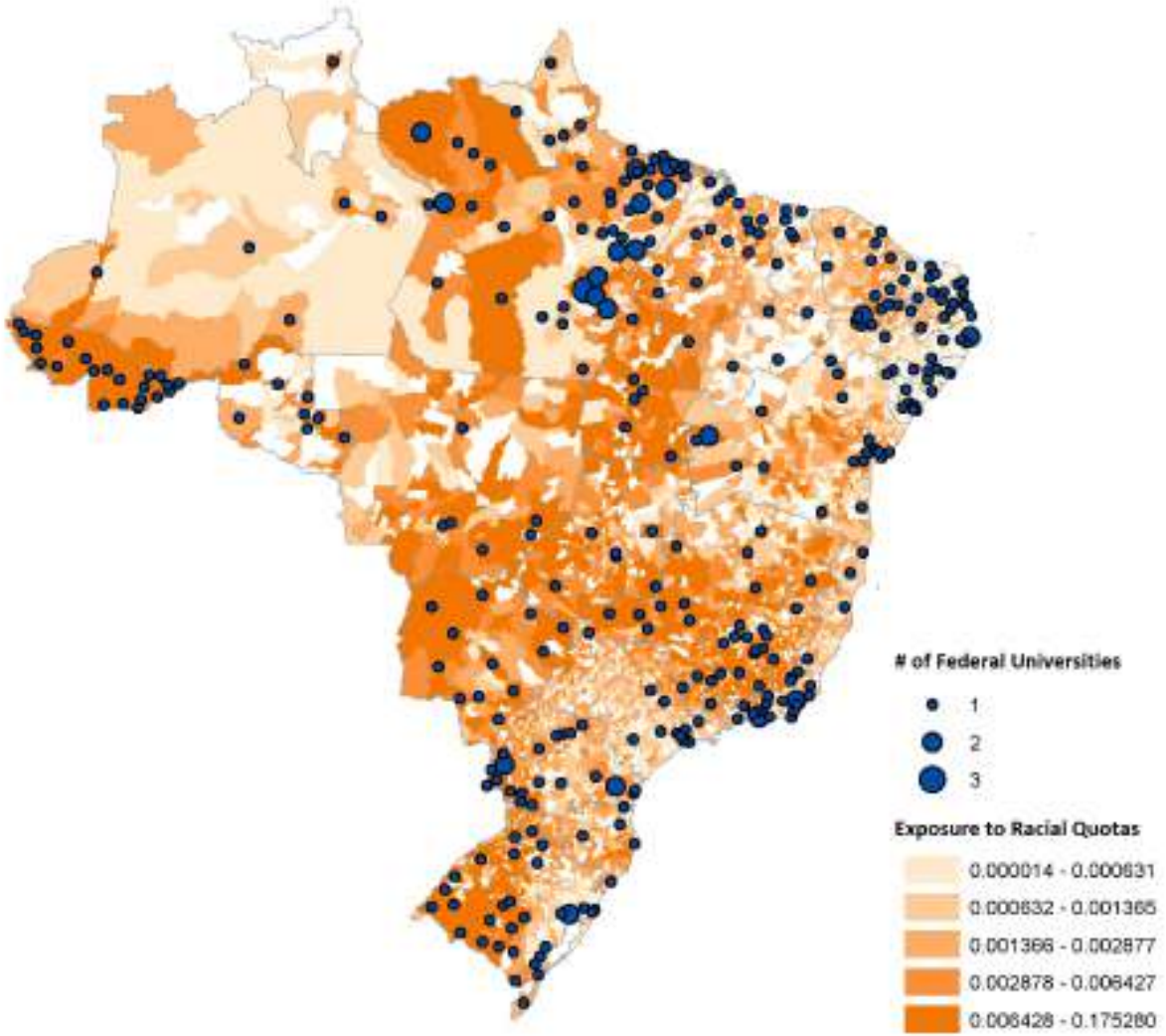
Average Exposure to Racial Quotas, 2013-2018



