Racial Inequality in Brazilian Education:
Recent trends on education quantity and quality and evidence on racial stigma

Lemann Dialogue 2014

Lemann Center, Stanford University, November 2014

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Outline

- Recent trends on racial inequality in Brazilian education:
  1. Important racial gaps in the labor market are a consequence of educational gaps in quantity and quality.

  2. Recent democratization in school access is closing the quantity gap.

  3. The same seems to be not true for the quality gap, racial stigma could be part of the explanation.

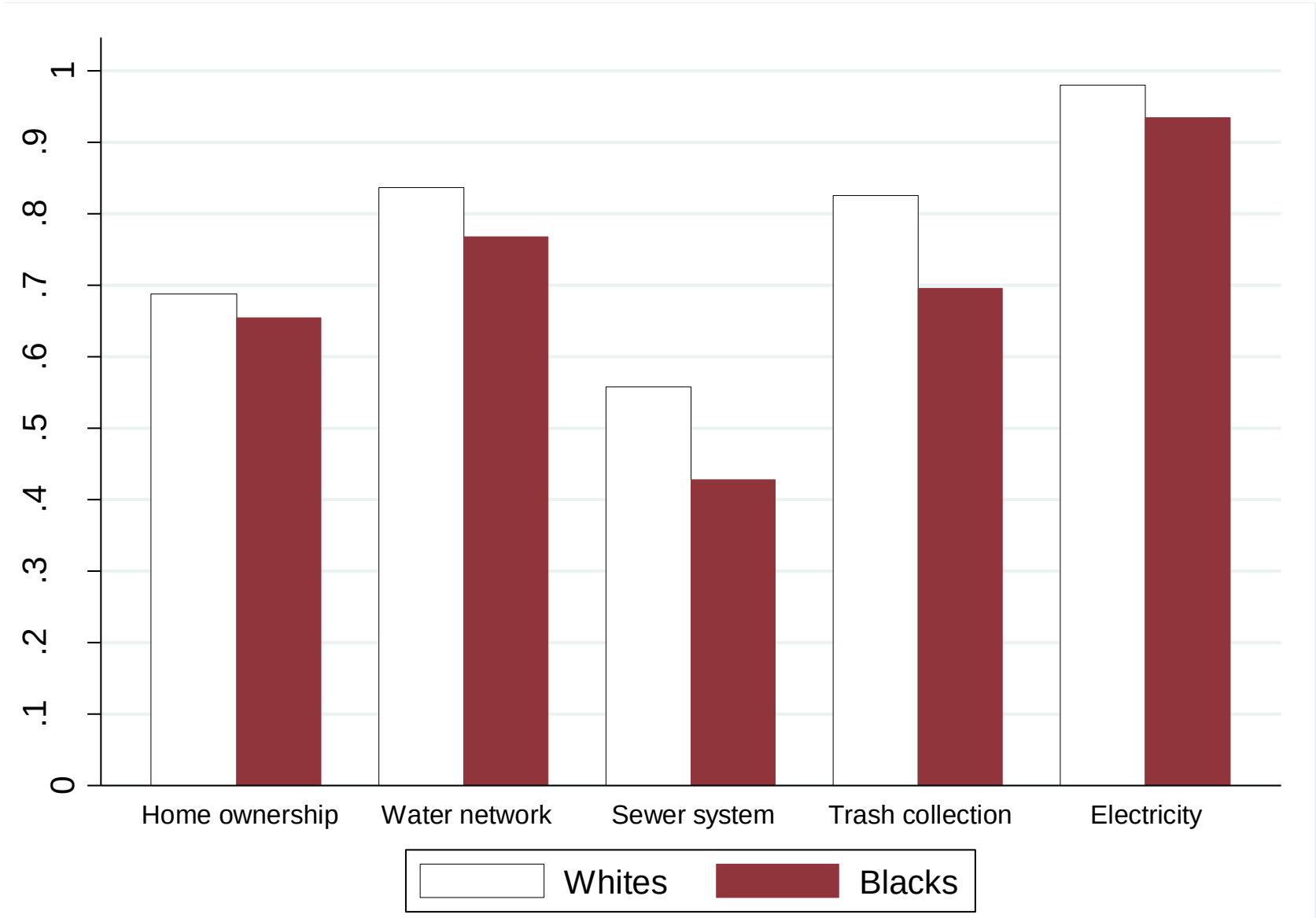
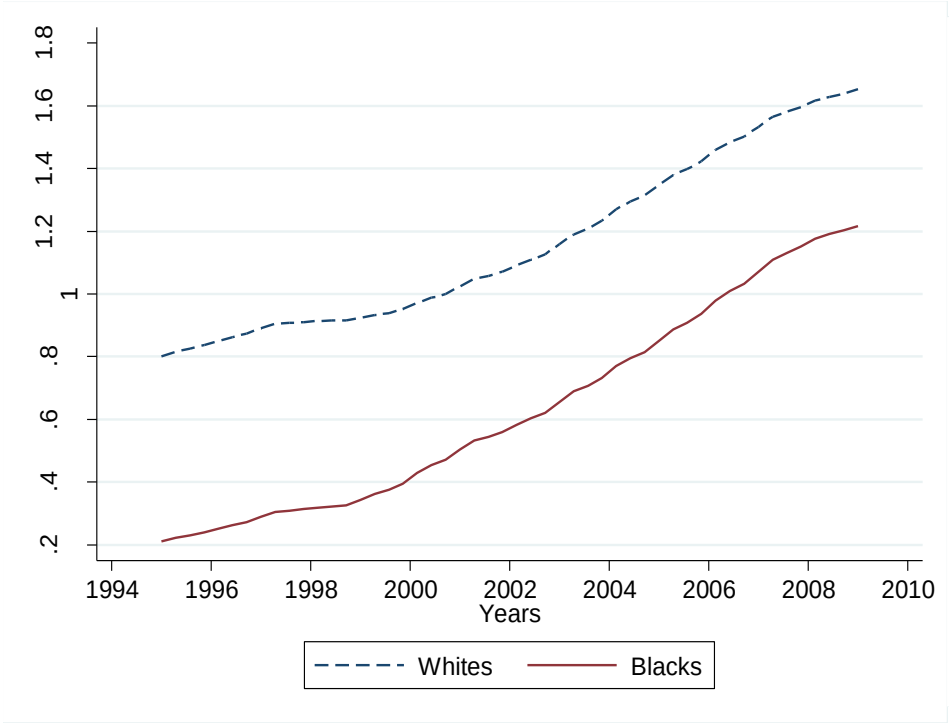


Figure 1: Living standards by race, Brazil 2000

Data source: Population Census 2000, IBGE.

Figure 2: Hourly wages by race (in logarithms), Brazil 2000

Data source: Population Census 2000, IBGE.



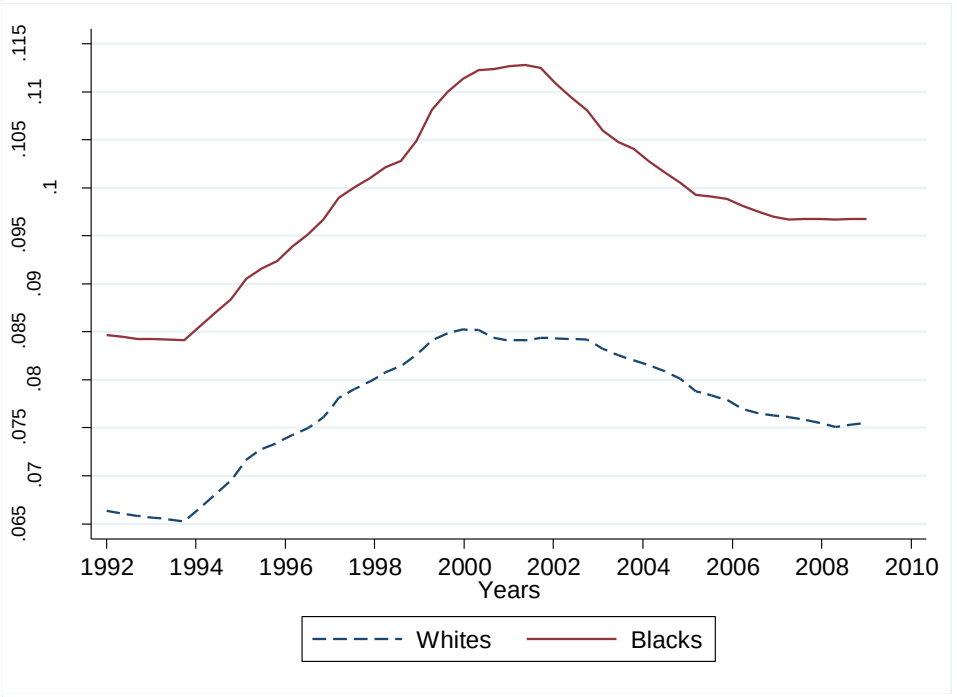


Figure 3: Hourly wages and non-employment rates by race (in logarithms), Brazil 1992-2009

Data source: PNAD, IBGE.

