

Race and Economic Opportunity in the United States

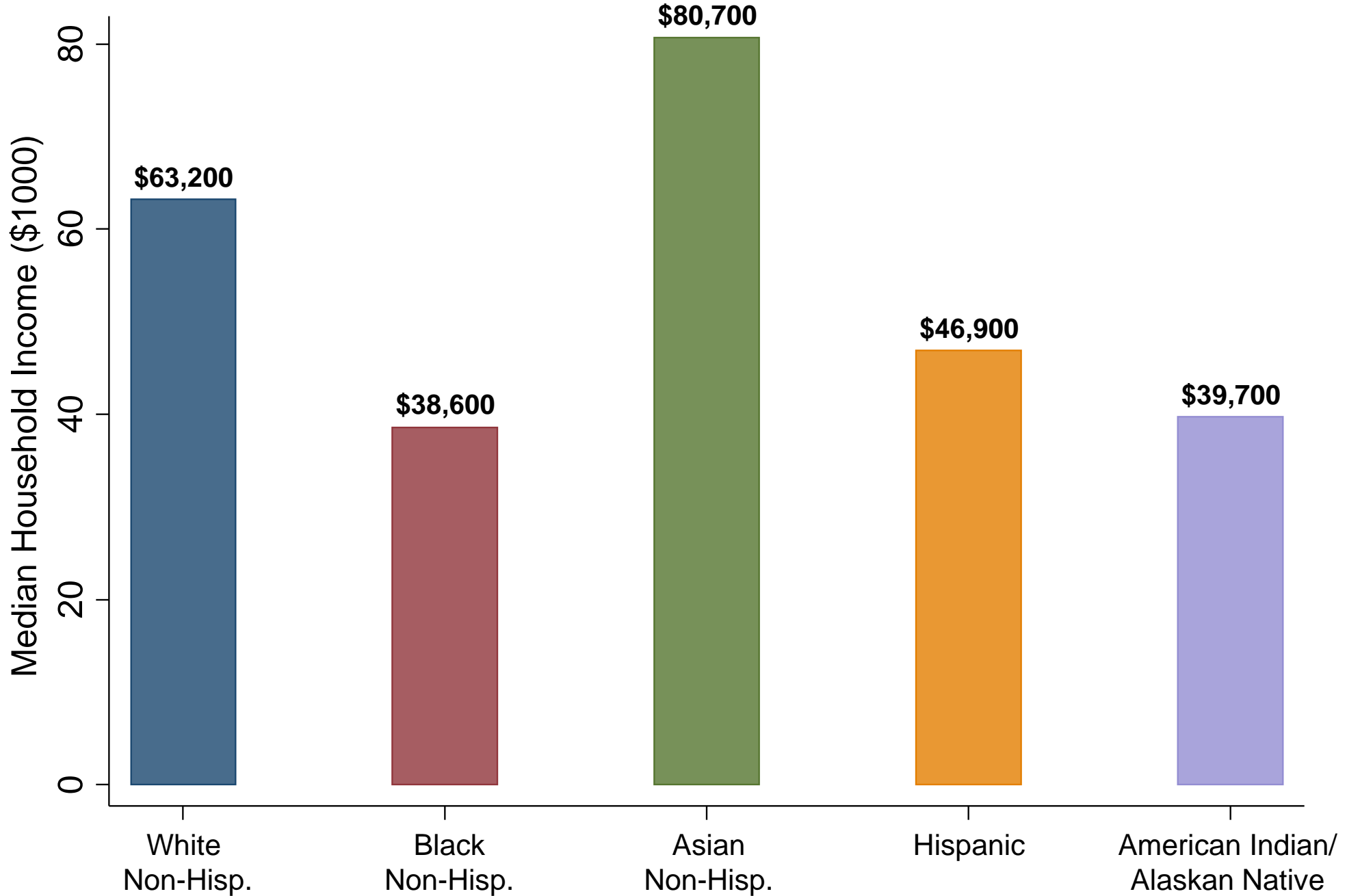
An Intergenerational Perspective

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March 2018

Disclaimer: This presentation is based on the paper “Race and Economic Opportunity in the United States: An Intergenerational Perspective” by Raj Chetty (Stanford), Nathaniel Hendren (Harvard), Maggie R. Jones (U.S. Census Bureau), and Sonya Porter (U.S. Census Bureau). The views expressed are not necessarily those of the U.S. Census Bureau. The statistical summaries reported in these slides have been cleared by the Census Bureau's Disclosure Review Board release authorization number CBDRB-FY18-195. All values in the tables and figures that appear in this presentation have been rounded to four significant digits as part of the disclosure avoidance protocol.

Median Household Income by Race and Ethnicity in 2016



Theories of Racial Disparities

Family-Level Factors

Parental Income	Magnuson & Duncan 2006; Rothstein & Wozny 2012
Parental Human Capital & Wealth	Oliver & Shapiro 1995; Orr 2003; Conley 2010
Family Structure and Stability	McAdoo 2002; Burchinal et al. 2011
Ability at Birth	Rushton & Jensen 2005 vs. Fryer & Levitt 2006

Structural Features of Environment

Segregation, Neighborhoods	Massey & Denton 1993; Wilson 1987; Sampson and Wilson 1995; Smith 2005
School Quality	Smith & Welch 1989; Card & Krueger 1992; Jencks & Phillips 1998; Dobbie & Fryer 2011
Discrimination in the Labor Market	Donohue & Heckman 1992; Heckman 1998; Pager 2003; Bertrand & Mullainathan 2004
Discrimination in Criminal Justice	Steffensmeier, Ulmer, Kramer 1998; Eberhardt et al. 2004; Alexander 2010
Social Alienation, Stereotype Threat	Steele & Aaronson 1995; Tatum 2004; Glover, Pallais, Pariente 2017

Cultural Factors and Social Norms

Identity and Oppositional Norms	Fordham & Ogbu 1986; Noguera 2003; Carter 2005; Austen-Smith & Fryer 2005
Aspirations or Role Models	Mickelson 1990; Small, Harding, & Lamont 2010

This Paper: An Intergenerational Perspective

- Most prior work has studied racial disparities within a single generation
 - Exceptions: school district data, survey data, qualitative studies [e.g., Card and Rothstein 2007, Reardon et al. 2016, Mazumder 2014, Lareau 2003]
- We take an intergenerational perspective, focusing on dynamics of income across generations
 - Use new de-identified Census data linking parents and children covering nearly the entire U.S. population from 1989-2015
- Intergenerational approach sheds light on which disparities will persist in the long run and allows us to isolate the factors that drive persistent gaps

Outline

1. Data
2. Intergenerational Persistence of Disparities by Race
3. Marriage Rates and Gender Differences
4. Family-Level Explanations
5. Neighborhood-Level Explanations

Part 1: Data and Sample Definitions

Data and Sample Definitions

- Data sources: Census data (2000, 2010, ACS) covering U.S. population linked to federal income tax returns from 1989-2015 [Akee, Jones, and Porter 2017]
- Intergenerational linkage: Children linked to parents who first claim them as a dependent on a tax return
- Target sample: Children in 1978-83 birth cohorts who were born in the U.S. or are authorized immigrants who came to the U.S. in childhood
- Analysis sample: 20 million children, 94% coverage rate of target sample

Income Measures

- Parents' pre-tax household incomes: mean Adjusted Gross Income from 1994-2000, assigning non-filers zeros
- Children's pre-tax incomes measured in 2014-15 (ages 31-37)
 - Non-filers assigned incomes based on W-2's (available since 2005)
 - Begin with household income, then turn to individual (own) income
- Focus on percentile ranks: rank children relative to others in their birth cohort and parents relative to other parents

Part 2: Intergenerational Mobility by Race

Intergenerational Mobility by Race

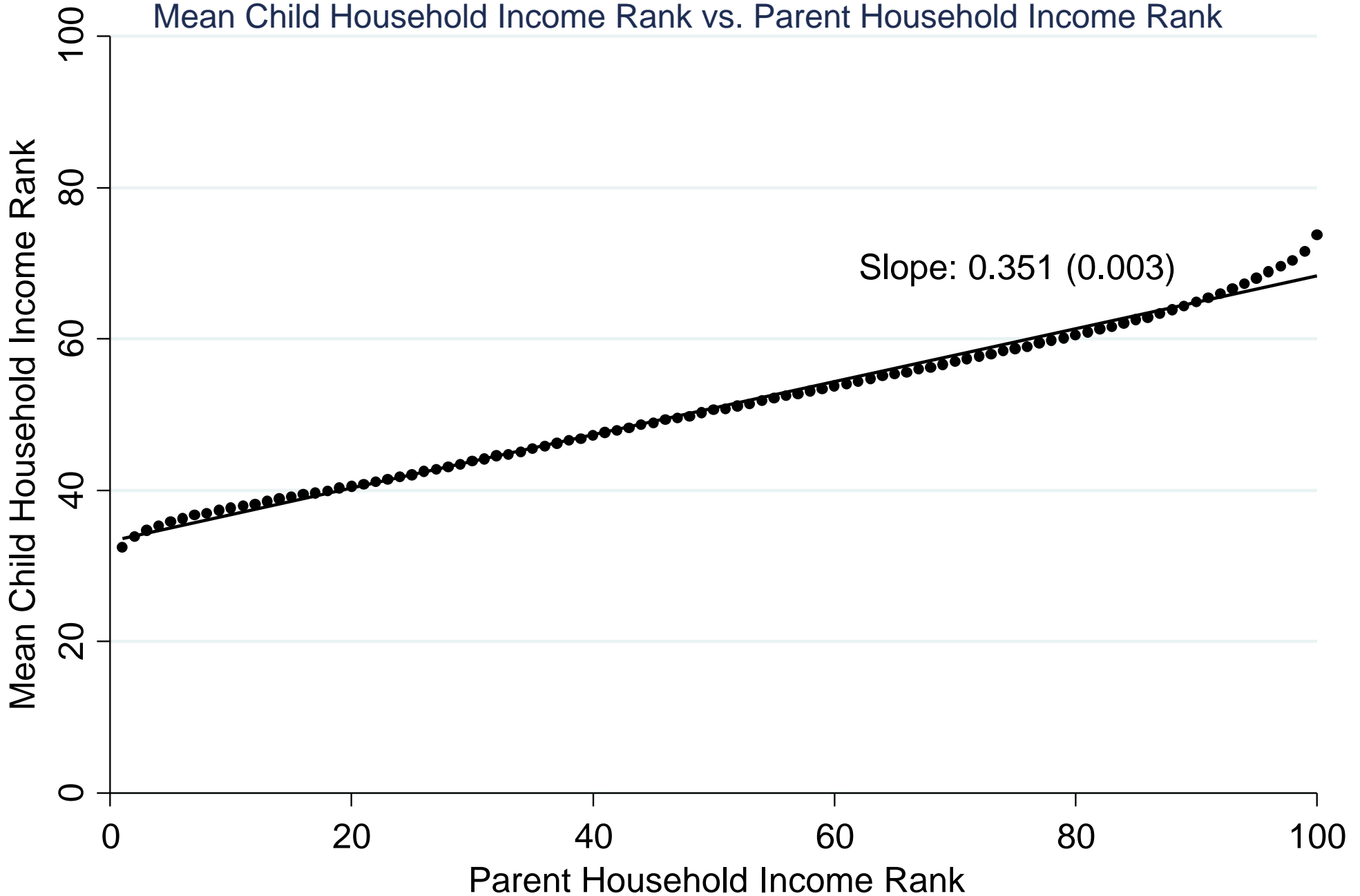
- Organize empirical analysis using a statistical model of intergenerational mobility and inequality [Becker and Tomes 1979]
 - Let i index families, t index generations, and $r(i)$ denote race of family i
 - Model child's income rank as a race-specific linear function of parent's income rank:

$$y_{it} = \alpha_r + \beta_r y_{i,t-1} + \varepsilon_{it}$$

- Evolution of racial gaps and steady-state disparities in mean ranks controlled by rates of relative and absolute mobility (α_r, β_r)

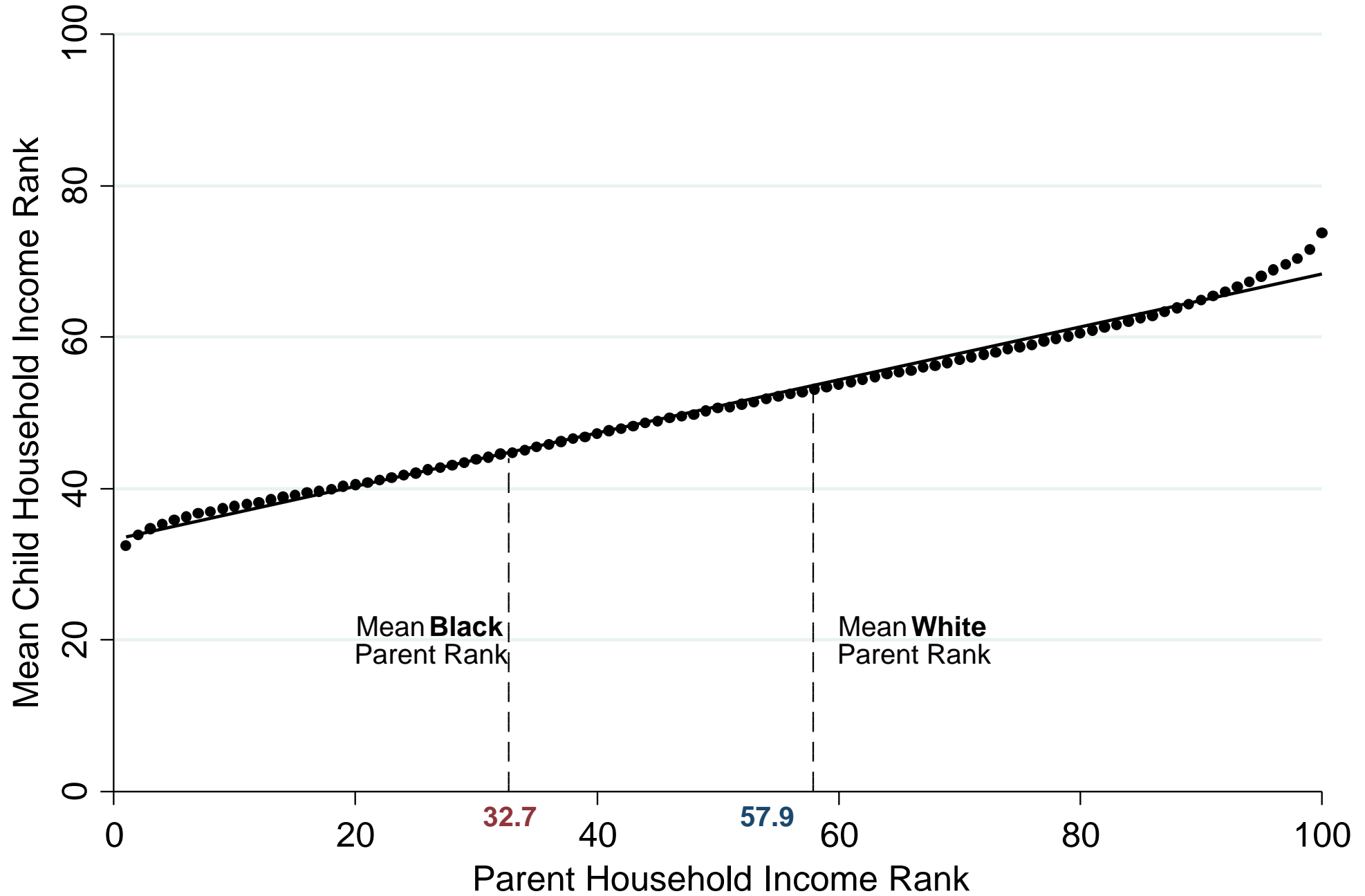
Intergenerational Mobility in the United States

Mean Child Household Income Rank vs. Parent Household Income Rank

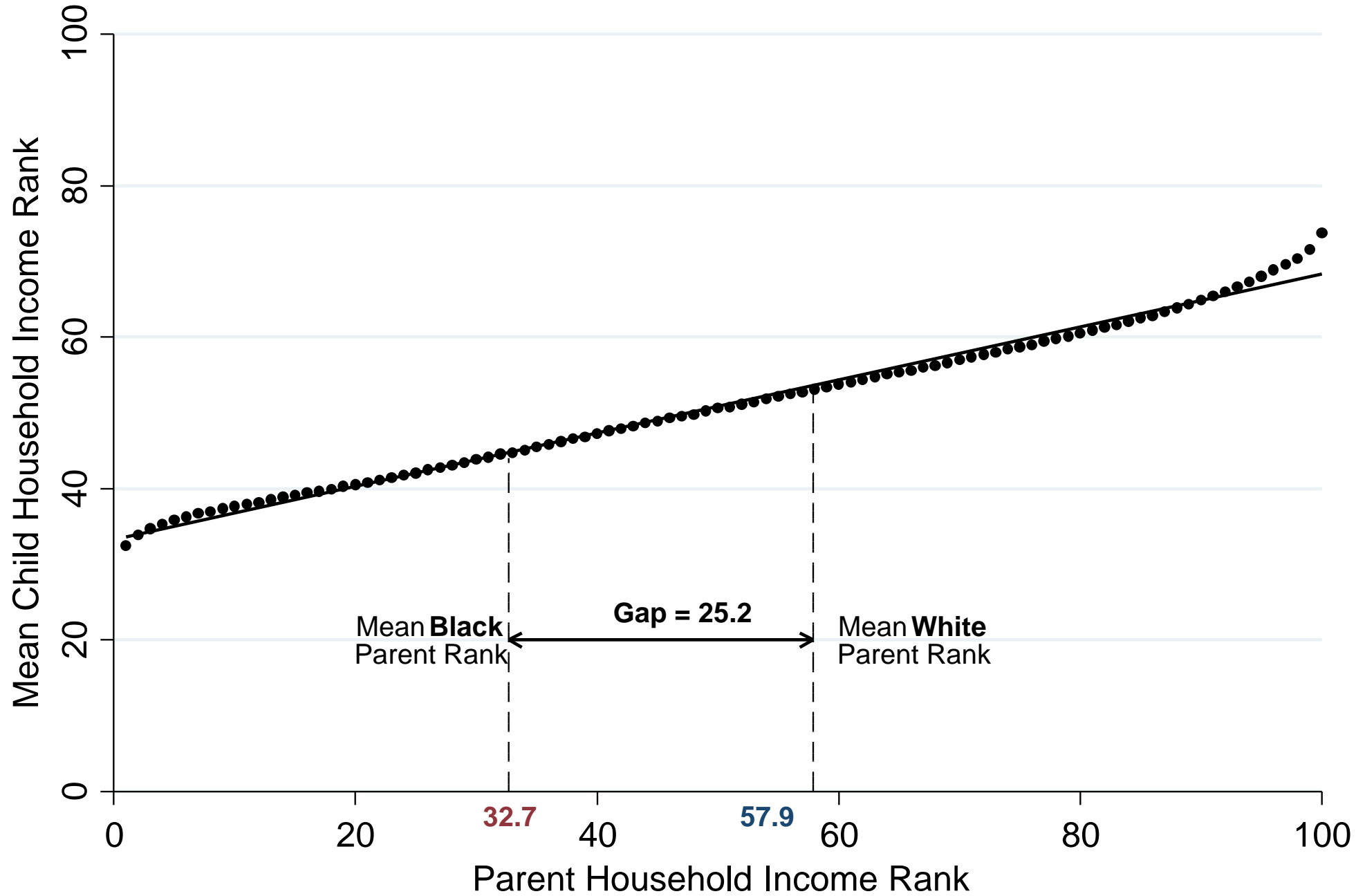


Source: This and all subsequent figures and tables are based on authors' calculations using the 2000 and 2010 Census, tax records, and 2005-2015 ACS

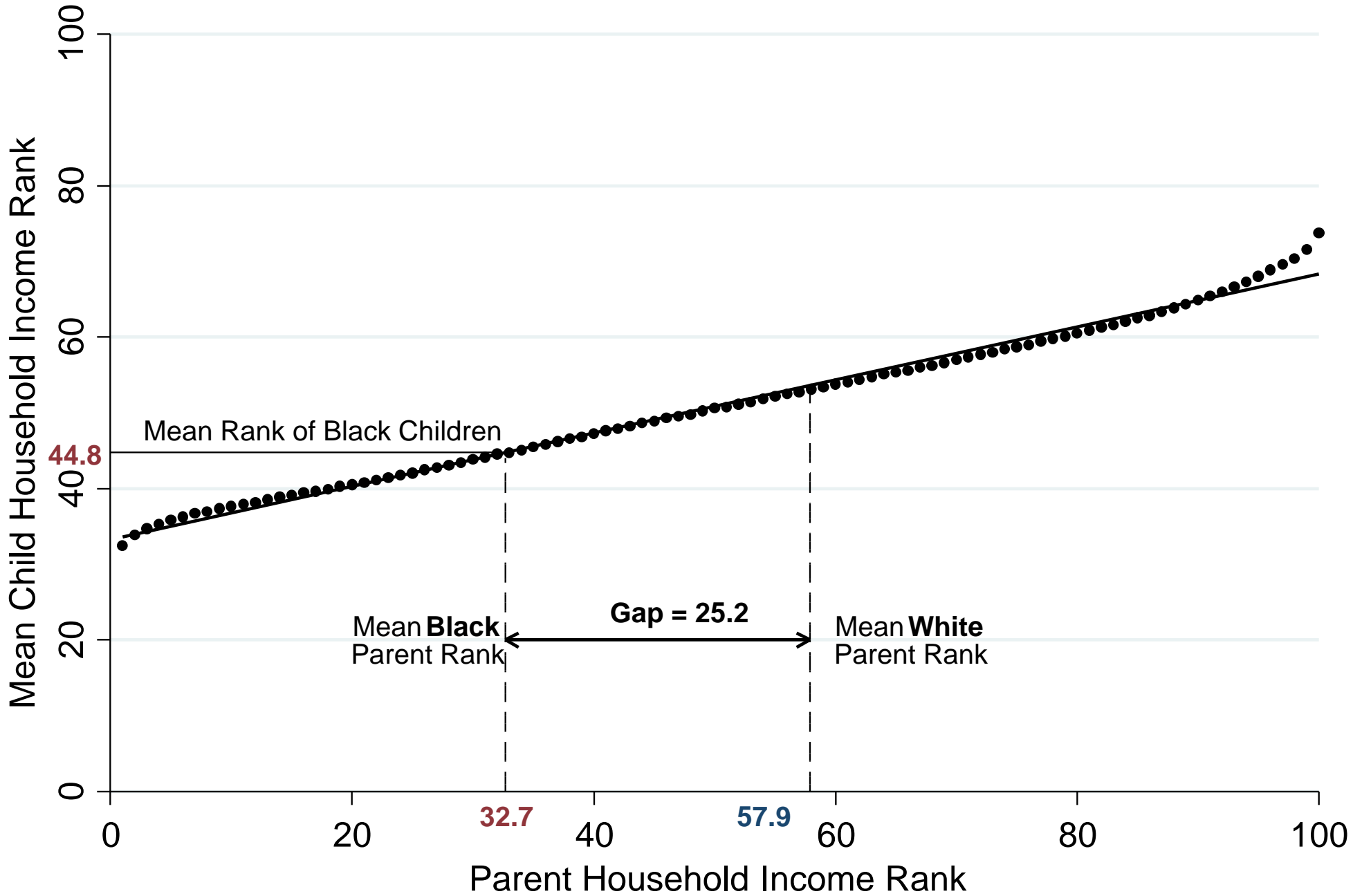
Convergence in Black-White Gap if Intergenerational Mobility is Race-Invariant



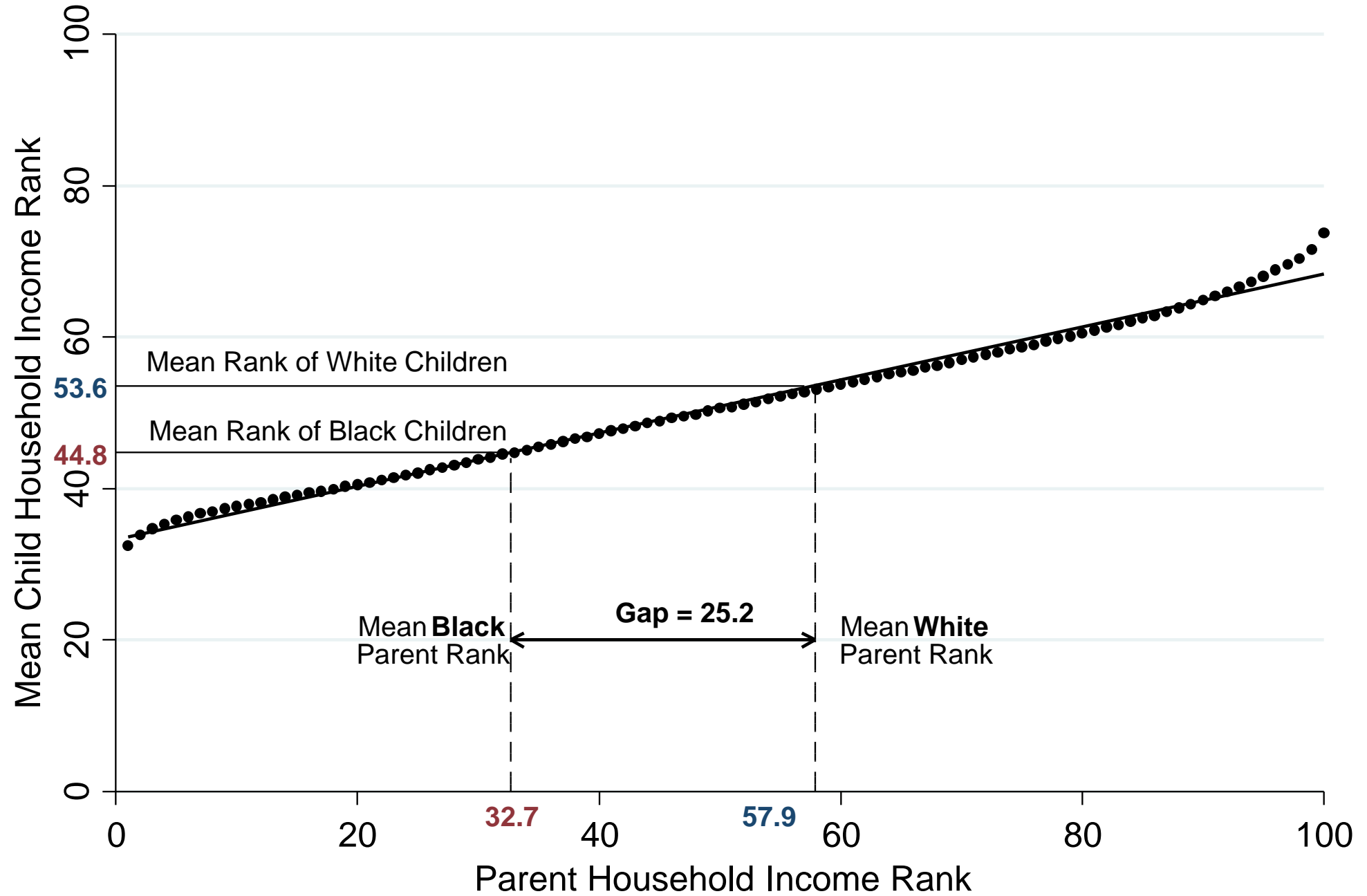
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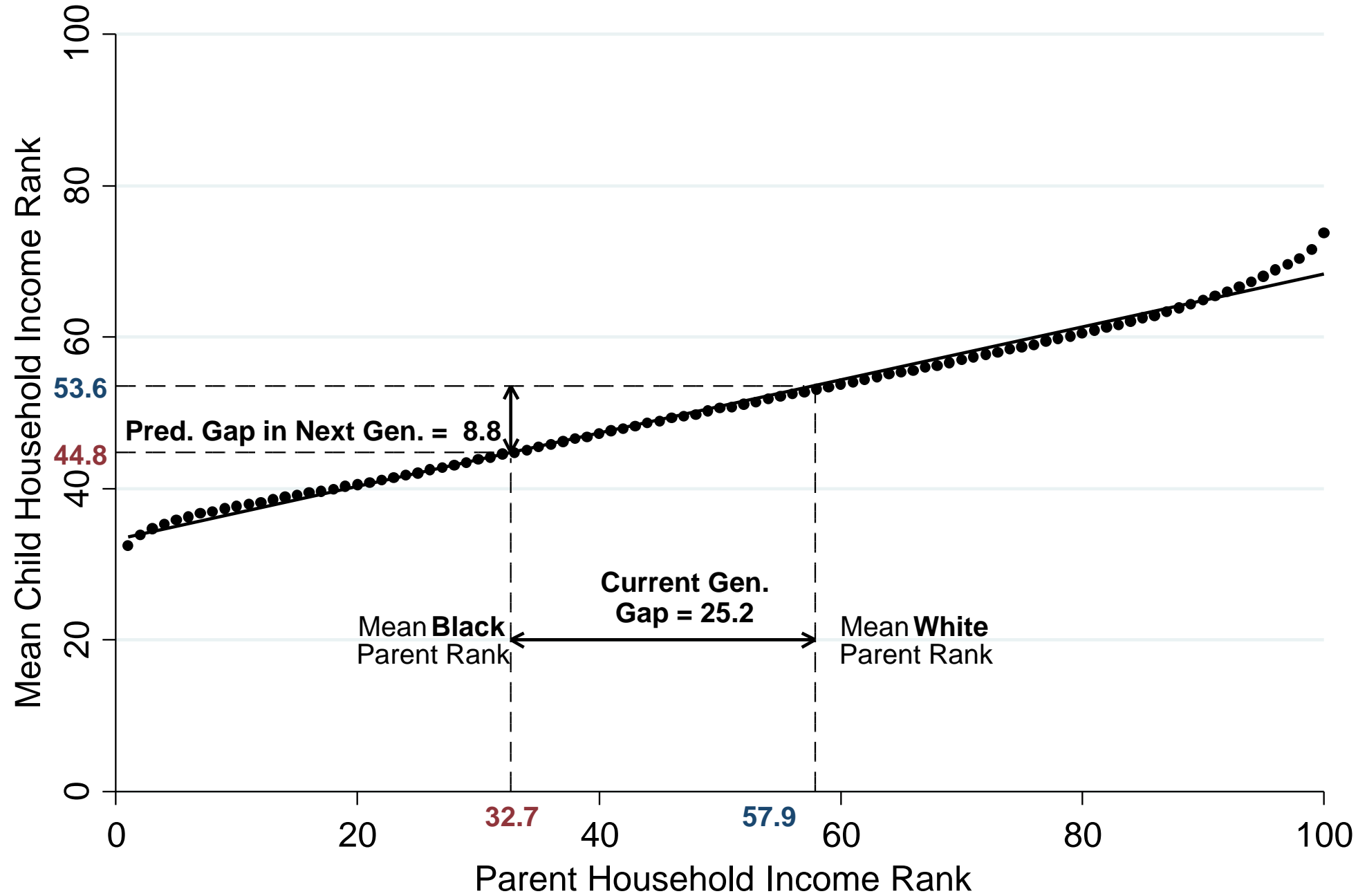
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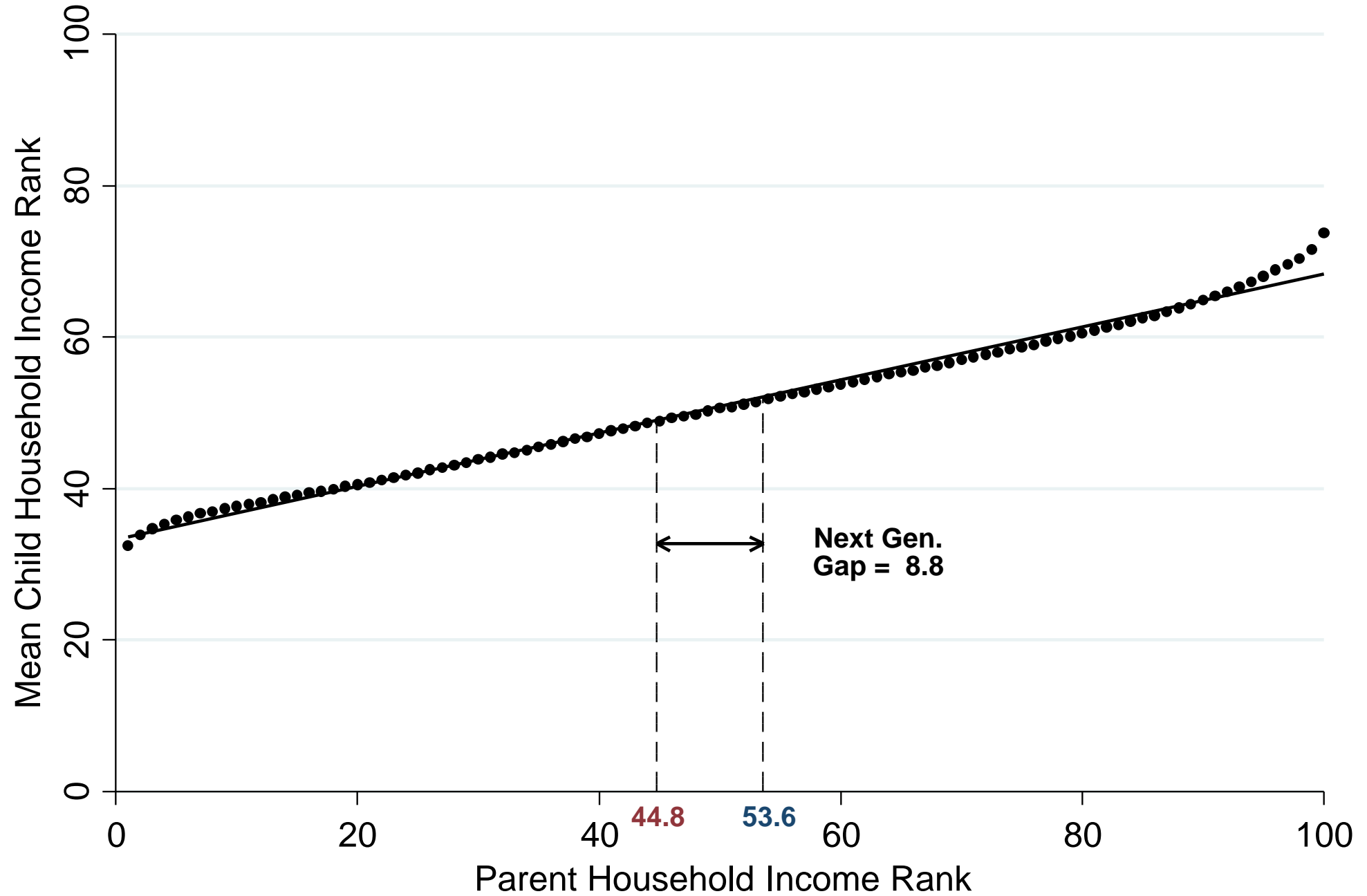
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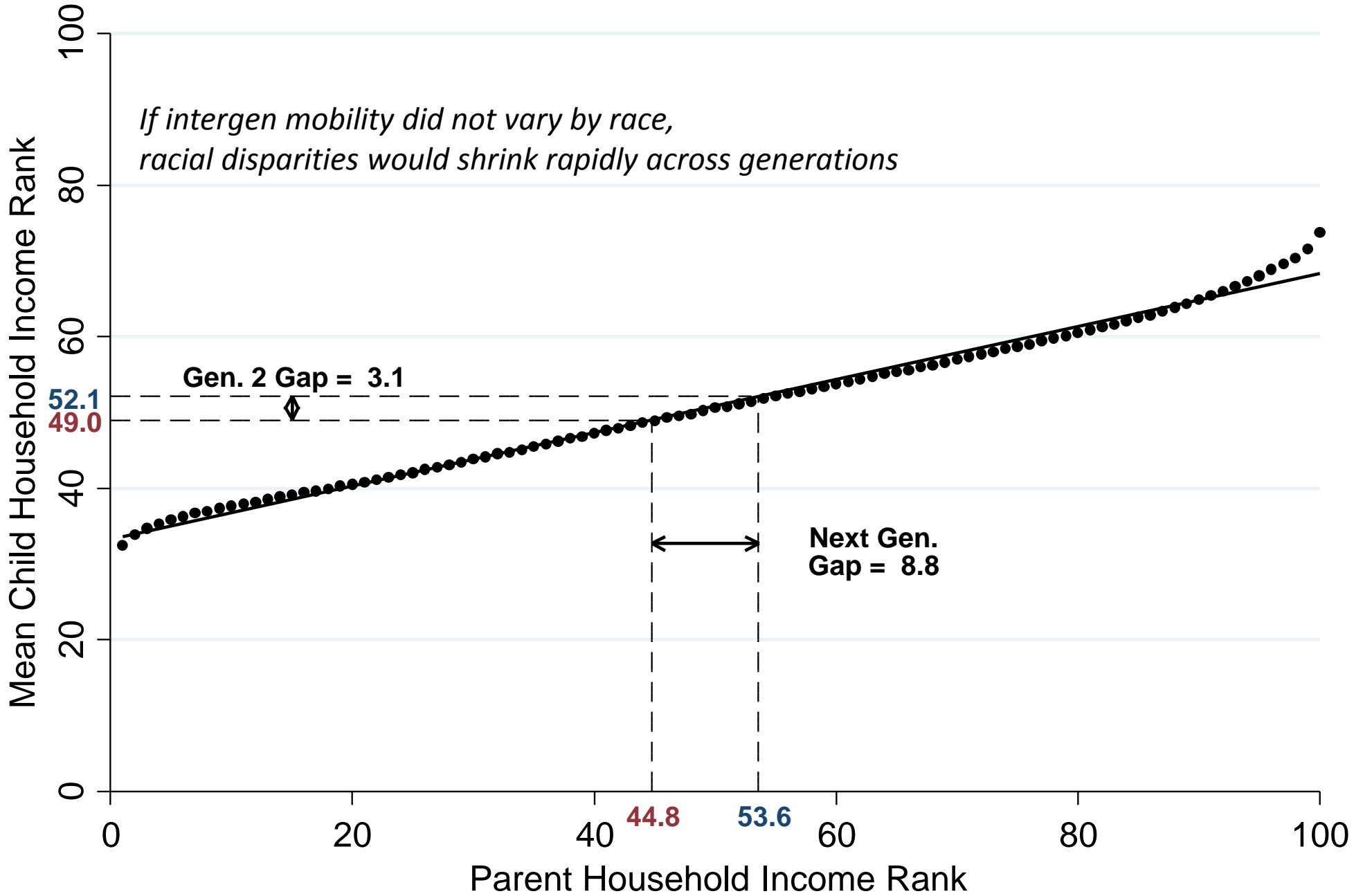
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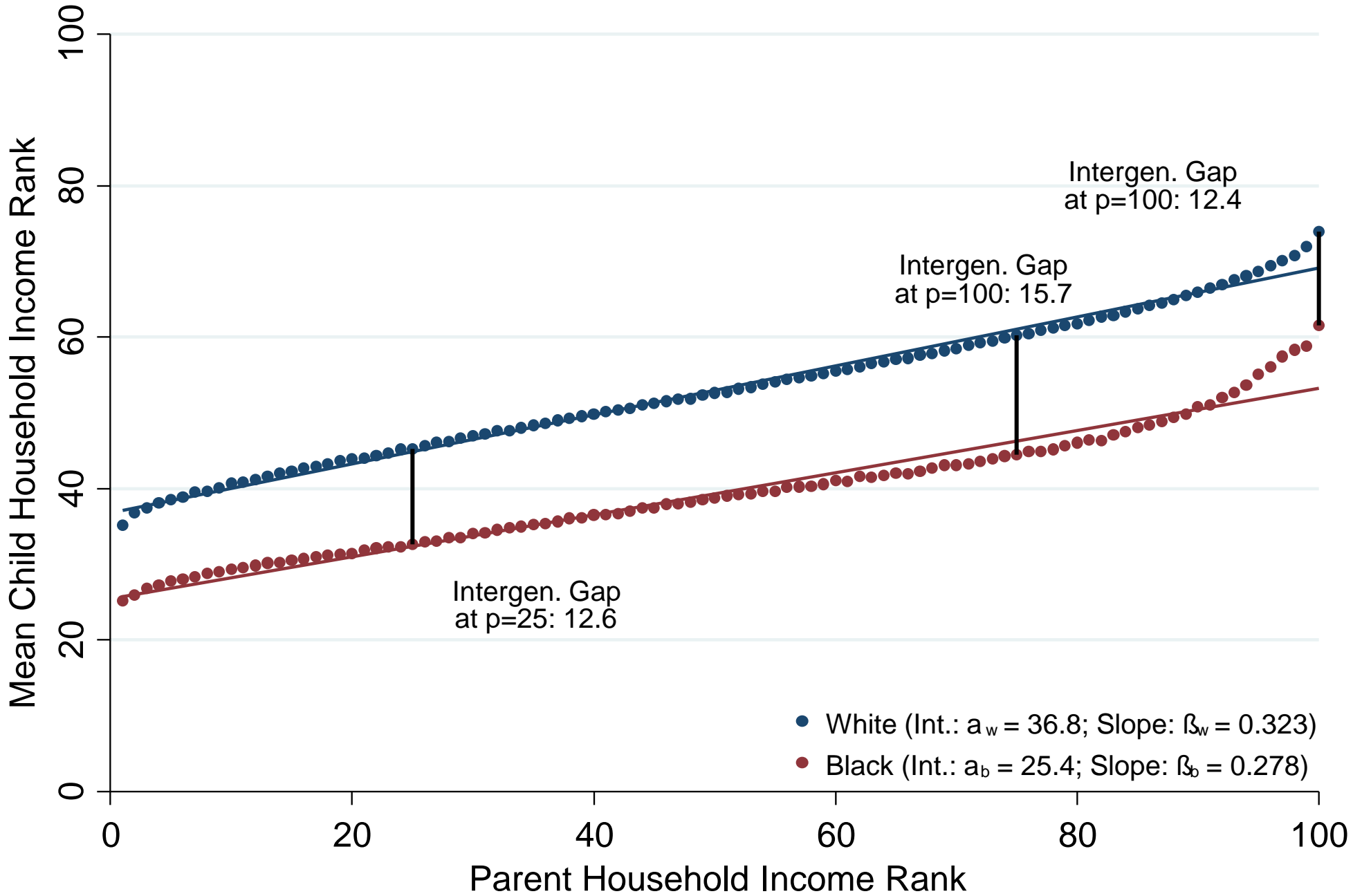
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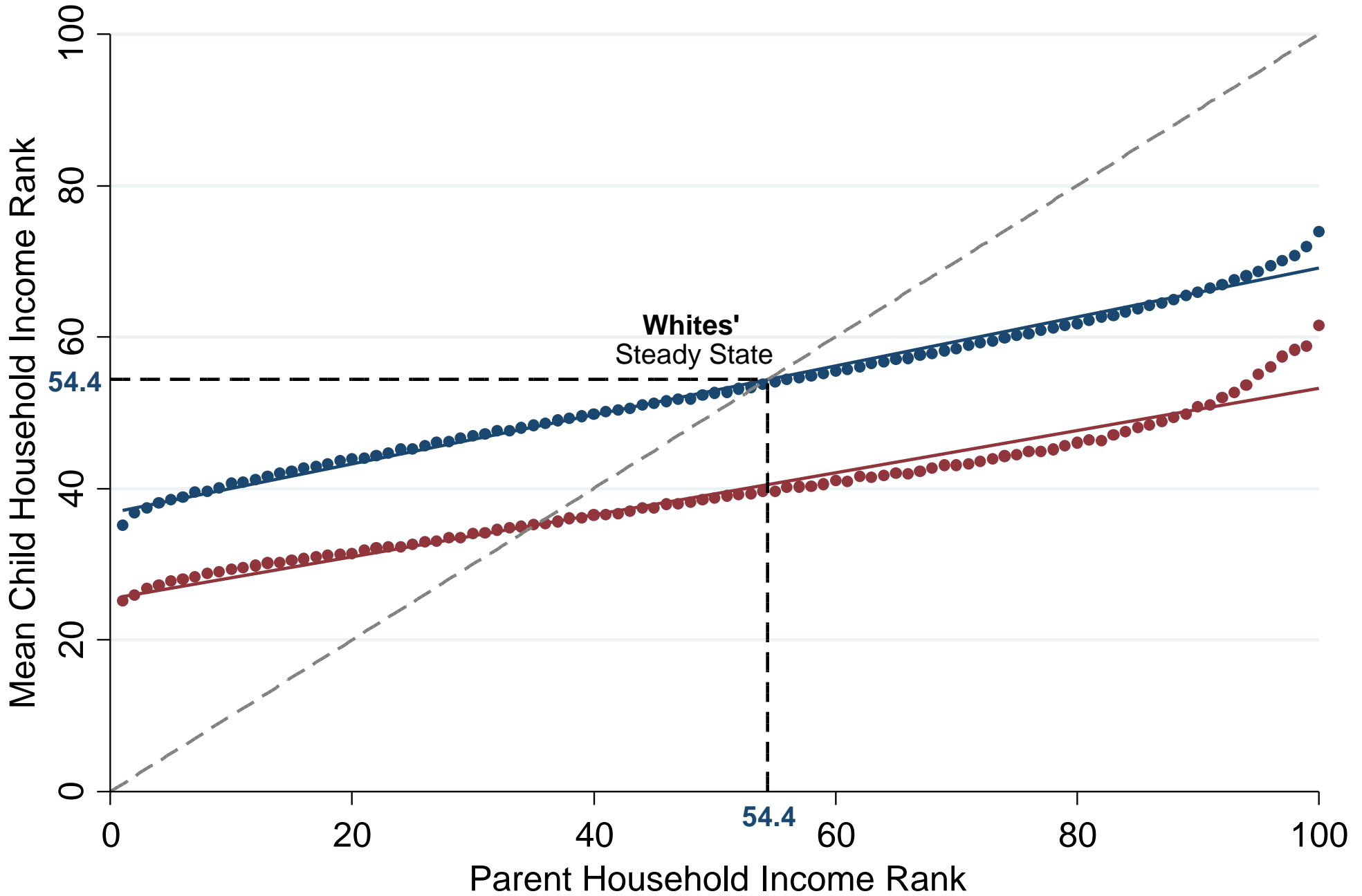
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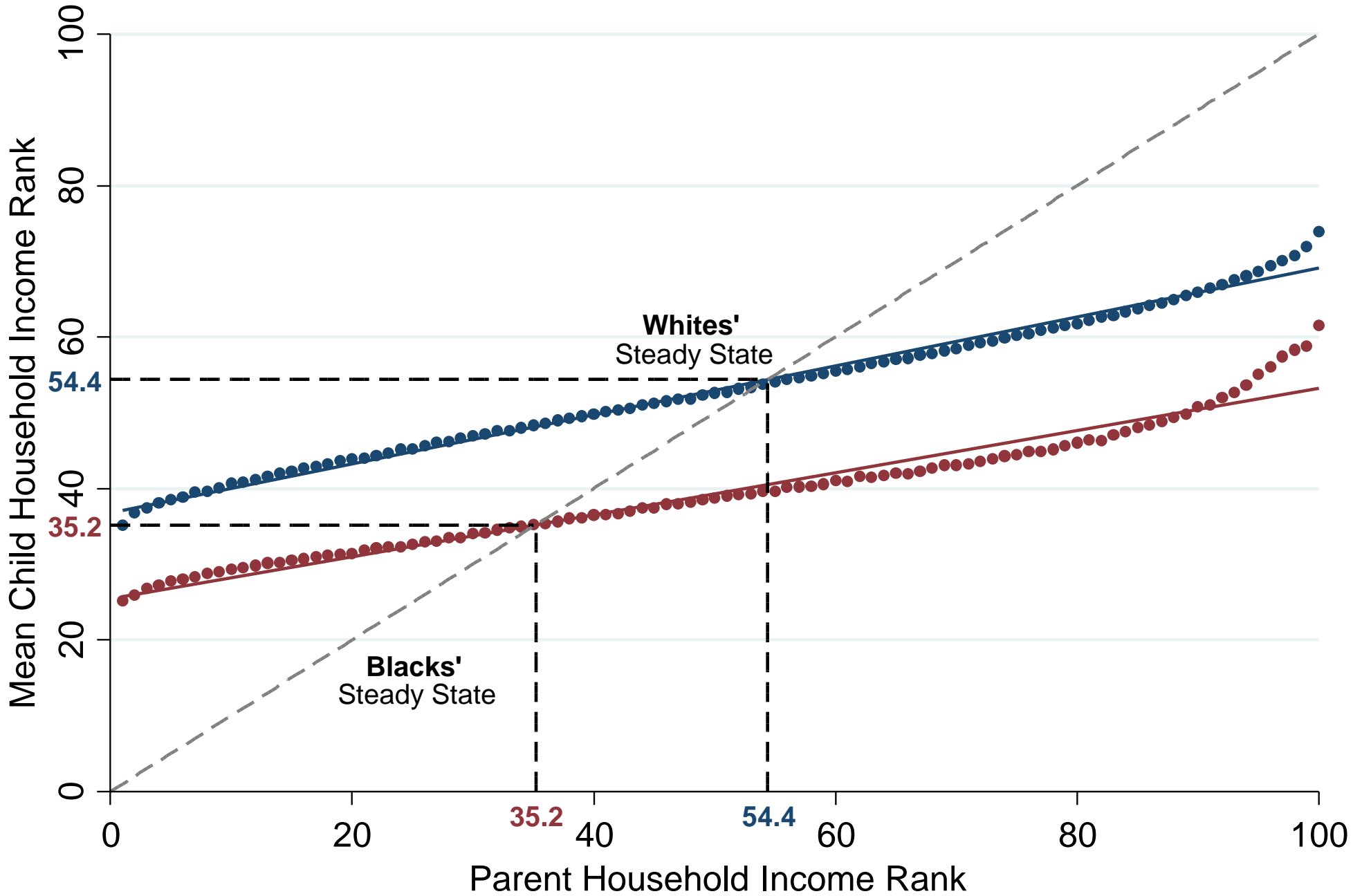
Intergenerational Mobility for Whites vs. Blacks



