

# From Reservation to Transformation: The Socioeconomic Impact of Political Quotas

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# Outline

Introduction and motivation

Background and Data

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Conclusion

## Motivation: Affirmative action

- ▶ Many countries have affirmative action policies, which give preferential treatment to historically disadvantaged minority groups
  - ▶ One such policy: Proportional quotas (or reservation) in politics
  - ▶ Efficiency of political quotas has long been debated:  
**Social Justice & Economic Justice**
  - ▶ Does political quota improve the economic outcomes of disadvantaged minority groups?

## Debate Around Political Quotas



Figure 1: Protest against *reservation*

*Bhavnani (2017)* finds that electoral quota fails to boost SC chances of winning election after they are discontinued.

# Literature Review

## ► Political Quotas & Redistribution

- Pande (2003): ↑ redistribution for STs, no effect for SCs.
- Chin & Prakash (2011): quotas ↓ poverty for STs, no effect for SCs.

## ► Discrimination & Representation

- Chauchard (2014), Girard (2018): quotas reduce caste discrimination (temporary).
- Jensenius (2015): no long-term development impact of SC quotas.

## ► Public Goods & Governance

- Chattopadhyay & Duflo (2004): reserved councils change public goods provision.
- Gulzar, Haas & Pasquale (2020): ST quotas ↑ NREGA participation.

## ► My Contribution

- First large-scale, village-level causal evidence on SC quotas.
- Show **sustained gains** in education, entrepreneurship, occupational mobility, infrastructure.
- Highlight mechanisms: **politician quality & access to finance**.

# Summary of Main Effects

## ▶ **Education:**

- ▶ SC student share ↑ 1.1 p.p. ( $\approx 5\%$  from mean).
- ▶ Stronger gains in elite federal schools (+5.1 p.p.).
- ▶ Larger effects in low-SC villages.

## ▶ **Entrepreneurship:**

- ▶ SC-owned firms ↑ 20%.
- ▶ Firm size ↑ ( $\approx 2$  workers).
- ▶ Entry into higher-status occupations (restaurants, textiles, BPO).

## ▶ **Village Development:**

- ▶ Nightlights ↑ 4.1% (proxy for income growth).
- ▶ Road construction ↑ 3.2%, Electrification ↑ 5.7%.

## ▶ **Persistence:** Effects remain even after quotas removed.

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# Political Representation in India

## Political System:

- ▶ Single member constituency
- ▶ Political party nominates a candidate. Independent politicians can also participate and win.
- ▶ Members are elected by first-past-the-post system (Plurality)

## Reservation:

- ▶ *Political Reservation (Quota)*: AA for proportionate representation in politics
- ▶ Scheduled Caste (**SC**) & Scheduled Tribe (**ST**) have political quotas
- ▶ **SC**: Lower caste Hindus & **ST**: Tribal communities
- ▶ SC - 16.63% and ST - 8.61% of India's total population
- ▶ **Longest-running** (since 1932 in current form) and targeting the **largest** ethnic group(s) (270 million in 2023)

# SC and ST Population

This Paper: Political quotas at *state* level for SC minority.

