A century of unequal opportunity in India: Concentration of educational access and investments

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Introduction

Jat Quota Violence In Haryana Claims Six Lives

Left demands creamy layer concept in OBC quota

Press Trust of India
New Delhi, May 17, 2006

Maratha quota: BJP MP warns of protest if demands not met by June 6

BJP backs quota but wants benefit for poor among forward castes

MAY 30, 2006 00:00 IST
UPDATED: MARCH 22, 2012 16:05 IST

Students protesting reservation tear-gassed, cane-charged

Written by: Staff | Published: Wednesday, April 26, 2006, 22:40 [IST]

Why India needs a new debate on caste quotas

29 August 2015

NEWS18 » NEWS » INDIA » IN UP, HUNDREDS PROTEST RESERVATION IN PROMOTION

In UP, Hundreds Protest Reservation in Promotion

Pro-reservation protest: PMK supporters create ruckus in Chennai after being stopped by police

PMK supporters stop train, block roads after being denied entry to Chennai to join pro-reservation protest.

Introduction

Stylized facts of the evolution of unequal opportunity in India

(1) **Access story**

- The rich have more, and gain more
- Brahmins and Muslims:
  historical roots, persistent cleavages
  (tale of two minorities)

(2) **Investments**

- Concentration in colonial period:
  1870s to 1910s
- Concentration in recent period:
  1980s to 2010s

Introduction

Sobering conclusions:

- Better off, but more unequal (access and investments)
- Class matters, caste matters
- Growing cleavages between communities
- Increasing usefulness of the state

Background

Background

- India today: large primary sector (45%), industrial and service sectors (20-30%)
- Puzzle: 150y ago, secondary schooling: India > Japan, France (Chaudhary, 2009)
  Why no progress?

Background

- India today: large primary sector (45%), industrial and service sectors (20-30%)
- Puzzle: 150y ago, secondary schooling: India > Japan, France (Chaudhary, 2009)
  150y ago, primary schooling share: India < Japan, France
- Historical roots: Concentrated access to education for elites, traditional occupations
- Economic, political reasons for no universal schooling (Chaudhary, 2015; Chaudhary and Rubin, 2011; Basu, 1974; Naik and Nurullah, 1943)
- **Uniquely low investments during colonial and post colonial period**: about 4% of budget in India vs 16% in other colonies (Davis and Huttenback, 1986), less than 6% of GDP since independence (Tilak; Kothari Commission, 1966)

Background

- **Low growth, development and mobility**

- **New problems:**
  Rising premiums on high skill education (Goldin and Katz, 2009)
  Rising income inequality (Chancel and Piketty, 2019)
  Rising political cleavages (Piketty et al., 2021)

- Little to no literature on mobility like US / advanced countries, intl comparisons
  (Chetty, Hendren, Klein, Saez; Corak; Solon; WB 2018)

Data for producing stylized facts

- Colonial period:
    - Progress of Education in India,
      British Indian censuses (hand coded for ~70 years)
- Post independence period:
    - Representative surveys: Indian Human Development Surveys,
      National Sample Surveys (Education, and Employment rounds)
    - District Information System on Education (population level panel on schools)
    - Ministries of Statistics, Human Resource Development

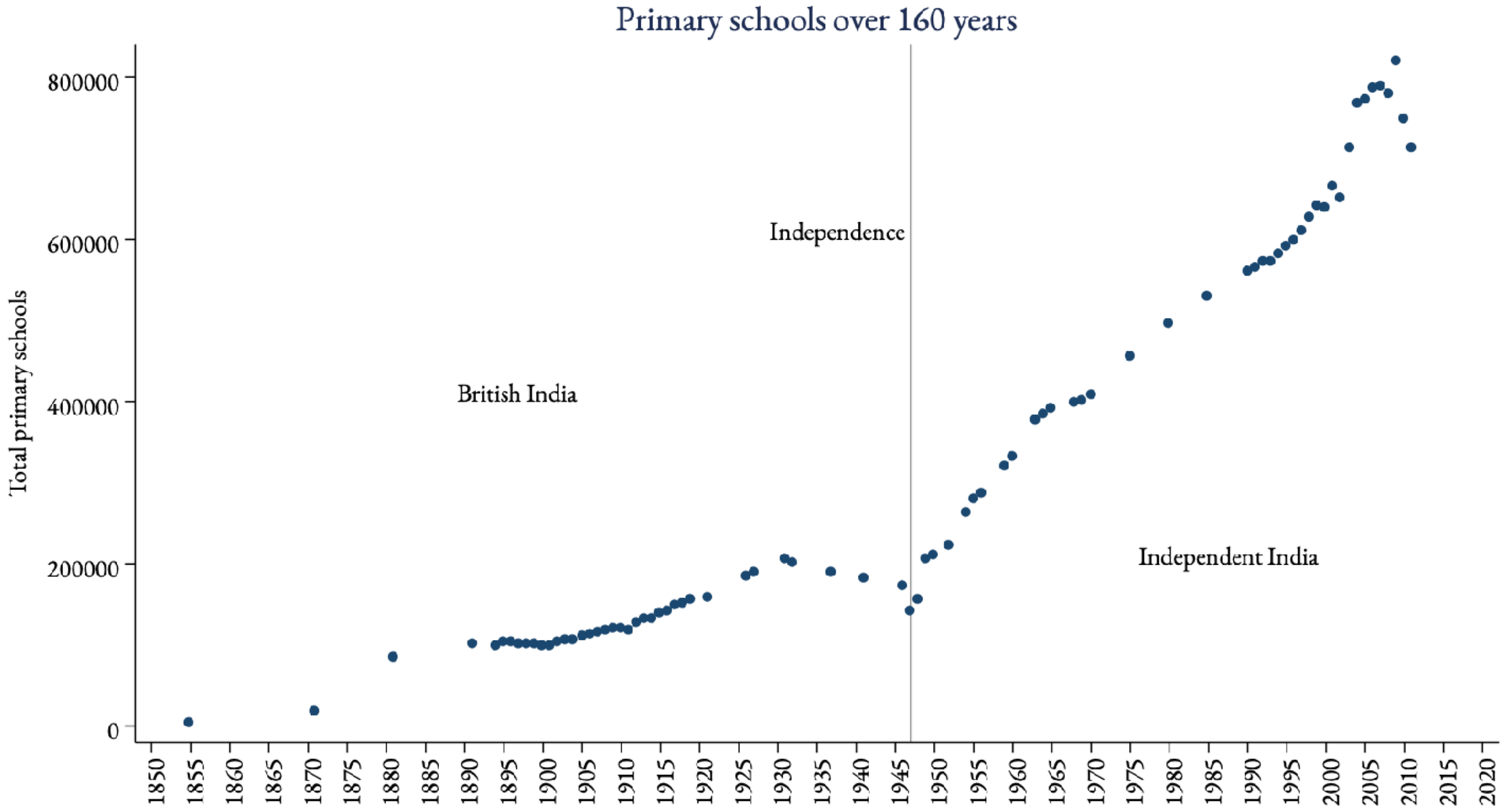
Rest of the talk

- Introduction and background
- Access story
- Investment story
- Conclusion and discussion

Access

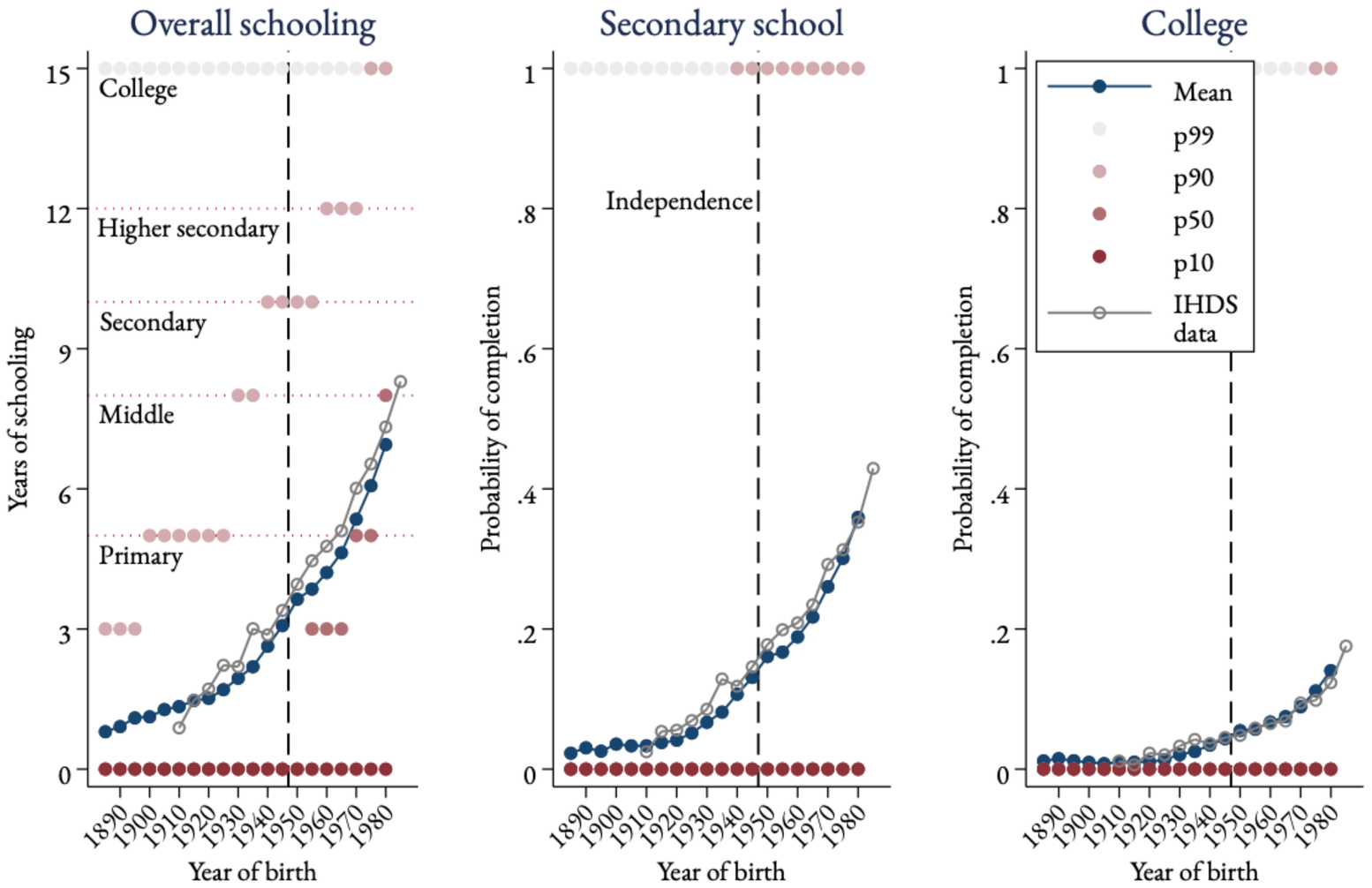
- The rich have more, and gain more
- Brahmins and Muslims:
  historical roots, persistent cleavages
  (tale of two minorities)

