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APPENDIX TO
UP FROM SLAVERY?
AFRICAN AMERICAN INTERGENERATIONAL MOBILITY SINCE 1880

APPENDIX I. DATA APPENDIX

a. Construction of Samples
   i. Linked Sample Construction for 1900 and 1930 cohorts
   ii. Incorporating data from the 1880 *Census of Agriculture*
   iii. Selection of samples for OCG 1962 and 1973 cohorts
   iv. Selection of samples for NLSY 1990 and 2000 cohorts

b. Assignment of Income Scores and Income Score Ranks

APPENDIX II. TRANSITION MATRICES

a. Decile-to-Decile Transition Matrices

b. Occupational Transition Matrices

APPENDIX III. ADDITIONAL RESULTS FOR NLSY79 COHORT OBSERVED IN 2000

APPENDIX IV. SENSITIVITY TESTS

a. Sensitivity of 1900 and 1930 Cohort Results to Match Quality

b. Sensitivity of Results to Changes in Income Score Assignments

c. Sensitivity of Results to Changes in Family Structure

d. Sensitivity of Results to Age of Sons' Observation

e. Sensitivity of Results to Southern-Resident Parent Restriction

APPENDIX V. COUNTERFACTUAL DISTRIBUTIONS OF BLACK INCOME RANKS

APPENDIX VI. INCORPORATING AGCT/AFQT SCORES

APPENDIX VII. TABLES & FIGURES

APPENDIX I. DATA APPENDIX

a. CONSTRUCTION OF SAMPLES

i. Linked Sample Construction for 1900 and 1930 cohorts

The two historical linked samples in this paper were constructed from the IPUMS samples in 1880 and 1910 of southern-residing males between the ages of 0 and 17 living in the same household as their father or stepfather. Individuals who live with their mother, but no father or stepfather, are dropped from the historical samples.[1] We then searched for each individual in the complete count (100 percent) of the census returns twenty years later (1900 and 1930), as provided by Ancestry.com.[2] Matches were made based on age (within two years), first and last name (including exact matches of the first three letters and common abbreviations of first names and exact and SOUNDEX matches of last name), exact state of birth and race.[3] The resulting matched samples are representative of the starting IPUMS samples, as indicated in Appendix Tables A5a and A5b. In these tables, we report the p-value of the difference between averages of key variables for the matched and full IPUMS samples. Although there are some statistically significant differences, they are rarely economically significant differences.

In the matching year (1900 or 1930), the Ancestry.com data contain only a portion of the variables available on the enumeration form. We returned to the original enumeration schedules to transcribe additional information. For 1900, we transcribed occupation, unemployment months, home ownership status, and mortgage status for home owners. For 1930, we transcribed home ownership status, monthly rent or home value, farm residence, marital status, age at first marriage, school attendance, literacy, occupation, and industry. We also transcribed the four-digit occupation code from the 1930 census, which is unique to that census year. We use only a subset of these variables in the current version of this paper.

For each individual in the linked sample, we made harmonized occupation assignments in the matching year (1900 or 1930) to approximate the same assignment made by IPUMS in the public use samples to which we compare each cohort of sons. The 1950-based occupation codes (*occ1950*) are the consistent standard across IPUMS samples. Still, there is no one-to-one correspondence between contemporary occupation codes and the 1950-based codes. For both 1900 and 1930, we used

[1] Women's occupations are inconsistently reported, and income assignments would be difficult to achieve given the limited amount of female employment in the US prior to 1950 or so.

[2] There are no known limitations to the Ancestry data outside of omissions in the original enumeration process. More recently, Ancestry has released the underlying samples of all Census returns for researchers' use. These data were not available at the origin of this project.

[3] The match rate for the 1900 cohort of sons was 26 percent. The match rate for the 1930 cohort of sons was 27 percent.

occupation strings, industry strings, and contemporary occupation codes to assign standardized 1950-based occupation codes. For most individuals in our data, we tabulated the 1950-based codes in the relevant (1900 or 1930) IPUMS sample by occupation and assigned the modal value. We then checked these 1900 or 1930 assignments by hand, and for those where the initial assignment was ambiguous, we checked the 4-digit occupation code using a website constructed by Morse, Weintraub, and Kehs which provides details of the 4-digit code assignment. [4] We then checked these details against the description of the 1950-based occupation codes to refine assignments.

ii. Incorporating data from the 1880 Census of Agriculture

For the purposes of making income assignments, it is useful to differentiate farmers of different tenure status. From the 1900, 1910, and 1930 Census of Population records, it is straightforward to use home ownership as a proxy for land ownership among farmers, and this is our primary means for distinguishing owner-operators from tenants.[5] Unfortunately, similar information is not available in the 1880 Census of Population. Therefore, we have taken an extra step to link farmers to the 1880 Census of Agriculture to distinguish farm owner-operators from tenants. [6]

For some states and counties, indices of the 1880 Census of Agriculture are available on Ancestry.com. For records that were indexed and searchable, we first searched the index based on the name of the father in the 1880 population records and his exact geographic location, including township. When this was not fruitful, we searched in a broader geographic region within the same county. For those who still were not located, we returned to the population schedules, took note of closest farming neighbors, and attempted to find those neighbors in the agricultural manuscripts. In many cases, finding the neighbors then led us to the individual of interest. Neighbors also allowed us to identify specific individuals when there were multiple possible matches within a county.

For the remaining states and counties, we repeated this process by hand using microfilmed images of the agricultural manuscripts. To do so, we searched for individuals within counties of residence in the population census by sifting through the full records in each county. Again, the

[4] http://stevemorse.org/census/ocodes.htm; accessed 2012

[5] Further distinctions among types of farmers by tenure type or farm production would be desirable but are not possible for 1900 or 1910 data because the manuscripts from the *Census of Agriculture* were not saved or microfilmed.

[6] To many readers, linking the 1880 population records to the agricultural records will be reminiscent of Ransom and Sutch's pioneering work (1977). Two key distinctions are that we start with population records and then search for self-reported farmers in the agricultural records, whereas Ransom and Sutch worked in the other direction; second, Ransom and Sutch focused on a set of specific southern counties whereas we started with our linked sample of fathers and sons who are drawn from all over the South. Richard Sutch provided helpful input at an early stage of this project.

location of neighbors in the population census allowed us to identify specific individuals when multiple matches were found.

We located 80.5 percent of the white farmers from the Census of Population in the Census of Agriculture manuscripts and 76.0 percent of the black farmers. Four potential explanations for missing matches are: 1) we simply missed in our search but the person is there somewhere; 2) the census enumerator did not collect information for the farmer either because his farm was so marginal or because the self-reported "farmer" did not work his own farm (e.g., he may have worked with a relative and only one farmer is listed per farm); 3) some men may have been recorded as "farmer" in the population records when in fact they floated between occupations and did not currently operate a farm (e.g., between sharecropping and wage labor); 4) some of the original manuscripts might be missing from the microfilmed records. We dropped individuals from our sample if we were reasonably certain that they were located on a missing page, but there is no way of knowing for sure.

Farmers for whom we did not find a manuscript in the 1880 Census of Agriculture tended to be less literate, to have younger sons, and to have sons who were less likely to be home owners in 1900 (all conditional on race). In other words, these farmers are not missing at random from our data, and we do not treat them as such. Instead, we assume that missing farmers were not owner-operators.[7]

iii. Selection of samples for OCG 1962 and 1973 cohorts

For cohorts of sons after 1930, we must rely on survey data to generate analysis comparable to that for the earlier samples.[8] Occupational Changes in a Generation (OCG) is a nationally representative (after weighting) survey taken as a supplement to the Current Population Survey (CPS) in 1962 and again in 1973. We utilize the replicate sample available at the Interuniversity Consortium for Political and Social Research (ICPSR), which contains harmonized responses across waves of the survey. After weighting, the OCG samples are nationally representative.

We limit the OCG survey respondents to men between the ages of 20 and 43. Because black men by 1960 were no longer overwhelmingly southern residents, we do not make any restrictions in

[7] Literacy for white fathers is 21.5% (farm schedule found) and 16.9% (farm schedule not found), respectively. Literacy for black fathers is 9.5% (farm schedule found) and 6.2% (farm schedule not found). Son's age for white households is 7.3 years (farm schedule found) and 6.8 (farm schedule not found), respectively. For black households, the statistics are 7.5 and 6.7 years, respectively. Finally, son's home ownership rates for white sons are 23.6% (farm schedule found) and 18.5% (farm schedule not found). For black sons', homeownership rates are 8.9 and 5.5%, respectively.

[8] Our methods for generating intergenerational samples cannot be implemented after 1940 because there are no publicly available census products containing names.

the OCG samples regarding parental region of origin for our baseline results. This is the first key distinction relative to the historical samples, where only intergenerational pairs with fathers residing in the South are included. Importantly, in all cases parents and sons in our samples are ranked relative to the national distribution, and so this distinction matters only for thinking about the comparison group when contrasting black and white sons' outcomes.

A second key distinction for the OCG data relative to our hand-constructed historical samples is the retrospective nature of reported parents' labor market outcomes. The OCG enumerators asked individuals about the "kind of work" and "most important activities [at work]" for their father or mother when the respondent was 16 years old. These responses were then coded into 1950-based occupation codes by survey staff before the data were released.

Finally, because the prevalence of sons living apart from their fathers increases substantially between 1960 and the end of our study period, we accommodate sons in households where the mother was present at age 16, but not the father.[9] Individuals living with neither father nor mother are dropped from the sample. These individuals represent 4.1 percent of the 1962 cohort and 5.1 percent of the 1973 cohort.

iv. Selection of samples for NLSY cohorts (1990 and 2000)

The NLSY79 1990 and 2000 interview waves share many characteristics with the OCG surveys. Again, we do not restrict the sample to southern-residing fathers. And, again, the occupation of fathers is ascertained retrospectively. In NLSY79, the original 1979 questionnaire asks respondents about "what kind of work" and "main activities or duties [at work]" of both their father and mother when they were age 14. Because respondents were aged 14 to 22 in the original 1979 sample, responses to parental occupation questions may be more accurate in this sample than in the OCG. Again, sons in households where the mother was present at age 14, but not the father. In 1990, this represents all but 4.2 percent of the NLSY sample. Finally, the NLSY sample contains an oversample of poor whites and of black males. We include these individuals in our sample and weight according to survey instructions. After weighting, the NLSY sample is nationally representative.

b. ASSIGNMENT OF INCOME SCORES AND INCOME SCORE RANKS

[9] For sons of mothers residing with another male adult (stepfather, etc.), we measure intergenerational mobility relative to the mother's occupational status. Appendix Section IVc examines the sensitivity of our results to replacing mother's occupational status with that of a non-father adult male (including stepfathers) if one is present.

For each cohort of sons, as well as for their parents, we assign incomes based on the census year most proximate to the year of observation. The sole exception is NLSY sons, who we observe in both 1990 and in 2000. We assign incomes based on 1990 wages for both waves of the survey in order to evaluate the sensitivity of our results to the age of sons at observation. A table of these base years for income assignments is below:

Year of Observation	Census Base Year for Income Score Assignments
1880 (Fathers)	1940
1900 (Sons)	1940
1910 (Fathers)	1940
1930 (Sons)	1940
~1950 (OCG Fathers and Mothers)	Average of 1940 and 1960*
1962 (OCG Sons)	1960
~1960 (OCG Fathers and Mothers)	1960
~1975 (NLSY Fathers and Mothers)	1970
1990 (NLSY Sons)	1990
2000 (NLSY Sons)	1990

**Income measures in 1950 were collected for only a subsample of respondents, making cell sizes too small in the IPUMS sample for this year to generate occupation-based income scores.*

As described in the main text, we generally assign income scores based on the average earnings of individuals in the same detailed occupation, race, region of residence, and gender cell, drawn from the decennial census that is closest in timing and contains earnings information. This approach is similar in spirit to the oft-used *occscore* variable from IPUMS (Ruggles et al. 2015), but it has more flexibility to reflect differences by location, race, gender, and farm ownership. Income assignments that would be based on fewer than 50 underlying earnings observations are supplanted with scores based on a race- and occupation-specific national average (not region-specific) or, if necessary, based on a race-specific one-digit occupation (rather than the 3-digit code).

In the 1940 Census, only wage earnings are recorded, leaving all self-employed individuals, including farmers (discussed at length below), without recorded income. For all non-farmers, we simply calculate the ratio of mean earnings for self-employed (non-wage) workers in a particular

occupation to mean earnings of wage workers in the same detailed occupation using the 1960 Census enumeration. We then use this ratio to scale wage earnings from the 1940 Census for assignment to non-wage workers.

Income assignments for farmers are more complex, and in this case we make an important set of adjustments to the basic income-by-occupation data from the census. First, we attempt to distinguish farmers who own their farms from those who do not. Second, we adjust census-based income measures upward to reflect the value of in-kind income. We describe each process in turn.

Farmers are a large and heterogeneous group in the early years covered by our data (63% of fathers in 1880), but they share a single occupation code. In the historical samples, many would be sharecroppers or tenants as opposed to owner-operators, and there is reason to expect their average income to differ (e.g., Blalock 1937, cited in Alston and Ferrie 2005, p. 1067). Unfortunately, the Census of Population provides only limited additional information to help discern between types of farmers. In 1900, 1910, and 1930, we can use information on whether they lived in owner-occupied housing, which is as close as one can get to seeing whether they owned land.[10] For farmers in 1880, we cannot observe home ownership in the Census of Population, and so we rely on tenure status information (farm ownership, in particular) culled from the Census of Agriculture, as described in the main text and Appendix I. So, in the historical samples we can distinguish between farmers who own and farmers who do not, and we assign different income scores. For farmers in the OCG and NLSY sample, there is no information on ownership, and so we do not distinguish between the two. By this time, however, far fewer fathers and sons report farming as their occupation (17 and 3 percent, respectively).

In the historical samples, we assign income to farmers based on the average income of farmers of the same ownership status (owners vs. non-owners), race, and, in the South, Census division of residence. Outside of the South, where there are fewer farmers, particularly black farmers, we assign incomes based on Census region rather than Census division. We explain more about this process after discussing the second major adjustment.

The second adjustment corrects for unreported income for agricultural workers. Both farmers and farm laborers commonly received non-cash earnings in the form of room and board payments-in-kind. The value of such perquisites was not reported as labor income to Census enumerators, and Census-based income figures require adjustment.

[10] This helps distinguish farm owners from non-owners, but it cannot distinguish between sharecroppers and cash rent tenants (or other varieties). Goldenweiser and Truesdell (1924, p. 53) provide breakdowns of farm ownership and tenancy by race and region for 1920 based on the Census of Agriculture. In the 1920 IPUMS sample from the Census of Population, we find a close correspondence between rates of home ownership among southern farmers and the rates of farm ownership reported by Goldenweiser and Truesdell (GT): 49.6 percent of farmers are "tenants" in GT; 50.3 are "not home owners" in IPUMS.

For agricultural laborers, whose income is observable in the 1940 Census returns based on their 1939 earnings history, we scale up reported wages by the ratio of perquisites and cash wages to cash wages alone in 1939, as reported in the 1957 USDA report *Major Statistical Series of the U.S. Department of Agriculture.*[11] This results in a "scale-up" factor of an additional 26% of reported wages for farm laborers when income scores are based on the 1940 Census. We do the same thing for agricultural laborers when occupation scores are based on the 1960 Census, but in this case the last available year of data in the USDA publication is 1956. We use the 1956 rate, but note that other sources show no change in the relative value of perquisite income between 1956 and 1959.[12] (Earnings reported in the 1960 Census are based on respondents' 1959 earnings history.) The implied value of perquisites is 19% of reported wages for farm laborers in 1959 (and 1956).

Farmers are a more challenging group for which to assign incomes, including perquisites, in each reference year because we do not observe their income in the 1940 Census returns. In order to estimate farmer wages for this reference year, we take advantage of the fact that farm laborer wages are reported in all years and assume that the ratio of total compensation (cash income plus perquisites) for land-owning farmers to total compensation for farm laborers is constant between 1940 and 1960 (the next reference Census year). We assume the same for non-land-owning farmers relative to farm laborers. We then use the observable values of farm laborer income (with perquisites) in the 1940 and 1960 reference years, and the observable values of land-owning and non-land-owning farmer income (with perquisites) in 1960, to infer farmer income, including perquisites, in 1940. For farmers in 1960, perquisite values are derived from the same USDA report described above. Unlike farm laborer rates, farmer perquisite rates have high variance, so we use the average value of perquisites from 1955 and 1956 to calculate a base rate, again scaling up by the growth in perquisites from other sources between 1959 and 1955/1956.[13] The net result is a perquisite rate of 35% for farmers in 1959, and the perquisite rate for farmers in 1939 is triangulated as 43%.

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[11] We divide "Value of Perquisites – TOTAL" by "Cash Wages + Value of Perquisites – TOTAL" to calculate the perquisite rate. See Table 7.