Stylized Facts : Living Standarts and Labor Market

- Two main factors that could explain racial differentials in those economic outcomes:

1. Discrimination or prejudice against blacks in the labor market
2. The result of lower investment in the accumulation of skills by darker-skin individuals, which translates into a scarcity of economic opportunities

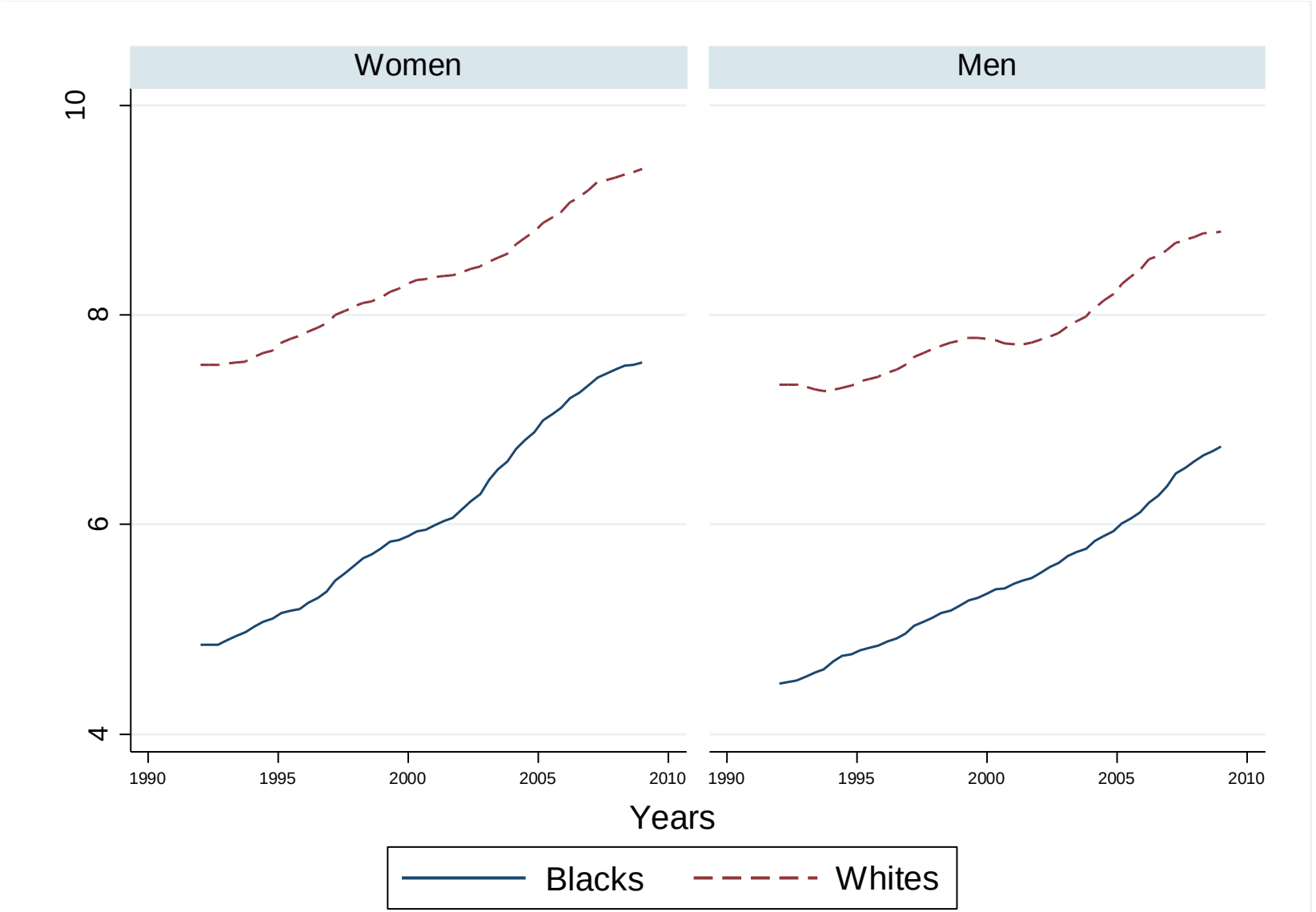


Figure 5: Education attainment by race over time (completed years) for adults age 35, Brazil 1992-2009

Data source: Brazilian Household Survey (PNAD), IBGE.

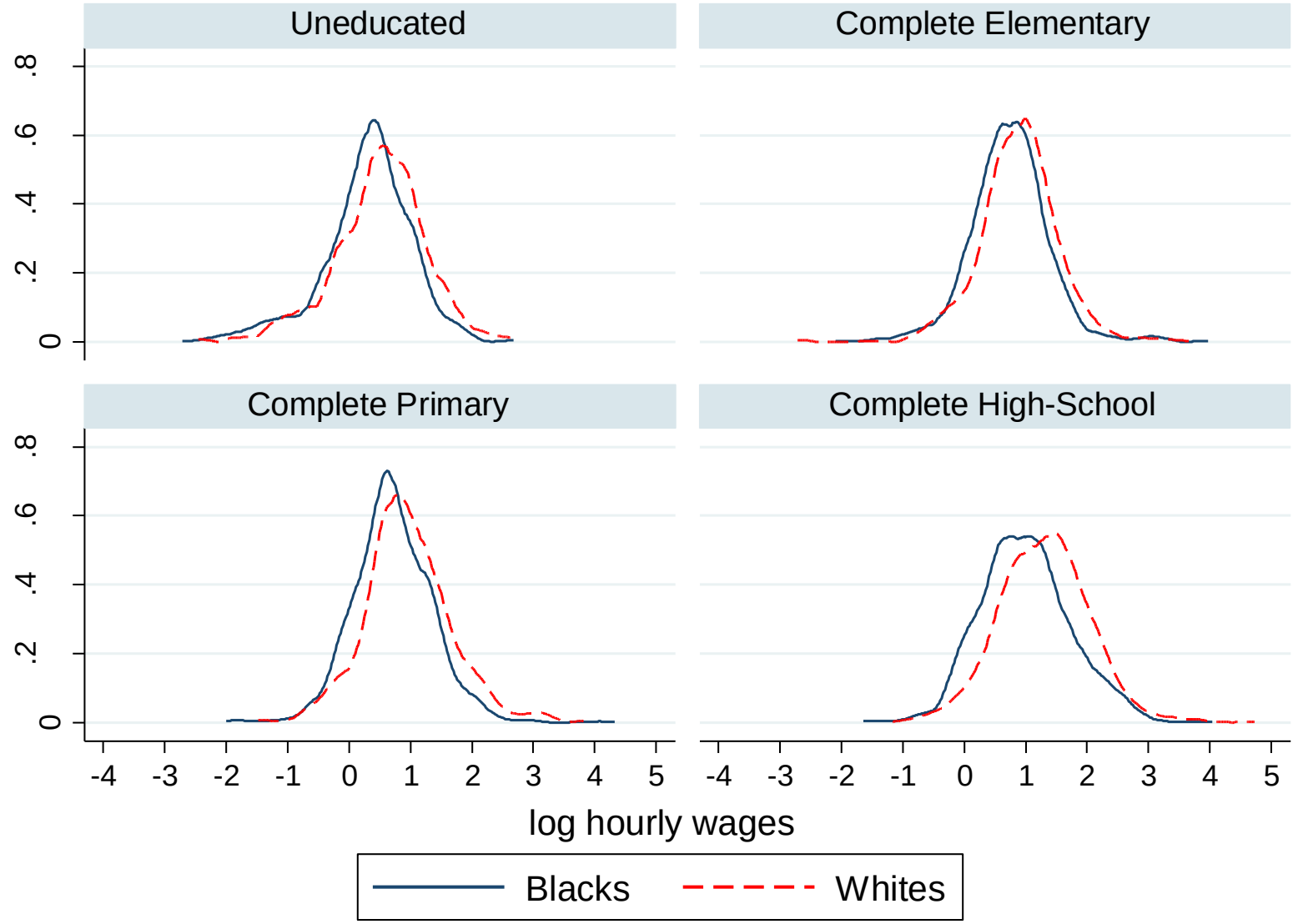


Figure 6: Log wage distributions for adults aged 30 to 35, Brazil 2001

Data source: Brazilian Household Survey (PNAD), IBGE.

Stylized Facts : Educational Attainment

- Blacks consistently accumulate less human capital in the form of formal education (lower quantity)
- Our findings indicate that accounting for educational disparities accounts for roughly 50% of the differences between Blacks and Whites.
  - Differences in unemployment rates are reduced from 2 to 1 percentage point
  - Differences in hourly wages go from.53 to .24 log-points.
  - Differences are particularly sizable for the population with more education

Trends in Attainment Gaps

- The 1990s marked a decade of structural changes in Brazil
  - Inflation stability was reached in 1995
    - planning and investment in education of children became more attractive to poorer parents
  - There was a significant regulatory wave in education policy
    - Initial steps were taken in the establishment of a system accountability based on national examination of students
    - Federal government launched the Bolsa Escola Program (CCT)
    - Major funding reform affected amounts and regional distribution of resources for school construction, maintenance and improvement
- These systemic changes led to a dramatic increase in the rates of enrollment of school-aged children.
  - This *"democratization"* process has had a major impact on the representation of a deprived portion of the population within classrooms. In particular the black population.