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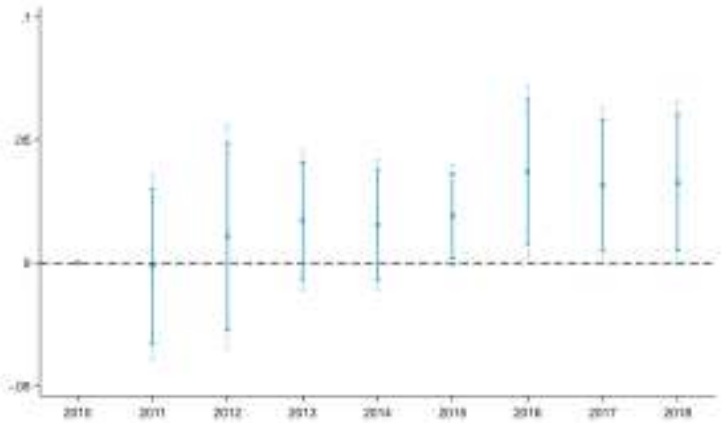
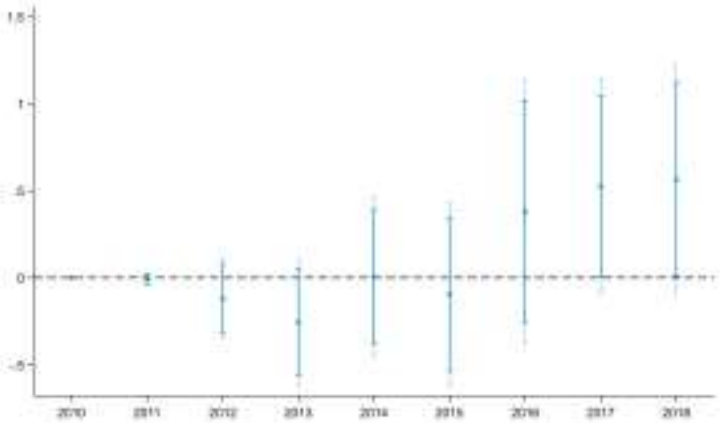
Pre-trends Main Educational Outcomes