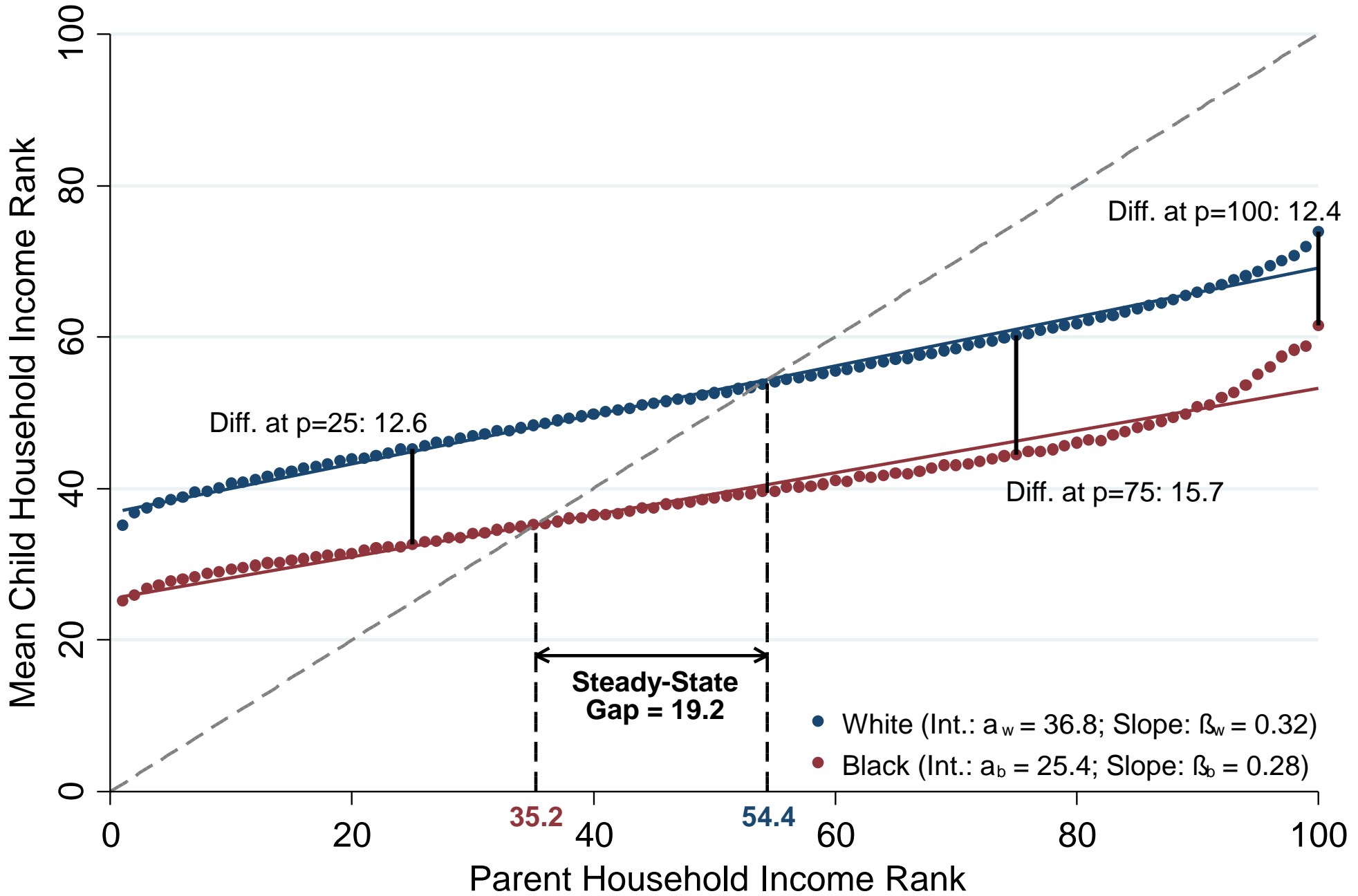
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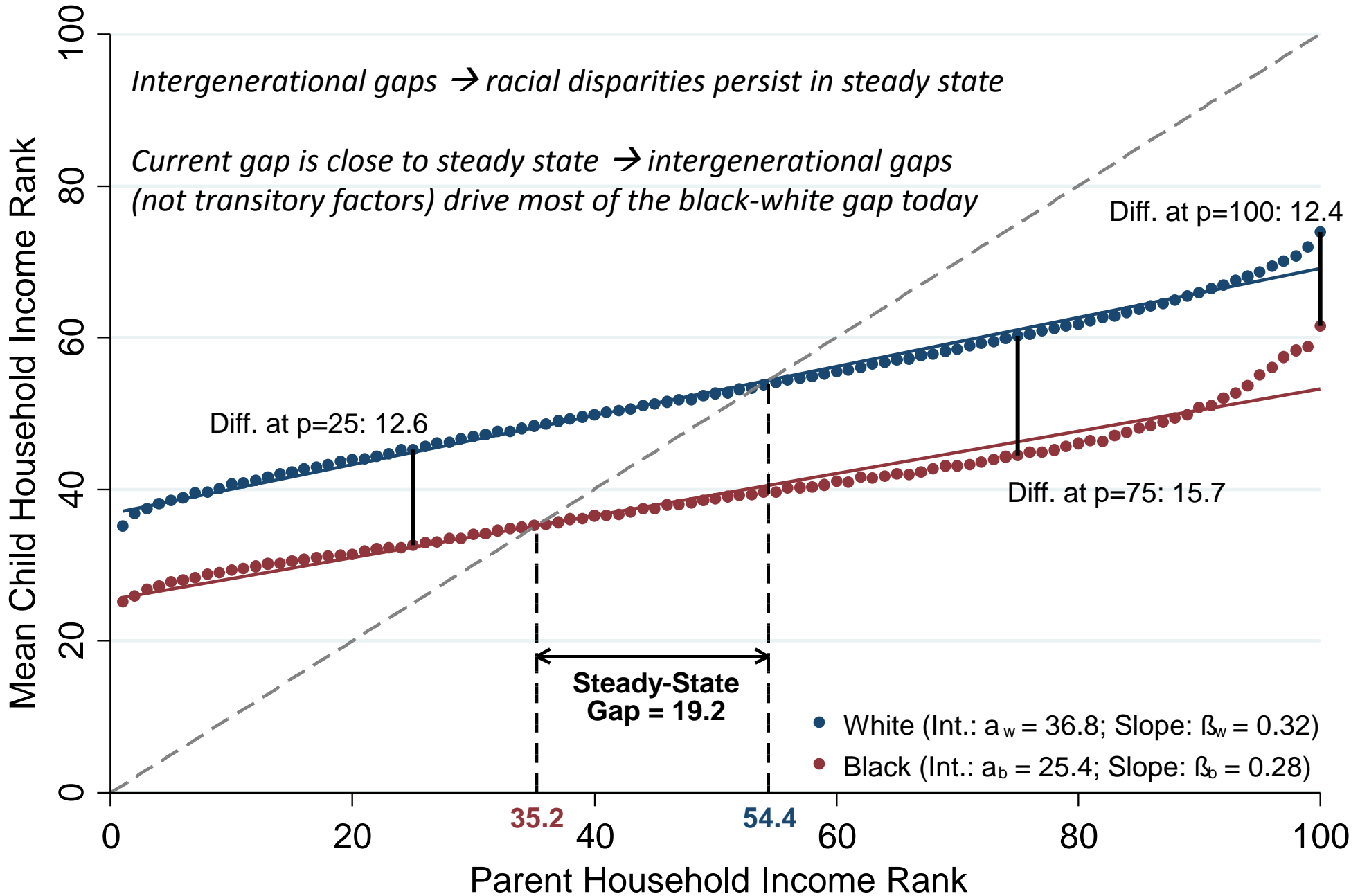
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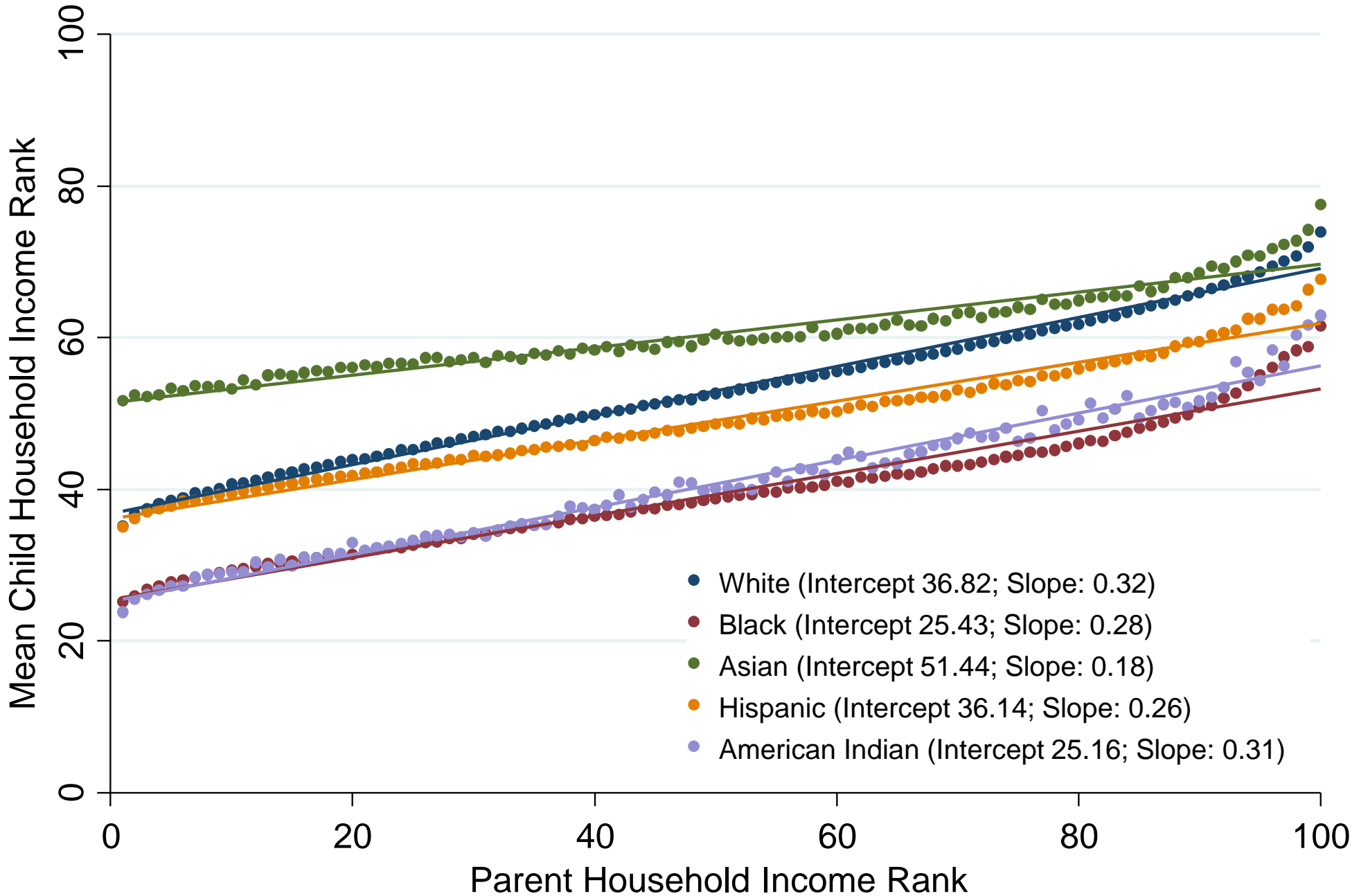
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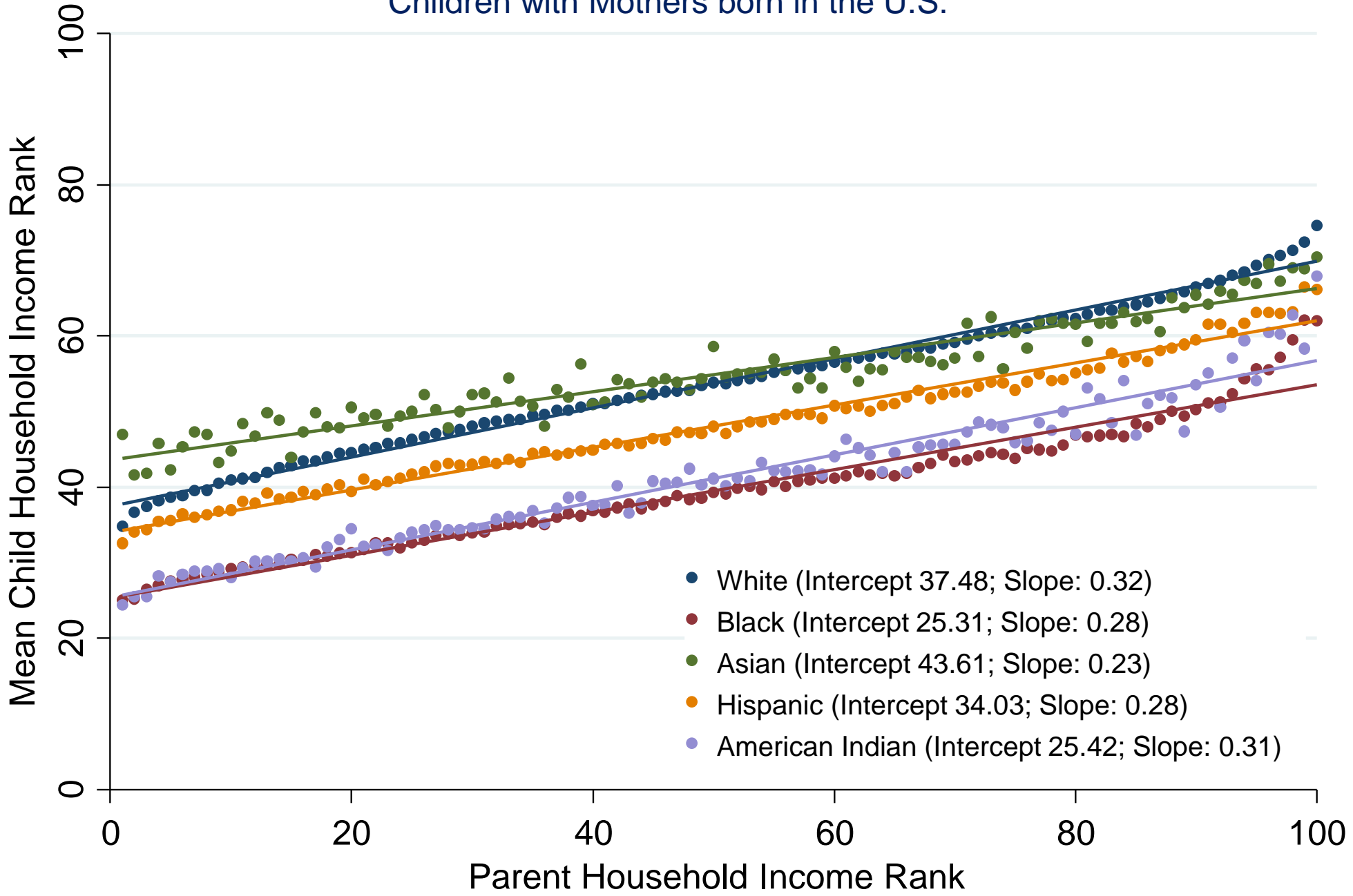


Mean Child Income Rank vs. Parent Income Rank by Race and Ethnicity

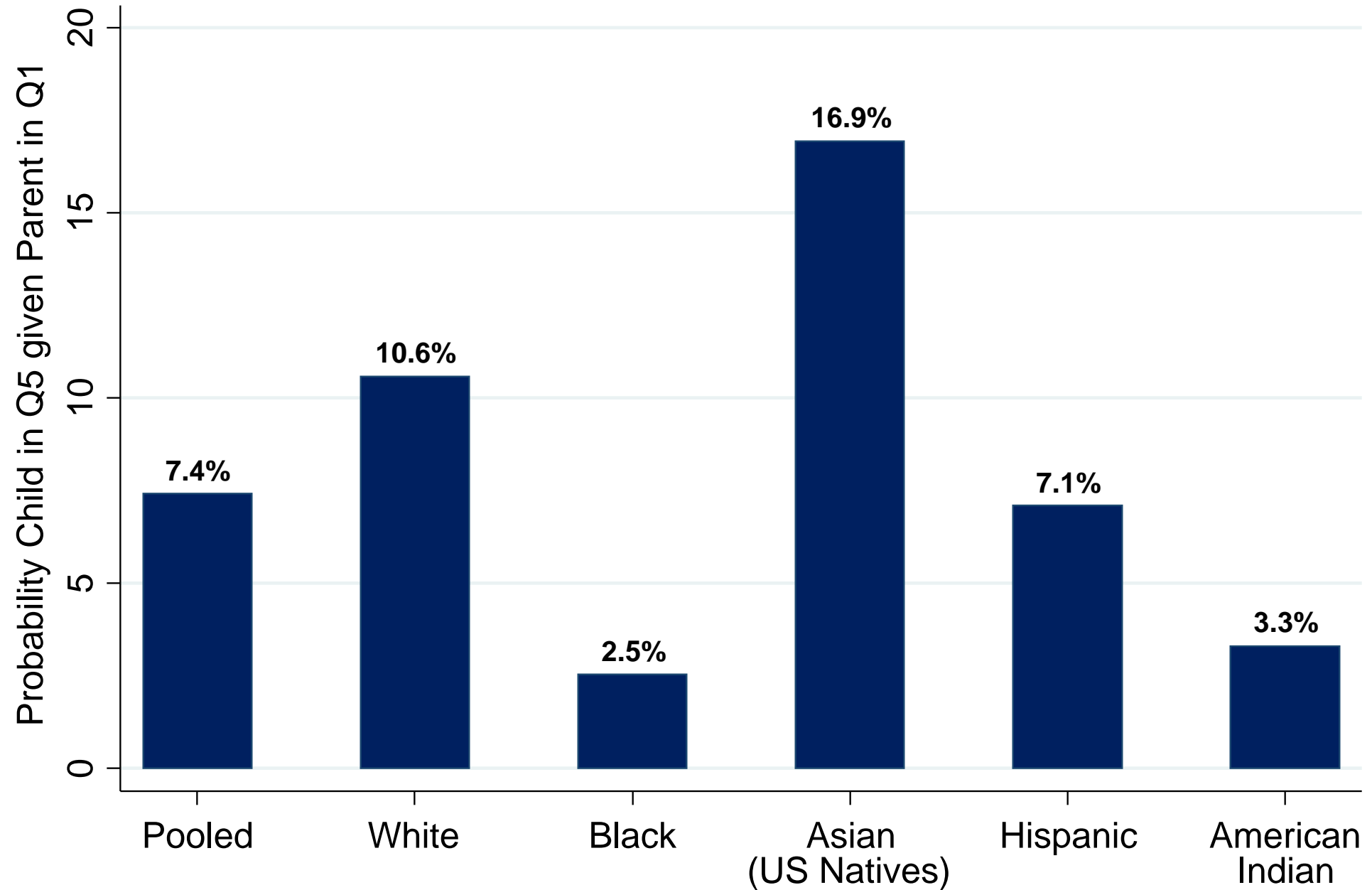


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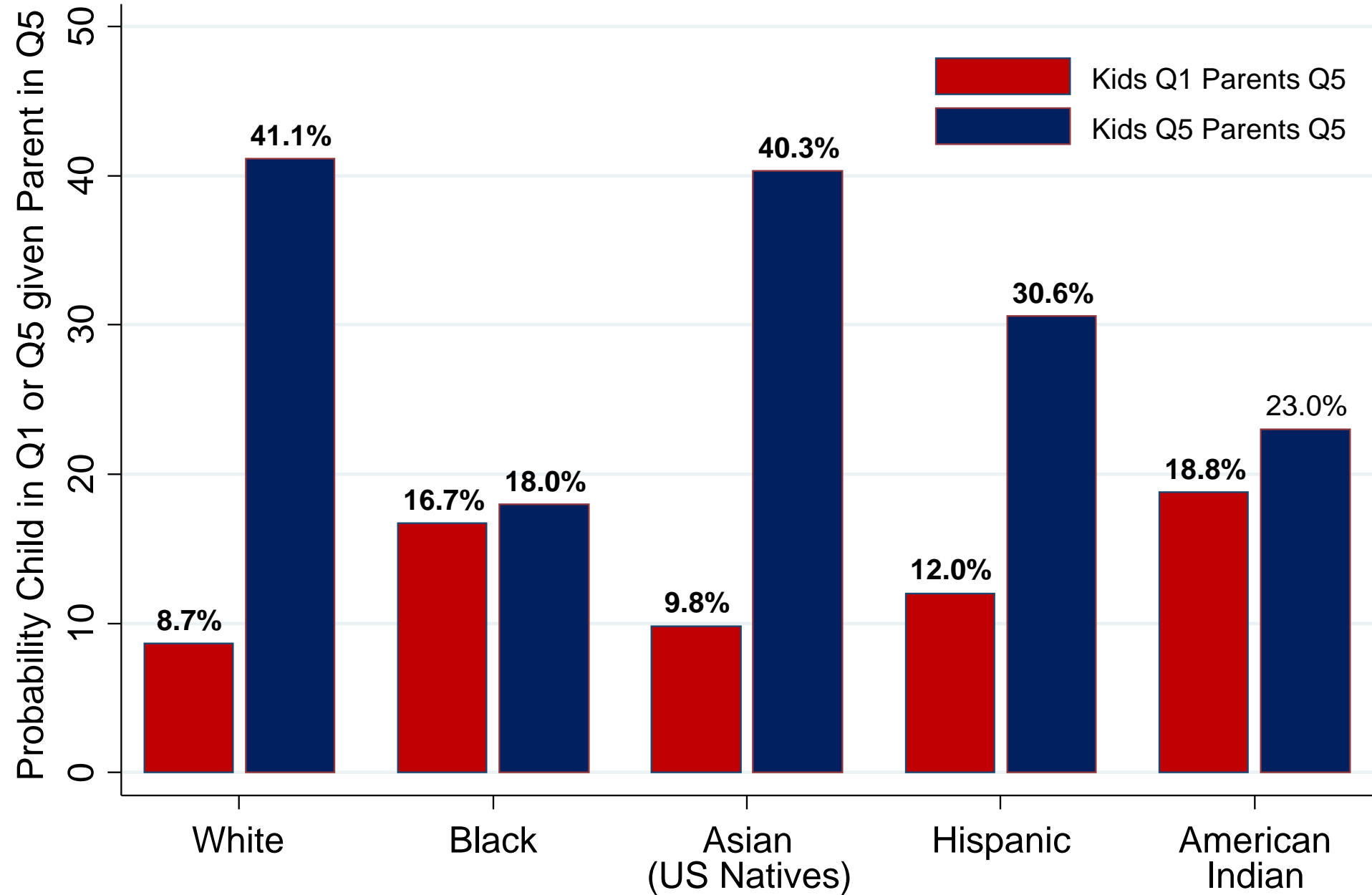
Children with Mothers born in the U.S.



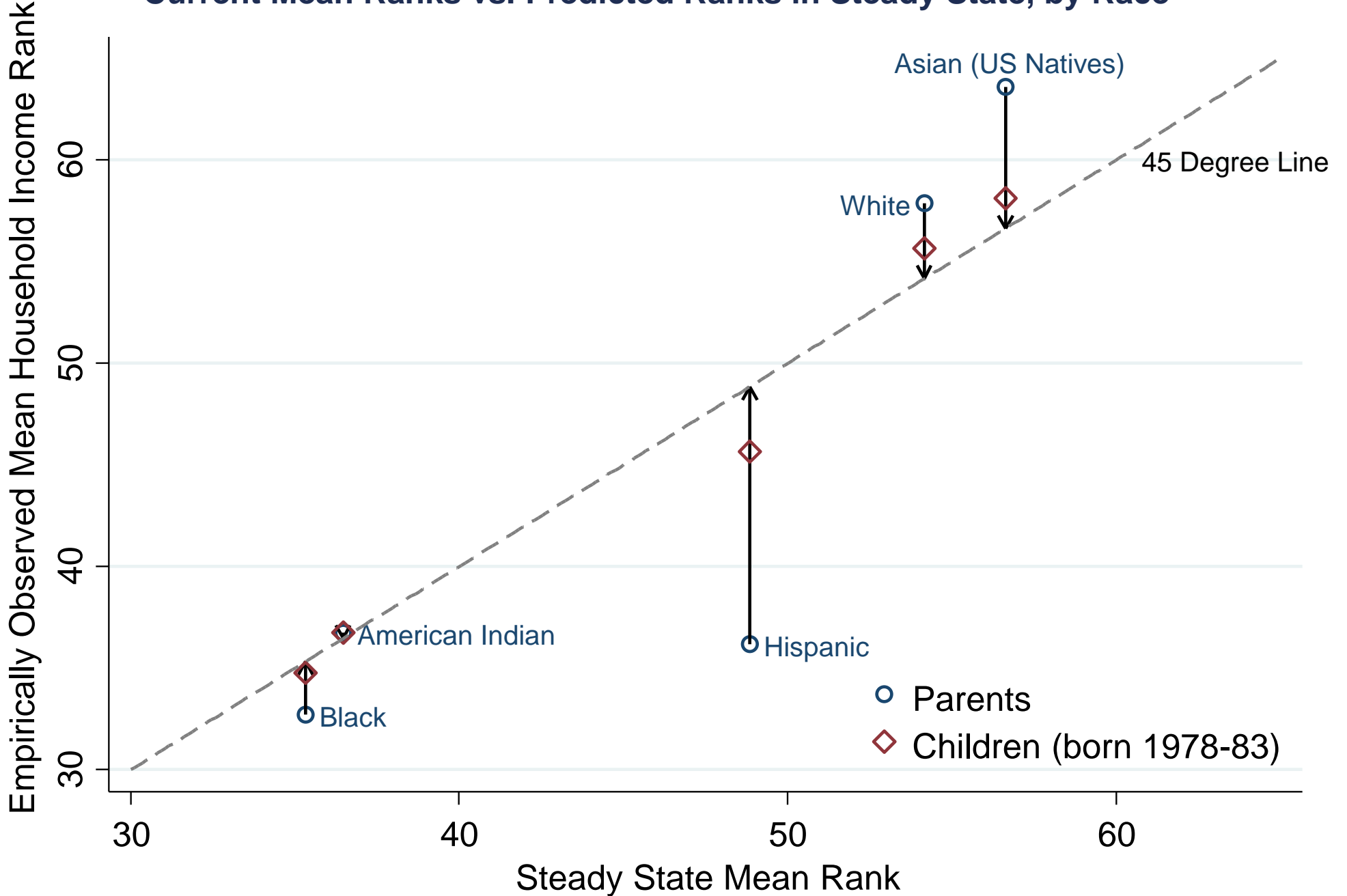
Rates of Upward Mobility, by Race



Rates of Downward Mobility, by Race



Current Mean Ranks vs. Predicted Ranks in Steady State, by Race



Intergenerational Persistence of Racial Disparities: Summary

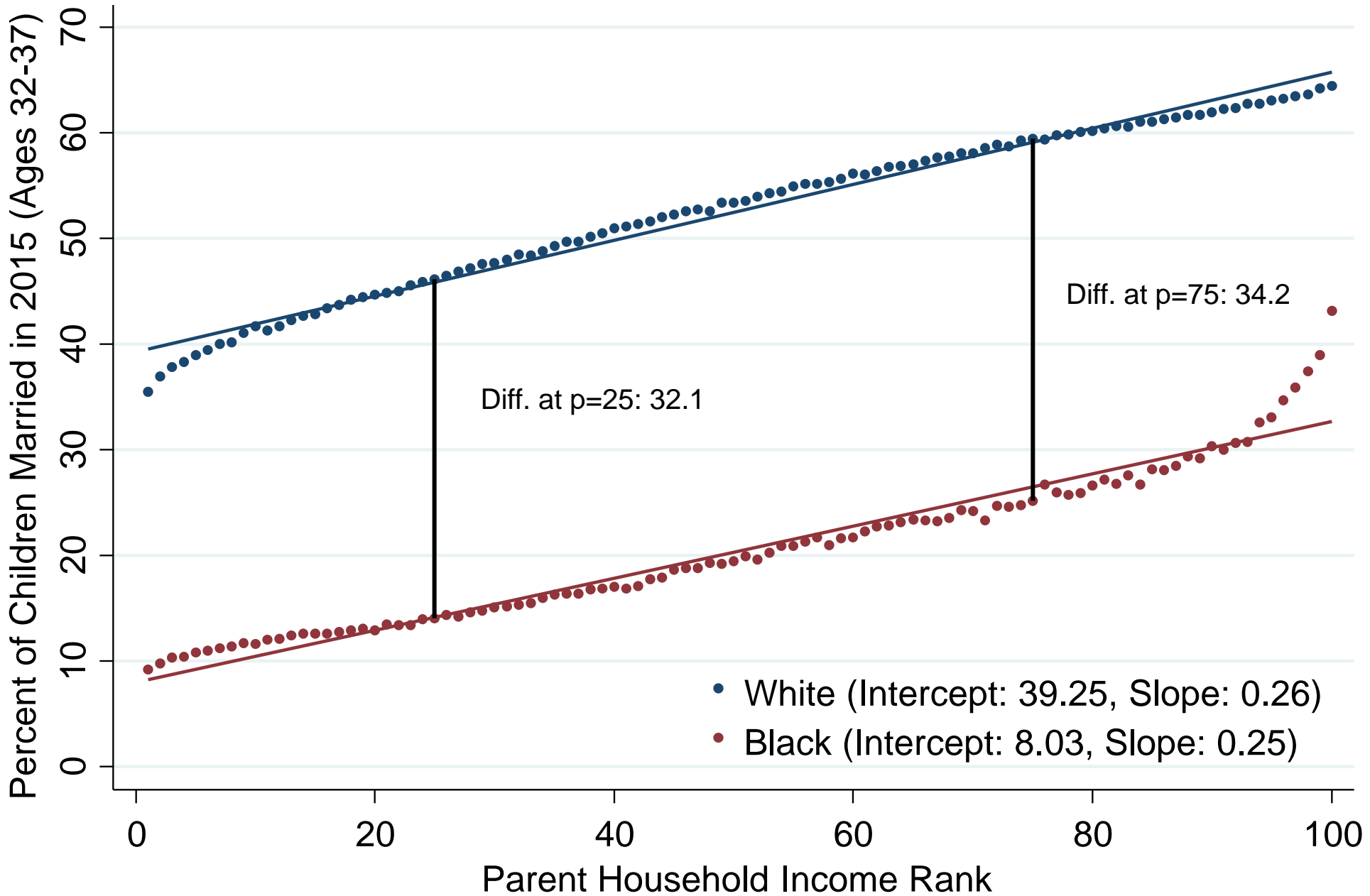
- All racial groups in the U.S. have similar rates of *relative* mobility → will converge rapidly to steady state
- Key driver of disparities is therefore intergenerational gap in absolute mobility, e.g. between blacks and whites
 - Why do black children have lower incomes than white children *conditional* on parent income?
- Rest of the talk: test a range of explanations for black-white intergenerational gaps

Part 3: Marriage Rates and Gender Differences

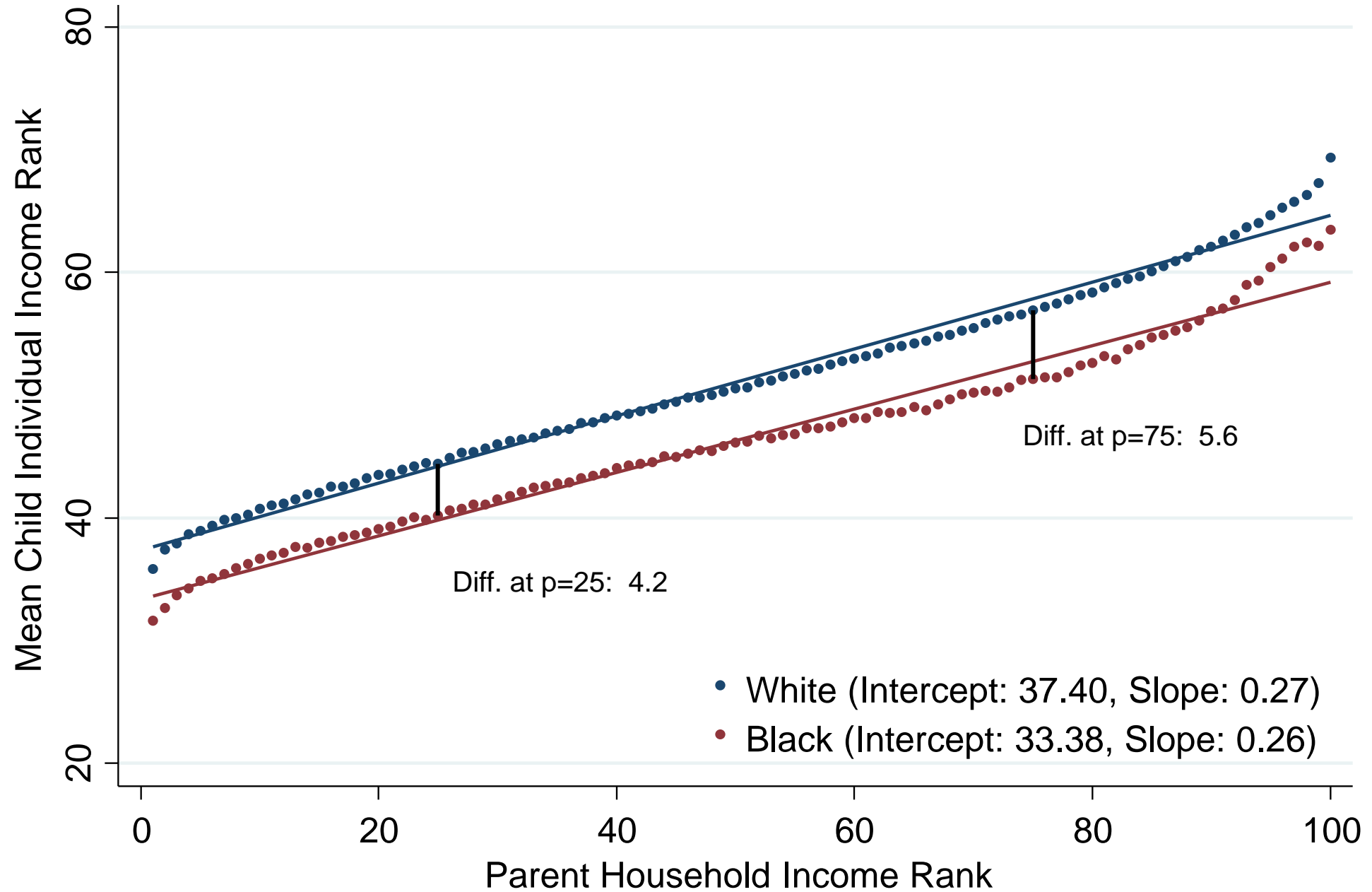
Mechanical Effects of Household Size

- Well-known that blacks marry at much lower rates than whites
- Do differences in marriage rates create mechanical differences between the household incomes of blacks and whites?
- Examine marriage rates and children's *individual* incomes by parental income

Black-White Gap in Marriage Rates vs. Parent Income Rank in the U.S.