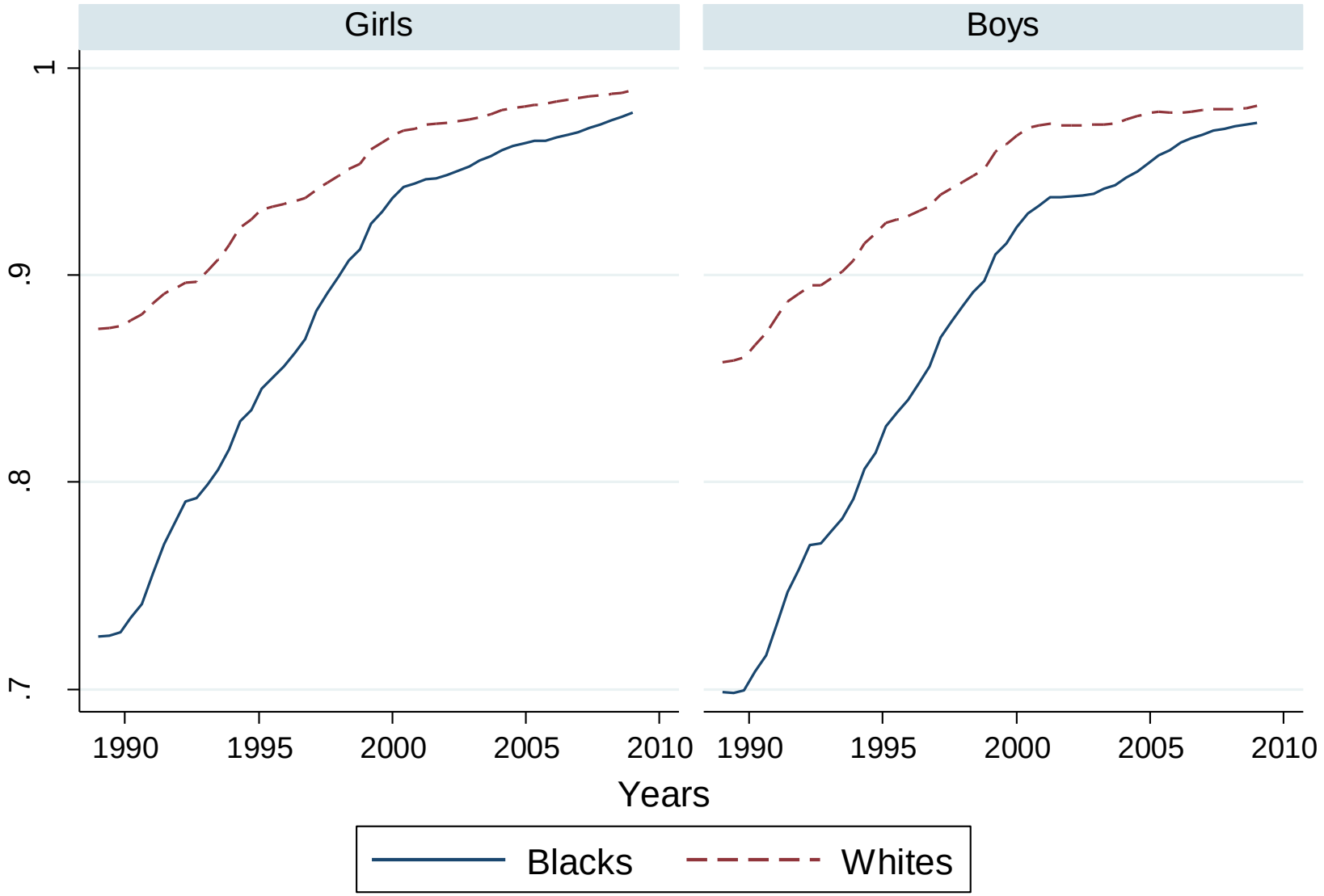


Figure 7: Enrollment rates for children aged 7, Brazil – 1989-2009

Data source: Brazilian Household Survey (PNAD), IBGE.

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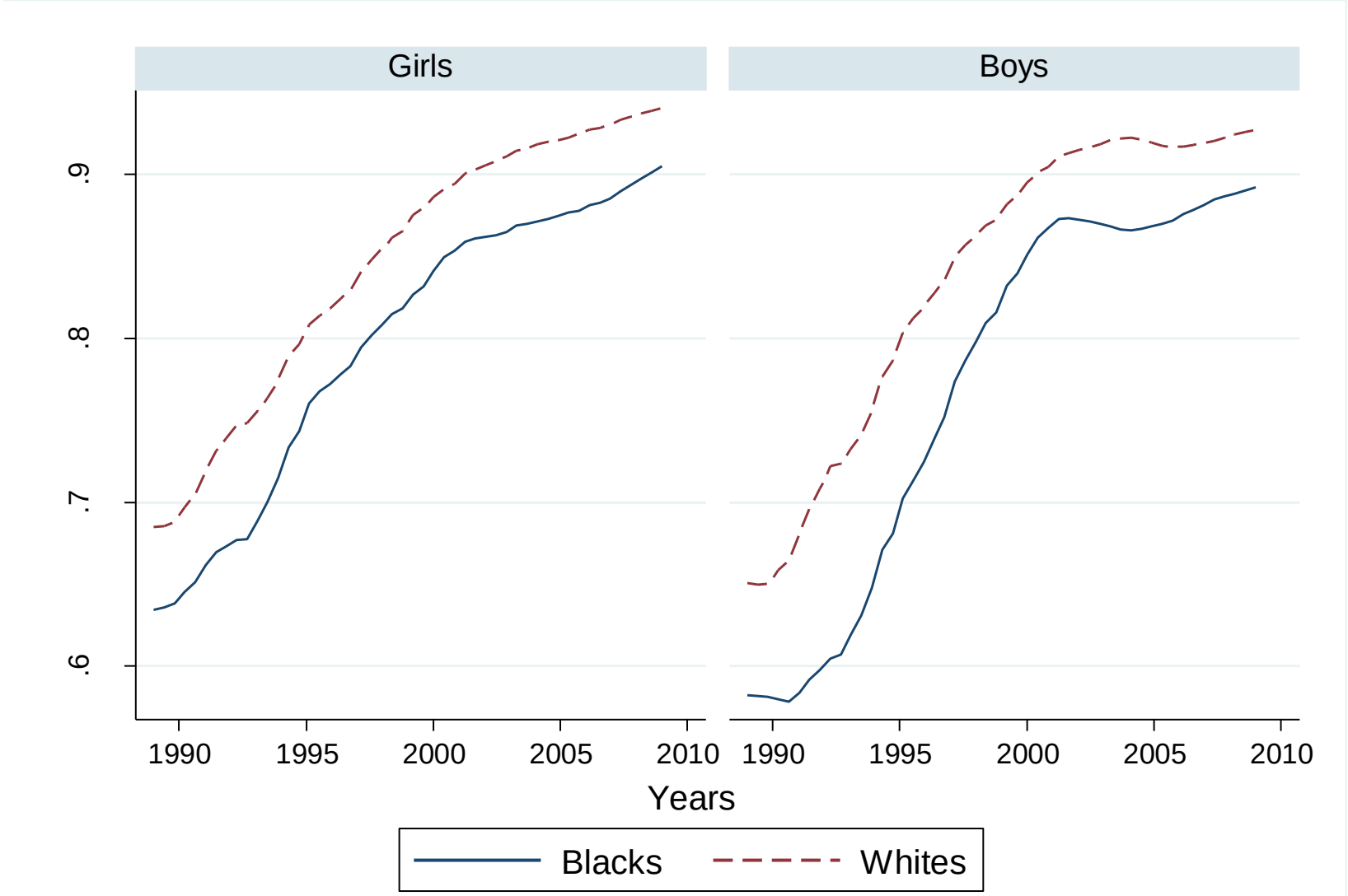

Figure 8: Enrollment rates for children aged 15, Brazil – 1989-2009

Data source: Brazilian Household Survey (PNAD), IBGE.

