

Dimensions of Inequality

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a. Capital vs. Labor
Income

Summary

- Reduction in labor share
- Sensitivity to measurement
- Sectoral heterogeneity

Rios-Rull et al. (2003)

- Large cross-sectional inequality in both wealth and earnings
- Larger disparities in wealth

TABLE 2
DISTRIBUTIONS OF EARNINGS AND WEALTH IN THE U.S. ECONOMY (%)

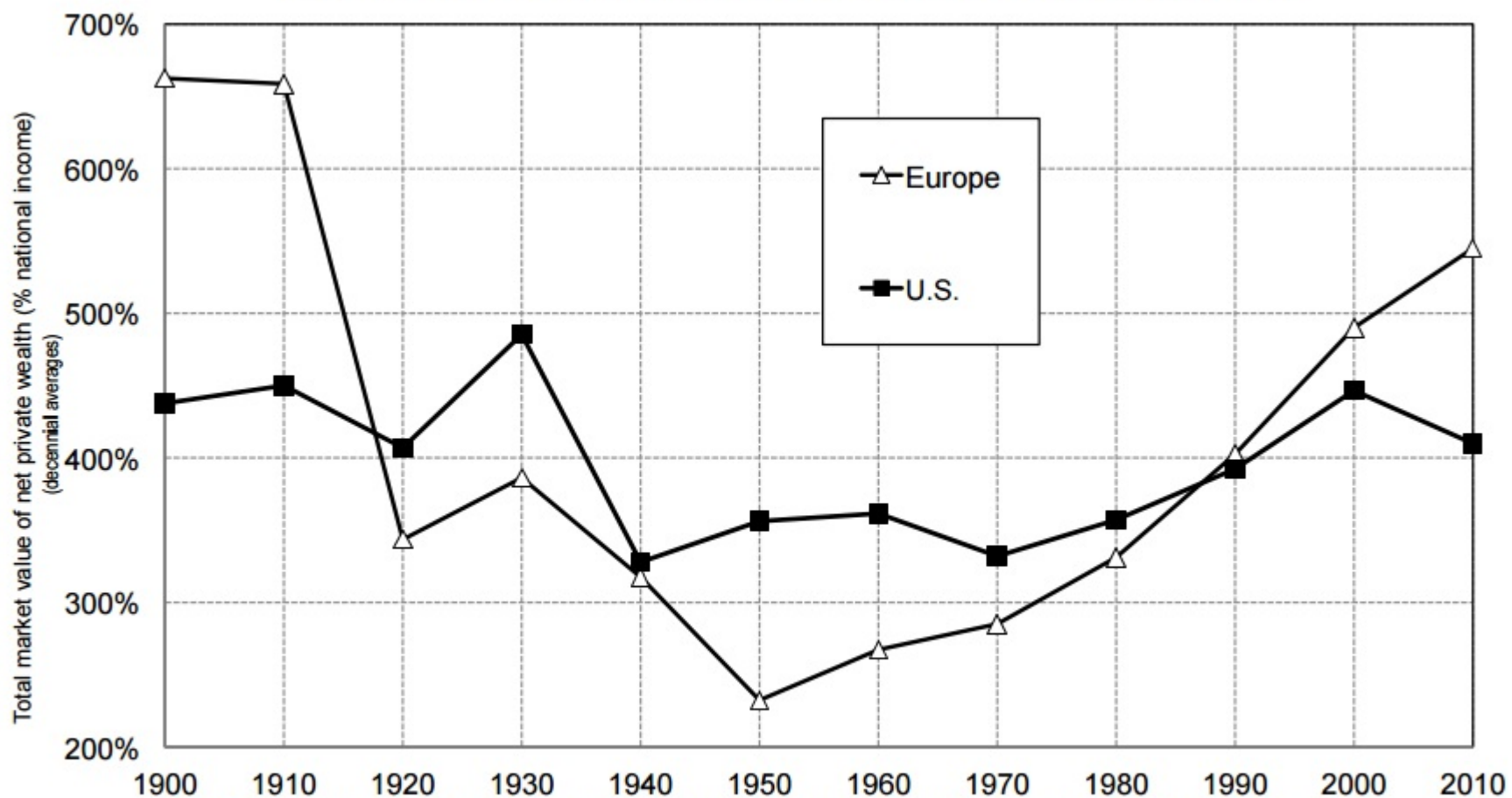
GINI	QUINTILE					TOP GROUPS (Percentile)		
	First	Second	Third	Fourth	Fifth	90th–95th	95th–99th	99th–100th
A. Distribution of Earnings								
.63	-.40	3.19	12.49	23.33	61.39	12.38	16.37	14.76
B. Distribution of Wealth								
.78	-.39	1.74	5.72	13.43	79.49	12.62	23.95	29.55

Source: Rios-Rull et al. (2003)

Piketty

- Growing inequality in the last few decades post WW2
- EU wealth income ratio rose from 250% to 550%
- US rose from 350% to 400%

Figure 3. Wealth-income ratios: Europe and the U.S., 1900-2010



Total net private wealth was worth about 6-7 years of national income in Europe prior to World War 1, down to 2-3 years in 1950-1960, back up to 5-6 years in 2000-2010. In the US, the U-shaped pattern was much less marked.

Sources and series: see pikett.pse.ens.fr/capital21c (fig.5.1)

Source: Piketty (2014)

Saez Zucman (2015)

- Most of the action in wealth inequality in the last few decades comes from the top 1%.
- From 1987 – 2012, the wealth share of the top 10% rose from 65% to 77%
- The share of the top 10 to 1% over the same period was stagnant
- The share of the top 1% rose from 25% to 42%

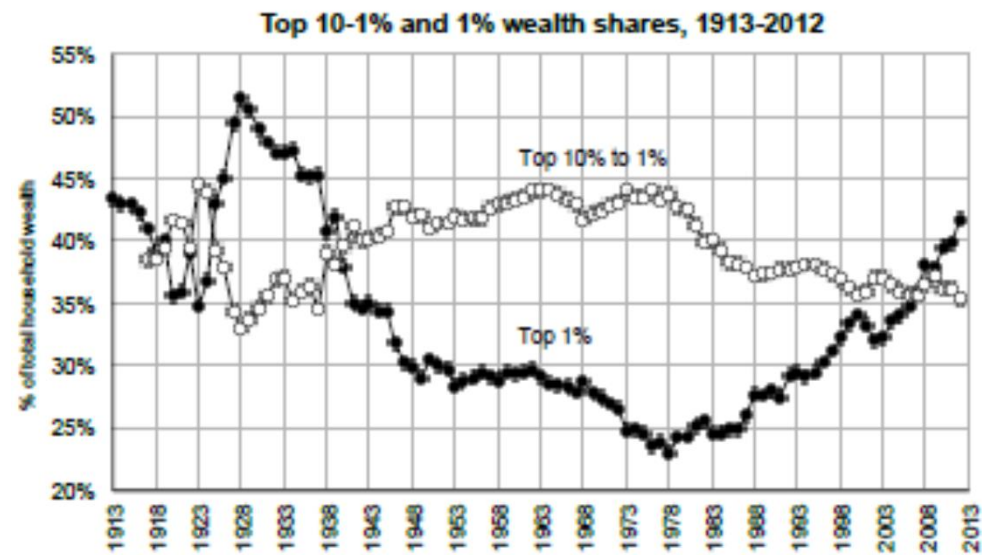
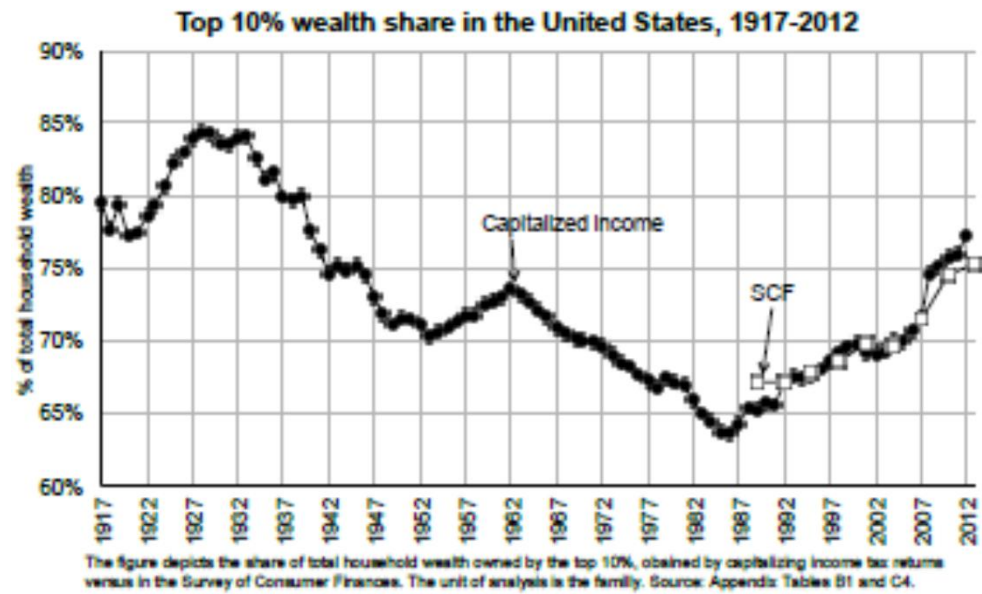


Figure 6: Top Wealth Shares in the United States, 1913-2012

Source: Saez and Zucman (2015)

Atkinson et al. (2011)

- Most of the action in income inequality in the last few decades comes from the top 1%.
- Capital income **does not** form the bulk of the income increase for the top; capital gains play a dominant role

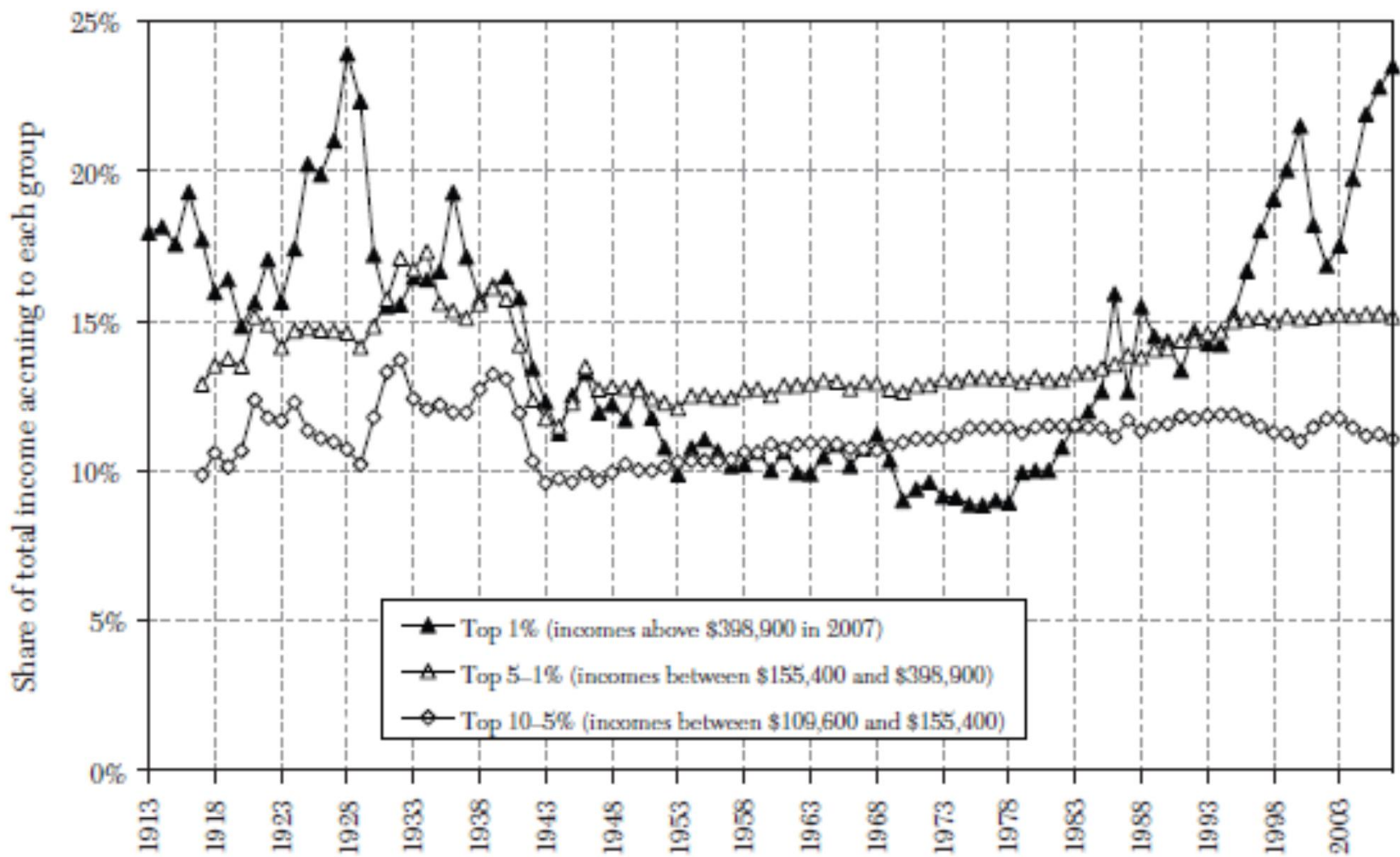


Figure 2. Decomposing the Top Decile US Income Share into three Groups, 1913–2007

Source: Atkinson et al. (2011)

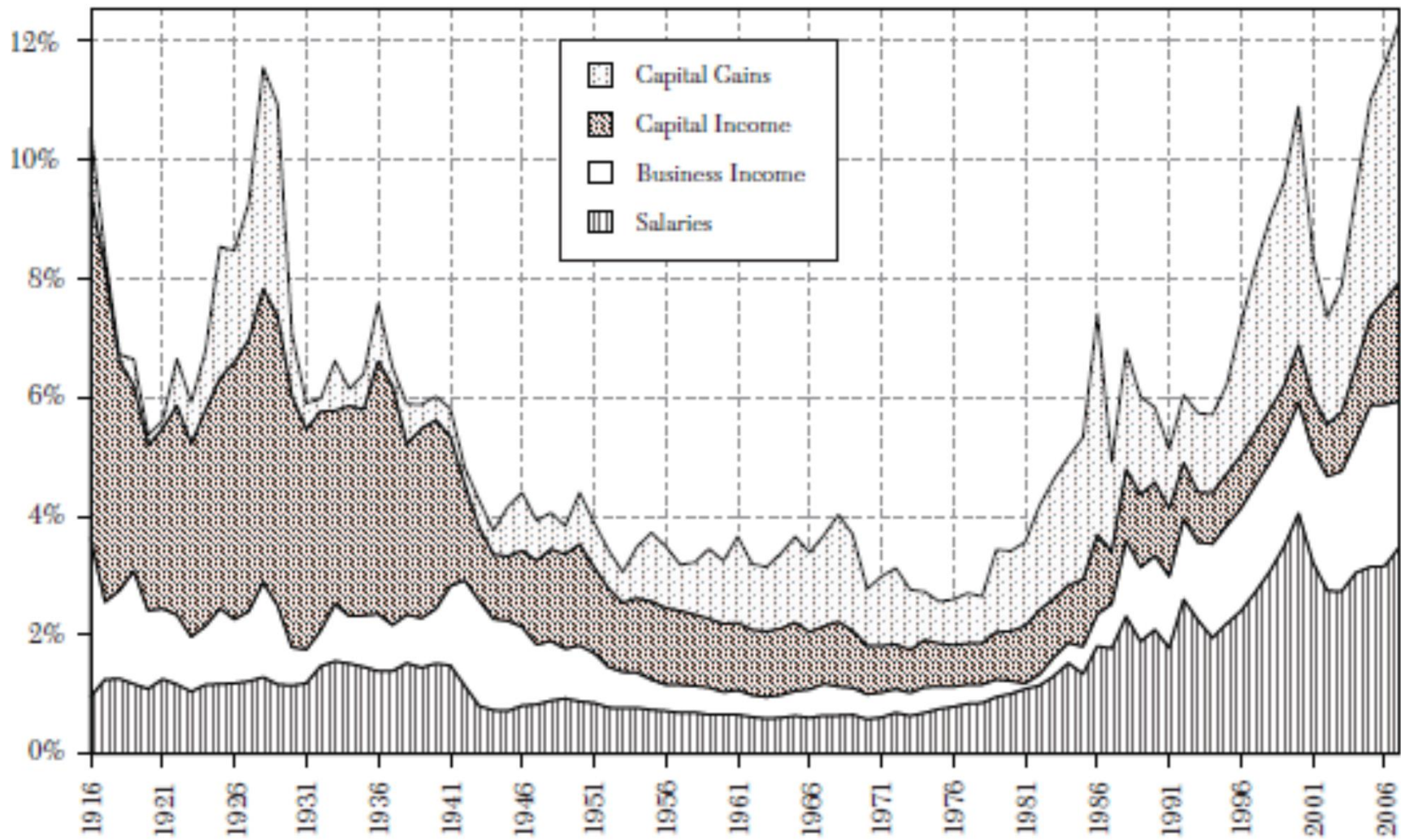


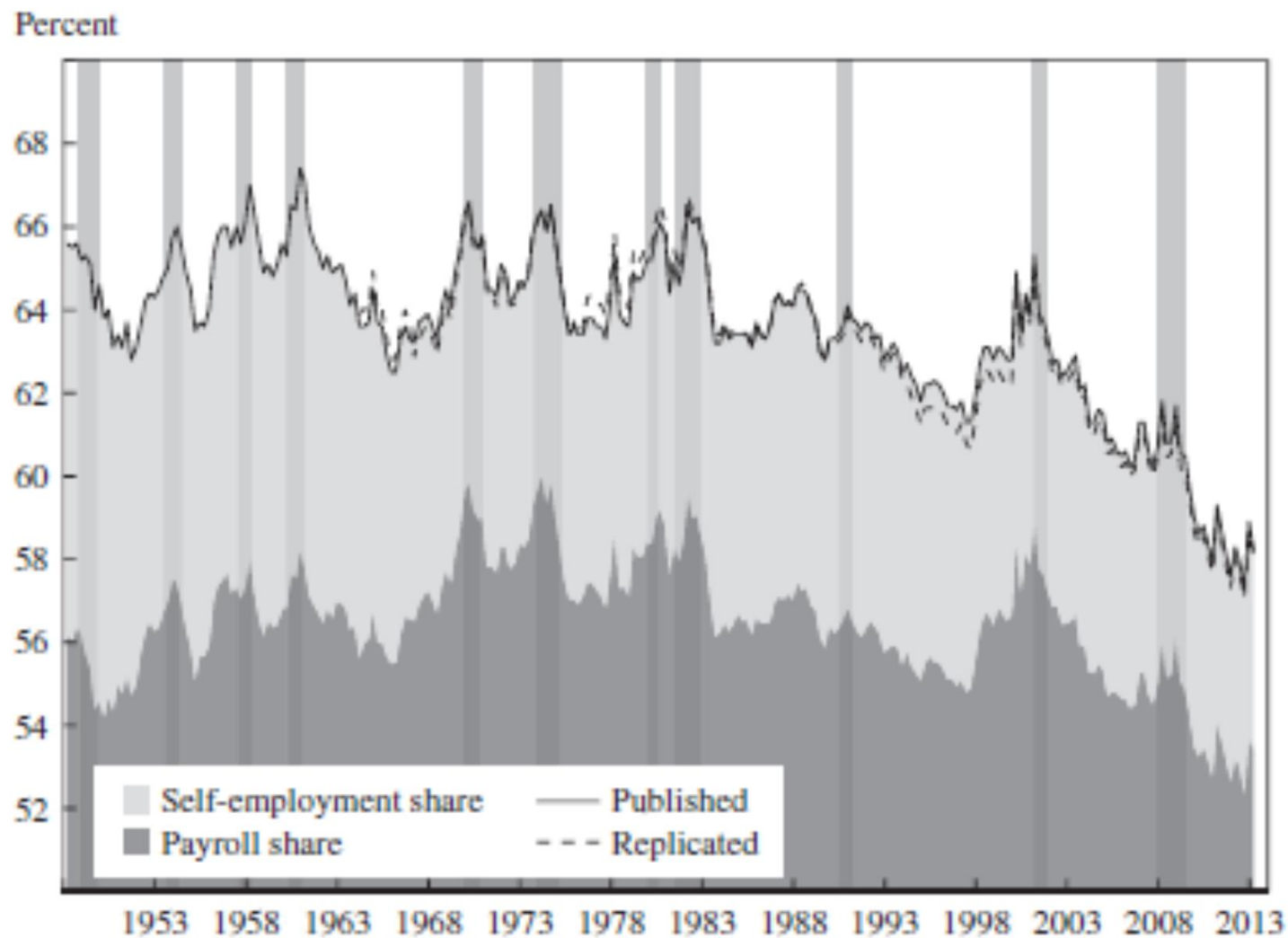
Figure 3. The Top 0.1 Percent Income Share and Composition, 1916–2007

Source: Atkinson et al. (2011)

Elsby et al. (2013)

- A large reported decline in labor shares between 1983 and 2013 – from 64% to 58%
- However, a third of this decline, mainly from the self-employed workers, is artificially large due to assumptions made regarding the wages of the self-employed
- Elsby et al. demonstrate this by calculating 2 alternative measures of labor share based on comparisons of assets and productivity

Figure 1. Labor Share, Payroll Share, and Replicated Labor Share in U.S. Nonfarm Business Sector, 1948-2013