Long run school supply



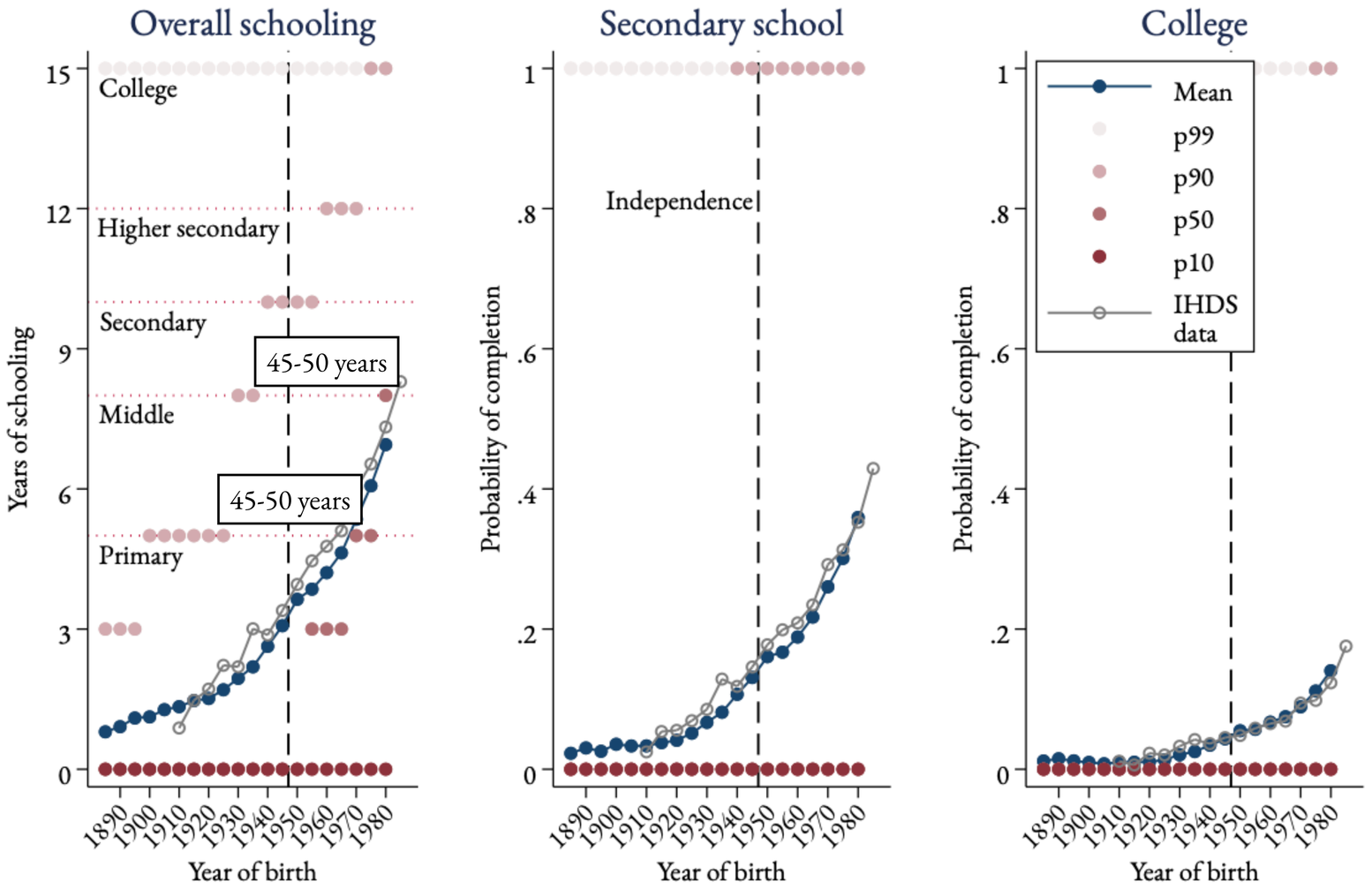
Source: Author's compilations based on Progess of Education in India, Education in India and statistics from the Ministry of Human Resource Development.

Schooling in the 20th century



Note: Author's calculations based on National Sample Surveys and ICPSR IHDS 2011 data.
The educational percentiles within a birth cohort are denoted by p'x' for various values of 'x'.

Schooling in the 20th century



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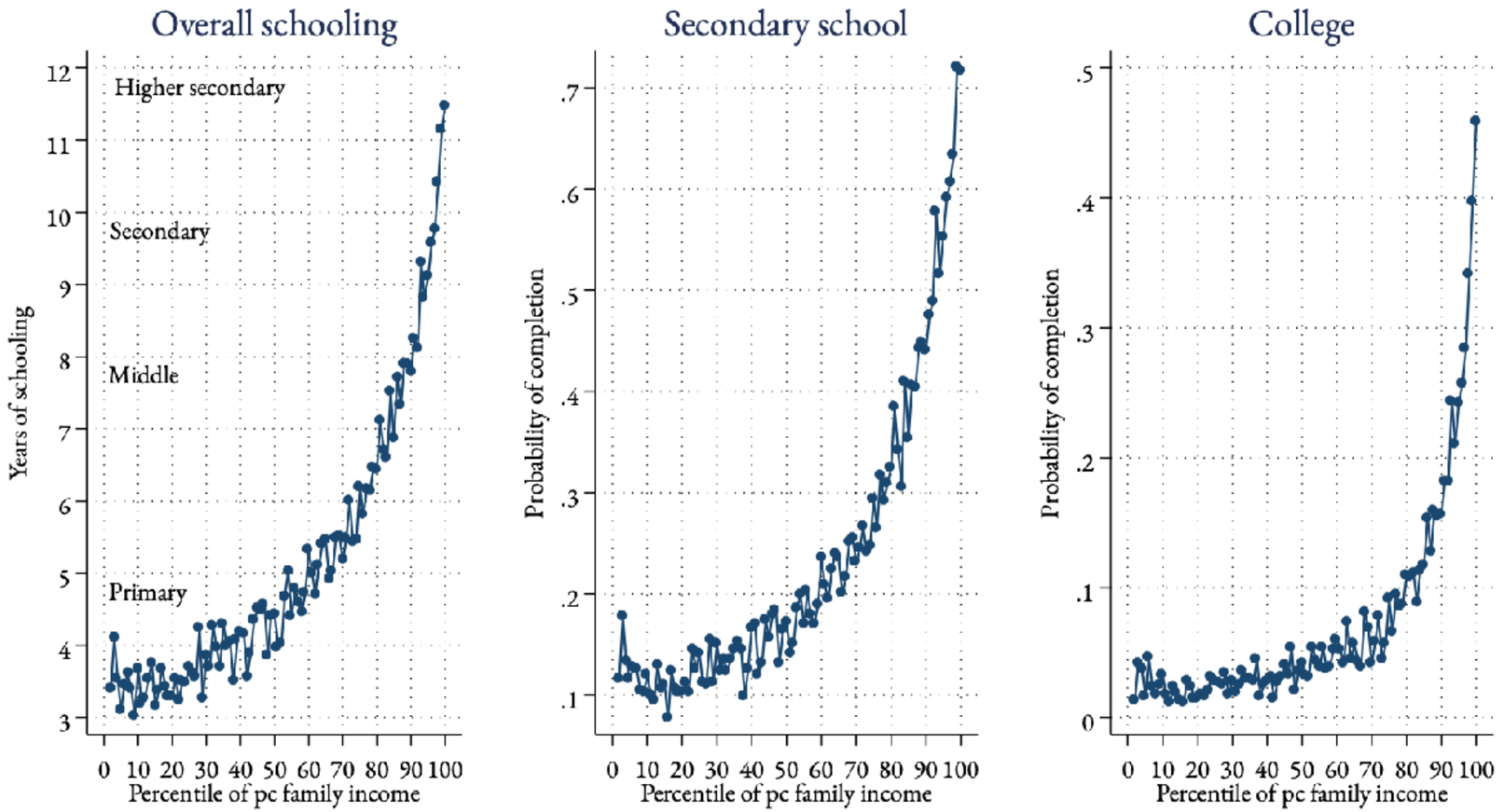
Family incomes and unequal opportunity in India

Education of individuals of ages 25 and above (as of 2011)



Source: Author's calculations based on ICPSR IHDS 2011.
Note: Secondary school completion probability represents the share of percentile population who have completed at least 10 years of schooling. Individuals may or may not have completed high-school which requires 12 years of formal schooling. College completion probability is estimated as the share of population with at least a Bachelors degree or 15 years of formal education.

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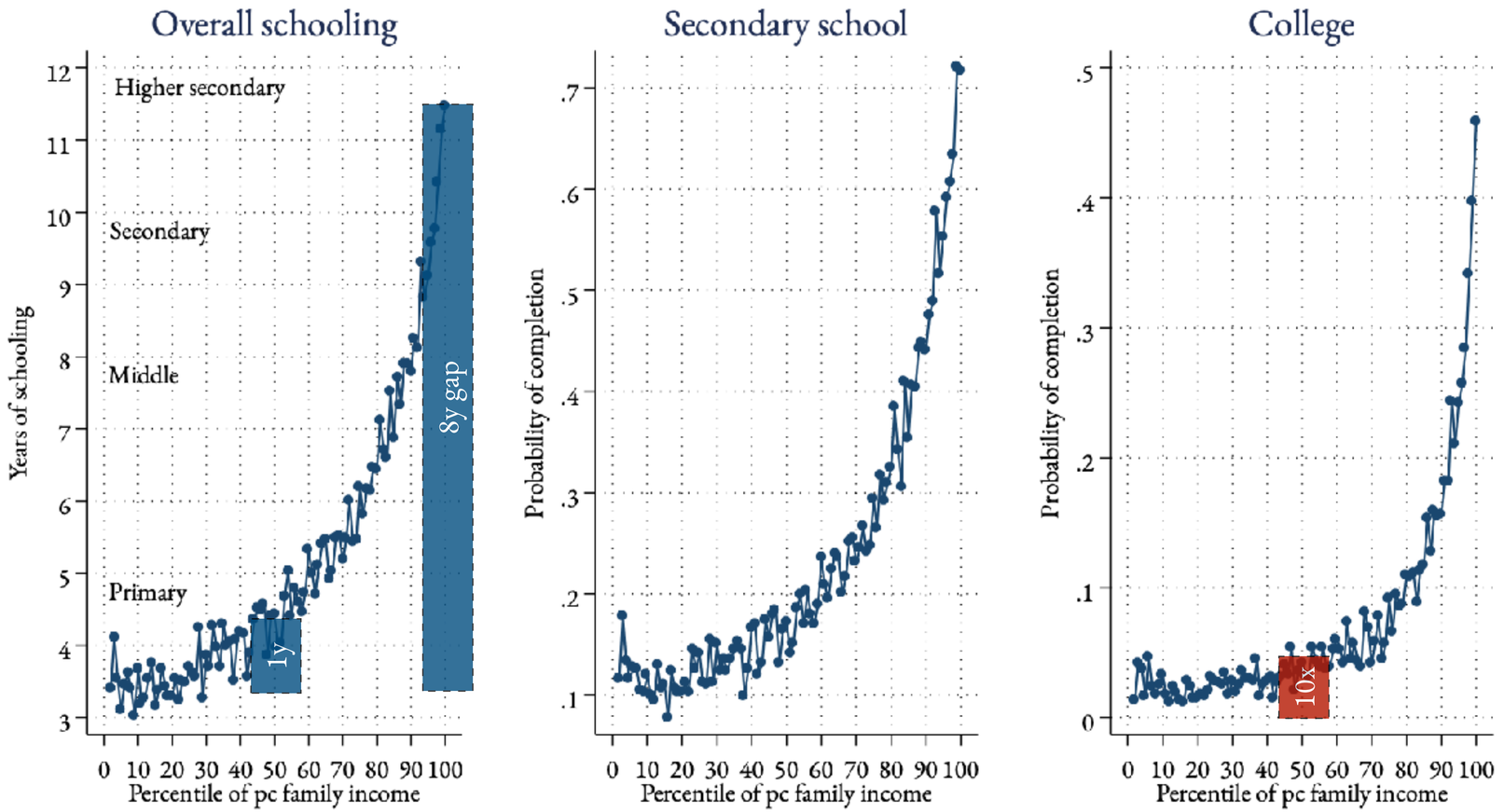