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Trends in Attainment Gaps: Aggregate Data

- Over time Black children became more likely to enter school but not more likely to finish primary education relative to Whites.
- We explore the fact that in Brazil education policy is decentralized to investigate a specific student-retention initiative: **automatic promotion scheme**
  - This policy grouped contiguous grades into cycles, with retention occurring only at the end of each cycle
  - In the state of Sao Paulo, two cycles were created. Cycle 1 encompasses grades 1 to 5, and cycle 2 covers grades 6 to 9
  - Within a cycle a student is promoted to the next grade if she attends more than 75% of the classes.
  - Insufficient proficiency can result in grade retention only at the end of each cycle

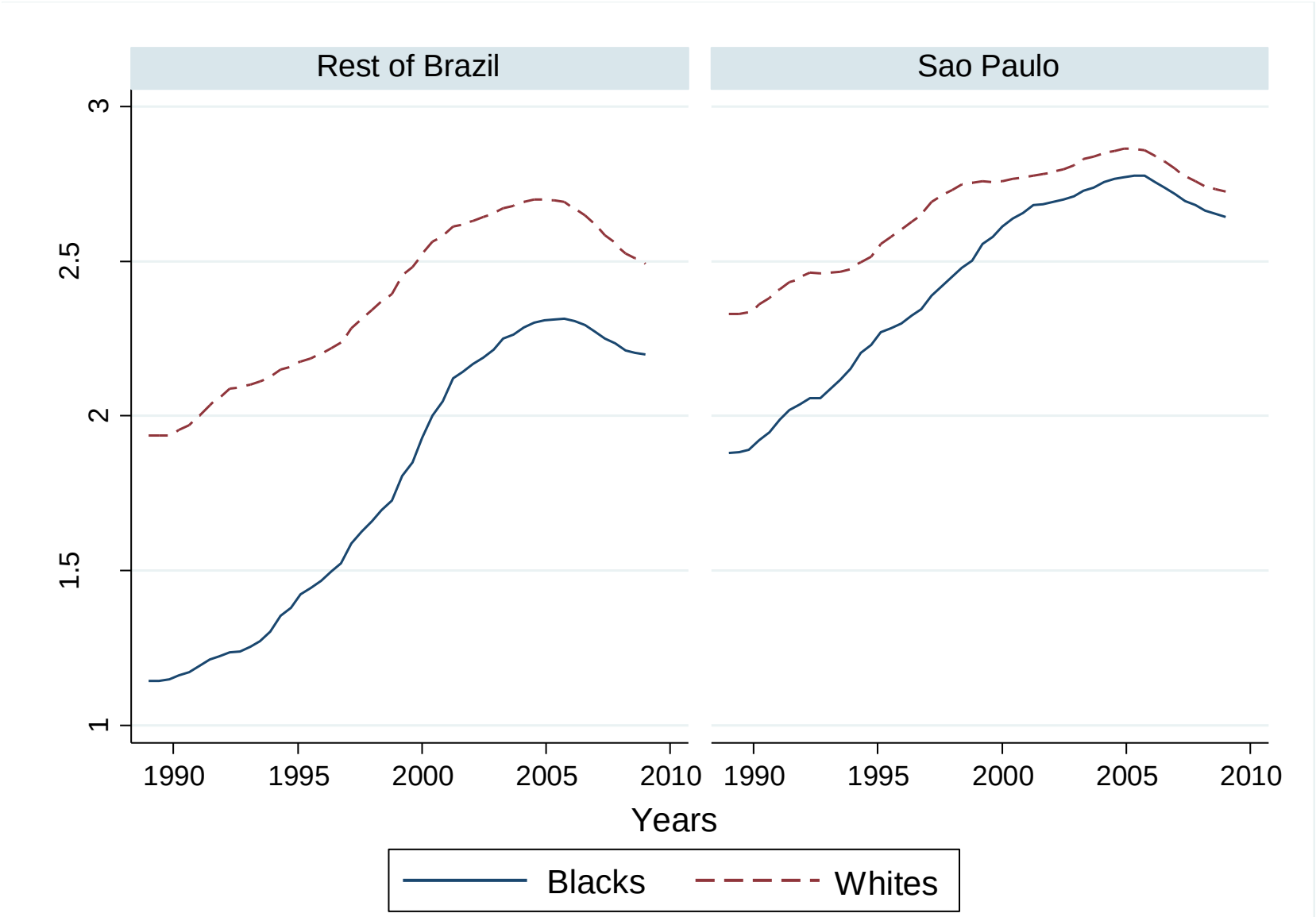

Figure 9: Educational attainment for children aged 10 (in completed years), Sao Paulo versus Rest of Brazil – 1989-2009

Data source: Brazilian Household Survey (PNAD), IBGE.

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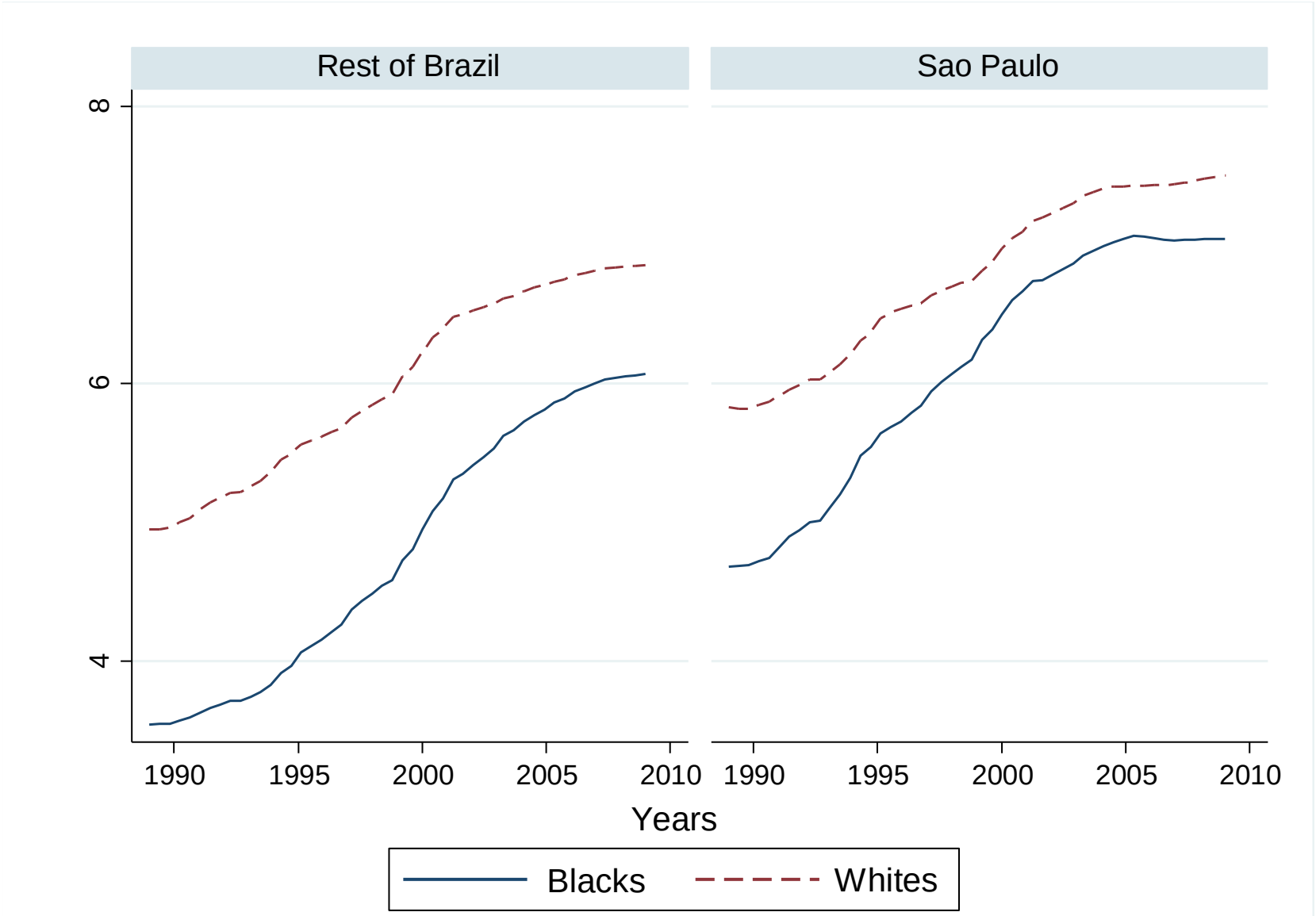

Figure 10: Educational attainment for children aged 15 (in completed years), Sao Paulo versus Rest of Brazil – 1989-2009

Data source: Brazilian Household Survey (PNAD), IBGE.