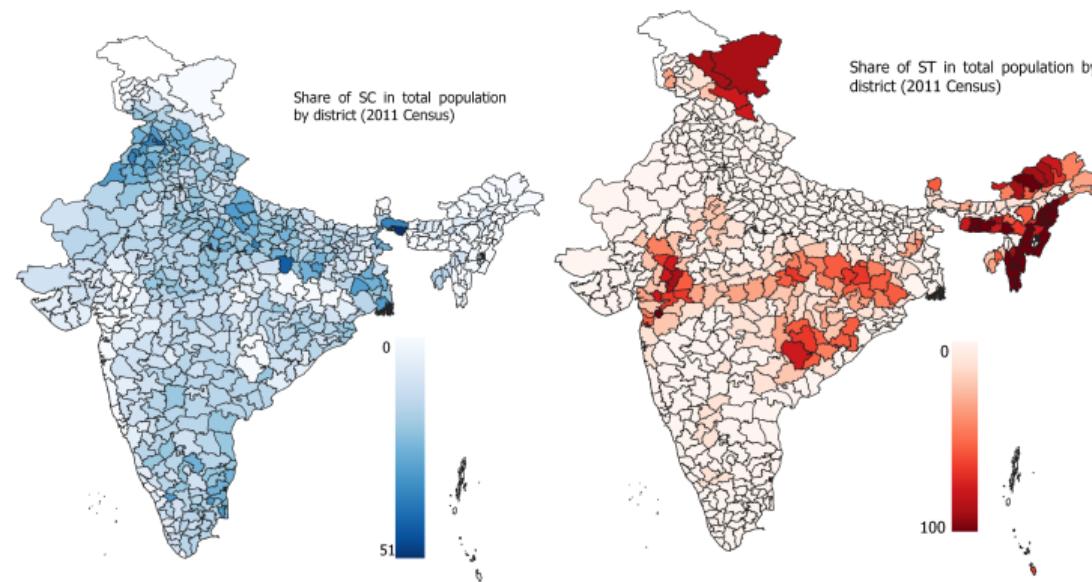


Figure 2: Concentration of SC and ST population

## Background I

### Exogenous Variation: Redistricting of 2008

- ▶ Why Redistricting?
  - *Last Redistricting 1976*
  - *Large variation in size of constituency*
  - *SC Population: 14.6% in 1971 ⇒ 16.2% in 2001*
  - *SC Population: 80 ml in 1971 ⇒ 166 ml in 2001*
- ▶ Redistricting: two step process
  1. *Redrawing of constituencies*
  2. *Selection of constituency to be reserved (quotas)*
- ▶ No evidence of Gerrymandering

## Background II: No evidence of Gerrymandering

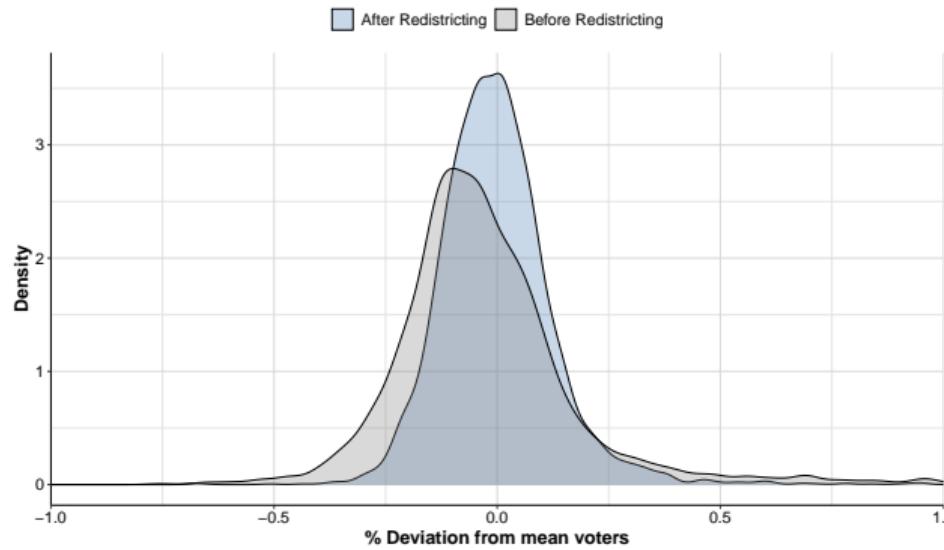


Figure 3: Size of constituencies before and after redistricting

**Additional evidence:** (Iyer, 2013) & (Vandewalle, 2021 WP)

(Resuf Ahmed, HEC Lausanne)