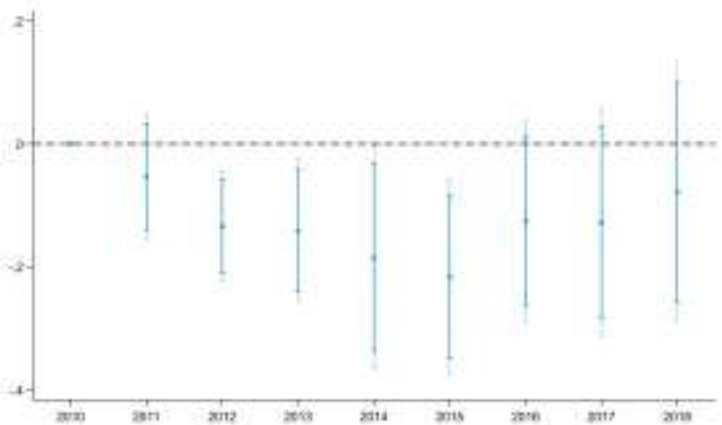
(a) Enrolment in Federal Universities



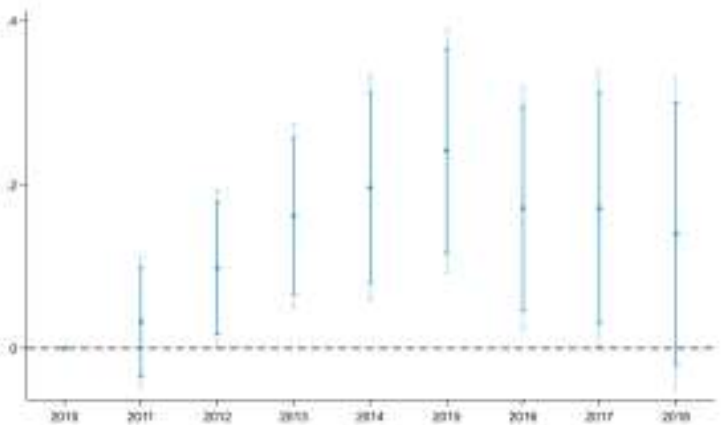
(b) Enrolment through Racial Quotas



(c) Share of Whites taking ENEM



(d) Share of Non-whites taking ENEM



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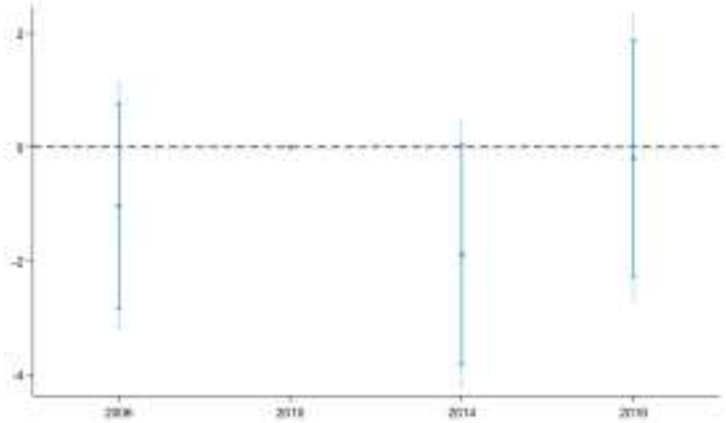
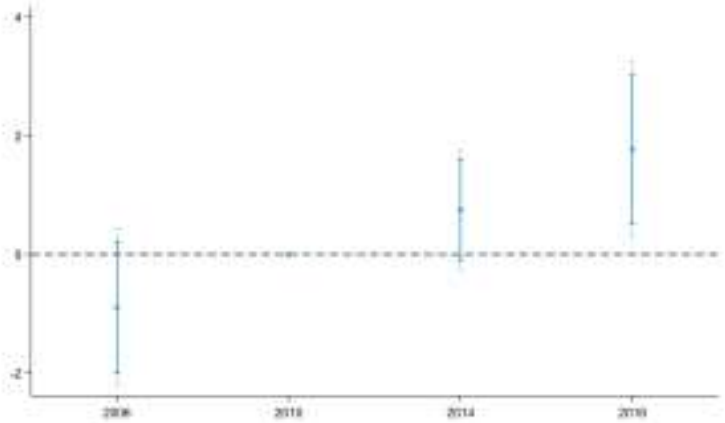
Pre-trends Main Political Outcomes

