



Municipal police and the economic mobility gap between black and white males in the US

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ABSTRACT

Estimates of intergenerational economic mobility for a recent U.S. birth cohort published by Opportunity Insights reveal a striking empirical puzzle: while there is a substantial gap in the upward mobility outcomes achieved by low-income Black and White males there is no such racial mobility gap for females. This study examines municipal police force size as a potential driver of these disparate mobility patterns. Although a larger police force may enhance mobility outcomes for all low-income children through reducing exposure to crime, for Black males prior work suggests this will be offset by the disparate negative impact of increased contact with the criminal justice system. Analyzing a sample of 200 major U.S. cities, linear models find a positive association between the number of police officers per capita and the size of the racial mobility gap for males, but not for females. We go on to show more police personnel in the late 1990s is associated with an increased gap in the likelihood of incarceration for Black males relative to White males. Taken together, our findings point to the heterogeneous impacts of policing for different race-sex groups as one potential explanation for why we observe a racial mobility gap between Black and White males and why this gap is larger in some cities and smaller in others.

1. Introduction

In the United States, the likelihood a low-income child achieves the “American Dream” of upward economic mobility in adulthood varies markedly across major cities. Estimates by Opportunity Insights (OI), using linked parent-child income tax records for a recent birth cohort, show that San Francisco children raised by parents at the 25th income percentile climb to the 53rd percentile on average as adults, compared to just the 38th percentile for Detroit children starting at the same income level (Chetty, Hendren, Jones, & Porter, 2014). The publication of these place-specific mobility estimates—which garnered significant popular interest beyond the academy (for instance, in the New York Times, see Leonhardt, Cox, and Miller, 2015; Badger, Miller, Pearce, & Quealy, 2018)—motivates research detailing which features of local context enhance or impede the economic mobility outcomes of low-income children (Chetty and Hendren, 2018a, 2018b).

Beyond variation by place, the OI estimates further reveal prospects for upward mobility in the U.S. vary substantially by race and sex (Chetty et al., 2020; Derenoncourt, 2022). Whereas low-income (25th percentile) White children rise to the 44th income percentile on average

in adulthood, low-income Black children rise to only the 40th percentile. Notably, this racial mobility gap is driven entirely by the difference in mobility outcomes between Black and White males: nationwide, low-income Black males rise to the 38th percentile of individual income on average as adults, trailing their White male peers by more than 10 percentiles. Low-income Black females, by contrast, rise to the 41st income percentile on average as adults, outperforming by 1 percentile their White female counterparts.

Just as economic mobility outcomes vary across localities, so, too, does the magnitude of these sex-specific racial mobility gaps. Fig. 1 plots the distribution of the White-Black mobility gap for males (red) and females (gray) across 200 major U.S. cities. In many cities, Black females post a relative mobility advantage whereas in other cities it is White females who climb further up the income ranks, a pattern consistent with near parity nationwide in the mobility outcomes of these two groups. By contrast, mobility outcomes for low-income Black males lag their White peers in nearly every city in our sample, consistent with their stark overall disadvantage nationwide. Researchers use these sex-specific racial mobility gaps as summary metrics of the role of place in generating racial disparities in social outcomes; for example, by

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detailing its correlation with racial gaps in mortality and longevity (O'Brien, Tiffany Neman, Nathan Seltzer, Linnea Evans, & Atheendar Venkataramani, 2020).

Why is there a racial mobility gap for low-income males but not for females? And why is the racial mobility gap between White and Black males larger in some cities than in others? Place-based variation in economic mobility is often attributed, in part, to differences in local public sectors, such as school quality (Biasi, 2023) or the generosity of support to low-income households (O'Brien and Robertson, 2018). Yet Black males and Black females attend the same schools, live in the same neighborhoods, and reside in the same households, so these features cannot readily account for the difference in mobility patterns observed across race-sex groups. Candidate explanations must impact the mobility prospects of Black males and females differently, relative to their White peers.

We argue that the size of municipal police force in the late 1990s—when the focal cohort analyzed by Opportunity Insights was in the “critical period” of adolescent development—may be key to explaining (1) why we observe a stark Black-White racial gap in economic mobility outcomes for males but not for females and (2) why the racial mobility gap for males is larger in some cities and smaller in others.

Prior work points to two primary pathways through which municipal policing can impact mobility outcomes. One is through its effect on crime. Studies find exposure to high crime neighborhoods in childhood and adolescence is associated with lower educational achievement and attainment and worse labor market outcomes in adulthood, key determinants of upward economic mobility (Schwartz et al., 2022; Sharkey and Torrats-Espinosa, 2017). At the same time, more police may yield more contact with the criminal justice system—including arrest and incarceration—which research shows has negative downstream consequences for education and labor market outcomes, thereby impeding upward mobility (Pager, 2003; Legewie and Fagan, 2019). We argue that the net impact of these two countervailing consequences of policing will differ systematically across race-sex groups: whereas lower crime rates will enhance upward mobility outcomes for all low-income children, for Black males this positive effect will be offset by the negative consequences of increased contact with the criminal justice system.

We test this proposition in the analysis below. To do so, we use data

from Opportunity Insights to construct race-sex specific measures of economic mobility in major cities; we then use these estimates to construct sex-specific ‘gaps’ in mobility outcomes separately for White and Black children from families at the same level (25th percentile) of household income. We combine these data with information on local government spending from the Government Finance Database (Pierson et al., 2015), city demographic information from the U.S. Decennial Census and American Community Survey (Census), and information on crime and police personnel for each municipality from the FBI Uniform Crime Reports (UCR).