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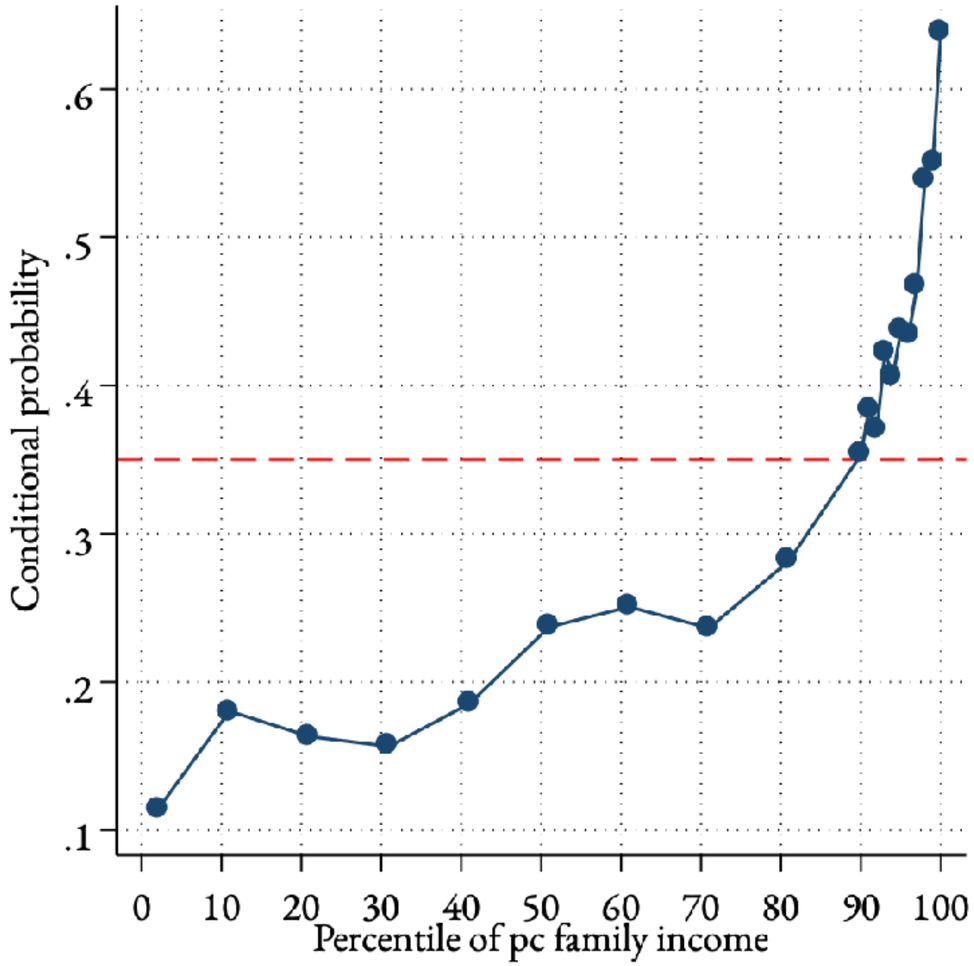
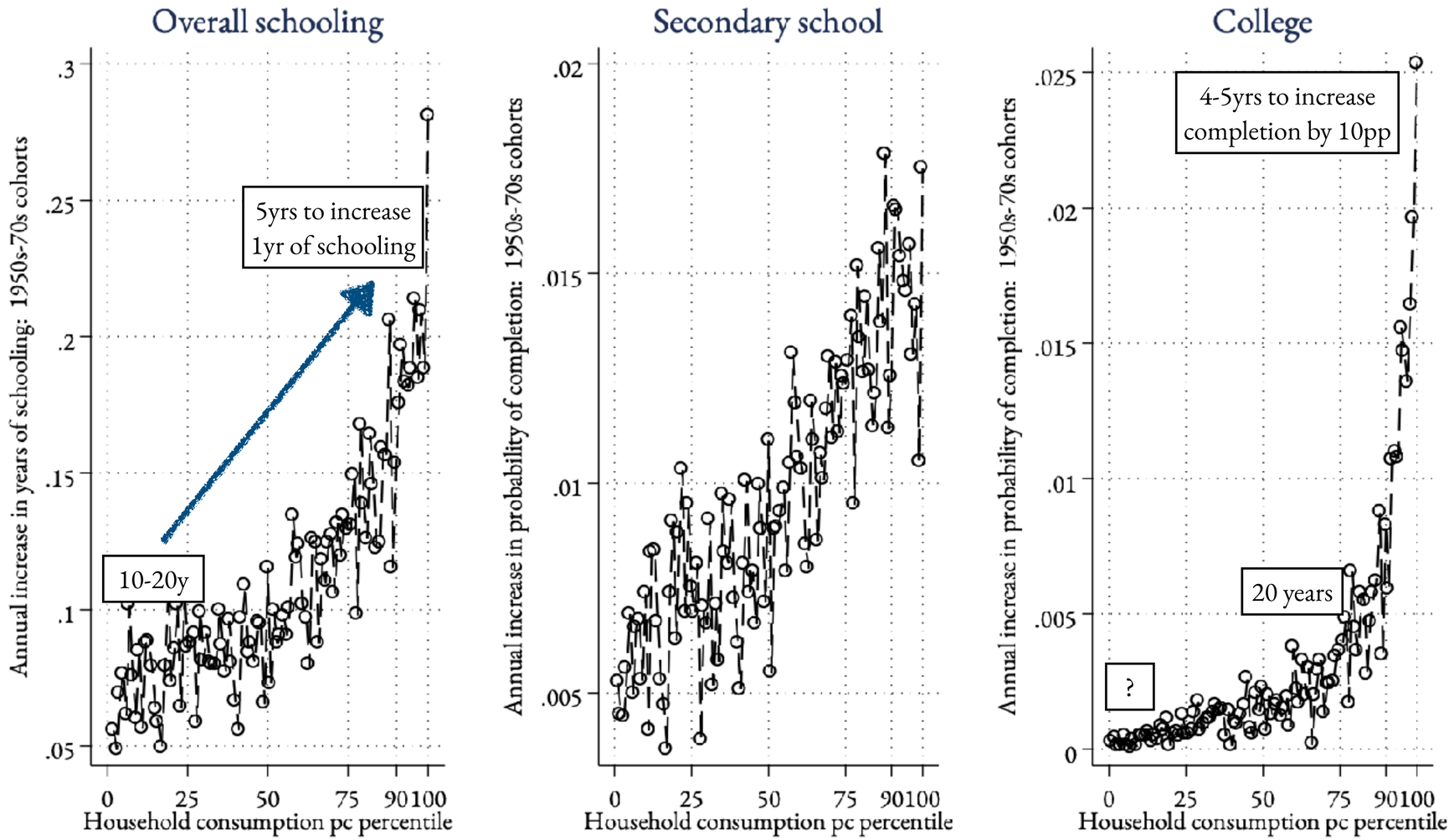
College completion given secondary school completion



Source: Author's calculations based on ICPSR IHDS 2011.

Dynamics: Annual gains in education



Source: Author's calculations based on National Sample Surveys.

Summarizing access

- Rich have more (7 years more schooling, over 10x more college completion rates)
  Rich gain more (top 10 percent show sharpest gains). Costs / constraints for college

Brahmins and Muslims: 100 years of cleavages

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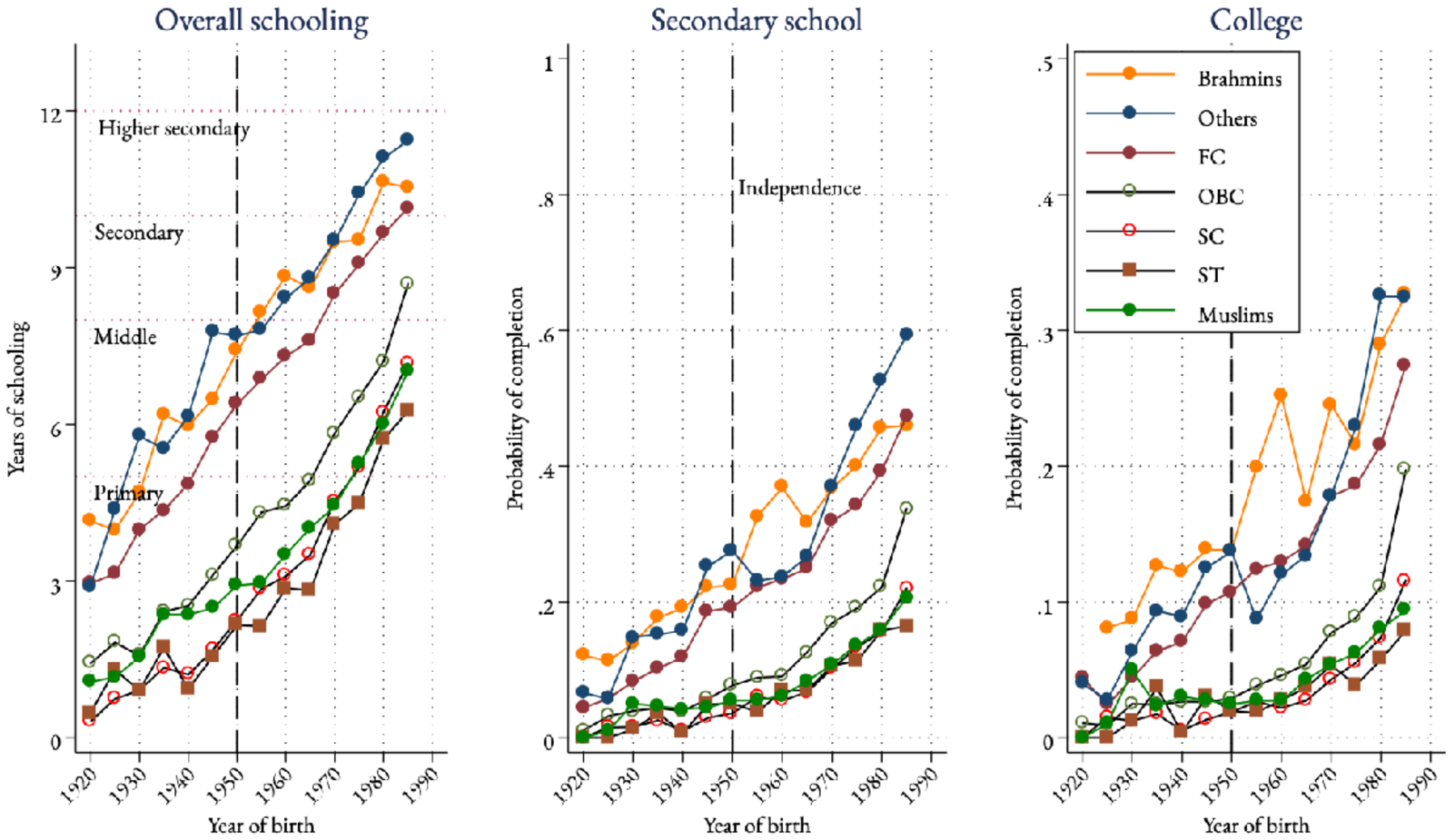
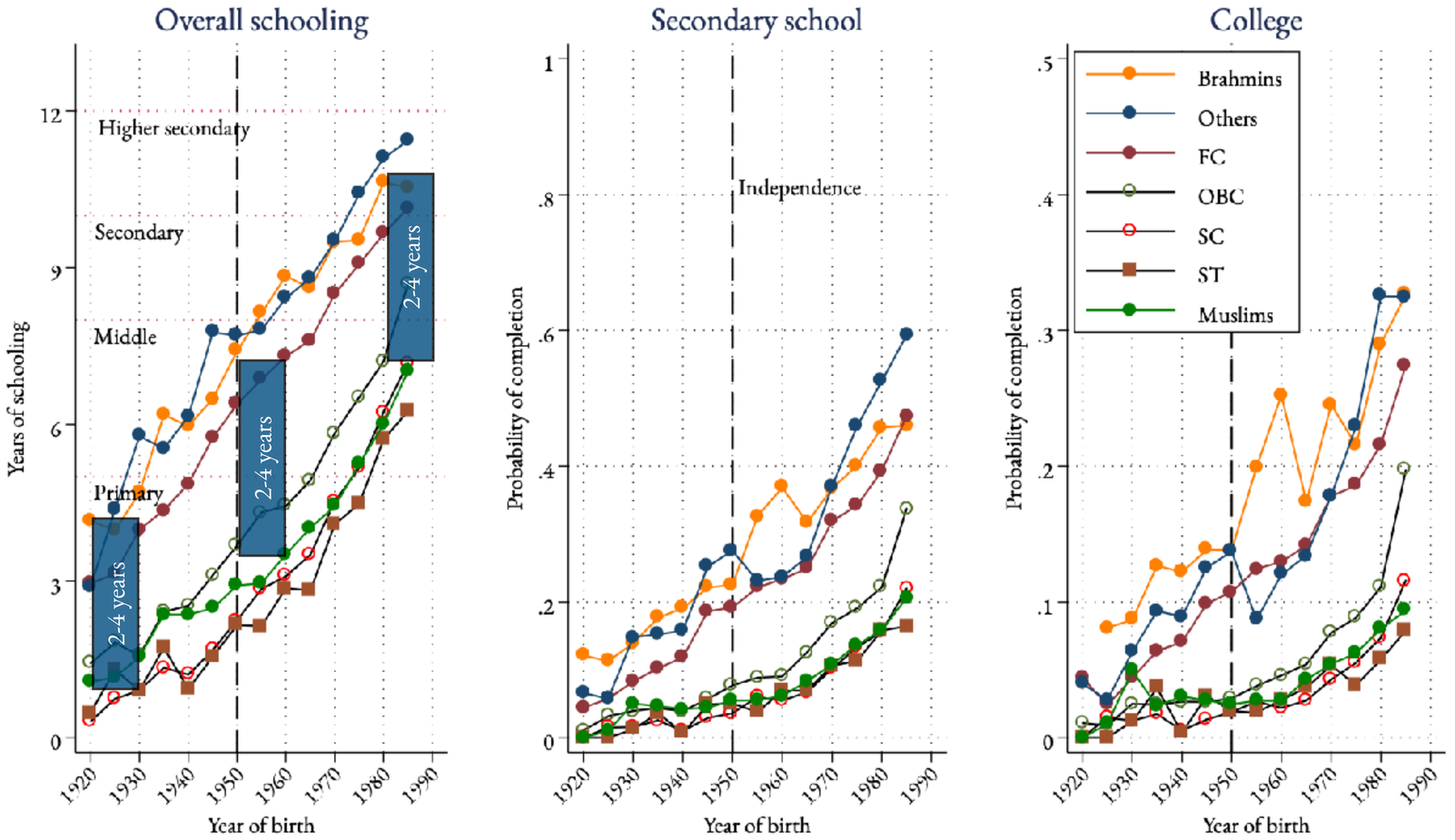
Caste and religious differences in access to education



Source: Author's calculations based on ICPSR IHDS.
Note: Others include Christians, Jains and Sikhs.