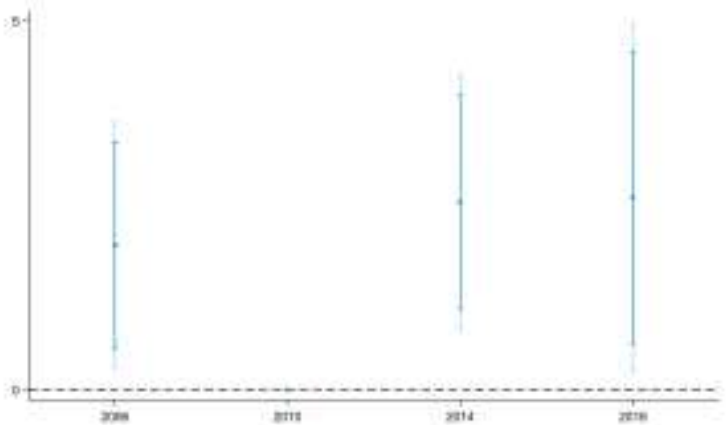
(a) Preference for Non-White Cand



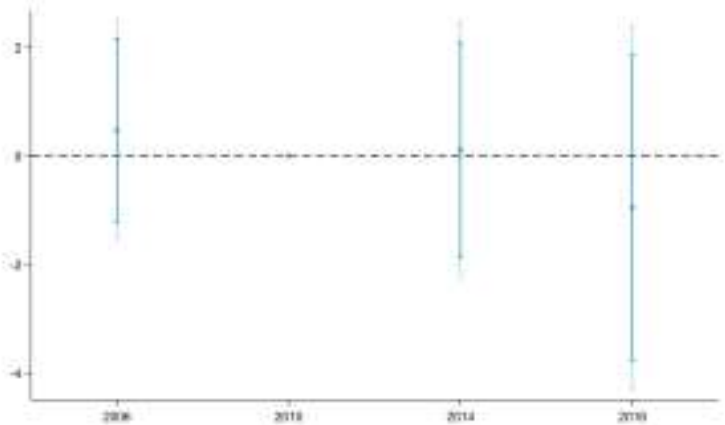
(b) Preference for Black Cand



(c) Ideological Shift



(d) Candidate Competence



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Control for Expansion of SISU

- In 2010, adoption of centralized admission system in public universities, SISU

	All		White		Non-white		W/ Racial Quota	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Exposure to Non-white Quotas	-0.0351	-0.0687**	3.7677***	4.4251***	3.5231***	3.7036***	1.7575**	1.4232*
	(0.0368)	(0.0350)	(1.0985)	(1.0322)	(1.0789)	(0.9617)	(0.8365)	(0.8583)
x Above Median Share NW Population		0.0807***		-1.5766		-0.4329		0.8020
		(0.0307)		(1.6015)		(1.8609)		(0.8281)
SISU Expansion	0.0130	0.0099	-0.5059	-0.4455	-0.2695	-0.2529	0.3104	0.2797
	(0.0154)	(0.0155)	(0.7574)	(0.7603)	(0.5959)	(0.6130)	(0.2920)	(0.2862)
Exposure to Non-white Quotas x SISU Expansion	-0.3725	-0.2096	-61.5302***	-64.7119***	-59.1003***	-59.9740***	-18.9368***	-17.3183**
	(0.2787)	(0.3081)	(11.9654)	(11.2356)	(13.5364)	(13.0920)	(7.2280)	(7.7747)
Avg Dep var	.001	.001	.026	.026	.024	.024	.009	.009
Municipalities	5,492	5,492	5,492	5,492	5,492	5,492	5,492	5,492
Observations	49,428	49,428	49,428	49,428	49,428	49,428	49,428	49,428

◂ Back

Ideological Shift, controlling for Income

	Left		Center		Right		PT	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Exposure to Non-white Quotas	5.9259	-5.1354	-4.2519	4.3674	-1.1679	-3.1066	-1.5308	-6.0516
	(6.0422)	(6.8167)	(6.6121)	(7.9231)	(5.3724)	(6.8492)	(3.3702)	(5.3323)
x Above Median Share NW Population		5.6279**		-4.3854		0.9864		2.2995
		(2.6798)		(2.9972)		(2.0683)		(1.6982)
x Income	-1.1406	0.3118	1.5586*	0.4268	-0.1066	0.1480	-0.0380	0.5556
	(0.8200)	(0.9165)	(0.9447)	(1.1346)	(0.8271)	(1.0342)	(0.4283)	(0.6395)
Avg Dep Var	.295	.295	.298	.298	.276	.276	.159	.159
Municipalities	5,492	5,492	5,492	5,492	5,492	5,492	5,492	5,492
Observations	21,968	21,968	21,968	21,968	21,968	21,968	21,952	21,952