From Reservation to Transformation

## Background III

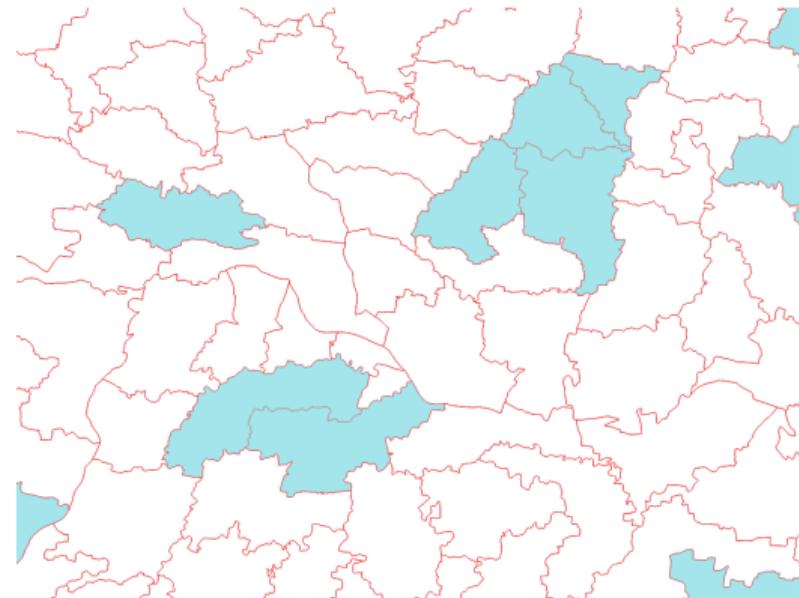


Figure 4: Constituency before redrawing in 2008

## Background IV

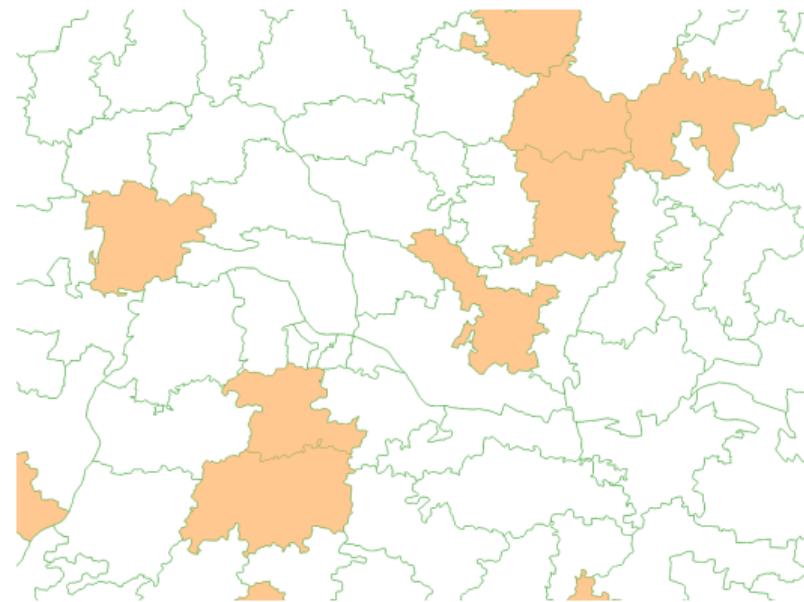


Figure 5: Constituency after redrawing in 2008

## Background V

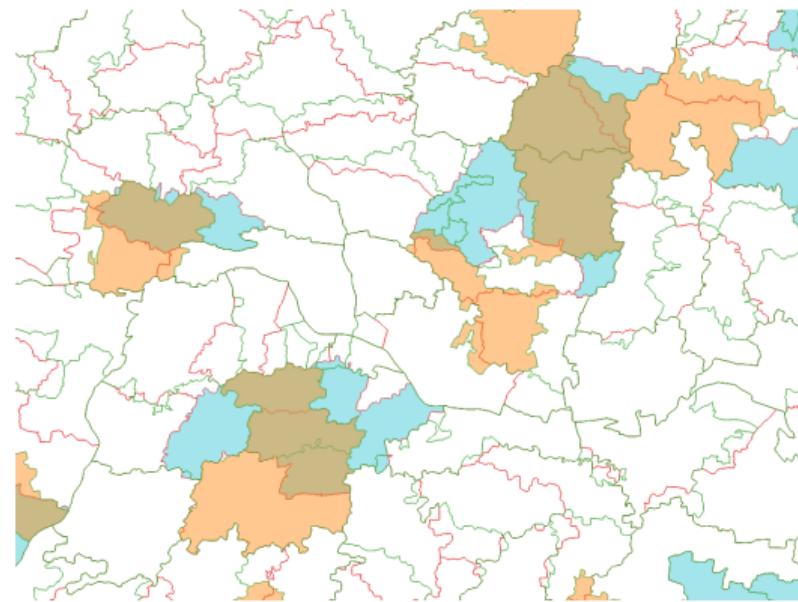


Figure 6: Constituencies after and before redrawing in 2008

## Background VI

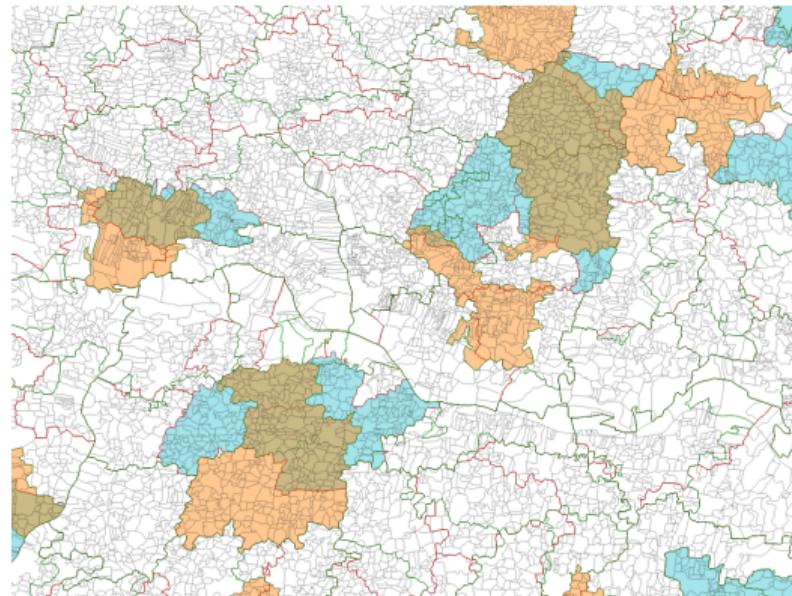


Figure 7: Constituencies after and before redrawing with village

## Background VII

Table 1: Type of village by political status

Change in Status	Freq	%	% Cum.
GEN ⇒ GEN	297,795	69.77	69.77
GEN ⇒ SC	45,134	10.57	80.34
SC ⇒ GEN	36,243	8.49	88.83
SC ⇒ SC	47,653	11.16	100
Total	426,825	100.00	100

# Data I

## Outcome Variable: Community specific

- ▶ Education Data
  - ▶ Data of 1.3 million school
  - ▶ 2005 - 2017
  - ▶ Enrollment by grade and community
- ▶ Economic Census Data
  - ▶ 30, 42, 59 million enterprises - **131 Million**
  - ▶ 1998, 2005, 2014
  - ▶ Owner Caste & enterprise Size
- ▶ Political Characteristics:
  - ▶ Pre and Post Delimitation Winning Politicians
  - ▶ Political Experience, Age, Education, Criminal record, Wealth
- ▶ **Unit of observation :** 400,000+ villages