Brahmins and Muslims: 100 years of cleavages

Caste and religious differences in access to education



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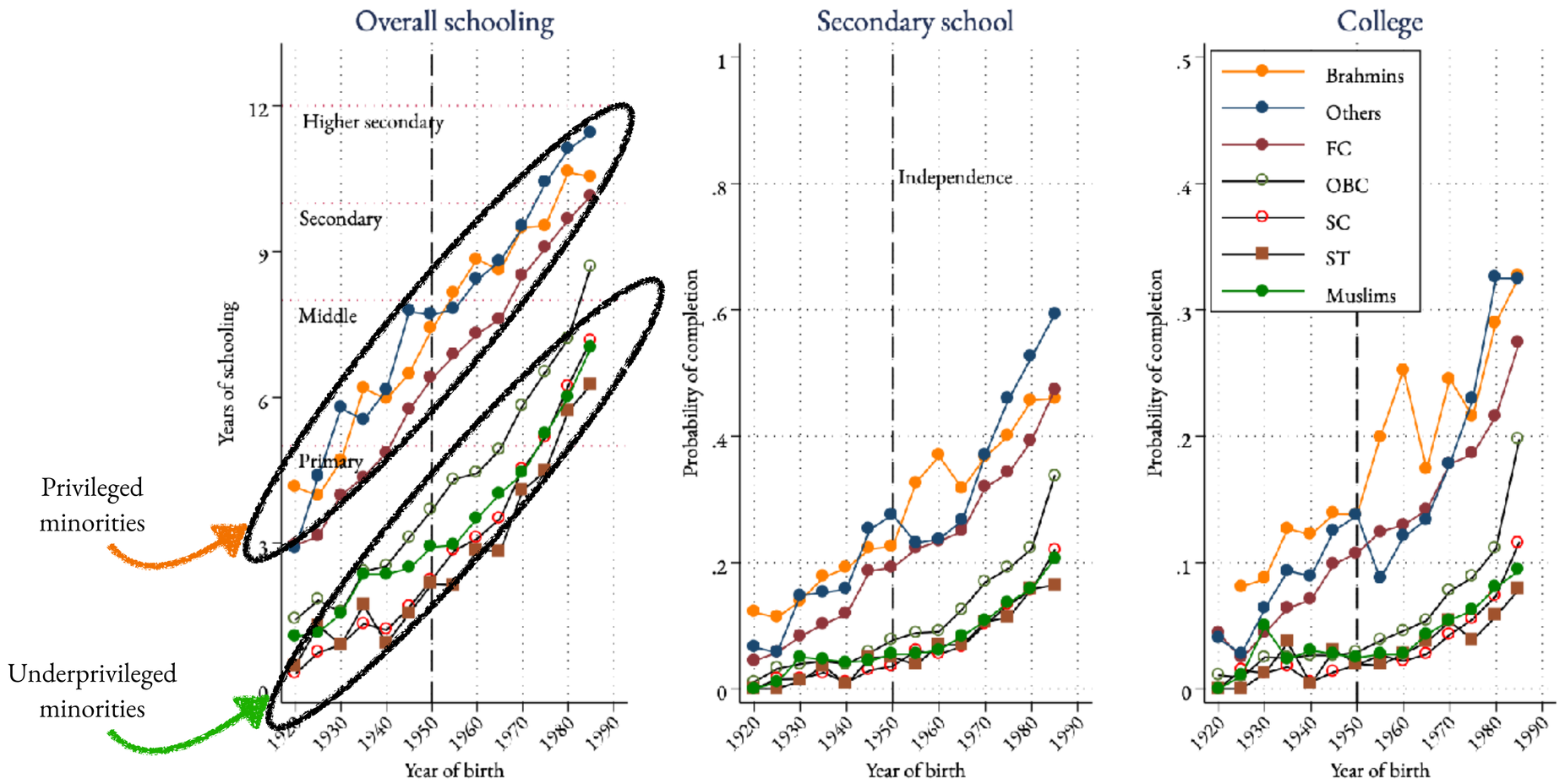
Brahmins and Muslims: 100 years of cleavages

Caste and religious differences in access to education



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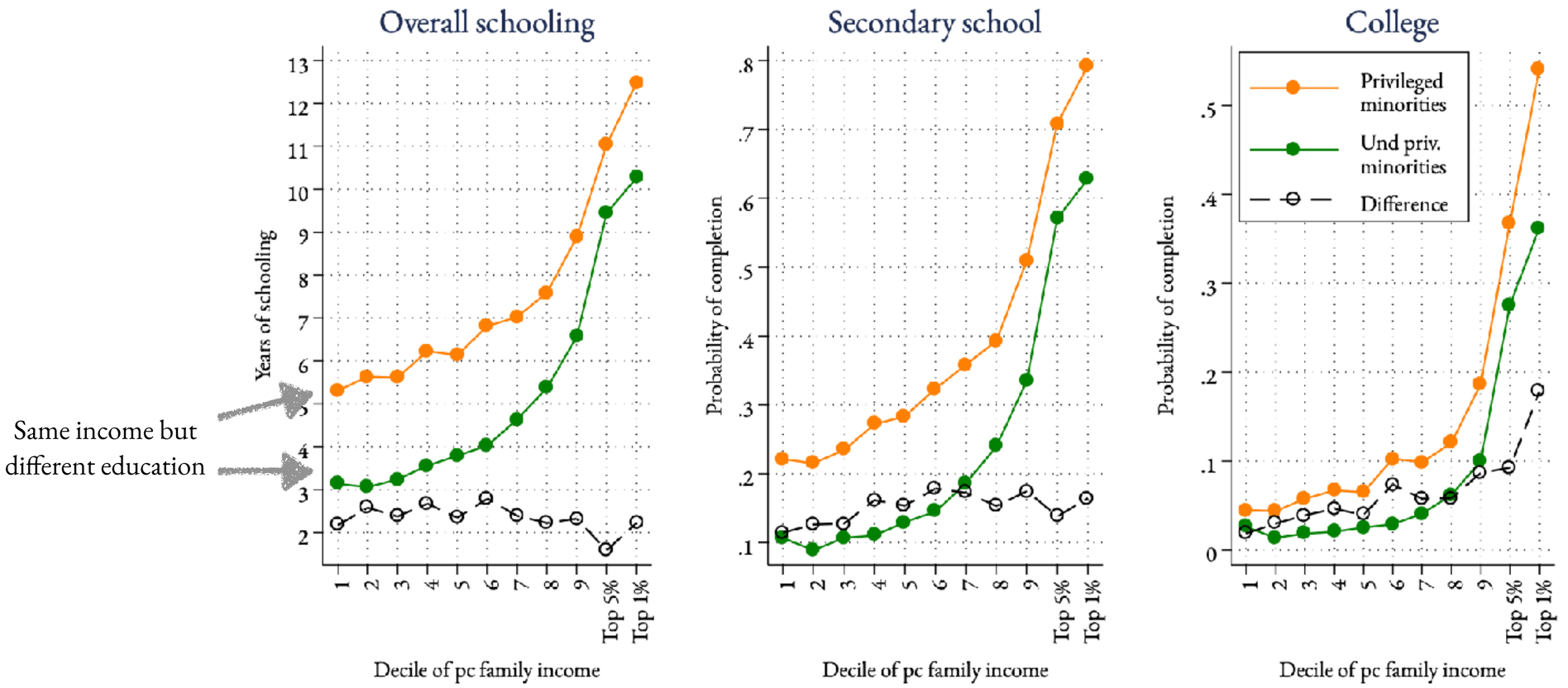
Family incomes and privileged opportunity

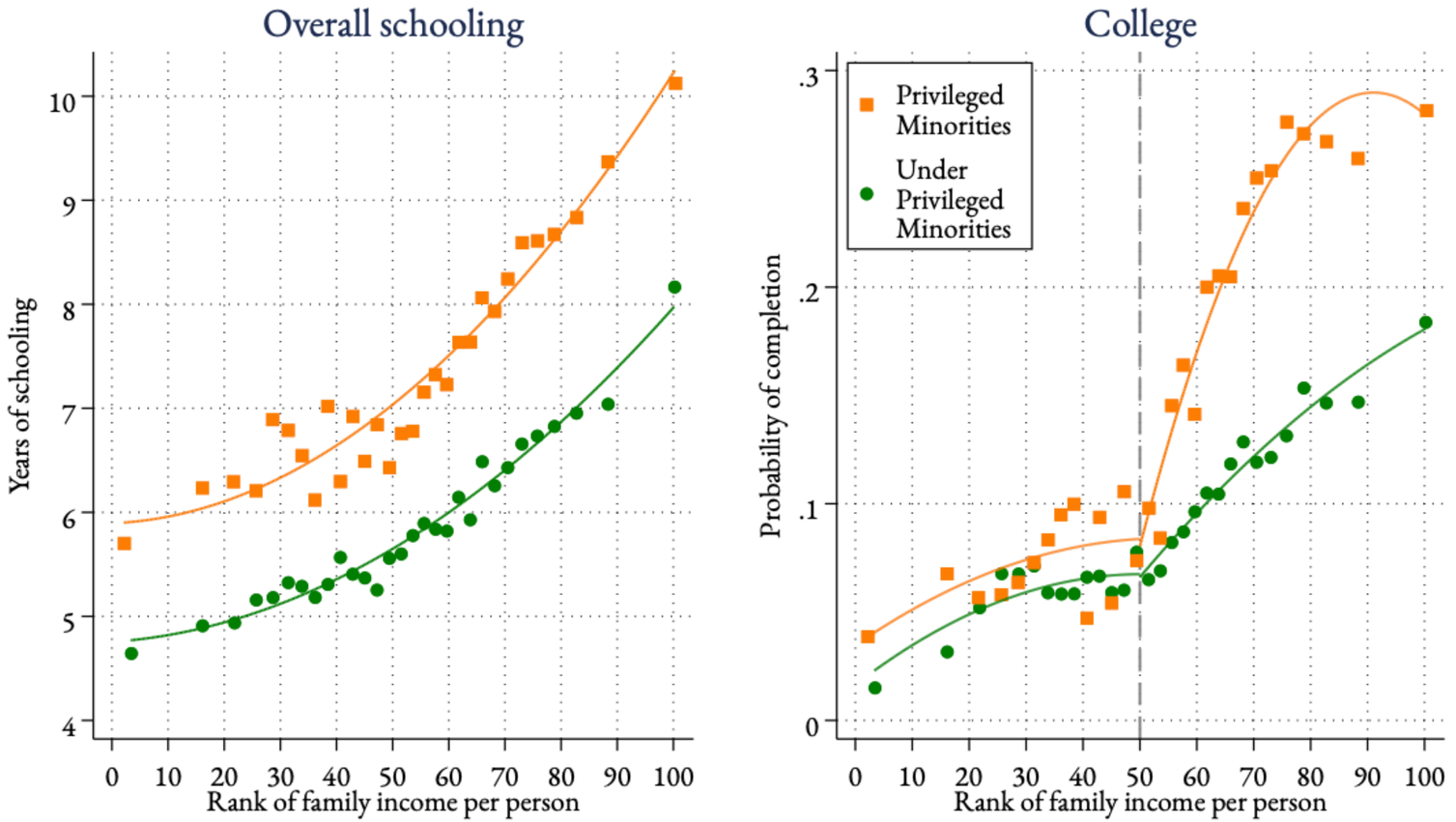
Education of individuals ages 25 and above



Source: Author's calculations based on ICPSR IHDS 2011.
Note: Secondary school completion probability represents the share of percentile population who have completed at least 10 years of schooling. Individuals may or may not have completed high-school which requires 12 years of formal schooling. College completion probability is estimated as the share of population with at least a Bachelors degree or 15 years of formal education. Privileged minorities consists of forward castes, Brahmins, Christians, Jains and Sikhs. Underpriviledged minorities consists of Muslims, OBCs, SCs and STs.