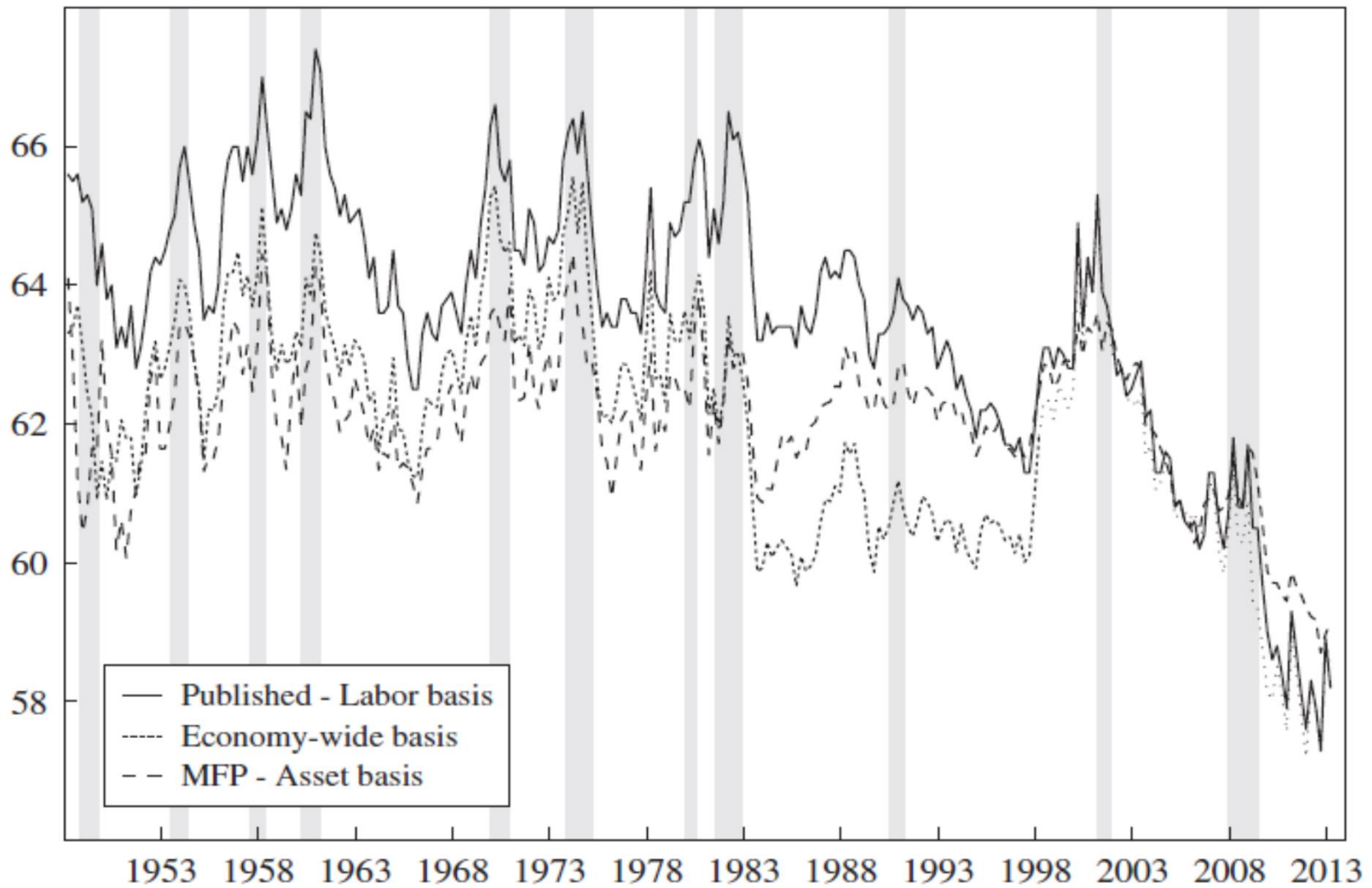


Source: Bureau of Labor Statistics, Bureau of Economic Analysis, and authors' calculations.

Source: Elsbey et al. (2013)

Figure 3. Alternative Measures of Labor Share Based on Three Estimates of Self-Employment Labor Income, 1948–2013

Percent



Source: Elsby et al. (2013)

b. Group-level Inequality

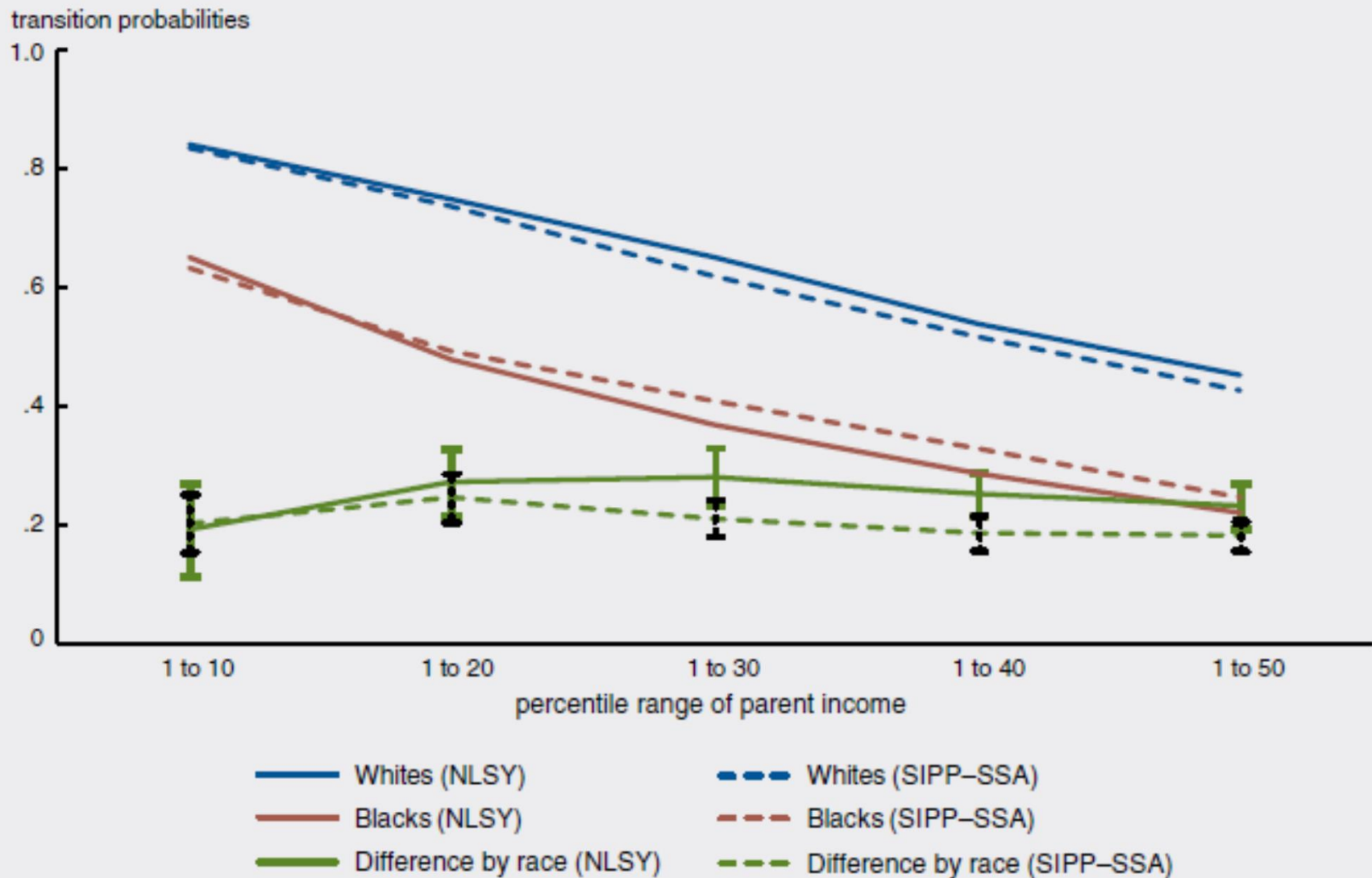
b. Group-level Inequality

Income

Mazumder (2014)

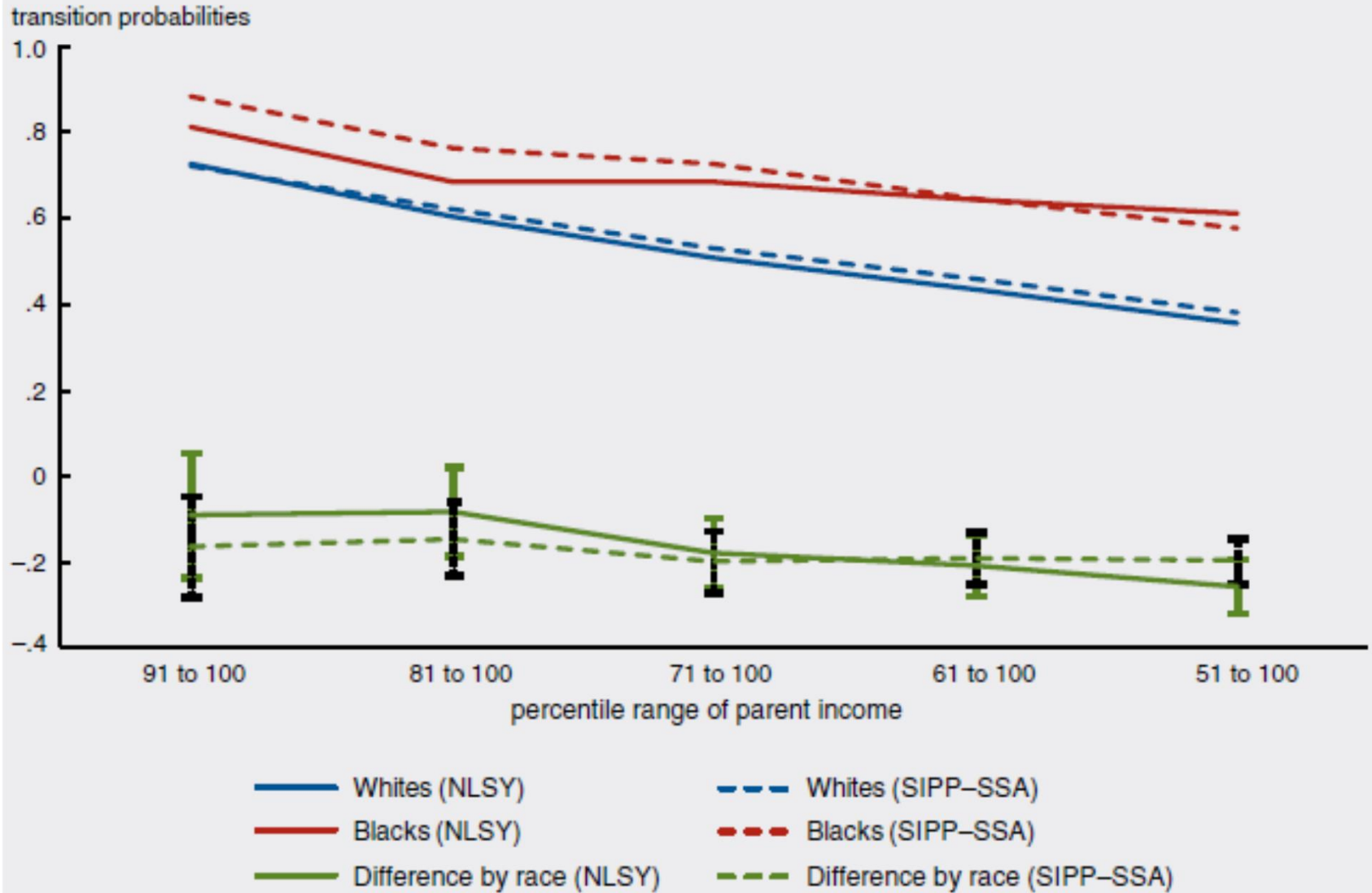
- Black-white differences in IGM are substantial
- Also more likely to be downward mobile (10-20 p.p.) and less likely to be upward mobile (20-30 p.p.)
- Distinction persists controlling for years of schooling (30 p.p. gap in upward mobility for fewer than 12 years of schooling)
- Gaps are smaller conditional on AFQT (roughly 10 p.p.)

Upward transition probabilities by race using cumulative samples ($\tau = 0$)



Source: Mazumder (2014)

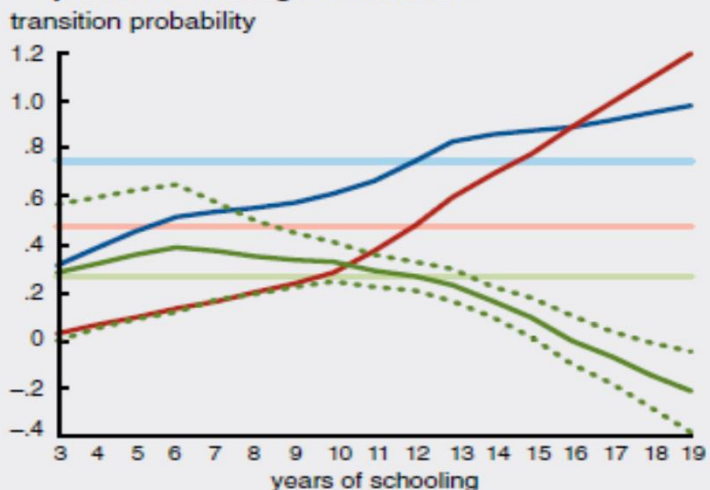
Downward transition probabilities by race using cumulative samples ($\tau = 0$)



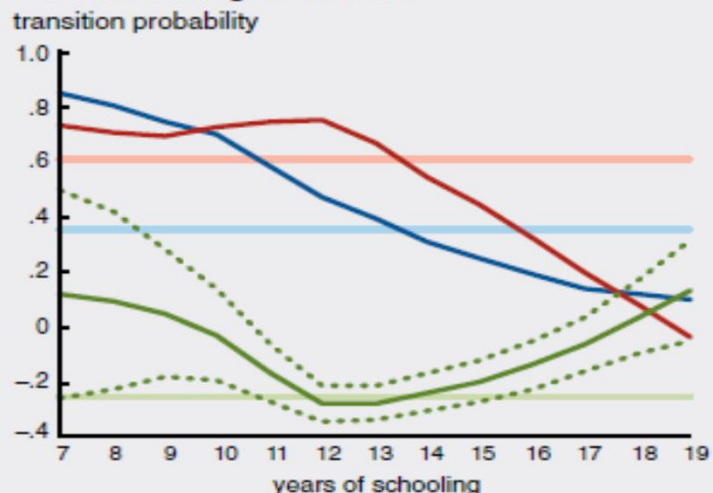
Source: Mazumder (2014)

Transition probability estimates controlling for explanatory variables

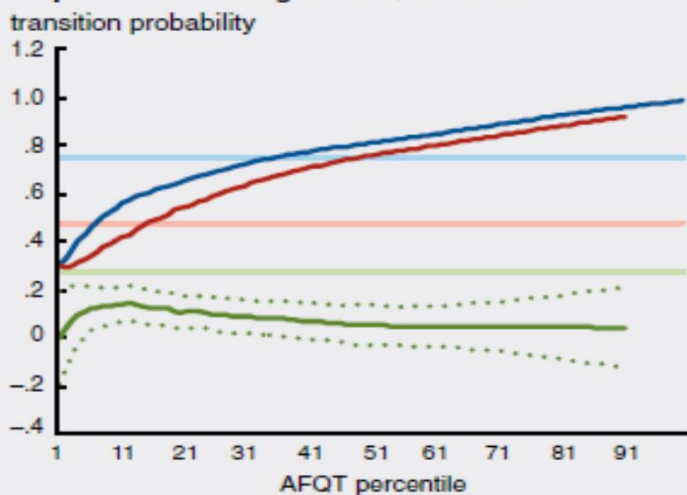
A. Upward transition probability out of bottom quintile controlling for education



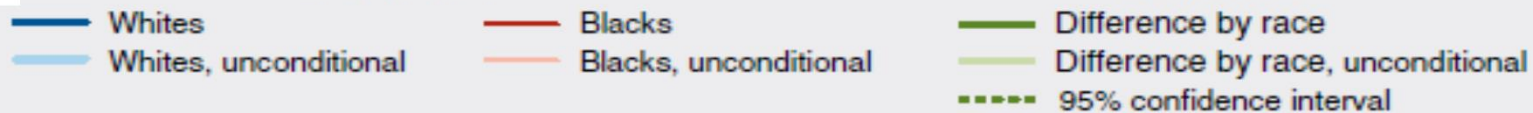
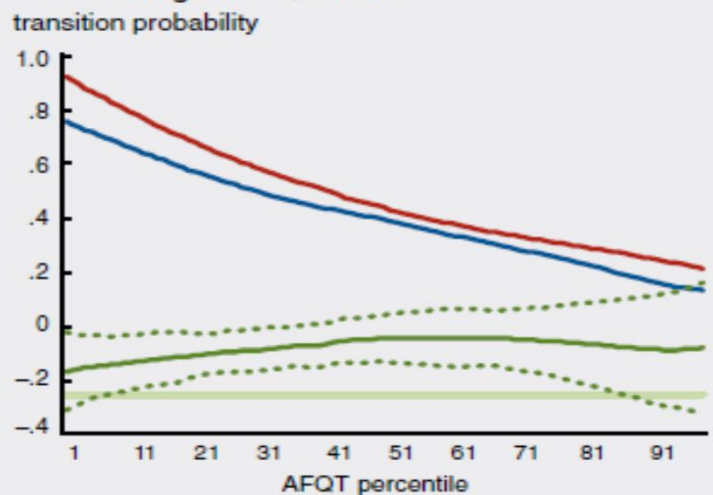
B. Downward transition probability out of top half controlling for education



C. Upward transition probability out of bottom quintile controlling for AFQT scores



D. Downward transition probability out of top half controlling for AFQT scores



Source: Mazumder (2014)

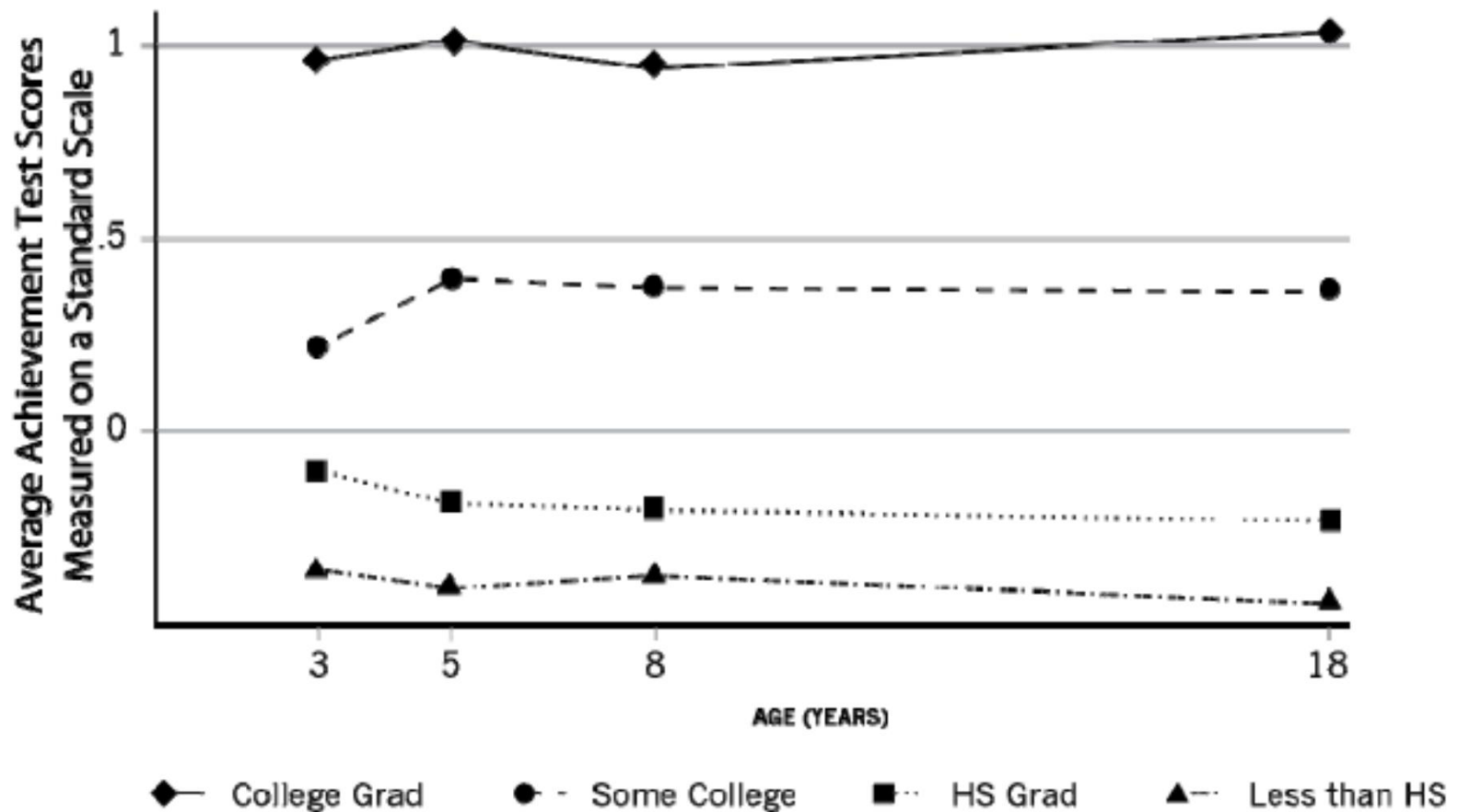
b. Group-level Inequality

Education

Heckman (2011)