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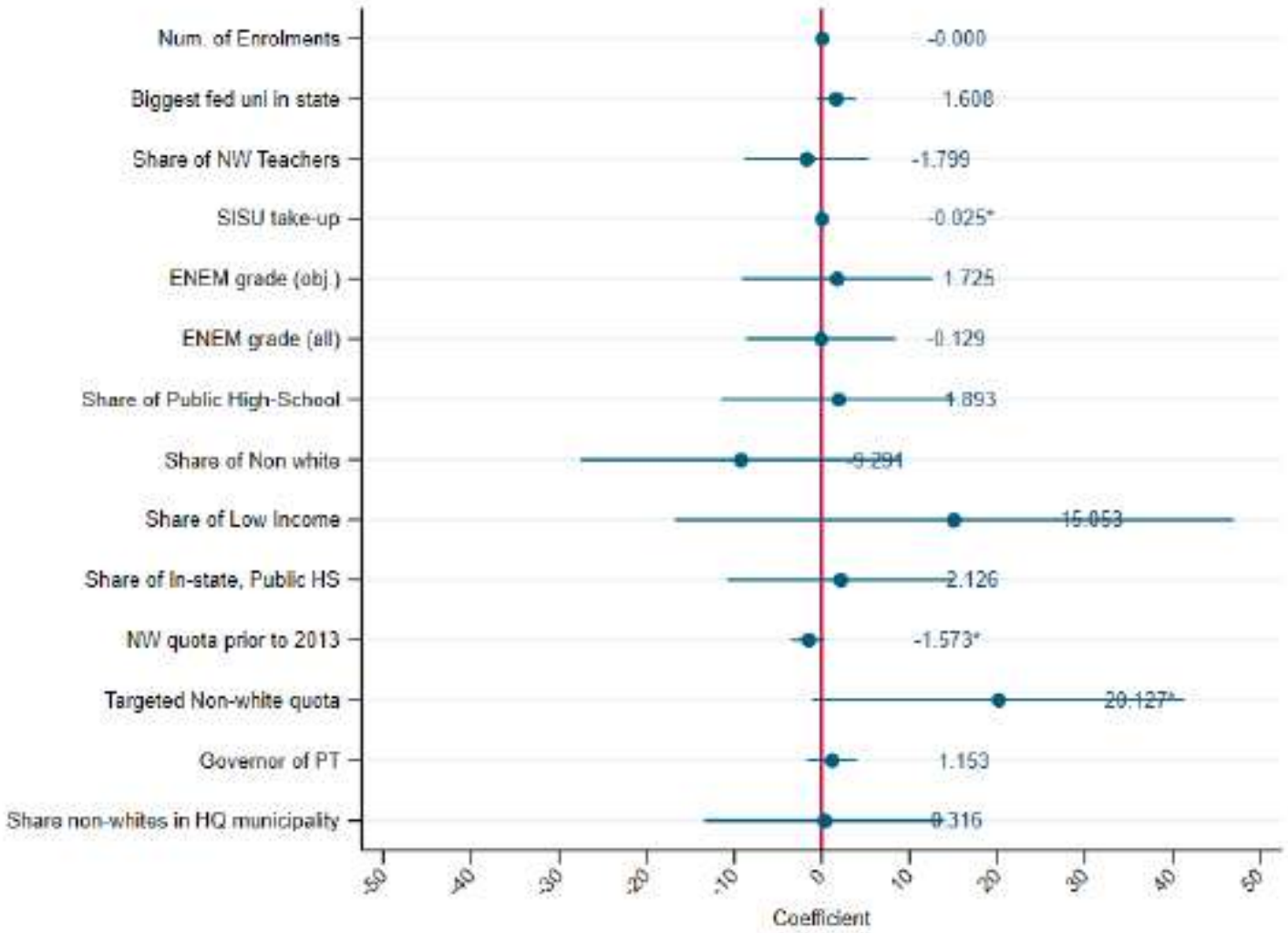
Determinants of Implementation of Racial Quotas