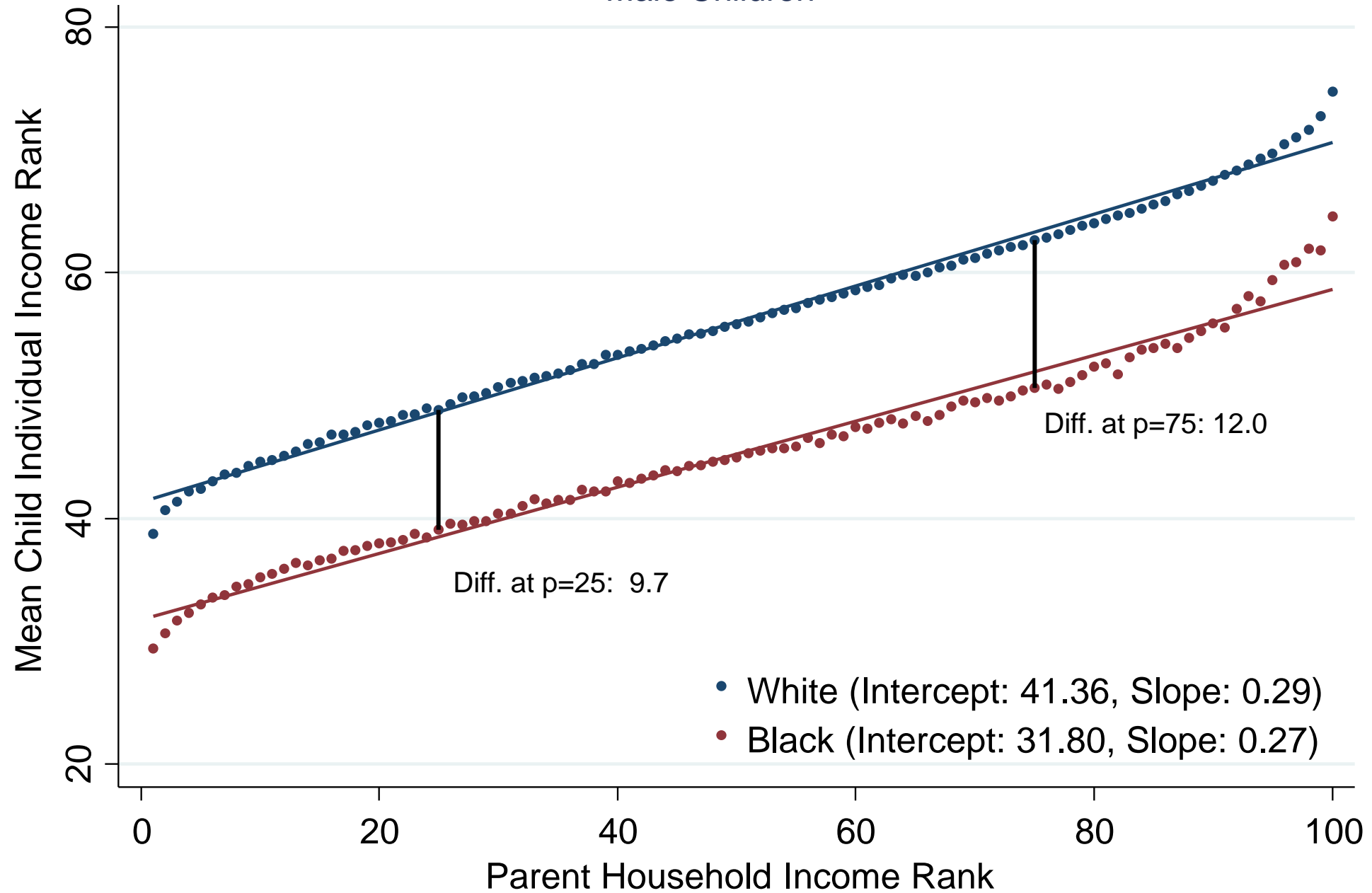


Black-White Gap in Child Individual Income Rank vs. Parent Income Rank



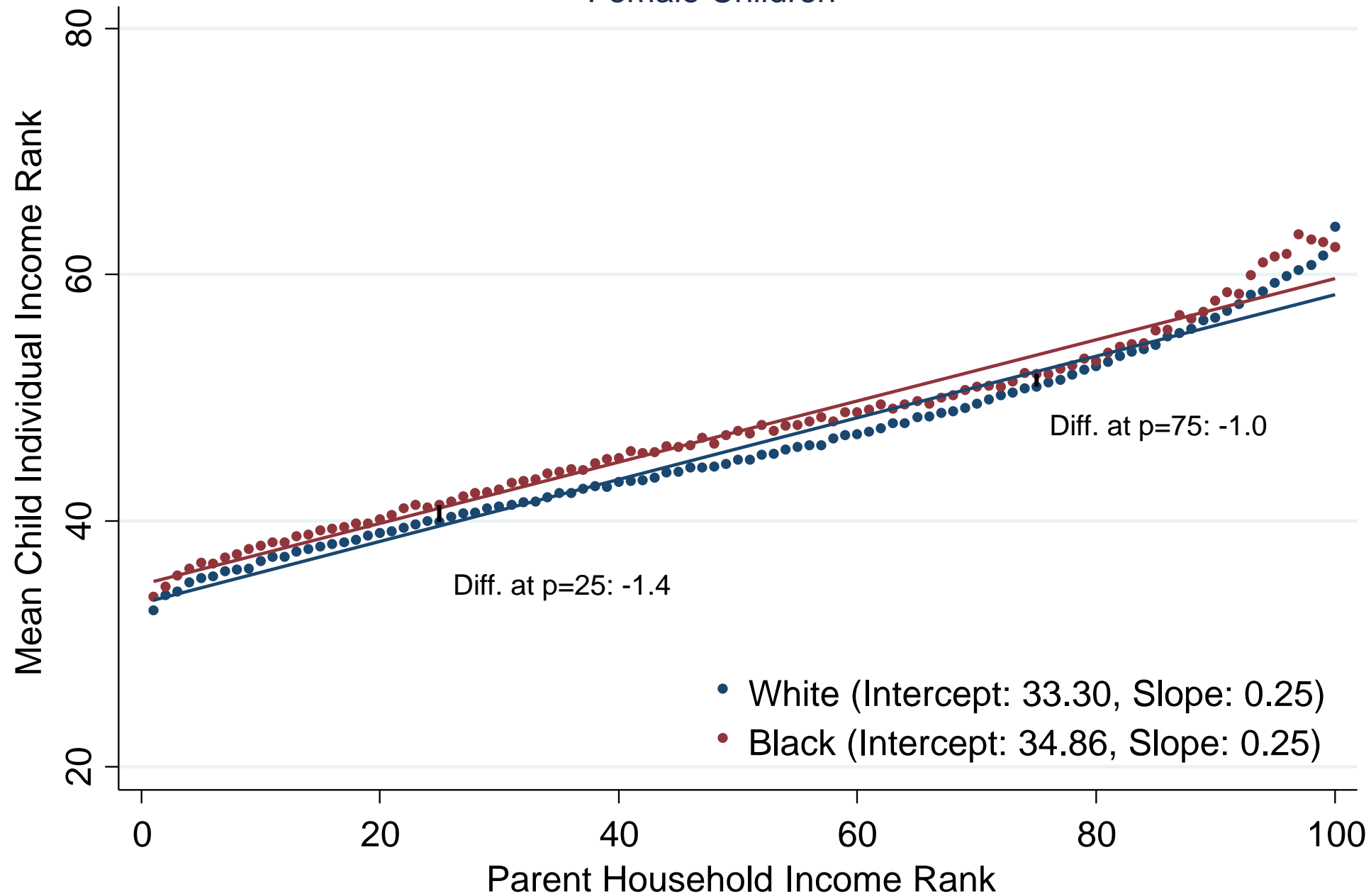
Black-White Gap in Child Individual Income Rank vs. Parent Income Rank

Male Children



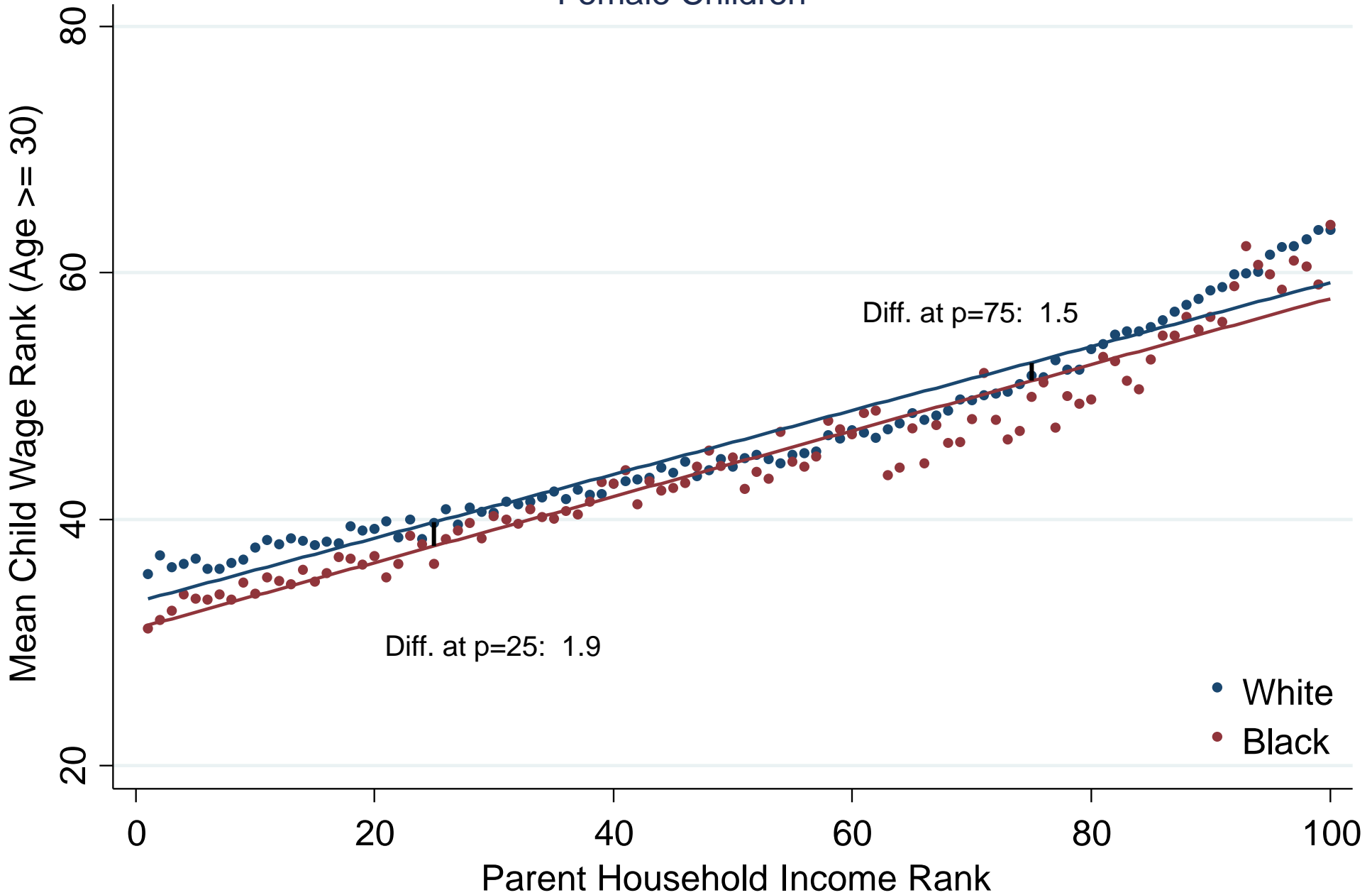
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Female Children



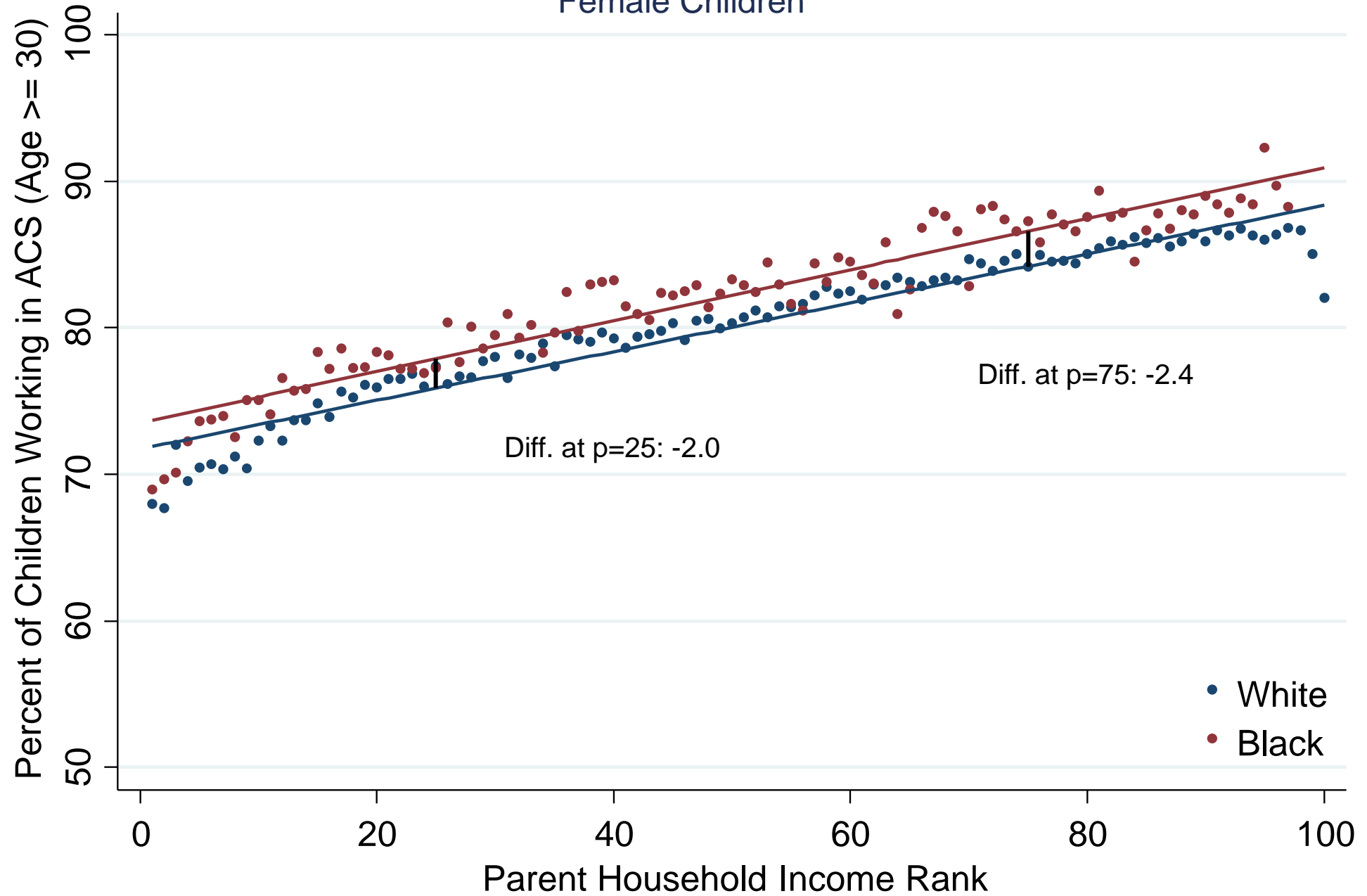
Hourly Wage Rank vs. Parent Income Rank

Female Children



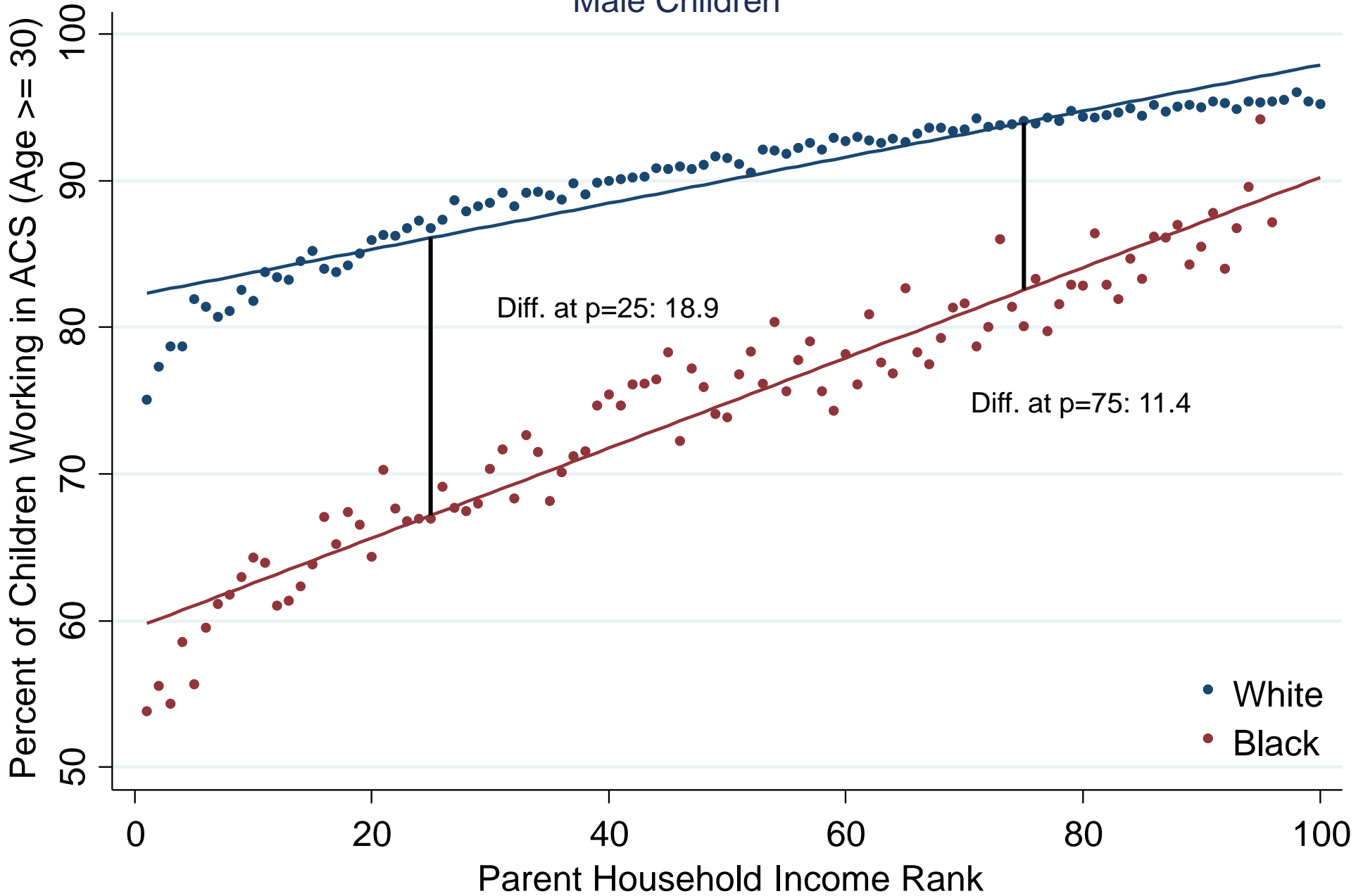
Employment Rates vs. Parent Income Rank

Female Children



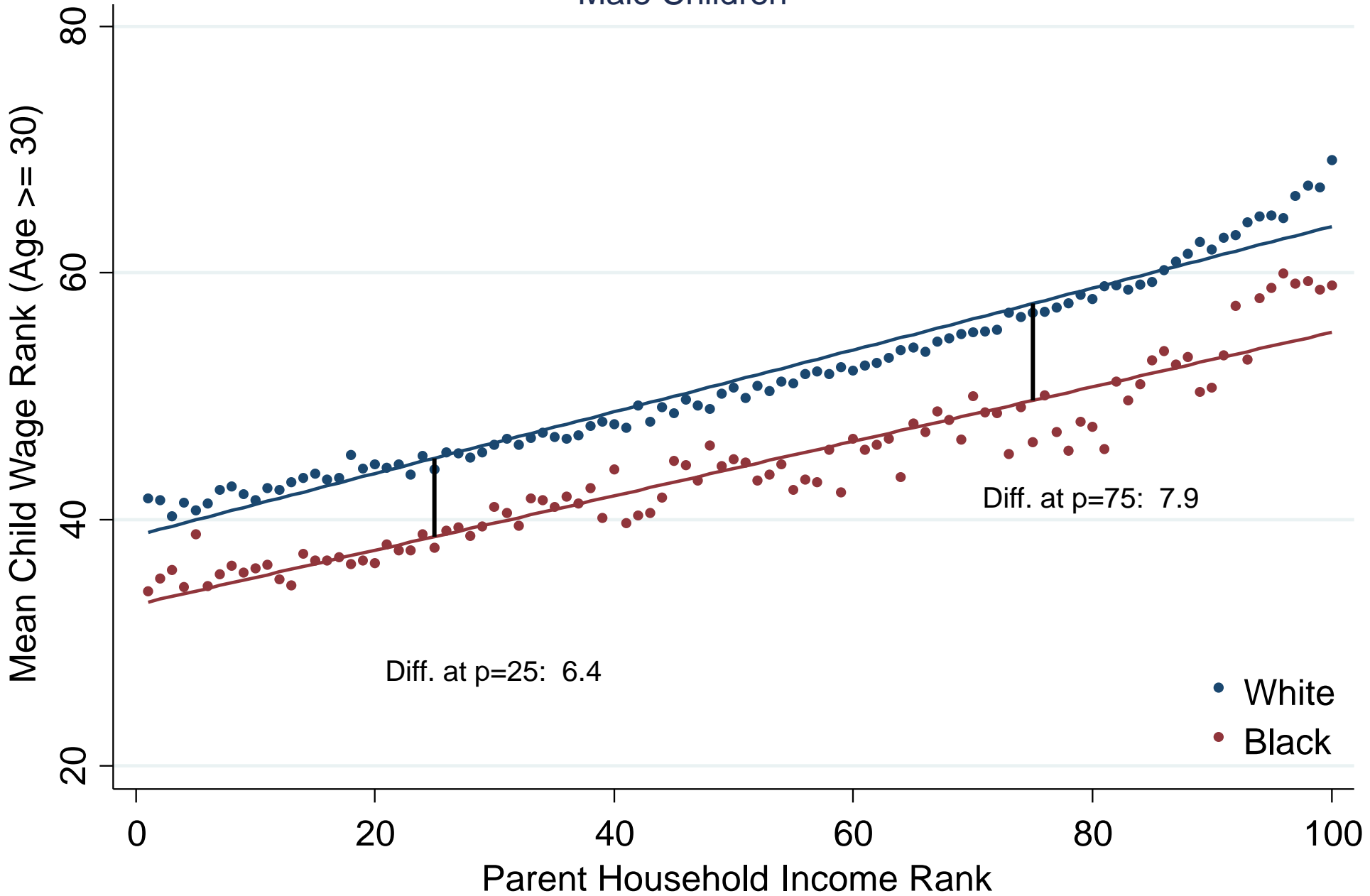
Employment Rates vs. Parent Income Rank

Male Children



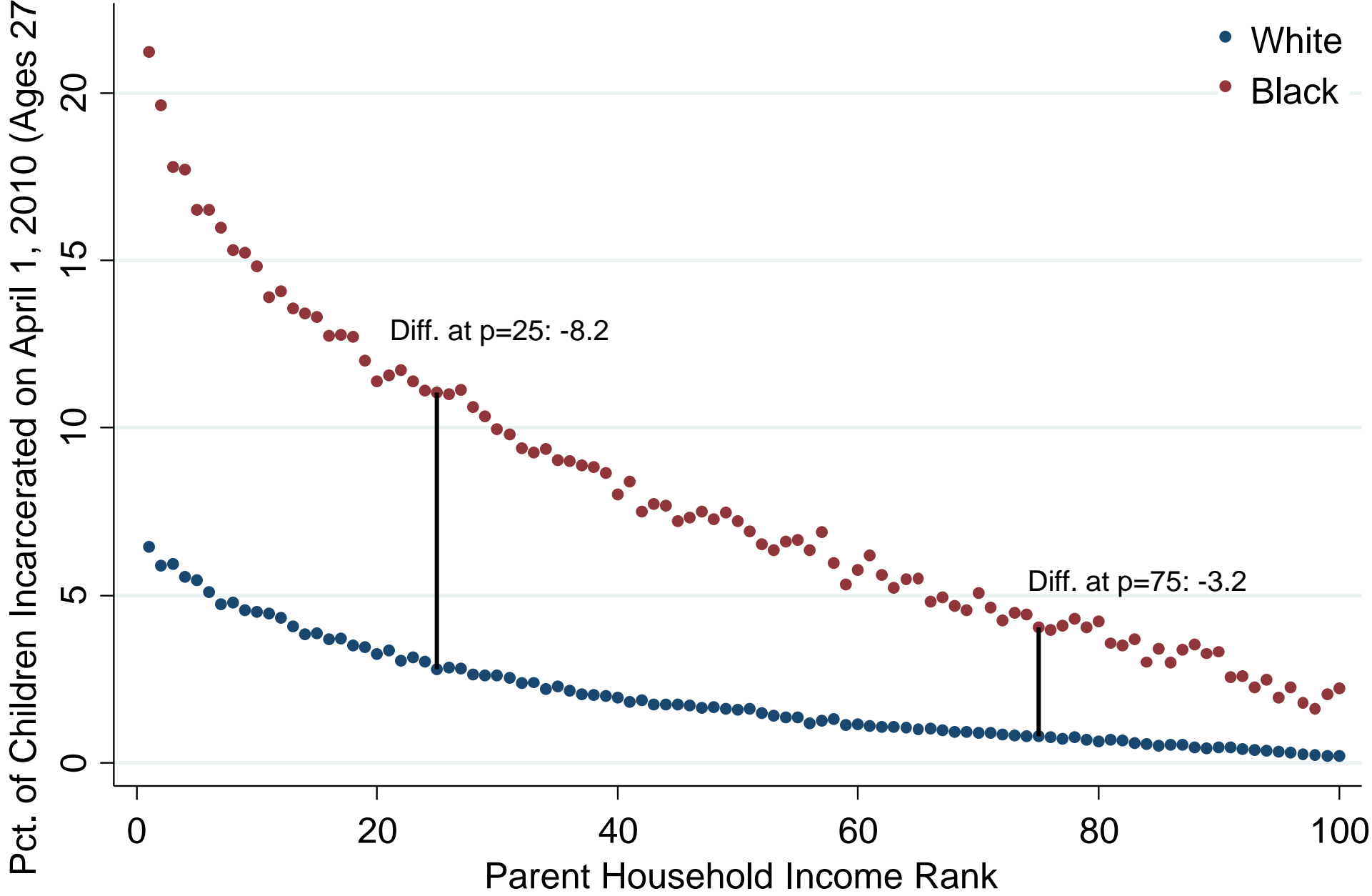
Hourly Wage Rank vs. Parent Income Rank

Male Children



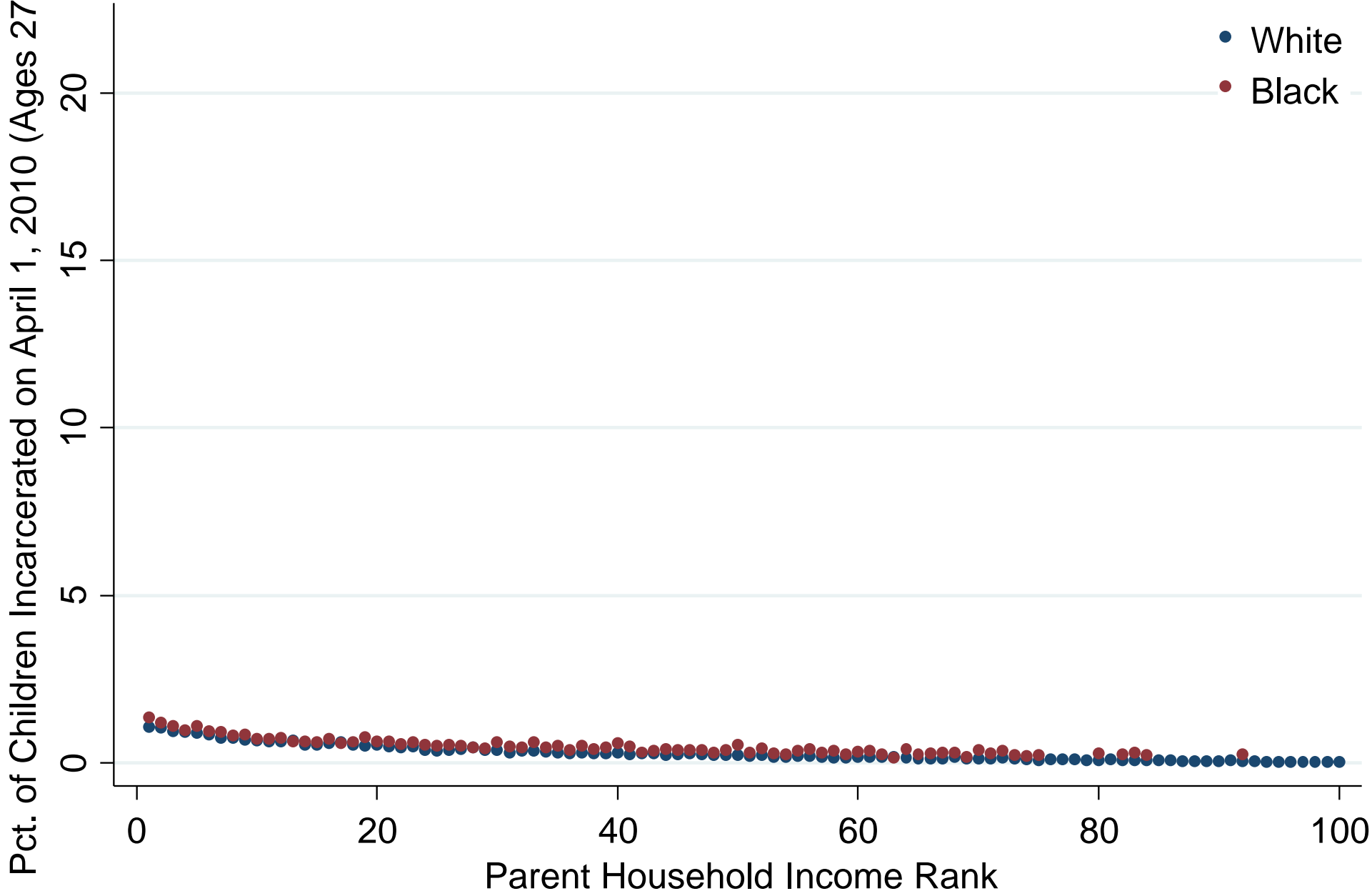
Incarceration Rates vs. Parent Income Rank

Male Children



Incarceration Rates vs. Parent Income Rank

Female Children



Part 4: Family-Level Explanations

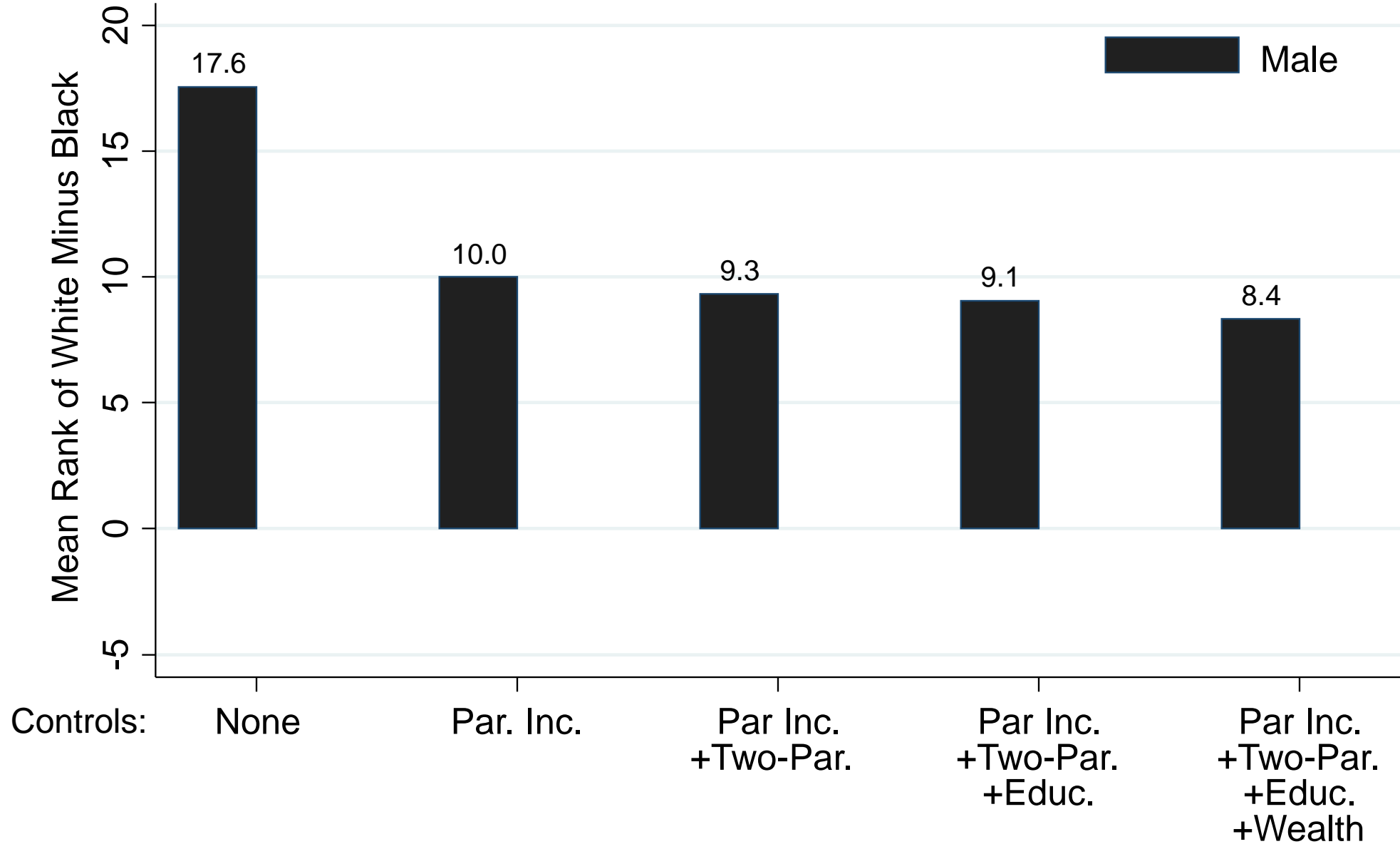
Explaining the Black-White Intergenerational Income Gap

Parental Education, Wealth, and Family Structure

- Do family-level factors (e.g., parental wealth) explain intergenerational gaps between black and white men?
- Condition on family-level characteristics to answer this question

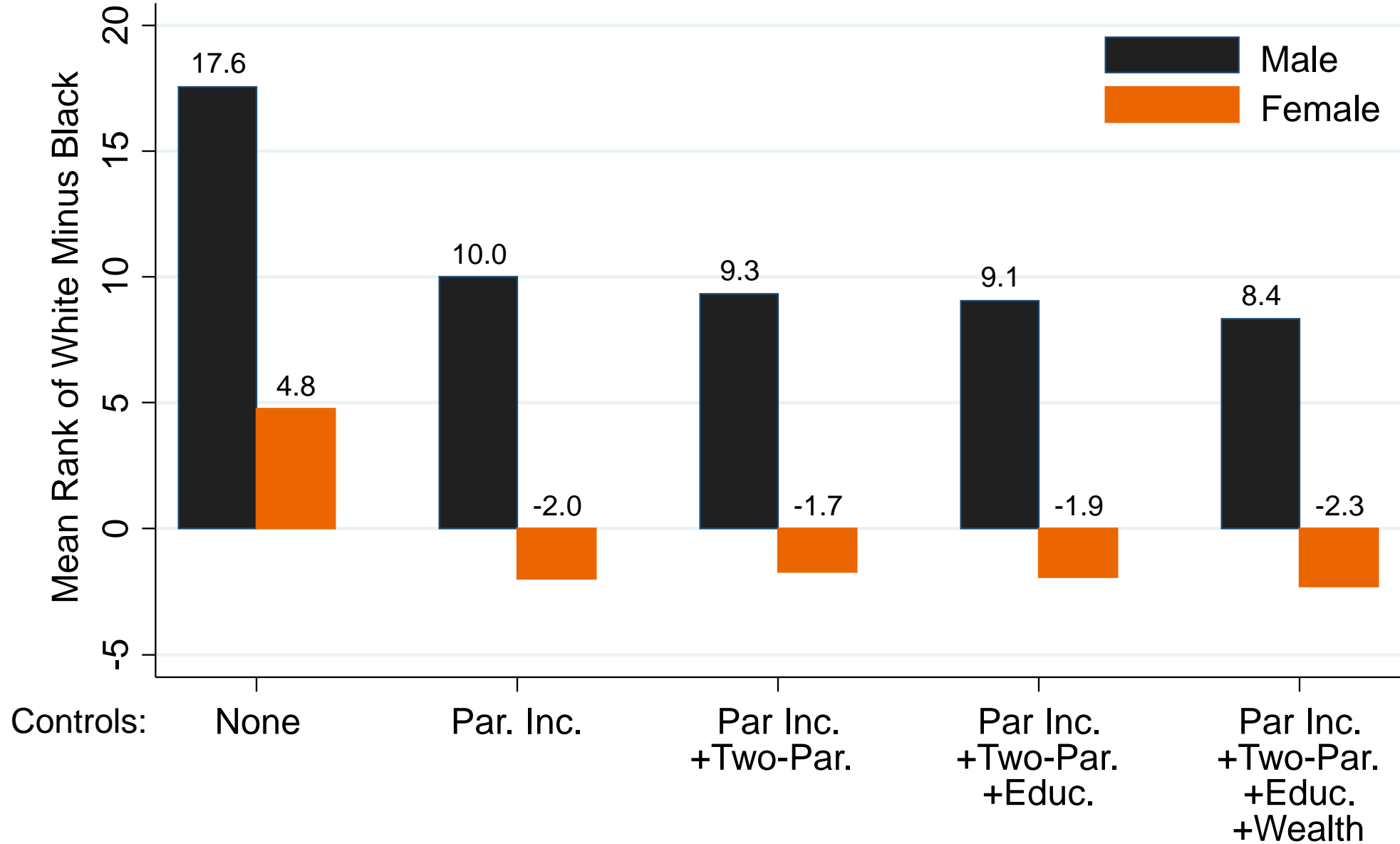
Effects of Family-Level Factors on the Black-White Income Gap

Children with Parents at 25th Percentile



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Children with Parents at 25th Percentile