- SES gaps in child skills open up early in life (even age 3)
- Out of wedlock children much more common in recent decades
- Higher returns for investments at early ages

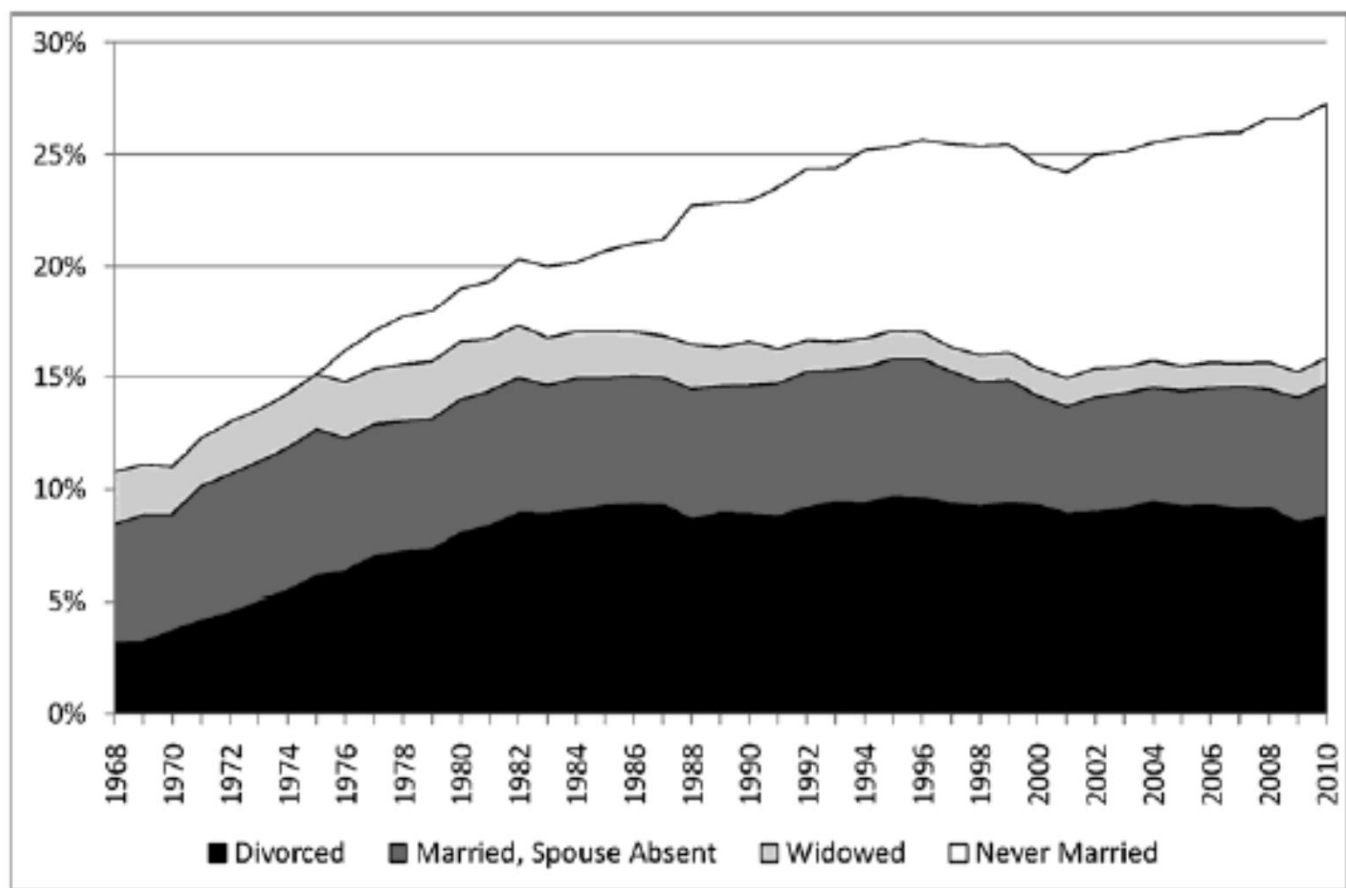
Figure 1. Average Achievement Test Scores of Children by Age by Maternal Education



Scores are reported in standardized units (they are transformed to “z” scores, i.e., normalized scores with unit variance).³²

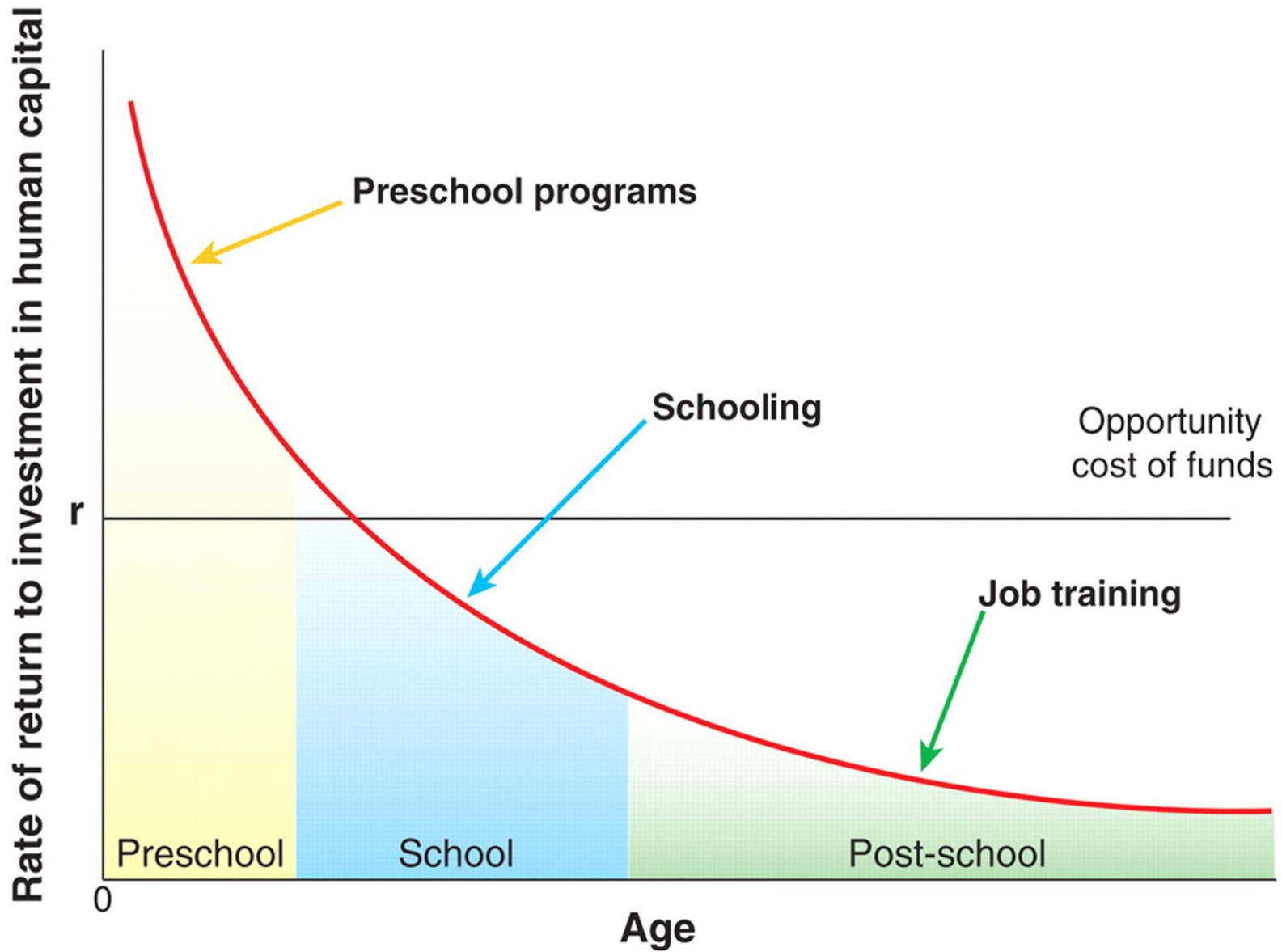
Source: Heckman (2011)

Figure 2. Percent of Children Under 18 Living with One Parent, By Marital Status of the Parent



Source: Author's tabulations.

Source: Heckman (2011)

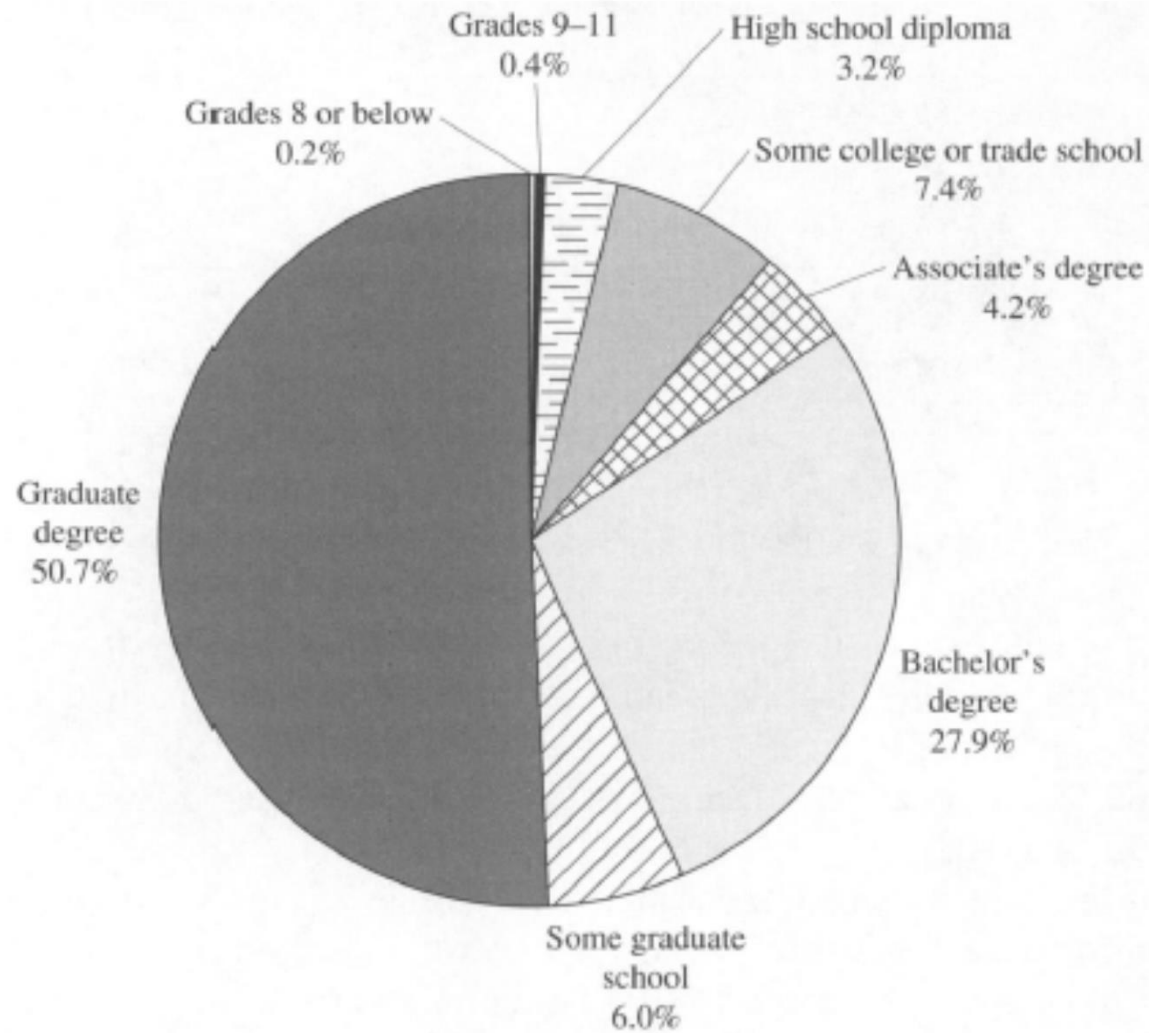


Source: Heckman (2008)

Hoxby and Avery (2013)

- High achieving students less likely to report parental education if parents less educated
- Similarly, embarrassed about race if Black or Hispanic
- Under-shoot school matches when deciding on college applications

Figure 3. High-Achieving Students, by Parents' Educational Attainment^a

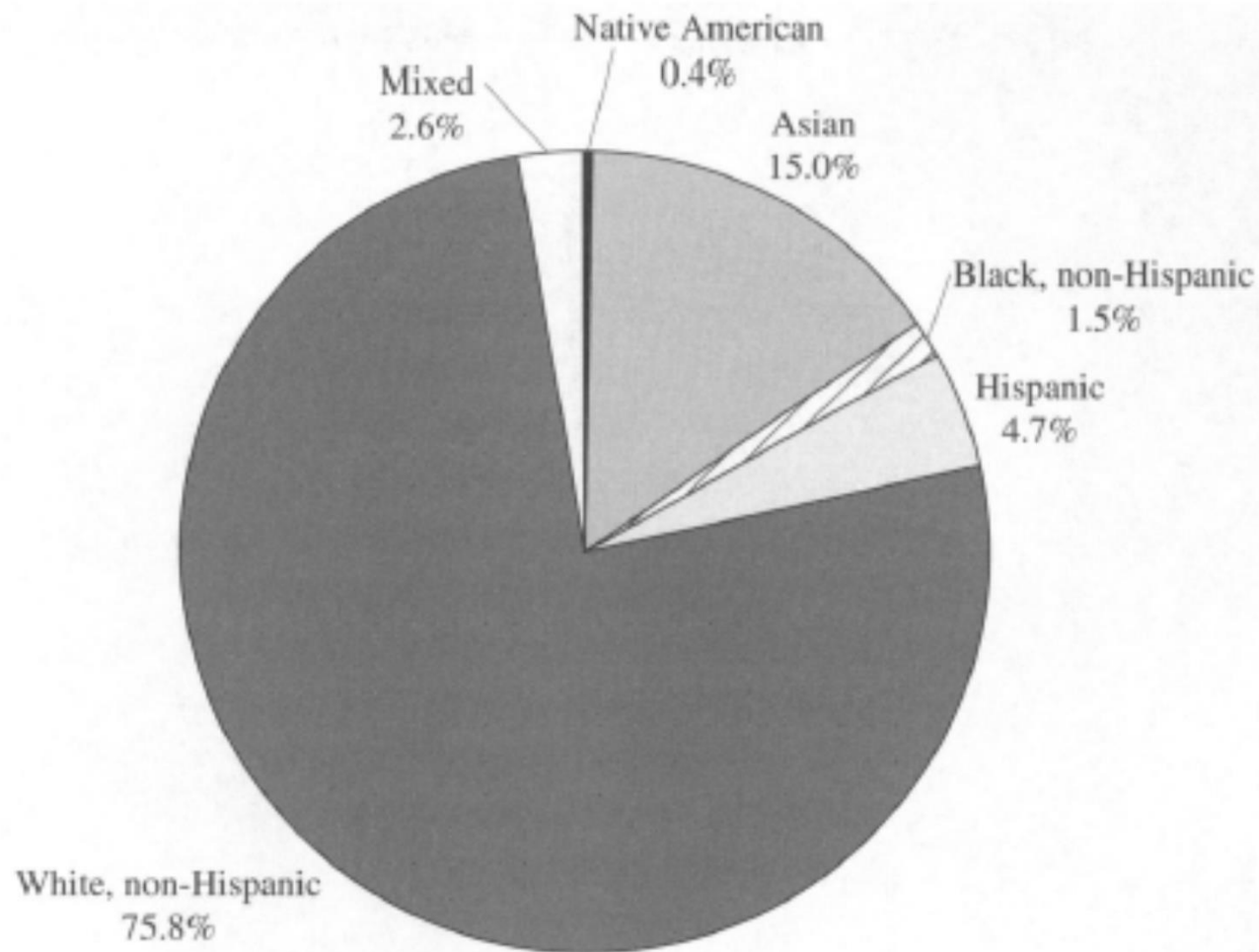


Source: Authors' calculations using the combined data set described in the text.

a. Parents' educational attainment is the highest level attained by either parent. Percentages are of those high-achieving students (defined as in table 2) who took a College Board test and answered the question about parents' education (61 percent of high achievers declined to answer; the ACT questionnaire does not include a similar question).

Source: Hoxby and Avery (2013)

Figure 4. High-Achieving Students, by Race and Ethnicity^a

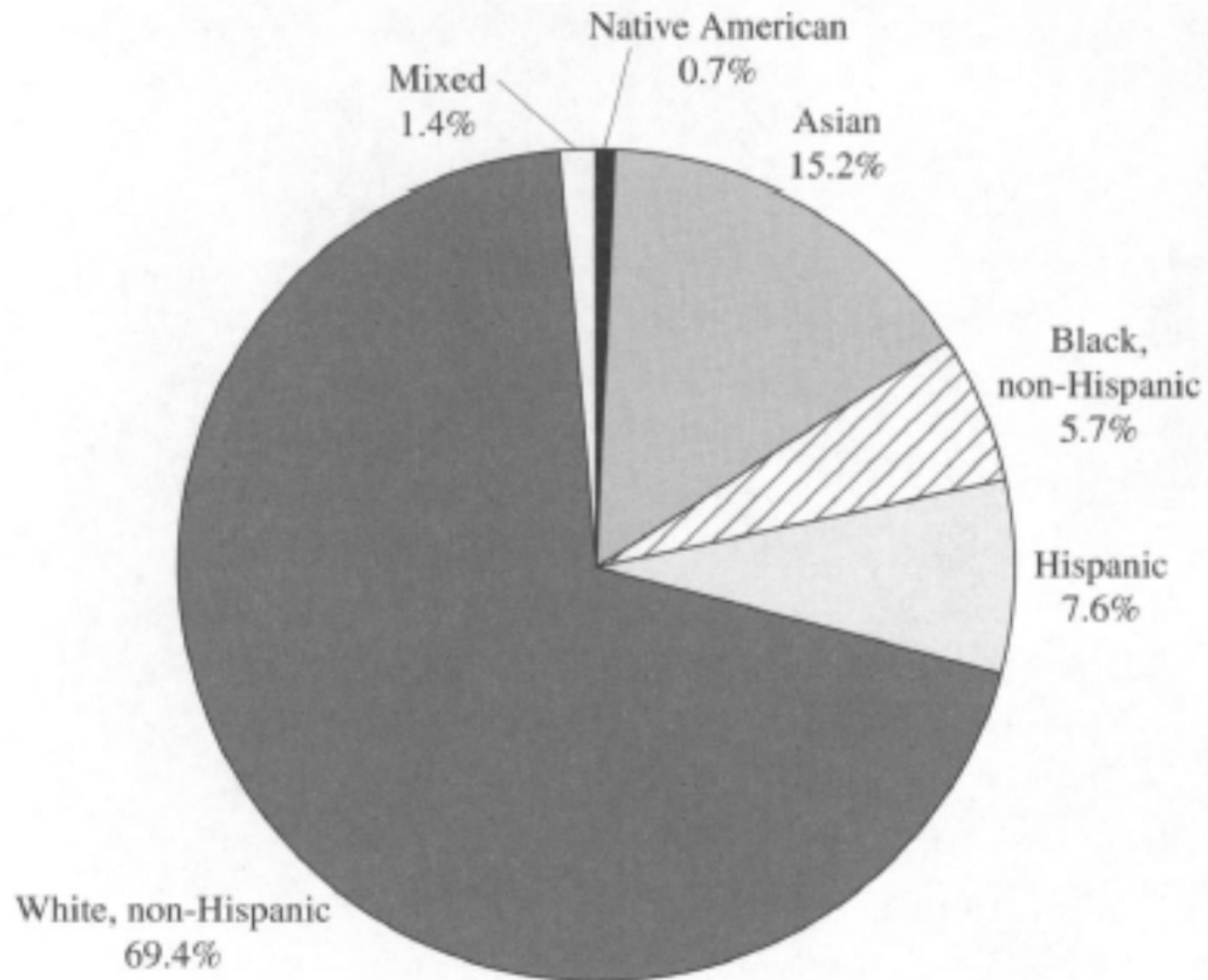


Source: Authors' calculations using the combined data set described in the text.

a. Percentages are of those high-achieving students (defined as in table 2) who took an ACT or a College Board test and answered the question about their race or ethnicity (2.1 percent of high achievers declined to answer).