## Data II

### Outcome Variable: Local Area Development

- ▶ Nighttime Light Density
  - ▶ Main Analysis: 2004 - 2013, Placebo Analysis: 1994 - 2003
  - ▶ Proxy for Consumption/Income (*Chen and Nordhaus 2011*)
  - ▶ Village level data
- ▶ Electrification
  - ▶ RGGVY: Indian federal Govt. plan to electrify all the villages
  - ▶ Launched in 2005
  - ▶ Main Predictor of Nighttime Light Density
- ▶ Road Construction
  - ▶ PMGSY: Indian federal Govt. plan to provide road connectivity to unconnected villages.
  - ▶ Launched in 2000

# Empirical Strategy

## Entering Reservation

**Treatment:** GEN  $\Rightarrow$  SC    **Control:** GEN  $\Rightarrow$  GEN

$$Y_{it} = \alpha + \beta_1 \cdot \mathbb{1}(\text{GEN} \Rightarrow \text{SC})_i \times \text{post}_t + \mathbf{X}_{it} + \delta_s \cdot t + V_i + T_t + \epsilon_{it}$$

## Leaving Reservation

**Treatment:** SC  $\Rightarrow$  GEN    **Control:** SC  $\Rightarrow$  SC

$$Y_{it} = \alpha + \beta_2 \cdot \mathbb{1}(\text{SC} \Rightarrow \text{GEN})_i \times \text{post}_t + \mathbf{X}_{it} + \delta_s \cdot t + V_i + T_t + \epsilon_{it}$$

- ▶  $Y_{it}$  is the outcome var. for village  $i$  in year  $t$ .  $\text{post}_t = 1$  if the redistricting has occurred, 0 otherwise.
- ▶  $\mathbb{1}(\text{GEN} \Rightarrow \text{SC})_i = 1$  if village  $i$  switches from GEN to SC, 0 otherwise.  $\mathbb{1}(\text{SC} \Rightarrow \text{GEN})_i = 1$  if village  $i$  switches from SC to GEN, 0 otherwise.
- ▶  $\mathbf{X}_{it}$  includes village-level controls.  $\delta_s \cdot t$  is state-specific linear time trends.
- ▶  $V_i$  and  $T_t$  denote village and year fixed effects, respectively.