Race-sex specific estimates of mobility are only available for a single cohort, pooling outcomes for children born between 1978 and 1983. This, coupled with the ecological nature of these data, limits analytic options and our ability to make causal claims or test mechanisms. Yet there are two compelling reasons to examine late 1990s municipal police levels as a potential driver of the economic mobility gap between low-income Black and White males observed for this cohort: (1) A substantial body of social science research that finds policing, and by extension involvement with the criminal justice system, negatively impacts the educational and labor market outcomes of Black males more than any other race-sex group and (2) There is broad interest—among social scientists, policymakers and the general public—in understanding what drives variation in the Opportunity Insights mobility estimates.

Analyzing a sample of 200 major U.S. cities, linear models find a positive association between the number of police officers per capita and the size of the racial mobility gap for males, but not for females. Disentangling mobility gaps, we show that a larger police force is associated with enhanced upward mobility outcomes for all race-sex groups *except for Black males*. We go on to show late 1990s municipal policing intensity is associated with a lower racial gap in crime victimization but, at the same time, a larger gap racial gap in arrests. Although less crime should enhance mobility outcomes for all race-sex groups, prior work suggests that Black males are more likely than other groups to experience negative consequences from increased contact with the criminal justice system. Consistent with this, we go on to show more police personnel in the late 1990s is associated with an increased gap in the likelihood of incarceration for Black males relative to White males, with no similar association for females. Taken together, our findings indicate the intensity of municipal policing in the late 1990s may be one explanation

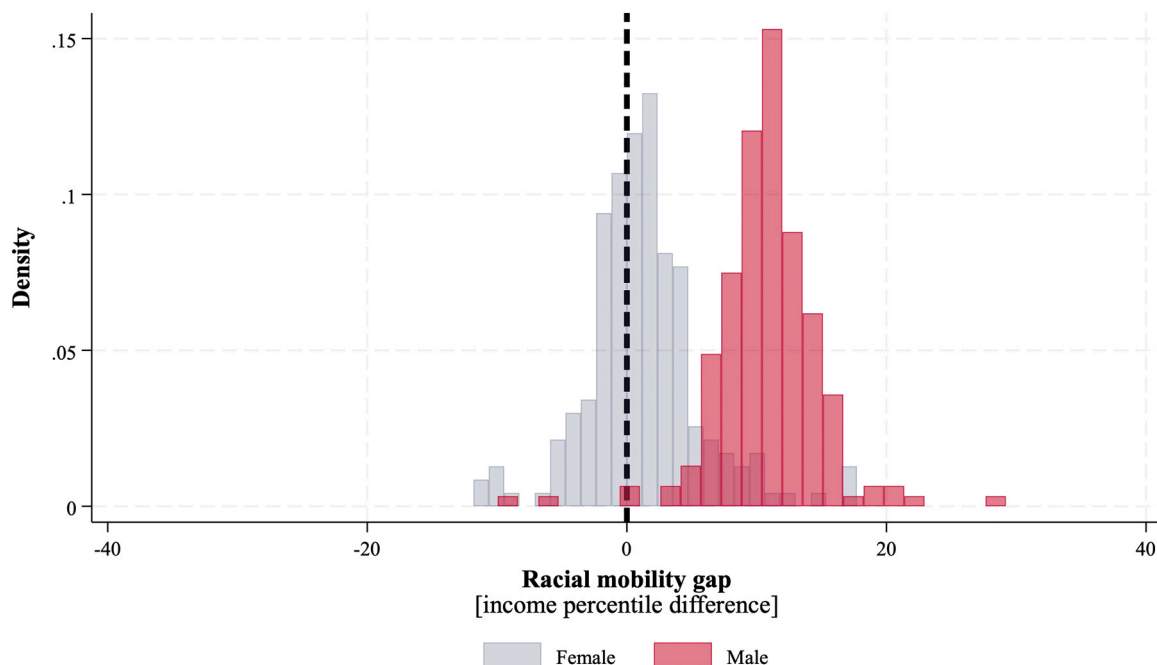


Fig. 1. Distribution of racial mobility gaps in major U.S. cities.

for why we observe a racial mobility gap between Black and White males, but not for females, and why the size of this gap is larger in some cities and smaller in others.

2. Background & motivation

The intergenerational economic mobility estimates published by Opportunity Insights (OI) have garnered significant attention among the public and researchers alike. Among the most notable descriptive findings from these administrative data, according to OI, is “The black-white intergenerational income gap for children at the same parental income level is primarily accounted for by differences in men’s not women’s, outcomes” (Opportunity Insights, 2018). Multivariable analyses demonstrate that this racial gap for males exists in virtually every city and cannot be accounted for by differences in family background, including their parents’ marital status, education, or wealth (Chetty, Hendren, Jones, & Porter, 2020).

The OI study by Chetty and colleagues analyzed the Black-White mobility gap nationwide; in this paper we take a different approach, leveraging variation in the size of the racial mobility gap across places. To do so, we use census-tract level estimates of mobility for race-sex groups published by OI to construct city-level estimates of the average income percentile rank achieved in adulthood for children raised in households at the 25th percentile of national income (details below). We then calculate the city-specific racial mobility gap by subtracting Black males’ percentile rank in the individual income distribution from White males’ percentile rank; a positive value indicates that Black males achieve a lower average rank in the national individual income distribution compared to White males born to parents of similar income in the same city. We repeat this process to estimate the gap between low-income Black and White females’ economic mobility outcomes.