Source: Hoxby and Avery (2013)

Figure 5. High-Achieving, Low-Income Students, by Race and Ethnicity^a

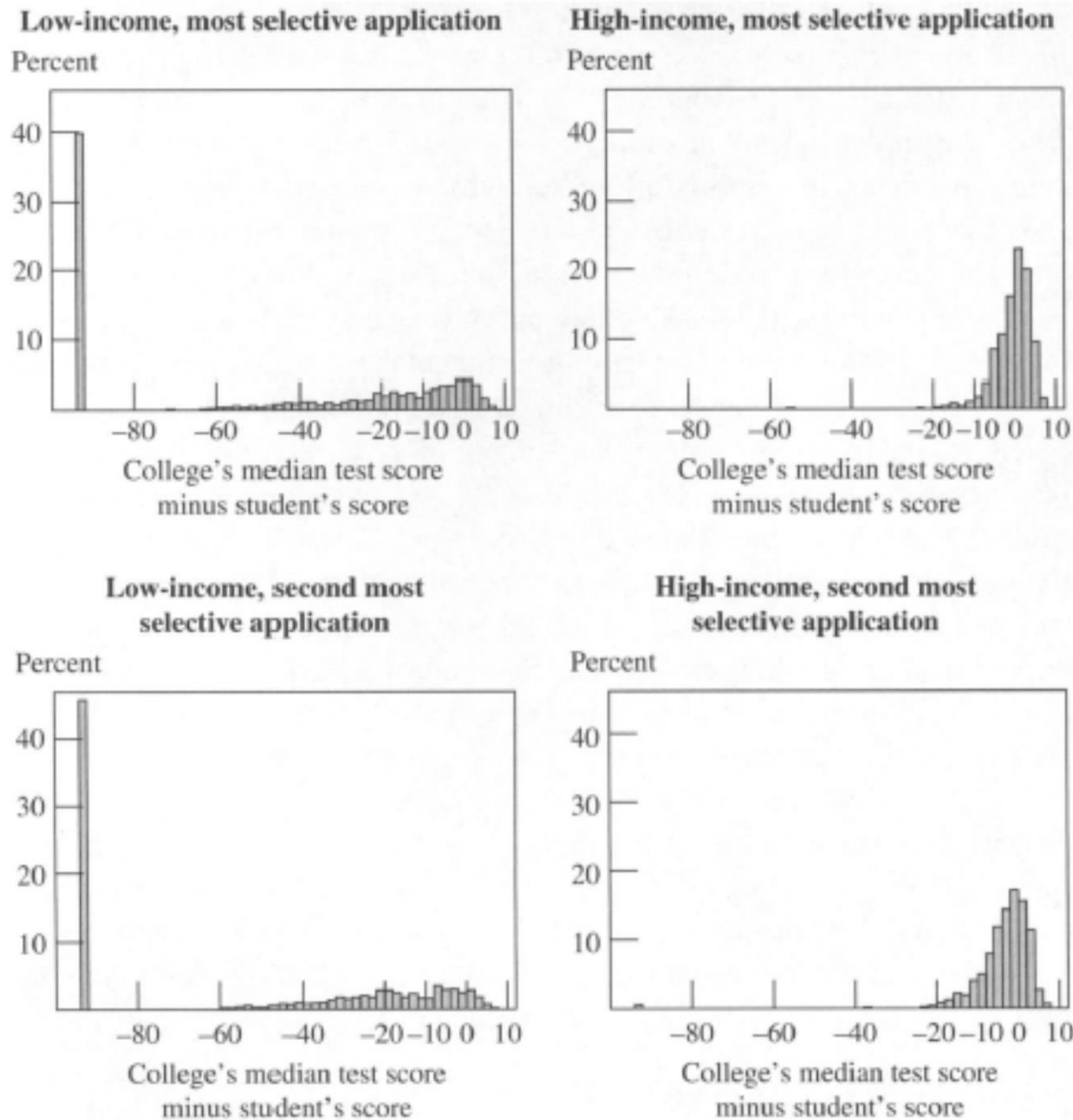


Source: Authors' calculations using the combined data set described in the text.

a. Percentages are of those high-achieving students (defined as in table 2) from bottom-quartile-income families who took an ACT or a College Board test and answered the question about their race or ethnicity (2.1 percent of all high achievers declined to answer).

Source: Hoxby and Avery (2013)

Figure 11. Distributions of High-Achieving Students' Most Selective and Second Most Selective College Applications, by Family Income^a



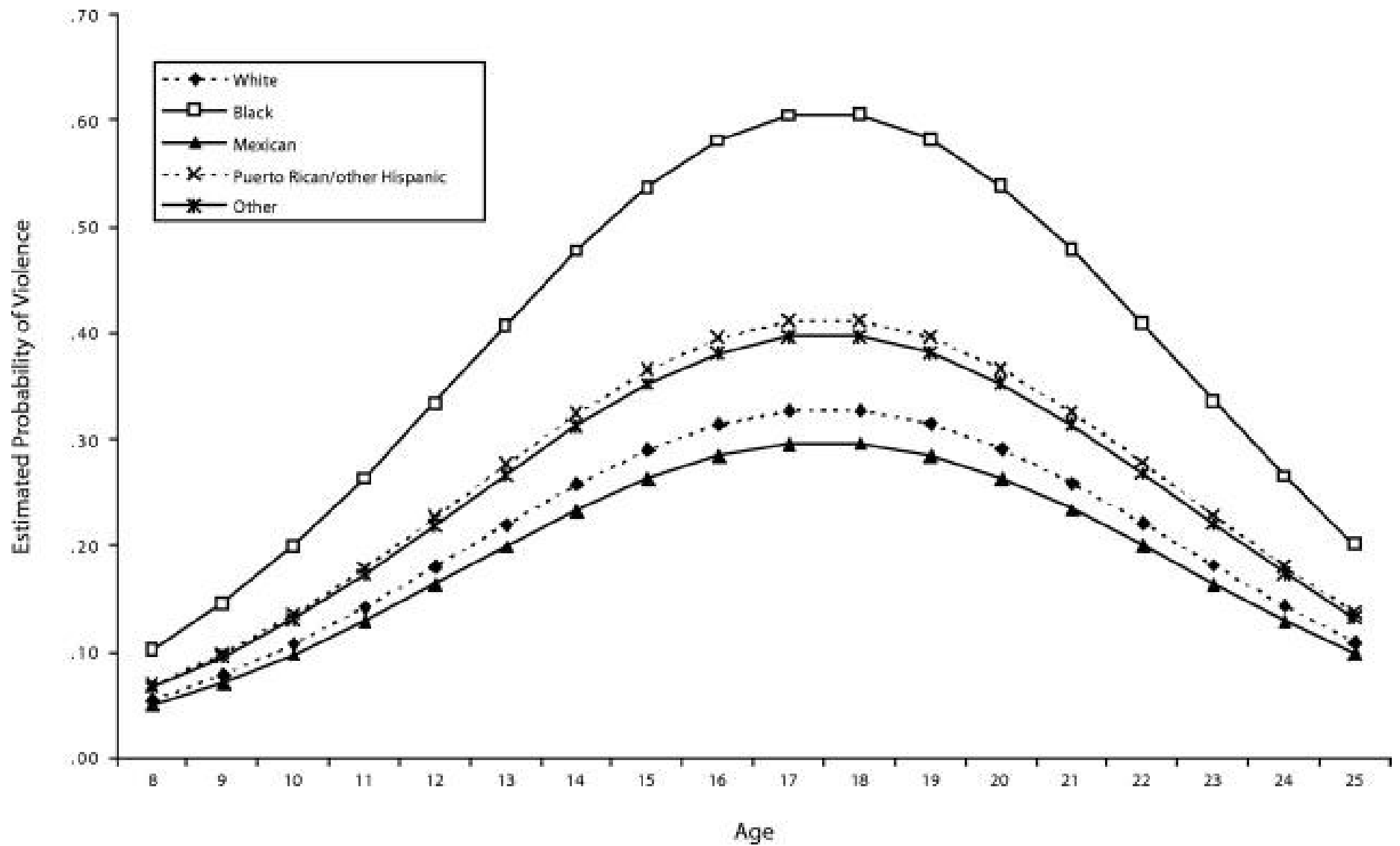
Source: Hoxby and Avery (2013)

b. Group-level Inequality

Crime and Violence

Sampson et al. (2005)

- There are large racial gaps in the estimated probability for violence
- At the peak (age 18), Blacks have a 60% chance while non-Mexican Hispanics and others have a 35-40% chance, and Whites and Mexicans have a roughly 30% chance



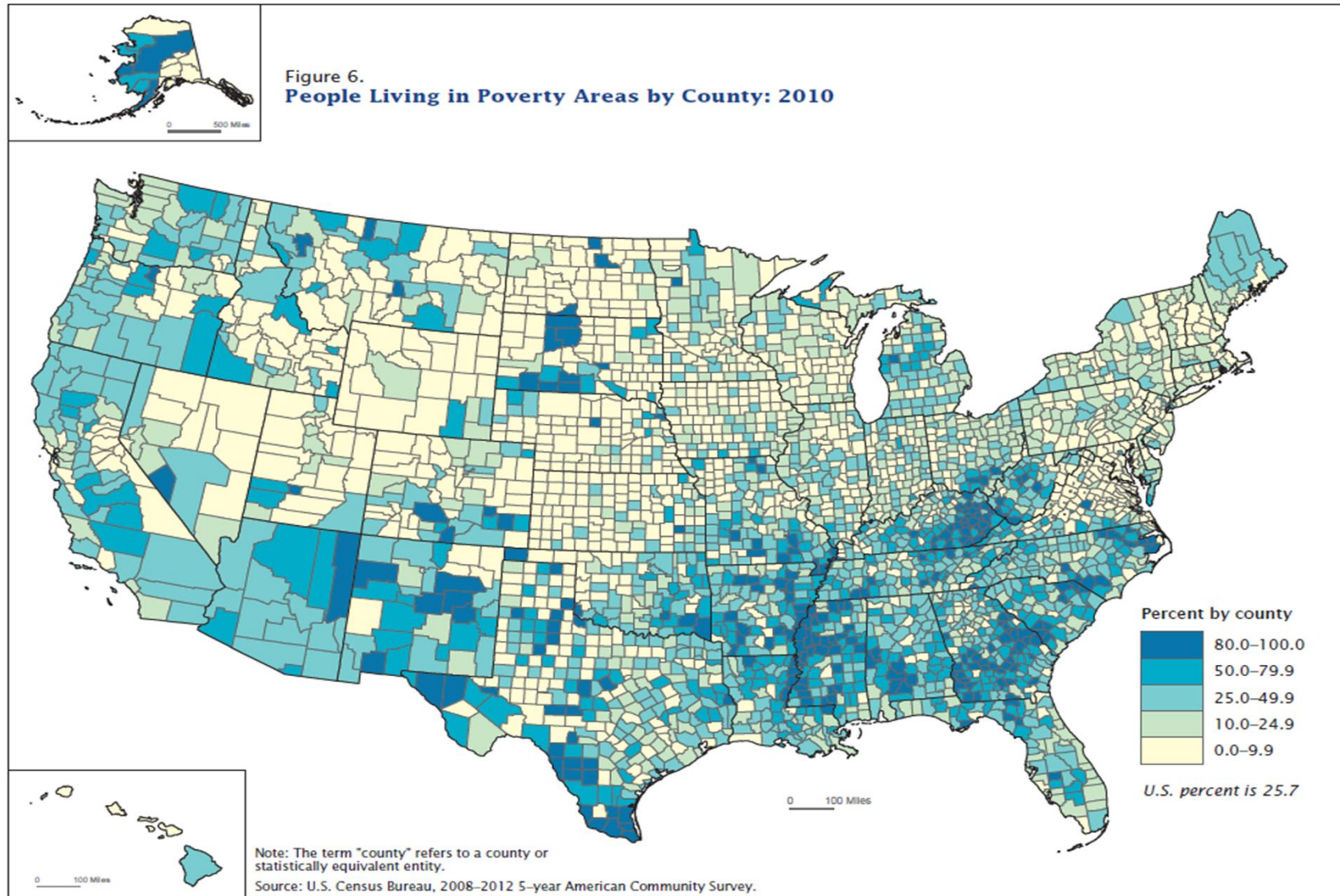
Source: Sampson (2005)

c. Spatial Inequality

American Community Survey Report (2014)

- Based on ACS data, shows differences in poverty rates by county
- Concentrated in the south west US

Poverty Rates by Region in the US

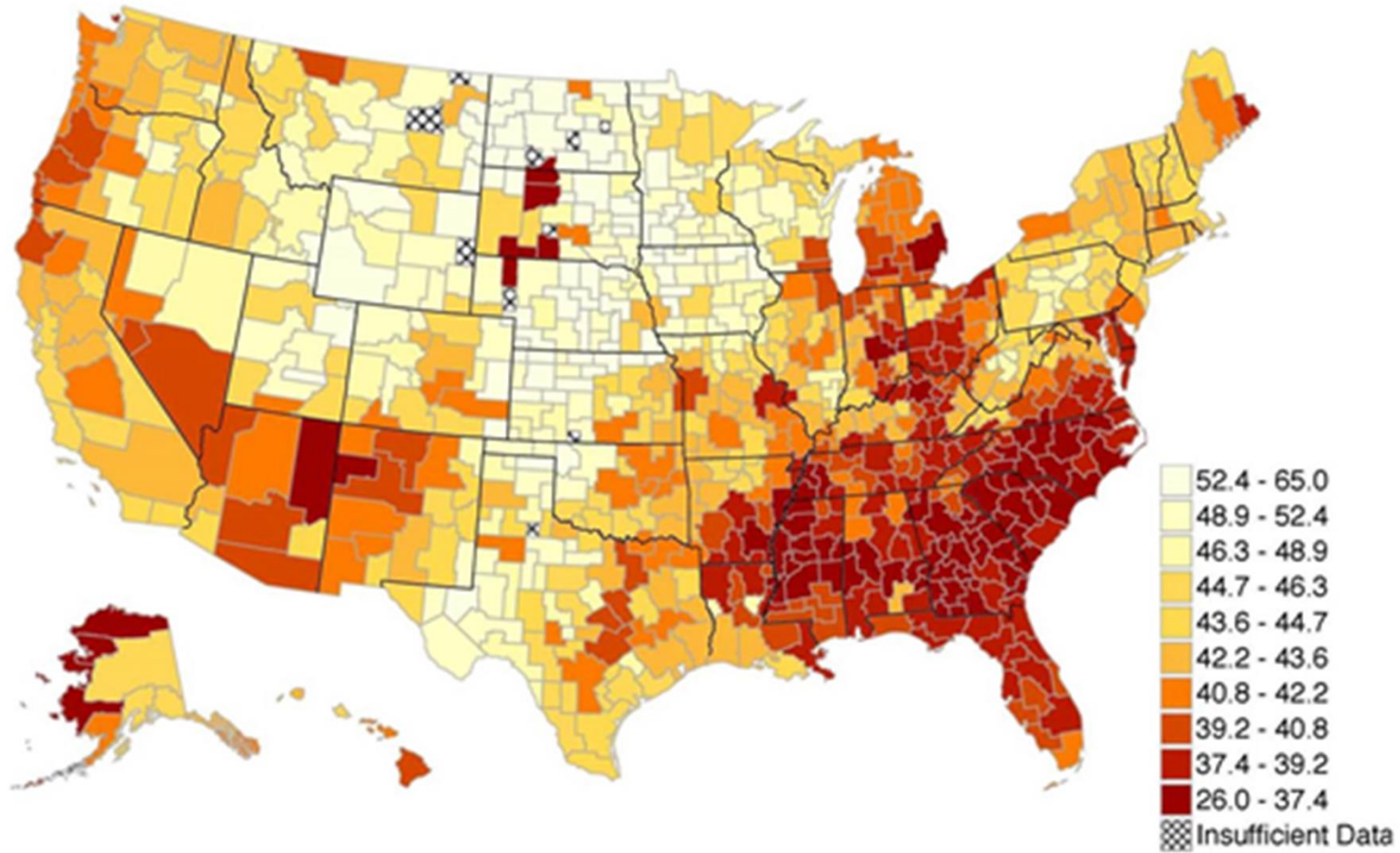


Source: American Community Survey Reports (2014)

Chetty et al. (2014)

- Shows differences in IGM by commuting zone
- Commuting zone is an area defined by local labor markets, in contrast to boundaries based on population and/or political units
- IGM is measured as log rank relations between parents and offspring
- Immobility also concentrated in the south west

Intergenerational Mobility in the US



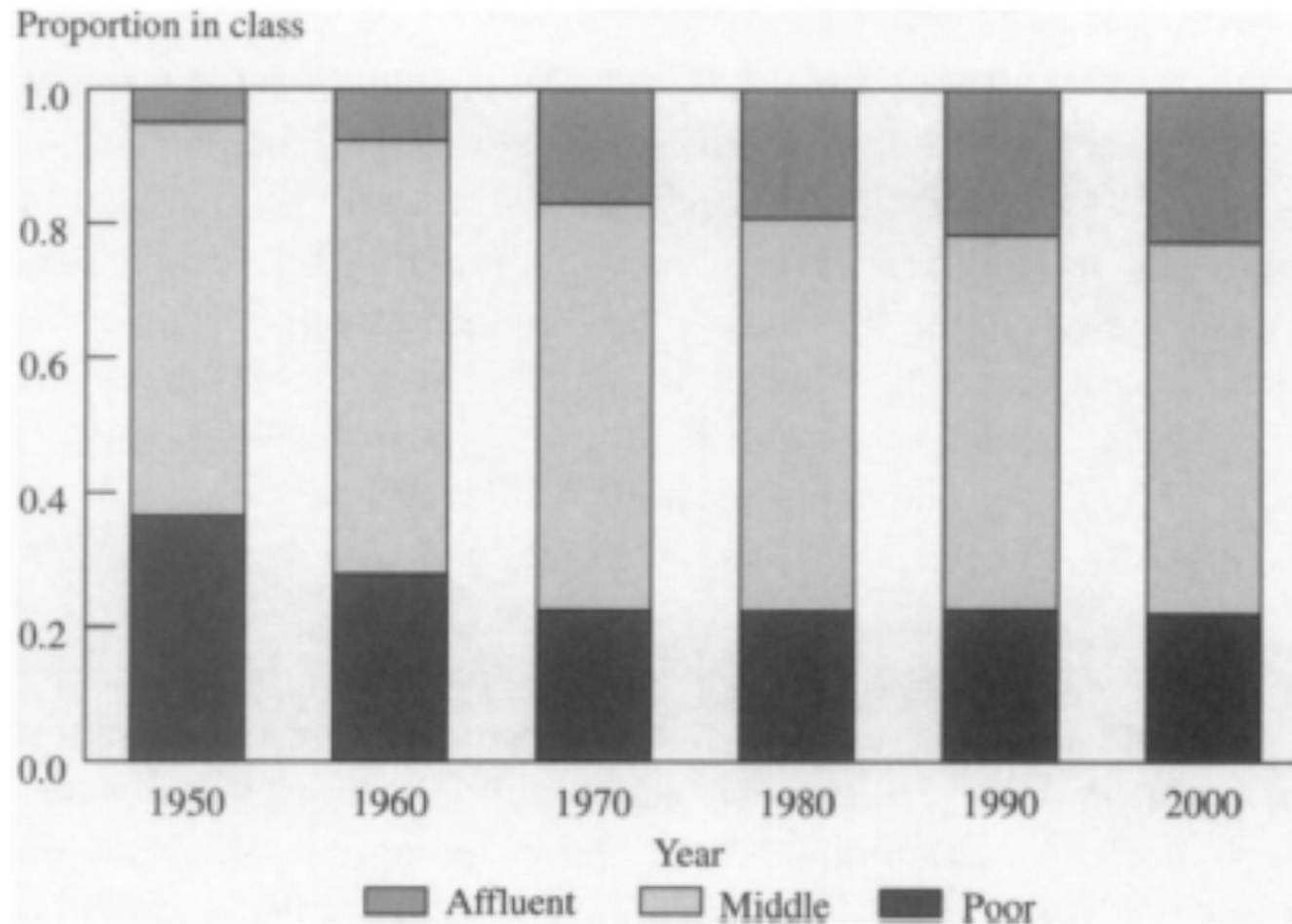
Notes: This map shows the average percentile rank of children who grow up in below-median income families across areas of the US (absolute upward mobility). Lighter colors represent areas where children from low-income families are more likely to move up in the income distribution.

Source: Chetty et al. (2014)

Massey et al. (2003)

- Distributional changes in family income over the last 5 decades
- Falling income segregation, rising affluence concentration at the State/MSA/Region levels.
- Sharp rise in segregation and poverty concentration at the census-tract levels from 1970-1990, and then decline after.
- Blacks generally more segregated than Whites.