[12] USDA Economic Research Service, "Farm Income and Wealth Statistics", accessible at https://data.ers.usda.gov/reports.aspx?ID=39629, is an alternative source for calculating perquisite rates. (Here calculated as non-cash employee compensation divided by the sum of the same and cash labor expenses.) The variable definitions in this series are less clear than for the *Major Statistical Series* and may exclude the in-kind value of housing, and we therefore prefer the latter for calculations. Still, the ERS series shows essentially no change in the implied perquisite rate between 1956 and 1959. For farmers, we will average 1955 and 1956 perquisite rates as a baseline from which to calculate the 1959 rate. For farm laborers, 1955 and 1956 estimates are identical.

[13] The 1960 Census data on farmer compensation is based on respondents'1959 earnings history. The 1957 *Major Statistical Series* publication reports a perquisite rate in 1956, and the next *Statistical Series* we could locate, published in 1969, begins with 1960 data. We average measures of "nonmoney income", "cash receipts" and "production expenses" from 1955 and 1956 from the 1957 report (See Table 15 for total cash

For farm managers in all years, we estimate a perquisite rate as the average of farmers and farm laborers: 34% in 1939 and 27% in 1959.

APPENDIX II. TRANSITION MATRICES

a. Decile to Decile Transition Matrices

Decile-to-decile transition matrices provide rich detail on mobility patterns, though they are unwieldy for presentation. Each row in a matrix displays the distribution of sons over all income deciles, conditional on having a father start in a particular decile. We provide the full set of tables in Tables A1a-A1f and highlight some salient features here.

As discussed in the main text, the majority (71.5%) of southern white fathers were in the bottom four deciles of the earnings-score distribution for men in the US, and nearly all the southern black fathers were in the lowest two deciles. In the 1800-1900 cohort, white sons of fathers in the bottom two deciles of the national distribution of earnings scores were somewhat likely to stay there themselves (about 28 percent), but many moved higher. For instance, nearly 40 percent of whites from the bottom decile in 1880 made it to the American middle class or higher by 1900 (defined here as above the 30th percentile). The story for African Americans is much bleaker. Fewer than 5 percent of black sons from the lowest decile made it to the middle class or higher by 1900, and 77 percent persisted in the lowest income score decile. These results are robust to limiting the sample to older sons whose occupational status is, presumably, more reflective of lifetime economic status.[14] In sum, the decile-to-decile results reinforce the impressions from above—there were large racial differences in the adult fortunes of children in the first post-Civil War generation, even when conditioned on the fathers' economic status.

For the 1930 cohort, black sons fared somewhat better than previously, in that 23.5 percent of sons from the lowest decile made it to the third decile or higher compared to only 11.6 percent in the previous cohort. This reflects, in part, new opportunities for migration to the relatively high-paying North during the Great Migration. Even so, white sons continued to fare far better than black sons with similarly situated fathers. Only 13 percent of white sons persisted in the bottom decile (in 1930), whereas 59 percent of black sons did. Few blacks escaped from the bottom deciles into the middle class. In fact, approximately 90 percent of all black sons remained in the third decile or below.

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receipts, Table 12 for production expenses, and Table 4 for cash receipts.) The perquisite rate is calculated as the ratio of nonmoney income to cash receipts less production expenses. Again, the ERS data provide a benchmark for growth between 1955/1956 and 1959, even though the underlying rate seems to exclude housing from the perquisite calculation.

[14] See Appendix Section IVd.

Another notable feature of the transition matrices for the historical samples is that while some white sons with fathers in the third and fourth deciles fell back into the lowest two deciles, such downward mobility was far more common for black sons with similar starting positions. For the 1930 cohort, for instance, 69 percent of black sons with fathers in the third decile fell into the bottom two deciles compared to only 32 percent of white sons of similarly situated fathers.

As described above, for several reasons the OCG and NLSY datasets are not exactly comparable to the historical datasets. Nonetheless, a large black-white gap in mobility from the bottom is still clearly evident. This is true whether we restrict the age ranges to exactly mimic those in the historical samples, and it is true when we restrict the sample to southern-born fathers or mothers. (We examine southern-born parents in the OCG cohorts as a robustness check in Appendix Section IVe and sensitivity to age restrictions in Appendix Section IVd.) Indeed, the dominant cell in the OCG transition tables is the low-decile parent to low-decile son entry, which shows a 73 percent persistence rate in the 1962 sample and a 59 percent persistence rate in 1973. Fewer than 15 percent of white sons persist in the lowest decile in both cohorts. Similar conclusions can be derived from the mobility of sons of parents in the 2nd through 4th deciles, where 45 percent of black parents fell by 1973. Sons of these black fathers and mothers had a 48 percent chance of falling to a lower income score decile than their parents while white sons fell at a rate of only 22 percent.

The patterns highlighted above continue to be evident for the cohort of sons observed in the NLSY79 covering the end of the 20th century. The persistence rate in the bottom decile for sons in 1990 is almost seven times as large for black sons as for white sons, and the rate of mobility into the middle class from the lowest income score decile is 65% for white sons compared to 25% for black sons. At the same time, black men continue to exhibit strong rates of downward mobility, including probabilities of being in the lowest income decile of 27.5, 19.2, and 25.0 percent for sons of parents in the 2nd, 3rd, and 4th deciles, respectively. The same downward mobility rates for white men are far smaller: 7.5, 5.7 and 5.6 percent, respectively. In the NLSY data, sons' income scores and rankings can be determined in both 1990 (when interviewed sons are ages 25 to 33) and again in 2000 (when they are ages 35 to 43). Observing sons at older ages, and closer to the age 40 "ideal" does little to affect these conclusions (Appendix Table A1f).

b. Occupational Transition Matrices

To provide further context for the labor markets and workers under study, we provide father-son mobility patterns by broad occupational category in Appendix Tables A2a-A2f. For example, in Appendix Table A2a, fathers' occupations in 1880 are listed in the first column (i.e., down the rows), and sons' occupations in 1900 are reported across the columns. Each number in the table represents

the share of sons with occupation X conditional on having a father with occupation Y; the figures sum to 100 within rows. Reading along the table's diagonals highlights father-son pairs who persisted in the same broad occupation category.

For the historical datasets, we created 7x7 transition matrices based on the following categories: 1) farmer owners, 2) farmer non-owners, 3) farm laborers, 4) white-collar workers (professionals, clerical, sales, etc.), 5) blue-collar skilled workers (typically craftsmen), 6) blue-collar semi-skilled workers (typically operatives), and 7) unskilled non-farm laborers. Father-son pairs with missing occupational information for either individual are omitted.

Not surprisingly, most of the fathers in our 1880-1900 samples were engaged in agriculture as farmers who owned farms, farmers who did not own farms, or farm laborers. But white and black fathers were distributed unevenly over these categories. Nearly 60 percent of white fathers working in agriculture owned farms, compared to only 14 percent of black fathers, a discrepancy that directly reflects the legacy of slavery and politics of post-Civil War land redistribution (or lack thereof). Focusing on the transition patterns, it is striking that white sons from almost *every* category of fathers were more likely to move into white-collar work than black sons of fathers in *any* category.[15] Within any given category of fathers, white sons were also far more likely than black sons to move into farm ownership or skilled blue-collar work. The high intergenerational persistence rate of whites in white-collar occupations (49 percent) is also striking.

For the 1910 to 1930 period, the distributions of black and white fathers over occupation categories remain disparate. Whereas white fathers remained concentrated in the "farmer-owner" category, black fathers were concentrated in the "farmer, tenant" category. Relatively few black sons with fathers in the farmer-own category had achieved similar status by 1930 (only 4 percent compared to 10 percent for whites). But, the transition out of agriculture for both white and black sons was substantially more pronounced than in the previous table (for the 1900 cohort of sons). For whites, the sons increased their concentration in white collar and skilled and semi-skilled blue-collar work; for blacks, the increases were concentrated in unskilled and semi-skilled blue-collar work with more modest increases in skilled blue-collar and white collar occupations. Racial differences in mobility conditional on father's status were again pronounced. Sons from every category of white fathers were more likely to obtain white-collar work than the sons from any category of black fathers. Also, sons from every category of black fathers were more likely to hold unskilled non-farm laborer jobs than the sons from any category of white fathers. Overall, one can see relatively large shares of

[15] The only exception is for the sons of white farm laborers, of whom 8.4 percent rose to a white-collar occupation, compared to 8.5 percent of black sons of white-collar workers.

black sons, regardless of where their father started, working in the non-farm unskilled laborer category in 1930.

When we shift to the OCG datasets for 1962 and 1973, we lose the distinction between farmers who owned and did not own land, but by this period far fewer men were engaged in agricultural employment. Because more men are working in white collar occupations, we subdivide the white collar occupation category into "Professional and Managerial" and "Clerical and Sales" categories. Another difference is that the OCG baseline datasets pertain to men from all over the U.S., whereas the historical samples are restricted to those who start in the South. (It is straightforward, however, to restrict the OCG datasets to southern-born men for comparison. See Appendix Section IVe.)

In broad terms, the intergenerational patterns in the 1962 OCG are reminiscent of those in the 1910-30 historical sample. Black sons sorted strongly out of agriculture and into unskilled and semi-skilled blue-collar work. There was also a notable rise in white-collar occupations for black men (18 percent), though still far less common than for whites (43 percent).[16] Finally, there is evidence of more intergenerational persistence for blacks in the white-collar categories than previously, but the rate for professional and managerial white collar workers (38 percent) still lags behind the same for whites (53 percent).

Whereas the 1962 OCG captures a portrait of young men's outcomes just before the major policy changes of the Civil Rights era, the 1973 OCG provides perspective several years afterwards. By 1973, the transition patterns for black men are notably different than before. There was a much stronger shift into white-collar and skilled blue-collar work by sons from all categories of fathers, a shift out of unskilled blue-collar work, and a sharp increase in the persistence of white-collar status (to 50 percent). The transitions observed for whites in the 1973 data are similar to those in the 1962 data, indicating that the improvements for blacks were not simply the result of macro-level structural changes. This is consistent with the economics literature's emphasis on the 1965-75 period as one of relatively rapid improvement for African American workers. Still, despite these advances for black workers, sons of white fathers continue to hold an occupational status advantage over white sons. For example, 71% of white sons of skilled blue collar fathers held skilled blue collar or white collar work themselves. For black sons, the comparable rate is 50%.

A final view of occupational transition comes from the NLSY79, where sons are observed in 1990 and again in 2000. This cohort of black sons appears to have retained many of the advances of the 1973 cohort, but black sons remain over-represented in lower skilled blue collar occupations, and

[16] When the sample is restricted to southern-born men, the rate of employment in white-collar jobs is 2.5 percent for black men and 22.5 for whites.

particularly under-represented in professional and managerial occupations. Ten years later, when these sons are observed again in 2000, these conclusions are unchanged. Again, the occupations of sons conditional on father's occupation differ strikingly by race. 64% of white sons of white collar fathers, for example, are themselves in a white collar occupation, compared to 53% of their black peers. Similarly, white sons of unskilled or semi-skilled blue collar fathers have a 24% chance of reaching professional and managerial status. For similarly-situated black sons, the probability is 17%.

Given the transition matrices, it is straightforward to ask, "What would the occupational distribution of black sons look like if they had moved across categories in the same way that white sons with similar fathers did?" Of course, this approach does not yield deep insight into *why* racial differences in transitions existed, nor does it consider general equilibrium issues, but it can isolate the proximate importance of such differences.

Figure A1 summarizes the implications of black-white differences in transition matrices in each of the samples. The white and black bars correspond to the actual outcomes for white and black sons in 1900, 1930, 1962, 1973, and 1990. (We do not include the 2000 cohort here, but the results are essentially unchanged relative to the 1990 observations.) The gray-shaded bars are the counterfactual distributions of black sons given their fathers' initial status but the white sons' transition matrix. If black-white differences in fathers' initial status were the primary determinants of differences in sons' outcomes, then the gray counterfactual bars would be similar in height to the black bars (i.e., differences in transitions conditional on fathers' status would look relatively unimportant). However, the striking result from all four periods is that differences in transition patterns account for the lion's share of the differences in sons' outcomes. For instance, observe how much closer the gray bars are to the white bars for white-collar work or unskilled blue-collar work. This implies that black sons' outcomes would have been much closer to white sons' outcomes if they had transitioned like whites across occupation categories.

APPENDIX III. ADDITIONAL RESULTS FOR NLSY79 COHORT OBSERVED IN 2000

A unique feature of the 1990 cohort of sons is that the NLSY79 data allow for repeated observation, continuing through the present. We follow sons in the NLSY79 data an additional ten years, through 2000, to evaluate whether the racial differences in intergenerational mobility hold over the longer-run. Because our results are based on occupation scores, and not income *per se*, changes in the longer term will come from movements across occupational categories, inter-regional migration, or changes in the relative ranks of occupation/region/gender/race cell average incomes between 1990 and 2000. Figure 3 in the main text includes results for this 2000 cohort of sons in panel F.

Here, we replicate Figure 2 and Figure 4 for the 2000 cohort, as well as the regressions in Table 3. Appendix Figure A2 contains the results for upward rank mobility, where the probability of exceeding parental income score rankings (Panel A) falls somewhat for black sons compared to 1990. This figure is repeated in Panel A of Figure A8, followed by sensitivity analysis.

Black sons in the counterfactual scenario contained in Panel B of Appendix Figure A2 exhibit less convergence relative to the distribution of white sons at lower ends of the income score distribution, although racial differences in intergenerational transitions continue to explain most of the racial difference in income score rankings in 2000.

Finally, regressions of sons' income scores on those of their fathers and a binary indicator for race using the same empirical method as the main paper's Table 3 are contained in Appendix Table A3. We replicate the regressions for the full sample in 1990 and 2000, but also for a balanced sample of the same sons and fathers observed in both years. (There is some attrition between years.) Results for the NLSY79 cohort observed in 2000 are little changed from the results for observations taken in 1990. Black men continue to experience a disadvantage relative to their white peers of between 19 and 22 percentiles of the national income distribution.

APPENDIX IV. SENSITIVITY TESTS

This section contains sensitivity tests for the paper's main results on upward rank mobility by race and expected outcomes, by race, conditional on parental occupation score rank. For most tests, both Figure 2 and Table 3 in the main text are replicated under alternative assumptions regarding data construction.

a. SENSITIVITY OF 1990 AND 1930 COHORT RESULTS TO MATCH QUALITY

A recent literature studies techniques for and resulting quality of intergenerational matches in historical datasets (Ferrie 1996; Feigenbaum 2016; Massey 2016; Bailey, Henderson, and Massey 2016). The purpose of much of this literature is to assess the accuracy and efficiency of various strategies for linking historical datasets. Our linkage method is different in specifics from the standard methods covered in these papers. Nevertheless, the information contained therein is helpful for bounding the size of the bias in our estimates generated by incorrect intergenerational matches.

Bailey et al. (2016) and Massey (2016) provide evidence of two key issues relevant for our results. First, both estimate a 20 percent rate of "mismatch" in samples generated in a manner similar to the historical samples in this paper. Second, both indicate that tighter controls on age and name

similarity in match generation result in more accurate matches (i.e., a lower rate of mismatch), but may generate higher rates of selection into the linked sample.

Mismatched data in our samples will reduce the power of fathers' characteristics, including their own income score rank, to explain variation in sons' income score ranks. In the context of Table 3, these mismatched data will serve to attenuate the coefficient on "Parent's Income Rank" but increase the coefficient on "black," as racial differences in earnings between black and white sons are less explained by other covariates. (Note that there is likely no mismatch on race. All sons who are black in 1880 are still black in 1900, by matching design. The exception would be if sons "passed" as white in the later census years.)

To evaluate the potential bias generated by mismatched pairs in our sample, we first take advantage of the full set of information gathered on matched pairs to restrict the sample to "exact matches." This restricted set includes (A) only those matches where last name strings are exactly the same in both years[17] and (B) only those matches where the son's age in 1900 or 1930 is exactly equal to their reported age in 1880 or 1910, plus 20 years. The original linking methodology allowed for variance in reported age by up to two years and in the spelling of last names. These tighter restrictions likely improve accuracy of the matches but may also disproportionately reduce the representation of less educated individuals from the matched sample, as selection into the sample now depends more heavily on numeracy and, arguably, on literacy.

For the cohorts of sons in 1900 and 1930, we then re-run the regression specifications in the first two columns of Table 3 on this limited sample of individuals. These results are contained in Appendix Table A4. The baseline results, identical to those contained in Table 3 of the main paper, are included in Columns 1 (for the 1900 cohort of sons) and 4 (for the 1930 cohort of sons). The results for the restricted sample of "exactly matched" individuals are contained in Columns 2 and 5. As predicted, the restriction serves to increase the coefficient on Parents' Income Rank in all specifications while reducing the coefficient on the black indicator by up to three percentage points of the national income distribution. Again, this may be the result of increasing match quality or of increasing selection into the matched sample.

In an attempt to separate the effect of match quality versus match selection, we then take the exactly matched datasets represented in columns 2 and 5 and generate a 20 percent deliberate mismatch rate. To do so, we match 20 percent of fathers to a random son in the 1900 or 1930 data who was born in the same state as the father's actual son and had an age within two years of their

[17] The first three letters of the first name are already selected to match exactly as part of the matching algorithm.

actual son's age in either 1880 or 1910, plus 20 years. We then estimate the coefficients of interest on this deliberately mismatched sample.