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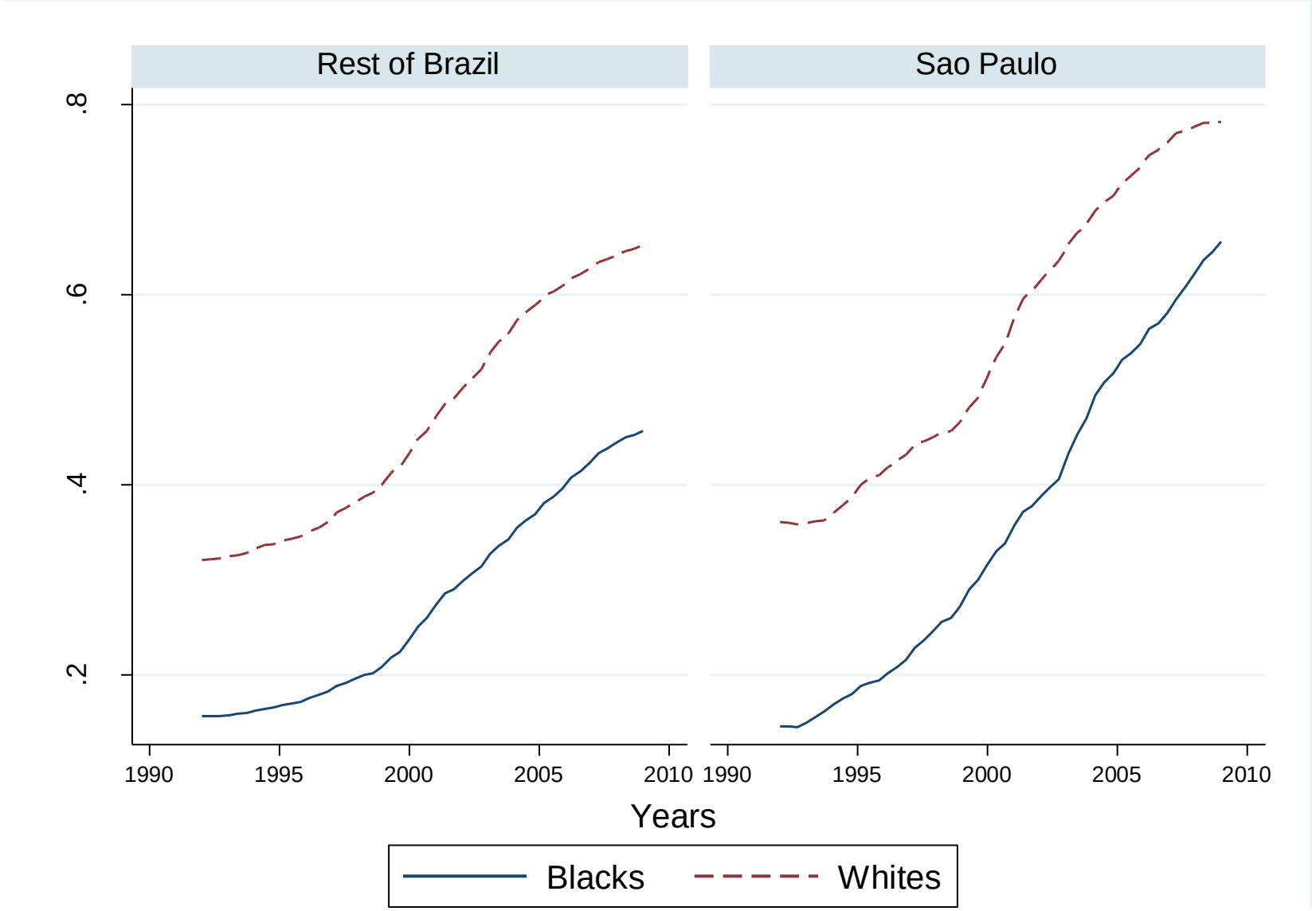

Figure 11: High-school completion rate (by age 24), 1992-2009

Data source: Brazilian Household Survey (PNAD), IBGE.

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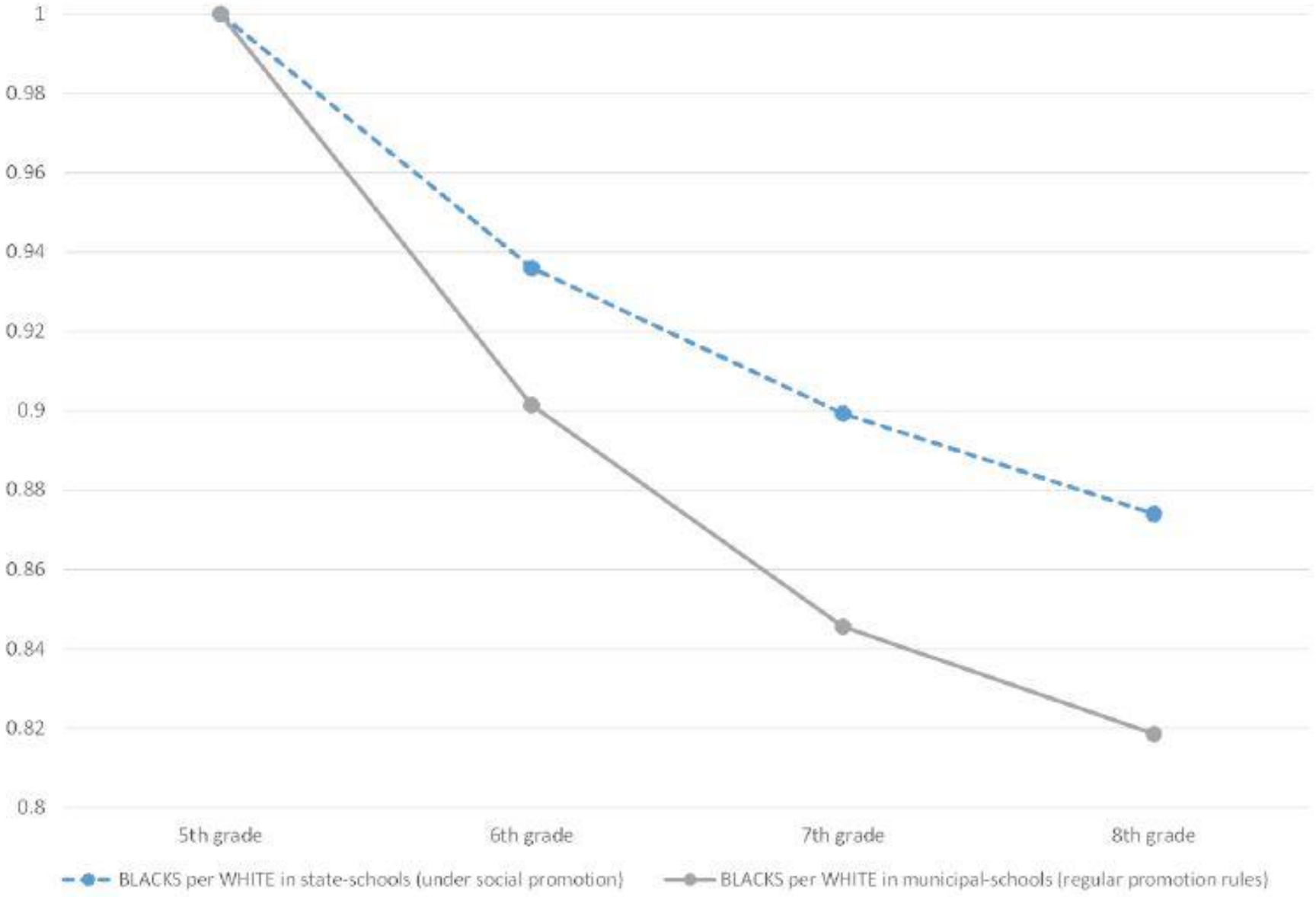
Trends in Attainment Gaps: Longitudinal Micro Data

- Open question: the quality of education received by each group can be considered comparable?
- Employing administrative data from São Paulo state, we investigate the racial gap in two main dimensions:
  I. student progression in the school system;
  II. student performance on standardized tests.

Trends in Attainment Gaps: Longitudinal Micro Data

- Retention and failure rates are much higher for black students:
  - 81.4% of the White second graders (in 2007) reached the sixth grade in 2011, whereas only 74.7% of the Black do so.
  - 74% of the White students in the eighth grade reach the last year of high school (grade 12), whereas only 51% of the Black do so.
- Automatic promotion has any effect on that?
  - We explore diferences in the attrition rates across municipal and state run schools (the later adopted the policy)

Figure 1. Differential Attrition (5th to 8th grade) by Race and Promotion Rules.



Trends in Attainment Gaps: Longitudinal Micro Data

- We turn to a more careful investigation of prevalence and persistence of the proficiency gap
- Exploring the longitudinal aspect of the data, we computed the proficiency gap evolution over time within students cohorts.
  - *Model 1*: Does not account for differences in the school environment and students' socioeconomic characteristics
  - *Model 2*: accounts for differences in observable socioeconomic characteristics
  - *Model 3*: compares only students in the same school and controls for socioeconomic characteristics