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## Education: Event Study

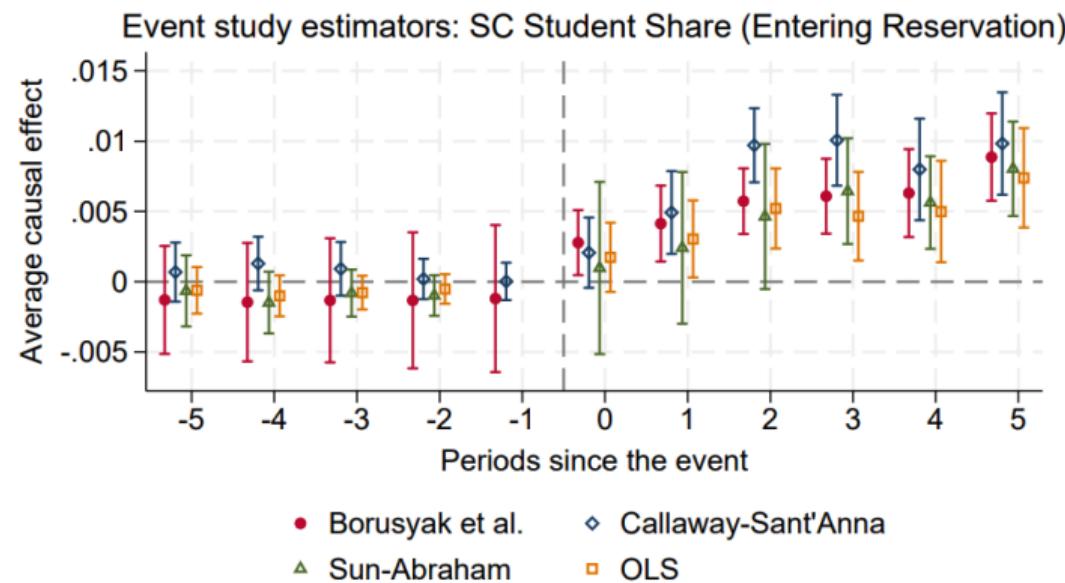


Figure 8: Event Study: Impact of Quotas on SC school enrollment

## Education: Heterogeneous

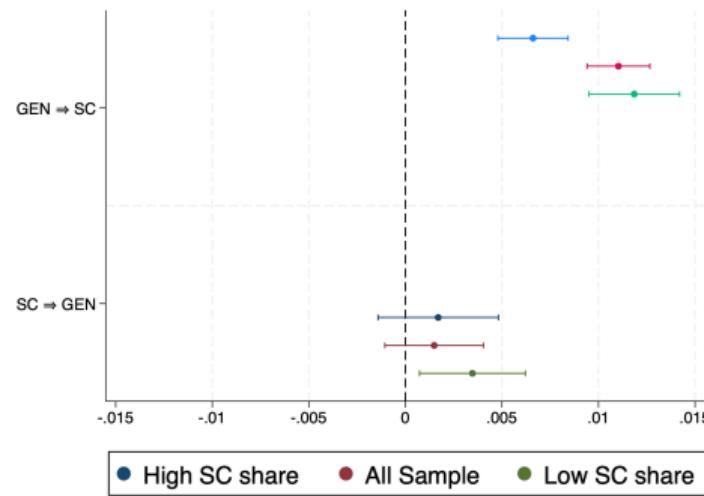


Figure 9: Impact of political quotas by share of SC.

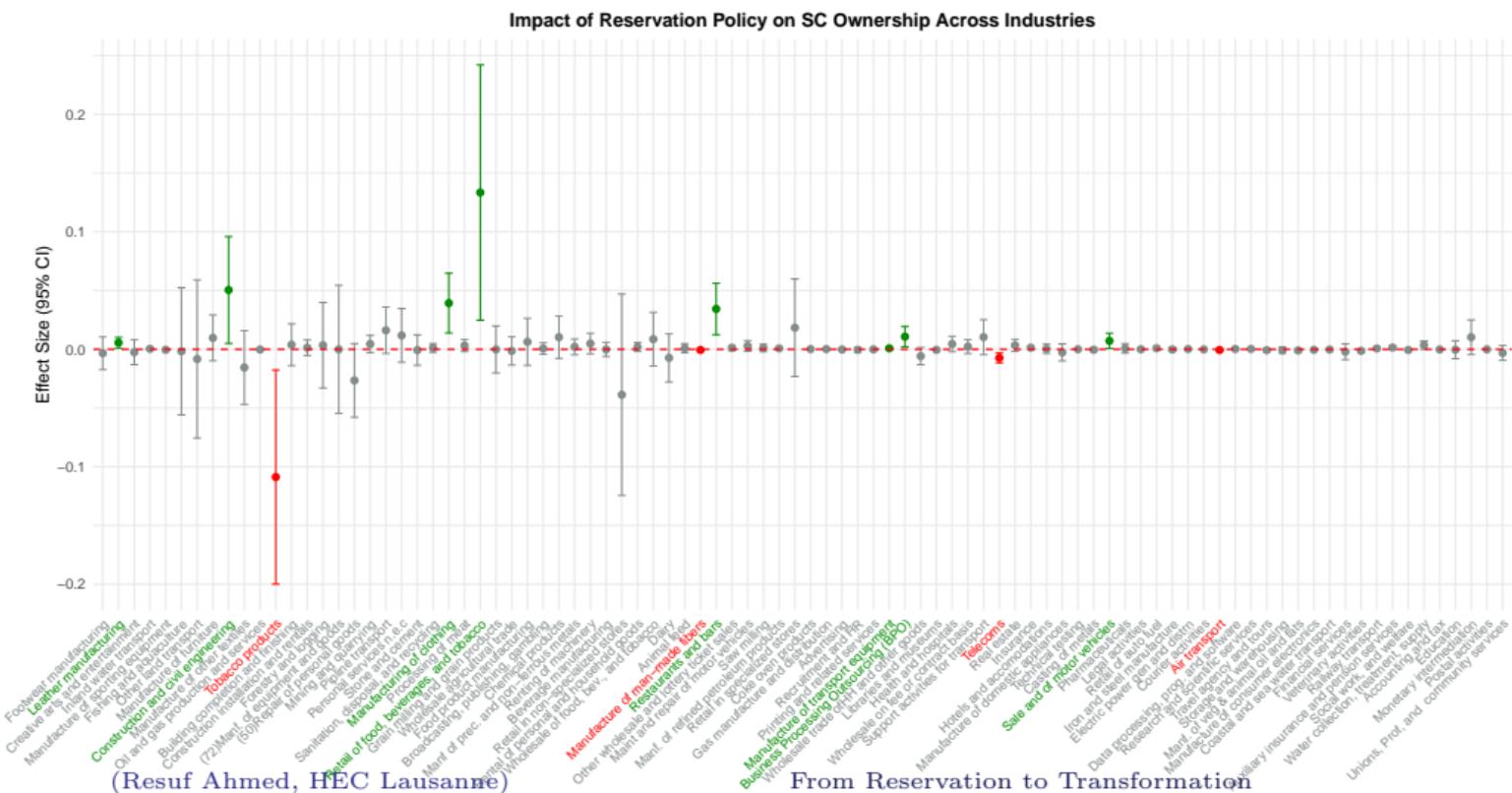
## Enterprises: Number and Size of SC Firm