Fig. 2 plots the economic mobility outcomes of Black vs White females (panel A) and males (panel B) in our sample of major U.S. cities. Solid lines indicate parity in mobility outcomes between racial groups, dashed lines show the linear fit to the observed data. Black males have higher mobility outcomes than White males from similar economic backgrounds in only two cities in our sample (Lowell and Lawrence, MA). Black females, by contrast, achieve higher mobility outcomes than White females from similar economic background in 74 cities, almost

40 % of our sample. On average across major cities, Black females born to parents at the 25th percentile of the national income distribution rise to the 41st percentile and White females to the 42nd percentile. Black males, however, only rise to the 38th percentile while White males rise to the 49th percentile, leading to an average racial mobility gap of 11 income percentiles.

Our aim is to exploit this variation in the size of race-sex mobility gaps across major U.S. cities to examine potential contextual determinants. Based on prior literature, we hypothesize that the intensity of municipal policing in the late 1990s, when this cohort was in early adolescence, may be a key driver of the size of the racial mobility gap for males across U.S. cities and, by extension, a candidate explanation for why we observe a racial mobility gap for males but not for females in this cohort.

One way municipal policing shapes mobility outcomes is through its effect on crime. Analyzing a sample of major U.S. cities since 1980, Chalfin and colleagues find a larger municipal police force, i.e., more police officers per capita, is associated with less crime, including violent crimes such as homicide (Chalfin et al., 2022). Lower crime, in turn, has been shown to improve mobility outcomes for low-income children. For example, analysis of OI mobility estimates at the county-level by Sharkey & Torratts-Espinosa finds higher violent crime rates in the late 1990s is associated with worse mobility outcomes for low-income children in this cohort (Sharkey and Torratts-Espinosa, 2017); and, further, that this association holds for crime reductions induced by increased police personnel. Notably their research design relies on county-birth-year mobility estimates (published by OI) that aggregates outcomes across all low-income children and therefore cannot be used to test for potential heterogeneous impacts of crime and policing on mobility outcomes across race-sex groups.

Other research finds exposure to violent crime helps explain variation in mobility outcomes for Black and White children across Chicago neighborhoods, showing the link between crime and mobility holds within as well as between cities (Manduca and Sampson, 2019). As Black Americans are more likely to be victims of urban crime (Like-Haislip, 2014), more police may lead to relatively greater improvement in their mobility outcomes. Overall, prior work suggests that less crime resulting from more police personnel should enhance mobility outcomes for all low-income children.

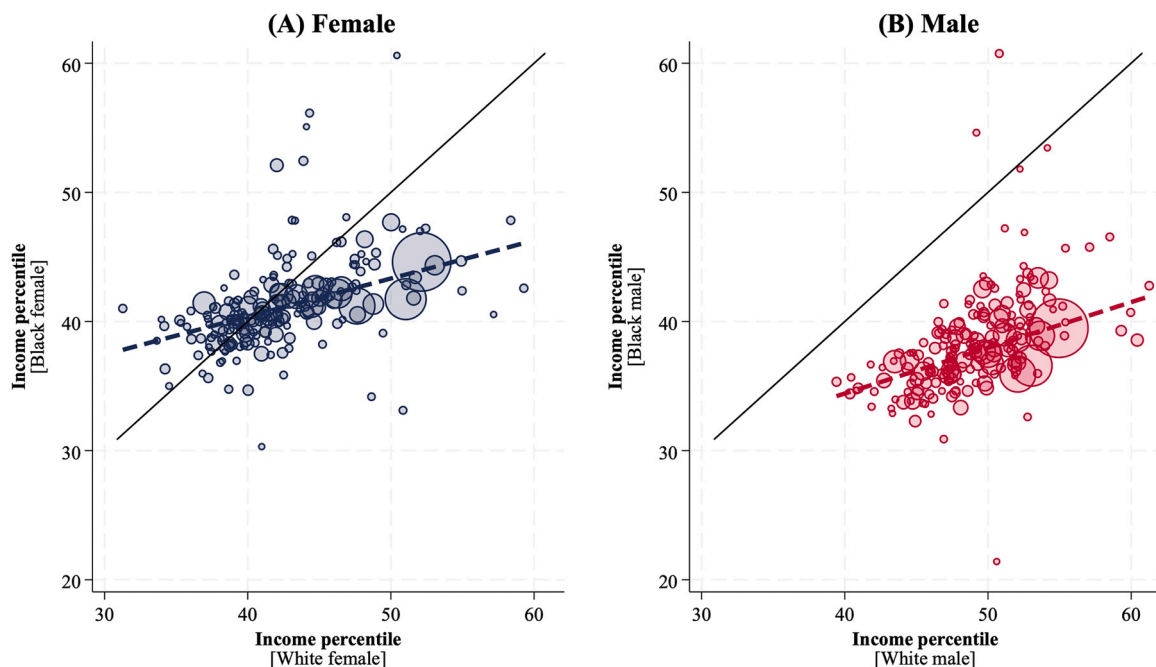


Fig. 2. Racial Mobility Gap for Females and Males Across Major U.S. Cities.