The results from this deliberate mismatch exercise are located in Table A3, columns 3 and 6. As expected, the coefficient on the race indicator is higher under the mismatch and the coefficient on parental income score is lower, relative to the exactly matched columns (2 and 5). Indeed, the coefficient values estimated under this random-mismatch are remarkably close to those in the baseline sample, generally deviating by approximately one point of the national income distribution.

We conclude that mismatches in our historical datasets may serve to artificially inflate the coefficient on the race indicator in Table 3 and reduce the coefficient on parental income rank. However, the fundamental conclusions of the paper remain unchanged: conditional on other observables of the household, race, *per se*, was a substantial determinant of sons' economic position for every cohort of sons from 1900 through 2000.

b. SENSITIVITY OF RESULTS TO CHANGES IN INCOME SCORE ASSIGNMENTS

To assess how changes in relative occupation score ranks over time are affecting the paper's main results, we "fix" the Census income assignment year across all samples and re-run the analysis. Because job categories become obsolete over time and because new job categories emerge in each Census year, it is challenging to choose a base year for income score assignments that allows us to make inference both about occupations that existed in 1880 and in 1990. For the purposes of this robustness check, we fix income scores at their 1960 values. The 1960 Census returns have the advantage of continuing to provide income data for the agricultural occupations so prevalent in the historical samples while also containing occupation data for emerging occupation categories found in the late 20th century samples.

With this fixed-in-time income assignment approach, we re-calculate two of the paper's key figures and tables. First, we compare upward rank mobility measures calculated in each sample (Figure 2 of the main text) under both income assignment methods. Second, we replicate the main regression results from Table 3.

Panel A in each of Appendix Figures A3-A8 contains the baseline results on upward rank mobility from the main paper for each cohort of sons, including the 1990 cohort of sons observed in both 1990 (Figure A7) and 2000 (Figure A8). Panel B in each figure contains the same results under a 1960-based income scoring methodology. For each cohort of sons, the change in income scoring methodology has little effect on the upward rank mobility calculations across all cohorts of black and white sons.

At the same time, as shown in Appendix Table A6, moving all income scores to a 1960-based measure generates higher conditional racial gaps in occupational income score rankings for the late 20th century. In particular, the conditional gap rises from around 20 percentiles of the national income distribution under the baseline measure to 26 to 28 percentiles of the same. In all other years, the differences between conditional racial gaps in occupation score rankings are roughly two percentiles of the national income distribution.

c. SENSITIVITY OF RESULTS TO CHANGES IN FAMILY STRUCTURE

Changes in the structures of families and the income-generation roles of women between 1880 and 2000 make the interpretation of rank-rank relationships between fathers and sons presented in the main paper more challenging. Two important questions are whether the occupation scores of non-father adult males (including stepfathers) should be incorporated in the paper's analysis and, related, whether the income of mothers should be incorporated into the intergenerational analysis when fathers are absent.

To simplify discussion, consider three situations for co-residence of sons with their parents. First, for sons living with their fathers, with or without their mother present, the baseline sample compares the occupation scores of these fathers with the occupation scores of their sons later in life.

Second, for sons living with their step-father and mother, the baseline sample takes two different approaches. In the historical samples, the baseline sample compares the occupation scores of stepfathers with the occupation scores of their stepsons later in life. For the modern datasets, the analysis considers the relationship between the mother's income and that of her son later in life.

Third, for sons living with their mother and no apparent step-father, the historical samples drop these individuals from the sample. Women's occupations and, subsequently, income scores are poorly measured in the historical samples, making inference difficult. In addition, given the paper's main results indicating low mobility out of the bottom deciles of the income distribution, it is unlikely that including sons with female household heads (whose income scores are likely to be extraordinarily low, and whose sons would have faced additional roadblocks to mobility) would change the paper's main conclusions.

We examine the sensitivity of the paper's main results to adjusting the modern sample imputation method. For sons living with mothers and a non-father male adult, we substitute the male adult's income score for the score of their mothers. The results of this robustness check for Figure 2 of the main text and Table 3 are contained in Panel C of Appendix Figures A5-A8 and in Appendix Table A7. Because stepfathers are already included in the analysis for 1900 and 1930 cohorts of sons,

and because there are few non-father adult males living in households who are not also stepfathers, there is no change relative to the baseline calculations for these initial cohorts.

Panels C of Figures A5-A8 provide little evidence that the main paper's core conclusions regarding racial differences in upward rank mobility for the 1962, 1973 and 1990 cohorts of sons are sensitive to changes in family structure. Similarly, differences in estimates of racial differences in income score rankings (Appendix Table A7) are remarkably impervious to shifting definitions of "parent" for these same cohorts. In each case, the differences relative to the baseline results are consistently few than one percentile of the national income distribution.

d. SENSITIVITY OF RESULTS TO AGE AT SON'S OBSERVATION

In the baseline samples, sons' occupation outcomes are measured when the sons are between 20 and 37 years of age for the two historical samples, between 20 and 43 years old for the OCG samples, between 25 and 33 years old in the NLSY sample measured in 1990 and between 35 and 43 years old in the NLSY sample measured in 2000. To determine the sensitivity of our results to a consistent set of sons' ages across samples, we limit the samples in each year to sons aged 30 to 37. This strategy both gives us sons at a consistent age across samples and addresses the possibility of lifecycle bias wherein sons early in their career may not yet reflect their lifetime earning potential. For the NLSY samples, this results in a sample of sons aged 30 to 33 in 1990 and 35 to 37 in 2000.

In the main paper, Table 3 contains this sensitivity analysis for conditional racial differences in income score rankings in the right-hand columns. For the paper's main results on racial differences in upward rank mobility, we replicate Figure 2 for this restricted age group in Panels D of Appendix Figures A3-A8. Again, there is little evidence the racial differences in upward rank mobility are sensitive to the age at which sons' occupations are observed.

e. SENSITIVITY OF RESULTS TO A SOUTHERN-RESIDENT FATHER RESTRICTION

As discussed in the main text, one incongruence between the historical and modern samples is the restriction on parent's place of birth. Because almost all black sons are born to fathers who were themselves born in the South before 1930, and because inter-regional migration is low prior to 1917, we limit the historical samples to southern-resident fathers. The sons of these men may live in any region and be included in our baseline sample.

For the OCG and NLSY samples, black and white parent-son pairs in our samples have no geographic restriction, reflecting the end of regionalization of the black population during and following the Great Migration.

To examine the import of these differences, we limit the OCG and NLSY samples to those parent-son pairs where the father or mother (if the father is absent) was residing in the South Census region at the time their occupation was reported. (The OCG data on parental occupation and residence is retrospective.)

The results of this robustness check for Figure 2 of the main text and Table 3 are contained in Panels E of Appendix Figures A5-A8 and in Appendix Table A8. Sample size restrictions mean we can calculate bootstrapped standard errors for a smaller subset of black parent deciles relative to the baseline. Still, there is little evidence that Southern-residing fathers in the late 20th century generate remarkably different upward rank mobility trajectories for their sons relative to the full sample. For the 1962 cohort of sons, upward rank mobility appears slightly lower for black sons of southern-resident fathers, and there is no difference in results for 1973 sons. White sons of southern-resident fathers in the 1990 cohort also appear to have slightly lower upward rank mobility, but the racial gap persists and is apparent in the 2000 observations of this cohort of sons as well.

Finally, Appendix Table A8 again demonstrates the robustness of the paper's main conclusions to changes in the underlying sample. Conditional racial gaps in sons' income scores for the 1962, 1973 and 1990 cohorts of sons are largely impervious to restricting the sample to Southern-resident fathers. These point estimates differ from the baseline by around one percentile of the national income distribution.

APPENDIX V. COUNTERFACTUAL DISTRIBUTIONS OF BLACK INCOME RANKS

A key finding of the analysis is that racial differences in the distribution of black sons' income score ranks in each cohort are largely explained by differences in the transitions from fathers' to sons' ranks. Given the transition rates of white sons, black sons' income score distributions would closely mimic those of their white peers. This finding is supported visually in Figure 4 which plots the distributions of black and white sons' income score ranks as well as the counterfactual distribution of black sons under white sons' transition patterns.

To quantify the difference in the counterfactual black distribution and the white distribution in each cohort, we take two different approaches. First, we calculate a dissimilarity index based on

ventiles of the national income score distribution.[18] A dissimilarity index calculated in this way indicates what share (between 0 and 1) of black (or white) sons would need to occupy different ventiles of the national income score distribution in order for the two distributions to be equal. Appendix Table A9 summarizes the findings for each cohort of sons.

Second, we use Hellinger distance estimates, again ranging from 0 to 1, to quantify the difference in smoothed kernel distributions of the black and white income score distributions. The kernel chosen for these estimates is STATA's "adaptive" kernel which uses a different bandwidth across the support of the distribution in recognition of varying mass at different points. Kernel estimates are generated at each of 100 percentiles of the national income distribution, and the distance index between these distributions, ranging from 0 to 1, is calculated according to Hellinger's formula.[19] There is no ready interpretation of the Hellinger distance corresponding to that for the dissimilarity index. Again, these results are contained in Appendix Table A8.

Our results indicate that mobility rates of black sons, conditional on their fathers' income scores, comprise the majority of the differences in black and white sons' relative positions in each cohort. These differences account for 66 to 70 percent of differences for the 1973 and 1990 cohorts and between 70 and 87 percent of the same in the years prior to and including 1962.[20]

APPENDIX VI. INCORPORATING AGCT/AFQT SCORES

To evaluate the role of acquired human capital for determining racial gaps in intergenerational mobility, we add test score data to the descriptive regression results from Table 3 in the main text. For both the 1930 cohort of sons and the NLSY79 cohort observed in 1990, we replicate the conditional gap in sons' income score ranks from Panel A of Table 3 as the top panel of Appendix Table A10. Controlling for fathers' rank, the unexplained gap in sons' rank in 1930 is 22.68 percentiles of the national income distribution and 18.94 percentiles in 1990.

We then add Armed Forces Qualification Test (AFQT) percentile scores to the regression. These scores are recorded for nearly all individuals in the NLSY79 data and were measured in the 1980 when the respondents were ages 15 to 23 (Neal and Johnson 1996, p. 873). The scores enter the equation as fixed effects to allow for non-linearity in the relationship between scores and earnings rank outcomes. With this additional human capital measure, the conditional racial gap falls to 10.59.

[18] DI = $\frac{1}{2}\sum_{i=1}^{20}\left|\frac{b_i}{B}-\frac{w_i}{W}\right|$.

[19] HD = $\frac{1}{\sqrt{2}}\sqrt{\sum_{i=1}^{100}\left(\sqrt{\frac{b_i}{B}}-\sqrt{\frac{w_i}{W}}\right)^2}$

[20] The NLSY79 cohort observed in 2000 exhibits a similar pattern.

Although we do not directly observe test scores for any other cohorts in our sample, we can use scores observed in the WWII enlistment records in the National Archives to gain some insight. For several months in 1943, enlistees' scores on an AFQT predecessor, Army General Classification Test (AGCT), were recorded at enlistment (Ferrie *et al* 2012). For this sample of individuals, enlistment data also include occupation, race, place of enlistment, educational attainment, etc. Most men in the sample are young (aged 20 or less), and so inference is based on the AGCT scores of young men. Using this information, we calculate mean values of AGCT by occupation, race, and region of residence, imposing the same minimum sample size restrictions as we do for income scores as described above. We then use these average AGCT scores by cell to impute scores to similar men in our 1930 sample. The regression results, contained in Appendix Table A10, reveal a conditional wage gap of 6.83 when controlling for fathers' rank and imputed AGCT scores (which are rounded to the nearest integer and entered as fixed effects).

APPENDIX VII. TABLES & FIGURES

TABLE A1A: DECILE-TO-DECILE TRANSITION MATRICES, BY RACE, 1880-1900 COHORT

SONS' DECILE IN 1900

FATHERS' DECILE IN 1880	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	ALL
1st	White: 27.9 **Black: 76.7**	22.6 **11.7**	9.7 **7.1**	7.3 **3.2**	7.7 **0.5**	8.4 **0.3**	4.0 **0.2**	3.5 **0.1**	2.5 **0.1**	6.5 **0.0**	5.6 **83.9**
2nd	23.3 **72.2**	23.7 **19.0**	10.5 **7.3**	8.5 **0.6**	11.2 **0.3**	5.8 **0.3**	3.8 **0.0**	5.8 **0.0**	2.9 **0.3**	4.5 **0.0**	26.0 **15.9**
3rd	19.7 **100.0**	6.6 **0.0**	19.2 **0.0**	23.9 **0.0**	4.0 **0.0**	5.7 **0.0**	3.8 **0.0**	5.0 **0.0**	4.0 **0.0**	8.1 **0.0**	19.0 **0.1**
4th	21.8 **100.0**	24.7 **0.0**	3.7 **0.0**	5.4 **0.0**	18.6 **0.0**	3.2 **0.0**	2.7 **0.0**	8.1 **0.0**	4.6 **0.0**	7.2 **0.0**	20.9 **0.1**
5th	9.4 ---	10.7 ---	4.7 ---	6.5 ---	15.9 ---	13.8 ---	7.5 ---	12.5 ---	12.1 ---	7.0 ---	1.1 **0.0**
6th	20.2 ---	11.0 ---	4.1 ---	2.6 ---	5.9 ---	23.9 ---	12.0 ---	7.4 ---	4.7 ---	8.3 ---	6.1 **0.0**
7th	21.8 ---	5.9 ---	0.0 ---	38.2 ---	0.0 ---	0.0 ---	0.0 ---	7.6 ---	12.7 ---	13.8 ---	0.4 **0.0**
8th	17.7 ---	8.8 ---	2.6 ---	3.0 ---	3.2 ---	23.0 ---	20.8 ---	8.7 ---	4.6 ---	7.6 ---	12.1 **0.0**
9th	7.3 ---	15.2 ---	5.7 ---	9.6 ---	3.3 ---	8.4 ---	4.6 ---	21.5 ---	9.6 ---	14.9 ---	1.9 **0.0**
10th	9.5 **100.0**	8.1 **0.0**	4.6 **0.0**	4.8 **0.0**	7.3 **0.0**	6.6 **0.0**	4.4 **0.0**	17.6 **0.0**	13.2 **0.0**	24.1 **0.0**	6.8 0.0
ALL	20.29 **76.00**	16.58 **12.86**	8.74 **7.16**	9.55 **2.82**	9.47 **0.49**	8.74 **0.28**	6.23 **0.20**	7.63 **0.04**	4.72 **0.14**	8.06 **0.00**	100.0 **100.0**

TABLE A1B: DECILE-TO-DECILE TRANSITION MATRICES, BY RACE, 1910-1930 COHORT

SONS' DECILE IN 1930

FATHERS' DECILE IN 1910	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	ALL
1st	White: 12.8 **Black: 58.8**	22.7 **17.7**	10.0 **14.0**	14.3 **6.3**	12.8 **1.9**	7.0 **0.4**	6.3 **0.5**	3.8 **0.2**	7.0 **0.2**	3.3 **0.0**	5.9 **87.6**
2nd	11.6 **39.8**	27.3 **30.7**	8.5 **16.0**	15.7 **10.9**	8.2 **1.2**	6.2 **0.3**	8.4 **0.4**	5.2 **0.0**	4.6 **0.5**	4.3 **0.4**	18.7 **10.6**
3rd	10.1 **35.0**	21.9 **34.2**	11.7 **8.9**	15.2 **6.5**	6.8 **8.9**	8.8 **0.0**	8.0 **0.0**	6.0 **6.5**	8.0 **0.0**	3.5 **0.0**	16.0 **0.6**
4th	7.9 **20.8**	20.2 **5.6**	6.0 **18.8**	22.8 **41.6**	7.4 **7.6**	5.7 **0.0**	9.8 **5.6**	6.3 **0.0**	7.0 **0.0**	7.0 **0.0**	16.4 **0.7**
5th	8.1 **65.0**	15.2 **17.5**	6.4 **17.5**	5.9 **0.0**	28.1 **0.0**	9.3 **0.0**	8.9 **0.0**	9.5 **0.0**	6.1 **0.0**	2.6 **0.0**	11.0 **0.1**
6th	5.3 ---	14.1 ---	12.3 ---	8.8 ---	10.5 ---	10.5 ---	10.5 ---	7.0 ---	10.5 ---	10.5 ---	0.6 **0.0**
7th	5.6 **66.7**	13.8 **0.0**	5.7 **33.3**	3.9 **0.0**	27.0 **0.0**	12.4 **0.0**	8.3 **0.0**	9.7 **0.0**	9.7 **0.0**	3.9 **0.0**	15.2 **0.1**
8th	6.2 **0.0**	10.0 **50.0**	7.1 **50.0**	11.6 **0.0**	12.7 **0.0**	6.7 **0.0**	14.0 **0.0**	10.9 **0.0**	12.0 **0.0**	8.7 **0.0**	5.4 **0.1**
9th	4.6 ---	10.2 ---	4.8 ---	7.3 ---	11.8 ---	7.3 ---	15.1 ---	11.5 ---	15.3 ---	12.1 ---	6.1 **0.0**
10th	3.1 **0.0**	10.1 **0.0**	6.0 **100.0**	9.9 **0.0**	10.1 **0.0**	7.8 **0.0**	14.0 **0.0**	10.3 **0.0**	10.1 **0.0**	18.7 **0.0**	4.7 0.0
ALL	8.38 **56.28**	18.75 **19.14**	7.63 **14.29**	12.77 **6.99**	13.74 **1.91**	8.06 **0.36**	9.47 **0.53**	7.54 **0.24**	7.94 **0.22**	5.73 **0.04**	100.0 **100.0**