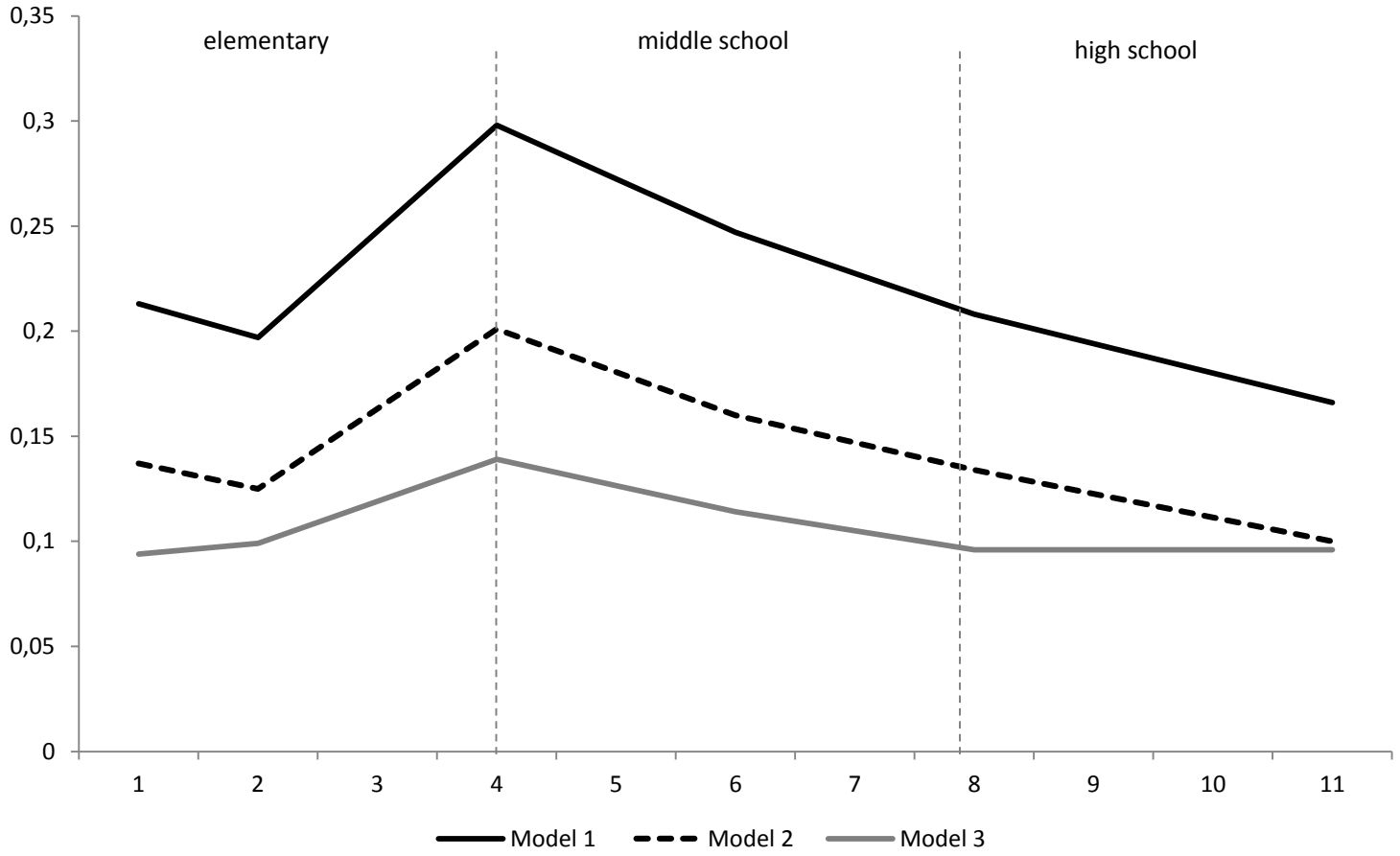


Figure 17: Math Proficiency Gaps (z-scores % of correct answers) over time in school

Data source: SARESP

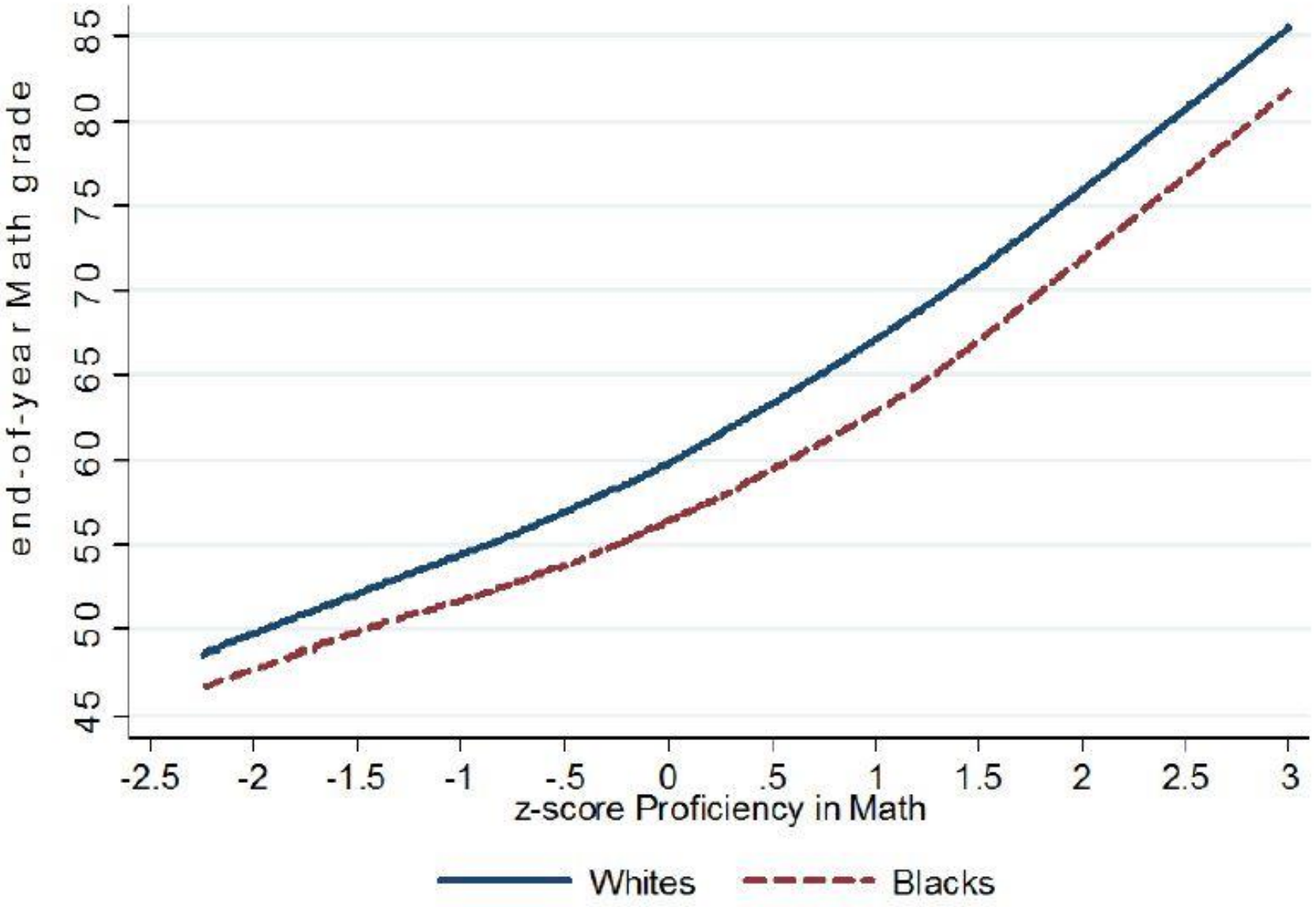
Trends in Attainment Gaps: Longitudinal Micro Data

- Even after controlling for school environment and students' socioeconomic background a gap remains for all grades
- The evidence is consistent with a constant gap over time
- Children "bring" the gap to school at the time of entry.
  - Such gap is neither explained away by socioeconomic differences nor eliminated by the training offered in the public schools.
- Usual explanations for the existing racial gap in proficiency, such as differences in school quality, school environment and socioeconomic background explain only about 55% of the gap
- These findings suggest that even if the democratization process eventually closes the secular racial gap in years of education, Blacks will still be lagging Whites in proficiency.