An alternative possibility is that more police personnel will yield more contact with the criminal justice system, which may impede prospects for upward mobility. In the same study cited above, Chalfin et al. find more police in the 1990s led to more arrests for low-level 'quality of life' violations, with disproportionate impacts on Black Americans (Chalfin et al., 2022; see also McGlynn-Wright, Crutchfield, Skinner, & Haggerty, 2022; ChegwinTeitler, Muchomba, & Reichman2023). Such contact with police is known to negatively impact the lives of Black males, in particular (Kramer and Remster, 2022). For example, recent work shows that 'surges' of police in New York City neighborhoods resulted in worse school outcomes for Black male teenagers but not for other groups (Legewie and Fagan, 2019; Schwartz et al., 2022; Legewie, Hsin, Harder, & Martén, 2022). Evidence from employer audits reveals that having a criminal record is more detrimental to employment outcomes for Black males relative to White males (Pager, 2003; Pager, Western, and Bonikowski, 2009). And if more policing heightens the relative risk of incarceration for Black males (Bonczar and Beck, 1997), time spent in prison will exacerbate racial disparities in social and economic outcomes over the life course (Brayne, 2014; Kirk and Wakefield, 2018).

More police may enhance mobility prospects for all groups by reducing exposure to crime, particularly violent crime; yet, for Black males, this positive impact may be offset by the negative impacts of increased contact with law enforcement and the criminal justice system. Taken together, prior research suggests that the effect of policing on economic mobility will differ across race-sex groups, and therefore, we argue, may partially account for why the OI data reveal a racial mobility gap for males but not females and, moreover, why this gap is larger in some cities and smaller in others. We test this proposition below.

3. Materials and methods

3.1. Data sources

We rely on economic mobility estimates published by Opportunity Insights (Chetty et al., 2014). We also use data on local government spending from the Government Finance Database, city demographic information from the U.S. Census and American Community Survey, and information on crime and police personnel for each municipality from the FBI Uniform Crime Reports (UCR). We obtain these data from the replication package produced by Chalfin et al. (2022). These data also include both total and race-specific count of arrests as well as crime perpetuation and victimization which we use to probe pathways below; notably, race-sex specific arrest and victimization data for municipalities are not available from the UCR. Our analytic sample is comprised of 200 major U.S. cities for which we have data on crime and police force size as well as sufficient information from Opportunity Insights to calculate race-sex specific mobility gaps.

3.2. Dependent variable: economic mobility gap for low-income black and white males

Our dependent variable is the gap in economic mobility outcomes between low-income (25th income percentile) White and Black males. We use census tract-level estimates of the mobility outcomes achieved by low-income children in each race-sex groups to construct city-level estimates, weighting each tract by the number of children in each race-sex group. Estimates are based on the outcomes of children born between 1978 and 1983. Economic mobility is measured as the percentile rank in the national individual income distribution these males achieve around the age of 35.

3.3. Independent variable: police officers per capita

To measure the size of the municipal police force, we draw on city-level information from FBI Uniform Crime Reports on the total

number of full-time police officers in each city's police agency. We divide the number of police officers by city population and log-transform the variable for our analyses. We then take the 5-year average of this measure over the years 1995–1999 when the focal cohort in the OI mobility data were 14 to 19 years of age on average; We chose this period (1) because it represents the critical moment in the life course when exposure to crime and contact with the criminal justice system has the greatest impact on life chances (Sampson and Laub, 1992; Neil and Sampson, 2021) and (2) it best matches when focal children are still likely to live in their parents' home corresponding to the address reported on the income tax return.

3.4. City-level covariates

We include a parsimonious set of city-level demographic and economic covariates: median household income (log), poverty, the share of the population that is Black, and the total population of each city (log) from the U.S. Census' American Community Survey. We also include city-level information on total per-capita government spending (log) from the Government Finance Database, U.S. Census of Governments as well as the per-capita violent crime rate (log), operationalized as the sum of total aggravated assaults, murders, and burglary, from FBI Uniform Crime Reports (UCR). We use the 5-year average from 1995 to 1999 for all covariates. We further adjust for income and racial segregation (both measured as CoV between Census tracts within each city) as well as the population share with a college degree at the city level. Next, we account for the share of manufacturing employment at the county level. Those data are based on the 2000 Decennial Census and accessed through the Chetty et al. (2016) replication package. All variables are standardized in the regression analyses.

Table 1 provides descriptive statistics for all variables.

3.5. Estimation strategy

We estimate the relationship between police personnel per capita and the sex-specific White-Black mobility gap across cities using linear models estimated using ordinary least squares regression:

$$Y_c = \alpha_1 Police_c + \beta_1 X_c + \epsilon_c$$

Where (Y_c) is the city-specific gap in mobility outcomes between Black and White men, ($Police_c$) indicates city-level police officers per capita, and X_c denotes a vector of city covariates detailed above. We note that including the violent crime rate as a control variable may introduce post-treatment bias, as police activity influences official crime rate statistics; yet, excluding crime rates as a covariate may introduce omitted variable bias as crime levels impact economic mobility outcomes. In our main analyses, we therefore present estimates from specifications that do and

Table 1
Descriptive statistics.

	mean	sd	min	max
Black male mobility gap	10.88	3.82	-9.96	29.20
Black female mobility gap	1.12	4.31	-11.82	16.71
Police officers (per 1000)	2.38	0.85	1.12	6.58
Median household income (log)	10.51	0.22	10.08	11.38
Poverty	15.23	5.21	3.81	30.22
Population share Black	22.40	18.11	0.98	82.34
Total population (log)	12.04	0.88	10.87	15.81
Total spending (per capita log)	1.27	0.37	0.60	2.78
Income segregation	0.33	0.10	0.07	0.66
Racial segregation	0.82	0.32	0.26	1.98
College degree	0.21	0.10	0.04	0.70
Share manufacturing	0.14	0.05	0.02	0.29
Violent crime (per 1000)	4.73	2.62	0.34	15.84
Observations	196			

Note: Descriptive statistics of police officers and violent crime shown as untransformed values per 1000 residents for ease of interpretation.

do not adjust for the city violent crime rate (results are substantively the same). Standard errors are clustered at the state level in all models to account for shared fiscal and legal policy context.