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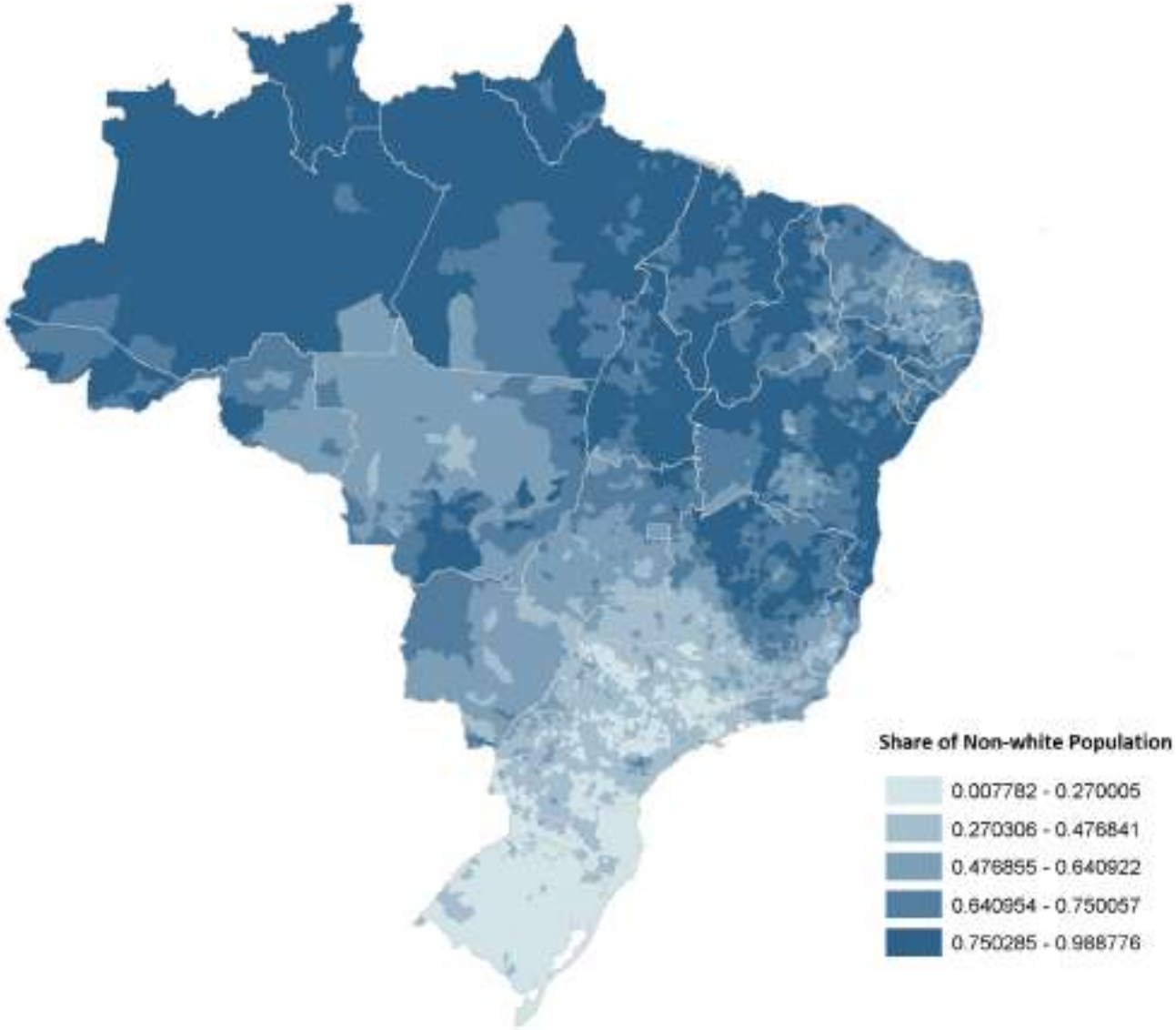
Share of non-whites, Census 2010