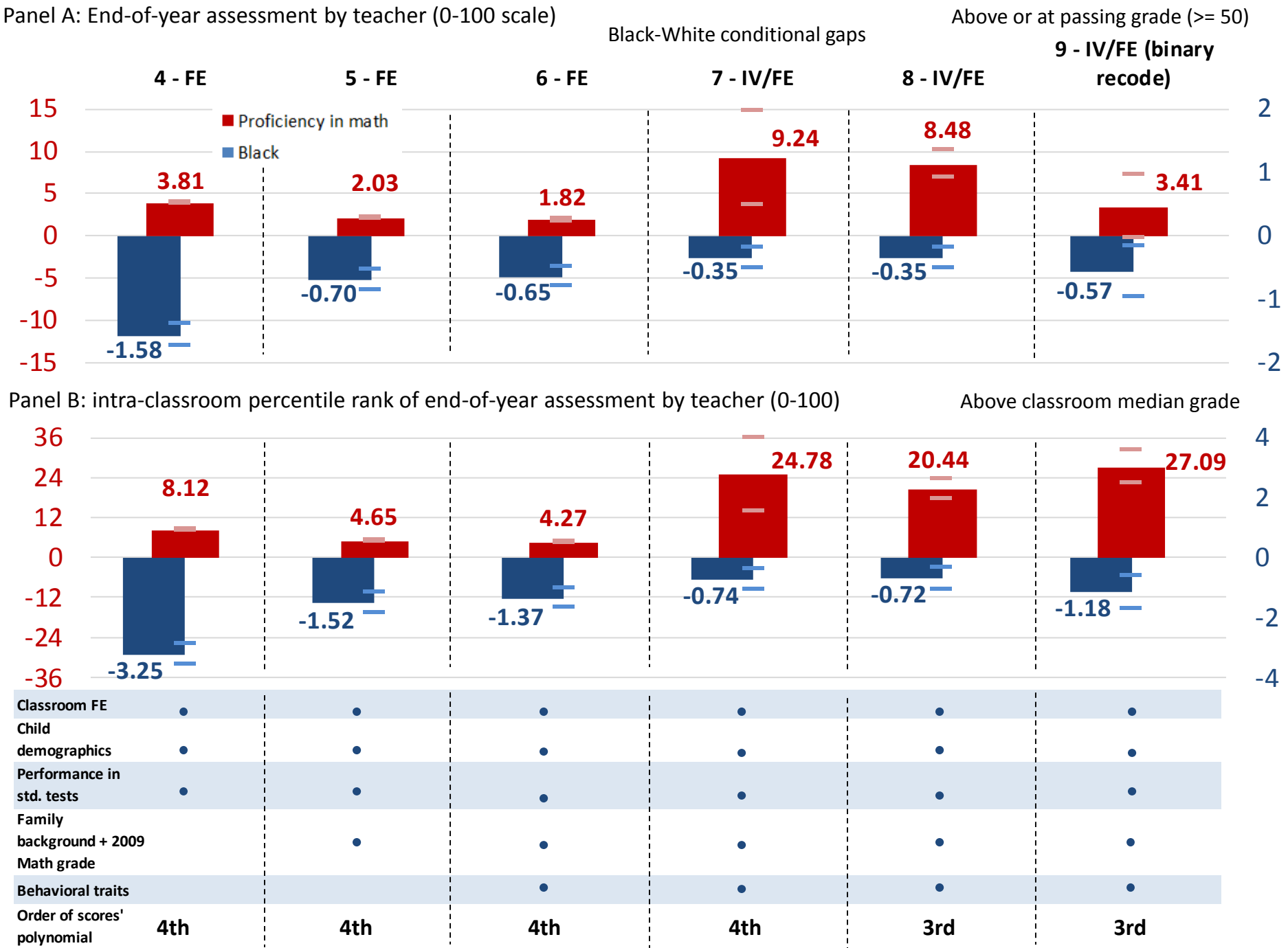
Trends in Attainment Gaps: Longitudinal Micro Data

- Big challenge: design and adopt policies capable of closing these gaps
- To achieve this goal is necessary to identify the main causes of the proficiency gap (beyond the usual explanations)
- What if teachers treat Black and White students differently, unfavoring the closing of pre-existing gaps?
  - We combine student-level data on standardized test scores with data on students' report cards in order to tackle this issue.
  - We explore the fact that SARESP's grading is color blind and that the state schools in Sao Paulo adopted an uniform criterion-referenced rule
  - The rationale for the empirical exercises performed here is to see whether White and Black students with the same blindly-graded math score (SARESP) receive different grades

Figure 4. Smoothed Raw Relation Between Proficiency Scores and Teacher-Assigned Grades for 8th Graders.

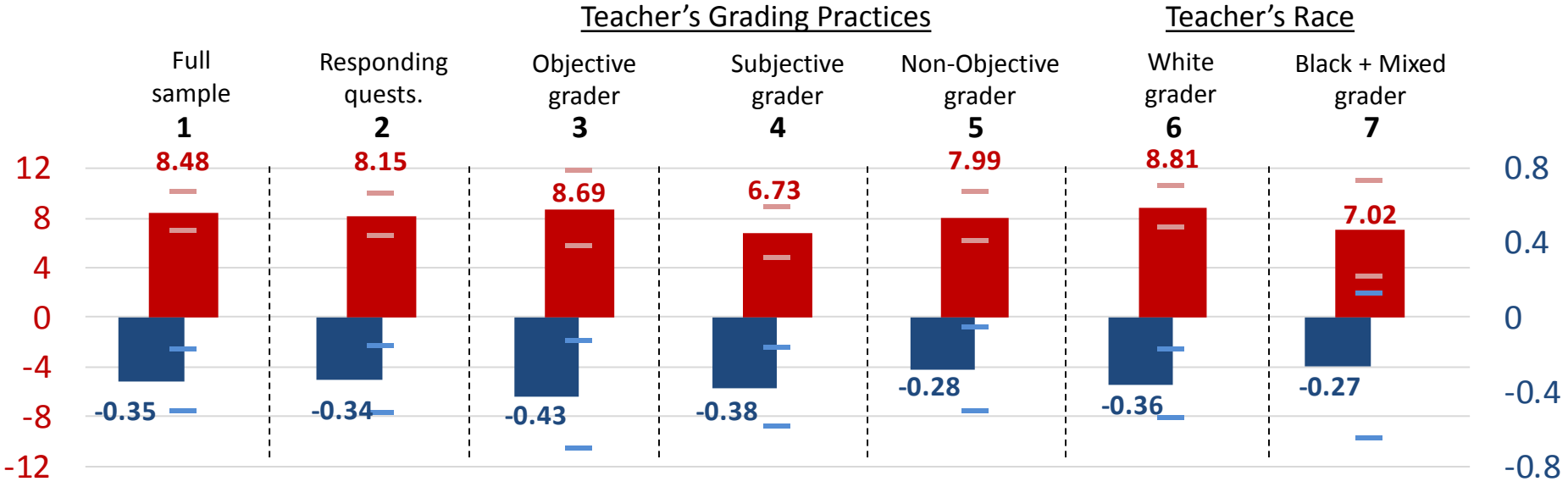


Unconditional and Conditional Racial Differentials in Grading – OLS and IV Estimations

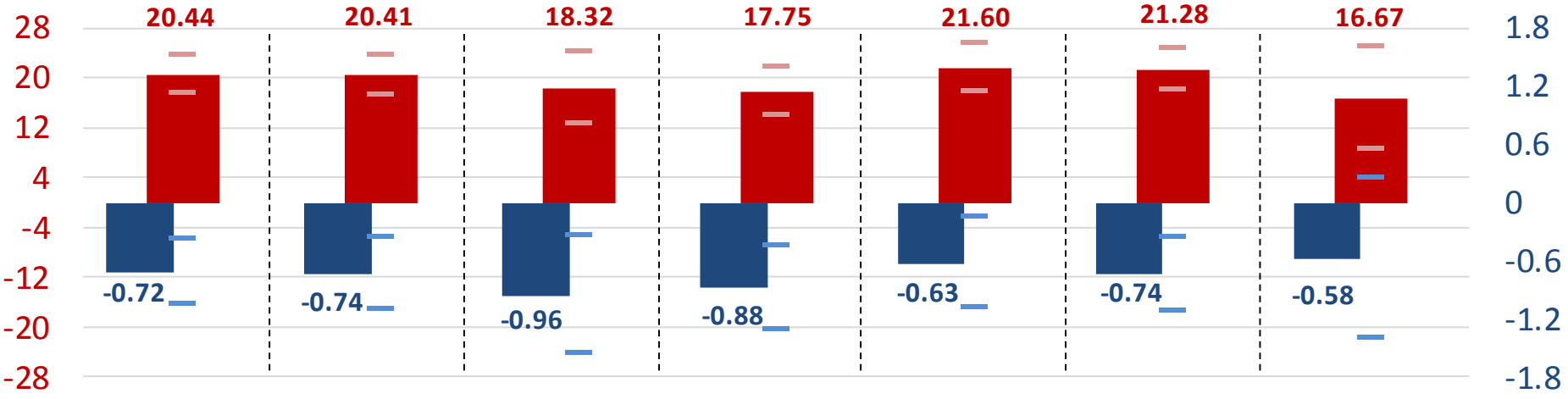


Conditional Racial Differentials in Grading by Teacher's Evaluation Practices and Race – IV Estimations

Panel A: End-of-year assessment by teacher (0-100 scale)