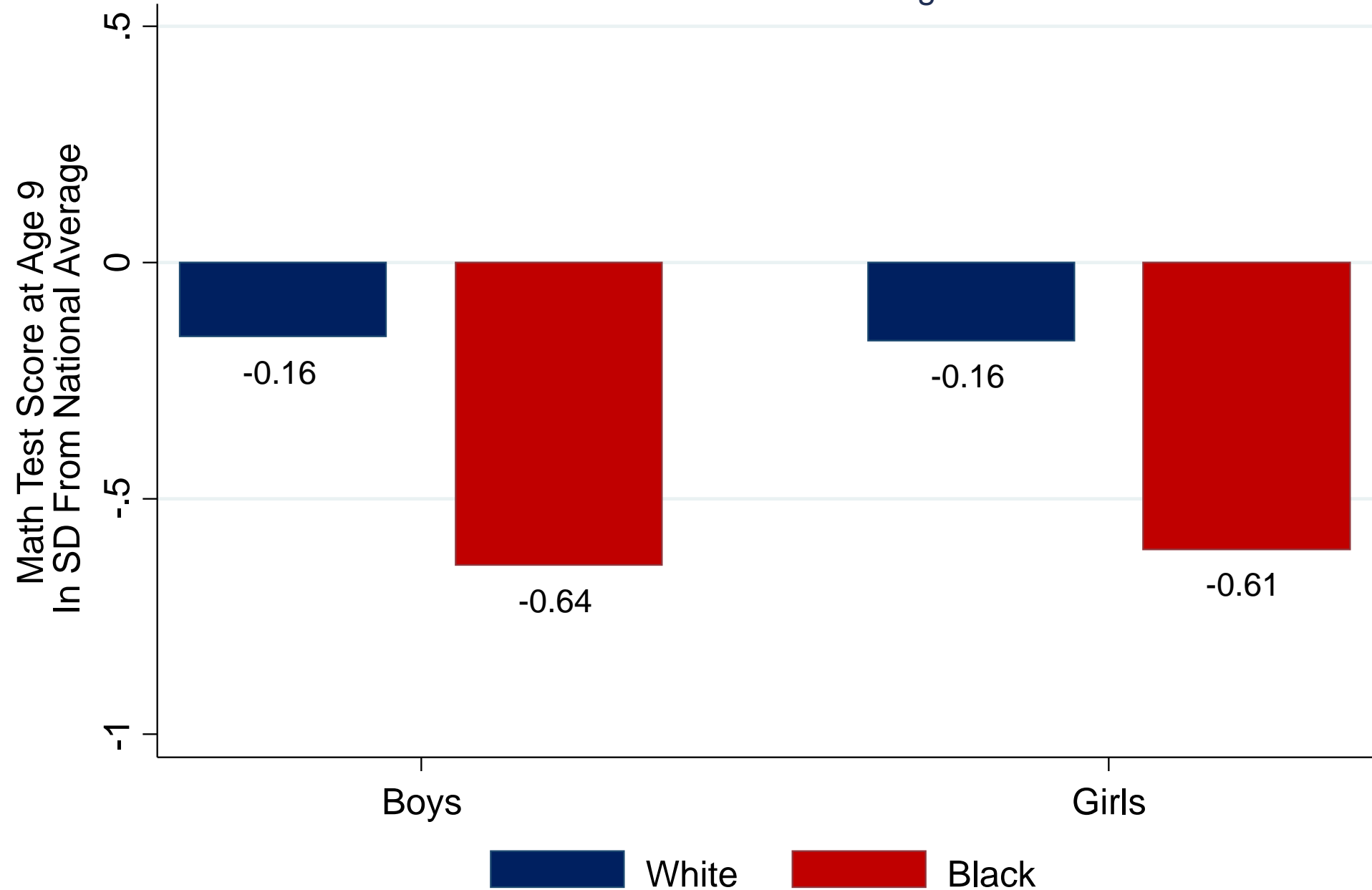
Explaining the Black-White Intergenerational Income Gap

Differences in Ability

- Ability hypothesis is inconsistent with gender heterogeneity in intergenerational gaps
 1. No ex-ante reason that racial differences in ability would produce differences in outcomes for boys but not girls
 2. Prior arguments for ability diffs. based on test score gaps, but black-white test score gaps do not vary by gender

Test Scores at Age 9 for Low-Income (Free-Lunch Eligible) Students

National Assessment of Educational Progress 2012



Explaining the Black-White Intergenerational Income Gap

Differences in Ability

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 1. No ex-ante reason that racial differences in ability would produce differences in outcomes for boys but not girls
 2. Prior arguments for ability diffs. based on test score gaps, but black-white test score gaps do not vary by gender
 - Test scores may not be an accurate measure of ability for black children, e.g. because of test bias or stereotype threat [Steele et al. 1995, Jencks et al. 1998]

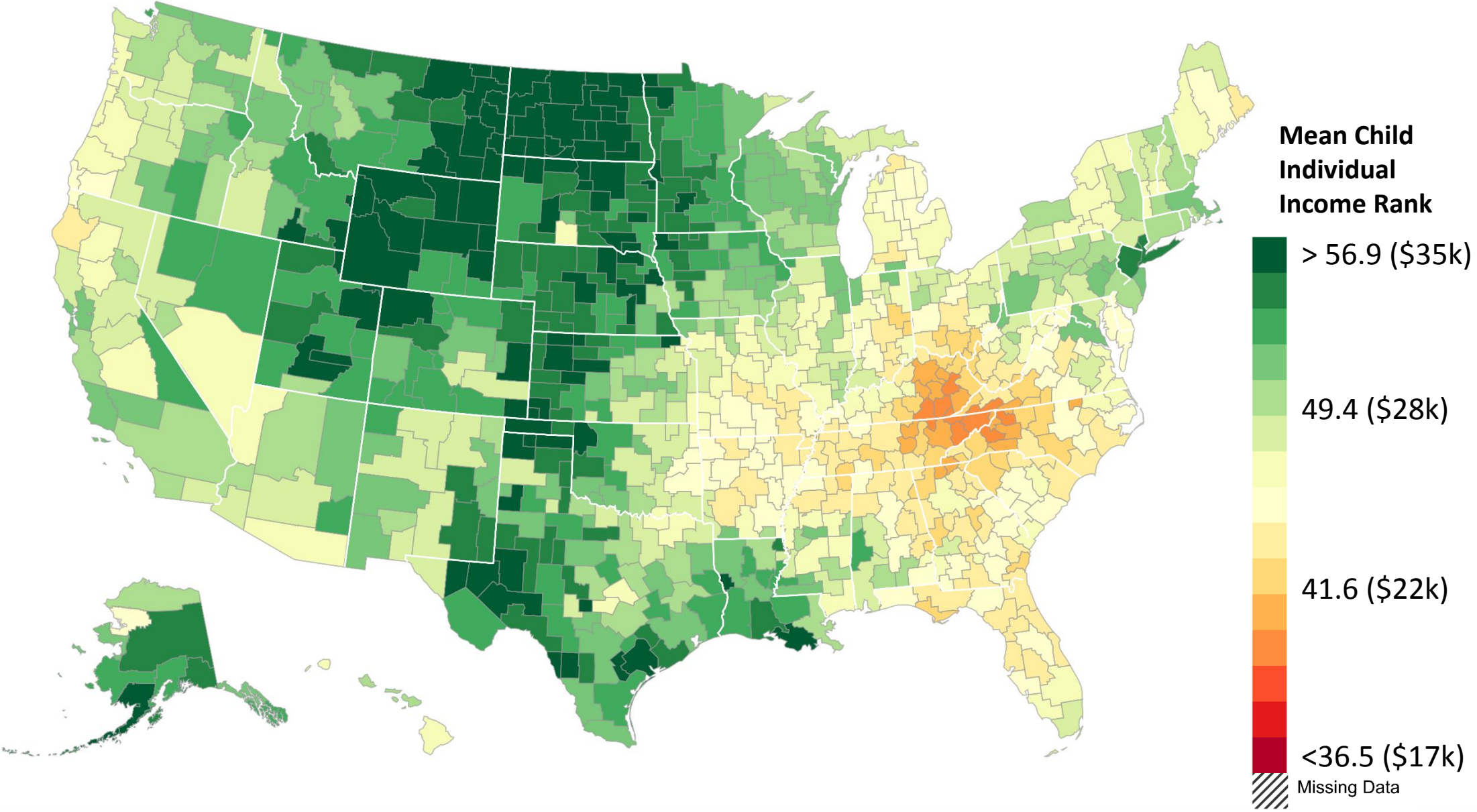
Part 4: Neighborhood-Level Variation

Neighborhood Environments and the Black-White Gap

- Do blacks have worse outcomes than whites because they live in different neighborhoods?
- Begin by examining broad geographic variation across commuting zones [Chetty, Hendren, Kline, and Saez 2014]
 - Assign children to locations in proportion to the fraction of their childhood that they spent in each CZ
- Estimate expected rank of children with parents at the 25th percentile of national income distribution using linear regression within each CZ

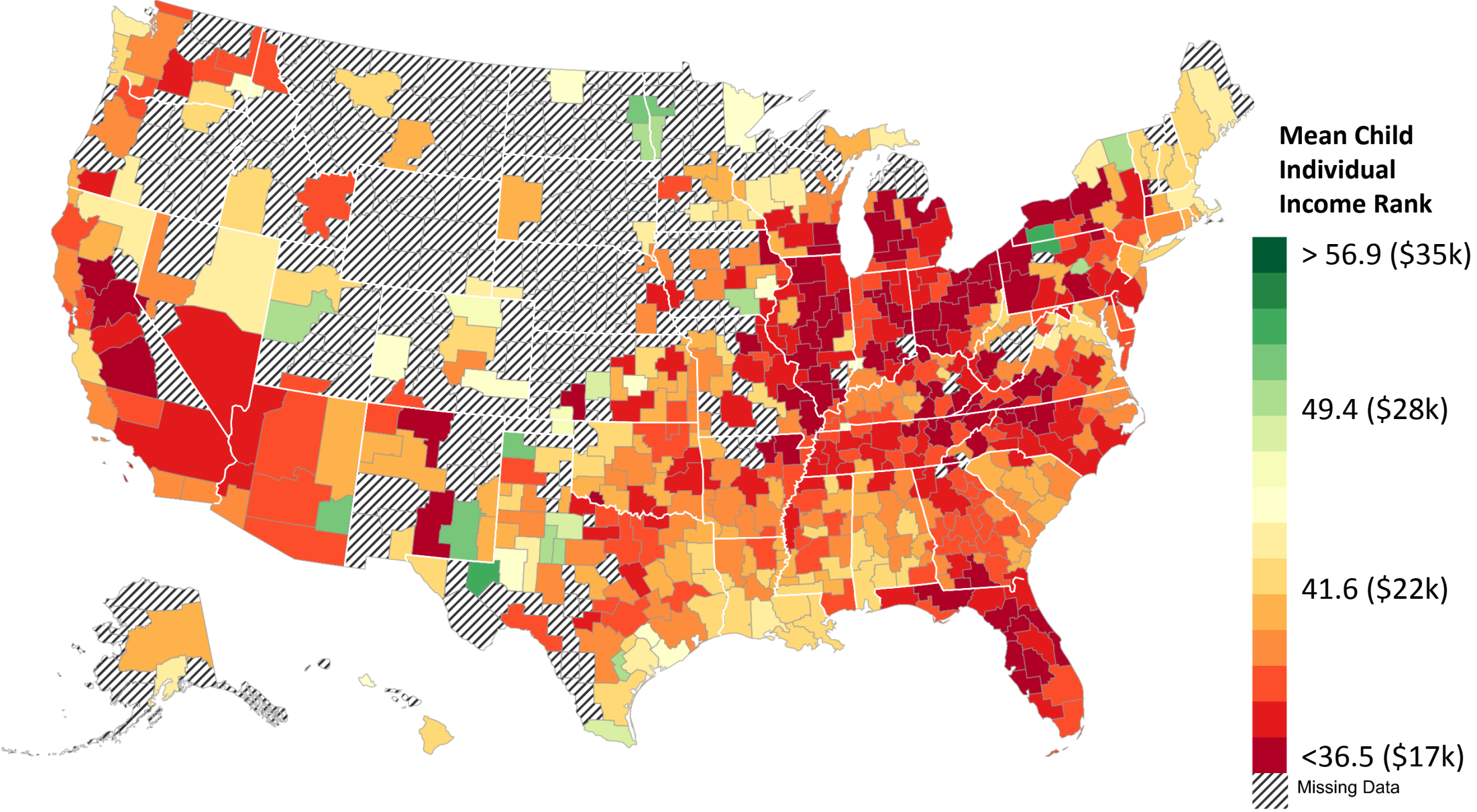
Mean Child Individual Income Rank by CZ

White Males with Parents at 25th Percentile



Mean Child Individual Income Rank by CZ

Black Males with Parents at 25th Percentile



Top 5 and Bottom 5 CZs in Upward Mobility for Low-Income Black Men Among 100 Largest CZs by Black Population

Commuting Zone	Mean Individual Income Rank Black Males (p=25)	White Minus Black Individual Income Rank (p=25)
A. Top 5 CZs		
Boston, MA	44.3	7.8
Lafayette, LA	44.0	11.6
Lake Charles, LA	43.1	11.1
Baton Rouge, LA	43.1	10.8
New York, NY	42.4	13.2
B. Bottom 5 CZs		
Grand Rapids, MI	35.5	11.1
Cleveland, OH	35.2	12.6
Youngstown, OH	35.2	12.9
Tampa, FL	34.9	9.3
Cincinnati, OH	34.7	10.1

Neighborhood Environments and the Black-White Gap

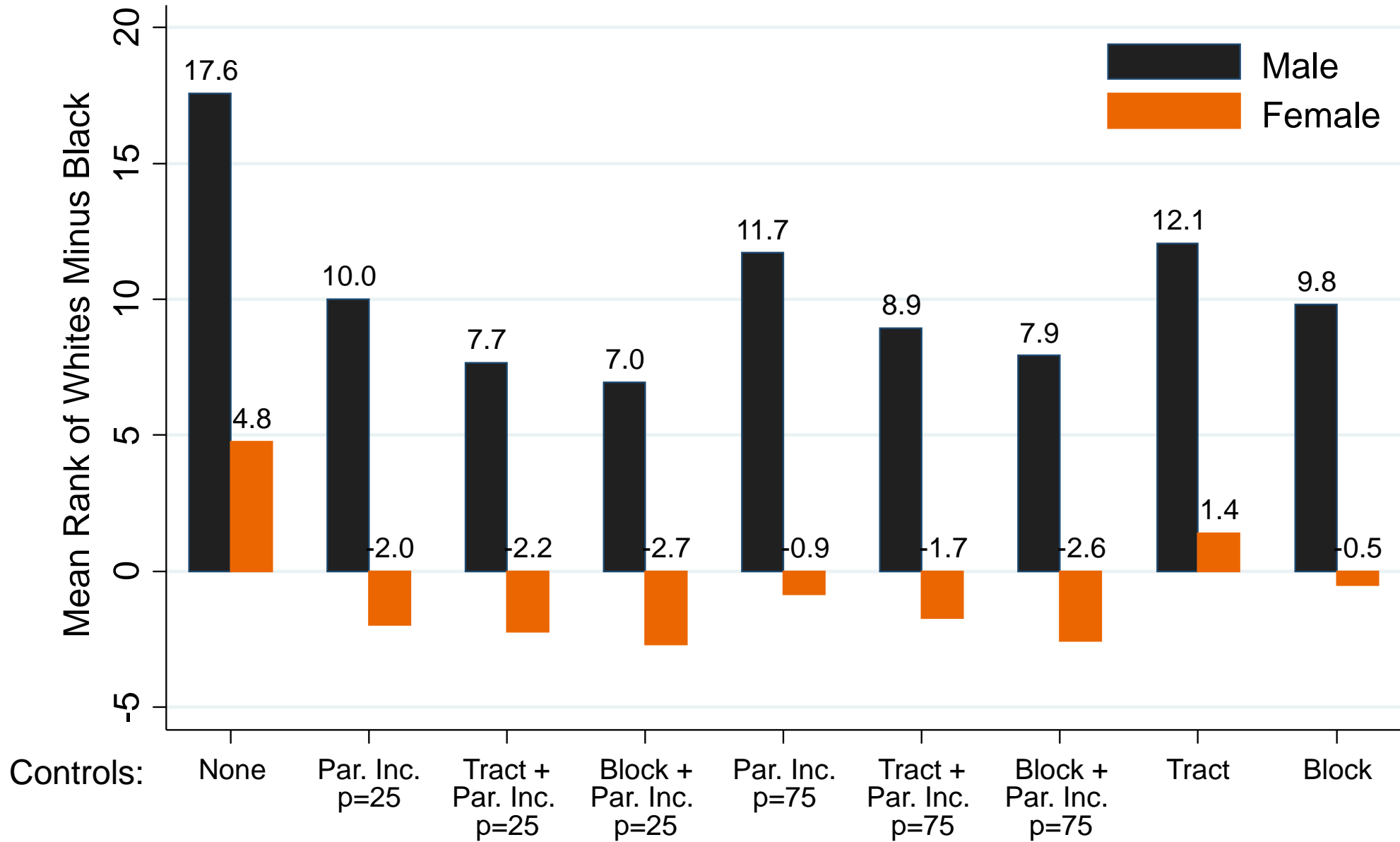
- Commuting-zone level variation illuminates broad regional patterns but does not directly test for “neighborhood” effects
- Blacks live in different neighborhoods from whites within CZs
- Therefore focus on variation across Census tracts (70K Census tracts in the U.S., 4000 people per tract)

Variation in the Black-White Earnings Gap Across Tracts

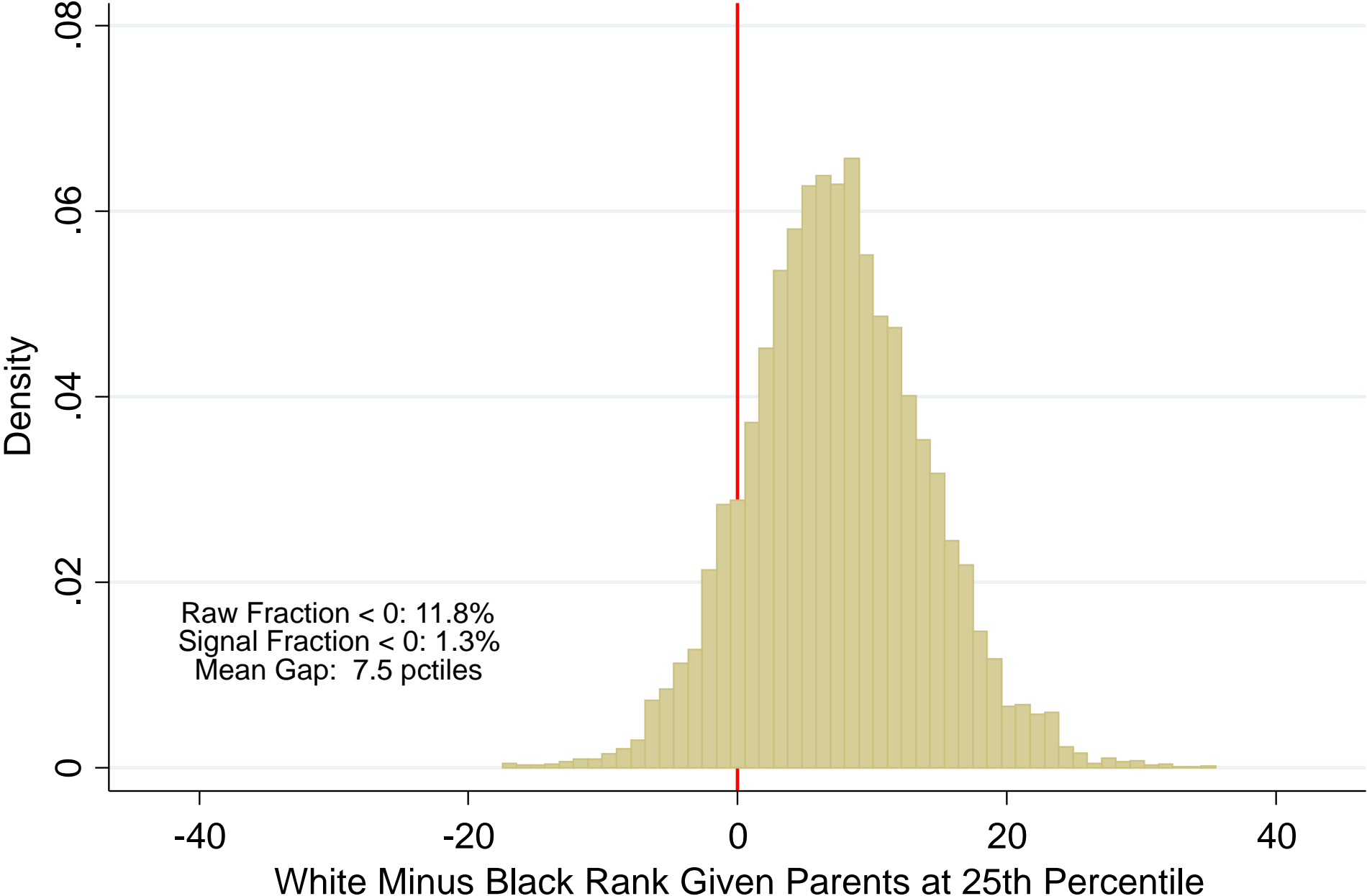
- Now characterize black-white gaps for men *within* each Census tract and examine correlations with neighborhood characteristics

- Four key results:
 1. Black boys have lower earnings than white boys in 99% of Census tracts in America, controlling for parental income

Black-White Gaps within Neighborhoods by Gender



Distribution of Black – White Gap in Individual Ranks Across Tracts for Men



Variation in the Black-White Earnings Gap Across Tracts

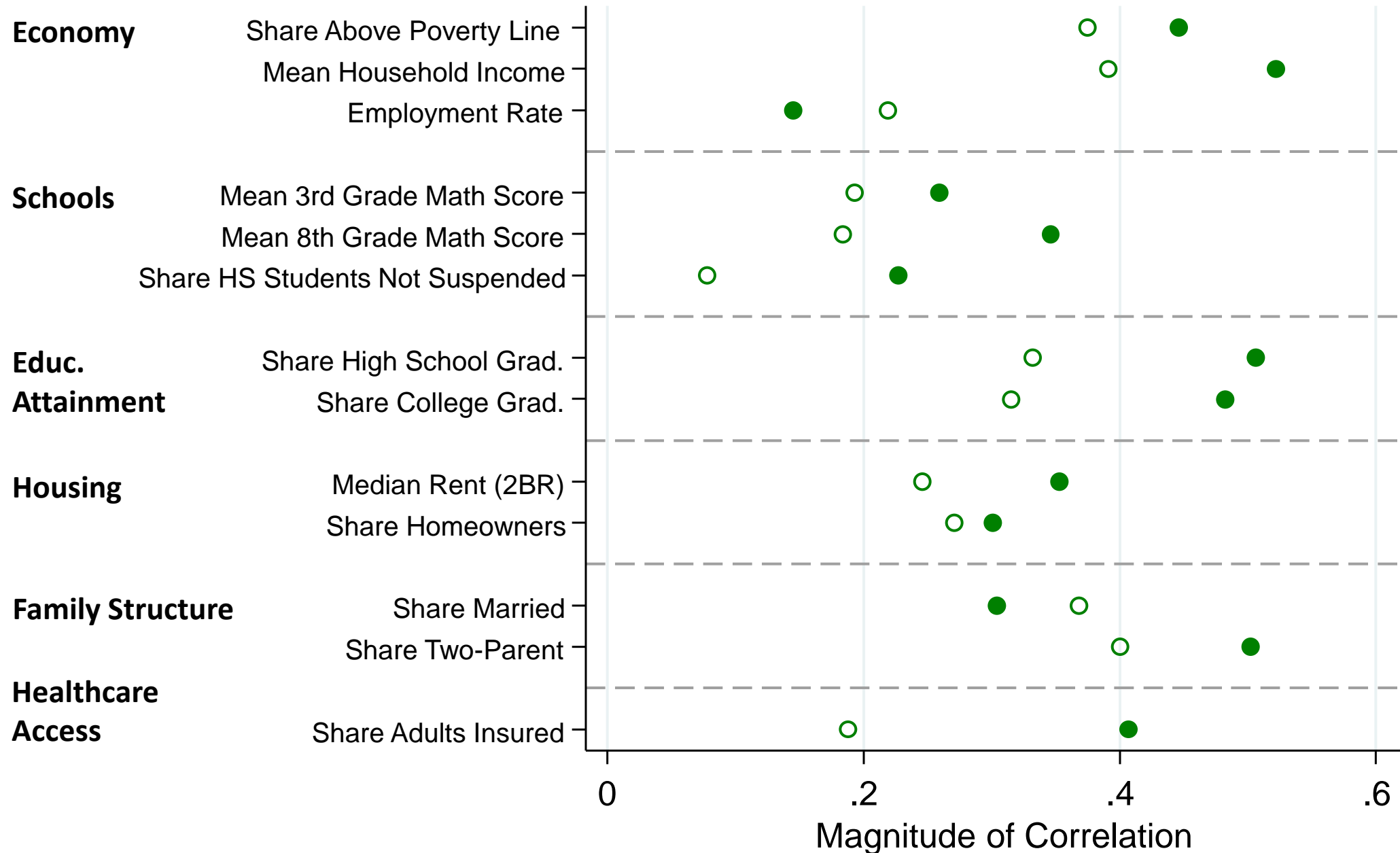
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 2. Both black and white boys have better outcomes in “good” (e.g., low-poverty, higher rent) neighborhoods, but the black-white gap is *bigger* in such areas

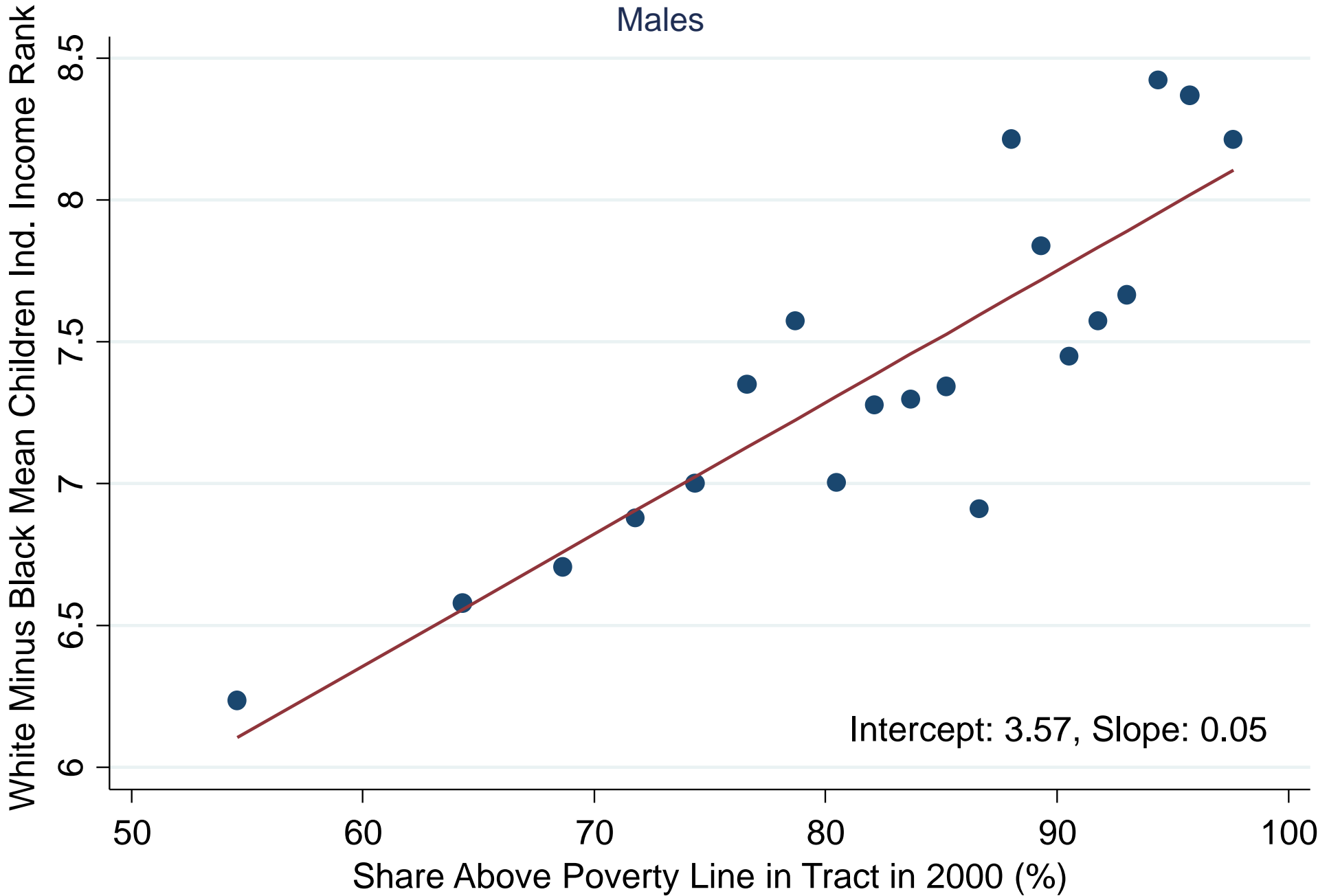
Correlations between Tract-Level Covariates and Individual Income Rank for Black Males vs. White Males

Children with Parents at 25th Percentile



Black – White Gap in Individual Income Ranks vs. Share Above Poverty Line

Males



Variation in the Black-White Earnings Gap Across Tracts

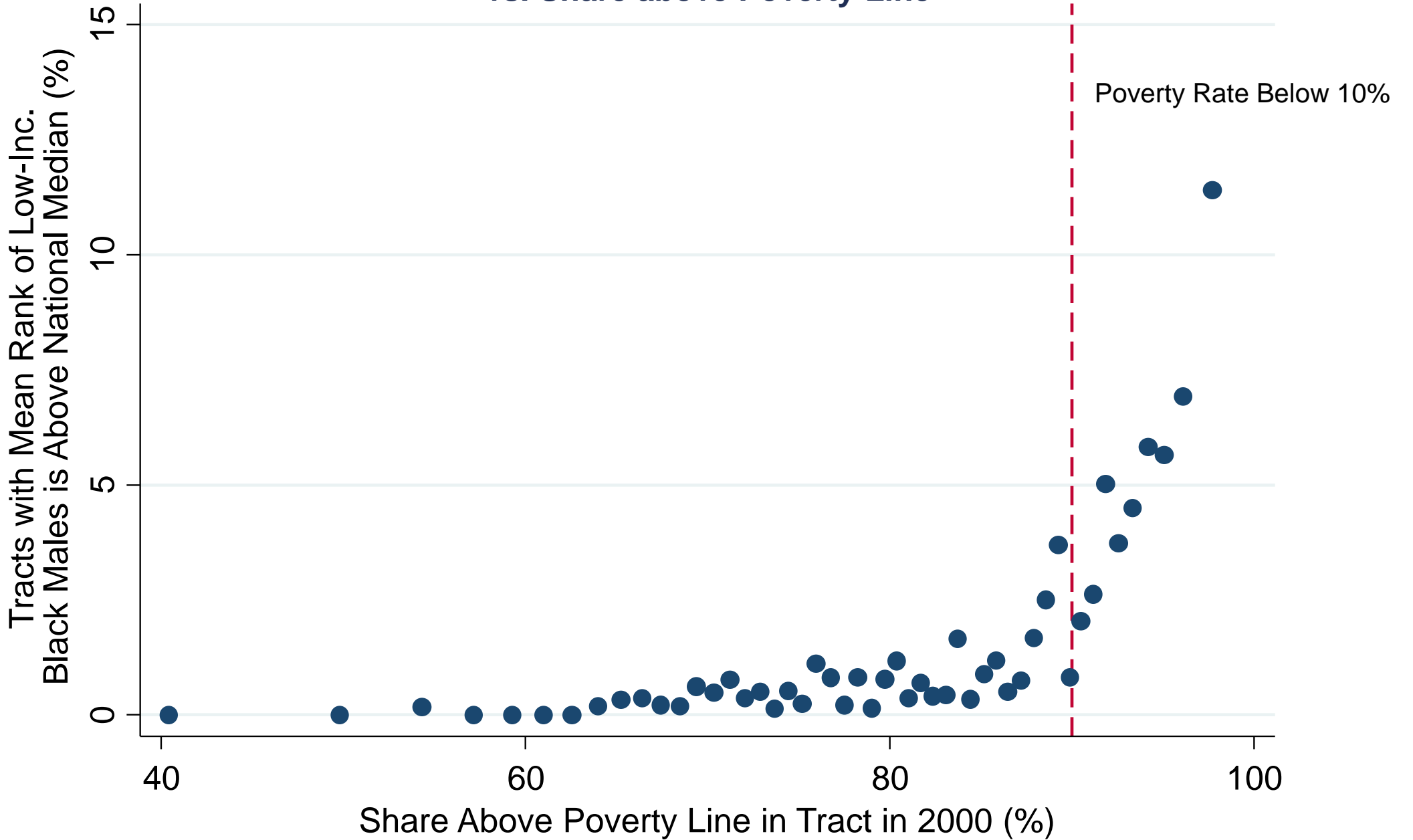
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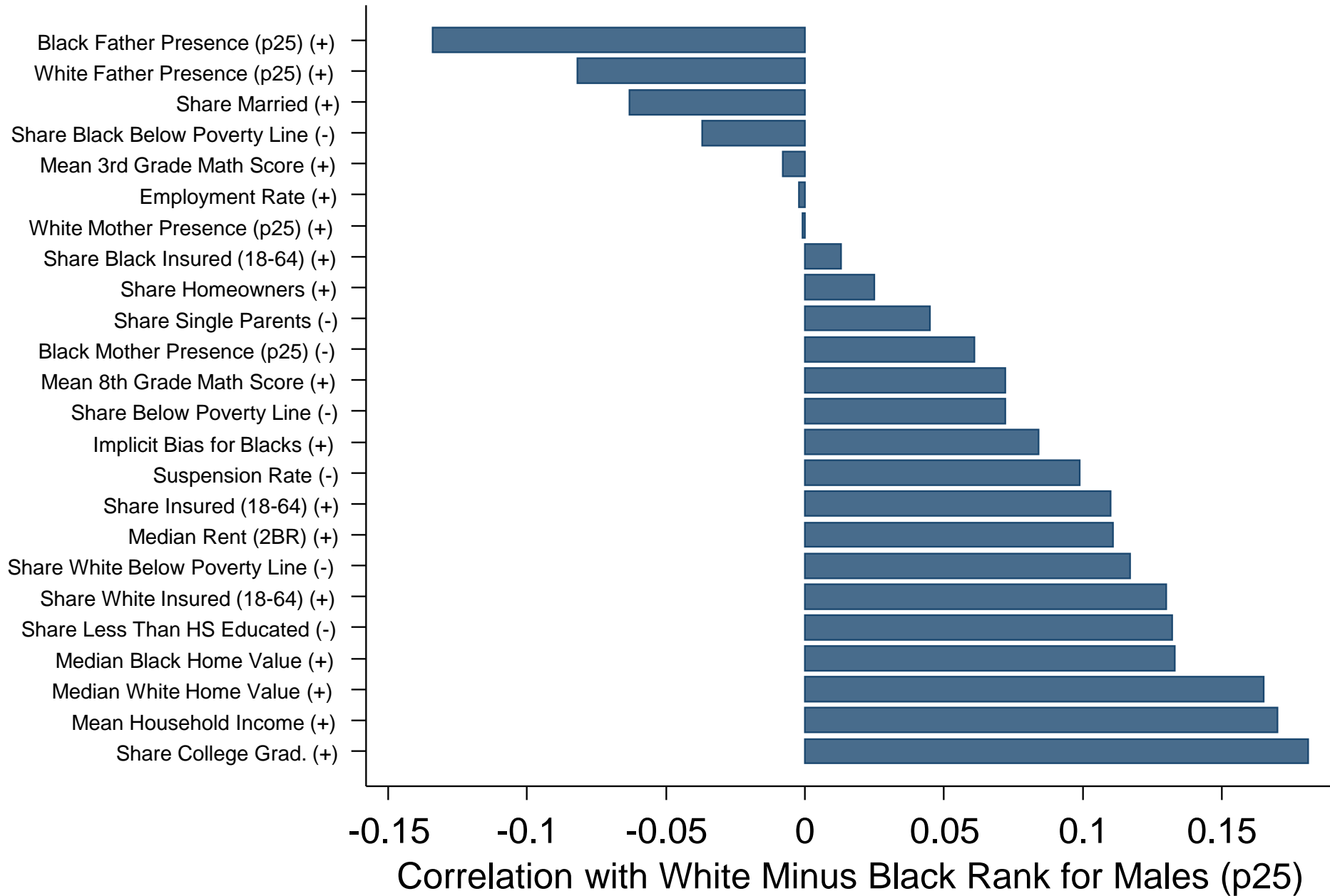
 2. Both black and white boys have better outcomes in “good” (e.g., low-poverty, higher rent) neighborhoods, but the black-white gap is *bigger* in such areas

 3. Within low-poverty areas, there are two factors associated with better outcomes for black boys *and* smaller gaps: greater father presence and less racial bias

Percentage of Tracts in which Predicted Rank of Black Males is above National Median vs. Share above Poverty Line

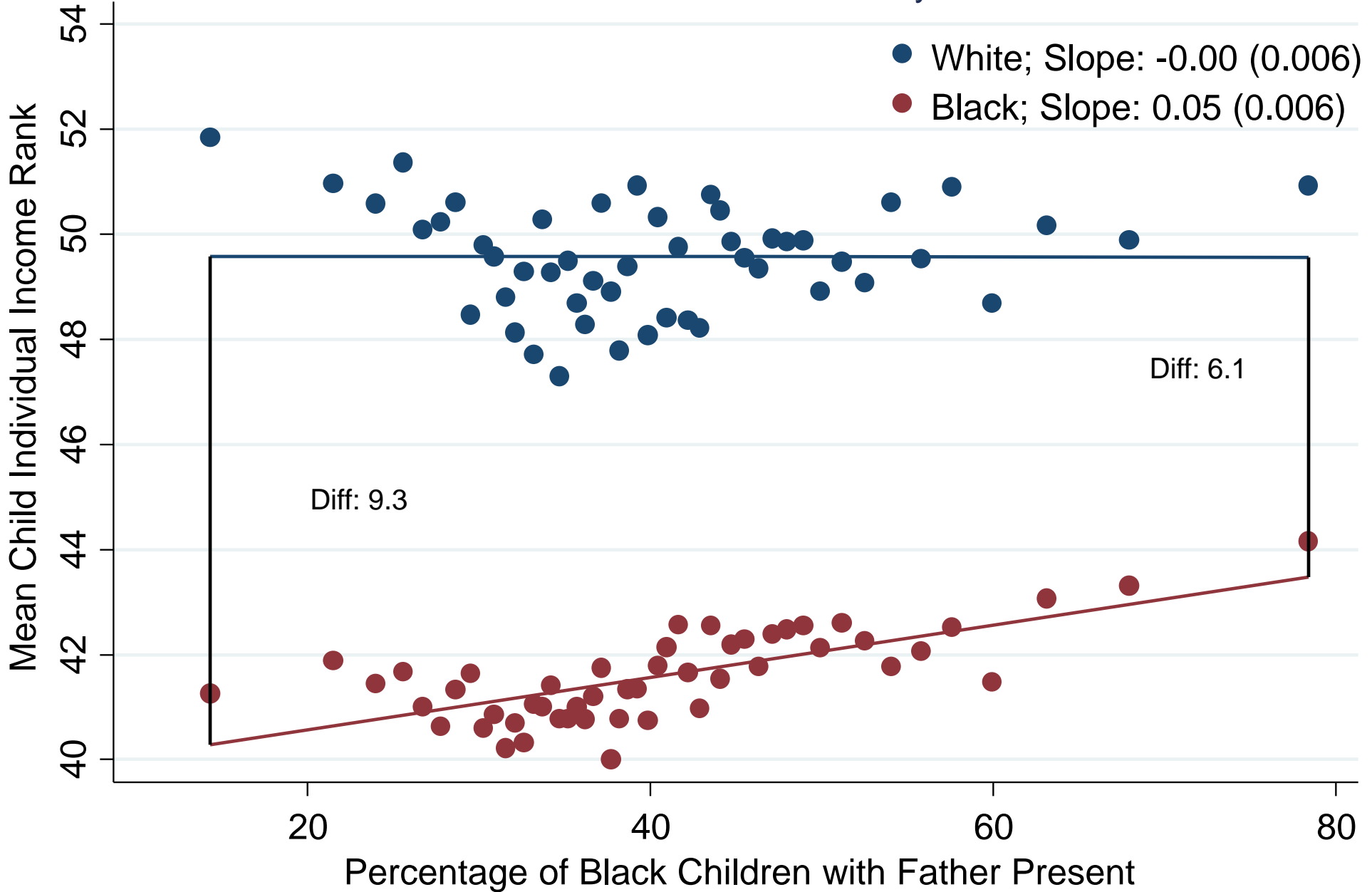


Covariates Correlated with Black Male Income and Black-White Gap



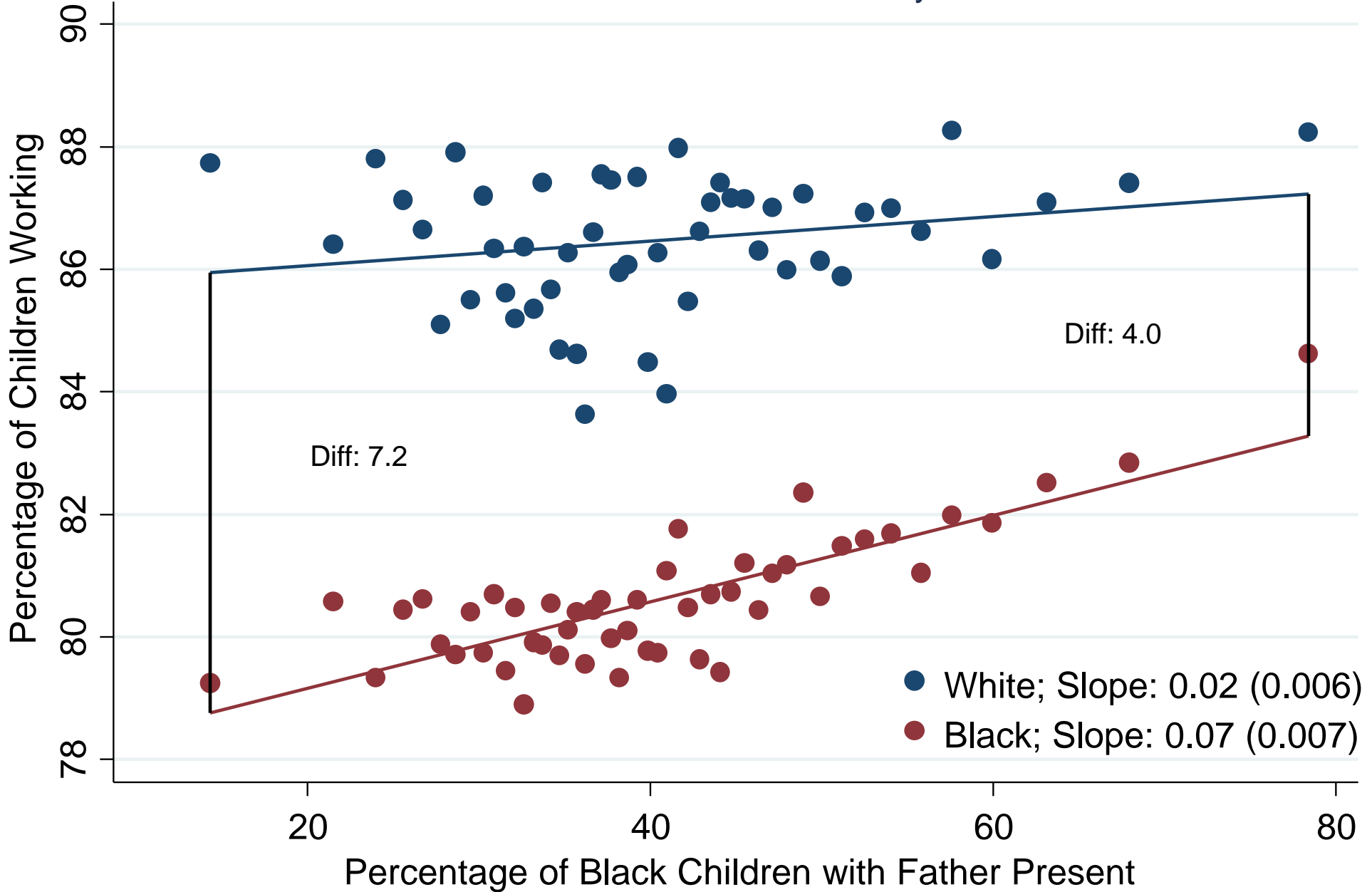
Black-White Gap in Individual Income Rank vs. Father Presence