4. Results

Table 2 presents coefficients from linear models estimating the relationship between the number of police officers per capita and the sex-specific racial mobility gap across major U.S. cities. Model 1 examines the relationship without adjusting for violent crime, Model 2 includes this covariate. For males we estimate a substantively large and statistically significant ($p < .005$) positive association between police staffing levels and the size of the racial mobility gap for males. The standardized coefficient implies a one standard deviation increase in the number of police officers per capita is associated with about one-third of a standard deviation larger gap in the economic mobility outcomes of low-income White and Black males. For females, the estimated coefficient is positive but smaller and with larger standard errors is not statistically distinguishable from zero.

Fig. 3 decomposes the above relationship by examining the association between police officers per capita and the average mobility level achieved by low-income children in each race-sex group, using the same model specification as above (Model 2). Across the four panels we estimate a positive relationship between the size of the municipal police force and the level of upward economic mobility for every group *except Black males*. For Black males (Panel A) we estimate a slightly negative relationship although the slope of the line is not statistically distinguishable from zero. This pattern is consistent with prior research showing less crime—and, specifically, reductions in crime due to more police officers (Sharkey and Torrats-Espinosa, 2017)—leads to improved economic mobility outcomes for low-income children in the aggregate. Yet at the same time the figure reveals important heterogeneity across population subgroups, as the negative impact of policing for Black males appears to wholly offset the gains accruing to other race-sex groups.

Fig. 4 plots the predicted relationship between police officers per

Table 2
Linear regression models of racial mobility gaps.

	Female		Male	
	Model 1	Model 2	Model 1	Model 2
Police officers	0.25 (0.16)	0.26 (0.17)	0.32 * * (0.09)	0.35 * * (0.11)
Median income	0.52 * * (0.19)	0.56 * * (0.20)	0.12 (0.18)	0.21 (0.18)
Poverty	0.25 (0.15)	0.28 (0.16)	0.02 (0.13)	0.08 (0.12)
Share Black	-0.16 (0.12)	-0.15 (0.12)	-0.14 (0.19)	-0.14 (0.18)
Population	-0.08 (0.09)	-0.09 (0.09)	0.11 (0.06)	0.08 (0.06)
Total spending	-0.02 (0.13)	-0.02 (0.13)	-0.28 * (0.13)	-0.28 * (0.13)
Income segregation	0.30 * (0.13)	0.32 * (0.14)	0.14 (0.12)	0.19 (0.14)
Racial segregation	0.09 (0.09)	0.08 (0.09)	0.05 (0.16)	0.02 (0.14)
College degree	-0.10 (0.12)	-0.13 (0.13)	0.19 (0.13)	0.14 (0.13)
Share manufacturing	-0.00 (0.09)	-0.01 (0.09)	0.00 (0.09)	-0.01 (0.08)
Violent crime		-0.07 (0.06)		-0.18 (0.10)
Constant	0.00 (0.11)	-0.00 (0.11)	-0.02 (0.14)	-0.01 (0.14)
Observations	198	198	196	196
R ²	0.169	0.172	0.173	0.197

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

1000 residents and the city-specific racial mobility gap for males based on regression results in Table 1; the slope of the line corresponds to the coefficient from Model 2. Here we see the racial mobility gap for males increases with the size of the municipal police force. The city of Sacramento, for example, has both a relatively small police force at 1.6 officers per 1000 residents as well as a relatively small racial mobility gap between White and Black males of about 10 income percentiles. Compare this to Philadelphia which had a substantially larger police force in the late 1990s—4.5 officers per 1000 residents—and has a substantially larger predicted racial mobility gap for males of 12 income percentiles. The 2 income percentile difference in the mobility gaps of Sacramento and Philadelphia is about one-fifth of the average overall gap for males across major cities. This suggests that municipal policing intensity is a key explanation for why we observe a racial mobility gap for males (but not females) and why the size of this gap varies systematically across U.S. cities.

4.1. Probing potential pathways

We argue more police personnel benefits all race-sex groups through lower crime, but, among Black males, this positive effect is offset by the negative consequences of increased involvement with the criminal justice system. We gauge the relevance of exposure to police in two distinct ways: First, we can use FBI Uniform Crime Reports data to gauge whether more police officers per capita is generally associated with racial disparities in crime victimization and arrests in the late 1990s. Table 3 presents coefficients and standard errors from linear models estimating the relationship between the number of police officers per capita and crime victimization and arrests by race across cities in our sample. We find the number of police officers per capita is positively associated with crime victimization for White but not Black Americans, yet positively associated with arrests of Black but not White Americans. Taken together, where the police force is larger, the racial gap in exposure to crime is lower and the racial gap in criminal justice contact is higher.