Figure 1. Distribution of U.S. Families by Income Class, 1950-2000



Source: Massey et al. (2003)

Table 1. Segregation by Family Income, by Region, State, and Metropolitan Area Level as Measured by Indexes of Affluent/Poor Dissimilarity, Selected Years, 1950–2000

<i>Level and race</i>	<i>1950</i>	<i>1960</i>	<i>1970</i>	<i>1980</i>	<i>1990</i>	<i>2000</i>
<i>Affluent versus poor</i>						
Region						
White	0.179	0.190	0.163	0.085	0.123	0.086
Black	0.373	0.418	0.324	0.141	0.182	0.119
Total	0.222	0.236	0.189	0.097	0.130	0.097
State						
White	0.226	0.231	0.211	0.137	0.182	0.161
Black	0.454	0.491	0.390	0.202	0.266	0.197
Total	0.249	0.260	0.222	0.133	0.179	0.155
Metro						
White	0.361	n.a.	0.284	0.230	0.283	0.275
Black	0.582	n.a.	0.414	0.247	0.309	0.257
Total	0.359	n.a.	0.278	0.211	0.253	0.246

Source: Massey et al. (2003)

Table 2. Tract-Level Income Segregation and Concentration of Poverty and Affluence in Sixty Metropolitan Areas, Selected Years, 1970–2000

<i>Index and race</i>	<i>1970</i>	<i>1980</i>	<i>1990</i>	<i>2000</i>
<i>Affluent and poor populations</i> <i>(measured by absolute thresholds of income)</i>				
Income segregation				
White	0.261	0.364	0.403	0.351
Black	0.336	0.435	0.521	0.428
Total	0.287	0.398	0.430	0.373
Poverty concentration				
White	0.127	0.138	0.258	0.227
Black	0.160	0.206	0.332	0.282
Total	0.136	0.162	0.279	0.246
Affluence concentration				
White	0.310	0.281	0.361	0.345
Black	0.239	0.200	0.298	0.272
Total	0.308	0.276	0.356	0.338

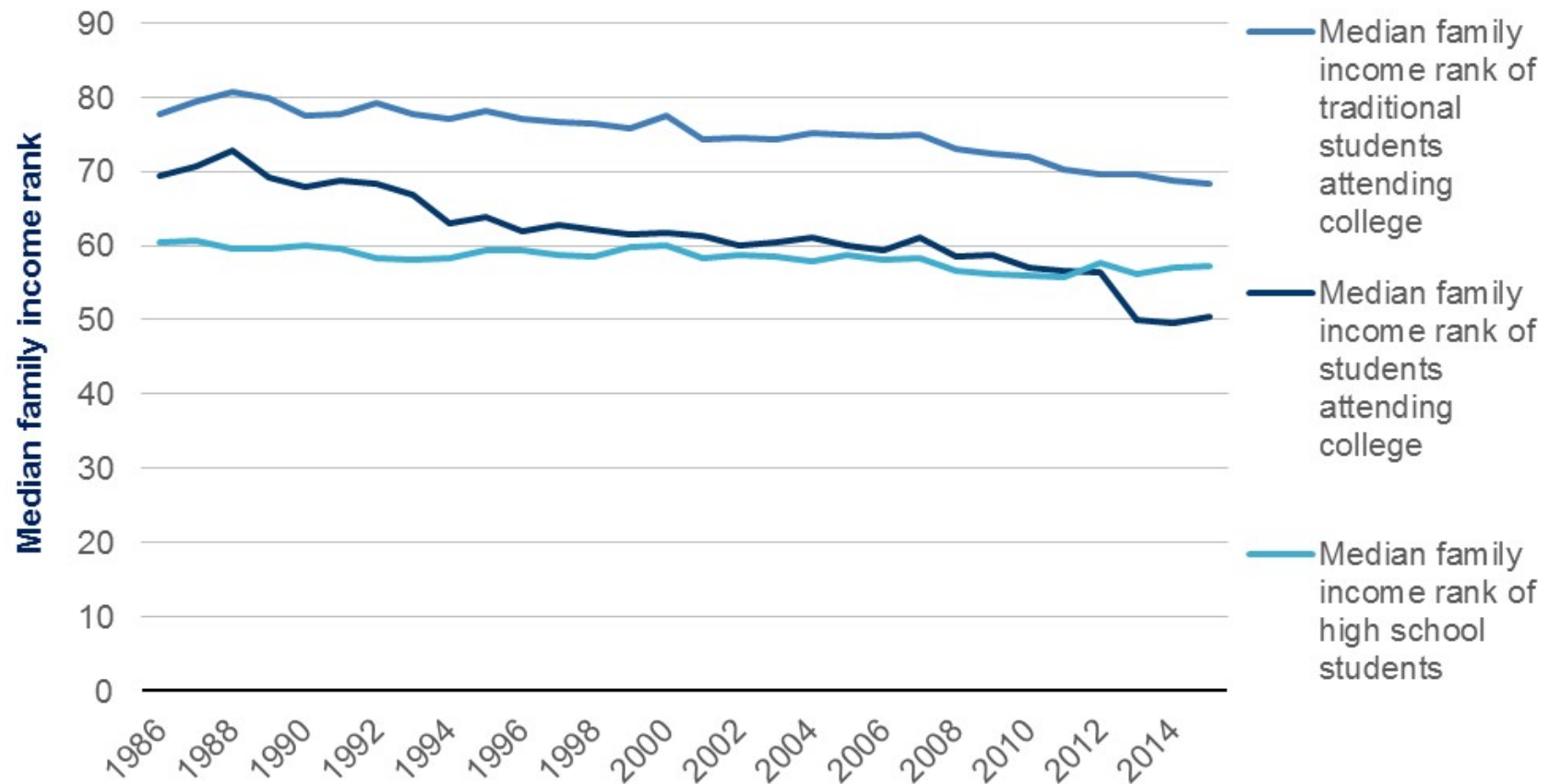
Source: Massey et al. (2003)

d. Segregation

Rothwell (2015)

- Average college student has median parental income, but traditional students have higher median incomes
- Higher education inequality (by race) has risen since the 80s.
 - Both for enrollment rates
 - As well as quality of attended college

College entry goes middle class

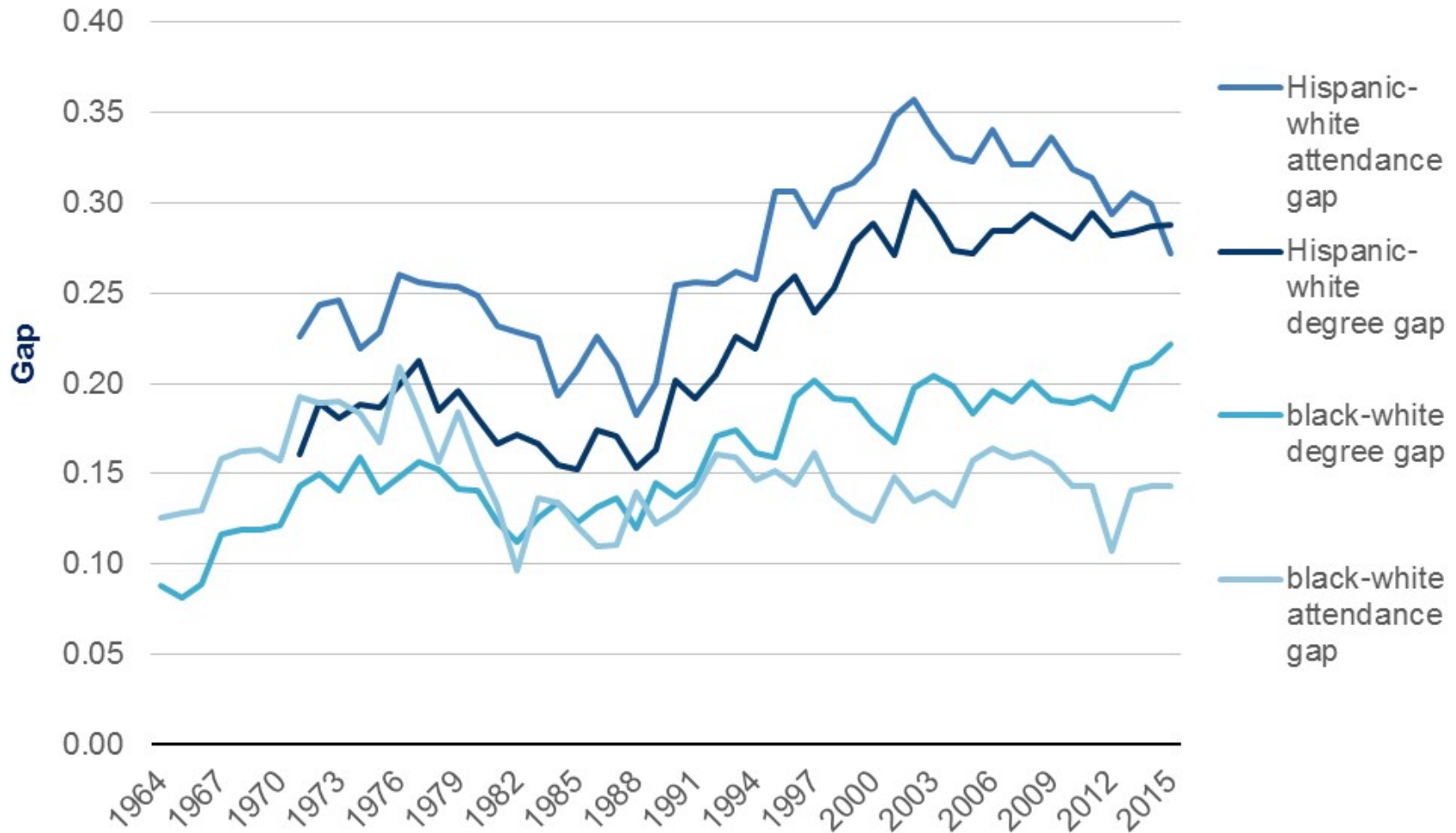


Source: Author analysis of IPUMS-CPS, University of Minnesota, www.ipums.org, 1986-2015. Sample of college students defined as those attending college who have not earned a degree. Traditional students defined as those 30 or younger with a parent as household head.

BROOKINGS

Source: Rothwell (2015)

The growing race gap in colleges

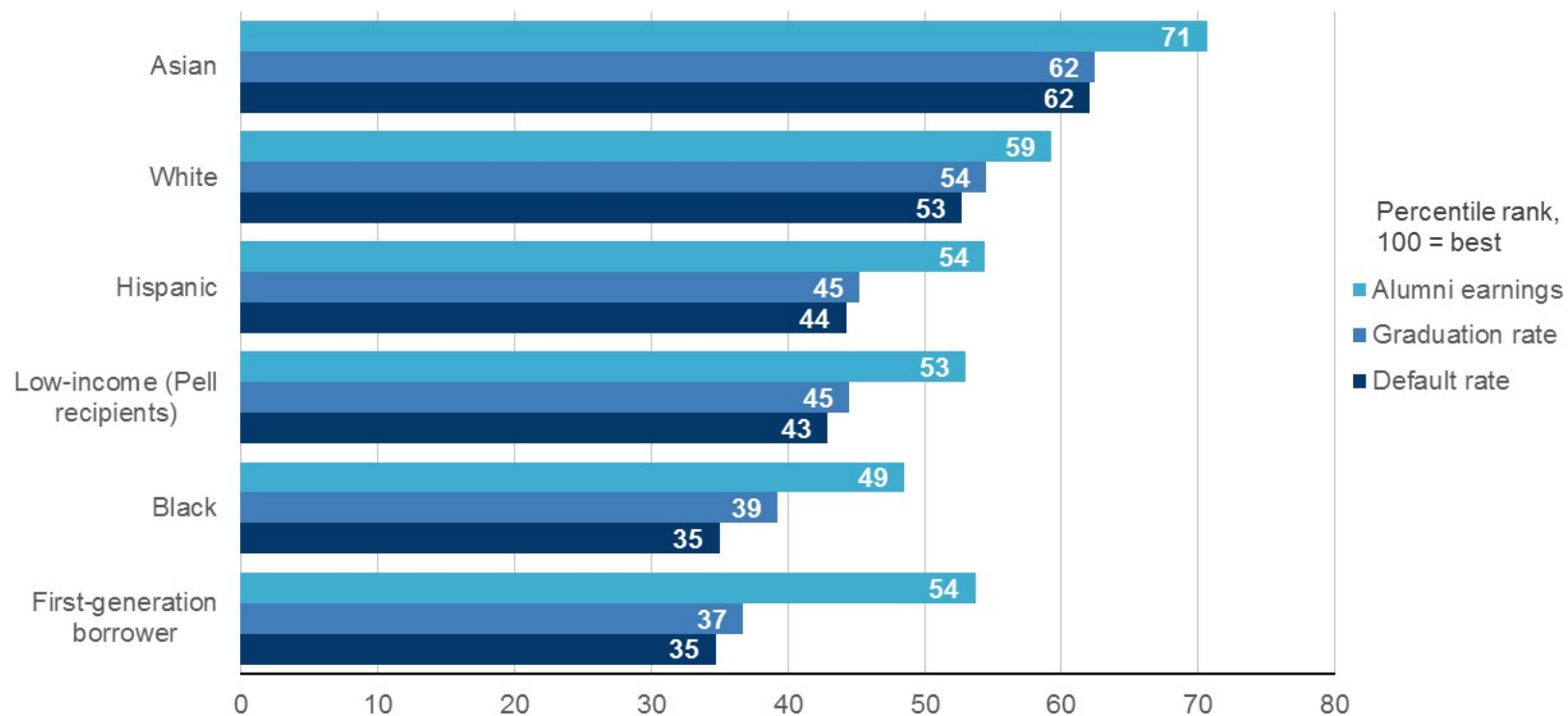


Source: Author analysis of IPUMS-CPS, University of Minnesota, www.ipums.org.

Source: Rothwell (2015)

BROOKINGS

The race gap in college quality



Notes: Centile rank of college attended in 2013 by average undergraduate by racial, ethnic, and income category. Chart ranks score each variable on 1-100 scale, where 100 is the best outcome (eg lowest default rate, highest income). Colleges that did not report loan data for specific campuses were treated as one observation when calculating first-generation student average, which is based on loan data. Undergraduate enrollment data by group in 2013 are used to calculate weighted means at the group level for each variable, measured for the college using the most recent available year. Source: Author analysis of College Scorecard and IPEDS. Alumni income ranks median earnings for all colleges with federal aid recipients by 6-year earnings for aid-receiving cohort of undergraduate students entering in 2005 and 2006, measured in 2011 and 2012 for population working and not-enrolled. The default rate is measured within 2-years after start of repayment (for 2010-2011 entering cohort), where default means failure to make payment within 270 days. The graduation rate is measured at the 150 percent standard, which is 3 years for 2-year colleges and 6 years for four-year colleges, and applies to the 2005-2006 entering cohort.

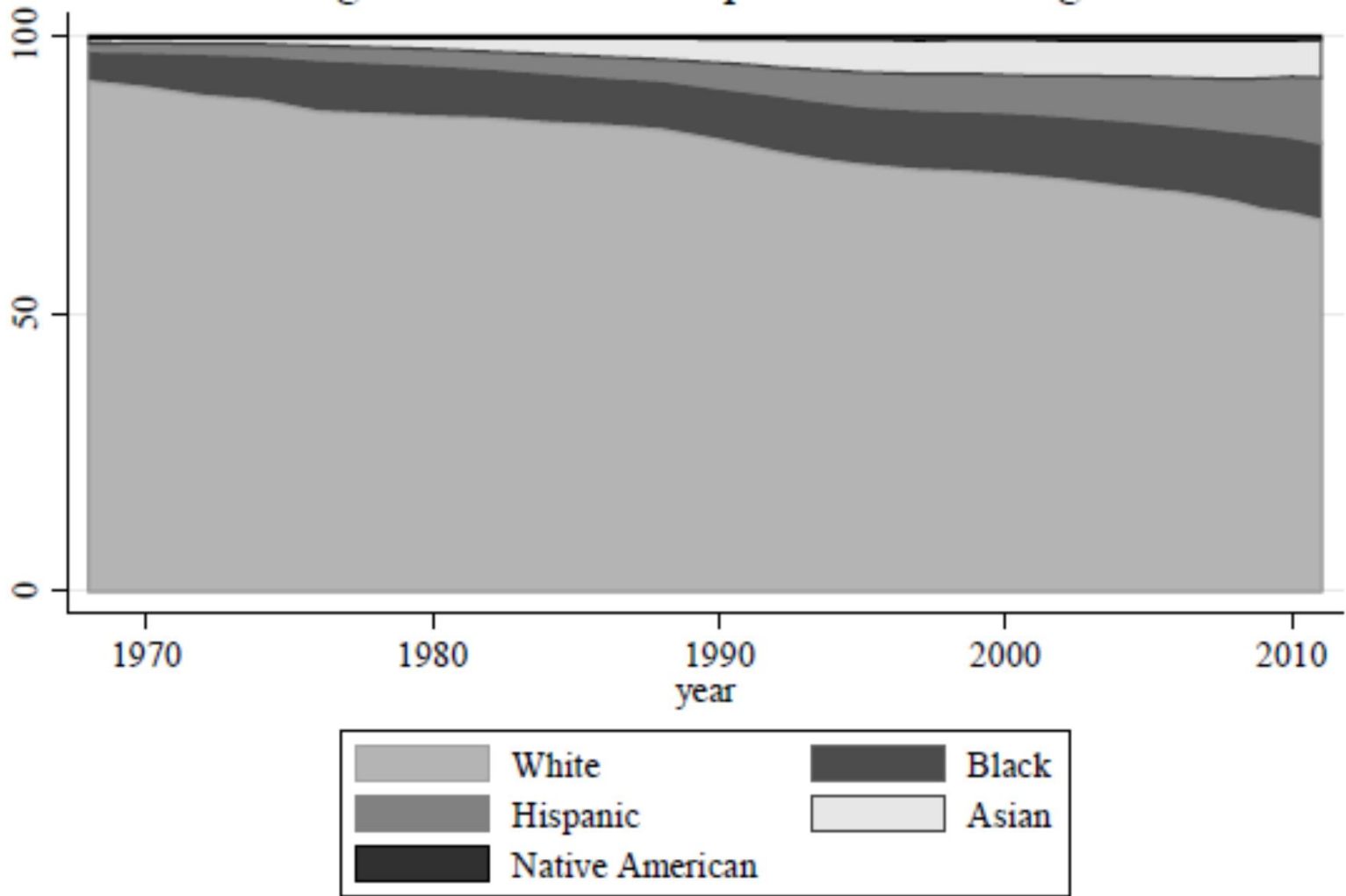
BROOKINGS

Source: Rothwell (2015)

Hinrichs (2014)

- Higher education has become less segregated since the 60s.
- White exposure to blacks steadily rose
- Black exposure to whites rose sharply in the late 60s-early 70s and then fluctuated since then
- Regional convergence in segregation although the south remains more segregated
- Reduction in blacks attending historically black colleges

Figure 1: Racial Composition of Colleges



Source: Hinrichs (2014)

Figure 3: White Exposure to Blacks by Census Region

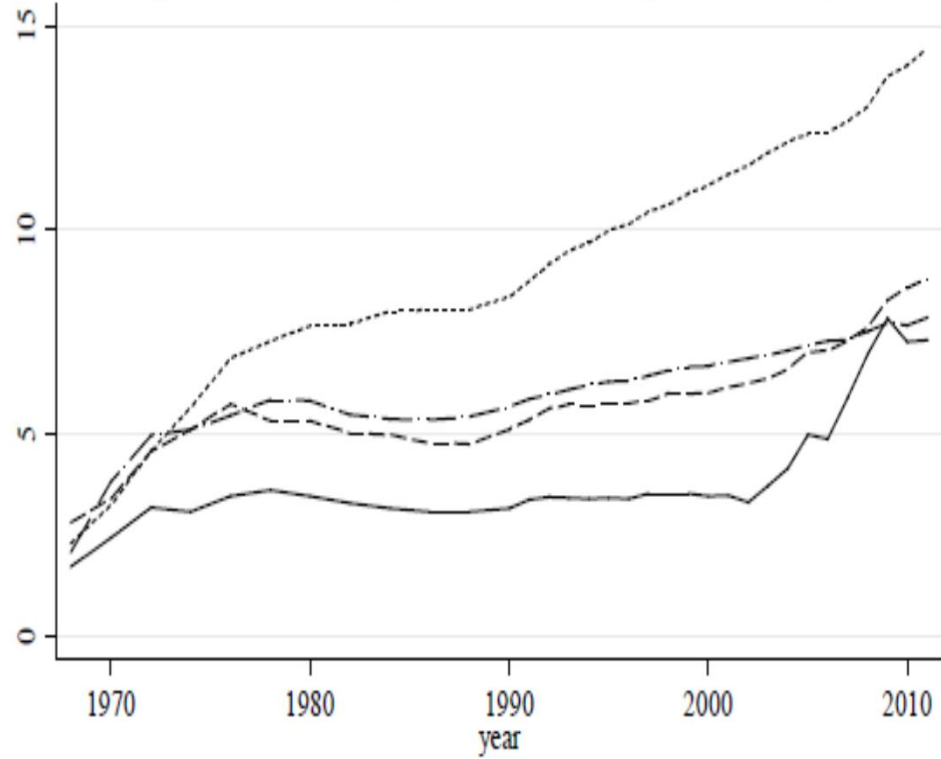
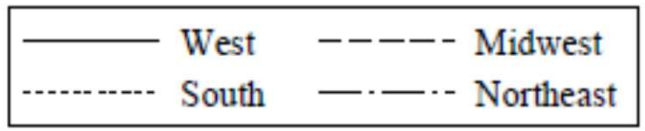
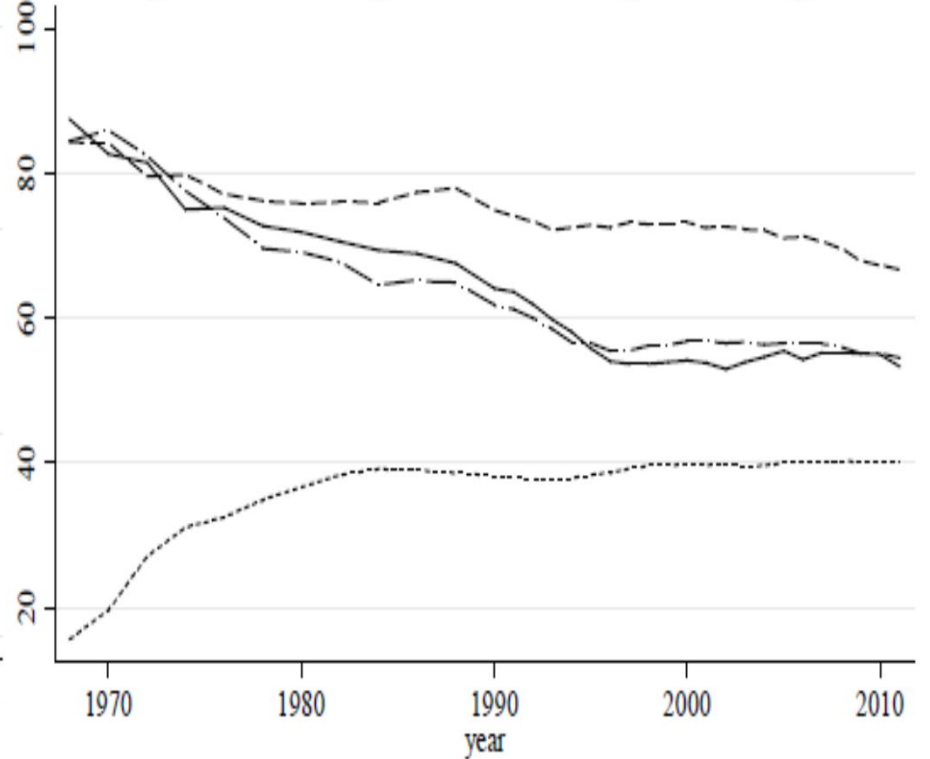