Male Children with Parents at 25th Percentile - Poverty Share Less than 10%



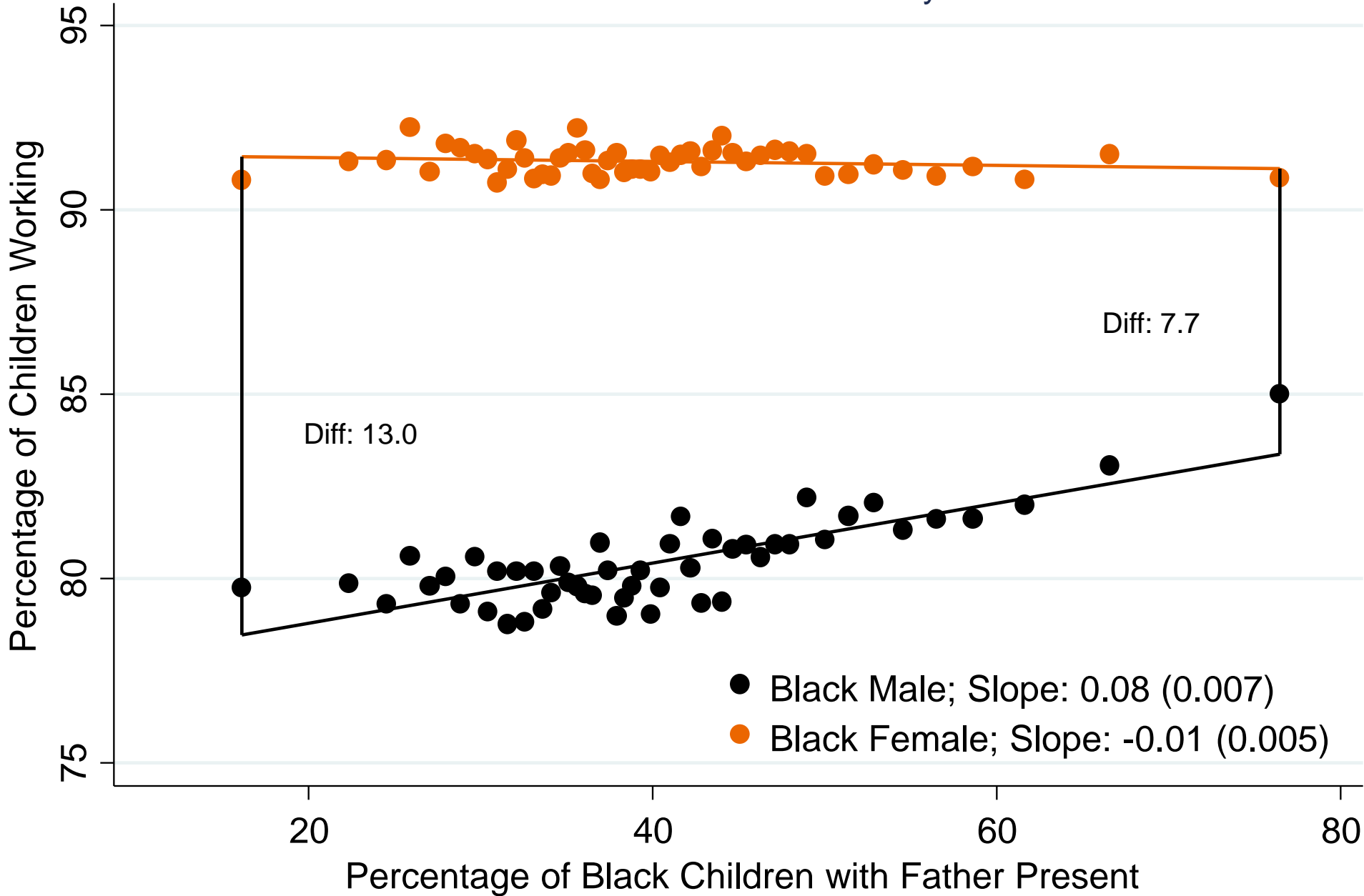
Black-White Gap in Employment Rates vs. Father Presence

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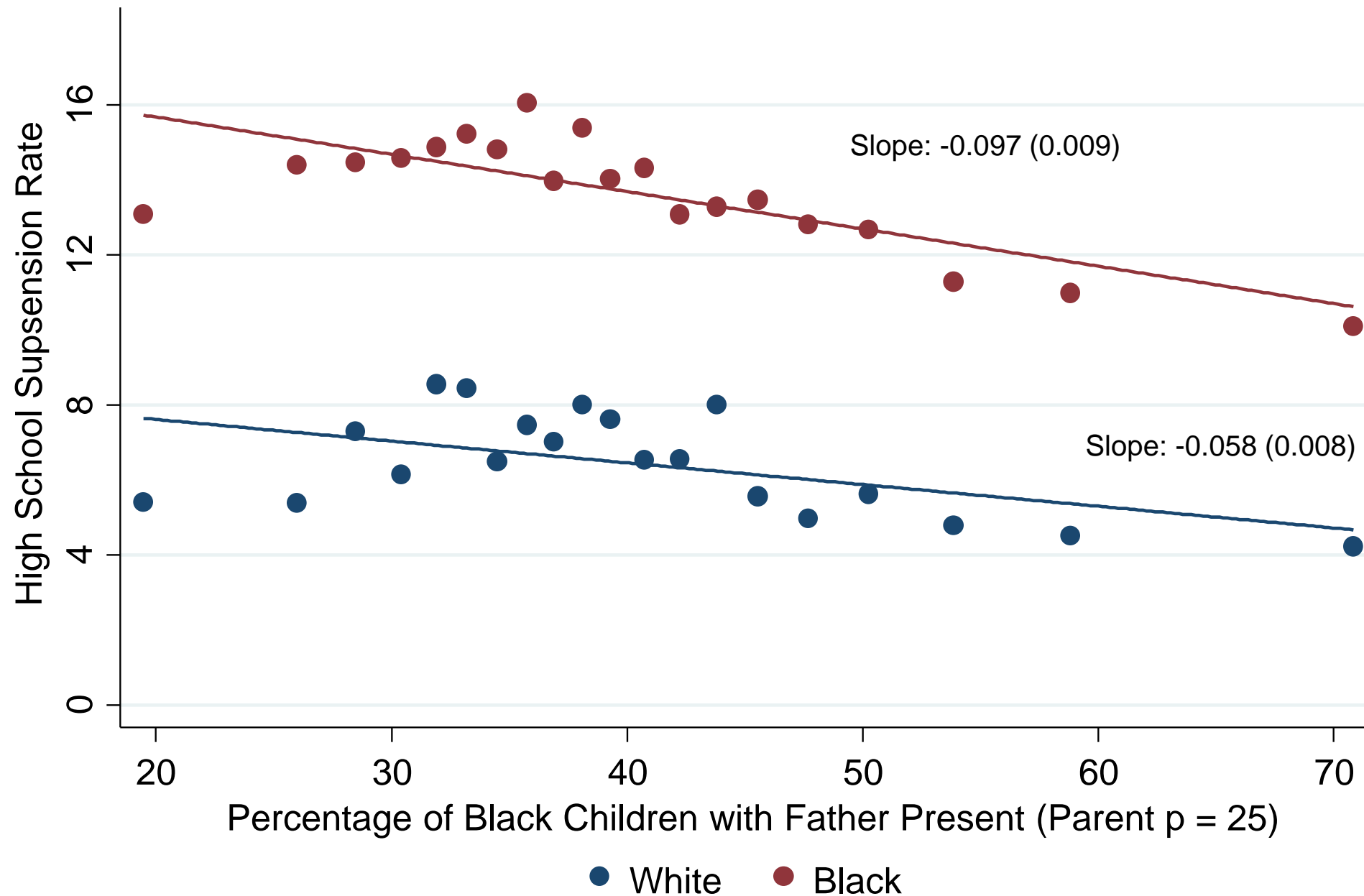


Male-Female Gap in Employment Rates vs. Father Presence

Black Children with Parents at 25th Percentile - Poverty Share Less than 10%



High School Suspension Rate for Males vs. Fraction with Fathers in Low-Poverty Areas



Association Between Black Father Presence and Black Boys' Outcomes

OLS Regression Estimates

	Baseline	Black and White Father Present	Own Father Absent	Two Parents	All Tracts	Gender Ratio	Current Tract FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Low-Income Black Father Presence	0.0492 (0.0062)	0.0450 (0.0068)	0.0279 (0.0108)	0.0461 (0.0128)	0.0806 (0.0036)		0.1052 (0.0079)
Low-Income White Father Presence		0.0077 (0.0076)					
Low-Income Black Father Presence 2000						0.0387 (0.0043)	
Low-Income Black Male Filers Per Child						-0.0011 (0.0011)	
Low-Poverty Tracts	X	X	X	X			
Current Tract FEs							X

Results from OLS regressions of the average income rank of black males who grow up in each census tract in below median income families (p25); standard errors in parentheses. Columns (1)-(6) are at the tract level. Column (7) has one observation per tract of origin X current tract combination.

Presence of Black Fathers: Key Takeaways

- Greater presence of black fathers in tract is predictive of boys' outcomes even *conditional* on whether their own father is present or not
 - This is not simply about direct effect of own parents' marital status
- What matters is presence of black *fathers* in a tract, not black men in general
 - Conditional on fraction of black children with fathers present, number of black males per child is uncorrelated with boys' outcomes

Association Between Racial Bias Among Whites and Black Children's Outcomes

OLS Regression Estimates

Dependent Variable:	Indiv. Income (Male)	Indiv. Income (Male)	Indiv. Income (Male)	Indiv. Income (Female)	Indiv. Income (Male)	Employed (Male)	Indiv. Income (Female)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Difference in IAT	-0.0081 (0.0024)		-0.0060 (0.0019)	-0.0082 (0.0029)			
IAT White		-0.0080 (0.0023)					
IAT Black		0.0047 (0.0023)					
Racial Animus					-0.0263 (0.0056)	-0.0138 (0.0057)	-0.0191 (0.0080)
State FE's			X				
Sample Size	340	340	340	325	28	28	27

Columns (1)-(3) are at the county level. Columns (4)-(7) are at the media market level. We restrict to counties (media markets) with poverty rates less than 10% obtained by aggregating the tract-level poverty rates up to the county level using population weights from the 2000 Census.

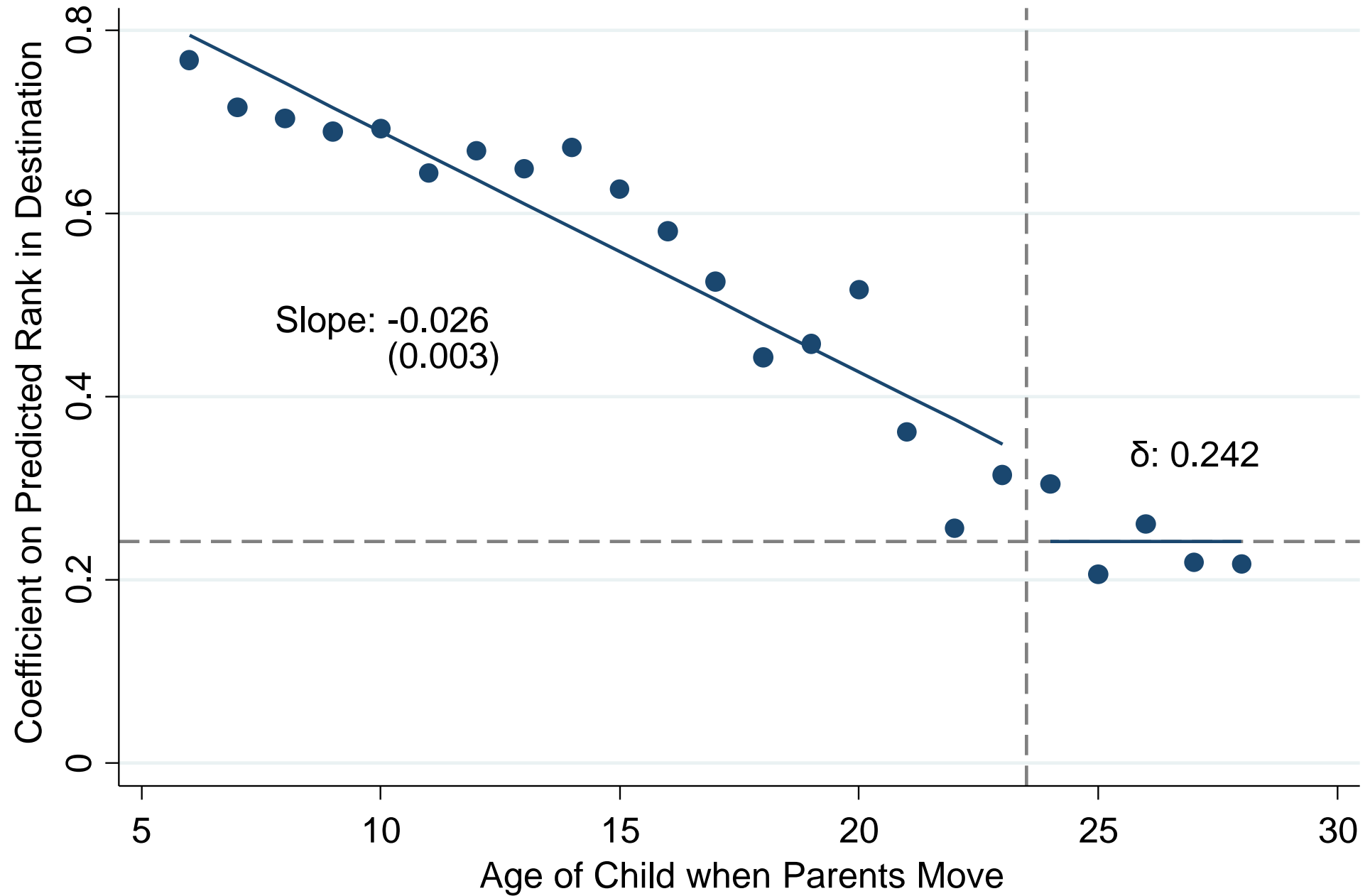
Variation in the Black-White Earnings Gap Across Tracts

- Now characterize black-white gaps for men *within* each Census tract and examine correlations with neighborhood characteristics

- Four key results:
 1. Black boys have lower earnings than white boys in 99% of Census tracts in America, controlling for parental income
 2. Both black and white boys have better outcomes in “good” (e.g., low-poverty, higher rent) neighborhoods, but the black-white gap is *bigger* in such areas
 3. Within low-poverty areas, there are two factors associated with better outcomes for black boys *and* smaller gaps: greater father presence and less racial bias
 4. Neighborhoods have *causal* childhood exposure effects: black boys who move to good areas at a younger age do better [based on Chetty & Hendren 2018 design]

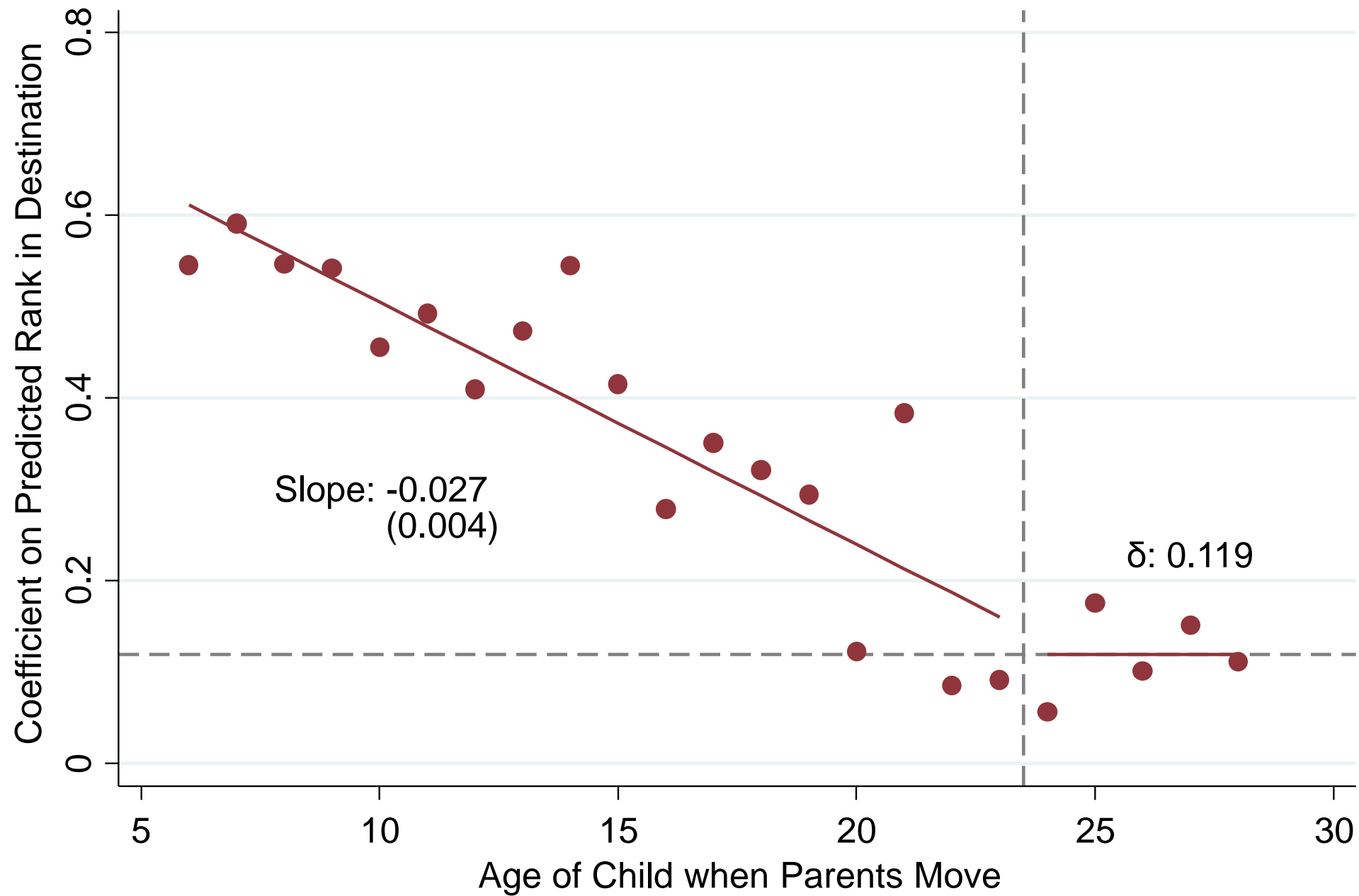
Childhood Exposure Effects on Income Rank at Age 30

White Males



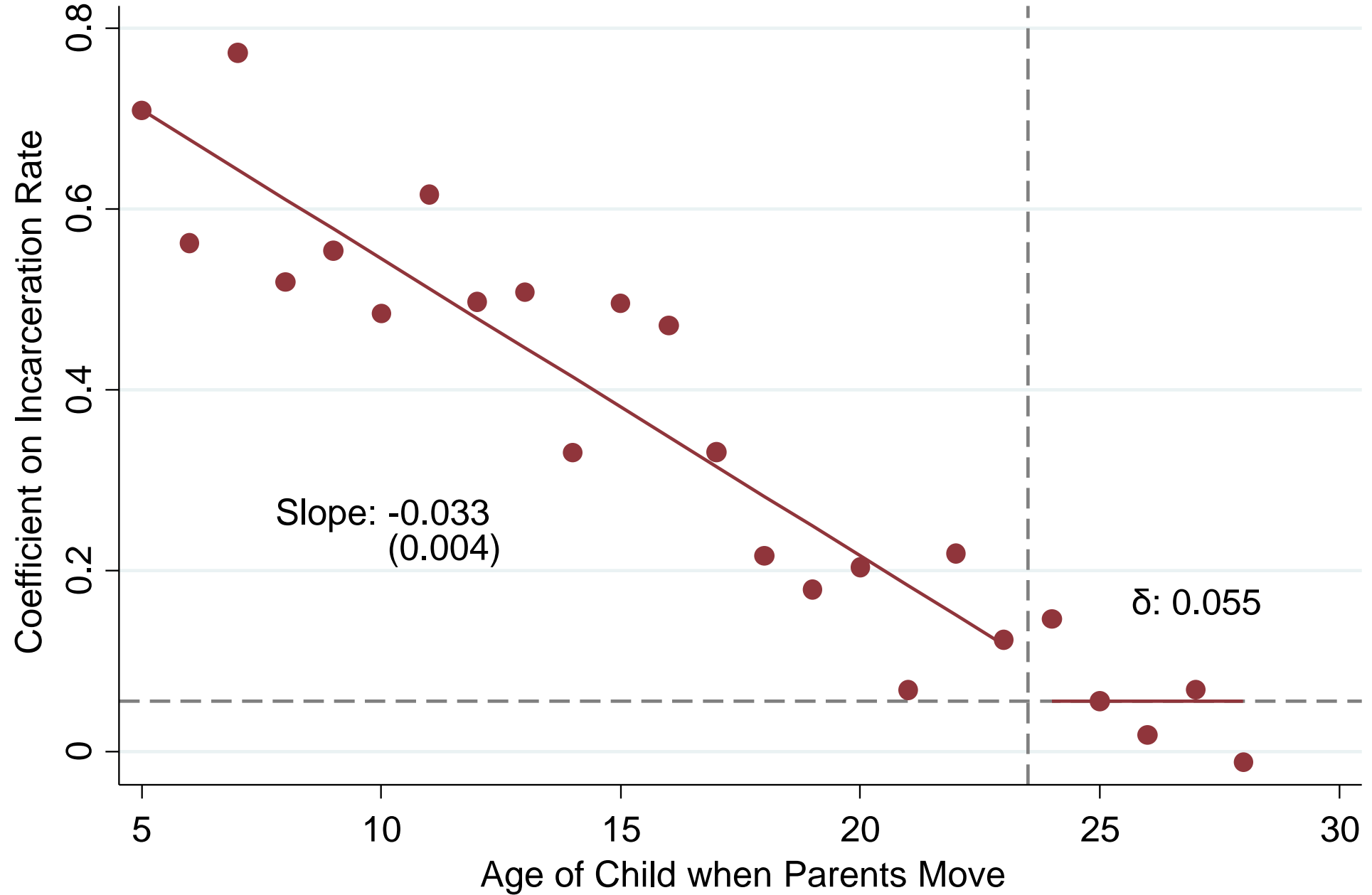
Childhood Exposure Effects on Income Rank at Age 30

Black Males



Childhood Exposure Effects on Probability of Being Incarcerated in 2010

Black Males



Annual Childhood Exposure Effects on Ind. Income by Race

OLS Regression Estimates

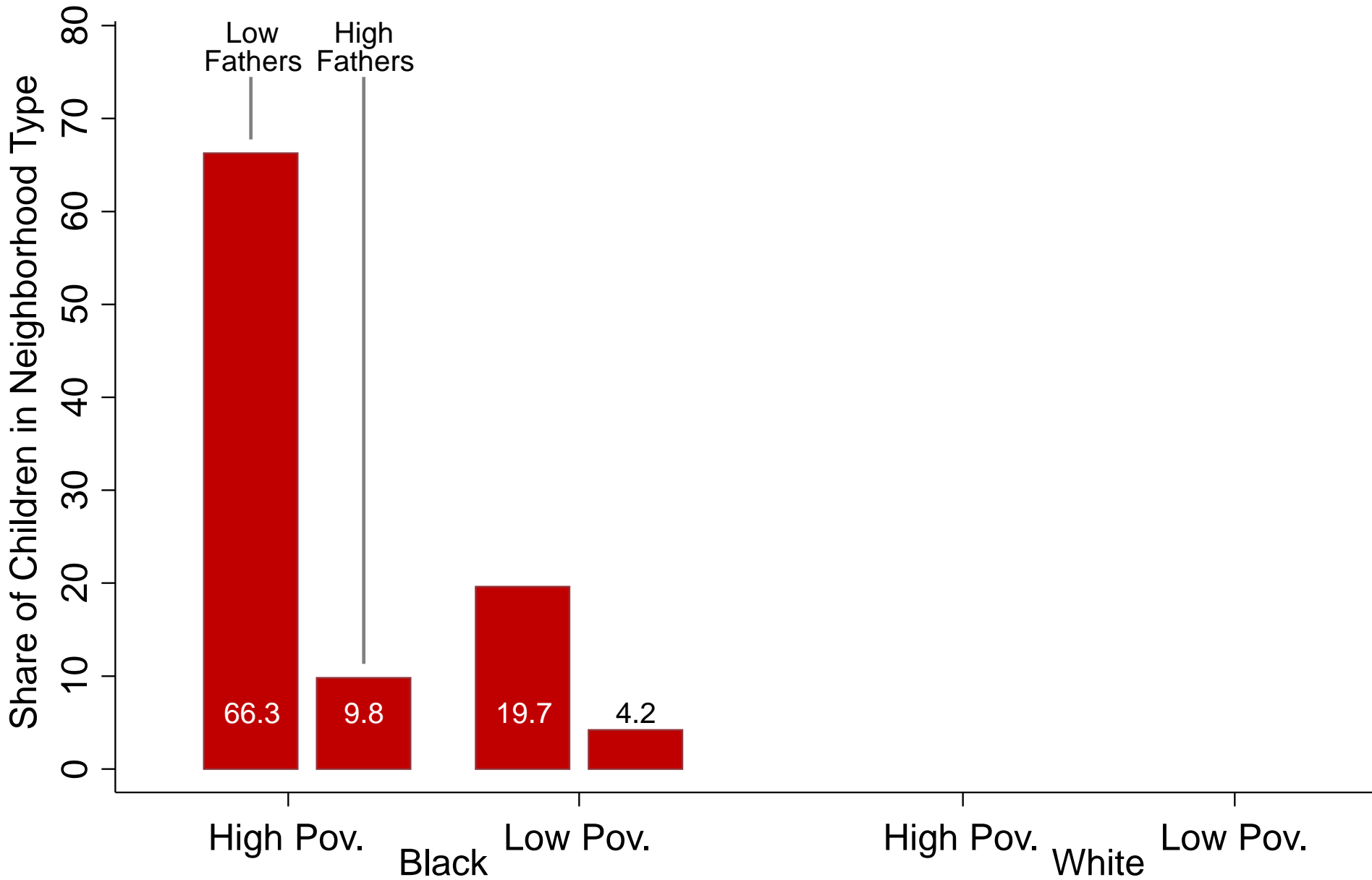
	Whites	Blacks
	(1)	(2)
Own Race Prediction	-0.023 (0.002)	-0.029 (0.004)
Other Race Prediction (Placebo)	-0.004 (0.001)	0.003 (0.004)

Slopes estimated using OLS regressions between ages 0-23; standard errors in parentheses.

Impacts of Neighborhood Environments on Black Men

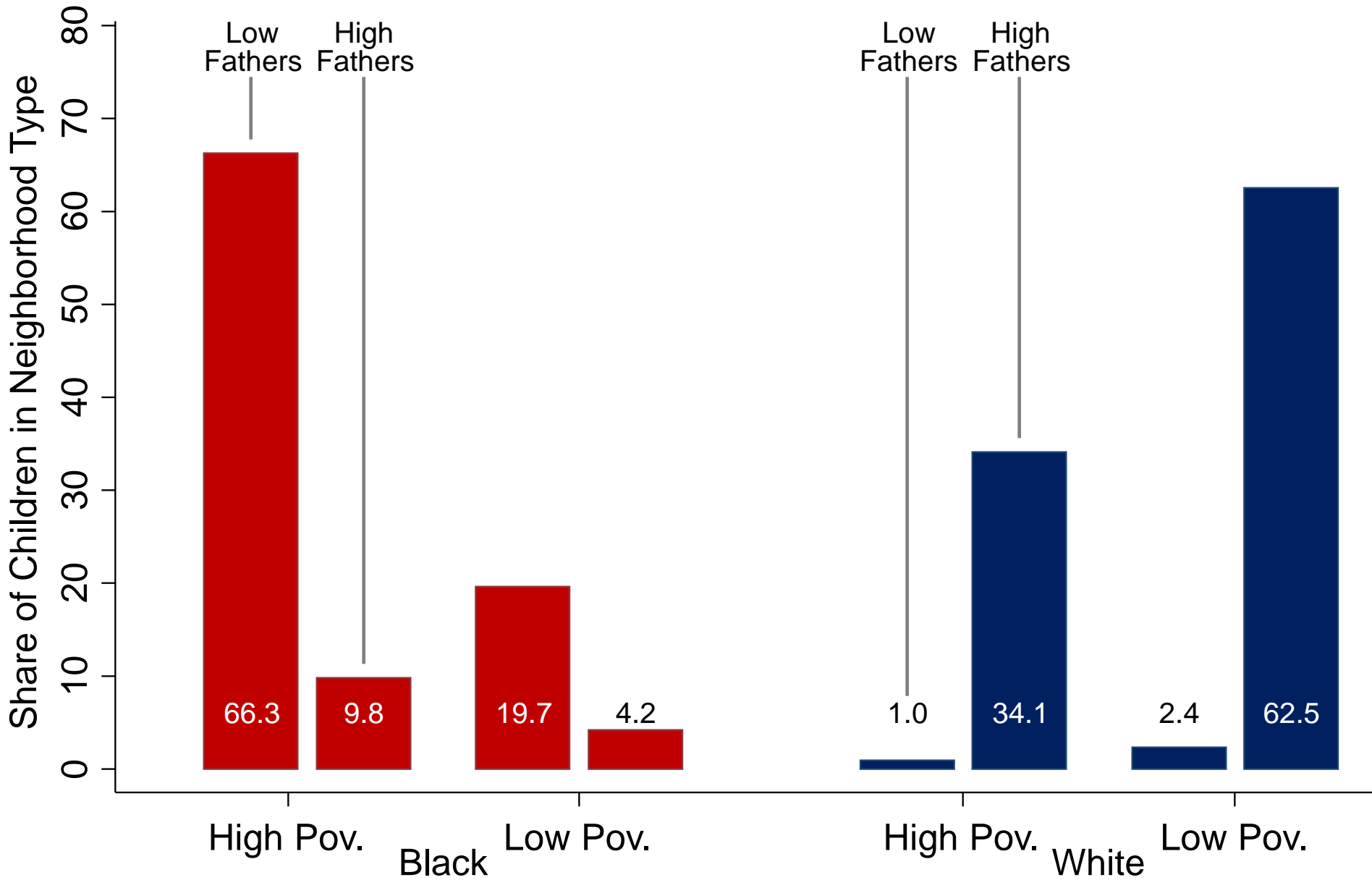
- Main lesson: childhood environment is an important driver of black-white gaps, but on dimensions that cut within residential neighborhoods
- Black boys do well in nbhds. with good resources (low poverty rates) *and* good race-specific factors (high father presence, less racial bias)
- The problem is that there are essentially no such neighborhoods in America

Father Presence and Poverty Rates by Tract for Blacks vs. Whites



Note: Low-Poverty: Poverty Rate < 10%; High Father Presence: >50% Father Presence Among Children of Own Race

Father Presence and Poverty Rates by Tract for Blacks vs. Whites



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Examples of High Upward Mobility Neighborhoods for Low-Income Black Men

New York City, NY	
Eastchester / Wakefield	Bronx, NYC
Queens Village / Laurelton	Queens, NYC
Washington, DC	
Downtown Silver Spring / Woodside Park / Woodside Forest	Silver Spring (MD) – Washington DC CZ
New Carrollton / College Park / Greenbelt	Prince Georges’ County (MD) - Washington DC CZ

Conclusions

1. Mobility into and out of poverty is a central determinant of racial disparities
 - Hispanics have relatively high rates of upward mobility → increasing income across generations
 - Blacks have much lower rates of upward mobility → persistent gaps across generations

Conclusions

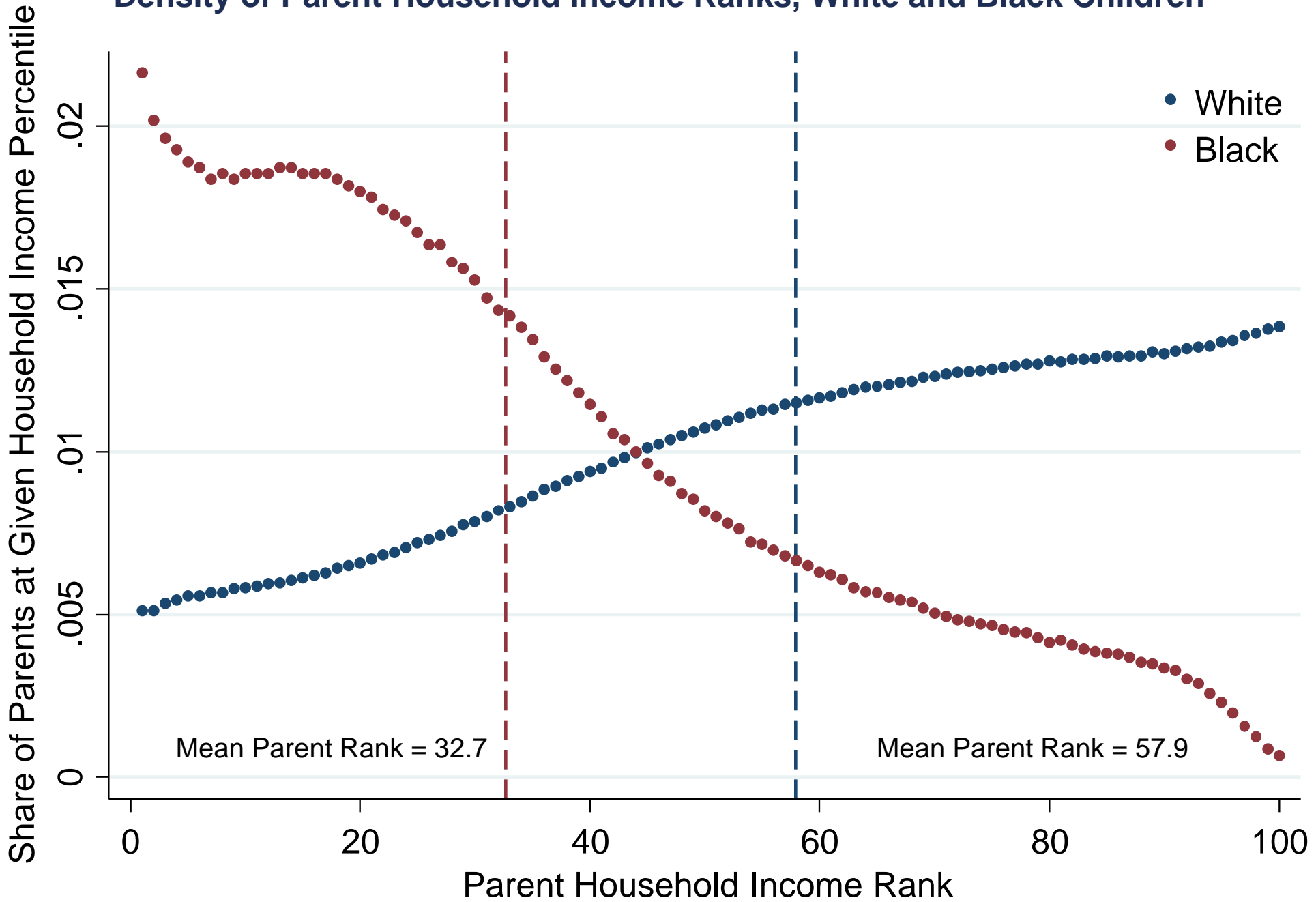
1. Mobility into and out of poverty is a central determinant of racial disparities
2. Commonly proposed policies likely to be insufficient to close black-white gap
 - Changes in transfer programs and minimum wages unlikely to have persistent effects, unless they change rates of mobility
 - Reducing residential or school segregation without achieving racial integration *within* neighborhoods unlikely to close gap

Conclusions

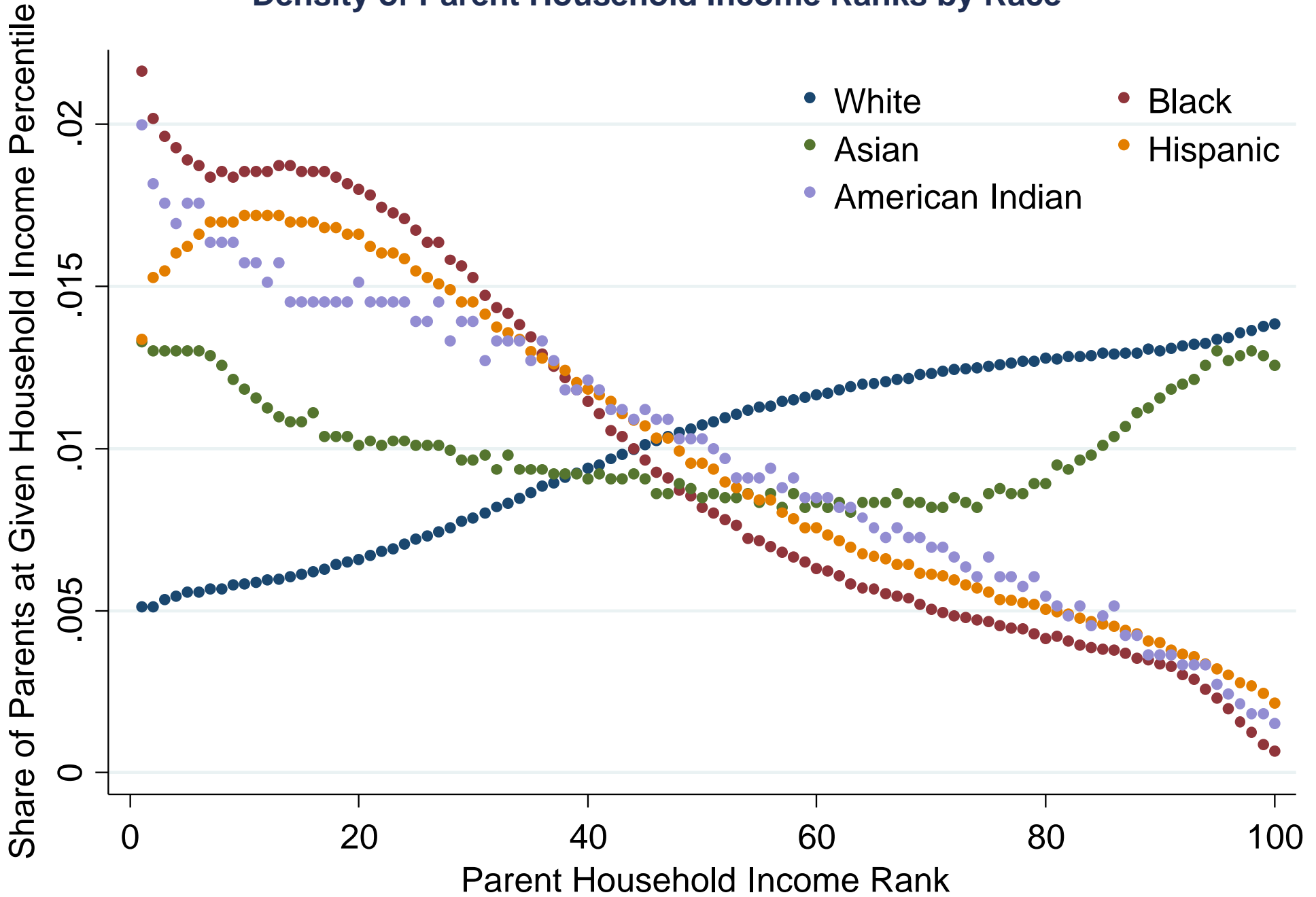
1. Mobility into and out of poverty is a central determinant of racial disparities
2. Commonly proposed policies likely to be insufficient to close black-white gap
3. Reducing the gap requires policies that cut *within* neighborhoods and improves environments for specific subgroups, such as black males
 - Ex: Mentoring programs, efforts to reduce racial bias
[Heller et al. 2015, Devine et al. 2012]
 - Further evaluation of such efforts may provide a path to reducing racial disparities