TABLE A1C: DECILE-TO-DECILE TRANSITION MATRICES, BY RACE, OCG 1962 COHORT

SONS' DECILE IN 1962

FATHERS' DECILE IN ~1950	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	**ALL**
1st	White: 14.8 **Black: 73.1**	17.7 **11.7**	11.6 **12.3**	8.2 **0.5**	10.1 **1.1**	11.7 **0.6**	10.7 **0.5**	6.7 **0.0**	5.3 **0.2**	3.3 **0.0**	5.1 **70.0**
2nd	6.7 **25.0**	12.8 **22.9**	6.6 **35.0**	11.0 **3.4**	14.9 **4.1**	13.5 **2.7**	12.0 **5.9**	9.1 **0.0**	7.5 **0.0**	6.1 **1.1**	10.2 **17.6**
3rd	9.9 **0.0**	23.8 **44.7**	18.3 **47.1**	5.4 **8.2**	7.6 **0.0**	11.0 **0.0**	8.0 **0.0**	4.9 **0.0**	8.0 **0.0**	3.3 **0.0**	12.0 **1.6**
4th	5.7 **14.1**	10.6 **18.9**	9.5 **38.0**	15.0 **0.0**	11.5 **19.8**	11.1 **3.9**	8.7 **5.4**	10.9 **0.0**	8.5 **0.0**	8.5 **0.0**	8.6 **7.5**
5th	6.7 59.7	7.5 0.0	4.4 40.3	23.3 0.0	13.4 **0.0**	12.0 0.0	8.6 0.0	8.9 0.0	6.0 0.0	9.2 0.0	10.7 **0.3**
6th	6.0 **14.8**	8.7 **9.3**	7.5 **16.0**	13.3 **0.0**	13.7 **27.8**	11.5 **25.5**	12.2 **6.6**	11.5 **0.0**	5.5 **0.0**	10.2 **0.0**	7.9 **1.8**
7th	5.4 **0.0**	7.4 **58.3**	3.7 **41.7**	10.9 **0.0**	13.5 **0.0**	13.7 **0.0**	15.0 **0.0**	12.3 **0.0**	8.9 **0.0**	9.3 **0.0**	11.4 **0.6**
8th	2.5 72.6	6.1 0.0	4.5 0.0	8.7 0.0	11.2 0.0	9.8 0.0	19.4 0.0	13.1 27.4	12.4 0.0	12.2 0.0	12.4 0.4
9th	3.8 ---	6.0 ---	4.5 ---	6.0 ---	9.0 ---	11.1 ---	11.8 ---	18.2 ---	15.6 ---	14.0 ---	11.2 **0.1**
10th	2.5 ---	3.5 ---	3.1 ---	6.0 ---	10.0 ---	5.6 ---	10.0 ---	16.8 ---	14.5 ---	28.1 ---	10.5 **0.0**
ALL	5.91 **57.35**	10.1 **15.04**	7.12 **19.05**	10.66 **1.08**	11.42 **3.48**	11.03 **1.64**	11.85 **1.92**	11.5 **0.10**	9.61 **0.14**	10.8 **0.20**	100.0 **100.0**

TABLE A1D: DECILE-TO-DECILE TRANSITION MATRICES, BY RACE, OCG 1973 COHORT

SONS' DECILE IN 1973

FATHERS' DECILE IN ~1960	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	**ALL**
1st	White: 13.6 **Black: 58.9**	13.5 **17.5**	14.3 **10.2**	10.3 **4.3**	10.8 **5.4**	11.5 **1.7**	7.0 **1.1**	6.7 **0.7**	8.0 **0.0**	4.4 **0.2**	4.4 **49.0**
2nd	9.3 **40.5**	13.6 **24.0**	13.0 **12.2**	10.1 **5.8**	11.8 **6.4**	9.7 **6.6**	8.2 **2.7**	7.3 **0.7**	11.8 **0.0**	5.3 **1.2**	8.7 **30.3**
3rd	5.5 **26.9**	12.7 **36.8**	14.7 **4.4**	12.7 **12.7**	10.9 **6.1**	10.5 **6.7**	9.7 **3.6**	8.1 **1.3**	9.3 **0.0**	5.9 **1.6**	8.6 **4.8**
4th	8.4 **13.6**	14.3 **26.0**	12.6 **23.6**	13.8 **7.9**	11.3 **8.6**	9.1 **13.4**	8.9 **3.0**	7.4 **1.7**	9.3 **0.0**	4.9 **2.2**	10.2 **9.6**
5th	6.2 44.9	6.5 24.4	8.4 4.1	10.8 3.4	12.4 **5.2**	13.0 12.5	15.8 5.6	11.6 0.0	6.4 0.0	8.9 0.0	11.2 **1.7**
6th	6.3 **25.0**	9.2 **24.0**	10.1 **20.5**	13.4 **0.0**	13.2 **5.9**	11.3 **15.6**	9.7 **9.1**	10.0 **0.0**	8.4 **0.0**	8.5 **0.0**	8.9 **1.1**
7th	6.4 **0.0**	7.6 **23.5**	9.9 **33.4**	11.0 **3.7**	11.7 **15.8**	14.5 **17.2**	11.6 **0.0**	10.0 **0.0**	9.8 **0.0**	7.4 **6.4**	12.1 **1.4**
8th	5.1 **10.5**	5.6 **22.5**	7.8 **7.9**	11.9 **6.5**	9.6 **8.9**	9.9 **21.1**	14.4 **6.6**	13.2 **3.0**	11.6 **0.0**	11.1 **12.9**	11.9 **1.7**
9th	7.1 **0.0**	5.9 **0.0**	8.4 **0.0**	9.0 **0.0**	8.7 **0.0**	8.9 **0.0**	10.4 **0.0**	14.7 **0.0**	17.8 **0.0**	9.2 **0.0**	12.2 **0.0**
10th	4.6 **0.0**	4.0 **0.0**	6.3 **21.8**	6.5 **14.6**	6.7 **20.9**	7.4 **42.7**	13.0 **0.0**	15.1 **0.0**	16.3 **0.0**	20.1 **0.0**	11.8 **0.4**
ALL	6.79 **44.99**	8.67 **21.50**	10.04 **12.13**	10.83 **5.49**	10.55 **6.29**	10.52 **5.57**	11.31 **2.15**	10.93 **0.83**	11.24 **0.00**	9.11 **1.06**	100.0 **100.0**

TABLE A1E: DECILE-TO-DECILE TRANSITION MATRICES, BY RACE, NLSY79 COHORT (IN 1990)

FATHERS' DECILE IN ~1970	SONS' DECILE IN 1990: 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	ALL
1st	White: 6.1	17.9	10.7	15.1	12.4	9.7	9.6	5.0	6.7	6.9	4.8
	Black: 41.0	**18.4**	**16.1**	**10.1**	**1.7**	**4.0**	**4.4**	**2.0**	**2.3**	**0.0**	**37.5**
2nd	7.5	10.5	6.7	13.4	15.0	12.4	7.3	12.1	7.3	7.9	6.6
	27.5	**21.1**	**19.2**	**12.8**	**2.8**	**2.9**	**7.6**	**2.4**	**3.7**	**0.0**	**28.6**
3rd	5.7	10.9	13.2	14.1	13.0	11.7	6.1	7.9	8.4	9.0	8.9
	19.2	**17.7**	**14.6**	**17.2**	**5.0**	**6.8**	**11.7**	**1.9**	**5.9**	**0.0**	**13.3**
4th	5.6	9.2	12.9	10.1	13.2	9.1	12.3	8.2	7.0	12.5	9.7
	25.0	**13.5**	**5.5**	**16.6**	**8.7**	**9.2**	**11.3**	**4.3**	**6.0**	**0.0**	**11.8**
5th	6.3	9.4	11.2	8.5	13.1	10.0	11.4	11.1	10.4	8.7	10.1
	9.0	**13.4**	**7.9**	**16.1**	**5.0**	**24.2**	**13.6**	**7.1**	**3.9**	**0.0**	**3.7**
6th	6.0	3.8	7.8	7.7	19.8	11.1	12.3	13.6	7.6	10.5	12.0
	10.2	**30.1**	**10.7**	**13.6**	**0.0**	**2.8**	**15.3**	**3.0**	**11.0**	**3.3**	**4.0**
7th	3.4	6.7	11.7	6.9	14.3	15.1	11.2	8.5	10.8	11.6	11.6
	0.0	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**
8th	4.5	3.9	8.2	10.0	7.8	10.5	14.7	14.0	13.9	12.5	11.7
	0.0	**0.0**	**0.0**	**0.0**	**25.0**	**12.0**	**23.0**	**0.0**	**29.0**	**11.0**	**0.7**
9th	2.9	4.1	5.7	3.7	5.8	11.6	11.4	14.6	20.7	19.6	12.2
	---	---	---	---	---	---	---	---	---	---	**0.0**
10th	2.6	3.4	7.0	5.3	6.9	6.0	10.3	18.7	14.7	25.2	12.4
	0.0	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**47.2**	**0.0**	**52.8**	**0.2**
ALL	4.8	6.96	9.32	8.68	11.86	10.69	10.97	12	11.41	13.31	100.0
	29.52	**18.76**	**14.85**	**12.85**	**3.47**	**5.38**	**7.96**	**2.70**	**4.17**	**0.34**	**100.0**

TABLE A1F: DECILE-TO-DECILE TRANSITION MATRICES, BY RACE, NLSY79 COHORT (IN 2000)

FATHERS' DECILE IN ~1970	SONS' DECILE IN 2000: 1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	ALL
1st	White: 8.8	7.7	21.1	12.4	7.8	7.5	6.4	7.2	10.5	10.6	4.8
	Black: 36.0	**20.8**	**16.1**	**2.4**	**8.6**	**7.6**	**3.9**	**4.5**	**0.0**	**0.0**	**37.9**
2nd	3.4	11.1	10.4	14.6	12.5	9.0	14.6	5.4	6.5	12.5	7.0
	31.0	**22.8**	**16.0**	**4.1**	**7.7**	**12.1**	**2.5**	**3.9**	**0.0**	**0.0**	**28.5**
3rd	5.5	7.4	14.7	12.6	12.0	12.7	8.3	7.6	7.4	11.9	9.3
	26.8	**20.7**	**15.2**	**5.0**	**5.6**	**11.4**	**6.5**	**8.8**	**0.0**	**0.0**	**13.2**
4th	8.5	8.0	13.8	8.6	9.9	15.6	6.6	12.4	4.4	12.3	9.7
	16.9	**10.1**	**26.3**	**7.0**	**13.7**	**6.9**	**6.1**	**13.2**	**0.0**	**0.0**	**11.6**
5th	4.8	7.9	5.1	16.1	11.2	12.5	16.0	10.0	4.3	12.1	9.4
	25.3	**4.7**	**22.5**	**15.3**	**14.5**	**7.6**	**8.8**	**1.4**	**0.0**	**0.0**	**4.3**
6th	6.2	7.7	5.8	15.1	7.9	15.7	15.5	6.3	6.8	13.0	12.3
	12.2	**10.0**	**12.9**	**8.0**	**8.5**	**23.3**	**9.8**	**11.3**	**4.1**	**0.0**	**3.5**
7th	3.1	8.9	7.0	10.0	12.6	14.4	8.8	11.1	6.7	17.4	11.2
	0.0	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.2**
8th	2.4	5.0	4.2	13.4	4.7	11.2	16.5	10.1	13.0	19.6	11.8
	0.0	**0.0**	**23.9**	**10.6**	**12.4**	**23.9**	**0.0**	**29.2**	**0.0**	**0.0**	**0.7**
9th	2.5	6.6	3.0	4.4	6.2	7.1	9.7	13.0	21.8	25.9	12.0
	---	---	---	---	---	---	---	---	---	---	**0.0**
10th	3.4	5.2	2.6	9.8	4.5	7.6	15.7	15.1	8.2	27.9	12.6
	0.0	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100.0**	**0.0**	**0.0**	**0.0**	**0.1**
ALL	4.56	7.32	7.6	11.44	8.61	11.51	12.22	10.23	9.23	17.29	100.0
	29.49	**18.83**	**17.48**	**4.56**	**8.78**	**9.93**	**4.61**	**6.18**	**0.14**	**0.00**	**100.0**

Notes and Sources: Data construction described in the Data Appendix and in the main text. Matrices demonstrate the probability that sons rank in each income score decile, given the income score decile of their father. See main text for definition of "father" in each sample. Rows sum to 100% within race. Final row of each figure gives the aggregate distribution of sons across income score deciles for each cohort, separately by race. See Appendix Section II for more discussion.

TABLE A2A: OCCUPATION-TO-OCCUPATION TRANSITION MATRICES, BY RACE, 1880-1900 COHORT

SONS' OCCUPATION CATEGORY IN 1900

FATHERS' OCCUPATION CATEGORY IN 1880	Farmer, owner	Farmer, tenant	Farm laborer	White collar	Blue collar, skilled	Blue collar, semi-skill	Blue collar, laborer	*N*
Farmer, owner	21.54 **10.97**	22.82 **31.52**	21.57 **24.56**	14.20 **4.29**	6.39 **0.47**	5.44 **7.78**	8.03 **20.40**	*1772* ***211***
Farmer, tenant	13.49 **3.37**	26.06 **29.43**	24.66 **30.00**	10.71 **2.19**	7.57 **2.38**	5.70 **6.57**	11.81 **26.05**	*1035* ***846***
Farm laborer	8.55 **1.83**	23.39 **26.21**	34.46 **29.53**	8.38 **2.76**	8.11 **2.30**	5.15 **6.80**	11.96 **30.56**	*180* ***497***
White collar	7.61 **0.00**	7.34 **32.83**	9.25 **20.25**	48.74 **8.49**	9.23 **0.00**	10.35 **17.03**	7.47 **21.40**	*374* ***22***
Blue collar, skilled	11.18 **6.28**	9.22 **17.23**	13.95 **23.41**	19.10 **1.70**	22.68 **10.00**	12.94 **6.34**	10.94 **35.04**	*312* ***63***
Blue collar, semi-sk	6.40 **2.10**	9.74 **8.71**	14.31 **23.67**	20.22 **2.25**	19.21 **3.96**	16.99 **14.03**	13.14 **45.30**	*116* ***48***
Blue collar, laborer	11.07 **3.58**	14.43 **17.07**	19.33 **27.51**	12.51 **3.62**	7.72 **2.73**	9.18 **11.94**	25.75 **33.55**	*194* ***464***
All	15.79 **3.82**	20.39 **25.42**	20.9 **28.39**	16.76 **2.89**	8.74 **2.48**	7.05 **8.18**	10.37 **28.82**	*3,983* ***2,151***

TABLE A2B: OCCUPATION-TO-OCCUPATION TRANSITION MATRICES, BY RACE, 1910-1930 COHORT

SONS' OCCUPATION CATEGORY IN 1930

	Farmer, owner	Farmer, tenant	Farm laborer	White collar	Blue collar, skilled	Blue collar, semi-skill	Blue collar, laborer	*N*
Farmer, owner	10.35 **4.29**	20.30 **23.84**	6.43 **8.32**	21.02 **4.41**	13.02 **5.28**	15.75 **15.11**	13.12 **38.75**	*3874* ***290***
Farmer, tenant	5.45 **1.49**	24.96 **32.16**	9.72 **11.13**	17.62 **2.72**	12.76 **4.66**	15.79 **13.46**	13.69 **34.38**	*2367* ***1082***
Farm laborer	7.19 **1.71**	20.89 **20.50**	10.21 **14.31**	17.86 **4.12**	12.75 **4.24**	16.24 **16.49**	14.85 **38.63**	*431* ***268***
White collar	3.26 **0.00**	8.25 **4.83**	4.27 **5.70**	48.15 **12.26**	16.44 **15.72**	11.59 **33.21**	8.04 **28.28**	*1386* ***39***
Blue collar, skilled	3.69 **0.00**	7.97 **17.09**	4.78 **9.26**	28.81 **9.73**	23.33 **7.83**	19.25 **18.62**	12.16 **37.47**	*1004* ***52***
Blue collar, semi-sk	1.97 **1.09**	9.07 **12.00**	5.77 **11.66**	23.05 **1.43**	16.97 **5.94**	27.19 **26.39**	15.98 **41.49**	*608* ***119***
Blue collar, laborer	3.16 **1.69**	13.43 **17.82**	8.79 **9.90**	15.09 **2.98**	15.74 **5.44**	23.71 **17.06**	20.08 **45.11**	*603* ***341***
All	6.57 **1.84**	17.51 **25.73**	7.00 **10.86**	24.29 **3.41**	14.81 **5.12**	16.71 **15.65**	13.12 **37.39**	*10,273* ***2,182***