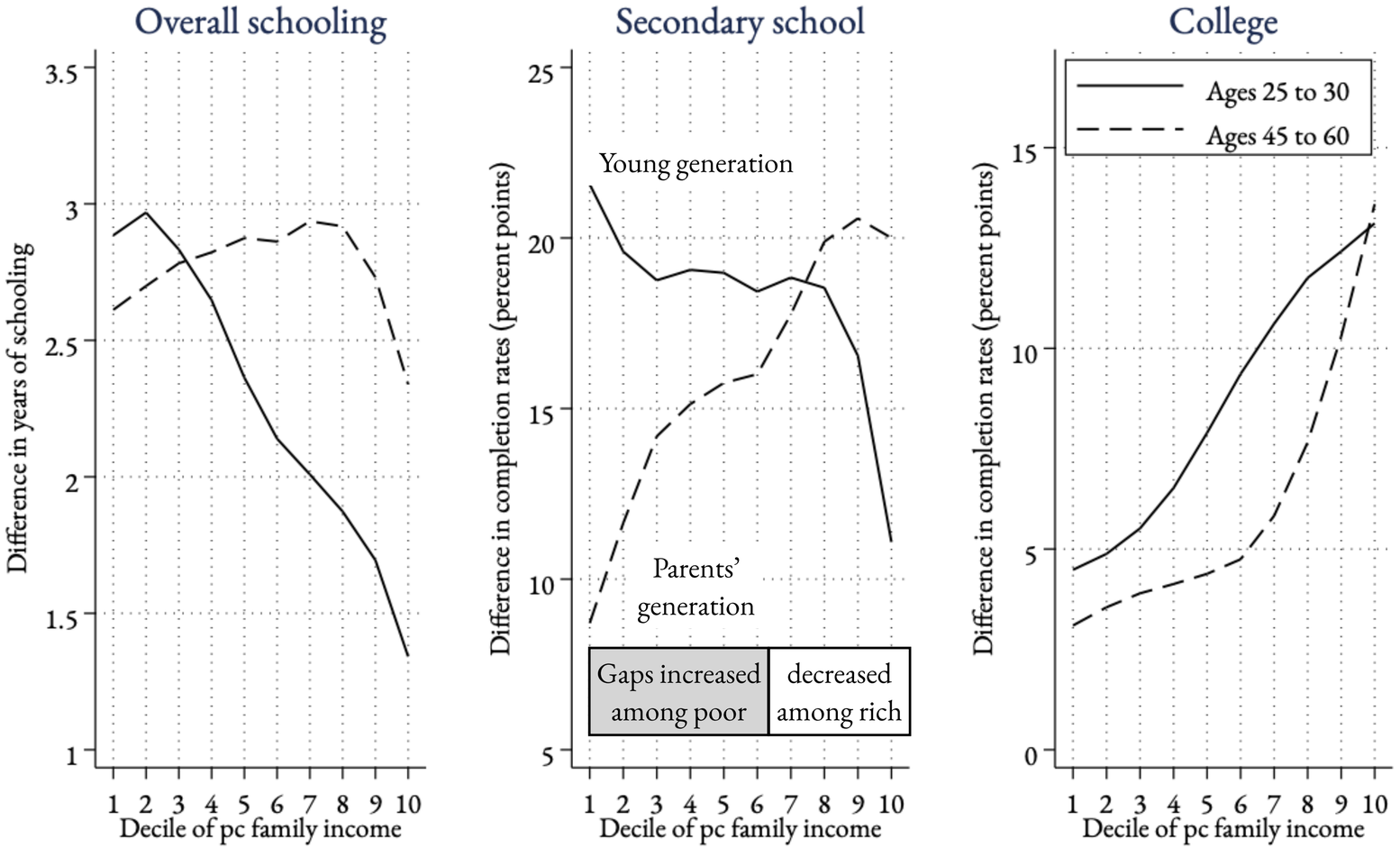
Family incomes and privileged opportunity (with controls)

Education of individuals ages 25 and above



Source: Author's calculations based on ICPSR IHDS 2011.
Note: Privileged minorities include Brahmins, Christians, other 'forward castes', Jains and Sikhs. Under privileged minorities include Muslims, Scheduled Castes (SC), Scheduled Tribes (ST) and Other Backward Castes (OBC). Controls include primary activity, districts, rural / urban area, birth cohort and sex. Individuals engaged in housework, full time students, and those unfit for work, are not included.

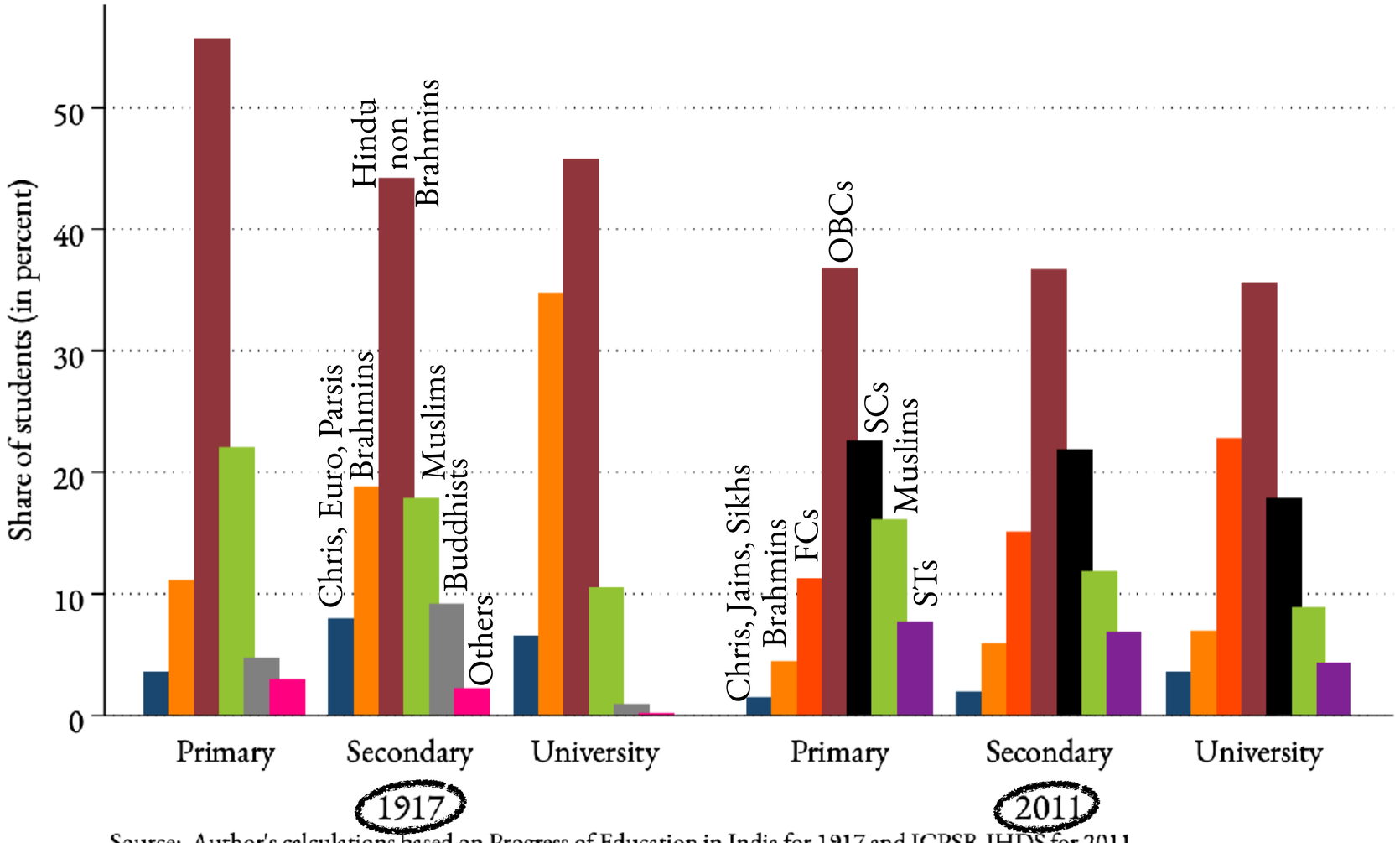
Differences between Brahmins and Muslims



Source: Author's calculations based on the ICPSR IHDS data.
Note: The figure displays the difference in educational attainment between privileged minorities and the underprivileged minorities. Privileged minorities include Brahmins, Christians, other 'forward castes', Jains and Sikhs. Underprivileged minorities include Muslims, Scheduled Castes (SC), Scheduled Tribes (ST) and Other Backward Castes (OBC). The lines are smoothed using lowess regression.

Zooming out: have patterns changed?

Caste, religious composition: Patterns haven't changed much in 100 years



Source: Author's calculations based on Progress of Education in India for 1917 and ICPSR IHDS for 2011.
Note: The university data for 1917 corresponds to college enrollment.

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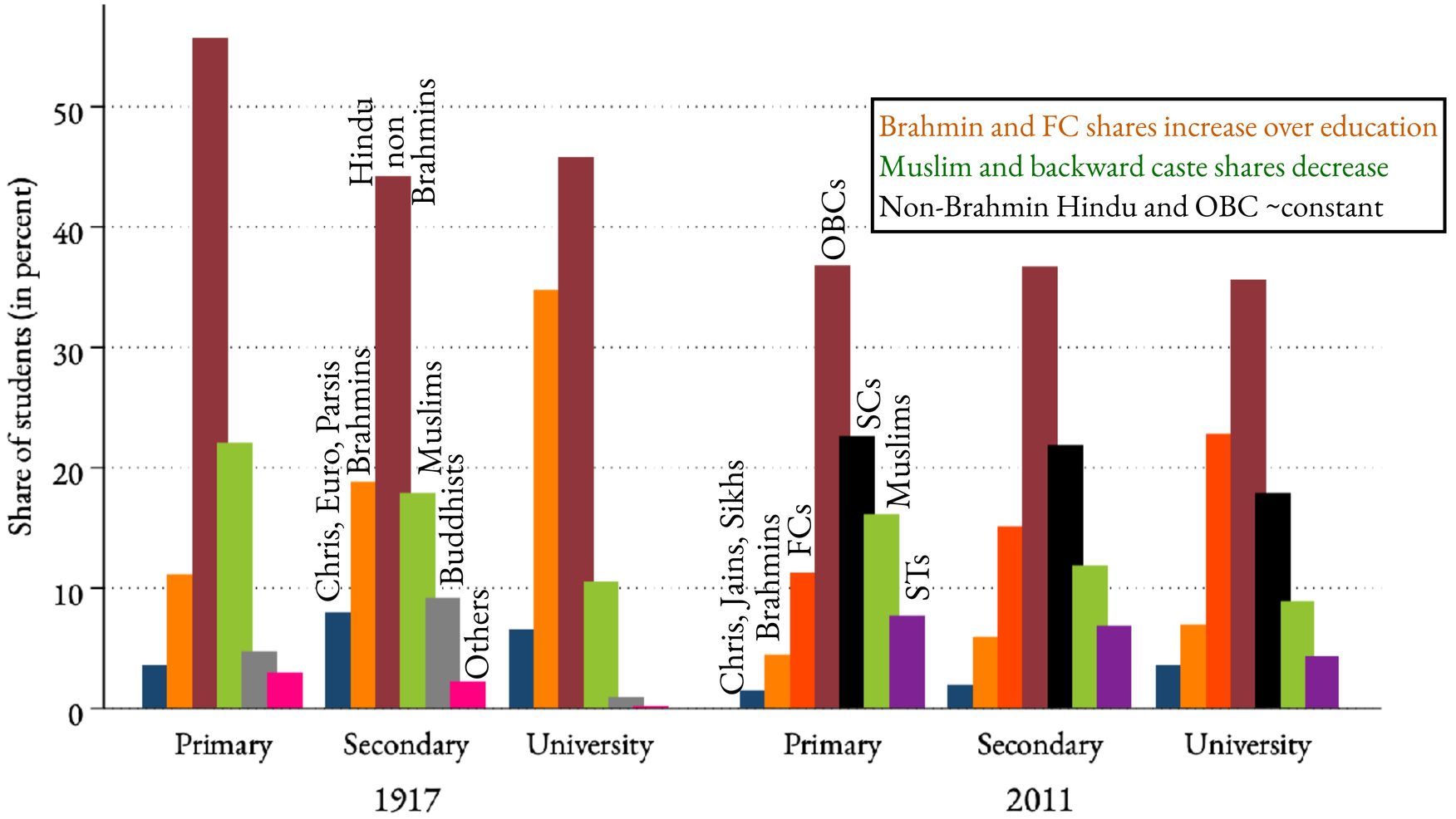