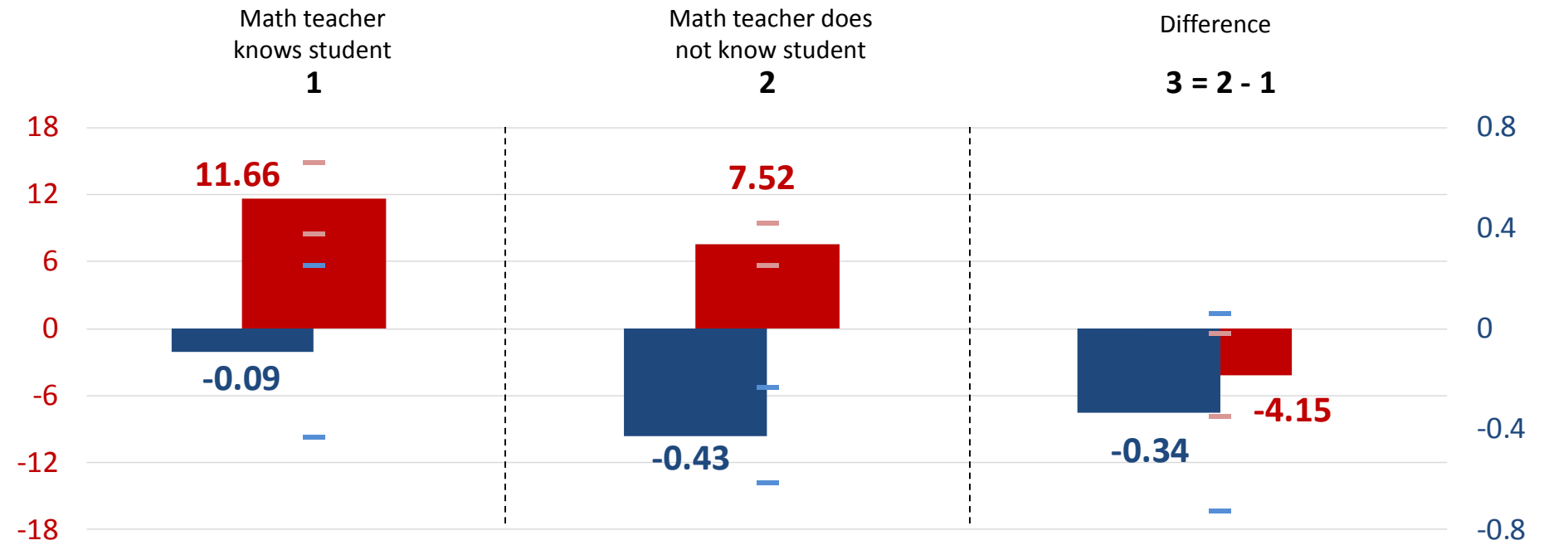
Panel B: intra-classroom percentile rank of end-of-year assessment by teacher (0-100)



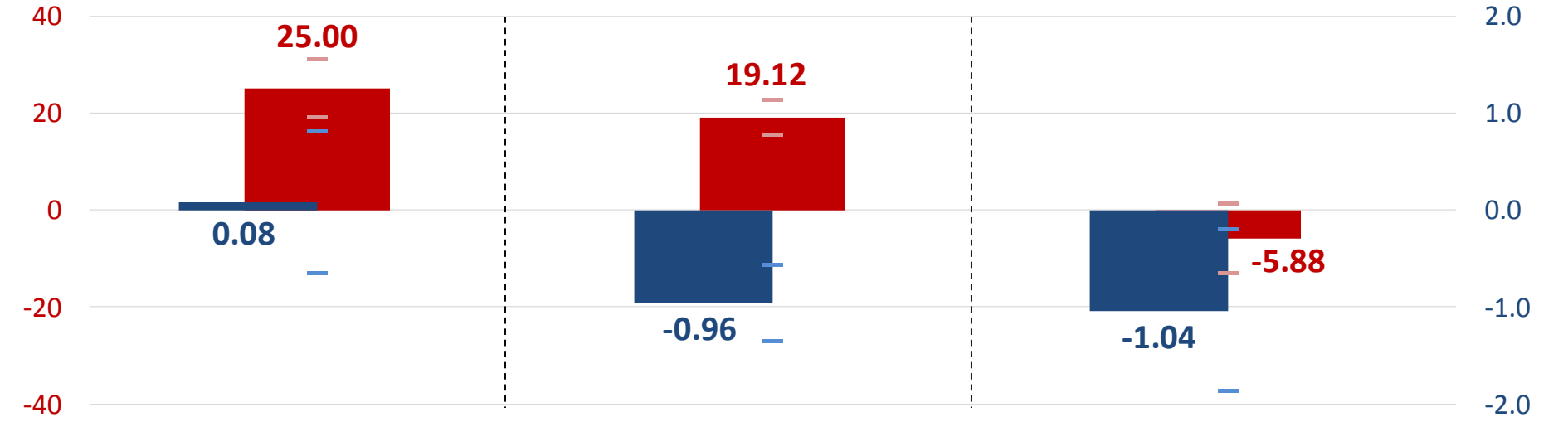
Sample students	277,444	233,750	86,485	171,727	147,846	224,936	52,198
Sample teachers	10,614	8,925	3,305	6,548	5,641	8,596	2,006

Conditional Racial Differentials in Grading and Learning Students' Types – IV Estimations

Panel A: End-of-year assessment by teacher (0-100 scale)

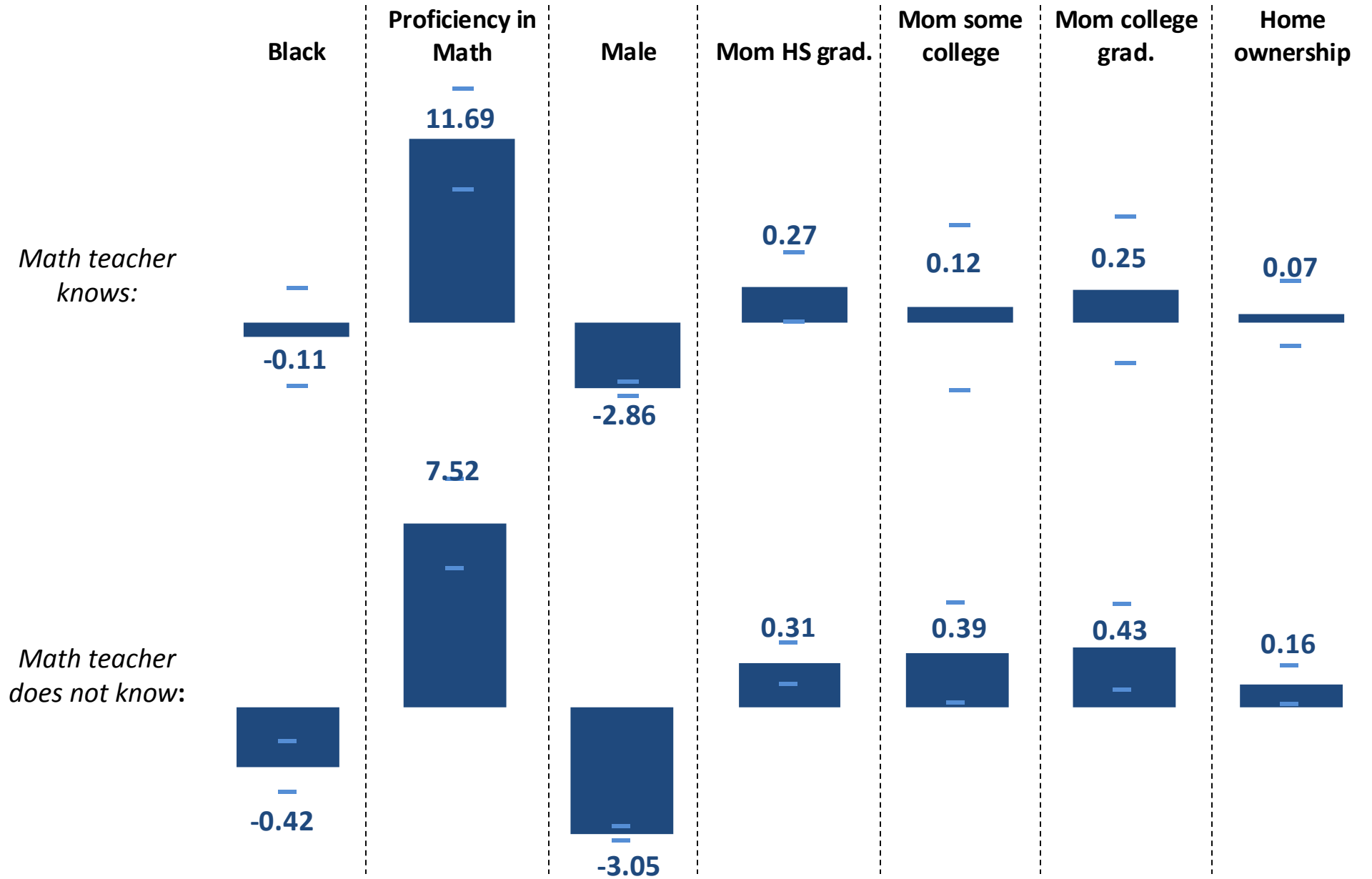


Panel B: intra-classroom percentile rank of end-of-year assessment by teacher (0-100)



Conditional Racial Differentials in End-of-year assessment by teacher (0-100 scale) and Learning Students' Types – IV Estimations for Signals Beyond Race and Interactions with Behavioral Traits

Interactions with SES added



Conclusion

- Documented the prevalence and extent of socioeconomic differentials between Black and White Brazilians
- Related these outcomes to differences in the accumulation of human capital across races
- Differences in both quantity and quality of formal education are pervasive
- We uncover that recent trends in enrollment rates and in attrition reduction observed in some Brazilian states can generate reduced socioeconomic differences among future cohorts

Conclusion

- Worrisome evidence on the persistence of gaps in the quality of education provided to Blacks and Whites, as well as the possible reinforcing role played by public elementary, middle and high schools in such pattern

THANK YOU!