TABLE A2C: OCCUPATION-TO-OCCUPATION TRANSITION MATRICES, BY RACE, 1962 COHORT

SONS' OCCUPATION CATEGORY IN 1962

FATHERS' OCCUPATION CATEGORY IN ~1950	Farmer	Farm laborer	Profess & Managerial	Clerical & Sales	Blue collar, skilled	Blue collar, semi-skill	Blue collar, laborer	*N*
Farmer, owner	15.85	6.14	17.95	7.88	21.35	24.63	6.20	*2008*
	10.05	**15.20**	**3.27**	**3.29**	**6.84**	**35.44**	**25.91**	***292***
Farm laborer	4.07	11.94	7.06	10.45	24.89	30.79	10.79	*209*
	0.00	**21.77**	**1.79**	**6.18**	**9.23**	**30.68**	**30.36**	***59***
Professional & Managerial	0.55	0.18	52.81	19.66	13.57	10.26	2.97	*1599*
	0.00	**2.04**	**37.64**	**11.40**	**14.35**	**18.65**	**15.92**	***38***
Clerical and Sales	1.03	0.00	44.98	21.08	16.27	14.24	2.39	*799*
	0.00	**0.00**	**31.64**	**22.38**	**8.64**	**27.70**	**9.63**	***21***
Blue collar, skilled	0.55	0.63	27.79	13.92	29.08	21.83	6.19	*2047*
	0.00	**2.32**	**17.69**	**17.43**	**11.66**	**32.58**	**18.32**	***82***
Blue collar, semi-sk	0.60	1.04	21.42	13.82	23.71	31.65	7.77	*2000*
	0.00	**5.46**	**10.47**	**10.30**	**9.25**	**34.04**	**30.48**	***136***
Blue collar, laborer	0.87	1.25	17.63	12.68	24.38	32.71	10.48	*601*
	1.15	**2.14**	**7.88**	**10.39**	**10.39**	**31.72**	**36.33**	***151***
All	3.89	2.02	29.28	14.15	22.00	22.67	5.99	*9,263*
	3.96	**9.03**	**9.28**	**8.56**	**9.09**	**32.76**	**27.32**	***779***

TABLE A2D: OCCUPATION-TO-OCCUPATION TRANSITION MATRICES, BY RACE, 1973 COHORT

SONS' OCCUPATION CATEGORY IN 1973

FATHERS' OCCUPATION CATEGORY IN ~1960	Farmer	Farm laborer	Profess & Managerial	Clerical & Sales	Blue collar, skilled	Blue collar, semi-skill	Blue collar, laborer	*N*
Farmer	11.12	4.80	19.93	8.51	24.58	23.58	7.48	*1823*
	2.51	**5.17**	**10.73**	**6.84**	**17.66**	**35.26**	**21.82**	***409***
Farm laborer	1.74	8.60	13.59	7.92	26.20	32.24	9.71	*584*
	1.80	**4.31**	**7.74**	**6.67**	**20.48**	**37.65**	**21.36**	***221***
Professional & Managerial	0.41	0.52	49.68	15.79	15.97	13.39	4.23	*3047*
	0.00	**0.00**	**48.04**	**18.03**	**6.45**	**22.07**	**5.40**	***186***
Clerical and Sales	0.15	0.45	40.50	19.25	17.82	16.59	5.24	*1440*
	0.00	**2.50**	**28.46**	**8.35**	**13.68**	**35.98**	**11.03**	***111***
Blue collar, skilled	0.39	0.55	28.65	12.33	29.73	22.34	6.01	*3444*
	0.00	**0.00**	**17.95**	**14.82**	**17.95**	**31.95**	**17.34**	***286***
Blue collar, semi-sk	0.16	0.51	23.14	12.73	26.60	29.55	7.30	*3058*
	0.00	**0.76**	**18.60**	**12.99**	**12.59**	**38.35**	**16.71**	***557***
Blue collar, laborer	0.41	0.95	21.06	9.66	28.17	28.87	10.89	*1008*
	0.00	**0.96**	**12.73**	**11.65**	**14.60**	**37.37**	**22.69**	***597***
All	1.71	1.36	31.11	13.06	24.00	22.30	6.46	*14,404*
	0.58	**1.80**	**17.96**	**11.50**	**14.84**	**35.14**	**18.18**	***2,367***

TABLE A2E: OCCUPATION-TO-OCCUPATION TRANSITION MATRICES, BY RACE, 1990 COHORT OBSERVED IN 1990

SONS' OCCUPATION CATEGORY IN 1990

FATHERS' OCCUPATION CATEGORY IN ~1974	Farmer	Farm laborer	Profess & Managerial	Clerical & Sales	Blue collar, skilled	Blue collar, semi-skill	Blue collar, laborer	*N*
Farmer	14.87	8.44	19.95	10.47	17.82	19.35	9.10	*79*
	0.00	**0.00**	**0.00**	**14.29**	**36.84**	**29.32**	**19.55**	***8***
Farm laborer	0.00	10.73	0.00	3.07	50.26	21.12	14.82	*19*
	3.93	**0.00**	**9.69**	**0.00**	**28.27**	**31.94**	**26.18**	***27***
Professional & Managerial	0.18	0.52	50.96	17.37	16.61	9.64	4.72	*718*
	0.00	**0.00**	**35.51**	**25.91**	**15.60**	**12.27**	**10.70**	***81***
Clerical and Sales	0.00	0.45	36.71	16.61	20.85	17.68	7.71	*304*
	0.00	**0.00**	**25.72**	**17.00**	**18.95**	**19.24**	**19.09**	***77***
Blue collar, skilled	0.24	0.82	25.17	9.78	30.20	20.37	13.42	*580*
	0.28	**0.40**	**18.30**	**15.54**	**17.68**	**27.63**	**20.17**	***176***
Blue collar, semi-sk	0.31	0.70	21.44	9.14	26.31	29.68	12.41	*517*
	0.16	**0.35**	**13.63**	**12.72**	**17.69**	**33.62**	**21.83**	***323***
Blue collar, laborer	0.00	3.28	12.36	10.60	36.41	20.82	16.53	*137*
	0.00	**1.08**	**12.41**	**10.90**	**16.15**	**33.42**	**26.04**	***178***
All	0.61	1.04	33.62	13.11	23.74	18.27	9.61	*2,354*
	0.22	**0.42**	**17.56**	**14.43**	**17.75**	**28.68**	**20.95**	***870***

TABLE A2F: OCCUPATION-TO-OCCUPATION TRANSITION MATRICES, BY RACE, 1990 COHORT OBSERVED IN 2000

SONS' OCCUPATION CATEGORY IN 2000

FATHERS' OCCUPATION CATEGORY IN ~1974	Farmer	Farm laborer	Profess & Managerial	Clerical & Sales	Blue collar, skilled	Blue collar, semi-skill	Blue collar, laborer	*N*
Farmer	21.65	2.45	25.77	11.56	23.67	13.17	1.73	*61*
	0.00	**0.00**	**0.00**	**0.00**	**58.95**	**21.05**	**20.00**	***7***
Farm laborer	0.00	0.00	11.42	0.00	45.86	34.27	8.44	*9*
	0.00	**0.00**	**7.22**	**0.00**	**20.56**	**33.33**	**38.89**	***23***
Professional & Managerial	0.15	0.40	61.36	9.82	14.69	8.69	4.89	*565*
	0.00	**0.00**	**41.87**	**17.52**	**13.62**	**23.16**	**3.84**	***75***
Clerical and Sales	0.46	0.00	51.57	9.98	21.93	13.60	2.46	*235*
	0.00	**0.00**	**24.53**	**18.33**	**15.87**	**25.18**	**16.09**	***71***
Blue collar, skilled	0.37	0.75	36.07	9.62	29.04	15.08	9.06	*458*
	0.00	**0.33**	**26.53**	**8.81**	**13.82**	**32.63**	**17.87**	***166***
Blue collar, semi-sk	1.43	0.00	28.81	6.13	31.22	18.72	13.69	*347*
	0.00	**0.29**	**23.34**	**8.75**	**21.07**	**30.23**	**16.33**	***299***
Blue collar, laborer	1.30	0.00	19.87	13.48	24.21	30.56	10.58	*88*
	0.00	**0.00**	**16.49**	**1.41**	**21.44**	**32.10**	**28.56**	***161***
All	1.22	0.41	43.80	9.26	23.49	14.28	7.54	*1,763*
	0.00	**0.18**	**24.32**	**8.93**	**18.54**	**29.90**	**18.14**	***802***

Notes and Sources: Data construction described in the Data Appendix and in the main text. Matrices demonstrate the probability of son's occupation category, given the occupation category of their father. See main text for definition of "father" in each sample. Rows sum to 100% within race. Final row of each figure gives the aggregate distribution of sons across occupations for each cohort, separately by race. See Appendix Section II for more discussion.

TABLE A3: SONS' INCOME SCORE RANK REGRESSIONS, INCLUDING FATHERS' INCOME SCORE RANK AND RACE --- NLSY79 COHORT OBSERVED IN 1990 AND 2000

	(1)	(2)	(3)	(4)
Sons' Cohort Year	**1990**	**2000**	**1990 - balanced sample**	**2000 - balanced sample**
PANEL A: WITH FATHERS' INCOME RANK CONTROLS				
BLACK	-18.94***	-19.64***	-19.40***	-19.84***
	(1.554)	(1.638)	(1.740)	(1.708)
Parent's Income Rank	0.254***	0.244***	0.240***	0.241***
	(0.0239)	(0.0260)	(0.0274)	(0.0268)
N	2,595	2,039	1,868	1,868
R-Squared	0.146	0.150	0.141	0.146
PANEL B: ADD FATHERS' HUMAN CAPITAL CONTROLS				
BLACK	-19.81***	-19.85***	-19.99***	-20.24***
	(1.571)	(1.636)	(1.759)	(1.700)
Parent's Income Rank	0.182***	0.137***	0.165***	0.133***
	(0.0270)	(0.0285)	(0.0303)	(0.0296)
R-Squared	0.188	0.222	0.193	0.219
PANEL C: ADD AGE REGION OF ORIGIN FIXED EFFECTS				
BLACK	-19.02***	-19.29***	-19.48***	-19.74***
	(1.576)	(1.652)	(1.771)	(1.716)
Parent's Income Rank	0.163***	0.118***	0.148***	0.114***
	(0.0273)	(0.0290)	(0.0309)	(0.0301)
R-Squared	0.202	0.233	0.207	0.231
PANEL D: ADD SONS' HUMAN CAPITAL CONTROLS				
BLACK	-20.27***	-21.45***	-21.16***	-22.15***
	(1.508)	(1.550)	(1.691)	(1.617)
Parent's Income Rank	0.124***	0.084***	0.113***	0.0879***
	(0.0283)	(0.0298)	(0.0319)	(0.0311)
R-Squared	0.306	0.346	0.309	0.341

Notes and Sources: Data construction described in the Data Appendix and in the main text. See notes to Table 3 in the main text. Columns 1 and 2 represent NLSY79 sons observed in 1990 and 2000, respectively. See main text for definition of "father" in the NLSY79 sample. See Appendix Section III for more discussion.

TABLE A4: KEY RESULT SENSITIVITY TO MATCHING ERRORS

	(1)	(2)	(3)	(4)	(5)	(6)
Sons' Cohort Year		**1900**			**1930**	
	Baseline	Exact Matches Only	Simulated 20% Error Rate	Baseline	Exact Matches Only	Simulated 20% Error Rate
PANEL A: WITH FATHERS' INCOME RANK CONTROLS						
BLACK	-20.84***	-17.60***	-19.48***	-22.68***	-19.76***	-22.04***
	(0.761)	(1.409)	(0.788)	(0.548)	(1.104)	(0.597)
Parent's Income Rank	0.323***	0.401***	0.343***	0.258***	0.369***	0.310***
	(0.0185)	(0.0307)	(0.0186)	(0.0105)	(0.0175)	(0.0103)
N	6,205	1,680	1,680	12,446	3,610	3,610
R-Squared	0.334	0.293	*n/a*	0.187	0.204	*n/a*
PANEL B: ADD FATHERS' HUMAN CAPITAL CONTROLS						
BLACK	-20.01***	-17.14***	-18.87***	-22.65***	-20.63***	-22.70***
	(0.847)	(1.586)	(0.977)	(0.565)	(1.135)	(0.621)
Parent's Income Rank	0.275***	0.340***	0.297***	0.215***	0.293***	0.250***
	(0.0191)	(0.0317)	(0.0193)	(0.0109)	(0.0186)	(0.0108)
R-Squared	0.345	0.309	*n/a*	0.198	0.235	*n/a*
PANEL C: ADD AGE AND STATE/REGION OF ORIGIN FIXED EFFECTS						
BLACK	-20.29***	-18.46***	-20.70***	-23.21***	-20.51***	-22.72***
	(0.915)	(1.783)	(1.144)	(0.614)	(1.236)	(0.687)
Parent's Income Rank	0.255***	0.318***	0.259***	0.178***	0.266***	0.213***
	(0.0202)	(0.0350)	(0.0233)	(0.0118)	(0.0200)	(0.0121)
R-Squared	0.382	0.373	*n/a*	0.226	0.264	*n/a*
PANEL D: ADD SONS' HUMAN CAPITAL CONTROLS						
BLACK	-25.10***	-23.73***	-25.27***	-23.33***	-22.06***	-24.94***
	(1.717)	(3.975)	(1.887)	(1.050)	(2.072)	(1.311)
Parent's Income Rank	0.265***	0.289***	0.250***	0.196***	0.244***	0.198***
	(0.0334)	(0.0639)	(0.0378)	(0.0193)	(0.0318)	(0.0198)
R-Squared	0.443	0.413	*n/a*	0.224	0.251	*n/a*

Notes and Sources: Data construction for 1900 and 1930 cohorts of sons described in the Data Appendix and in the main text. Columns 1 and 3 contain baseline estimates of *BLACK* and *Father's Income Rank* coefficients. Columns 2 and 4 repeat the analysis using only sons whose name in 1910 exactly matches the matched individual in the 1930 census returns. Columns 3 and 6 simulate a 20% error rate within the set of exact matches to calculate the bias induced from a 20% mismatch rate. See Appendix Section IVa for more details.

TABLE A5A: COMPARISON OF LINKED AND FULL SAMPLE CHARACTERISTICS, 1900 COHORT OF SONS

	Black Males			White Males		
	Matched Sample	Full IPUMS	*P-value of difference*	Matched Sample	Full IPUMS Sample	*P-value of difference*
Panel A: Distribution of state of residence						
Alabama	0.07	0.07	*0.29*	0.10	0.10	*0.54*
Arkansas	0.05	0.06	*0.07*	0.03	0.04	*0.22*
Florida	0.02	0.01	*0.16*	0.02	0.02	*0.31*
Georgia	0.08	0.09	*0.40*	0.14	0.13	*0.86*
Kentucky	0.14	0.14	*0.60*	0.04	0.04	*0.45*
Louisiana	0.05	0.04	*0.32*	0.08	0.08	*0.69*
Mississippi	0.05	0.05	*0.57*	0.11	0.11	*0.60*
North Carolina	0.09	0.09	*0.90*	0.12	0.11	*0.08*
South Carolina	0.05	0.04	*0.14*	0.11	0.11	*0.57*
Tennessee	0.11	0.12	*0.63*	0.06	0.06	*0.72*
Texas	0.12	0.13	*0.09*	0.08	0.07	*0.37*
Virginia	0.09	0.09	*0.61*	0.10	0.11	*0.05*
West Virginia	0.08	0.07	*0.00*	0.01	0.00	*0.70*
Panel B: Personal characteristics						
Attending school	0.48	0.47	*0.20*	0.24	0.24	*0.77*
Literate (age 10-20)	0.65	0.67	*0.44*	0.27	0.29	*0.51*
Father is farmer	0.71	0.70	*0.31*	0.50	0.49	*0.49*
Urban residence	0.08	0.07	*0.40*	0.05	0.06	*0.03*
1880 city population (00's)†	690.2	609.3	*0.20*	320.3	445.2	*0.05*
Panel C: Age Distribution						
Mean Age	7.1	7.1	*0.73*	6.9	7.1	*0.21*
Std. Dev.	0.11	0.03	*0.62*	0.10	0.04	*0.14*

Notes and sources: The linked sample for 1880-1900 is created by taking the 1880 IPUMS sample of black men, age 0-17, who reside in the South and searching for these men in the 1900 census manuscripts. The main text and Data Appendix contain more details on sample construction. The IPUMS data are from Ruggles et al. (2010). A variance-ratio test is used to compare sample standard deviations. All others comparison of means are done with standard t-tests. †City population is conditional on urban residence.