Of course, a higher arrest rate for Black vs. White Americans does not account why we see a racial mobility gap for males but not females. We thus, second, examine how city-level exposure to municipal policing impacts the relative risk of incarceration for Black males vis a vis their White male peers. We do so using a measure from Opportunity Insights that captures the fraction of low-income children in each race-sex group in prison or jail at a snapshot in time (April 2010). These data allow us to gauge the relevance of racial disparities in incarceration of the children in the Opportunity Insights data, rather than their exposure to crime in early adolescence. We estimate this association using the same model specification above which adjusts for city demographic and economic characteristics. Results detailed in Appendix Table S3 find police force size is positively associated with the racial incarceration gap for males, but not females. Fig. 5 shows the association for Black and White males separately. Here we see the intensity of municipal policing in the late 1990s is positively associated with the likelihood a low-income Black male is incarcerated in 2010. Notably, for White males the relationship is slightly positive; the number of police officers per capita does not negatively impact their likelihood of incarceration. This illustrates a direct pathway through which the size of the city police force in the late 1990s can yield a racial gap in upward mobility outcomes between Black and White males yet not for females.

4.2. Robustness checks

The analysis above—in concert with prior work detailing both the benefits of crime reduction and the disparate negative impact of police contact for Black males—lends support to our argument that late 1990s municipal policing intensity may help account for why we observe a racial mobility gap for low-income males but not females in the OI mobility data. In this section we report results from several robustness

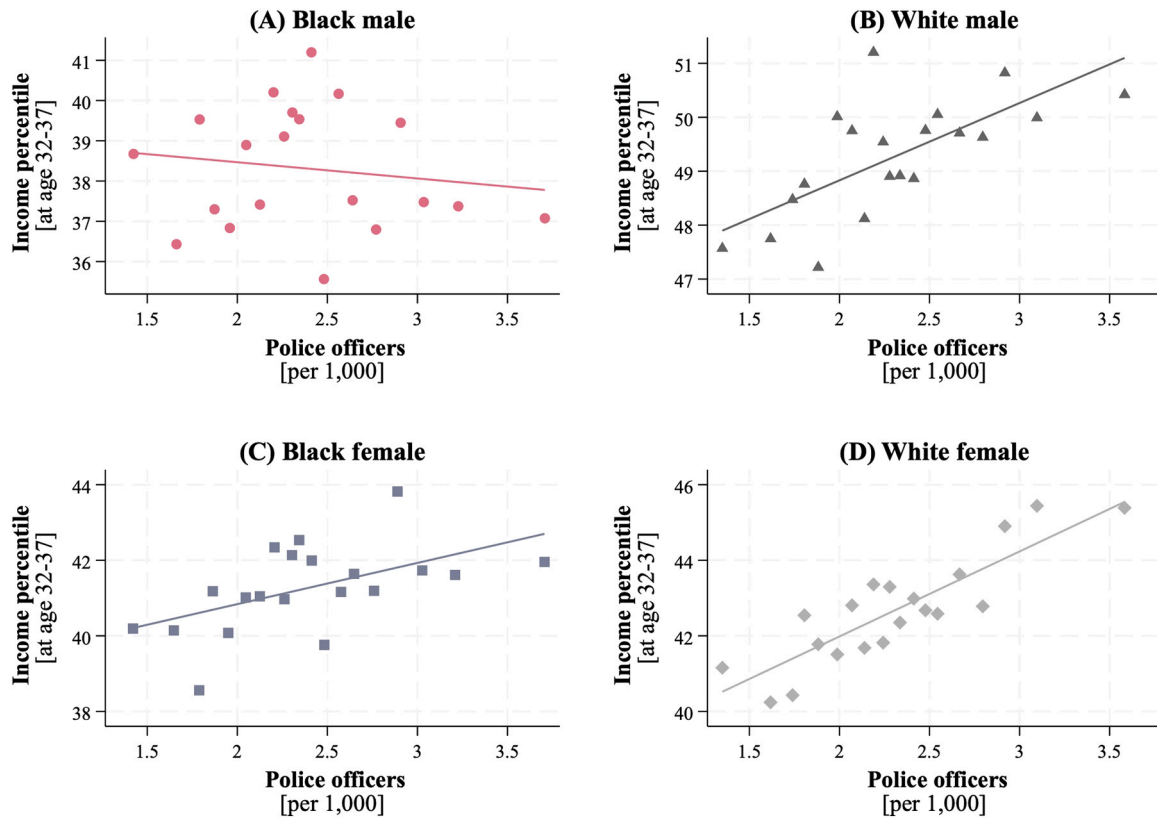


Fig. 3. Linear regression models of economic mobility outcomes by race-sex group.

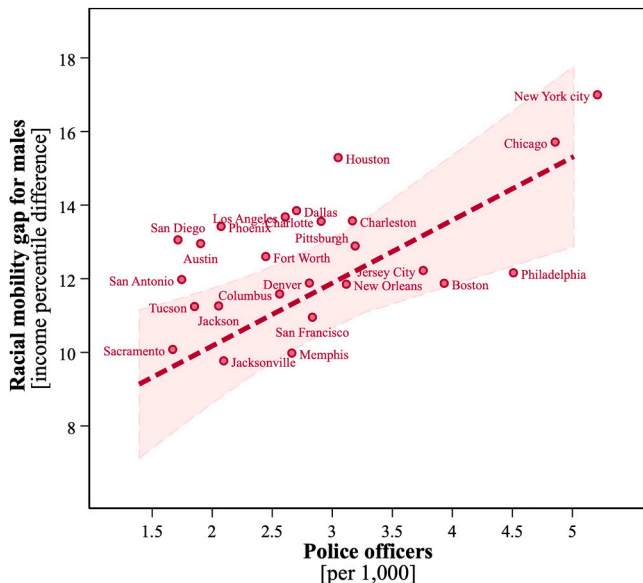


Fig. 4. Predicted association between police officers and racial mobility gaps for males across major U.S. cities. *Note.* Predictions are based on regression Model 2 from Table 1.

checks and alternative analyses.