Supplementary Figures

Density of Parent Household Income Ranks, White and Black Children

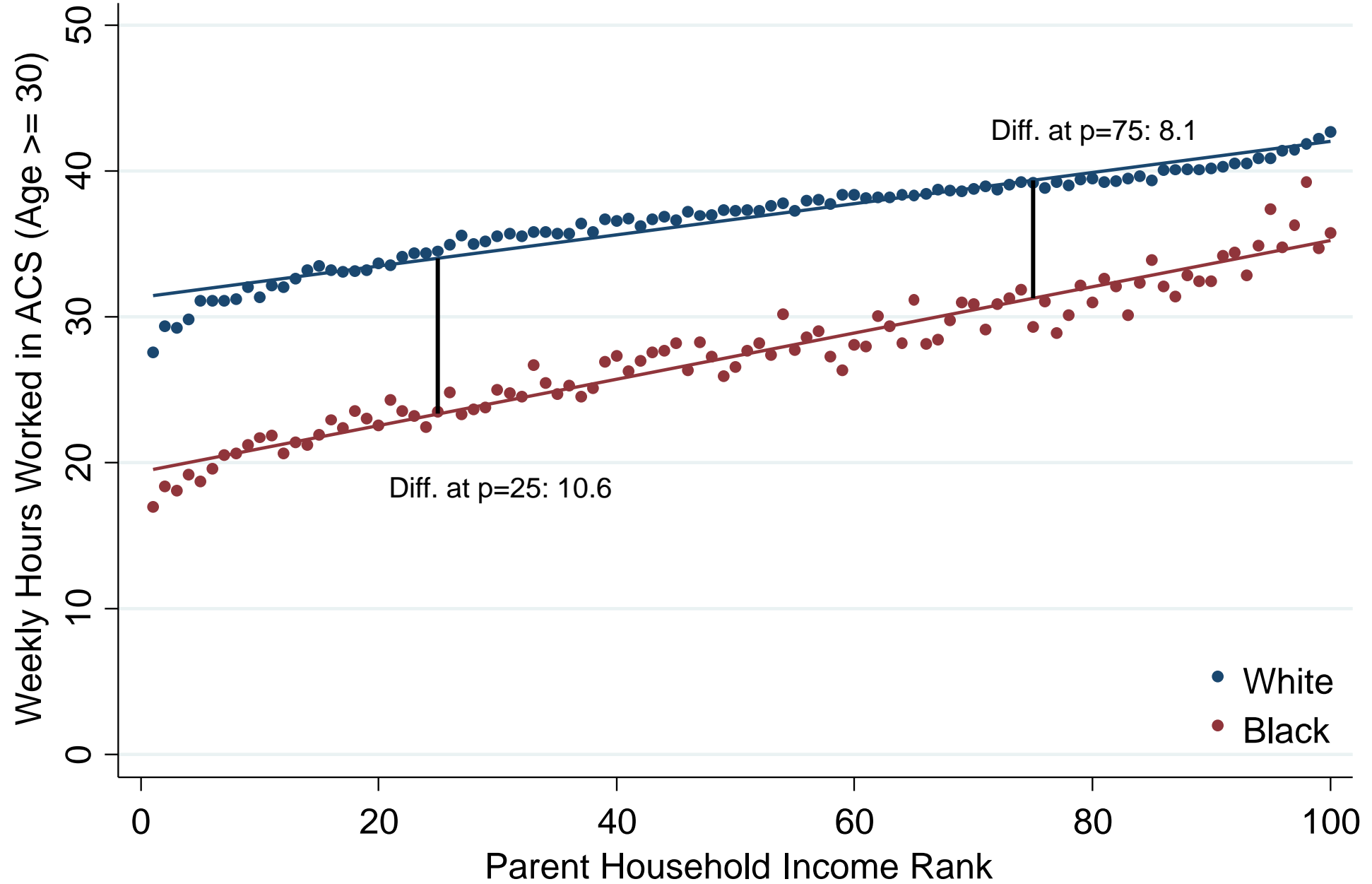


Density of Parent Household Income Ranks by Race



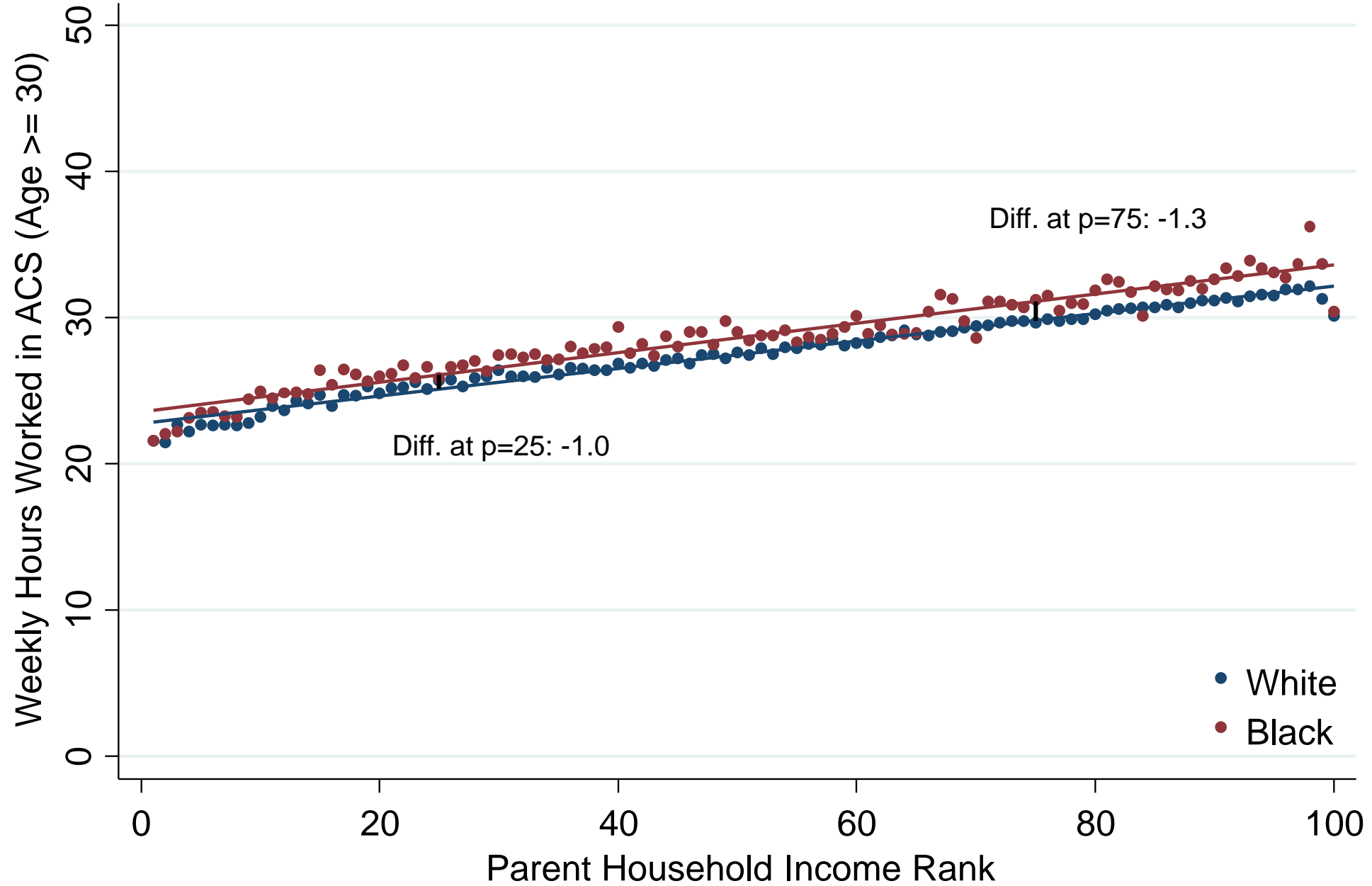
Hours Worked vs. Parent Income Rank

Male Children



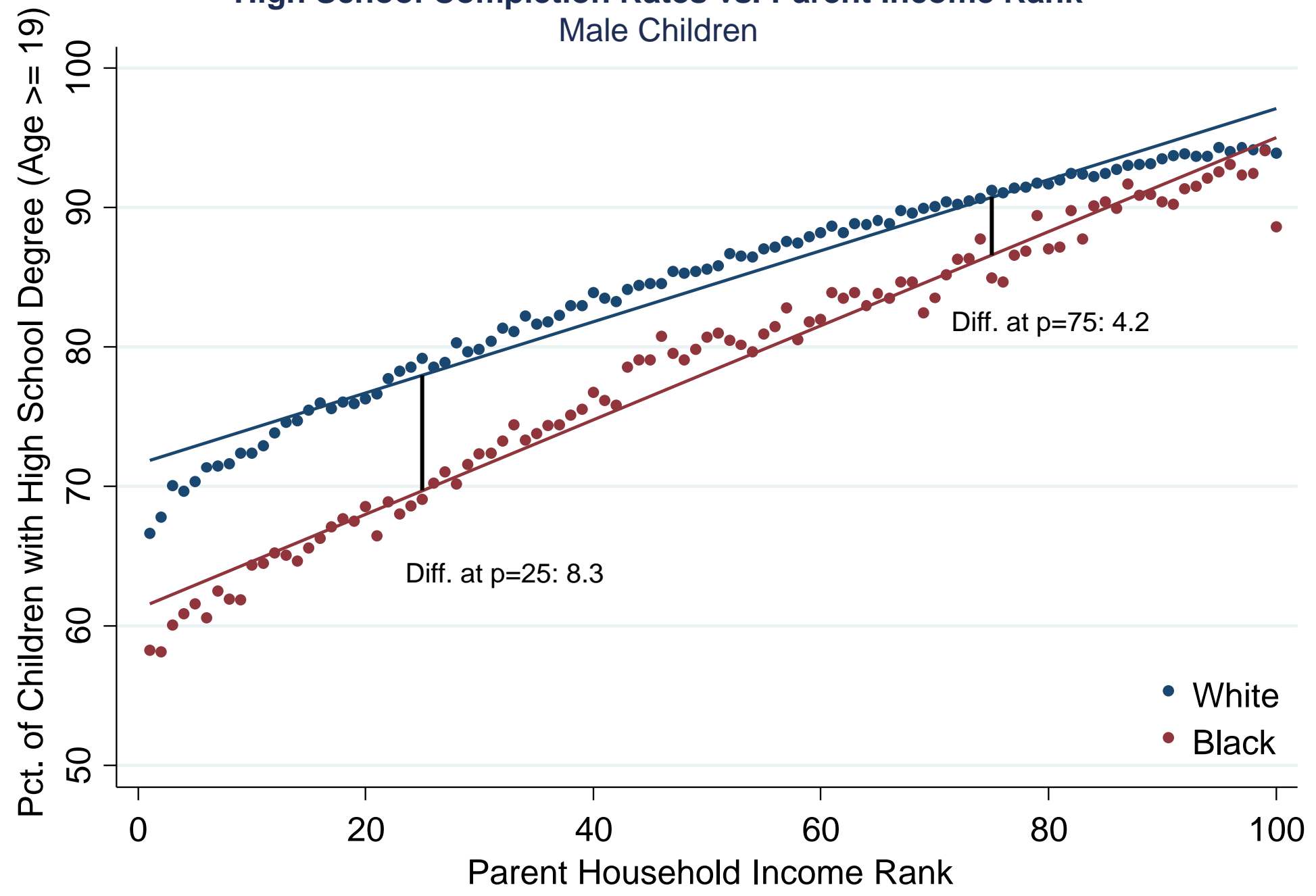
Hours Worked vs. Parent Income Rank

Female Children



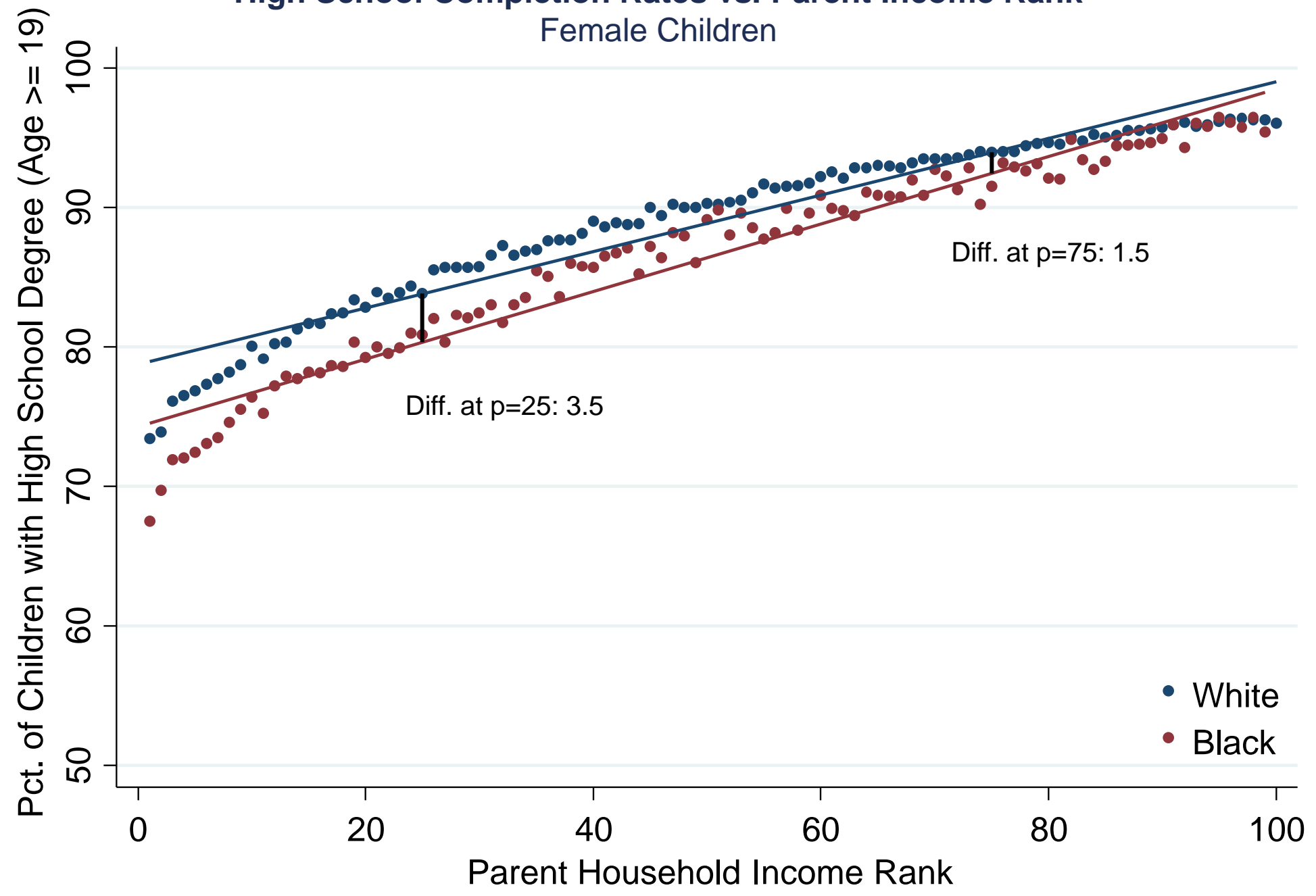
High School Completion Rates vs. Parent Income Rank

Male Children



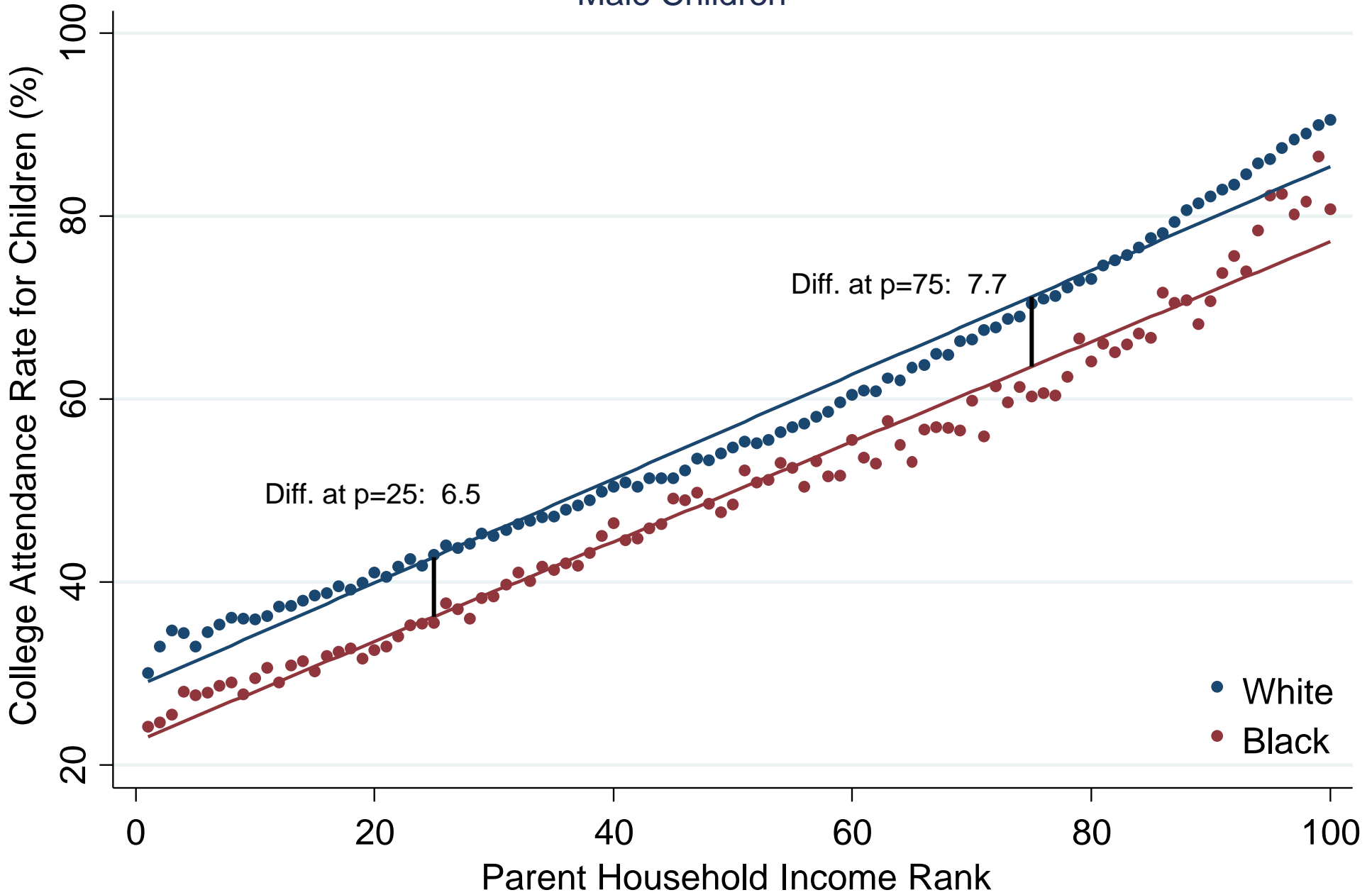
High School Completion Rates vs. Parent Income Rank

Female Children



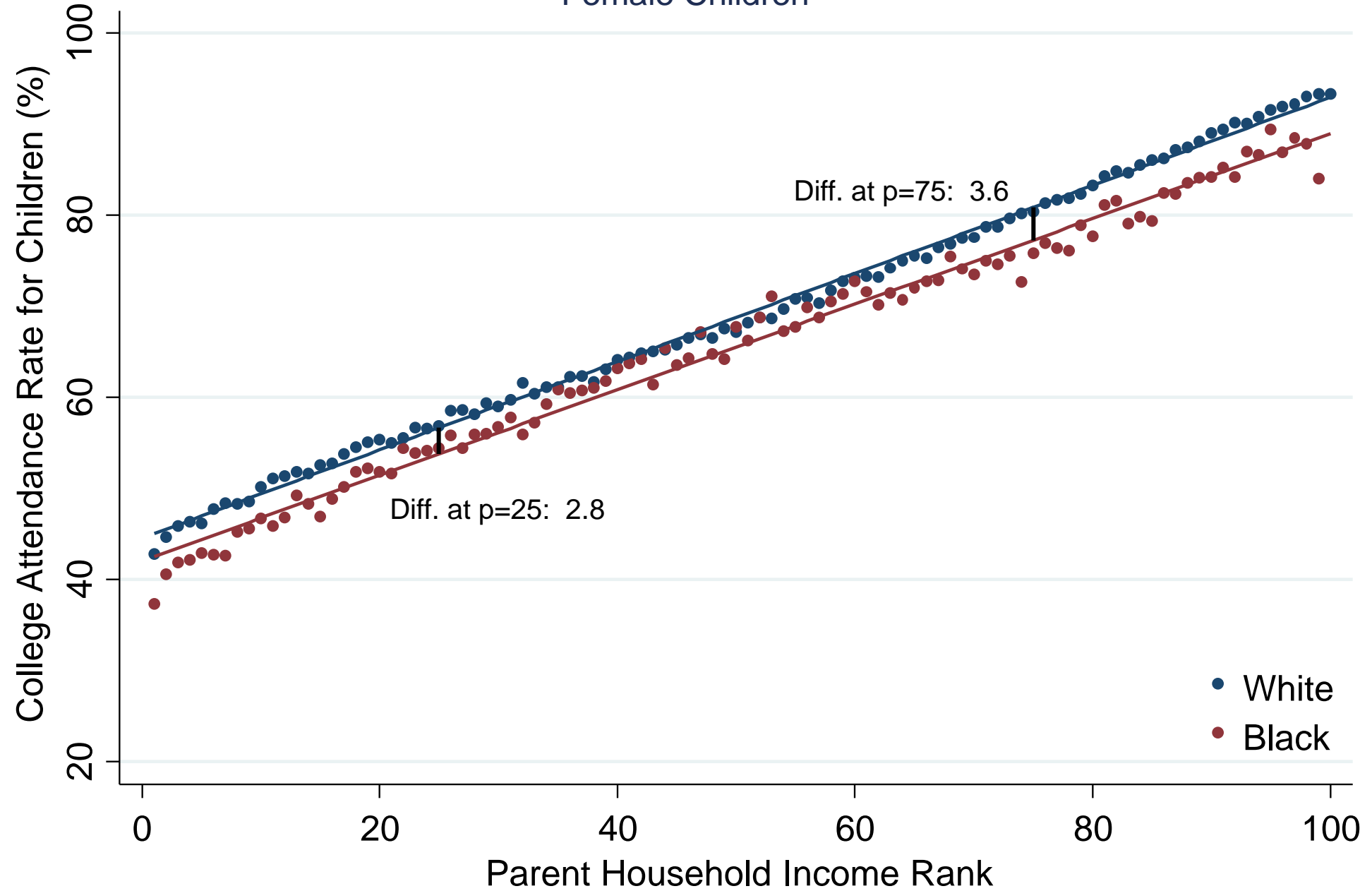
College Attendance Rates vs. Parent Income Rank

Male Children



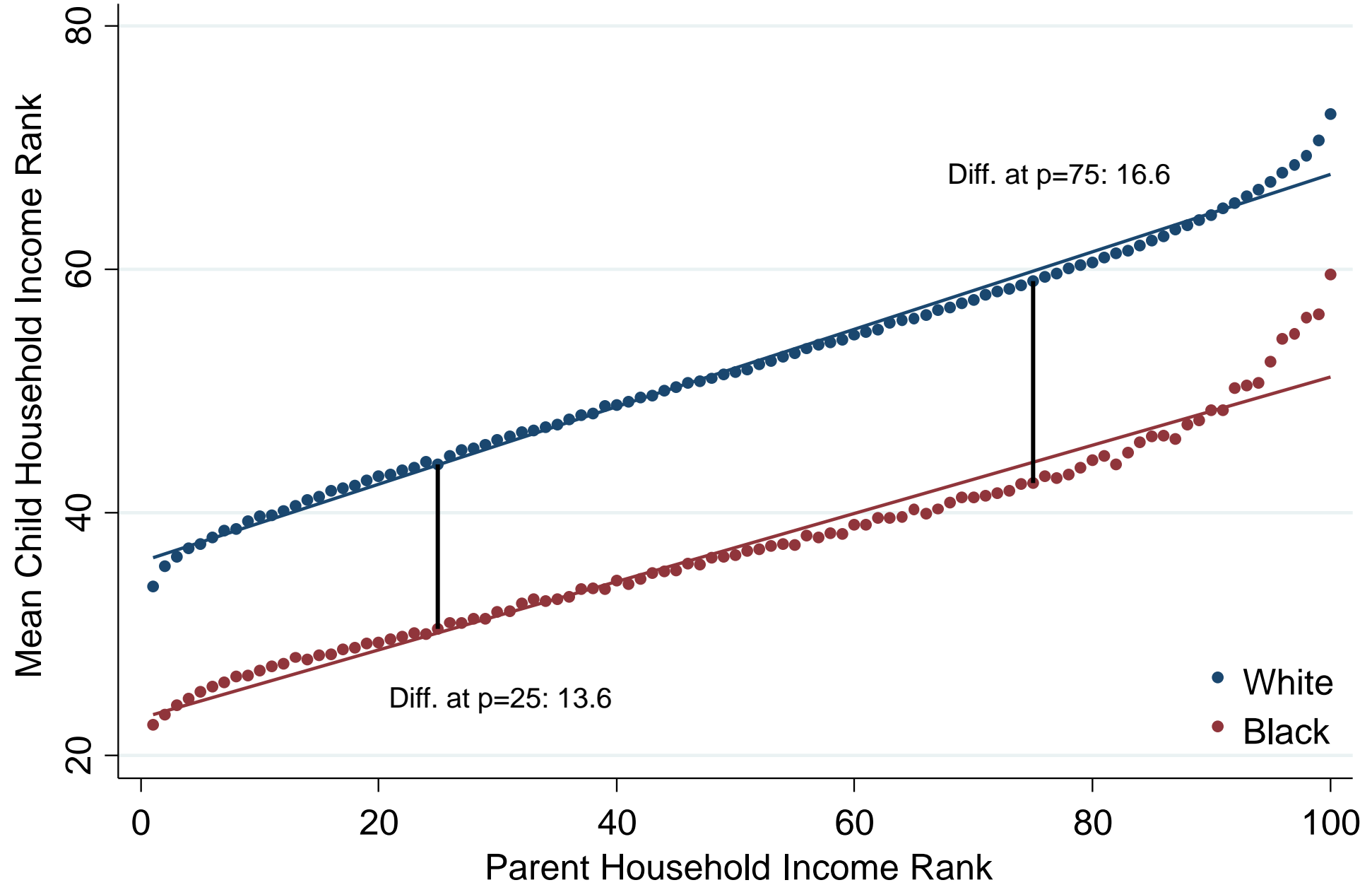
College Attendance Rates vs. Parent Income Rank

Female Children



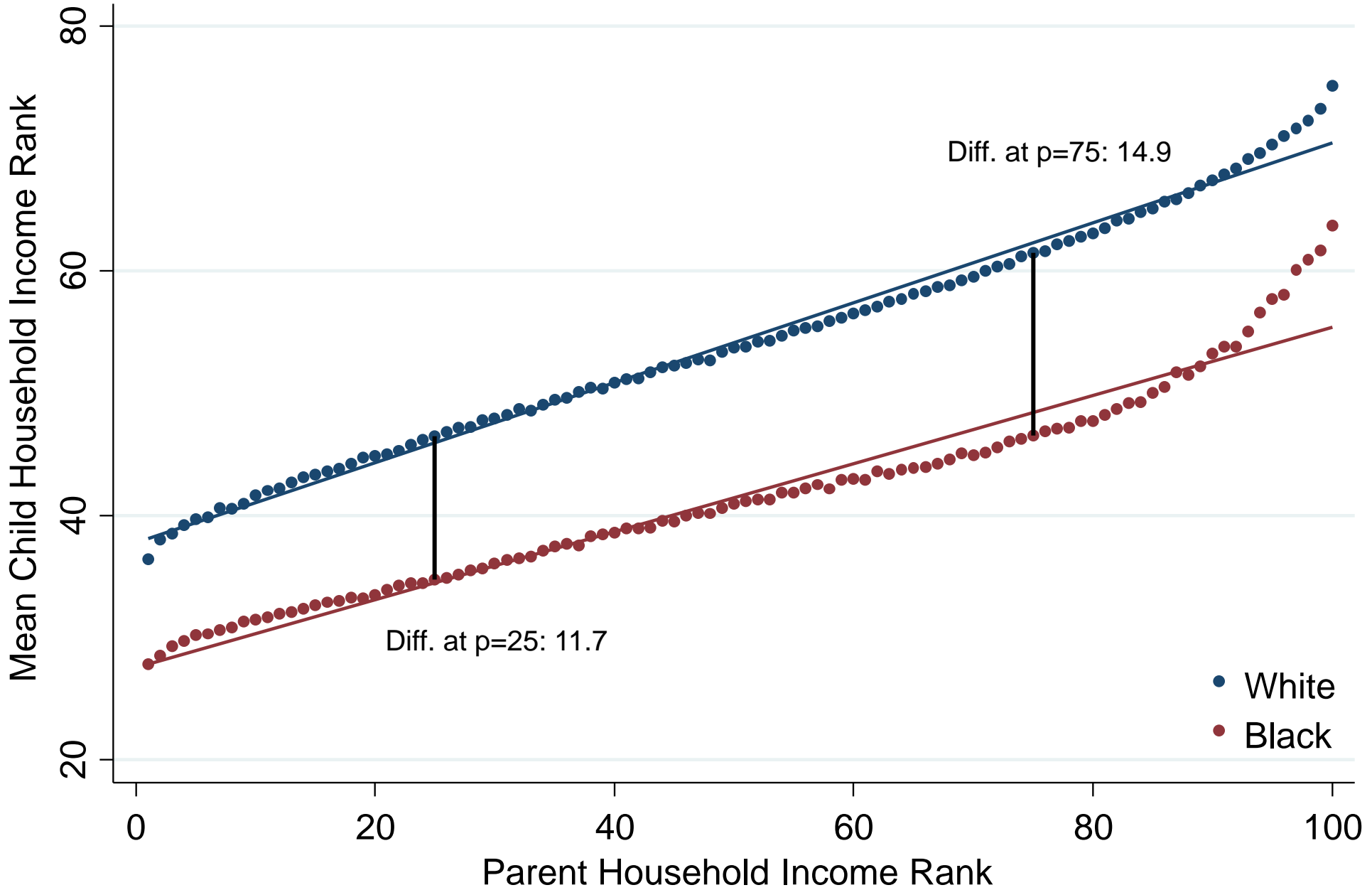
Household Income Rank vs. Parent Income Rank

Male Children



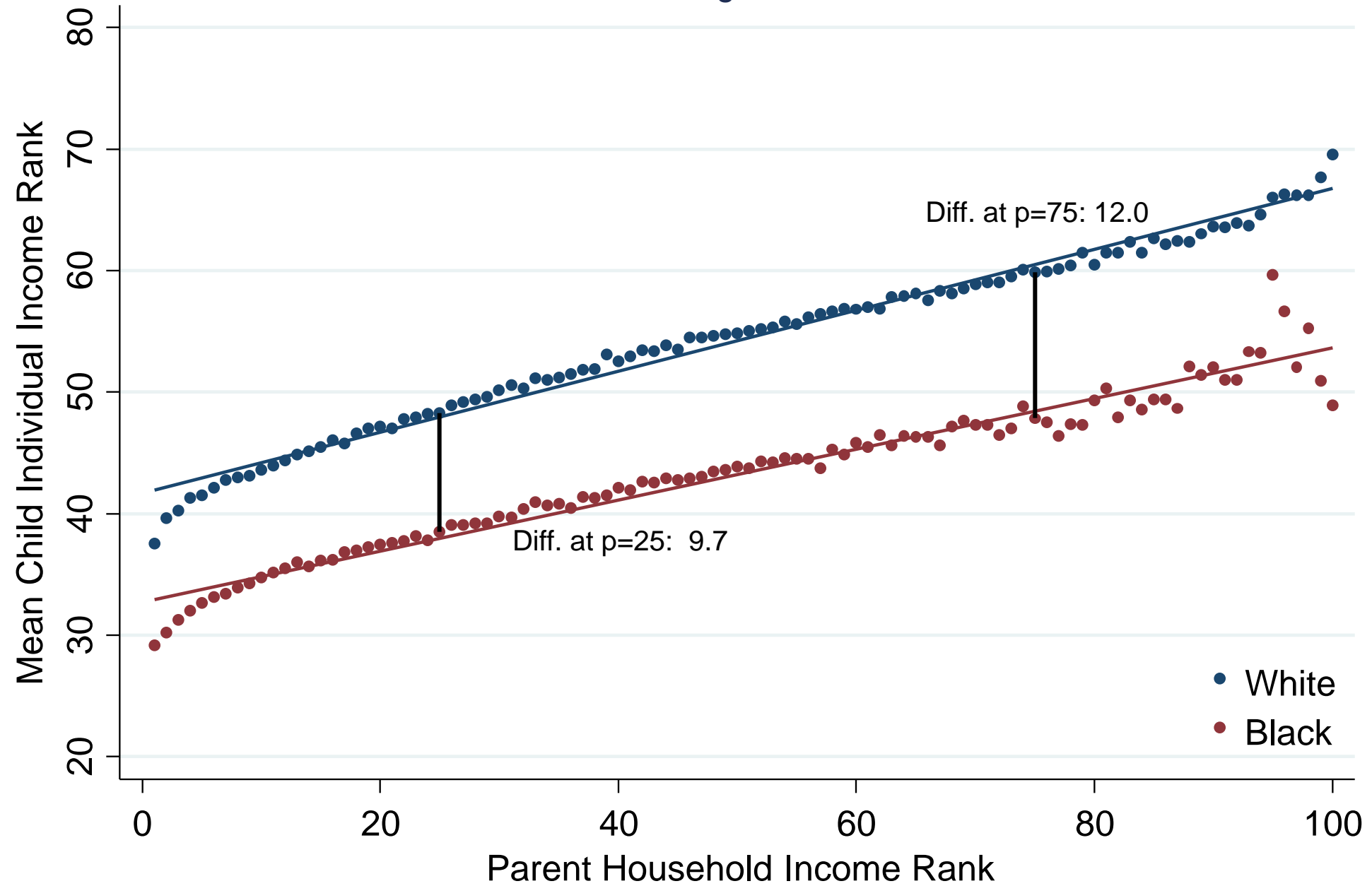
Household Income Rank vs. Parent Income Rank

Female Children



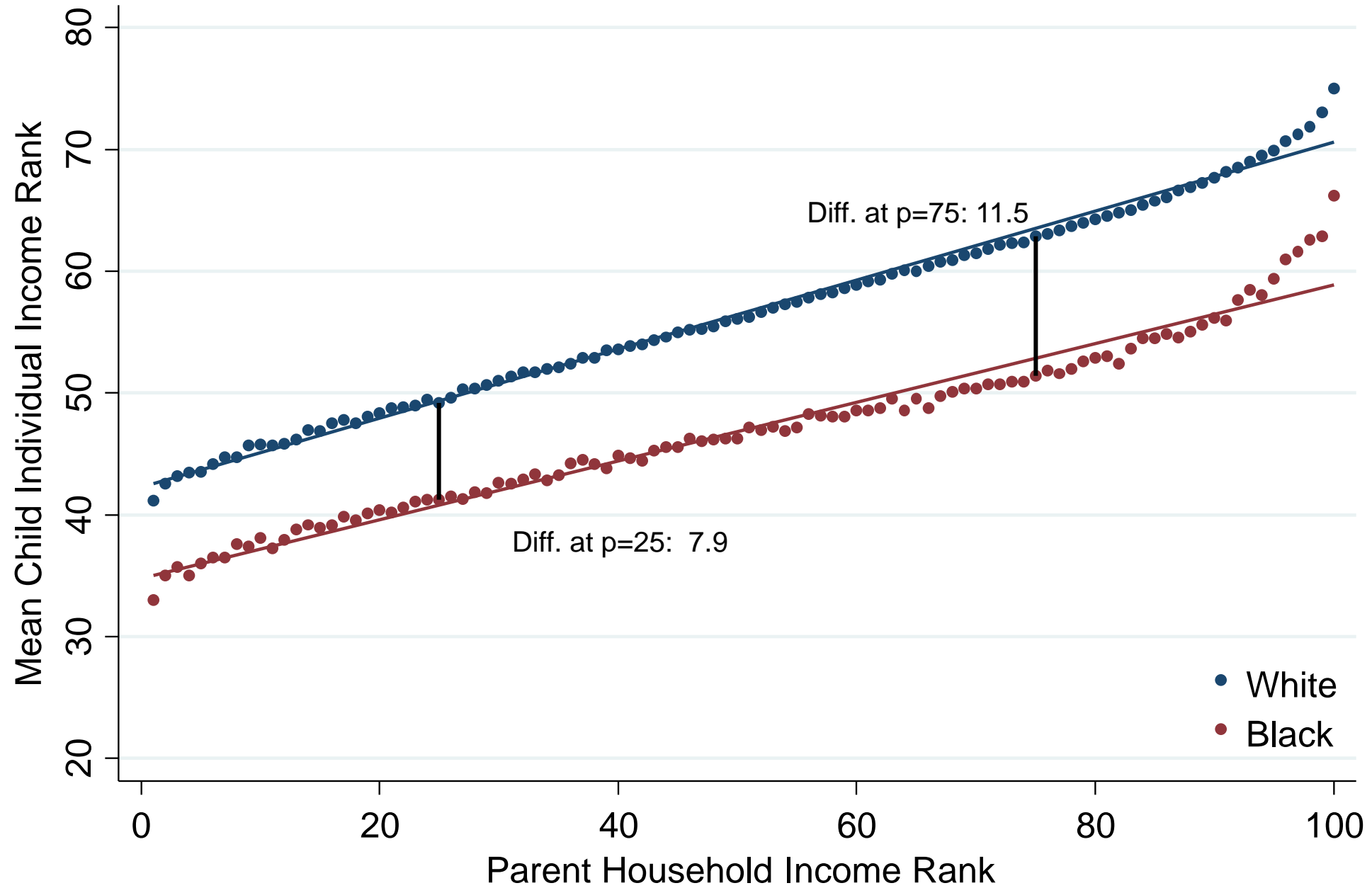
Black-White Gap in Child Individual Income Rank vs. Parent Income Rank

Male Children in Single-Parent Families



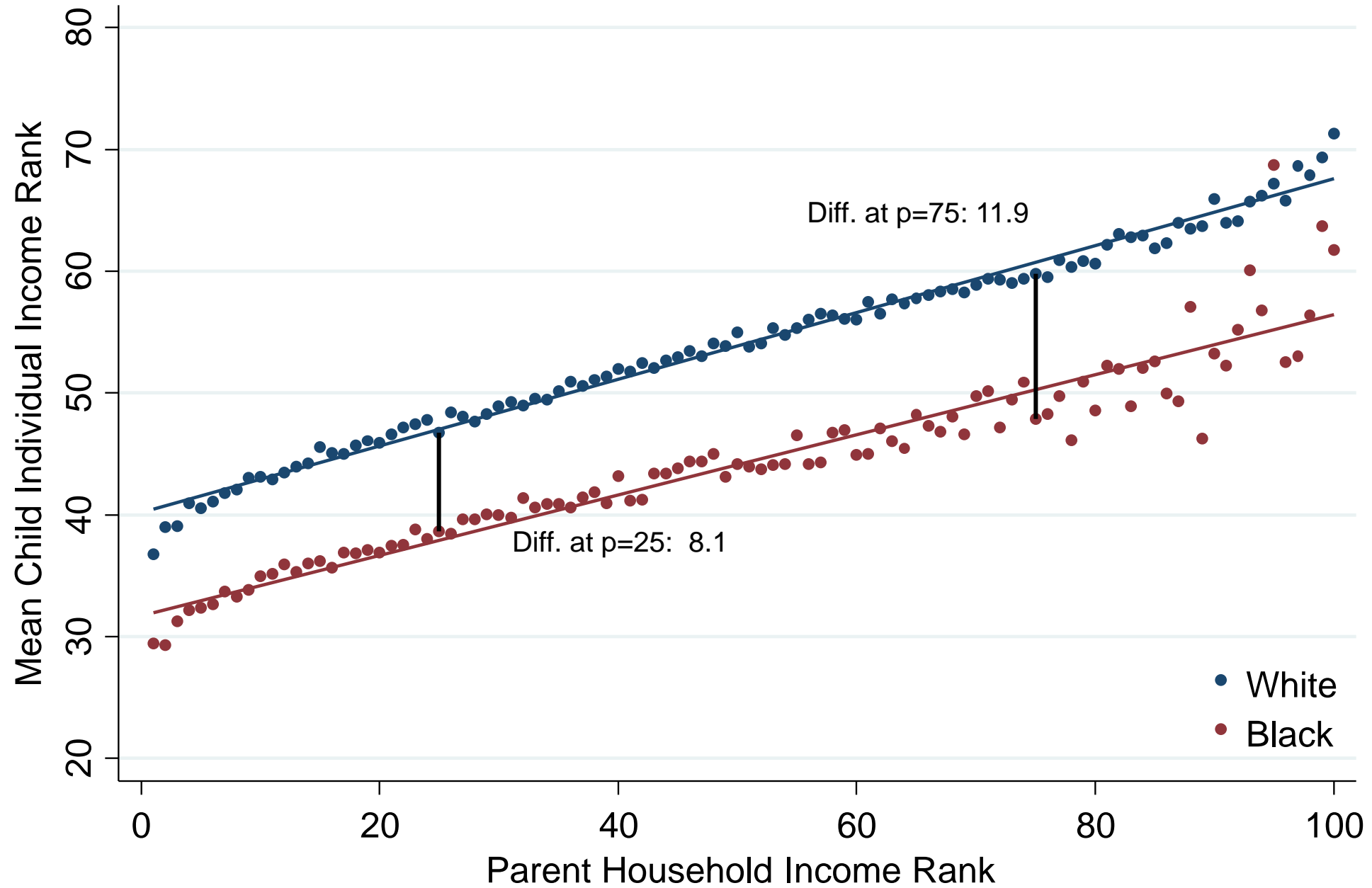
Black-White Gap in Child Individual Income Rank vs. Parent Income Rank