TABLE A5B: COMPARISON OF LINKED AND FULL SAMPLE CHRACTERISTICS, 1930 COHORT OF SONS

	White Males			Black Males		
	Matched Sample	Full IPUMS Sample	*P-value of difference*	Matched Sample	Full IPUMS Sample	*P-value of difference*
Panel A: Distribution of state of residence						
Alabama	0.07	0.07	*0.93*	0.10	0.10	*0.31*
Arkansas	0.07	0.06	*0.21*	0.05	0.04	*0.75*
Florida	0.21	0.22	*0.67*	0.03	0.03	*0.85*
Georgia	0.08	0.08	*0.81*	0.14	0.15	*0.38*
Kentucky	0.10	0.10	*0.81*	0.03	0.02	*0.18*
Louisiana	0.05	0.05	*0.01*	0.08	0.08	*0.97*
Mississippi	0.04	0.04	*0.75*	0.14	0.12	*0.07*
North Carolina	0.08	0.08	*0.66*	0.10	0.09	*0.06*
Oklahoma	0.08	0.08	*0.26*	0.01	0.02	*0.08*
South Carolina	0.03	0.04	*0.07*	0.12	0.11	*0.35*
Tennessee	0.09	0.09	*0.32*	0.05	0.05	*0.70*
Texas	0.16	0.17	*0.21*	0.08	0.09	*0.56*
Virginia	0.07	0.07	*0.54*	0.07	0.08	*0.07*
West Virginia	0.07	0.06	*0.02*	0.00	0.01	*0.19*
Panel B: Personal characteristics						
Attending school (6-15)	0.83	0.82	*0.08*	0.63	0.63	*1.00*
In owner-occupied	0.54	0.51	*0.00*	0.23	0.25	*0.01*
Literate (age 10-20)	0.92	0.90	*0.00*	0.60	0.62	*0.29*
Father is farmer	0.61	0.58	*0.00*	0.63	0.62	*0.69*
Urban residence	0.15	0.16	*0.18*	0.12	0.13	*0.38*
1910 city population	603.6	602.3	*0.96*	633.4	568.0	*0.23*
Panel C: Age Distribution						
Mean Age	8.2	7.7	*0.00*	8.0	7.8	*0.04*
Std. Dev.	0.05	0.03	*0.01*	0.10	0.04	*0.44*

Notes and sources: The linked sample for 1880-1900 is created by taking the 1910 IPUMS sample of black men, age 0-17, who reside in the South and searching for these men in the 1930 census manuscripts. The main text and Data Appendix contain more details on sample construction. The IPUMS data are from Ruggles et al. (2010). A variance-ratio test is used to compare sample standard deviations. All others comparison of means are done with standard t-tests. †City population is conditional on urban residence.

TABLE A6: SENSITIVITY TO YEAR OF INCOME ASSIGNMENT

	Full Sample					Age 30-37 only				
Sons' Cohort Year	1900	1930	1962	1973	1990	1900	1930	1962	1973	1990
Panel A: With Fathers' Income Rank Controls										
BLACK	-18.76***	-23.93***	-27.82***	-27.10***	-25.58***	-22.97***	-25.13***	-27.34***	-28.79***	-27.57***
	(0.797)	(0.495)	(0.796)	(0.675)	(1.433)	(1.380)	(0.819)	(1.372)	(1.299)	(2.375)
Parent's Income Rank	0.327***	0.245***	0.301***	0.240***	0.264***	0.360***	0.276***	0.329***	0.279***	0.274***
	(0.0183)	(0.00961)	(0.0109)	(0.00874)	(0.0240)	(0.0291)	(0.0149)	(0.0177)	(0.0152)	(0.0400)
N	6,205	12,446	9,025	13,848	2,597	2,008	5,118	3,361	4,267	990
R-Squared	0.332	0.195	0.223	0.188	0.205	0.410	0.215	0.252	0.221	0.221
Panel B: Add Fathers' Human Capital Controls										
BLACK	-17.61***	-23.33***	-28.34***	-27.75***	-26.53***	-22.80***	-23.99***	-27.96***	-29.18***	-28.44***
	(0.871)	(0.512)	(0.777)	(0.670)	(1.465)	(1.645)	(0.854)	(1.347)	(1.313)	(2.461)
Parent's Income Rank	0.303***	0.222***	0.219***	0.167***	0.192***	0.333***	0.244***	0.232***	0.179***	0.214***
	(0.0189)	(0.00981)	(0.0119)	(0.00978)	(0.0273)	(0.0301)	(0.0152)	(0.0194)	(0.0170)	(0.0470)
R-Squared	0.338	0.203	0.258	0.209	0.252	0.417	0.228	0.298	0.260	0.278
Panel C: Add Age and State/Region of Origin Fixed Effects										
BLACK	-18.92***	-24.43***	-26.99***	-25.24***	-25.20***	-23.73***	-24.70***	-28.37***	-27.44***	-26.68***
	(0.965)	(0.578)	(0.772)	(0.654)	(1.443)	(1.862)	(0.958)	(1.269)	(1.286)	(2.452)
Parent's Income Rank	0.259***	0.145***	0.163***	0.123***	0.152***	0.299***	0.178***	0.194***	0.127***	0.173***
	(0.0206)	(0.0117)	(0.0118)	(0.00966)	(0.0277)	(0.0348)	(0.0191)	(0.0199)	(0.0176)	(0.0474)
R-Squared	0.378	0.239	0.328	0.299	0.275	0.427	0.241	0.318	0.282	0.300
Panel D: Add Sons' Human Capital Controls										
BLACK	-23.28***	-24.31***	-26.91***	-25.64***	-26.55***	-23.28***	-24.31***	-28.22***	-27.17***	-27.97***
	(1.872)	(0.983)	(0.775)	(0.601)	(1.379)	(1.872)	(0.983)	(1.288)	(1.210)	(2.349)
Parent's Income Rank	0.290***	0.178***	0.168***	0.0770***	0.116***	0.290***	0.178***	0.201***	0.0768***	0.126**
	(0.0348)	(0.0191)	(0.0124)	(0.00975)	(0.0283)	(0.0348)	(0.0191)	(0.0211)	(0.0173)	(0.0496)
R-Squared	0.434	0.241	0.328	0.387	0.369	0.434	0.241	0.319	0.399	0.407

Notes and Sources: See notes to Table 3 in the main text for covariate definitions. Data construction is described in the main text and in the Data Appendix. Each cohort of sons, as well as their fathers, have been assigned income scores based on incomes reported in the 1960 U.S. Census. See Appendix Section IVb for more details.

TABLE A7: SENSITIVITY TO CHANGES IN FAMILY STRUCTURE

	Full Sample					Age 30-37 only				
Sons' Cohort Year	1900	1930	1962	1973	1990	1900	1930	1962	1973	1990
Panel A: With Fathers' Income Rank Controls										
BLACK	-20.84***	-22.68***	-27.05***	-25.16***	-19.15***	-26.33***	-24.32***	-26.69***	-26.96***	-20.54***
	(0.761)	(0.548)	(0.784)	(0.680)	(1.457)	(1.298)	(0.915)	(1.362)	(1.292)	(2.438)
Parent's Income Rank	0.323***	0.258***	0.310***	0.225***	0.250***	0.335***	0.275***	0.338***	0.265***	0.268***
	(0.0185)	(0.0105)	(0.0108)	(0.00871)	(0.0228)	(0.0291)	(0.0166)	(0.0176)	(0.0149)	(0.0380)
N	6,205	12,446	9,293	14,280	2,843	2,008	5,118	3,452	4,403	1,067
R-Squared	0.335	0.187	0.226	0.166	0.147	0.423	0.201	0.255	0.202	0.165
Panel B: Add Fathers' Human Capital Controls										
BLACK	-20.01***	-22.65***	-27.83***	-25.55***	-19.87***	-25.82***	-24.17***	-27.53***	-27.11***	-21.18***
	(0.847)	(0.565)	(0.766)	(0.676)	(1.474)	(1.552)	(0.951)	(1.339)	(1.312)	(2.467)
Parent's Income Rank	0.275***	0.215***	0.226***	0.159***	0.177***	0.284***	0.215***	0.239***	0.173***	0.211***
	(0.0191)	(0.0109)	(0.0119)	(0.00976)	(0.0256)	(0.0307)	(0.0173)	(0.0194)	(0.0168)	(0.0441)
R-Squared	0.346	0.198	0.259	0.184	0.188	0.434	0.220	0.300	0.238	0.222
Panel C: Add Age and State/Region of Origin Fixed Effects										
BLACK	-20.29***	-23.21***	-26.50***	-22.96***	-19.10***	-25.49***	-23.99***	-27.88***	-25.31***	-19.77***
	(0.915)	(0.614)	(0.763)	(0.656)	(1.480)	(1.712)	(1.032)	(1.265)	(1.279)	(2.475)
Parent's Income Rank	0.255***	0.178***	0.169***	0.123***	0.155***	0.280***	0.199***	0.201***	0.127***	0.186***
	(0.0202)	(0.0118)	(0.0118)	(0.00967)	(0.0262)	(0.0334)	(0.0192)	(0.0199)	(0.0175)	(0.0449)
R-Squared	0.385	0.228	0.330	0.278	0.201	0.443	0.227	0.320	0.259	0.235
Panel D: Add Sons' Human Capital Controls										
BLACK	-25.09***	-23.33***	-26.51***	-23.43***	-20.59***	-25.09***	-23.33***	-27.77***	-25.19***	-20.82***
	(1.718)	(1.050)	(0.764)	(0.605)	(1.435)	(1.718)	(1.050)	(1.280)	(1.192)	(2.405)
Parent's Income Rank	0.265***	0.196***	0.168***	0.0690***	0.0974***	0.265***	0.196***	0.206***	0.0675***	0.121***
	(0.0334)	(0.0193)	(0.0122)	(0.00956)	(0.0262)	(0.0334)	(0.0193)	(0.0206)	(0.0170)	(0.0457)
R-Squared	0.451	0.228	0.330	0.371	0.299	0.451	0.228	0.320	0.381	0.340

Notes and Sources: See notes to Table 3 in the main text for covariate definitions. Data construction is described in the main text and in the Data Appendix. For 1962, 1973 and 1990 cohorts, parental income scores for mothers have been replaced with scores for co-residing, non-father adult males, if present. Results for 1900 and 1930 cohorts remain unchanged from the baseline. See Appendix Section IVc for more details.

TABLE A8: SENSITIVITY TO SOUTHERN-RESIDENT PARENT RESTRICTION

	Full Sample					Age 30-37 only				
Sons' Cohort Year	1900	1930	1962	1973	1990	1900	1930	1962	1973	1990
Panel A: With Fathers' Income Rank Controls										
BLACK	-26.33***	-24.32***	-26.94***	-26.94***	-20.19***	-26.33***	-24.32***	-26.94***	-26.94***	-20.19***
	(1.298)	(0.915)	(1.379)	(1.335)	(2.569)	(1.298)	(0.915)	(1.379)	(1.335)	(2.569)
Parent's Income Rank	0.335***	0.275***	0.336***	0.267***	0.269***	0.335***	0.275***	0.336***	0.267***	0.269***
	(0.0291)	(0.0166)	(0.0177)	(0.0152)	(0.0393)	(0.0291)	(0.0166)	(0.0177)	(0.0152)	(0.0393)
N	2,008	5,118	3,361	4,267	990	2,008	5,118	3,361	4,267	990
R-Squared	0.423	0.201	0.256	0.200	0.160	0.423	0.201	0.256	0.200	0.160
Panel B: Add Fathers' Human Capital Controls										
BLACK	-25.82***	-24.17***	-27.75***	-27.16***	-20.90***	-25.82***	-24.17***	-27.75***	-27.16***	-20.90***
	(1.552)	(0.951)	(1.355)	(1.359)	(2.633)	(1.552)	(0.951)	(1.355)	(1.359)	(2.633)
Parent's Income Rank	0.284***	0.215***	0.238***	0.176***	0.221***	0.284***	0.215***	0.238***	0.176***	0.221***
	(0.0307)	(0.0173)	(0.0197)	(0.0171)	(0.0457)	(0.0307)	(0.0173)	(0.0197)	(0.0171)	(0.0457)
R-Squared	0.434	0.220	0.300	0.235	0.216	0.434	0.220	0.300	0.235	0.216
Panel C: Add Age and State/Region of Origin Fixed Effects										
BLACK	-25.49***	-23.99***	-28.13***	-25.30***	-19.62***	-25.49***	-23.99***	-28.13***	-25.30***	-19.62***
	(1.712)	(1.032)	(1.276)	(1.323)	(2.663)	(1.712)	(1.032)	(1.276)	(1.323)	(2.663)
Parent's Income Rank	0.280***	0.199***	0.200***	0.129***	0.198***	0.280***	0.199***	0.200***	0.129***	0.198***
	(0.0334)	(0.0192)	(0.0202)	(0.0178)	(0.0462)	(0.0334)	(0.0192)	(0.0202)	(0.0178)	(0.0462)
R-Squared	0.443	0.227	0.320	0.256	0.229	0.443	0.227	0.320	0.256	0.229
Panel D: Add Sons' Human Capital Controls										
BLACK	-25.09***	-23.33***	-28.00***	-24.98***	-20.55***	-25.09***	-23.33***	-28.00***	-24.98***	-20.55***
	(1.718)	(1.050)	(1.294)	(1.224)	(2.548)	(1.718)	(1.050)	(1.294)	(1.224)	(2.548)
Parent's Income Rank	0.265***	0.196***	0.207***	0.0785***	0.152***	0.265***	0.196***	0.207***	0.0785***	0.152***
	(0.0334)	(0.0193)	(0.0213)	(0.0176)	(0.0492)	(0.0334)	(0.0193)	(0.0213)	(0.0176)	(0.0492)
R-Squared	0.451	0.228	0.320	0.378	0.341	0.451	0.228	0.320	0.378	0.341

Notes and Sources: See notes to Table 3 in the main text for covariate definitions. Data construction is described in the main text and in the Data Appendix. Results for 1962, 1973 and 1990 cohorts have been limited to fathers who were living in the South at the time of occupation observation (when sons were 16 or 14). Results for 1900 and 1930 cohorts remain unchanged from the baseline. See Appendix Section IVe for more details.

TABLE A9: SUMMARY OF CONTERFACUTAL DISTRIBUTION DISSIMILARITY AND DISTANCE MEASURES

Sons' Cohort	1900	1930	1962	1973	1990
Dissimilarity Index					
Black sons versus white sons - Actual	0.63	0.63	0.70	0.59	0.45
Black sons versus white sons - Counterfactual	0.19	0.12	0.14	0.20	0.15
% Reduction	69.8%	81.0%	80.0%	66.1%	66.7%
Hellinger Distance					
Black sons versus white sons - Actual	0.54	0.53	0.57	0.48	0.36
Black sons versus white sons - Counterfactual	0.07	0.09	0.13	0.16	0.11
% Reduction	86.5%	83.3%	77.5%	67.0%	70.3%

Notes and sources: See Appendix Section V for complete discussion of counterfactual construction based on Dinardo, Fortin and Lemieux (19XX) technique for calculating distributions of black sons' income ranks under white sons' transition rates. Dissimilarity index based on distribution of scores across ventiles of the national income score distribution. Hellinger distance measure based on 100 cut points of adaptive kernel distributions.

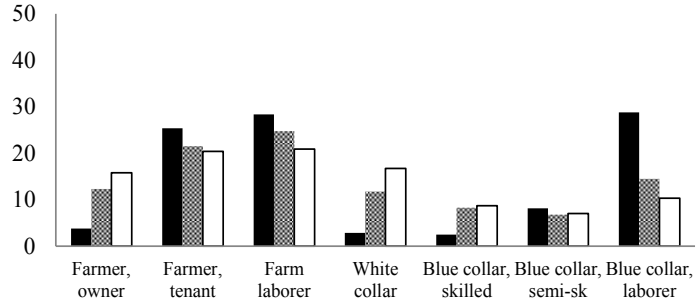
TABLE A10: SONS' INCOME RANK REGRESSIONS, INCLUDING STANDARDIZED TEST SCORES

Sons' Cohort Year	1930	1990
PANEL A: BASELINE RESULTS FROM TABLE 3, PANEL D		
BLACK	-22.68***	-18.94***
	(0.548)	(1.554)
Parent's Income Rank	0.258***	0.254***
	(0.0105)	(0.0239)
N	12,446	2,595
R-Squared	0.187	0.145
PANEL B: ADD AFQT/AGCT SCORE FIXED EFFECT		
BLACK	-6.83***	-10.59***
	(1.362)	(1.550)
Parent's Income Rank	0.076	0.132
	(0.0049)	(0.0247)
R-Squared	0.83	0.300

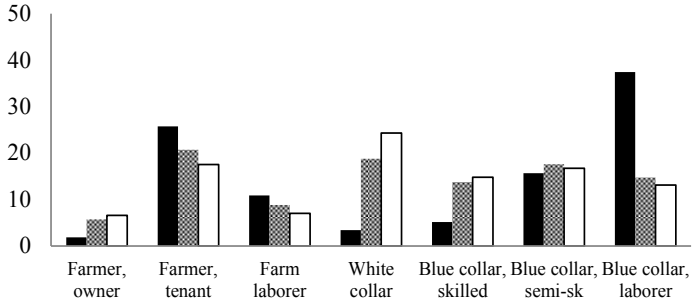
Notes and sources: Results from adding AFQT or AGCT actual and imputed scores. See Appendix Section VI for a full discussion.