	(1)	(2)	(3)	(4)
<i>Dependent Variable:</i>	Number of SC Owned Firm		Size of SC owned firm <sup>t</sup>	
$(GEN \Rightarrow SC)_i \times post_t$	1.079*** (0.280)		2.028*** (0.681)	
$(SC \Rightarrow GEN)_i \times post_t$		-1.108** (0.479)		-1.007 (0.837)
Mean of Dep. Var.	5.14775	7.08464	8.43294	11.01415
Observation(n)	950,823	229,067	950,823	229,067
Village(n)	345,774	83,648	345,774	83,648
Year FE & Village FE	✓	✓	✓	✓
Control	✓	✓	✓	✓
R-Squared	.647	.682	.499	.567

# Enterprises: Source of Funding

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Dependent Variable</i>	Source of Funding for SC owned Firm									
	Financial Inst.	Self-Finance		Other Sources		Moneylender		Government		
$(GEN \Rightarrow SC)_i \times post_t$	0.058*** (0.022)		0.956*** (0.255)		0.116*** (0.036)		-0.030*** (0.011)		-0.022* (0.013)	
$(SC \Rightarrow GEN)_i \times post_t$		-0.059*** (0.020)		-0.823* (0.434)		-0.187*** (0.062)		-0.038* (0.022)		0.001 (0.018)
Mean of Dep. Var.	0.12179	0.13214	4.51617	6.33827	0.30983	0.36737	0.07531	0.09579	0.12465	0.15108
Observation(n)	950,823	229,067	950,823	229,067	950,823	229,067	950,823	229,067	950,823	229,067
Village(n)	345,774	83,648	345,774	83,648	345,774	83,648	345,774	83,648	345,774	83,648
Year FE & Village FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
R-Squared	.403	.415	.634	.674	.382	.395	.416	.386	.377	.403