Figure 6: Black Exposure to Whites by Census Region



Source: Hinrichs (2014)

Quillian (2012)

- Black poverty concentration is correlated with the black poverty rate
- Blacks in high segregated cities (+2 SD), a 1% increase in the black poverty rate is associated with almost a 1% in contact with poor neighbors
- Similarly, for Hispanics an association of 0.8% higher contact with poor neighbors
- For cities with low segregation (-2SD), the association is 0.3% for both Blacks and Hispanics

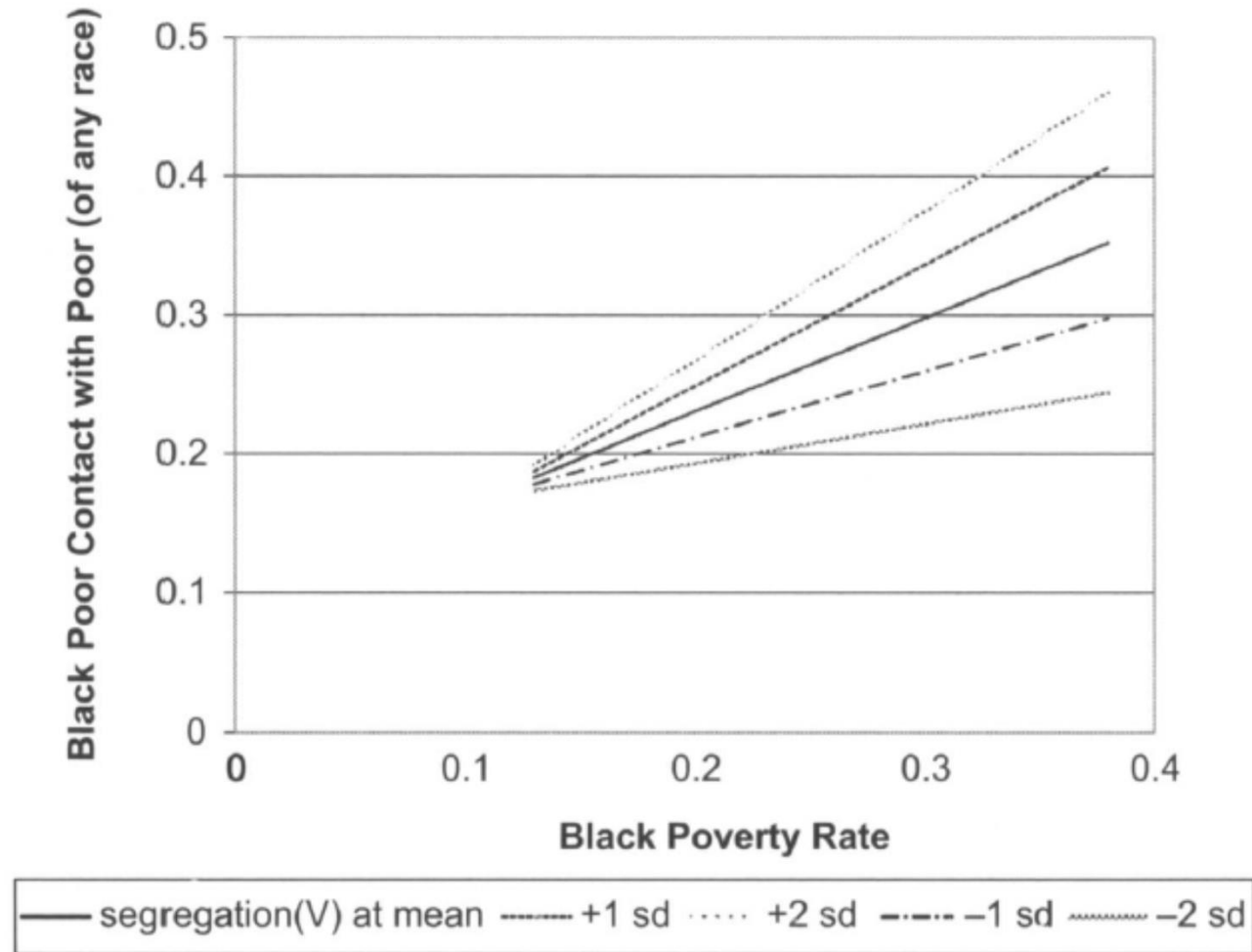
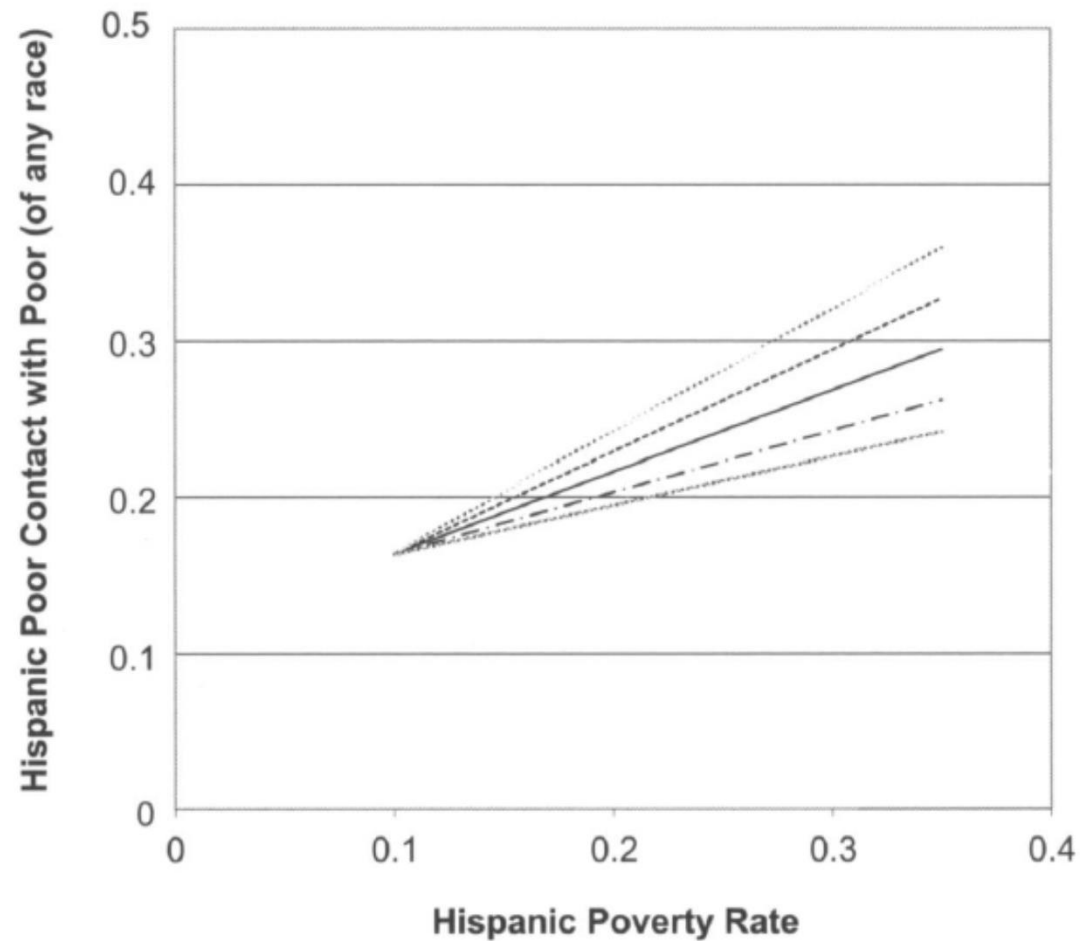


Figure 1. Black Neighborhood Poverty Concentration and the Black Poverty Rate by Metropolitan Segregation Level

Note: Predictions are from decomposition models with other components at black means.

Source: Quillian (2012)



— segregation(V) at mean - - - +1 sd ····· +2 sd - · - · -1 sd - - - - -2 sd

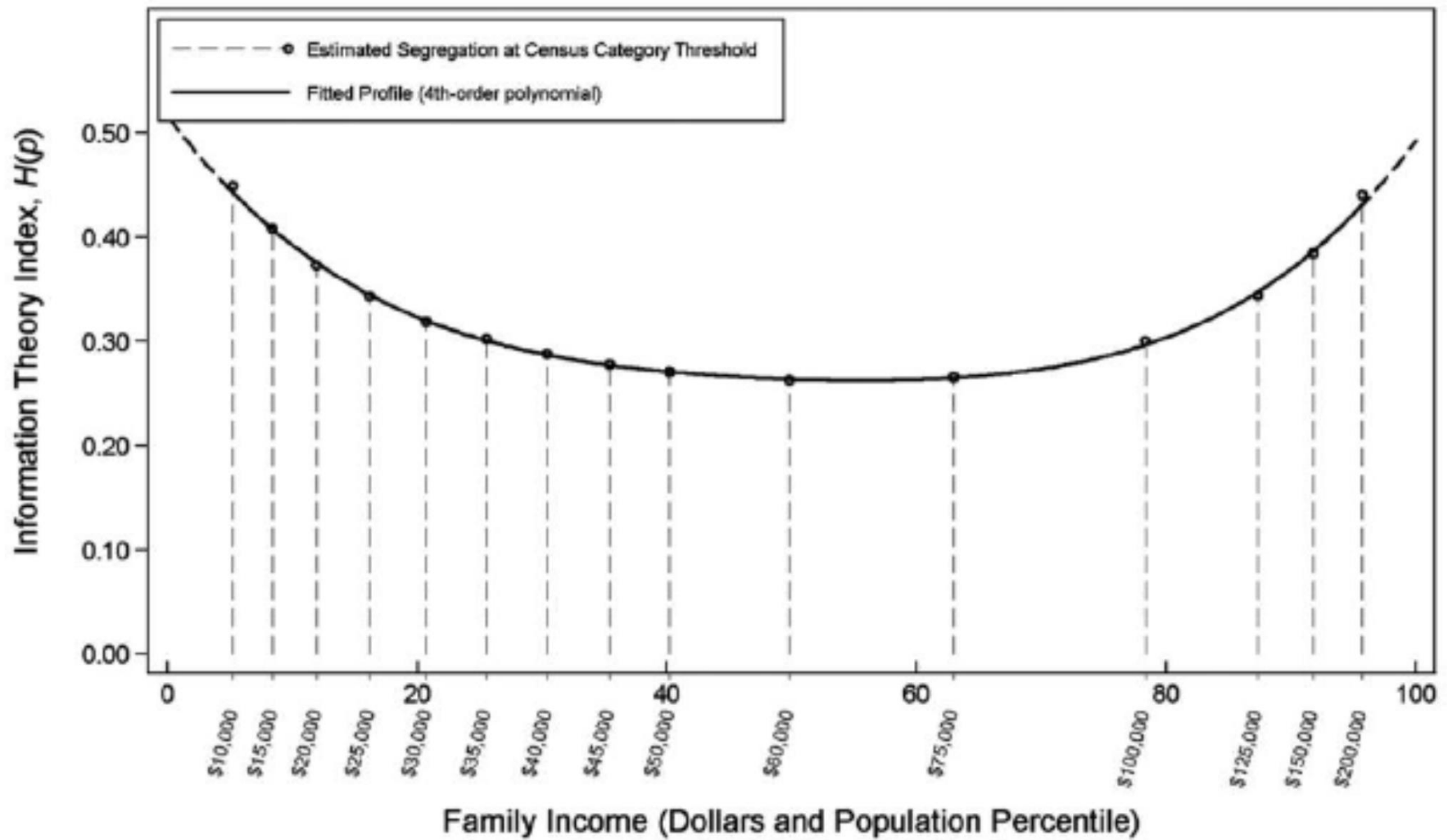
Figure 2. Hispanic Neighborhood Poverty Concentration and the Hispanic Poverty Rate by Metropolitan Segregation Level

Note: Predictions are from decomposition models with other components at Hispanic means.

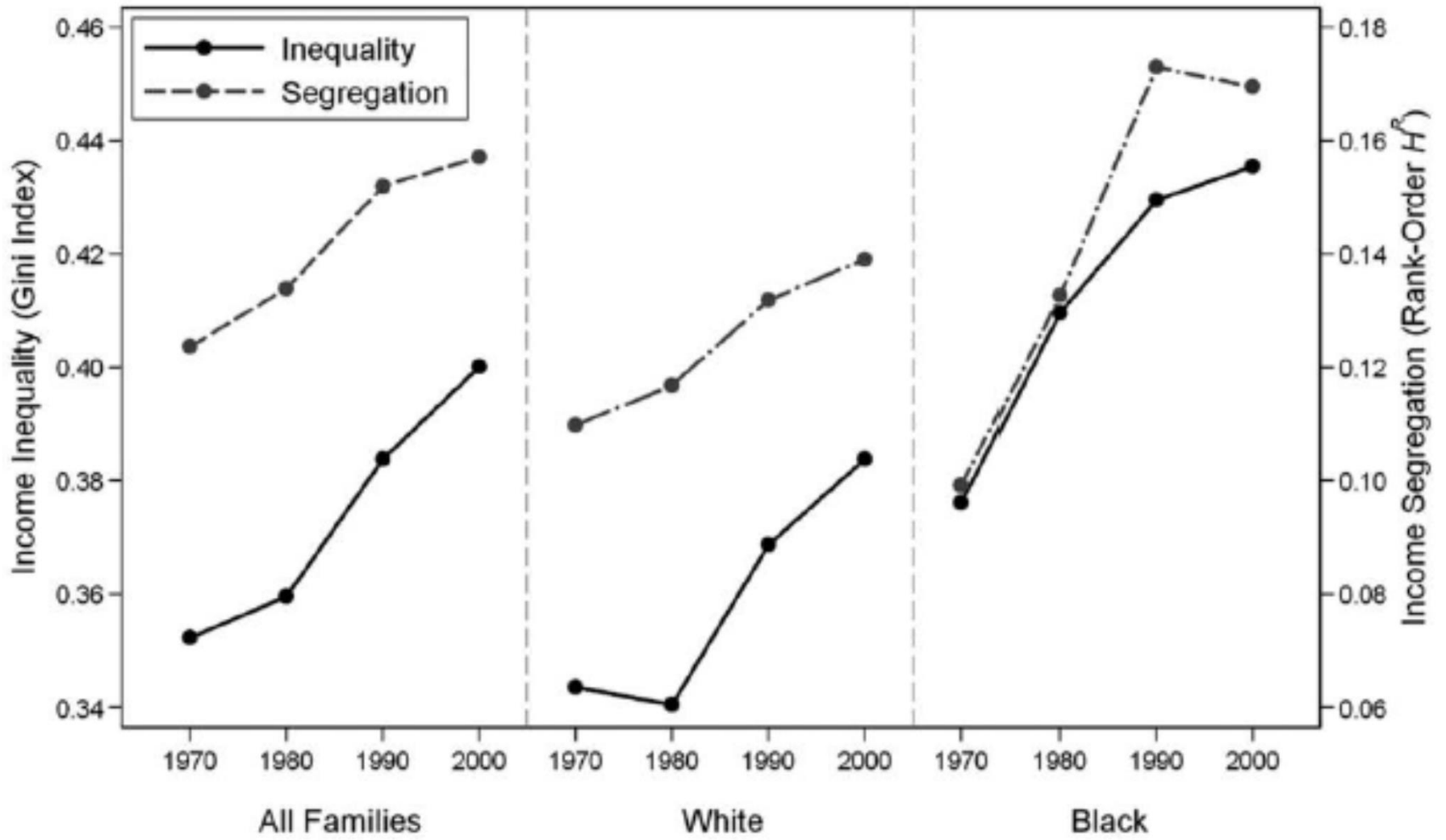
Source: Quillian (2012)

Reardon Bischoff (2011)

- Information Theory Index is a measure of segregation
- Segregation is highest at the low and high percentiles of income
- Inequality (Gini index) and segregation (Rank-Order H) have both increased from the 70s to the present
- Demonstrates an association between inequality and segregation



Source: Reardon Biscchoff (2011)



Source: Reardon Biscchoff (2011)

TABLE 4
ESTIMATED EFFECTS OF INCOME INEQUALITY ON INCOME SEGREGATION, 1970–2000, BY
RACE GROUP AND DECADE

	BY RACE GROUP			BY DECADE			
	All Families	White	Black	1970	1980	1990	2000
Gini index .....	.561*** (.085)	.450*** (.110)	.470*** (.124)	.624* (.268)	.649* (.276)	.688*** (.194)	.732*** (.153)
Year = 1980 .....	.027*** (.007)	.028* (.014)	.065*** (.018)				
Year = 1990 .....	.025* (.012)	.024 (.018)	.095*** (.029)				
Year = 2000 .....	.012 (.016)	.016 (.023)	.087* (.036)				
Black				-.111** (.042)	-.036 (.029)	-.013 (.025)	.044 (.027)
Metro-year covariates	Yes	Yes	Yes				
Group-metro-year covariates		Yes	Yes	Yes	Yes	Yes	Yes
Metro fixed effects ...	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2 .....	.959	.956	.921	.689	.789	.821	.866
Observations	400	400	244	161	161	161	161

Source: Reardon Biscchoff (2011)

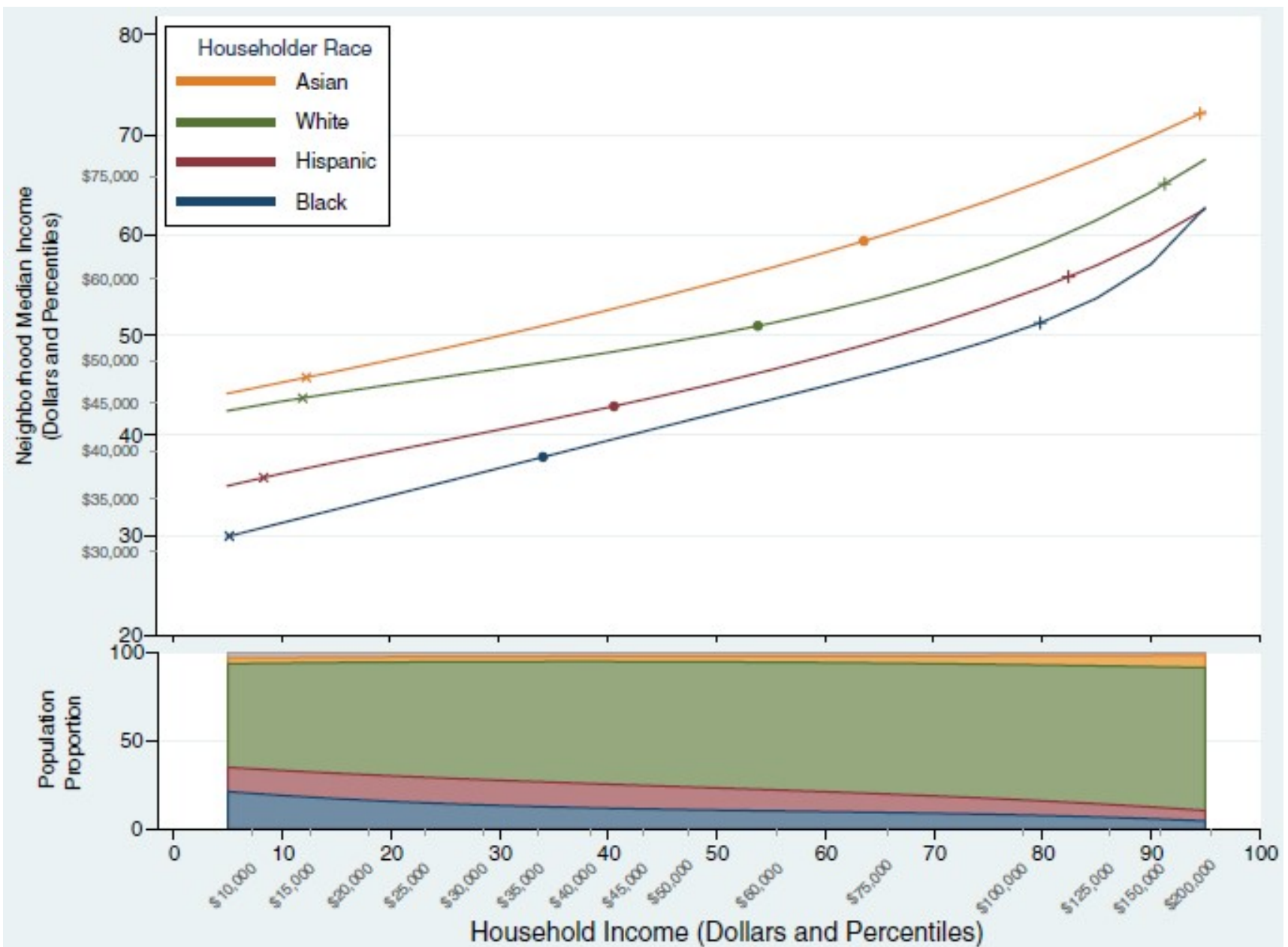
Reardon et al. (2015)