FIGURE A1: OCCUPATION CATEGORY TRANSITIONS AND COUNTERFACTUALS

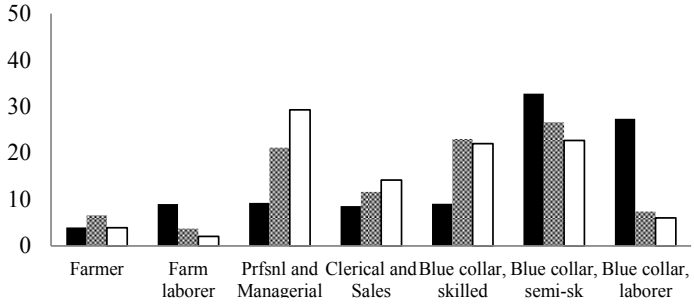
PANEL A: SONS IN 1900



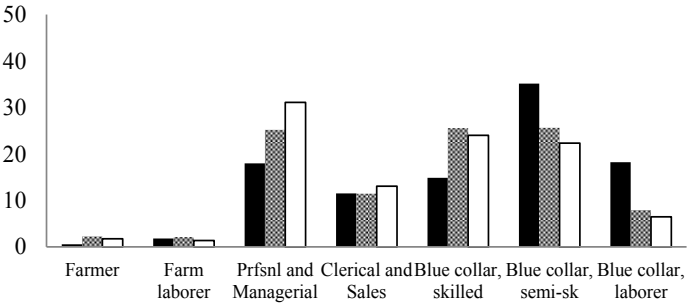
PANEL B: SONS IN 1930



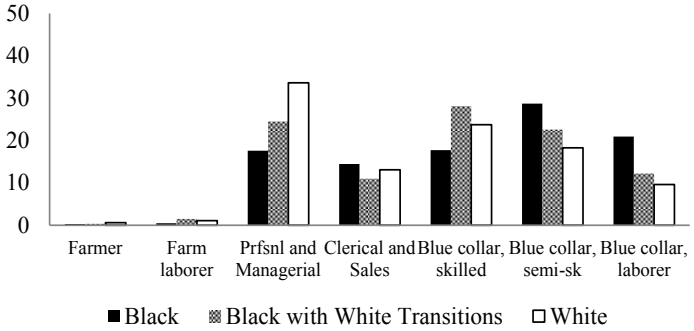
PANEL C: SONS IN 1962



PANEL D: SONS IN 1973



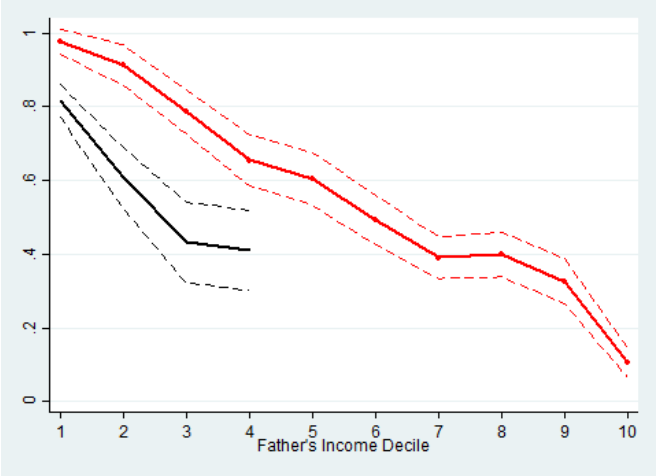
PANEL E: SONS IN 1990



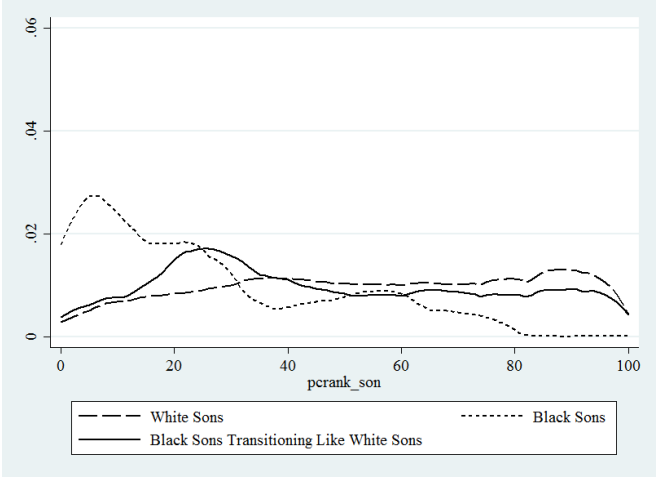
Notes and Sources: Data construction described in the Data Appendix and in the main text. Black bars represent the observed distribution of black sons across occupation categories. White bars represent the same for white sons. Hashed bars represent the counterfactual distribution of black sons across occupation categories when given the father-son occupation category transition patterns of white father-son pairs.

FIGURE A2: NLSY79 SONS OBSERVED IN 2000

PANEL A: Upward Rank Mobility by Father's Income Decile and Race



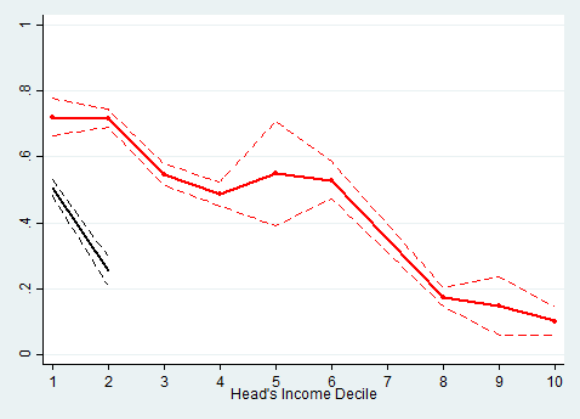
PANEL B: Counterfactual Kernel Density Plots for Black Sons Under White Sons' Transition Rates



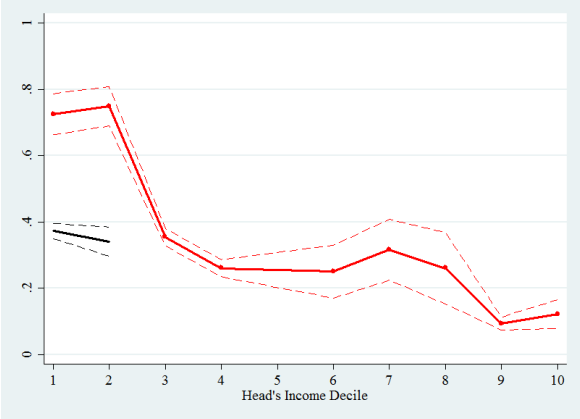
Notes and Sources: See notes to Figures 2 and 4 in the main text. Panel A contains the baseline estimates of upward rank mobility for NLSY79 sons observed in 2000. Panel B shows counterfactual distributions of black sons' income score rank under white father-son transition patterns for the same sample. See Appendix Section III.

FIGURE A3: 1900 COHORT OF SONS --- SENSITIVITY ANALYSIS

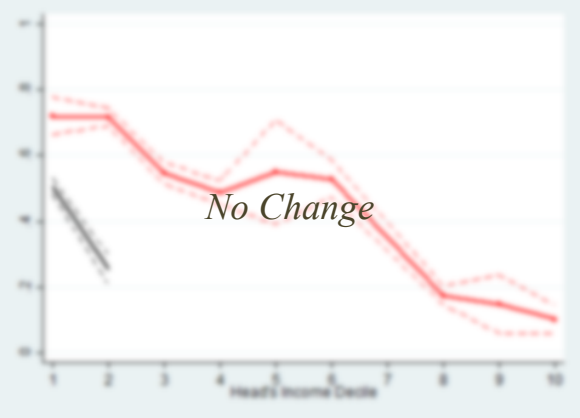
PANEL A: BASELINE



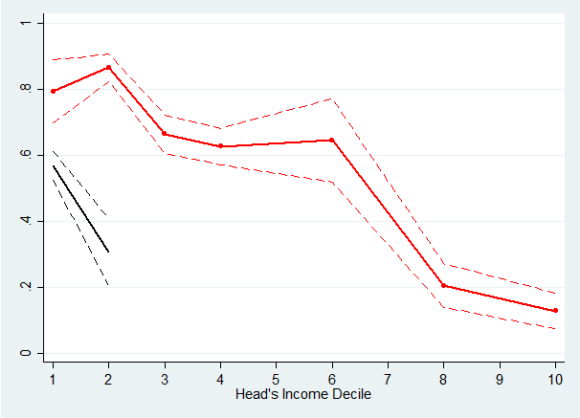
PANEL B: 1960-BASED OCCUPATION INCOME SCORES



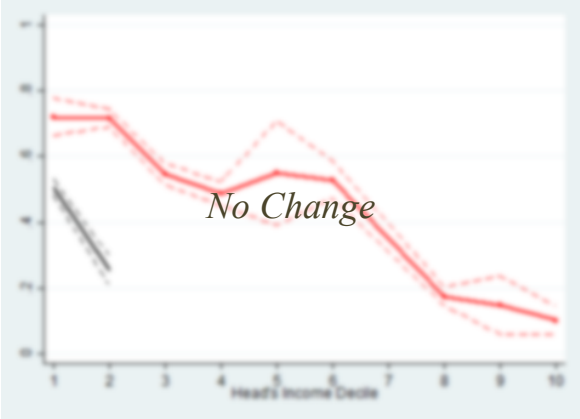
PANEL C: NON-FATHER CO-RESIDING MALES



PANEL D: SONS AGED 30-37 ONLY



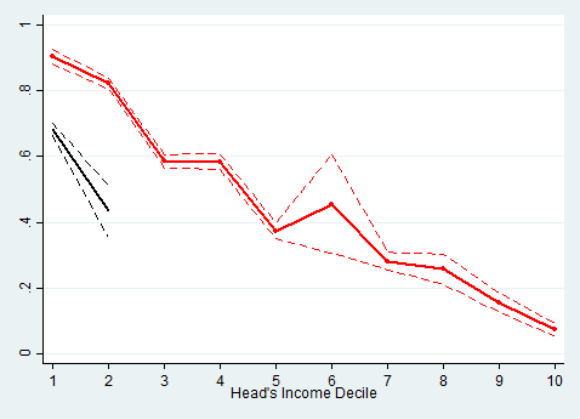
PANEL E: SOUTHERN-RESIDING FATHERS ONLY



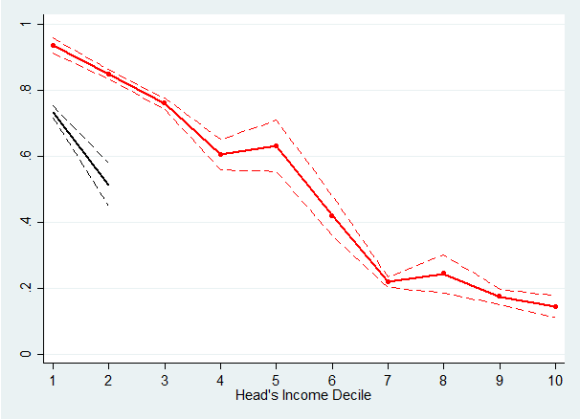
Notes and Sources: See notes to Figure 2 in the main text. Panel A contains the baseline estimates of upward rank mobility from the main text. Panel B relies on occupation score ranks based on the 1960 U.S. Census returns. (See Appendix Section IVb.) Panel C is unchanged relative to the baseline. Panel D contains sons aged 30-37 only. Panel E is unchanged relative to the baseline. Due to sample size limitations, bootstrapped standard errors are calculated using sample sizes of 30, rather than 50, observations for panel D.

FIGURE A4: 1930 COHORT OF SONS --- SENSITIVITY ANALYSIS

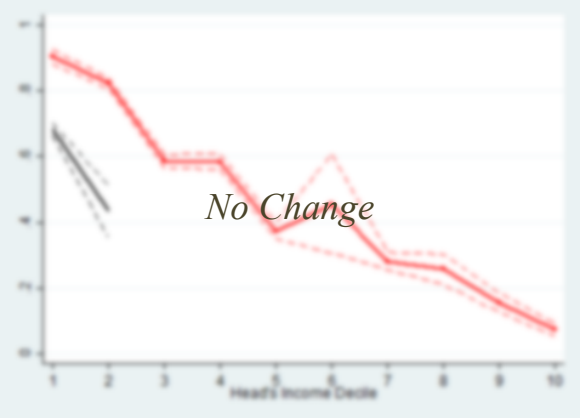
PANEL A: BASELINE



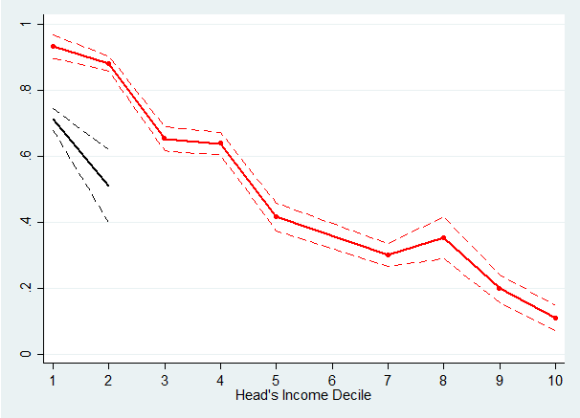
PANEL B: 1960-BASED OCCUPATION INCOME SCORES



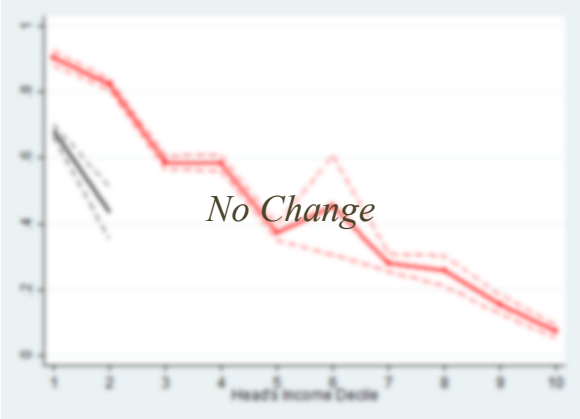
PANEL C: NON-FATHER CO-RESIDING MALES



PANEL D: SONS AGED 30-37 ONLY



PANEL E: SOUTHERN-RESIDING FATHERS ONLY

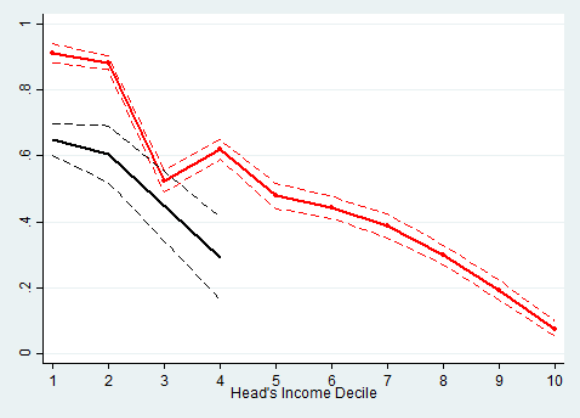


Notes and Sources: See notes to Figure 2 in the main text. Panel A contains the baseline estimates of upward rank mobility from the main text. Panel B relies on occupation score ranks based on the 1960 U.S. Census returns. (See Appendix Section IVb.) Panel C is unchanged relative to the baseline. Panel D contains sons aged 30-37 only. Panel E is unchanged relative to the

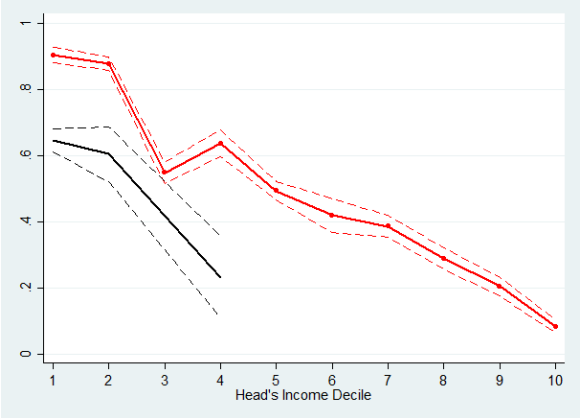
baseline. Due to sample size limitations, bootstrapped standard errors are calculated using sample sizes of 30, rather than 50, observations for panel D.