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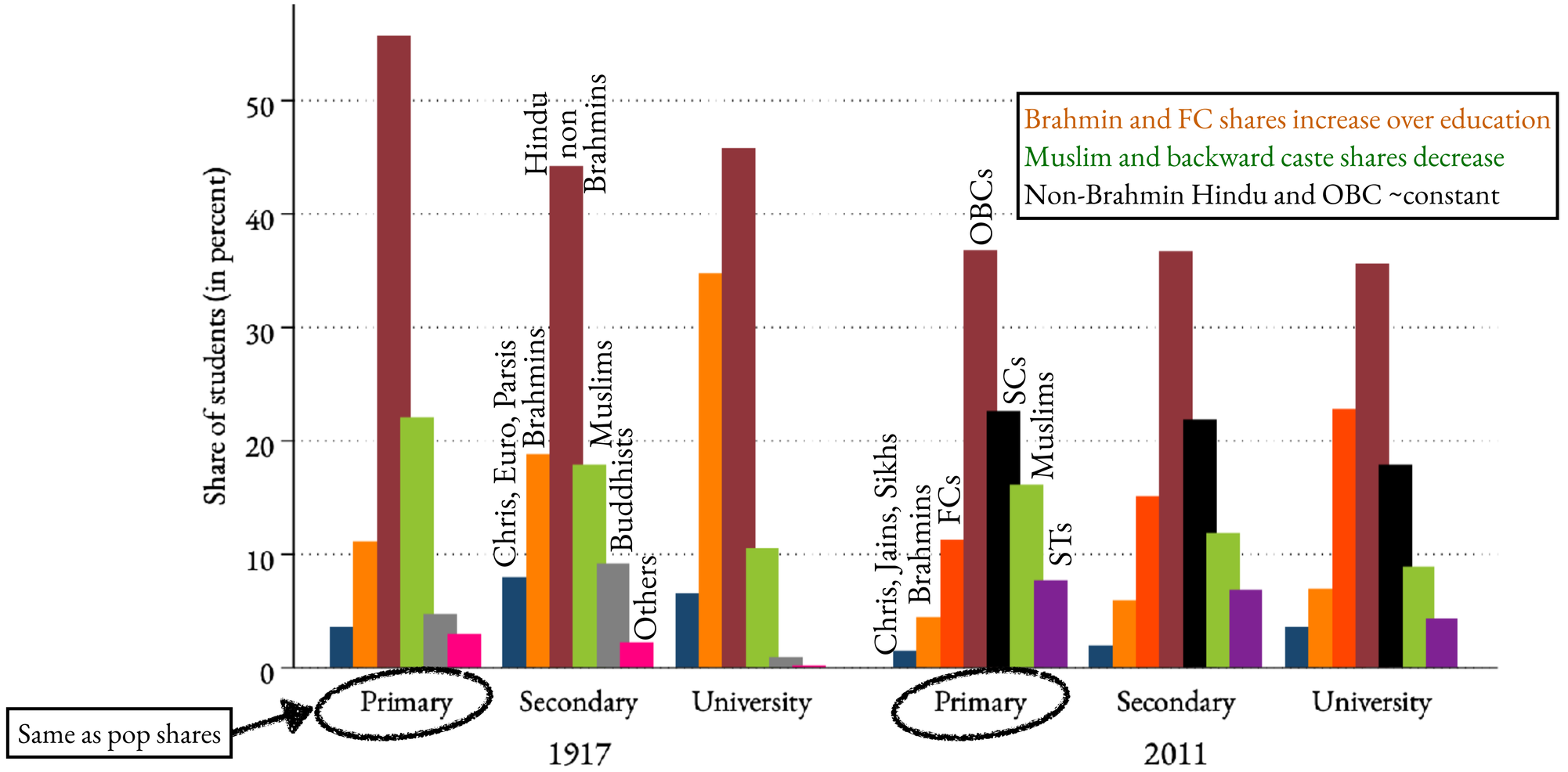

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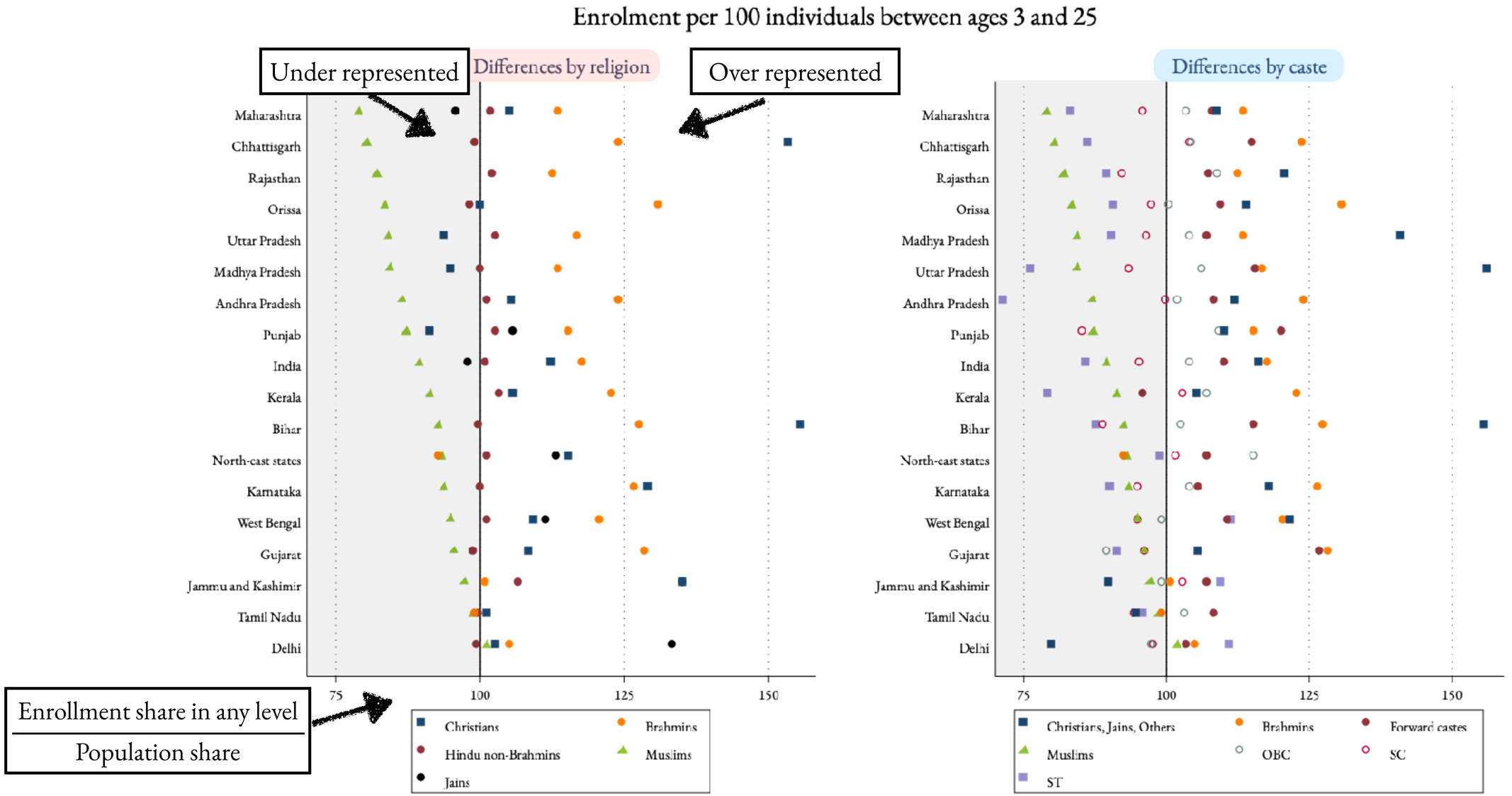
Unequal representation by state in 2011



Unequal representation by state in 2011

Enrolment per 100 individuals between ages 3 and 25

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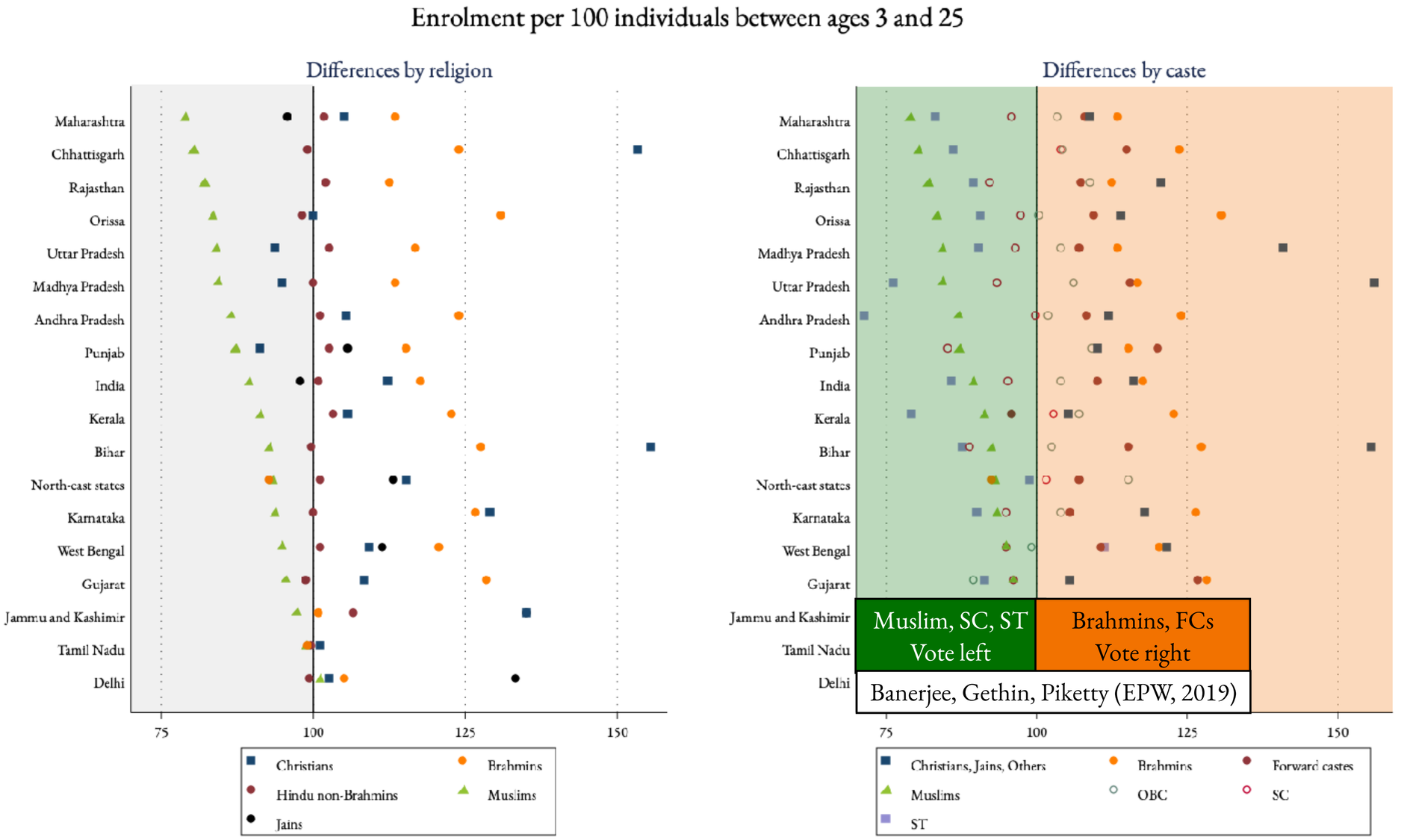


Summarizing access

- Rich have more (7-10 years more schooling, 10x more college completion rates)
  Rich gain more (top 10 percent show sharpest gains). Costs, constraints for college

- Cleavages between Brahmins (privileged minorities) and Muslims (underprivileged)