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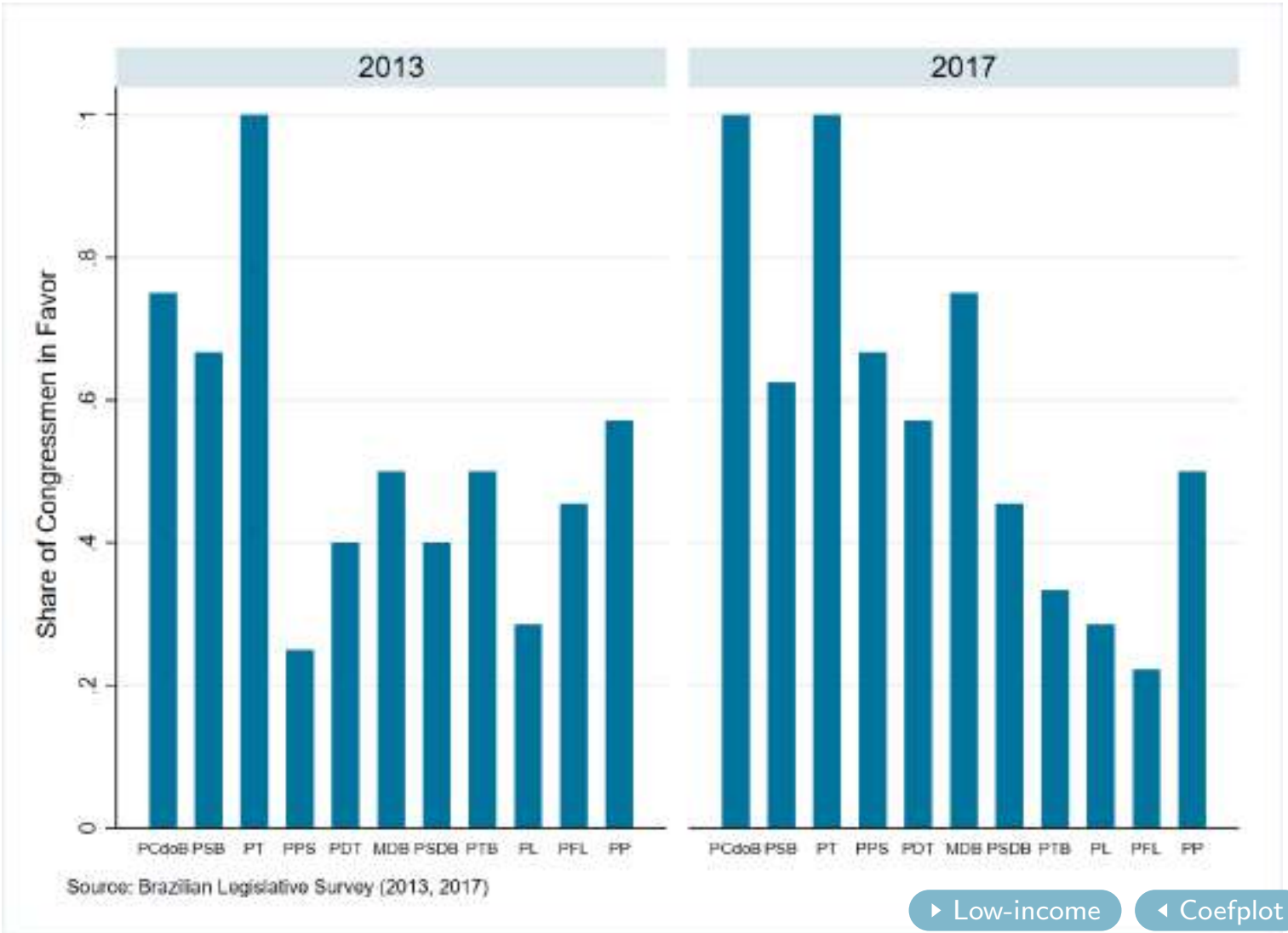
Stance towards Racial Quotas across Parties