Male Children in Two-Parent Families



Black-White Gap in Child Individual Income Rank vs. Parent Income Rank

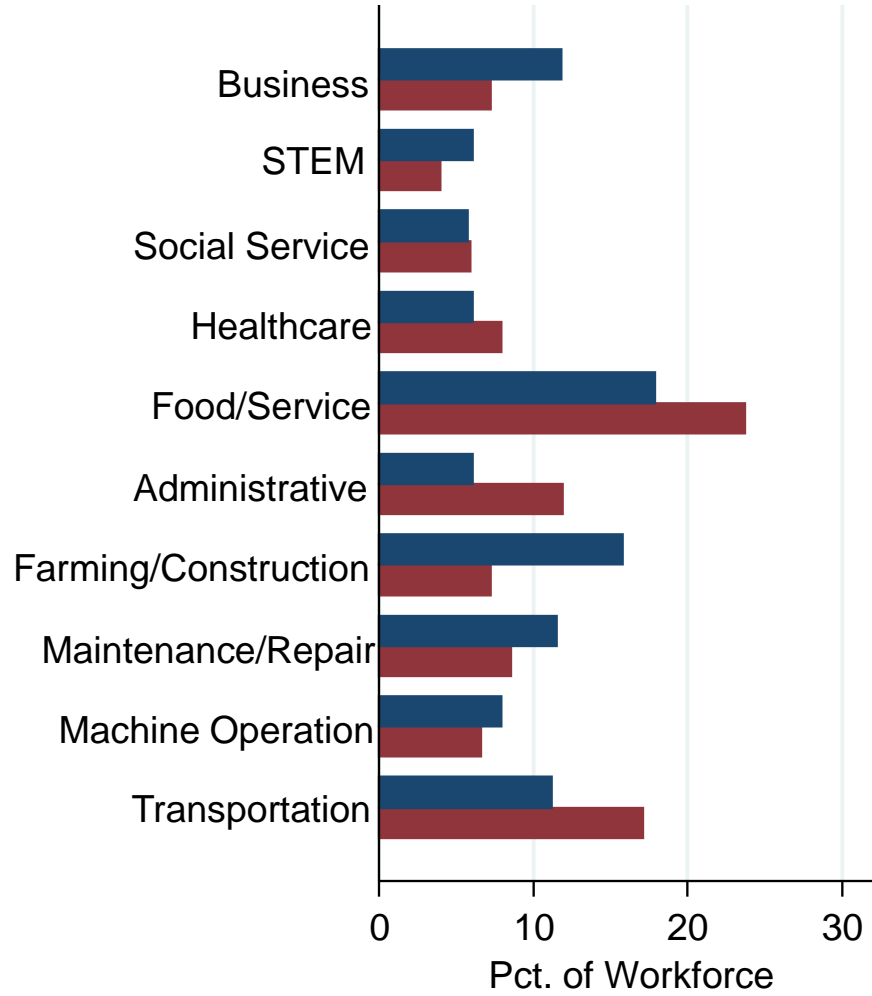
Male Children, Parents Do Not Own Home



Occupational Distributions Conditional on Parent Income, by Gender

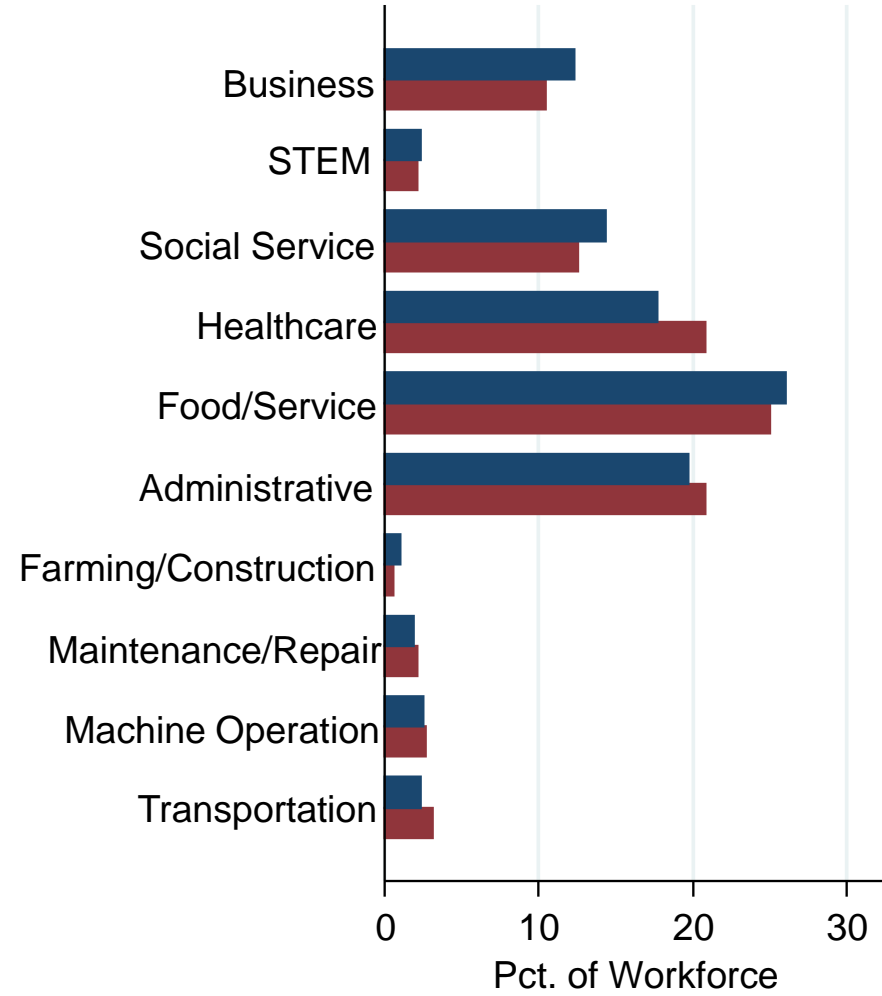
Black and White Children, Parents in 3rd Income Decile

Male



Fraction to Be Reallocated = 19.5%

Female



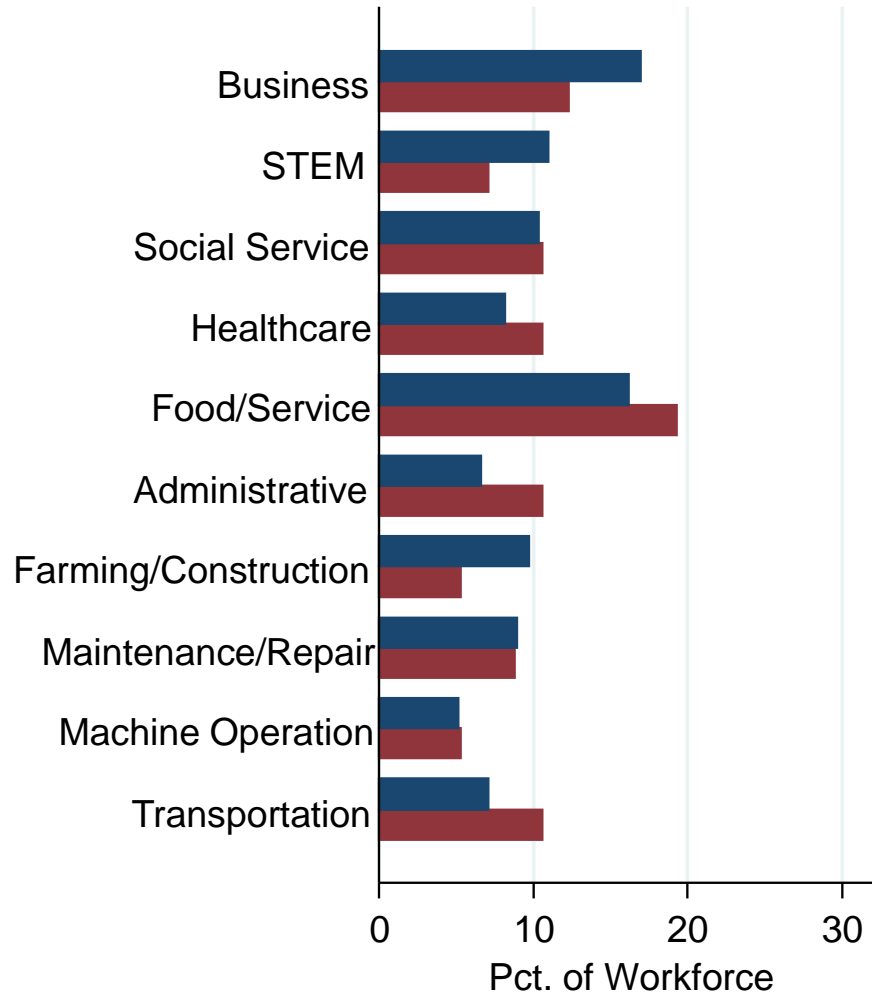
Fraction to Be Reallocated = 5.5%

White Black

Occupational Distributions Conditional on Parent Income, by Gender

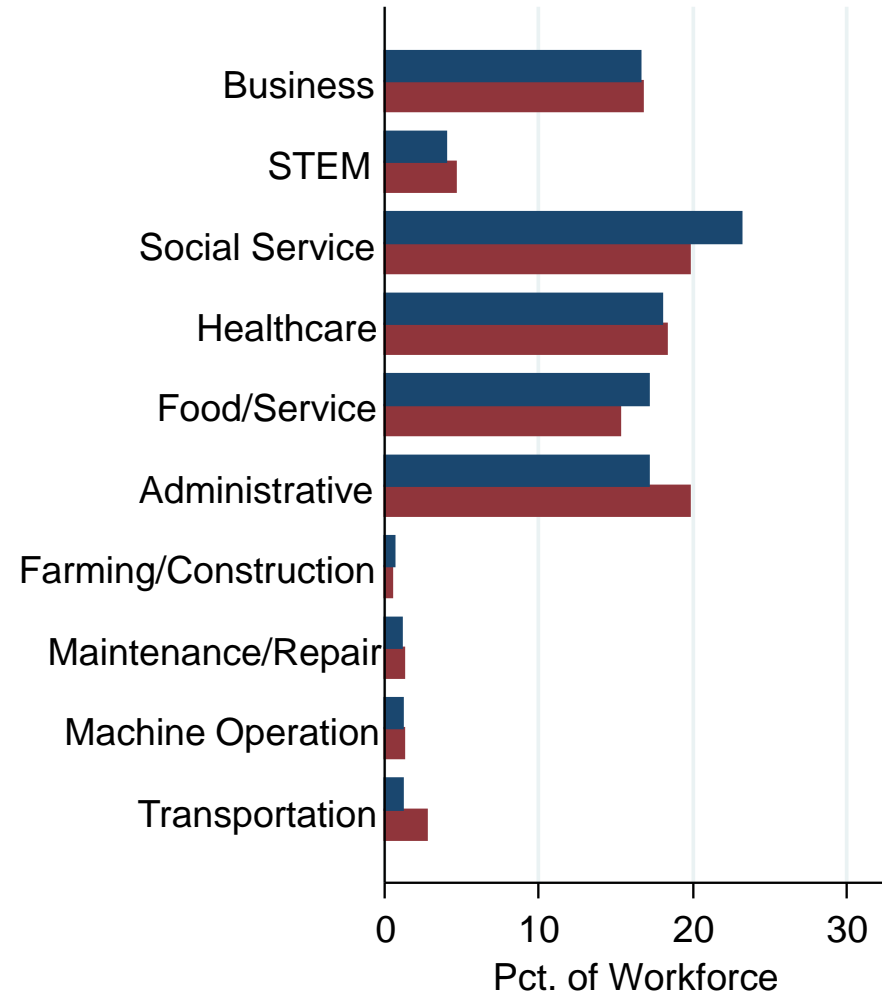
Black and White Children, Parents in 8th Income Decile

Male



Fraction to Be Reallocated = 13.2%

Female



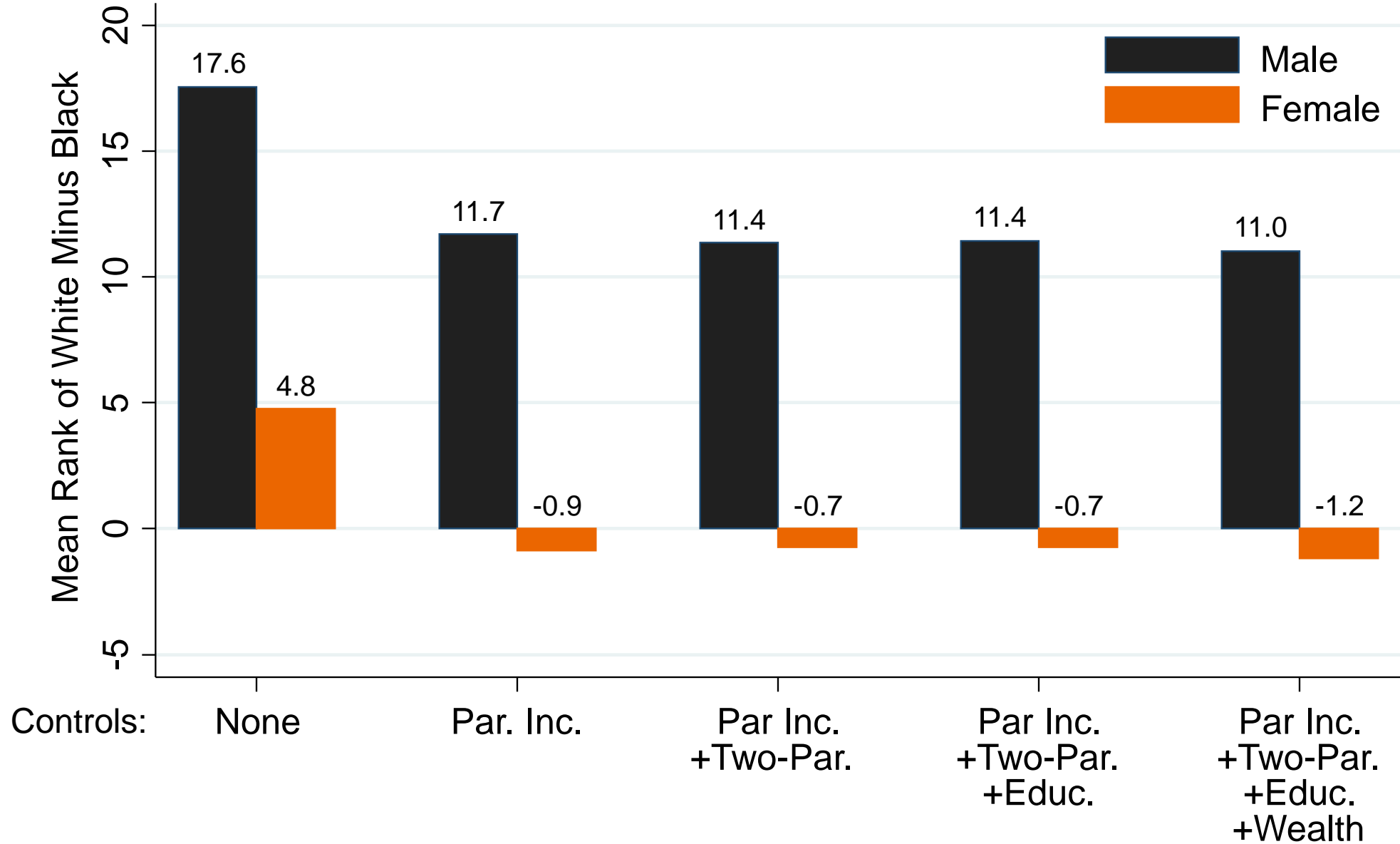
Fraction to Be Reallocated = 5.4%

White

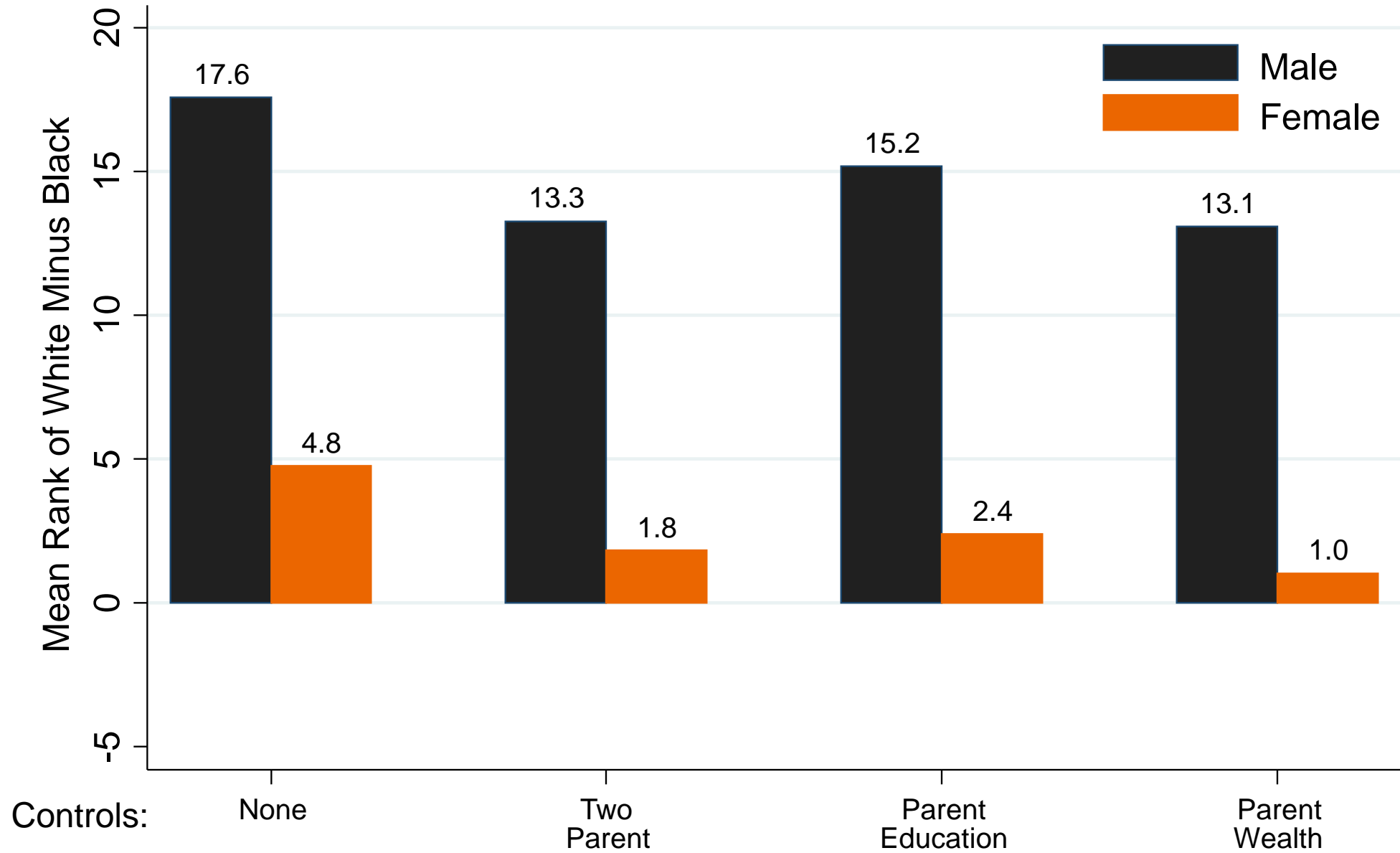
Black

Effects of Family-Level Factors on the Black-White Income Gap

Children with Parents at 75th Percentile

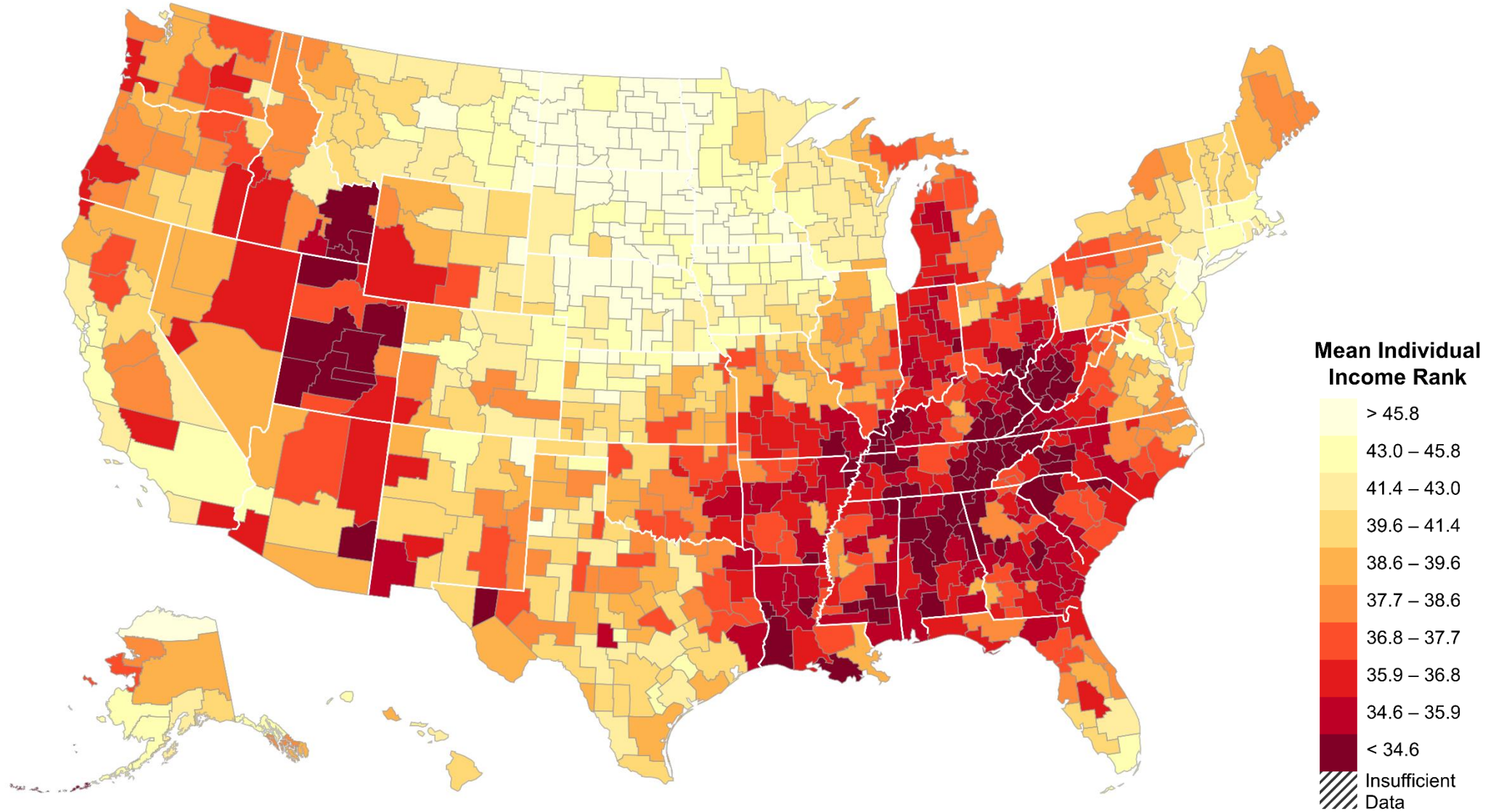


Effects of Family-Level Factors on the Unconditional Black-White Gap



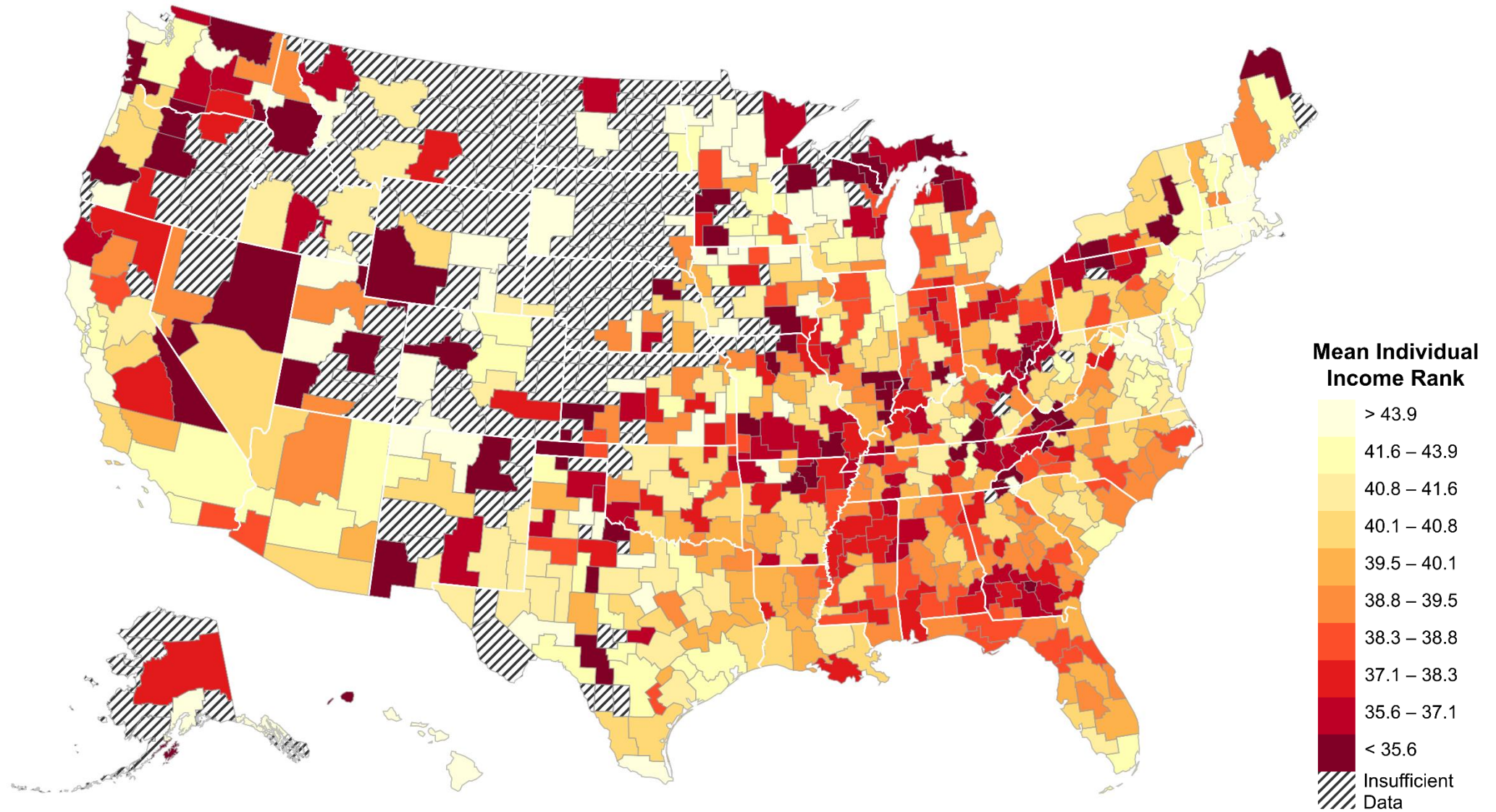
Mean Child Individual Income Rank by CZ

White Females with Parents at 25th Percentile

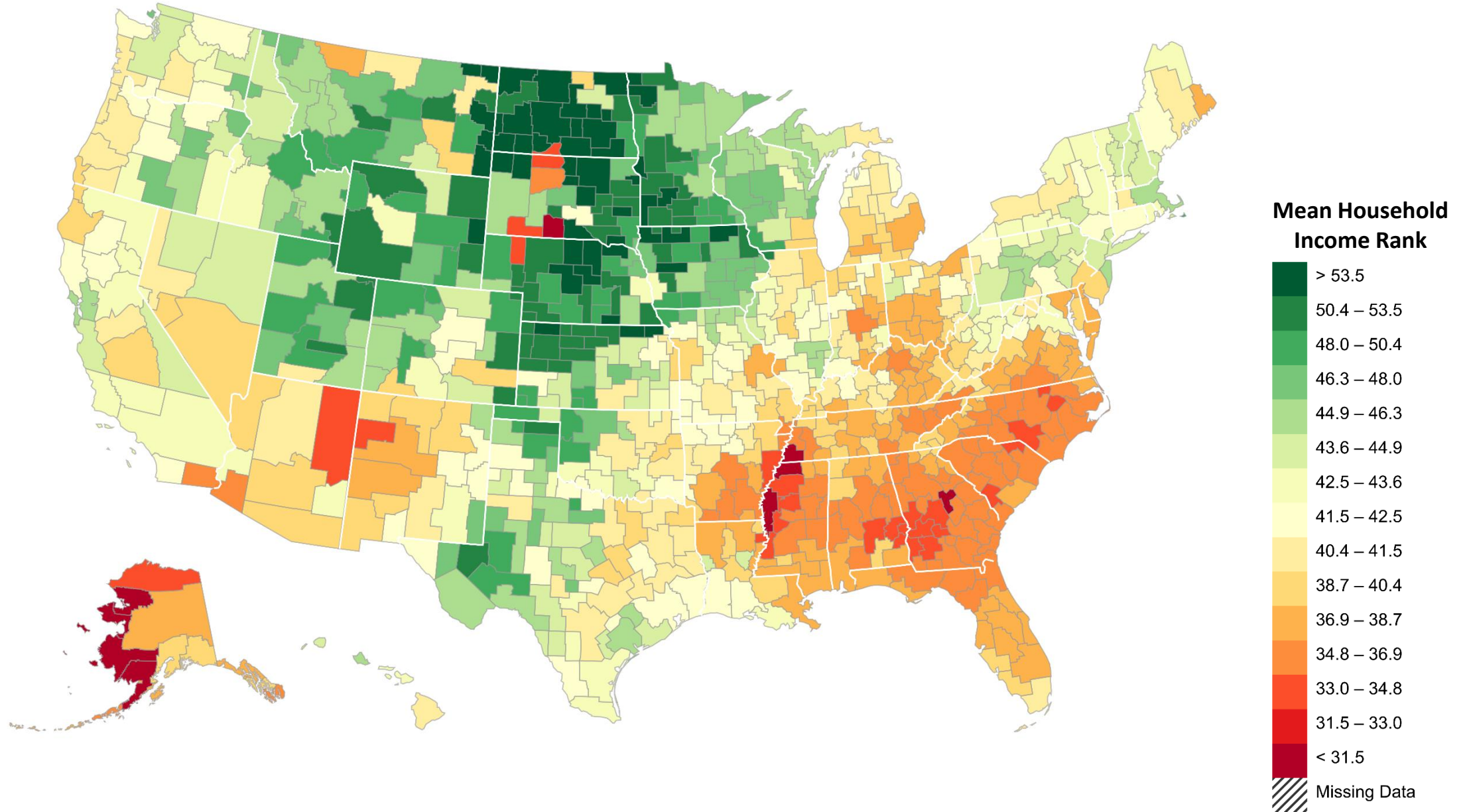


Mean Child Individual Income Rank by CZ

Black Females with Parents at 25th Percentile

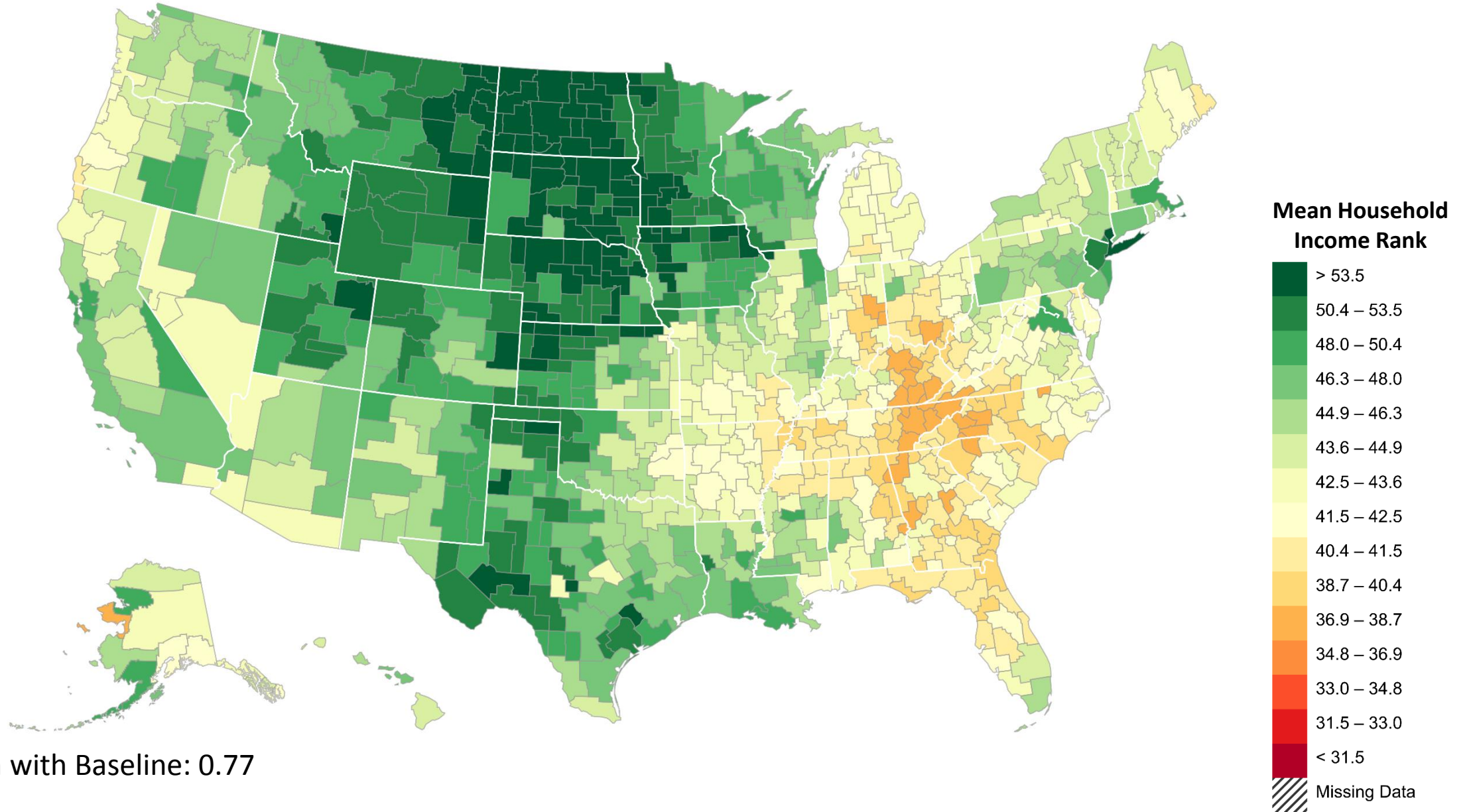


Mean Child Household Income Rank Given Parents at 25th Percentile by CZ Full Population

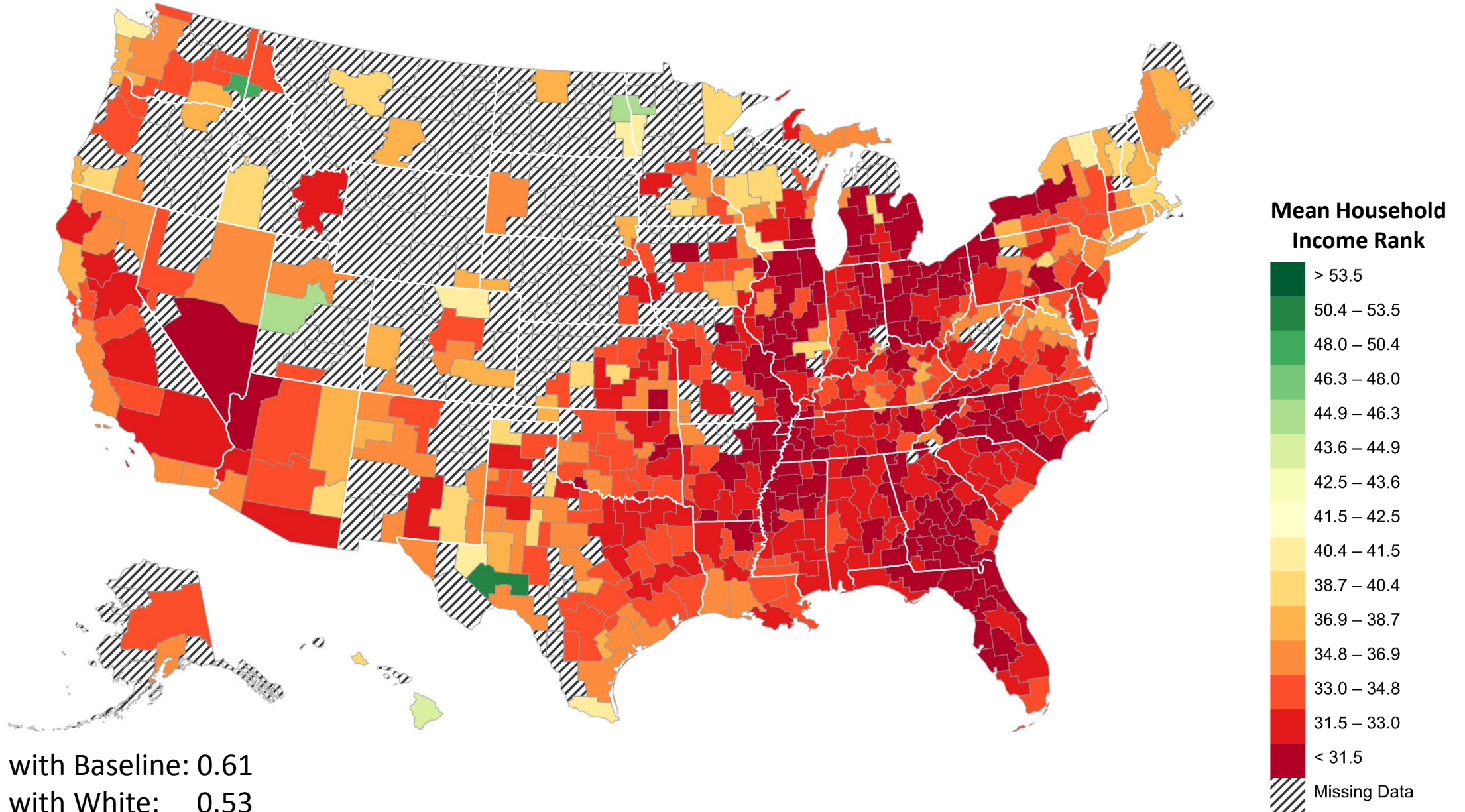


Mean Child Household Income Rank Given Parents at 25th Percentile by CZ

Whites



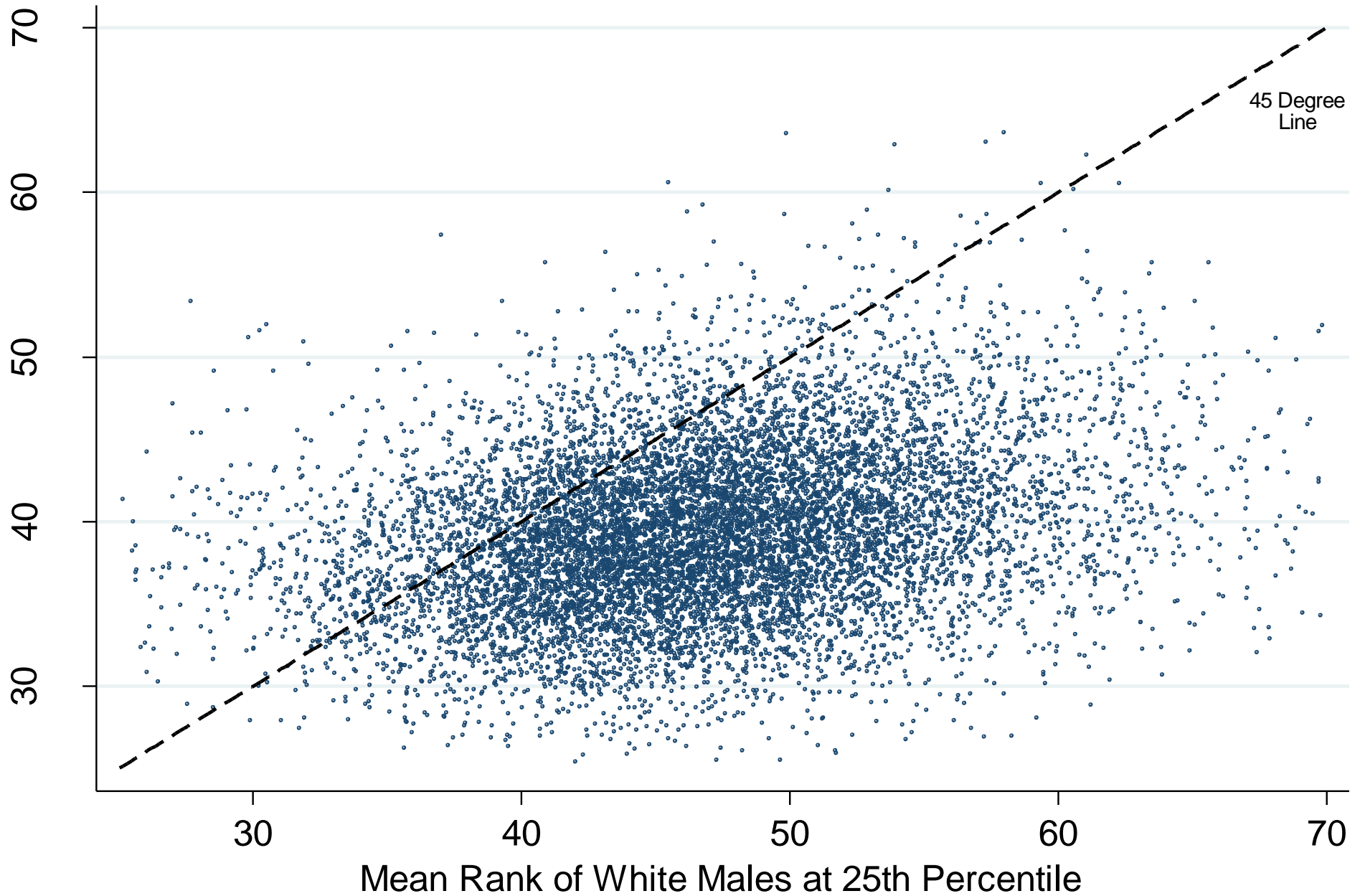
Mean Child Household Income Rank Given Parents at 25th Percentile by CZ Blacks