Our primary specification (Model 2) estimated the association between police force size and the racial mobility gap net of the city's violent crime rate; in the online appendix we show the relationship is robust to alternative approaches to adjusting for crime as well as for racial gaps in crime victimization and perpetration (Appendix Table S4). Supplementary analyses further demonstrate findings are robust to

Table 3

Linear regression models of victimization and arrests by race.

	Victimization		Arrests	
	Black	White	Black	White
Police officers	-0.04 (0.06)	0.27 * (0.10)	0.31 * * (0.09)	-0.07 (0.07)
Median income	-0.09 (0.08)	-0.51 * * * (0.14)	0.05 (0.09)	-0.24 (0.16)
Poverty	0.04 (0.07)	-0.12 (0.15)	-0.10 (0.07)	-0.12 (0.10)
Share Black	0.73 * * * (0.10)	-0.18 (0.13)	0.62 * * * (0.08)	-0.75 * * * (0.09)
Population	0.17 * (0.06)	0.17 (0.09)	-0.07 (0.06)	-0.02 (0.07)
Total spending	0.00 (0.03)	-0.02 (0.08)	-0.09 * (0.04)	0.01 (0.07)
Income segregation	-0.08 (0.07)	-0.04 (0.08)	0.24 * * (0.09)	0.25 * * (0.08)
Racial segregation	-0.10 * (0.04)	-0.09 (0.10)	0.00 (0.04)	-0.19 * * (0.06)
College degree	0.04 (0.04)	-0.02 (0.08)	0.01 (0.06)	-0.13 (0.08)
Share manufacturing	0.01 (0.03)	0.05 (0.07)	0.03 (0.06)	-0.08 (0.07)
Constant	-0.01 (0.04)	-0.00 (0.08)	-0.00 (0.06)	0.00 (0.08)
Observations	222	222	222	222
R ²	0.672	0.265	0.658	0.452

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

adjusting for the fraction of children in each race-sex group with a father present in the household (Appendix Table S5) or the fraction in each group who stayed in the same city commuting zone between childhood and adulthood (Appendix Table S6); consistent with Chetty and colleagues (Chetty et al., 2020) who find the racial mobility gap for males

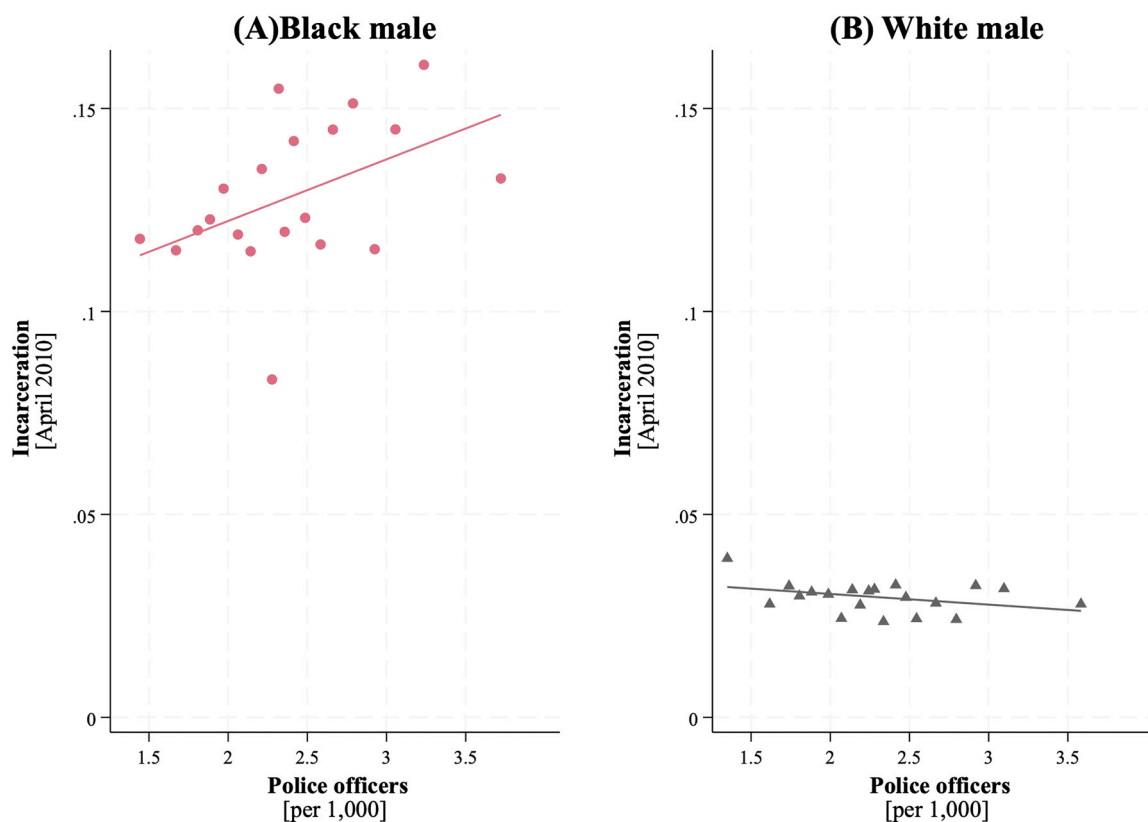


Fig. 5. Predicted Association Between Police Force Size and Probability of Incarceration (in 2010) for Black and White Males.

nationwide cannot be explained by differences in family characteristics.