- Median neighborhood income rose over time
- This is especially so for blacks, a 3,000 dollar increase at the 10th and 90th percentiles of household income
- Household income percentile rank is correlated with neighborhood median income percentile rank
- There are racial gaps in the neighborhood median income percentile ranks conditional on household income percentile rank
- Neighborhood racial composition depends on race and income of household

TABLE 1
 Neighborhood Median Income, by Household Income and Race, 1990–2009

Households at 10th Percentile Income	Neighborhood Median Income				Difference from White		
	White	Black	Hispanic	Asian	Black	Hispanic	Asian
1990	42.2	28.4	34.5	42.5	-13.8	-7.7	0.3
2000	43.3	31.0	35.2	43.4	-12.3	-8.1	0.1
2009	43.4	31.3	36.2	45.3	-12.1	-7.2	1.9
Change, 1990–2009	1.2	2.9	1.6	2.8	1.7	0.5	1.6
Households at 50th Percentile Income	White	Black	Hispanic	Asian	Black	Hispanic	Asian
1990	50.0	41.7	45.1	55.2	-8.3	-4.9	5.3
2000	50.2	41.7	44.2	54.4	-8.6	-6.1	4.2
2009	50.1	42.2	45.2	55.2	-7.9	-4.9	5.1
Change, 1990–2009	0.1	0.5	0.1	0.0	0.4	0.0	-0.1
Households at 90th Percentile Income	White	Black	Hispanic	Asian	Black	Hispanic	Asian
1990	64.8	53.8	59.1	70.2	-10.9	-5.7	5.5
2000	64.2	53.7	56.7	69.1	-10.5	-7.5	4.9
2009	64.3	57.1	59.5	69.8	-7.2	-4.8	5.6
Change, 1990–2009	-0.5	3.2	0.4	-0.4	3.7	0.9	0.1

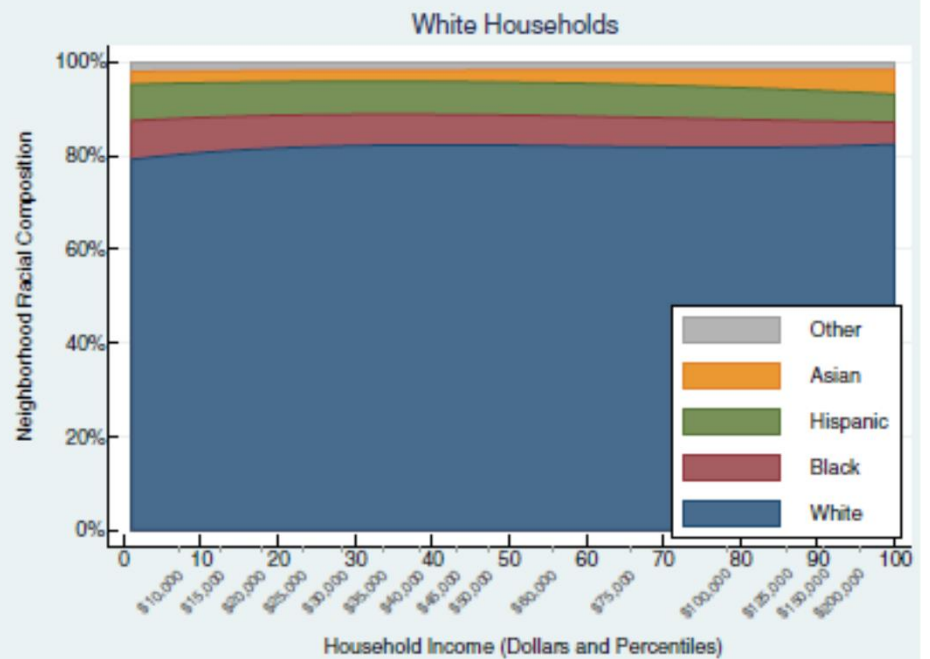
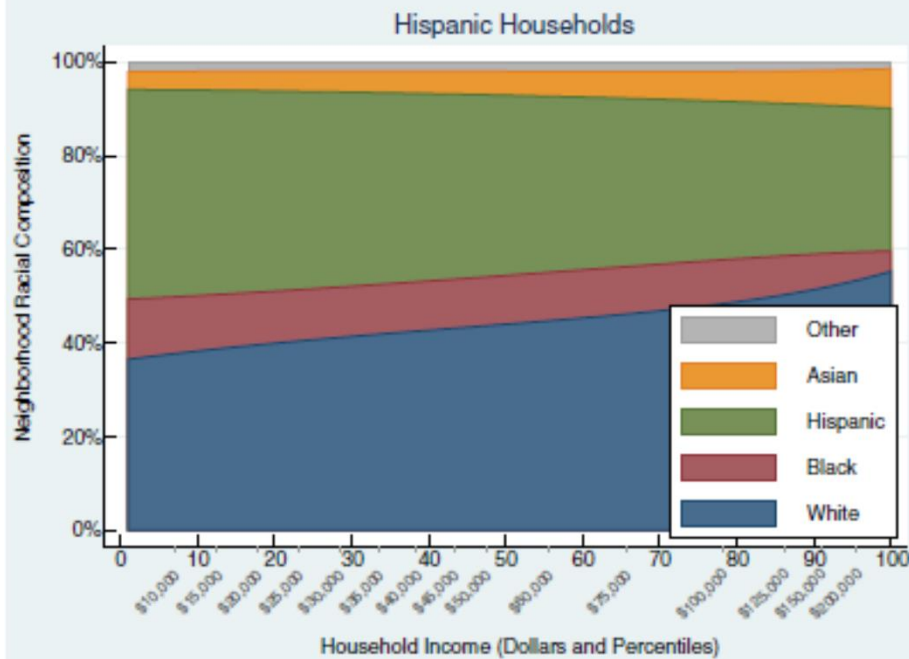
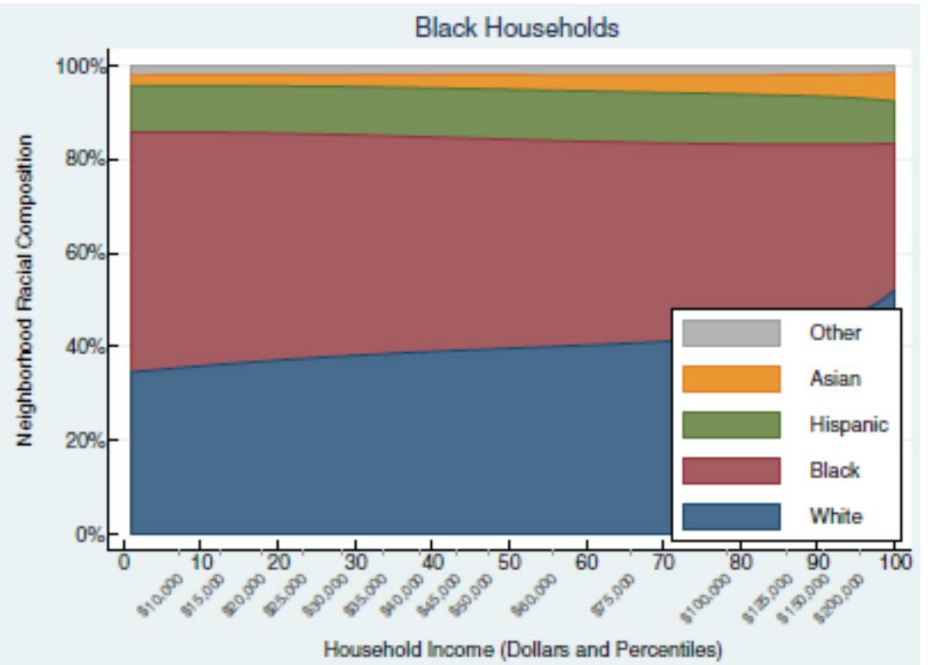
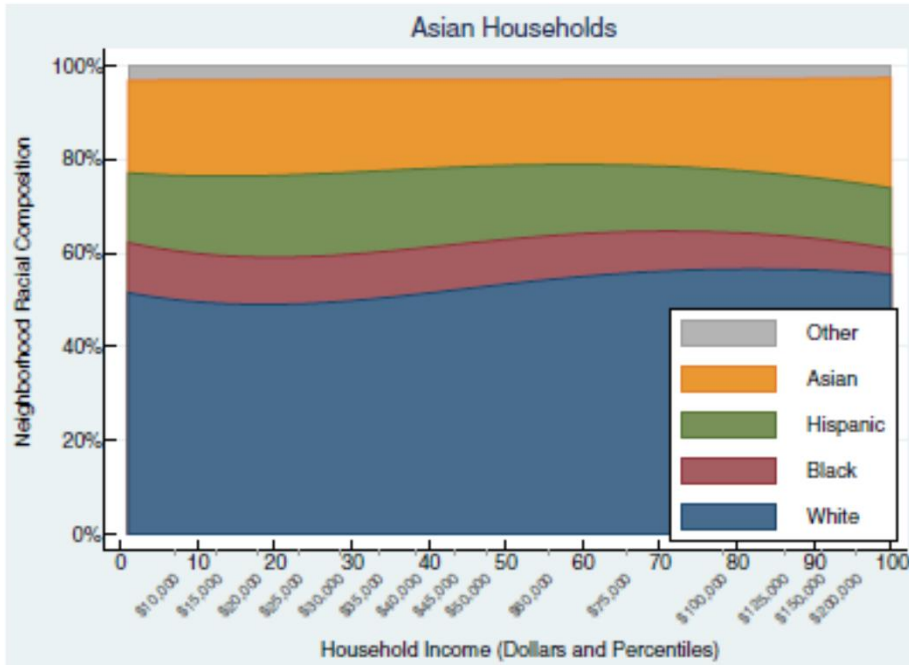
Source: Reardon et al. (2015)



Source: Reardon et al. (2015)

Reardon et al. (2015)

- This figure plots the racial composition in neighborhood on household income percentile, by race
- For the most part, racial composition is stable across income percentiles except for Blacks and Hispanics at the top who live in neighborhoods with more whites

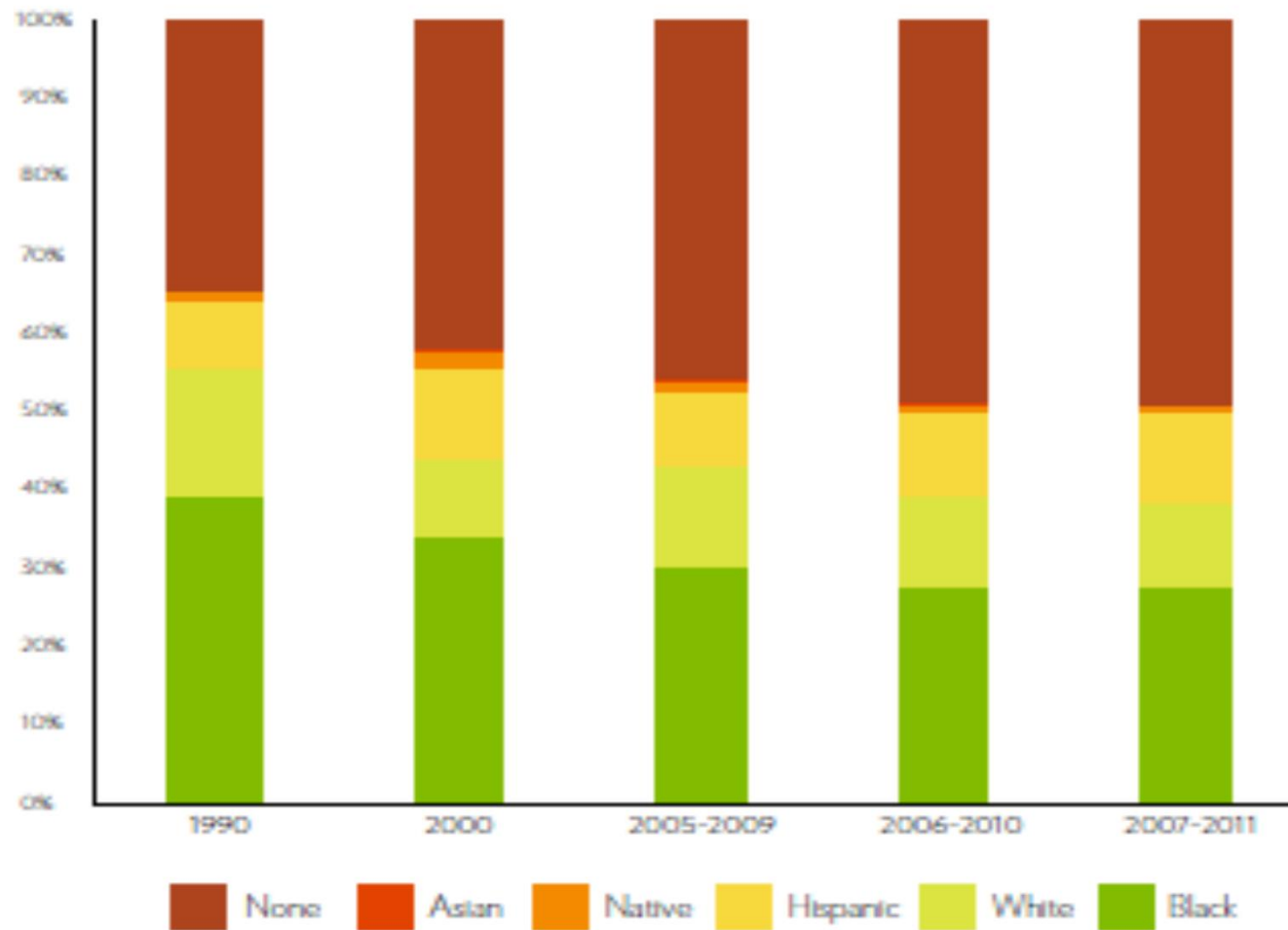


Source: Reardon et al. (2015)

Jargowsky (2014)

- Concentration of poverty is measured by the percentage of poor persons who live in high-poverty neighborhoods
- Concentration of poverty is less tightly linked to the racial composition of the neighborhood over time
- Blacks still live in the most concentrated high poverty areas
- Hispanics are a distant second

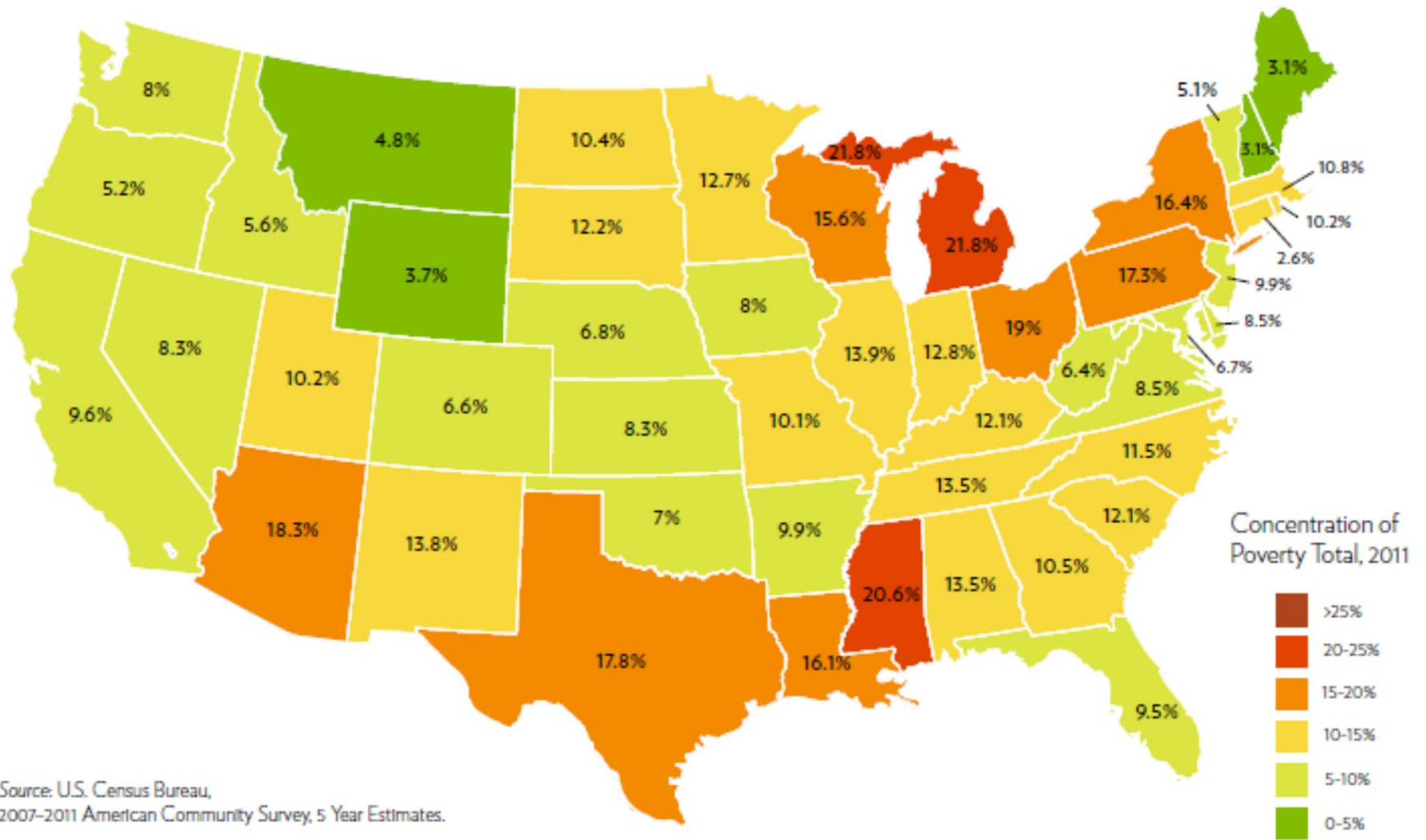
Figure 1. Dominant Racial or Ethnic Group in High-Poverty Census Tracts, 1990 to 2007–2011



Source: : U.S. Census Bureau, 1990 Census and 2000 Census, Summary File 3; 2009, 2010, and 2011 American Community Survey, 5-Year Estimates.

Source: Jargowsky (2014)

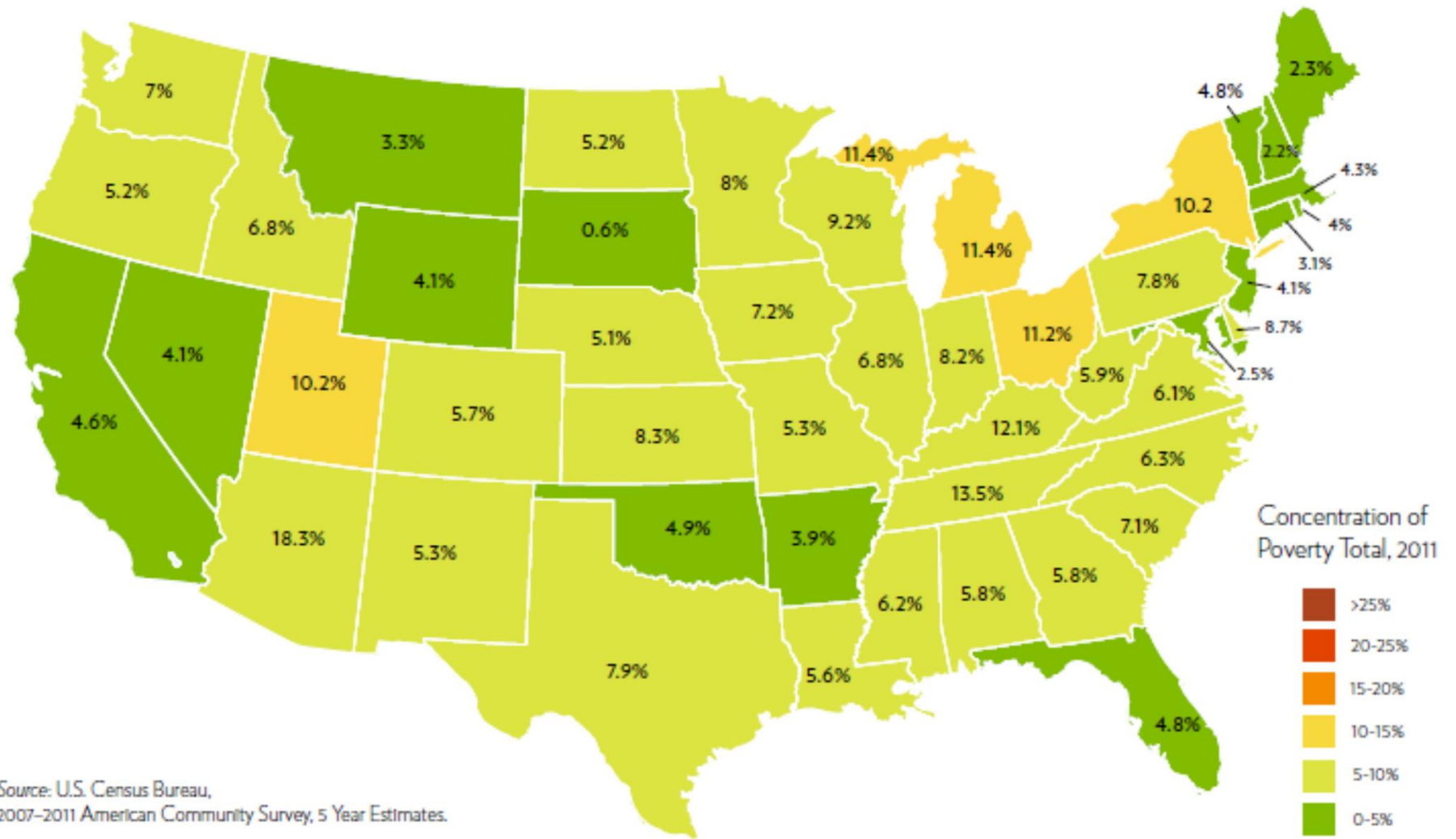
Figure 2. Concentration of Poverty, All Races and Ethnicities, 2007–2011



Source: U.S. Census Bureau, 2007–2011 American Community Survey, 5 Year Estimates.