## Enterprises: Type of SC Firm



# Local Area Development: Village Level

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Dependent Variable:</i>	Local Area Development							
	Nightlights		Electrification		New Road		Road Upgrade	
<hr/>								
$(\text{GEN} \Rightarrow \text{SC})_i \times \text{post}_t$	0.133*** (0.049)		0.037*** (0.010)		0.026*** (0.005)		0.010*** (0.003)	
$(\text{SC} \Rightarrow \text{GEN})_i \times \text{post}_t$		0.039 (0.064)		-0.005 (0.013)		0.010 (0.008)		-0.005 (0.005)
Mean of Dep. Var.	4.53043	4.67306	0.44319	0.46566	0.12306	0.15853	0.05817	0.05082
Observation(n)	3,343,207	816,770	2,448,402	558,844	1,347,088	242,832	1,347,088	242,832
Village(n)	334,321	81,677	222,582	50,804	84,193	15,177	84,193	15,177
Year FE & Village FE	✓	✓	✓	✓	✓	✓	✓	✓
Control	✓	✓	✓	✓	✓	✓	✓	✓
R-Squared	.89	.886	.69	.695	.642	.631	.6	.582
<hr/>								

## Impact on Political Class

### ► GEN ⇒ SC

- Legally only SC politician can participate in legislative election
- Non-SC politicians ineligible for MLA election
- Political class changes completely
- SC in & GEN out

### ► SC ⇒ GEN

- Legally all politician can participate in legislative election
- Big political party only nominate non SC politicians
- SC politician confined to SC reserved constituency
- Political class changes completely
- GEN in & SC out

# Impact on Political Class

HOME / ELECTIONS / [LOK SABHA 2019](#)

## Major parties confine Dalit candidates to reserved seats

Even parties supposedly promoting the cause of oppressed sections plead that victory prospects limit their options

March 22, 2019 12:57 am | Updated 07:58 am IST - CHENNAI

HOME / ELECTIONS / [LOK SABHA 2014](#)

## Parties shut out Scheduled Caste candidates from general seats

May 03, 2014 12:46 am | Updated November 27, 2021 06:56 pm IST - NEW DELHI

RUKMINI S.

Source: The Hindu

# New SC Politican Entering: Results

	(1)	(2)	(3)	(4)	(5)
<i>Dependent Variable:</i>	Effect of Political Quotas on Political Class				
	No. Contest	Age	No. of Crimes	Education	Log Wealth
$(\text{GEN} \Rightarrow \text{SC})_i \times \text{Post}_t$	-0.561*** (0.166)	-2.283*** (0.779)	-0.943*** (0.149)	-0.967*** (0.284)	-0.686*** (0.097)
Mean of Dep. Var.	2.64408	49.08755	0.98861	13.86266	15.22544
Observation(n)	746,964	729,390	737,074	693,966	669,578
Year-Village FE	✓	✓	✓	✓	✓
Control	✓	✓	✓	✓	✓
R-Squared	.773	.772	.811	.782	.858

## SC Politican Exiting: Results

	(1)	(2)	(3)	(4)	(5)
<i>Dependent Variable:</i>	Effect of Political Quotas on Political Class				
	No. Contest	Age	No. of Crimes	Education	Log Wealth
$(SC \Rightarrow GEN)_i \times Post_t$	-0.450** (0.188)	0.518 (0.925)	0.973*** (0.191)	0.673** (0.306)	1.186*** (0.122)
Mean of Dep. Var.	2.53428	48.03918	0.51465	13.40993	14.37021
Observation(n)	181,766	178,438	180,852	165,972	163,360
Year-Village FE	✓	✓	✓	✓	✓
Control	✓	✓	✓	✓	✓
R-Squared	.775	.741	.591	.794	.894

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## Conclusion

Political quotas lead to ..

- ▶ Higher school **enrollment** of SC students to the newly reserved constituency
- ▶ Higher **entrepreneurial** activity among SCs. Higher **growth** of SC-owned enterprises.
- ▶ Higher **access** to Financial Institutions.
- ▶ Higher local economic **development** (nightlights, electrification and roads)
- ▶ Positive effect is higher in the villages with a high **share of the SC minority** indicating *ethnic favouritism*
- ▶ Change in political class, less **criminal politicians**

Why I find, what I find?

- ▶ Highly disaggregated data
- ▶ Timeline (2000-2015)