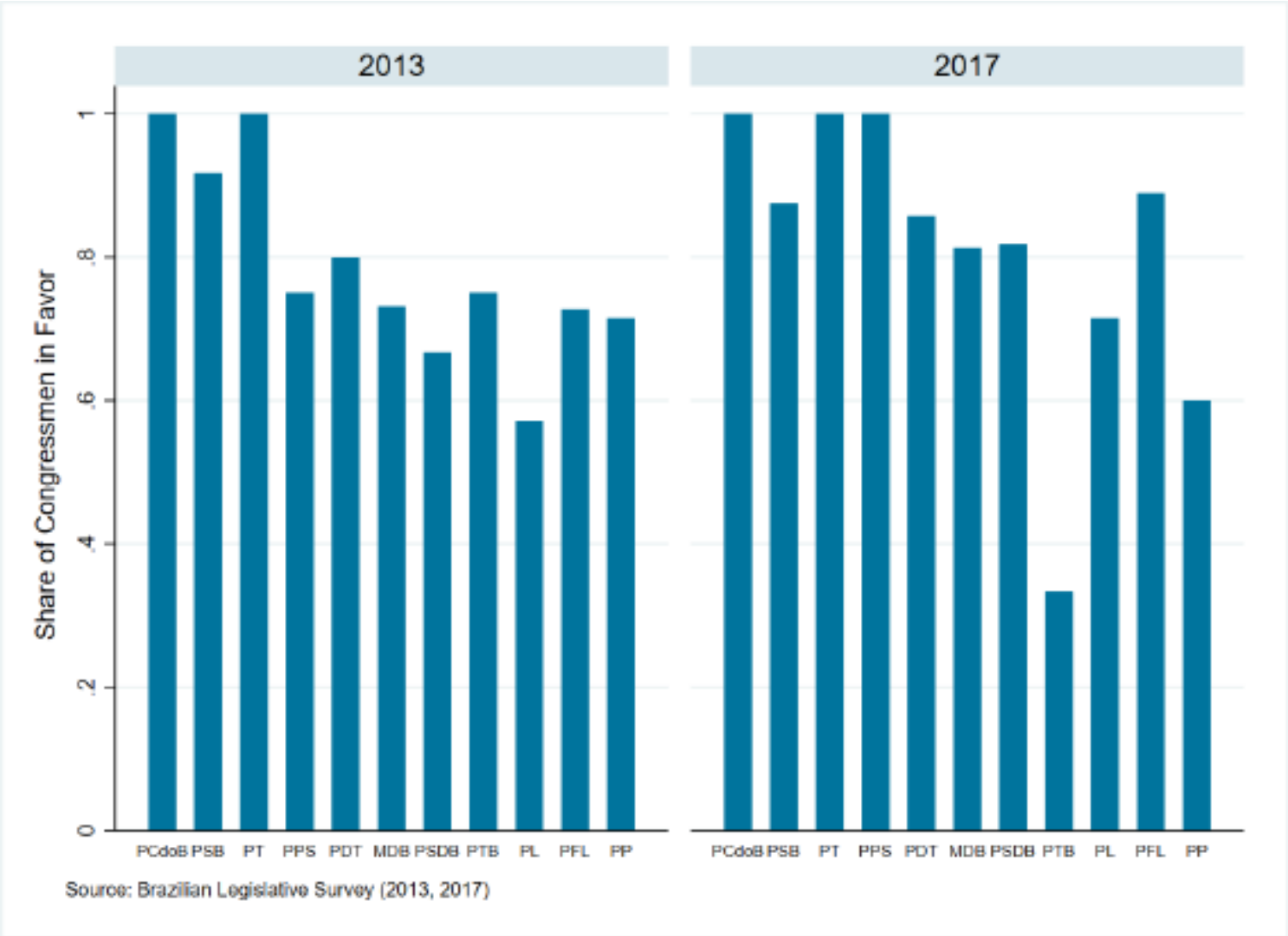
- "Do you agree or disagree? Public universities should have racial quotas for Afrodescendants"



▸ Low-income ◂ Coefplot ◂ Back

Stance towards Low-Income Quotas across Parties

- "Do you agree or disagree? Public universities should have quotas for low-income students"



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