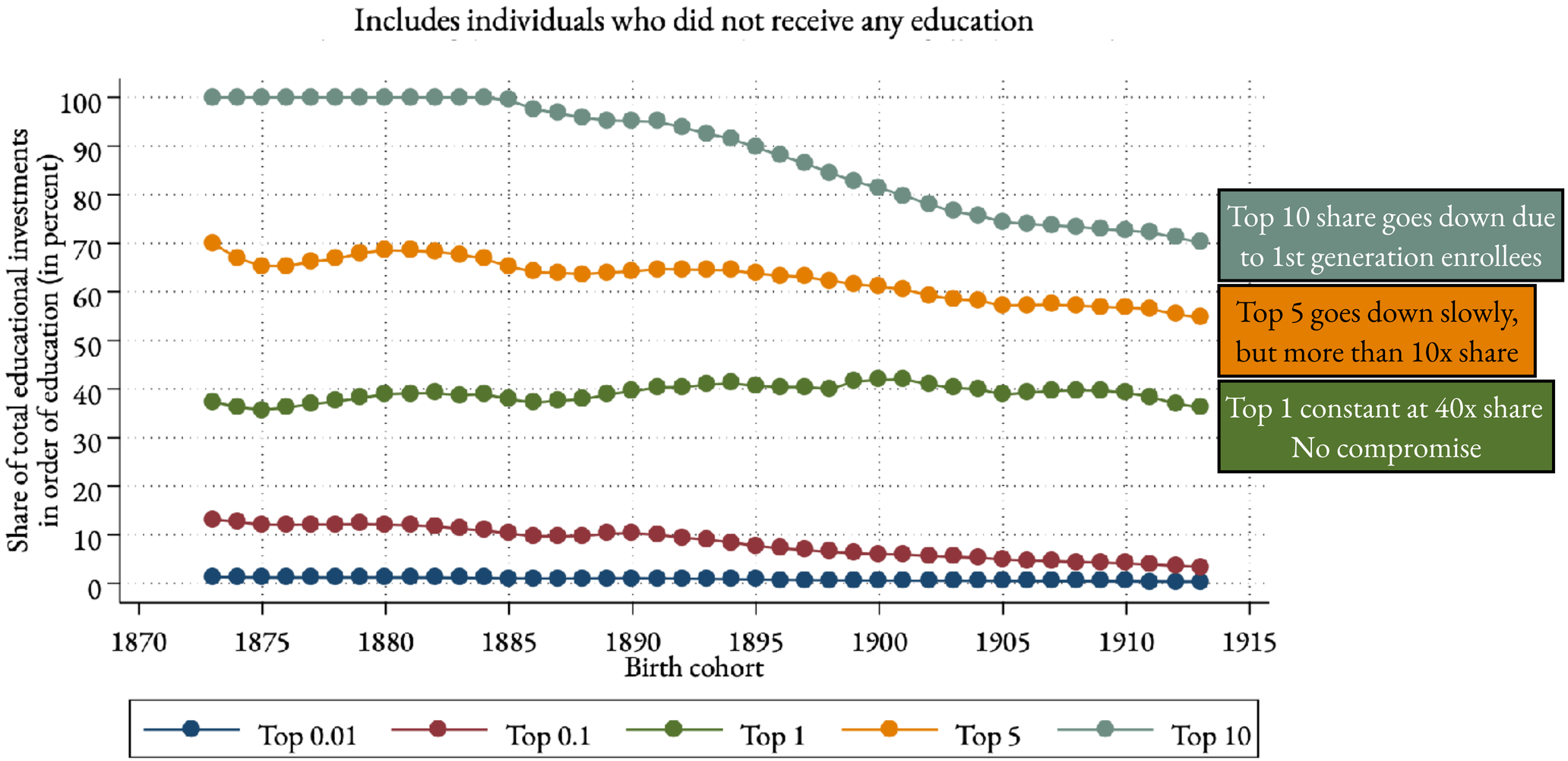
- Cleavages are persistent, systematic

- Ideology, political preference and representation in schooling?
  How opportunity is viewed, disconnected networks

Investments

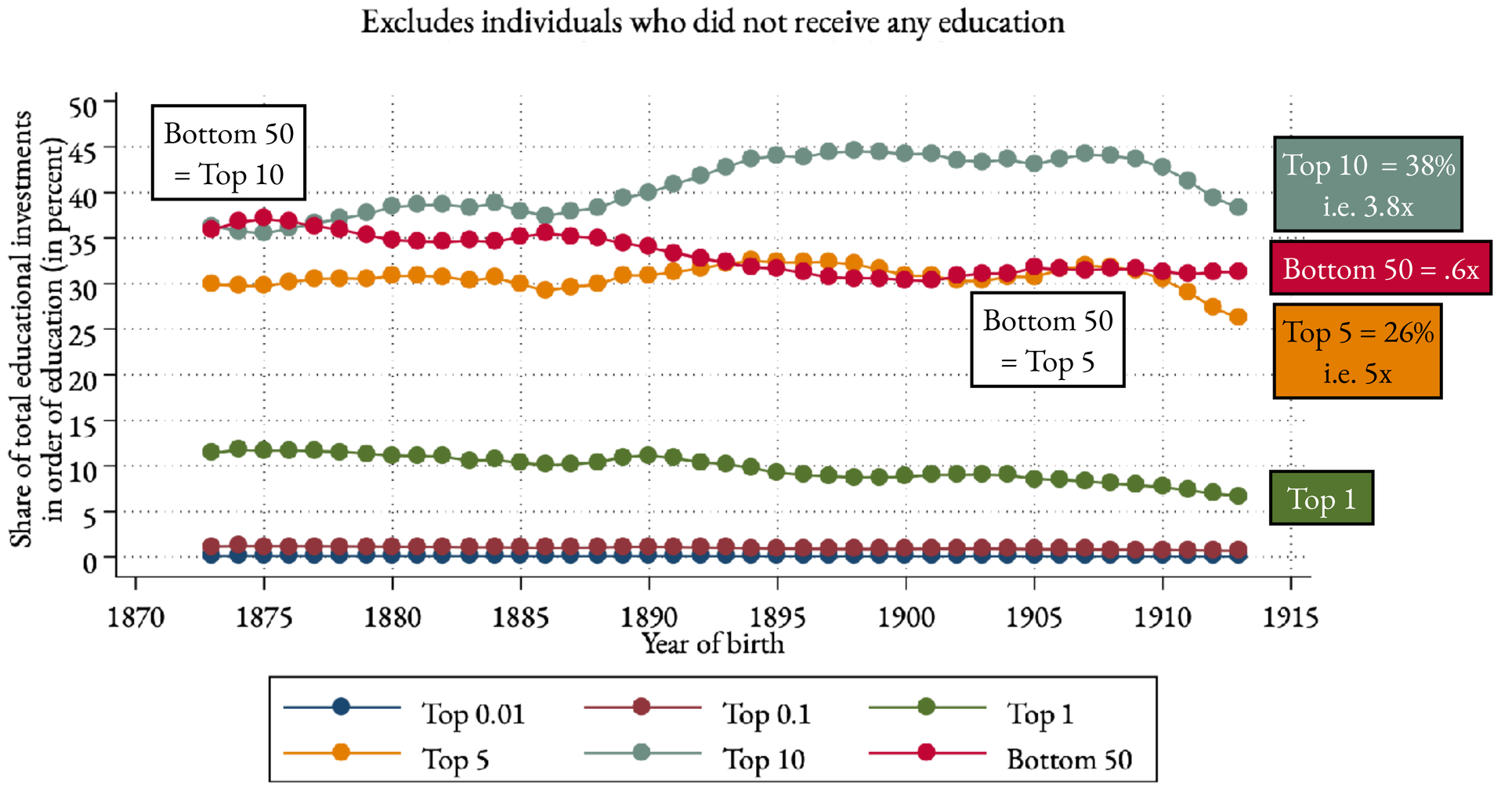
- Concentration in colonial period: 1870s to 1910s. Cohort based
- Concentration in recent period: 1980s to 2010s. Cross sectional
- Increasing value of the state

Colonial India: concentration of educational investments



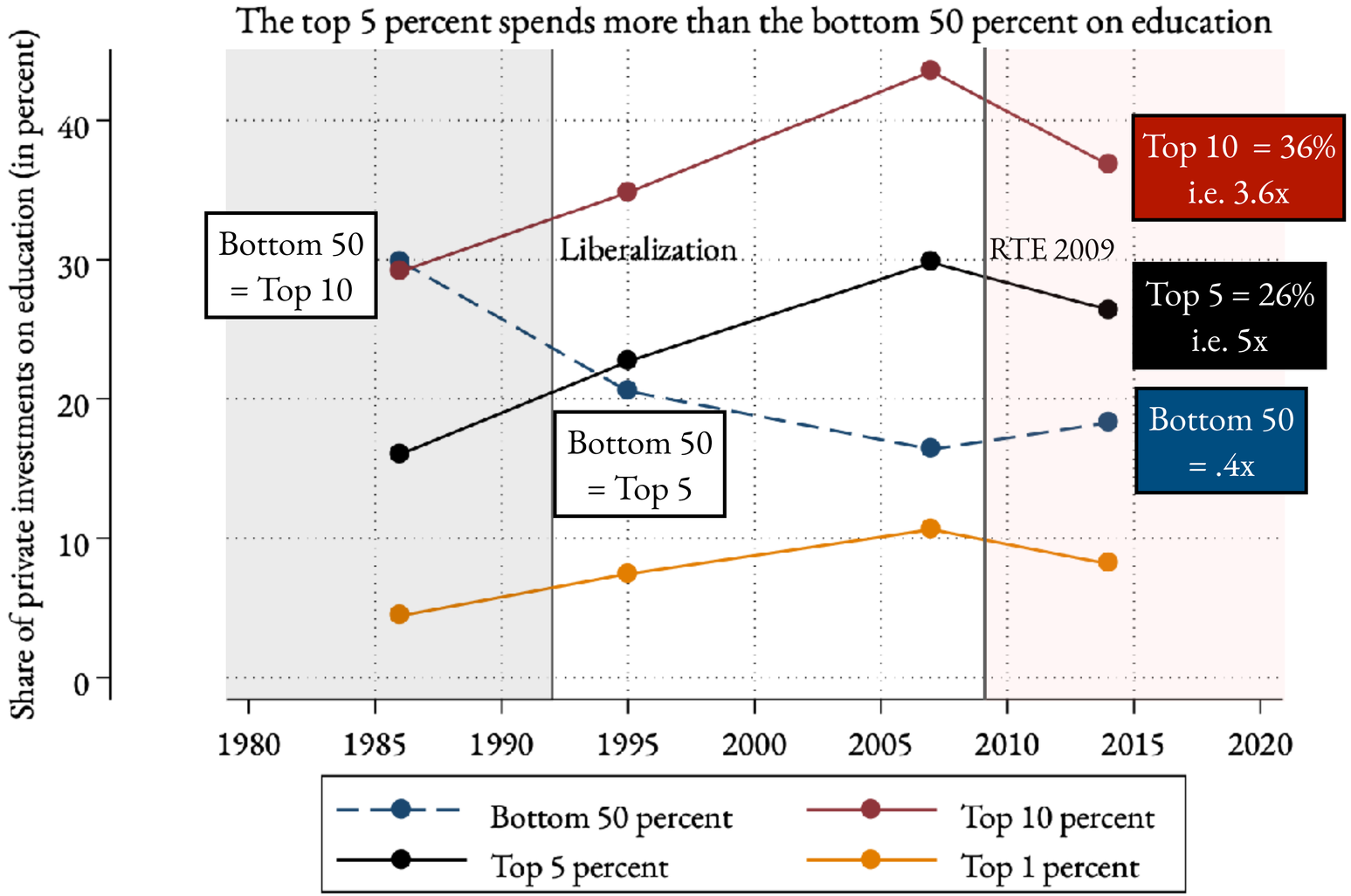
Source: Author's calculations based on Progress of Education in India reports and British India Censuses.
Note: Each point represents the share of total educational investments (public and private) among top 'x' percent educated individuals for a given birth cohort, including the large majority who do not attend school.

Colonial India: concentration of educational investments among educated



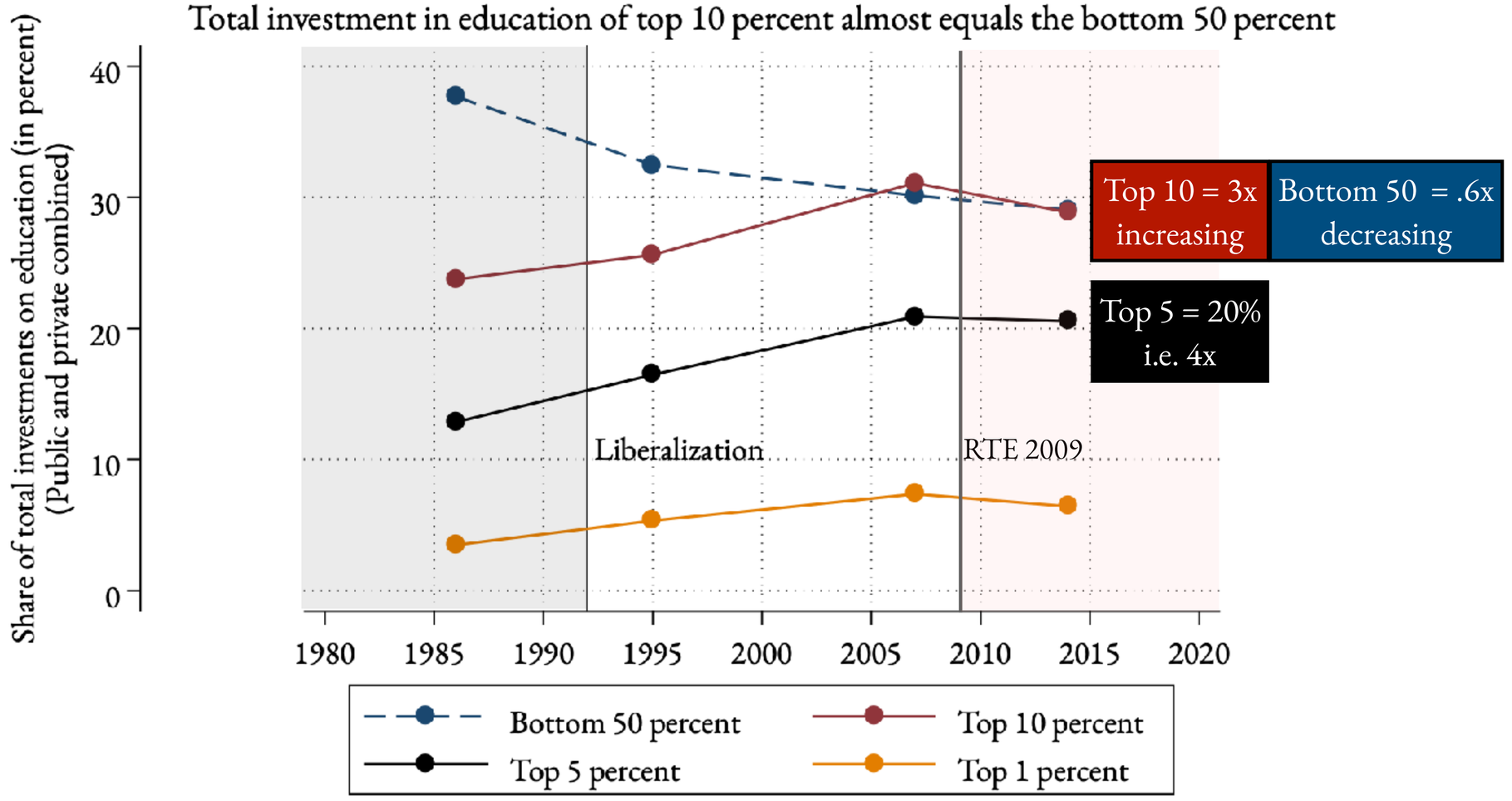
Source: Author's calculations based on Progress of Education in India reports and British India Censuses.
Note: Each point represents the share of total educational investments (public and private) among top 'x' percent educated individuals for a given birth cohort, limiting our attention to only those who attend at least some school.