Correlation with Baseline: 0.61

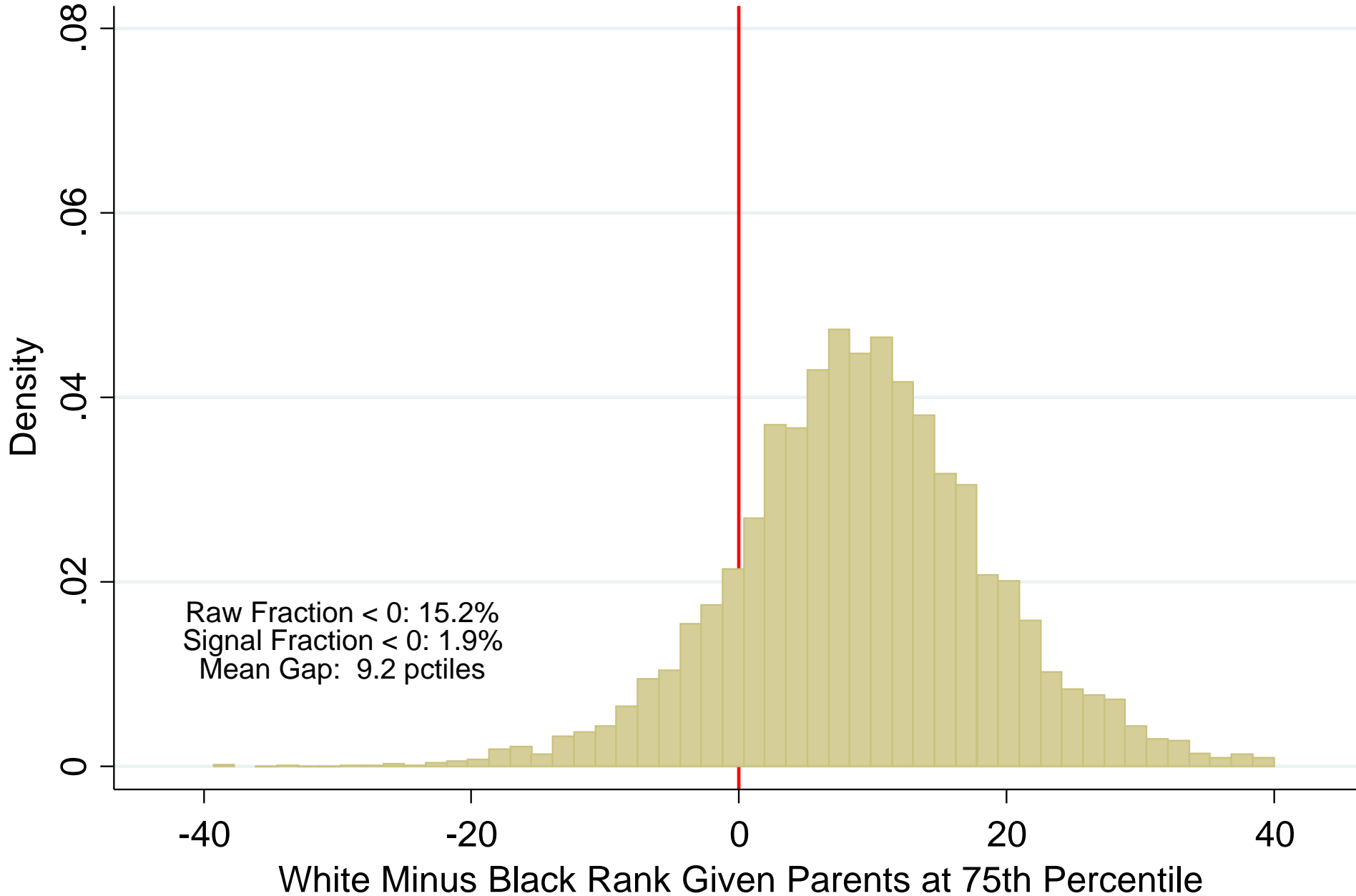
Correlation with White: 0.53

Mean Child Individual Income Rank for Males with Parents at 25th Percentile

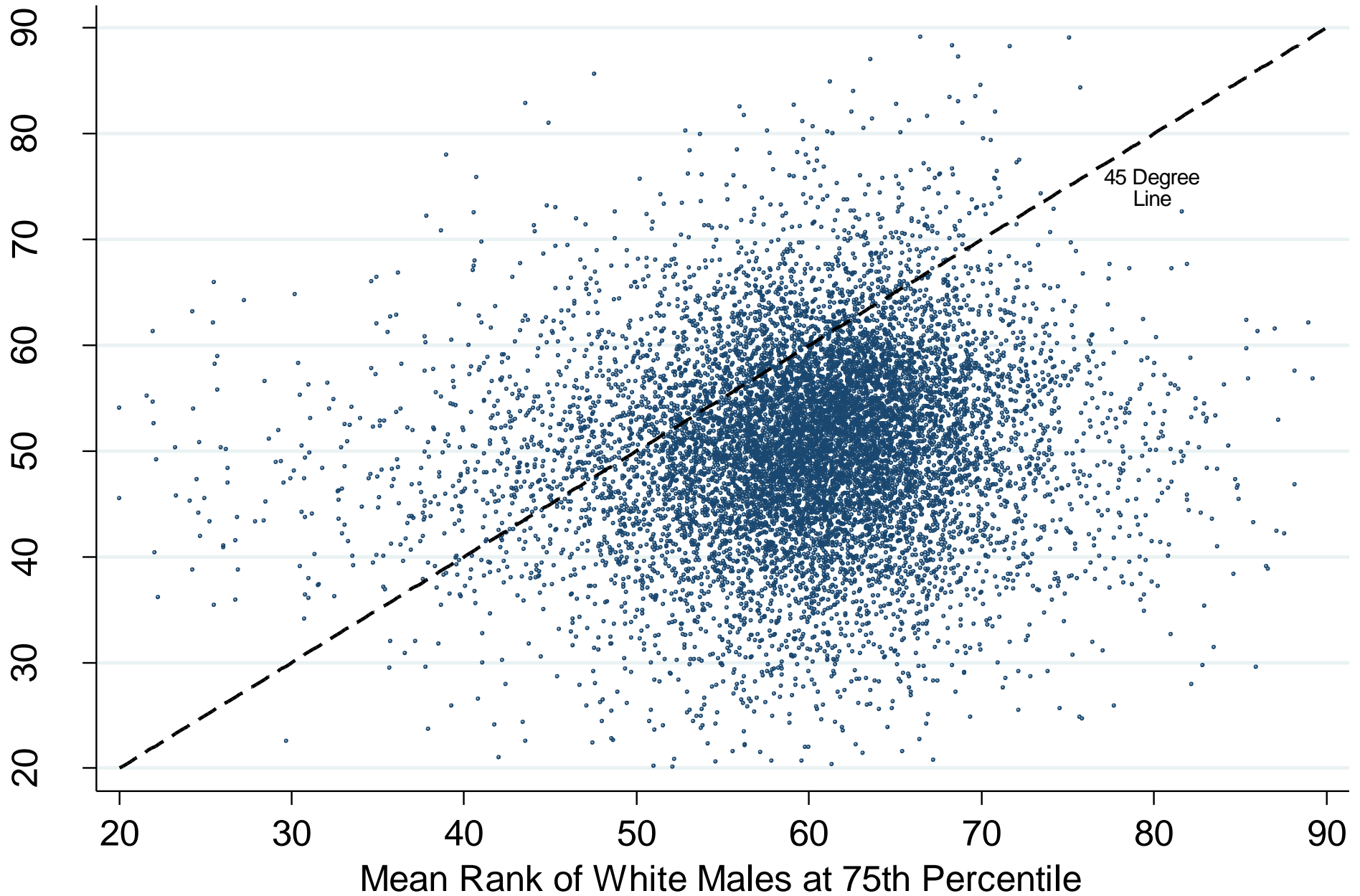


Distribution of Black – White Gap in Individual Ranks Across Tracts

Male Children with Parents at 75th Percentile

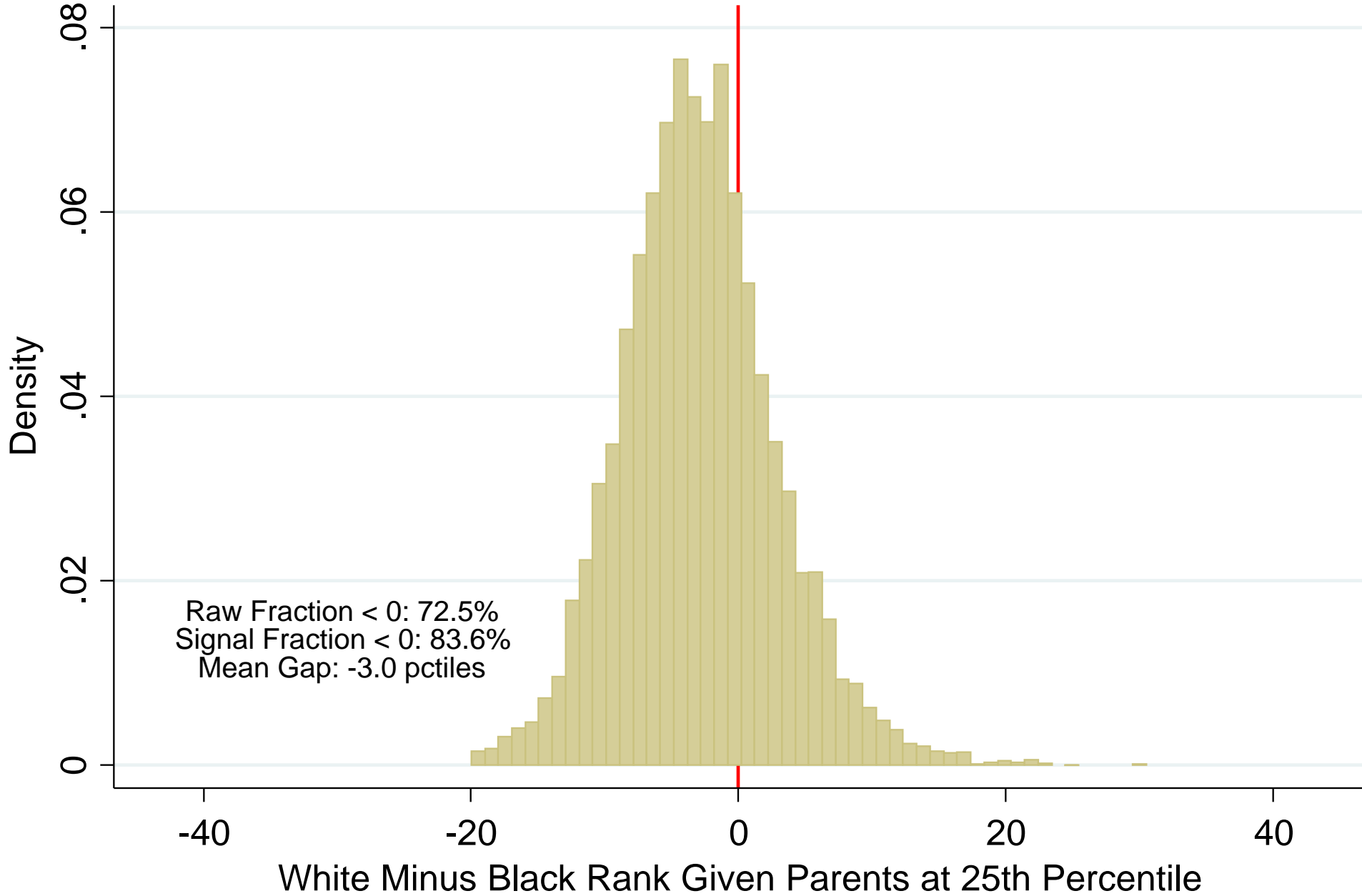


Mean Child Individual Income Rank for Males with Parents at 75th Percentile



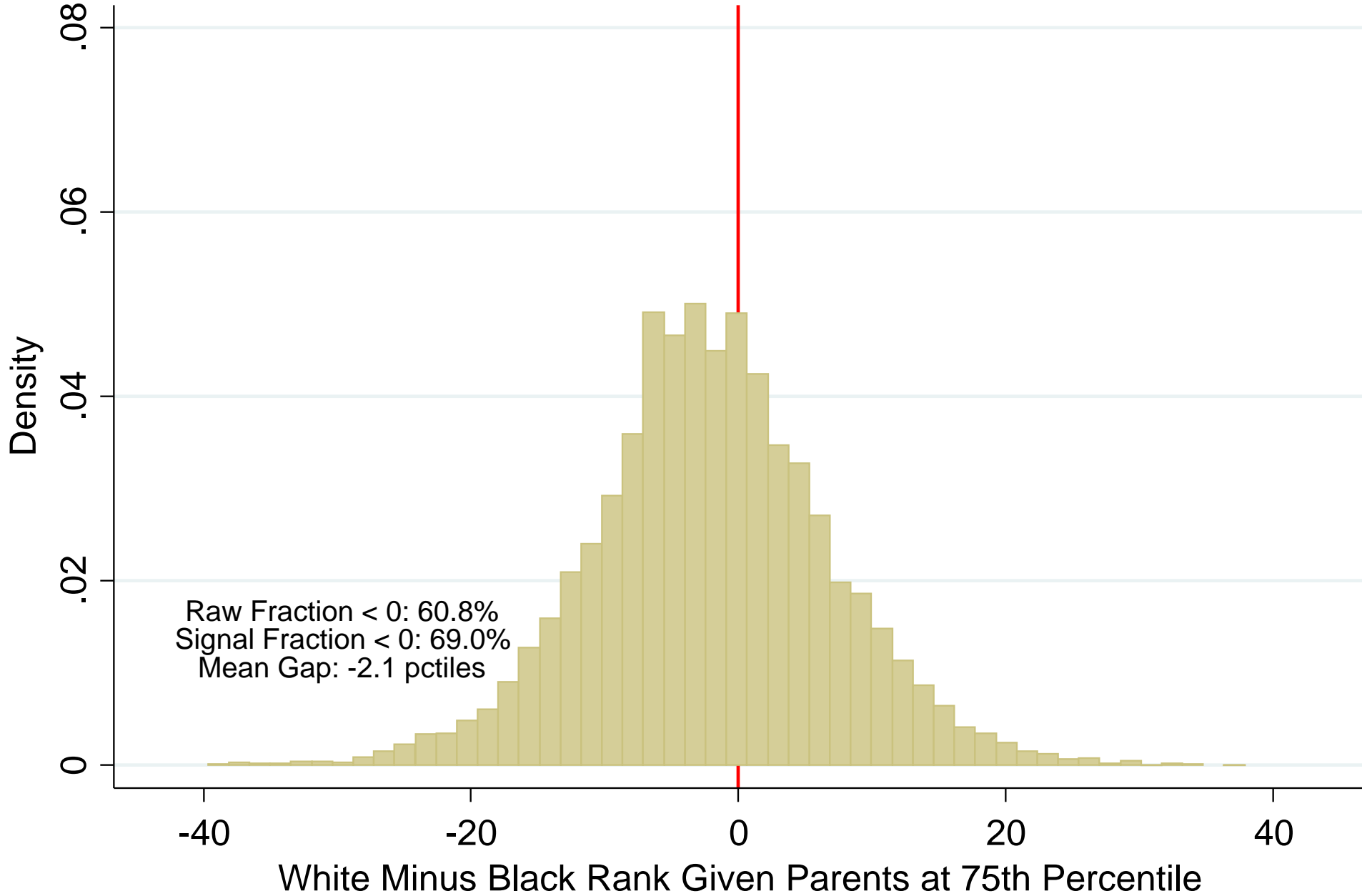
Distribution of Black – White Gap in Individual Ranks Across Tracts

Women Children with Parents at 25th Percentile



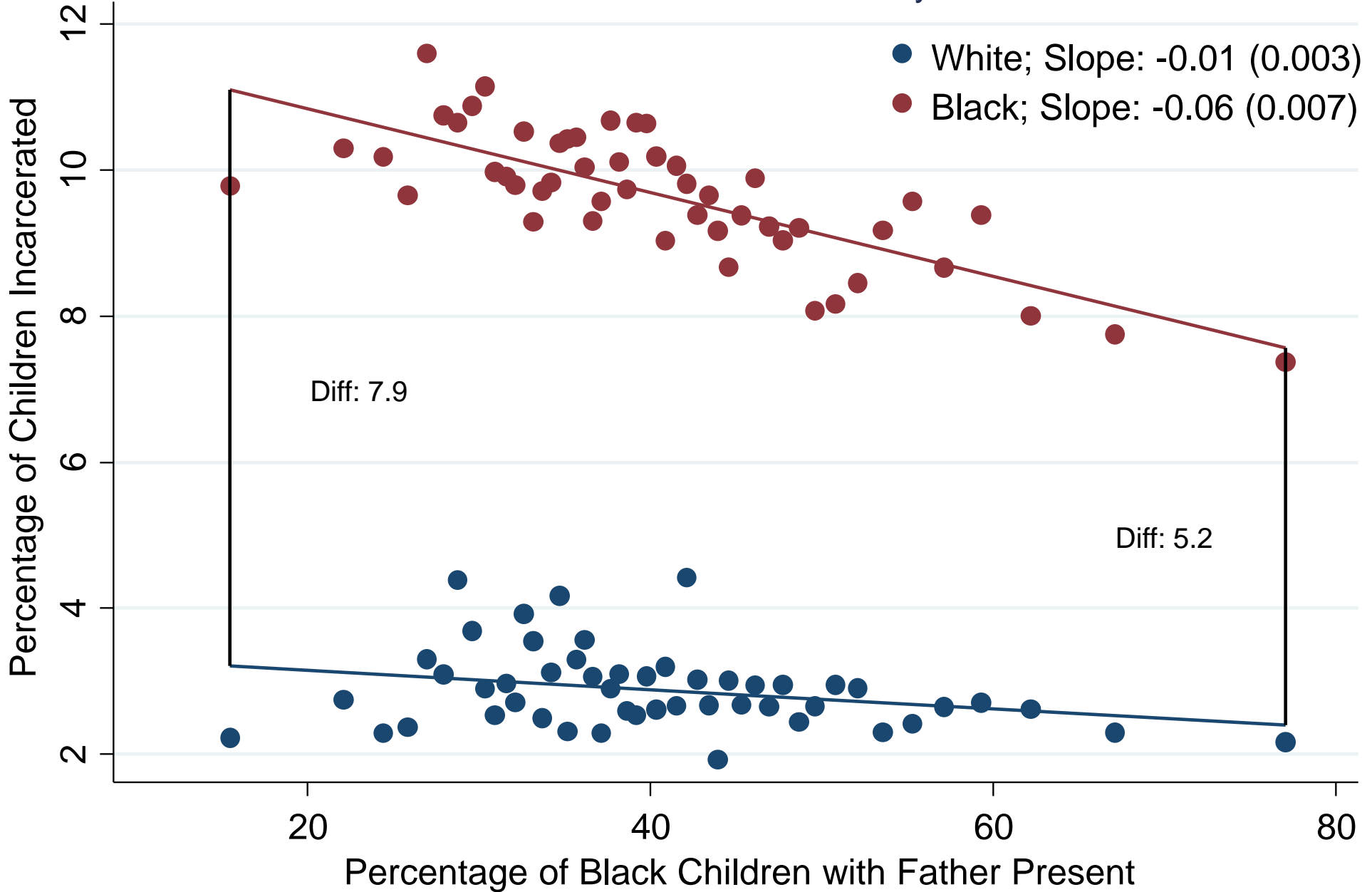
Distribution of Black – White Gap in Individual Ranks Across Tracts

Women Children with Parents at 75th Percentile



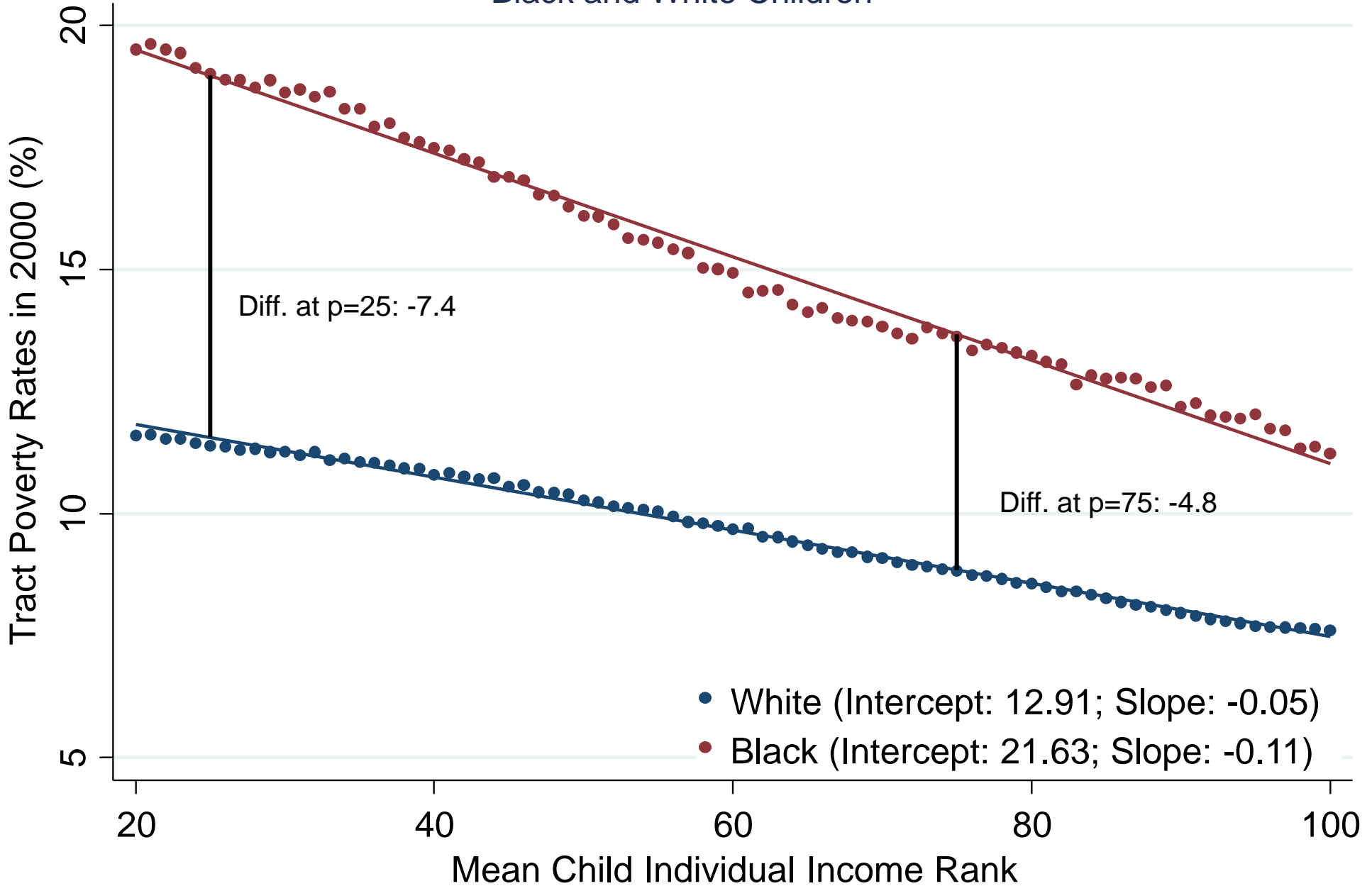
Black-White Gap in Incarceration Rate vs. Father Presence

Male Children with Parents at 25th Percentile - Poverty Share Less than 10%



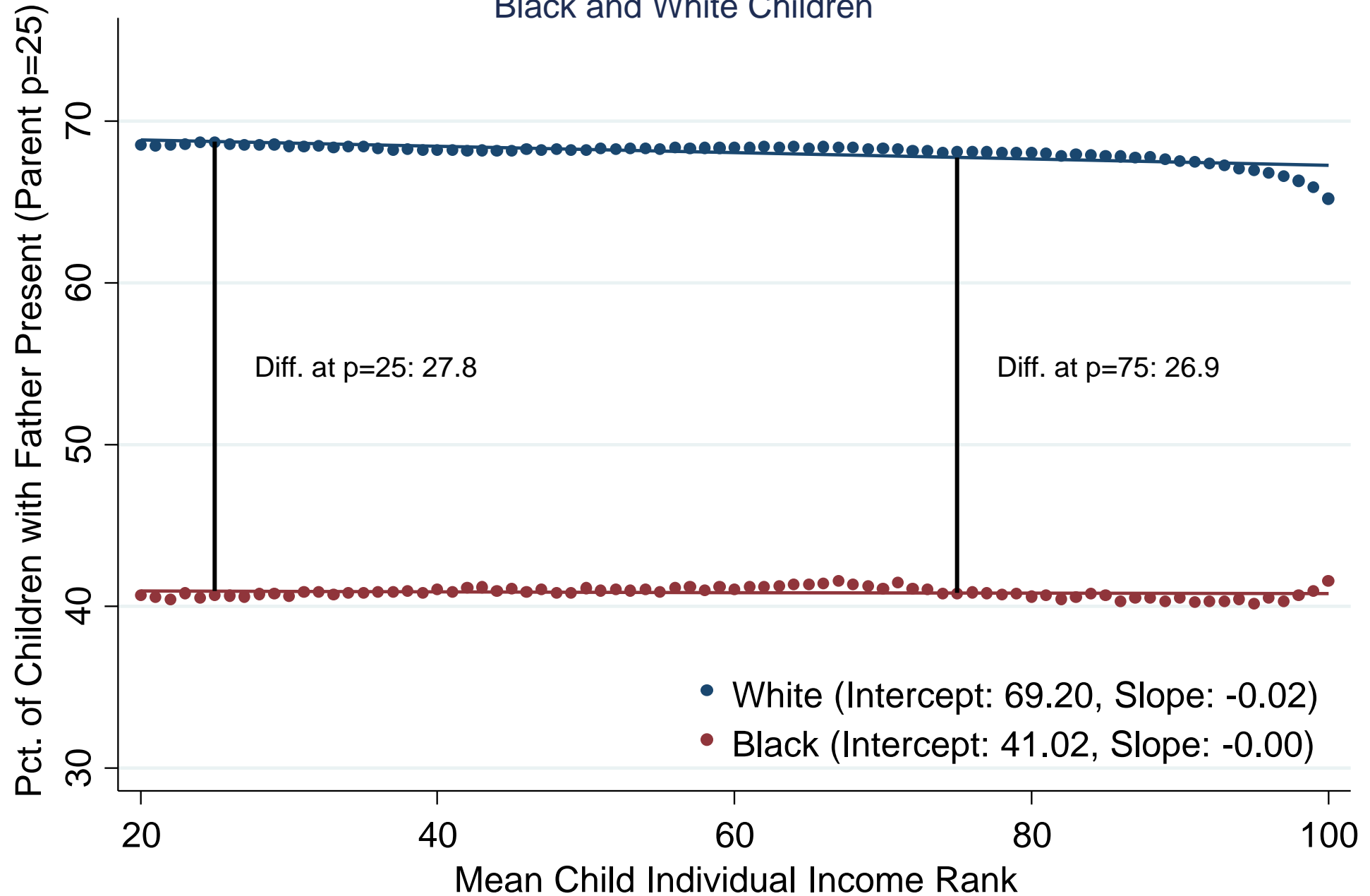
Tract Poverty Rates vs. Mean Child Individual Rank

Black and White Children

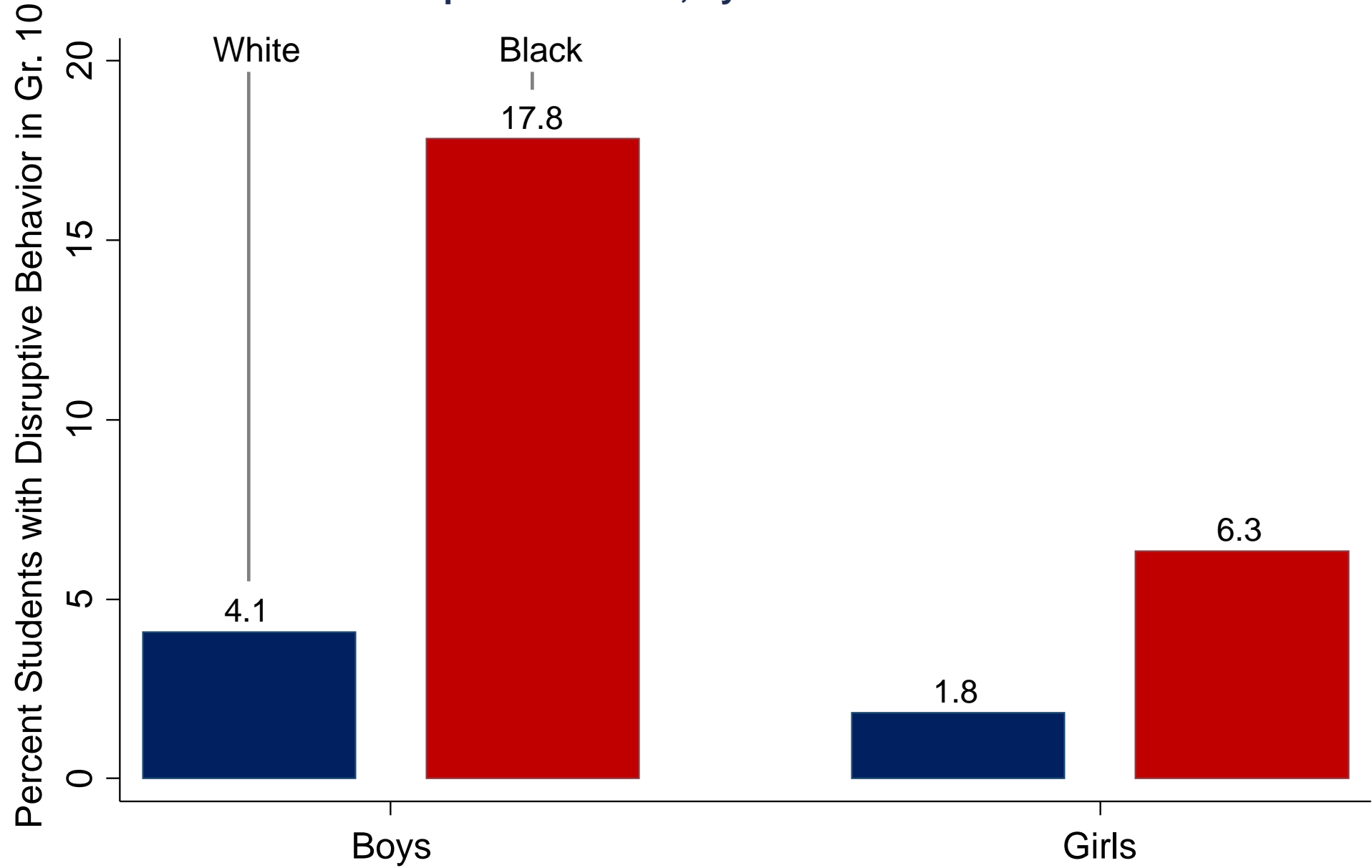


Fraction of Kids with Father Present vs. Individual Income Rank

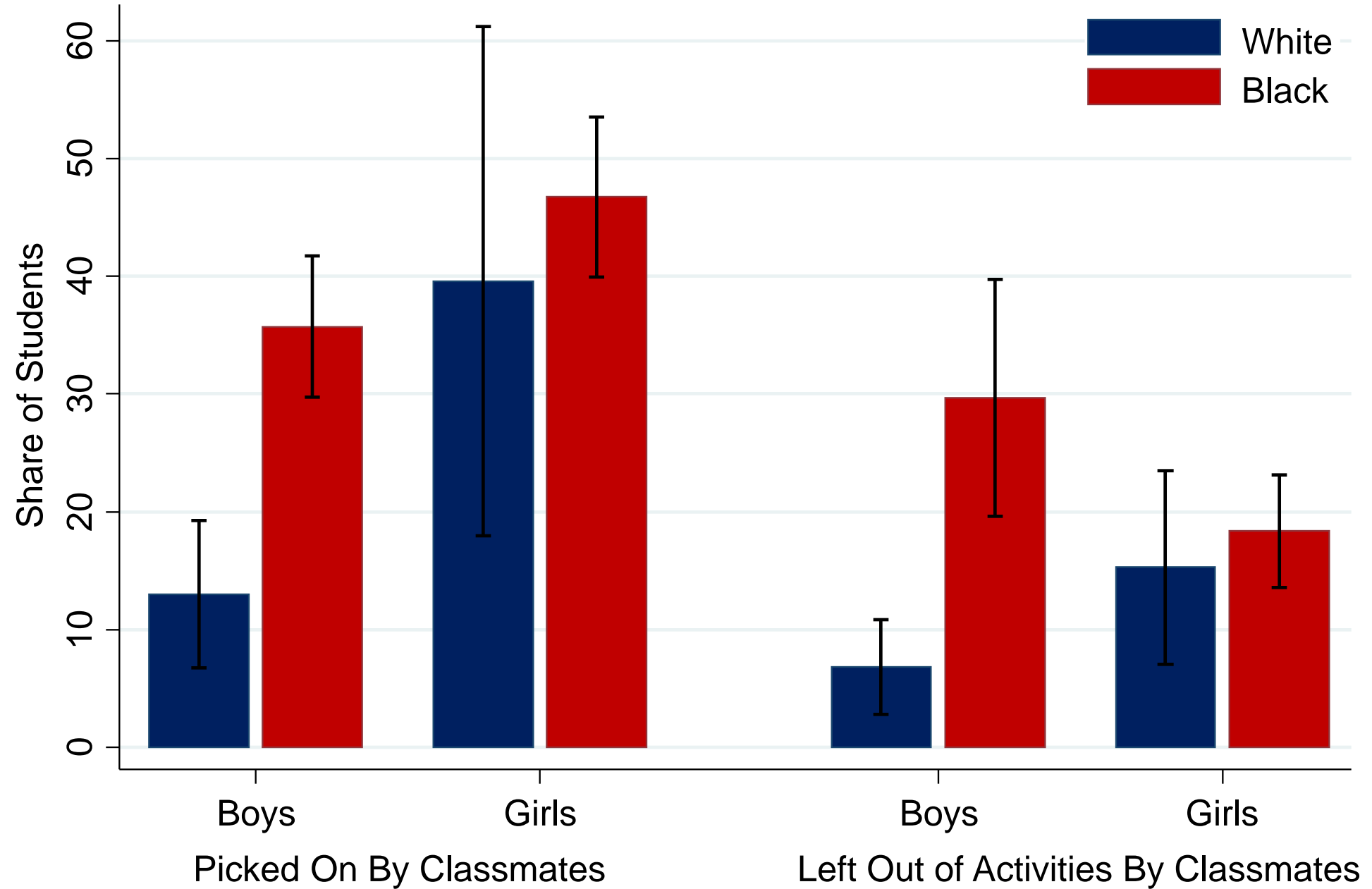
Black and White Children



Disruptive Behavior, by Race and Gender

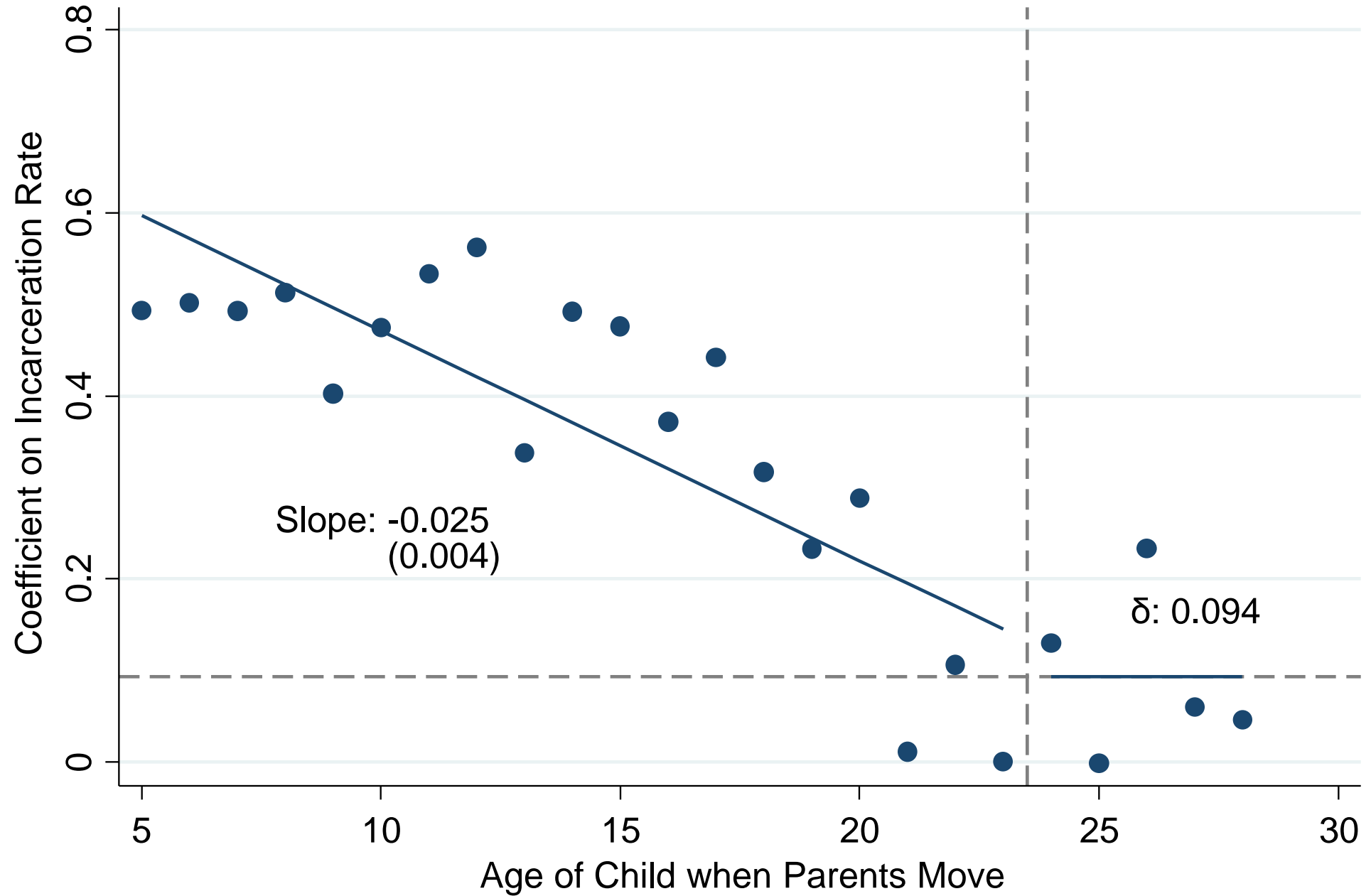


Social Isolation, by Race and Gender



Childhood Exposure Effects on Probability of Being Incarcerated in 2010

White Males



Childhood Exposure Effects for Males on Income Rank at Age 24