Our analysis examines the upward mobility outcomes of low-income children as they are more likely than their high-income peers to be exposed to crime and encounter law enforcement; and because extant analyses using the OI mobility estimates focus on upward mobility from the 25th percentile. Yet [Chetty et al. \(2020\)](#) notably find the racial mobility gap between Black and White males exists across all percentiles of parental income; that is, there is a racial gap in mobility outcomes even for Black and White boys raised in high-income households. We therefore considered whether policing intensity is also associated with racial mobility gap for males from high-income households (75th percentiles). Results in Appendix [Table S7](#) finds a positive association, yet the estimated coefficient on police force size is smaller and the model explains less of the overall variance across cities compared to analyzing the racial gap at the 25th percentile of the parental income distribution. This is consistent with the idea that crime and policing intensity has a relatively greater impact on the lives of low-income children. At the same time, we hesitate to make strong claims about differential effects of policing on children from families at different income levels given the OI estimates at p25 and p75 are predictions from the same underlying model and do not represent independent observations.

Another key analytic decision is measuring police force size during the years 1995–1999. We chose this period (1) because it represents the critical moment in the life course when exposure to crime and contact with the criminal justice system has the greatest impact on life chances and (2) it best matches when focal children are still likely to live in their parents' home corresponding to the address reported on the income tax return. If our reasoning is correct, measuring police force size at other time periods will introduce mismatch in the exposure and increase measurement error which would serve to attenuate any estimated association between policing and the racial mobility gap. Appendix [Fig. S1](#) plots the estimated coefficient on police force size averaged over different time 5-year periods; as expected, the estimate coefficient is largest when police staffing is measured over the years 1995–1999 and

attenuates as we shift the time window earlier or later. This data-driven approach aligns with our theoretical justification for measuring police staffing levels during this specific 5-year period.

As we note in the introduction, data limitations restrict our analytic options and impede our ability to make causal claims. We can, however, perform a bounds analysis to explore the robustness of our association to potential bias from mismeasured or unmeasured confounders ([Oster, 2019](#)). Here, we estimate the relative degree of selection in our model under the assumption of selection on observed covariates as proportional to selection on unobserved confounders. We re-estimated our primary specification (Model 2) eleven times, sequentially removing each covariate in turn. Appendix [Table S8](#) presents estimated deltas under seven different scenarios for our maximum R-squared of 1.0. For each scenario, the estimated delta is substantively large and negative. Across all models, the estimated delta varies between $-.43$ and $-.23$, implying that bias from unobserved confounders would need to be both substantially larger than selection on observables and operate in the opposite direction of other covariates to render the association between police officers per capita and the racial mobility gap for males statistically nonsignificant. This suggests the association is robust to even large bias from unmeasured or mismeasured confounders.

Finally, we conducted a series of additional robustness checks, demonstrating our results are not sensitive to model specification, e.g., weighting by number of children in mobility cohort (Appendix [Table S9](#)) or the inclusion state fixed effects (Appendix [Table S10](#)). We also show our results are robust to winsorizing extreme values (Appendix [Table S11](#)), providing assurance the estimated association is not driven by outliers in the data.

5. Conclusion

Intergenerational economic mobility estimates published by Opportunity Insights reveal two striking facts about the mobility trajectories of this early 1980s birth cohort: first, there is tremendous

variation across places in the upward economic mobility outcomes of low-income children and, second, there is a substantial gap in the upward mobility outcomes achieved by low-income White and Black males but there is no such racial mobility gap for females. Motivated by prior research, this study examines whether the intensity of municipal policing helps us account for these two stylized facts.

Analyzing a sample of 200 major U.S. cities, we find the size of the municipal police force in the late 1990s—when this cohort was in late adolescence—is positively associated with the gap in upward mobility outcomes between low-income Black and White males. This association is net of the overall violent crime rate and is robust to alternative model specifications. We find no evidence of an association between police force size and the racial mobility gap for females; instead, we show police intensity is associated with improved mobility outcomes for all race-sex groups except Black males. Finally, we present evidence that policing intensity increases the relative risk of incarceration for Black males, one pathway through which policing increases the racial gap in economic mobility outcomes.

Our findings are consistent with research showing an inverse relationship between local crime rates and the upward economic mobility outcomes of low-income children overall. Yet our study indicates efforts to reduce crime through more policing has offsetting, negative impacts on the mobility outcomes of Black males. Of course, depressed outcomes for Black males in turn negatively impact the well-being of prospective romantic partners, primarily Black females, with downstream consequences for their children, families and their communities (Morenoff and Harding, 2014; Turney, 2017; Wildeman, 2009; Pettit and Gutierrez, 2018).

We close by emphasizing that our study, and any study of economic mobility, is by definition retrospective: that municipal policing levels in the late 1990s helps us account for observed patterns in the mobility outcomes of an early 1980s birth cohort does not necessarily mean such an association holds for other birth cohorts or in other time periods, including today. Nevertheless, our findings underscore the need for researchers to document, and policymakers to consider, the disparate effects of municipal policing on the likelihood low-income children achieve the American Dream.

CRediT authorship contribution statement

Rourke O'Brien: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation.
Manuel Schechtl: Writing – review & editing, Writing – original draft, Methodology, Investigation, Formal analysis, Data curation, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.rssm.2024.100981](https://doi.org/10.1016/j.rssm.2024.100981).

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