Recent India: Private concentration



Source: Author's calculations based on the Education rounds of National Sample Surveys.
Note: The top income groups are classified using the per capita household consumption. (See text for explanation.)

Recent India: Total concentration



Source: Author's calculations based on the Education rounds of National Sample Surveys.
Note: The top income groups are classified using the per capita household consumption.
Total educational investments includes expenditure by the household sector and public contribution, that includes free education, mid-day meals, scholarhsips, transport, textbook, uniform and stationery assistance.

Investment story: new evidence

- Colonial and modern concentrations are high
  Orders of magnitude similar: top5 = 4-5x, top10 = 3-4x, bottom50 = .6x

- Top 5-10 and bottom 50 move in tandem. Middle 40 consume 40%

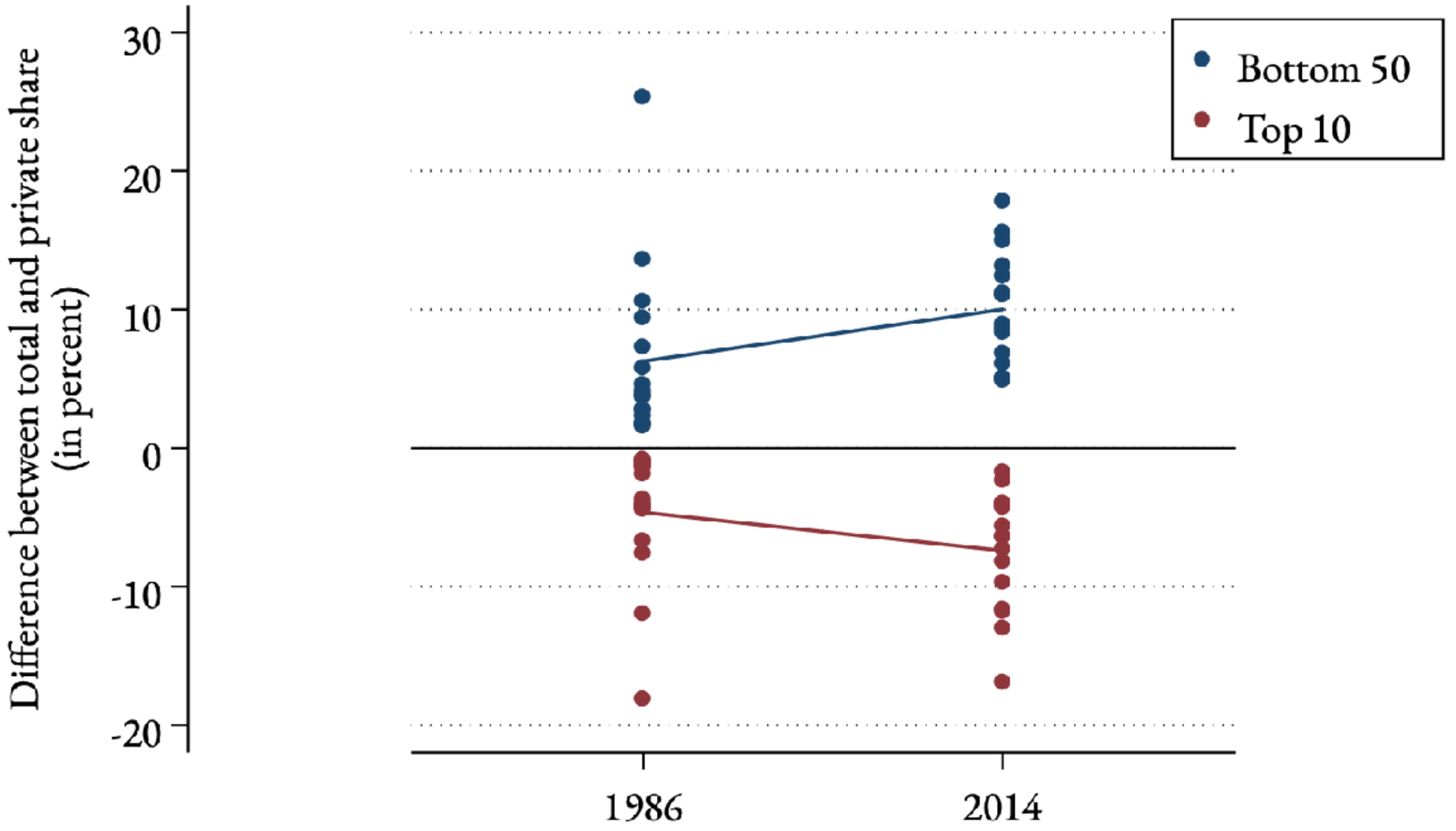
- Recent concentration increasing. Role of the state?

Increasing value of the state

- Consider the top 10
    - Private investment share = 38 percent, Total investment share = 30 percent
    - Therefore, including public investments *reduces* concentration by 8 pp

- Consider the bottom 50
    - Private investment share = 20 percent, Total investment share = 30 percent
    - Therefore, including public investments *increases* concentration by 10 pp

Contribution of the government (each point is a state)



Source: Author's calculations using the Education rounds of National Sample Surveys.
Note: Each point represents the difference in shares for a state for the given year. Bottom 50 and top 10 percentiles refer to national percentiles of household per capita consumption. The straight lines are linear fits over the period for illustrative purposes: states are unweighted by enrollment or expenditure.

Investment story: new evidence

- Colonial and modern concentrations are high
  Orders of concentration similar: top5 = 4-5x, top10 = 3-4x, bottom50 = .6x
  Privatization has increased inequality
- Top 10 and bottom 50 move in tandem. Middle 40 stationary and consume 40%
- Recent concentration increasing. Role of the state?
- State benefits the bottom 50 percent (complements decrease of top 10)
- More investments needed to reduce inequality in quantity and quality

Conclusion

Conclusion

- Two stories: (1) Access (2) Investments
- Conclusion: all boats risen, but water still shallow for bottom 50
  - Rich have 7-10y more education, and yet gain more. Thresholds for college
  - Attainment, gains: Poor Brahmins > Poor Muslims. College access easier
  - Historical view: networks cleaved. SC, ST, Muslims still under-represented
  - Concentration of investments increased since 30y. Role of state increased

Conclusion

- Two stories: (1) Access (2) Investments
- Implications:
  - Wage inequality may increase. Low level equilibrium for poor. Jobless growth?
  - Brahmins winners, Muslims may feel left out. Polarization increase?
  - More investments at bottom (quantity, quality) to complement privatization
  - To combat inequality: more financing of entrepreneurship (1990s experience)

Conclusion

- Two stories: (1) Access (2) Investments
- Discussion:
  - Why do minorities receive less education despite equal incomes?
    (preference / occupational sorting, constraints, discrimination)
  - Better to create more doctors and lawyers, or a literate public?
    Effects of horizontal vs vertical expansion of learning on innovation, growth?
  - Network disconnectedness. Perception vs reality? Hard-work / discrimination

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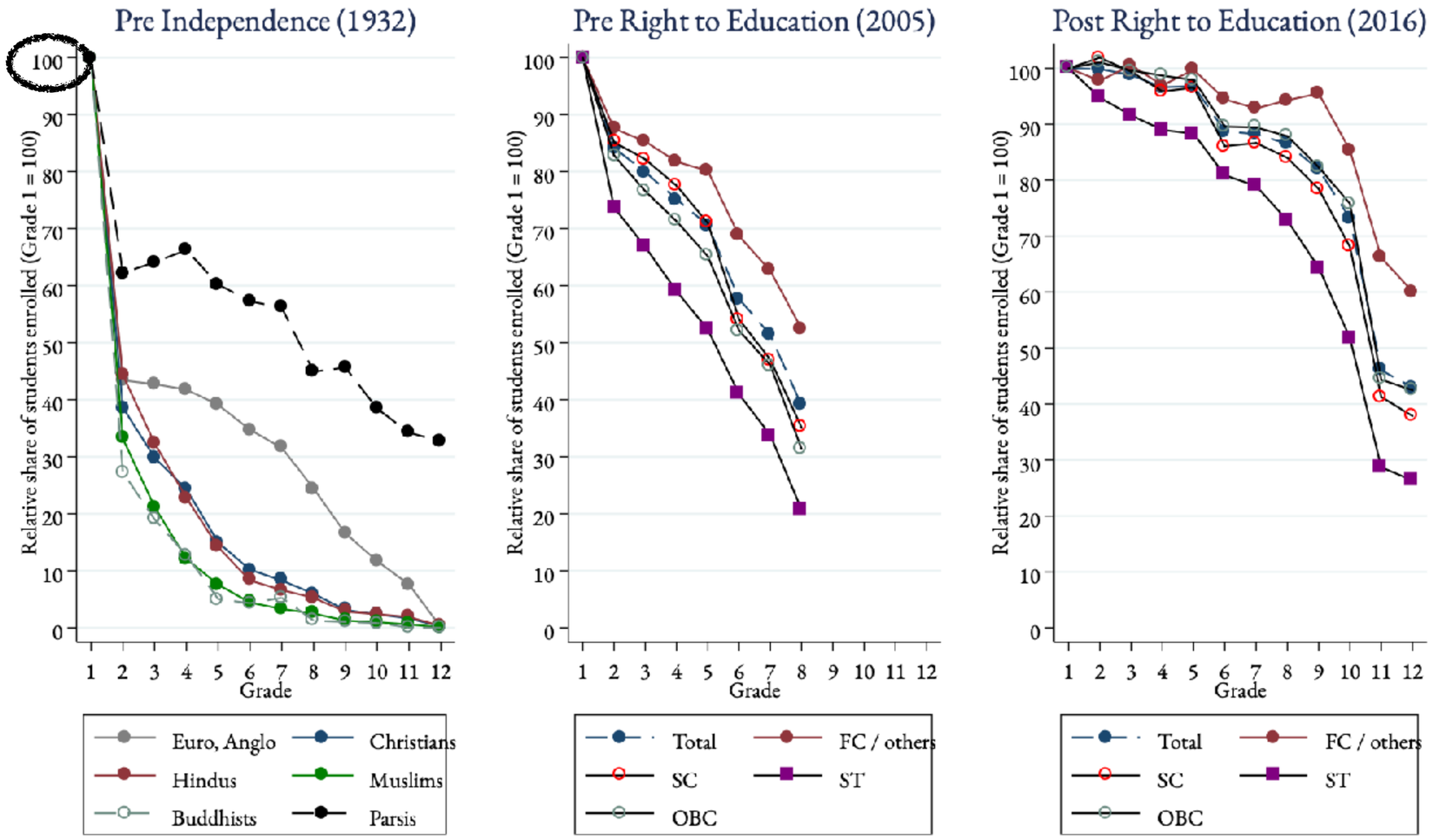
Dropout rates differ historically

100 kids join grade 1



Source: Author's calculations based on Progress of Education in India 1932 and DISE unit level data.
Note: Due to absence of longitudinal data, we rely on cross section in the year of 1932 to get approximate values of persistence for pre Independence data. For recent years, we use the same metrics for comparability and to eliminate the mechanical surge in enrolment induced by policies to universalize education in 2000s, including enrolment at age appropriate level in elementary school.