FIGURE A5: 1962 COHORT OF SONS --- SENSITIVITY ANALYSIS

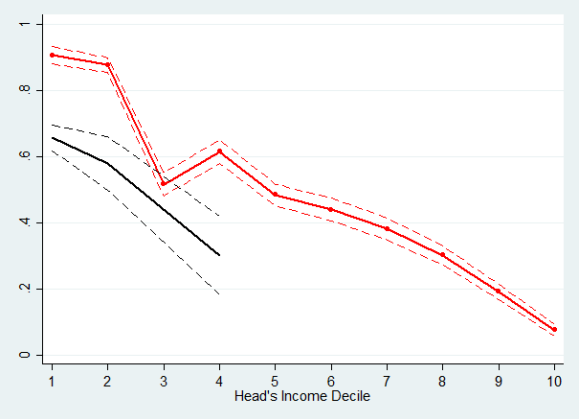
PANEL A: BASELINE



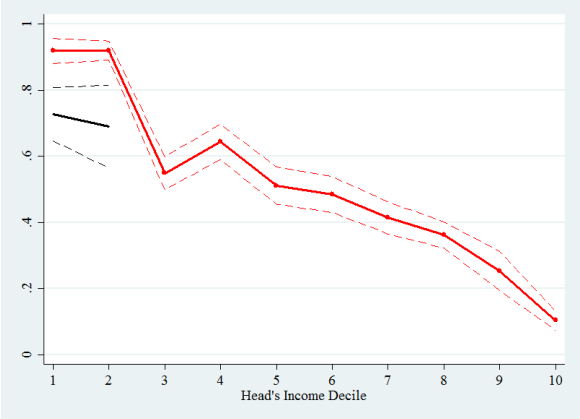
PANEL B: 1960-BASED OCCUPATION INCOME SCORES



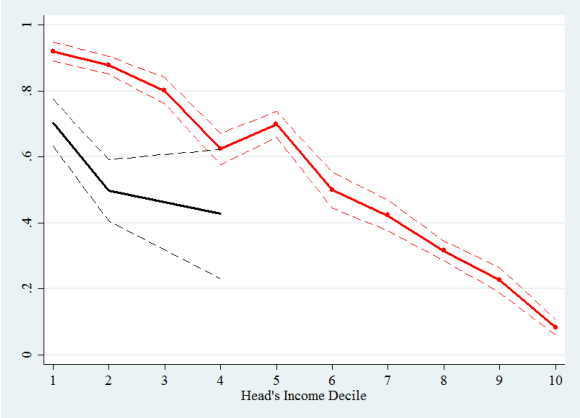
PANEL C: NON-FATHER CO-RESIDING MALES



PANEL D: SONS AGED 30-37 ONLY



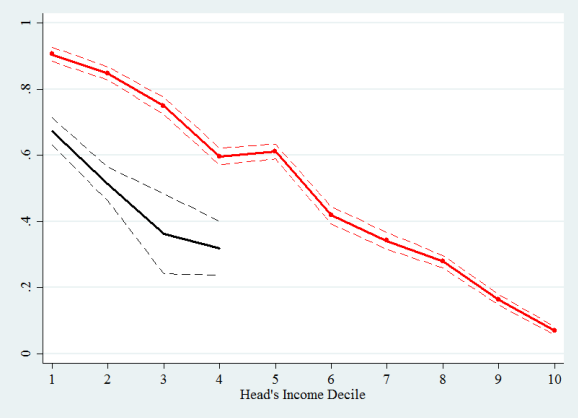
PANEL E: SOUTHERN-RESIDING FATHERS ONLY



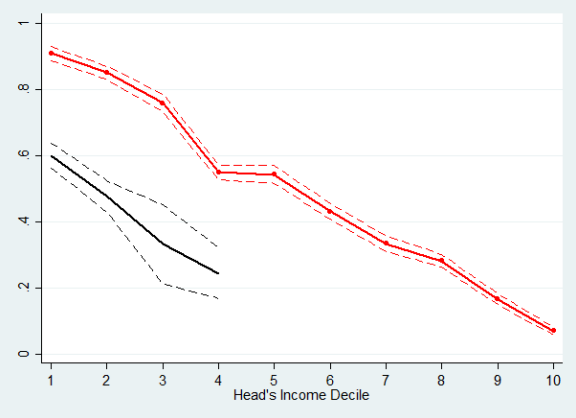
Notes and Sources: See notes to Figure 2 in the main text. Panel A contains the baseline estimates of upward rank mobility from the main text. Panel B relies on occupation score ranks based on the 1960 U.S. Census returns. (See Appendix Section IVb.) Panel C substitutes income scores for non-father co-residing adult males for those of mothers, when present. (See Appendix Section IVc.) Panel D contains sons aged 30-37 only. Panel E is restricted to father-son pairs living in the South at parental occupation observation. Due to sample size limitations, bootstrapped standard errors are calculated using sample sizes of 30, rather than 50, observations for panel D.

FIGURE A6: 1973 COHORT OF SONS --- SENSITIVITY ANALYSIS

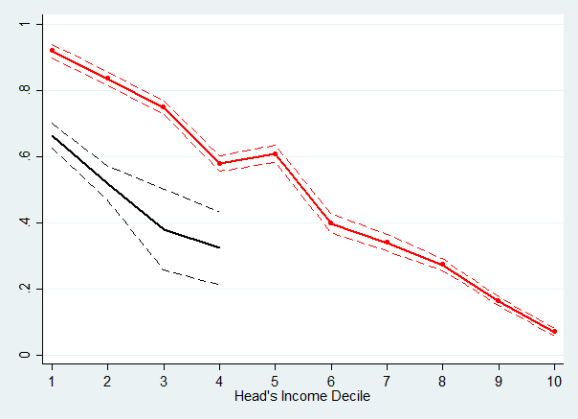
PANEL A: BASELINE



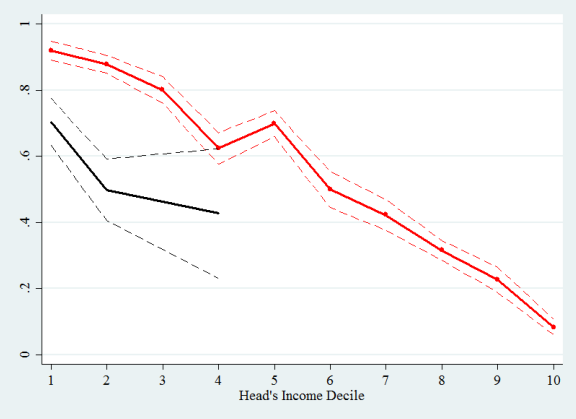
PANEL B: 1960-BASED OCCUPATION INCOME SCORES



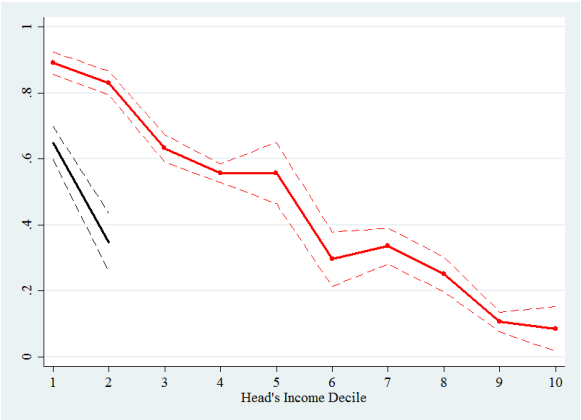
PANEL C: NON-FATHER CO-RESIDING MALES



PANEL D: SONS AGED 30-37 ONLY



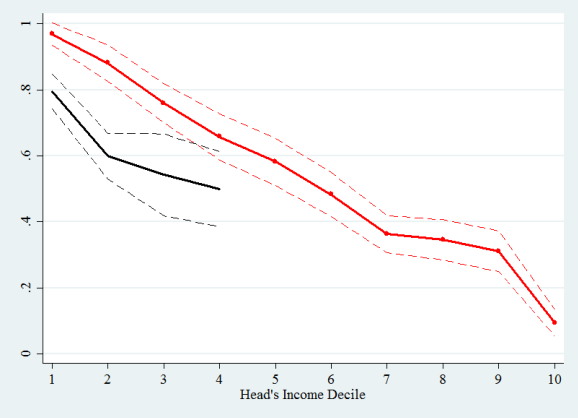
PANEL E: SOUTHERN-RESIDING FATHERS ONLY



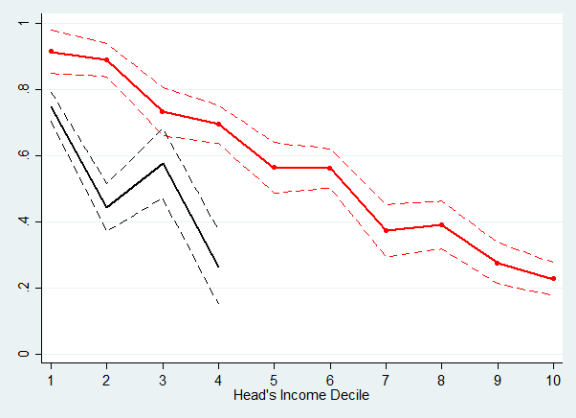
Notes and Sources: See notes to Figure 2 in the main text. Panel A contains the baseline estimates of upward rank mobility from the main text. Panel B relies on occupation score ranks based on the 1960 U.S. Census returns. (See Appendix Section IVb.) Panel C substitutes income scores for non-father co-residing adult males for those of mothers, when present. (See Appendix Section IVc.) Panel D contains sons aged 30-37 only. Panel E is restricted to father-son pairs living in the South at parental occupation observation. Due to sample size limitations, bootstrapped standard errors are calculated using sample sizes of 30, rather than 50, observations for panel D.

FIGURE A7: 1990 COHORT OF SONS --- SENSITIVITY ANALYSIS

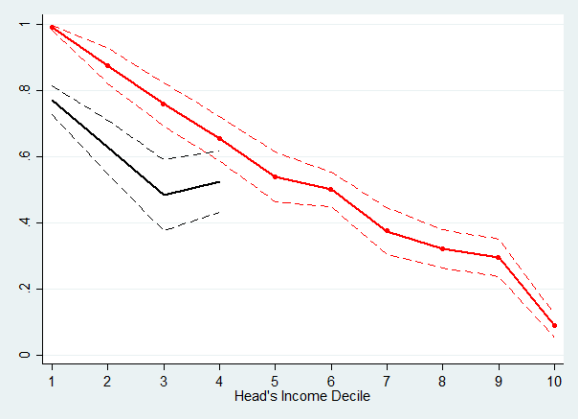
PANEL A: BASELINE



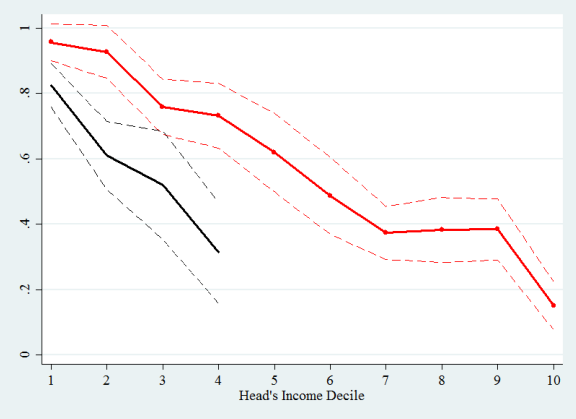
PANEL B: 1960-BASED OCCUPATION INCOME SCORES



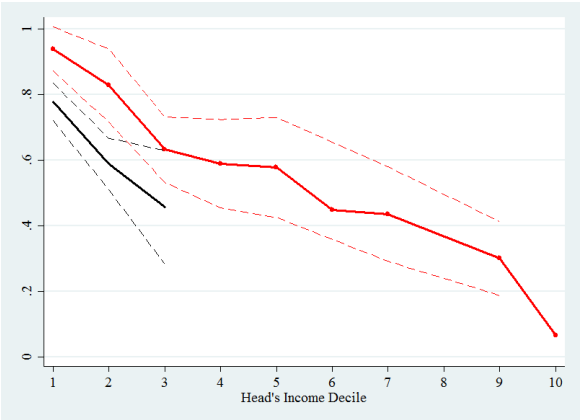
PANEL C: NON-FATHER CO-RESIDING MALES



PANEL D: SONS AGED 30-37 ONLY



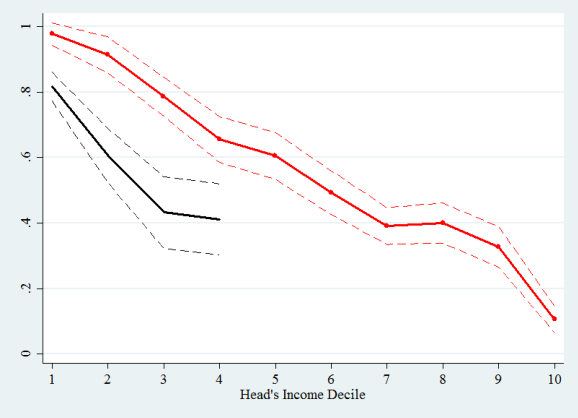
PANEL E: SOUTHERN-RESIDING FATHERS ONLY



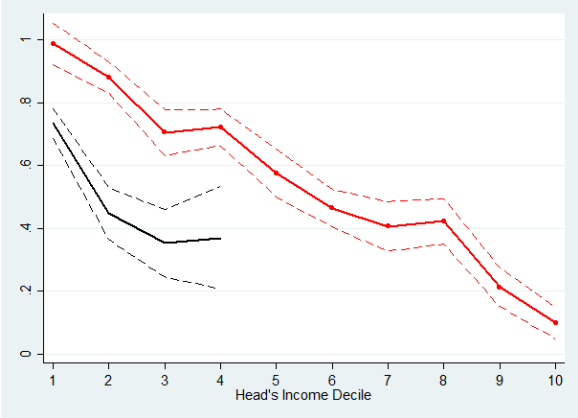
Notes and Sources: See notes to Figure 2 in the main text. Panel A contains the baseline estimates of upward rank mobility from the main text. Panel B relies on occupation score ranks based on the 1960 U.S. Census returns. (See Appendix Section IVb.) Panel C substitutes income scores for non-father co-residing adult males for those of mothers, when present. (See Appendix Section IVc.) Panel D contains sons aged 30-37 only. Panel E is restricted to father-son pairs living in the South at parental occupation observation. Due to sample size limitations, bootstrapped standard errors are calculated using sample sizes of 30, rather than 50, observations for panel D.

FIGURE A8: 1990 COHORT OF SONS OBSERVED IN 2000 --- SENSITIVITY ANALYSIS

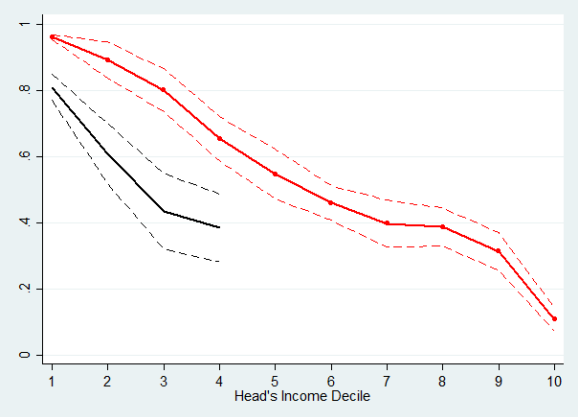
PANEL A: BASELINE



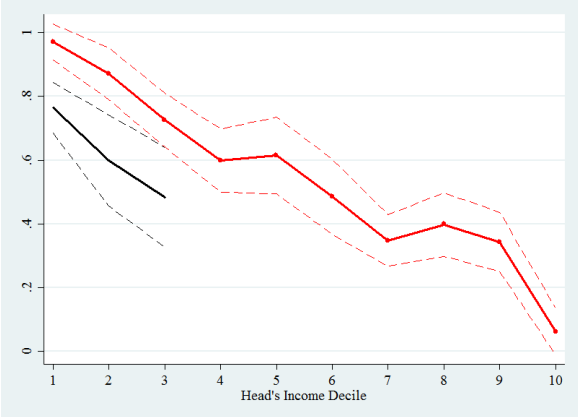
PANEL B: 1960-BASED OCCUPATION INCOME SCORES



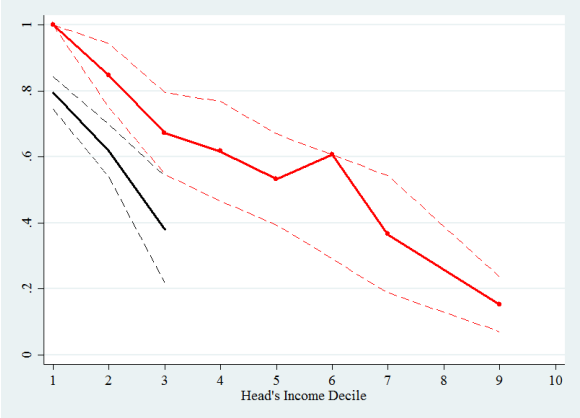
PANEL C: NON-FATHER CO-RESIDING MALES



PANEL D: SONS AGED 30-37 ONLY



PANEL E: SOUTHERN-RESIDING FATHERS ONLY



Notes and Sources: See notes to Figure 2 in the main text. Panel A contains the baseline estimates of upward rank mobility from the main text. Panel B relies on occupation score ranks based on the 1960 U.S. Census returns. (See Appendix Section IVb.) Panel C substitutes income scores for non-father co-residing adult males for those of mothers, when present. (See Appendix Section IVc.) Panel D contains sons aged 30-37 only. Panel E is restricted to father-son pairs living in the South at parental occupation observation. Due to sample size limitations, bootstrapped standard errors are calculated using sample sizes of 30, rather than 50, observations for panel D.