Source: Jargowsky (2014)

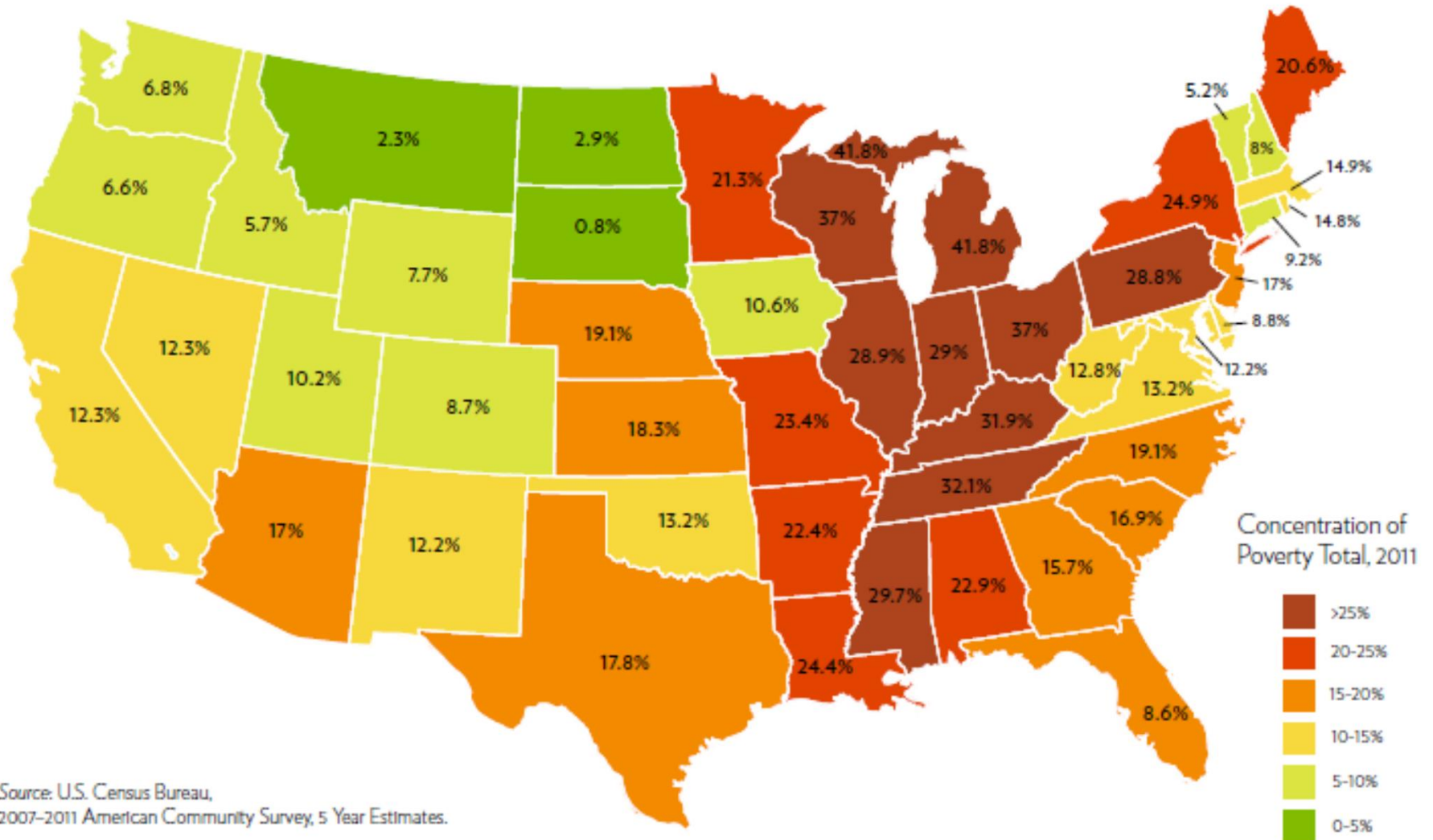
Figure 3. Non-Hispanic White Concentration of Poverty, 2007–2011



Source: U.S. Census Bureau, 2007–2011 American Community Survey, 5 Year Estimates.

Source: Jargowsky (2014)

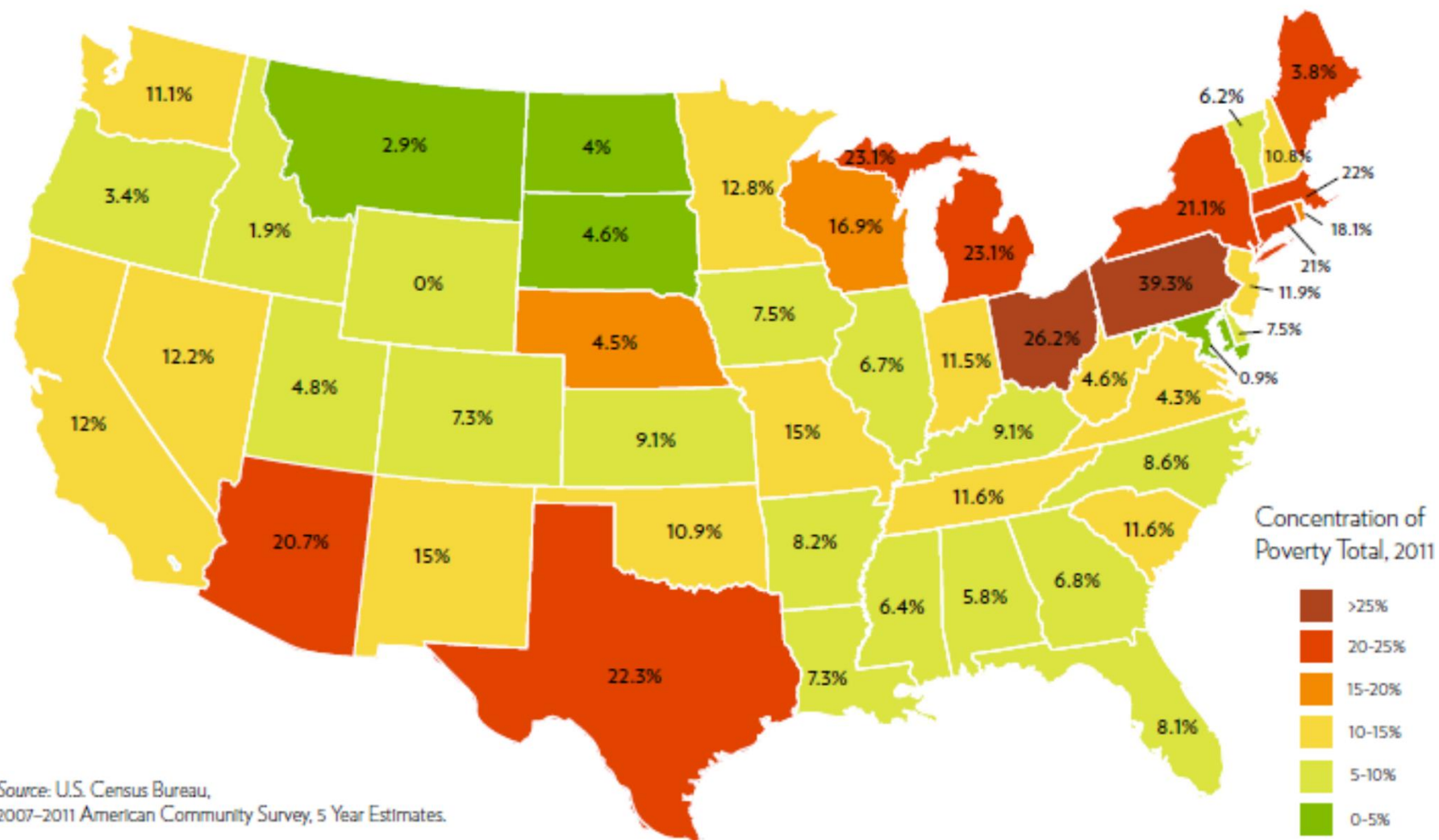
Figure 4. Black Concentration of Poverty, 2007–2011



Source: U.S. Census Bureau, 2007–2011 American Community Survey, 5 Year Estimates.

Source: Jargowsky (2014)

Figure 5. Hispanic Concentration of Poverty, 2007–2011



Source: U.S. Census Bureau, 2007–2011 American Community Survey, 5 Year Estimates.

Source: Jargowsky (2014)

e. Measures of Inequality and Distributive Justice

Overview

While one can in principle study inequality and poverty for purely positive reasons, interest in inequality and poverty is in fact a function of ethical intuitions that government policies should attempt their reduction.

Within political philosophy (which is where normative questions concerning inequality and poverty arise) there are several distinct traditions that provide guidance on *distributive justice* which, as the phrase indicates, concerns the just distribution produced by a society.

Welfarism

One reason why inequality may have normative intuitions derives from its implications for personal well being. The standard measurement of well being is utility. Utilitarianism evaluates possible states of affairs, actions, etc. according to their effect on the sum of utilities in a population; welfarism does this evaluation based on a function of the individual utilities, one that is increasing in each individual utility. Hence utilitarianism is a special case of welfarism. It is an important special case as much policy analysis in economics is based upon it.

Basic Ideas

In order to facilitate the discussion, we need some notation. For expositional purposes, let C denote the aggregate of some good that is available for a population of I agents. Individual consumption is c_i . Agents have the same utility function $u(\cdot)$. Note that I assume each agent has the same utility function. This is a significant assumption as it means that interpersonal comparisons of utility are unproblematic. Interpersonal utility comparisons are in fact a serious theoretical difficulty and are studied in the social choice literature, but this is not important for our purposes.

The social planner has available C units of a consumable good that is to be allocated across the members of the population. Each individual i receives c_i , hence the social planner's allocation is subject to the feasibility constraint that

$$(1) \sum_i c_i \leq C$$

What allocation should be chosen?

When thought of this way, it is evident that the allocation problem is not yet well posed, since I have not stated the objective function for the social planner. The classical utilitarian (or Benthamite) objective function for the social planner is

$$(2) \sum_i u(c_i)$$

In addition, suppose we follow the standard microeconomic assumptions on utility functions that $u'(\cdot) > 0$ and $u''(\cdot) < 0$

Under these assumptions, it is evident that aggregate utility (2) is maximized when

$$(3) \quad \forall i, c_i = \frac{C}{I}$$

This is interesting as the optimal allocation requires complete equality of consumption simply based on the *a priori* assumption of equality of the utility weights each person received in (2) and the assumption of concavity of the individual utility functions. The decreasing marginal utility of consumption provides a justification for egalitarian consumption levels.

In modern welfare economics, (2) is an example of a social welfare function; the generic form of such functions is

$$(4) \quad s(c) = s(u(c_1), \dots, u(c_I))$$

where $c = (c_1, \dots, c_I)$ and s is non-decreasing in the utility of each agent, which under our assumption on utility is the same thing as saying that s is non-decreasing in each element of c .

The idea that a policymaker should maximize a non-decreasing function of individual utilities is what is meant by welfarism.

If the social welfare function is concave and permutation invariant, then equal shares will uniquely maximize (2) as they did (1).

One example of a social welfare function that implies strict equality in the optimal allocation of consumption is

$$(5) \quad s(c) = \min_i u(c_i)$$

This social welfare function is of interest as it concentrates attention on the least well off member of society. This is sometimes called a Rawlsian social welfare function, named after the philosopher John Rawls.

One example of a social welfare function that differs from the utilitarian one is Arrow (1973). He gives an example for the Rawlsian social welfare function. Intuitively, for the Rawlsian case, one employs a social welfare function such that

$$(6) \quad s(c) = \sum_i \psi(u(c_i))$$

Where $\psi(\cdot)$ is increasing and concave. This model can induce a preference for equality on the part of the policymaker that is logically distinct from concavity of the utility functions.

Arrow (1973) discusses the following case. Suppose that

$$(7) \quad \psi(u(c_i)) = -u(c_i)^{-a}$$

Consider the utilitarian social welfare function

$$(8) \quad s(c) = - \sum_i u(c_i)^{-a}$$

The allocation that maximizes (8) also maximizes

$$(9) \left(\sum_i u(c_i)^{-a} \right)^{\frac{1}{a}}$$

Further,

$$(10) \lim_{a \rightarrow \infty} \left(\sum_i u(c_i)^{-a} \right)^{\frac{1}{a}} = \min_i u(c_i)$$

This produces Rawls' difference principle: maximize the utility of the least well off person. Hence Rawls has been faulted for implicitly assuming arbitrarily high risk aversion by contractors behind the veil.

Comments on Rawls

1. Difference principle is hard to defend from the perspective of social welfare functions. Derek Parfit argues that moral intuitions are really prioritarian, i.e. priority in the social welfare function should be assigned to the relatively poorly off.
2. Rawlsian argument, however, is not welfarist; it is based on a thick veil of ignorance, behind which individuals make choices about socioeconomic institutions. Thin veil leads to Harsanyi type approaches in which agents know everything about a society except identity. I raise this as Harsanyi's thinking is closer to social welfare approach in spirit.

Comments on Rawls

3. I find the veil of ignorance thought experiment meaningless.

4. Rawls will be subject to deontological critiques.

Deontological Approaches: Responsibility and Desert

From the perspective of ethical theory, the welfarist approach involves the good, as opposed to the right. By this, I mean that the welfarist approach does not embody notions of fairness, etc.

The question of fairness is deontological, i.e. involves moral rules. For us, one important distinction involves equality of opportunity versus equality of outcomes.

Equality of Opportunity

As a simple example of how the sources of inequality may matter for ethical evaluations, consider two individuals who have initial endowment of the good c_A and c_B respectively. If I told you that $c_A > c_B$, would an ethical case exist as to whether the good should be redistributed so that each individual receives $\frac{c_A + c_B}{2}$?

Equality of Opportunity

For the utilitarian, the answer is determined by the properties of the individual utility functions, whereas for the welfarist the answer is determined by social welfare function as well as the individual utility functions. What I refer to as the *deontological perspective* would find this approach unsatisfactory as it does not ask what moral rules should be applied.

Equality of Opportunity

To see how the deontological and welfarist approaches can differ, consider two scenarios. In the first scenario, c_A and c_B are the wages paid to A and B respectively. (I will ignore distinctions between wages and consumption for simplicity). A and B performed exactly the same job for the employer and were equally productive as workers; hence $\frac{c_A + c_B}{2}$ is the marginal product of each worker.

Equality of Opportunity

However, the employer paid A c_A because he is white and paid B because he is black c_B . (Notice I have rigged the example; there is no justification for the wage difference outside of racial animosity by the employer). For example, fairness would provide a justification for equalization of wages and hence consumption.

Equality of Opportunity

Now consider a second scenario. Situate the two individuals in time. At time $t - 1$, each individual performs an identical task and performs it equally well, and the employer pays each \bar{c} . (Assume both agents are white so discrimination is off the table.)

Agent A chooses to invest \bar{c} at a known real interest rate r and so at time t has $c_A = (1 + r)\bar{c}$. In contrast, agent B chooses to spend some of his \bar{c} on a world tour and invests the rest in an asset that has a known real interest rate of 0, even though the asset with real return r was available. As a result, at time t , individual B is in possession of c_B .

Equality of Opportunity

In this case, fairness would not lead us to advocate a policy that equalized consumption across the two agents at time t .

In the scenario 1, it seems unjust to hold individual B responsible for the consumption discrepancy since it was the manifest of an action by a third party that was unjust. From the perspective of B , he should not be held responsible for the consumption disparity and, for the context that we constructed, the government acts justly by reintroducing fairness in the consumption allocation.

Equality of Opportunity

In contrast, in scenario 2, the consumption disparity between agents A and B derives from their choices. Now assuming that one is responsible for one's preferences (while determination of individual responsibility for preferences is important in implementing such policies and will be addressed later in the course, it is not of any importance to the distinction between the scenarios), it is evident that the individuals are personally responsible for the consumption disparity that would occur in time t in absence of redistribution.

Equality of Opportunity

This distinction between the scenarios illustrates a fundamental idea in the equality of opportunity literature: inequalities are justified if they result from factors for which an individual should be held responsible.

Factors for which an individual should not be held responsible are often referred to as “luck.” Hence equality of opportunity egalitarianism is sometimes called luck egalitarianism.

Equality of Opportunity

How might one formalize the ideas I have described. Consider a socioeconomic outcome of interest, denote it as ω_i . Suppose this outcome is determined by two vectors of observable characteristics X_i and Z_i , and unobservable characteristics ϵ_i .

$$(15) \quad \omega_i = \phi(X_i, Z_i, \epsilon_i)$$

Equality of Opportunity

Suppose that we believe that an individual is not responsible for Z_i but is responsible for X_i and ϵ_i . An empirical analyst could construct the conditional probability of the outcome ω_i given the observable characteristics. One could then say that perfect equality of opportunity with respect to ω exists, if the following conditional probabilities hold

$$(16) \quad \forall i, j \quad \mu(\omega_i | X_i, Z_i) = \mu(\omega_j | X_j, Z_j) \text{ if } X_i = X_j$$

Equality of Opportunity

In words, equality of opportunity means that that so long as two individuals have the same values for the variable for which they are responsible, the probabilities of their outcomes are not affected by the variables for which they are not responsible. This formulation first appears in Durlauf (1996) although it seems an obvious extension of Roemer (1993).

Limitations

First, no guidance provided on division between X_i and Z_i .

Second, nothing guarantees feasibility.

Third, and this is distinct from the previous argument, it is possible that a policy that is feasible should be rejected on other grounds.

Fourth, ε_i is treated something for which individuals should be held responsible.

In thinking about the application of equality of opportunity as a policy objective, it is often the case that an analyst is concerned about the effects of family background on socioeconomic prospects for an individual.

Limitations

One is not responsible for one's parents, and their attendant effects on a child.

Other applications would focus on social factors outside an individual's control. Prejudice and discrimination are obvious examples, as are the effects of the neighborhoods in which one grows up or the schools one attends prior to college.

Responsibility vs. Desert

One limitation of luck egalitarianism is that it ignores any distinction between being responsible for something versus being deserving of something. Is this distinction meaningful?

I believe it is.

Responsibility vs. Desert

If my family and background has led me to adopt values that are not conducive to economic success, e.g. I do not work hard in school, is my effort something for which I am or I am not responsible?

Desert and responsibility are distinct notions. Compare differences in wages due to discrimination versus genetic ability.

Why is there controversy over the distinction? The main objection is that desert implies control. Not clear this is sensible. It is meaningful to ask who deserves to be named winner of a competition.

Desert seems important in respecting agency.

Responsibility vs. Desert

“The problem of moral luck cannot be understood without an account of internal agency”

-Thomas Nagel, *Mortal Questions*
(1979, p. 38)

“it is perfectly consistent to say that persons are not responsible for having certain characteristics, yet that precisely these characteristics make them the people they are.”

-George Sher, *Desert* (1987, p.
157)

Additional Comments

Market prices are clearly not something for which an individual is responsible (i.e. one is not responsible for both supply and demand). What about luck associated with winning a patent race?

Interconnected of socioeconomic outcomes may render responsibility and desert notions nonoperational in interesting contexts.

Welfarist Critique

Kaplow and Shavell (2001) have criticized deontological approaches to evaluating the justice of policies on the grounds that they necessarily violate the Pareto principle, i.e. if one is a deontologist, then one is willing to accept socioeconomic configurations that are strictly dominated from the vantage point of individual utility.

Suppose that a social planner/policymaker chooses an allocation $C = (C_1, \dots, C_I)$ from some set C ; I now allocations to be vectors. Assume free disposal, so if C is feasible, so is any other nonzero vector that is smaller element by element.

Welfarist Critique

Utility is allowed to be individual-specific, i.e. preference heterogeneity is now permitted. Assume the individual utility functions are $u_i(C_i)$ are strictly increasing all of the arguments in the vector C_i . Assume the social planner/policymaker ranks social states according to the “justice” function

$$(17) \quad J(C) = J(C_1, \dots, C_I)$$

Welfarist Critique

This function is assumed to be continuous. Following Kaplow and Shavell, the justice function is not a social welfare function if there exists a pair of feasible allocations $\bar{c}, \bar{\bar{c}}$ such that

$$(18) J(\bar{c}) > J(\bar{\bar{c}})$$

And

$$(19) \forall i u_i(\bar{c}_i) > u_i(\bar{\bar{c}}_i)$$

Welfarist Critique

Under the continuity assumptions, there must be an allocation $\bar{c} - \delta$, $\forall i \delta_{ij} > 0$, (note that δ_{ij} can be made arbitrarily small) such that

$$(20) \quad J(\bar{c} - \delta) > J(\bar{c})$$

But given (6), everyone is worse off, in terms of utility, at the allocation $\bar{c} - \delta$ than at the allocation \bar{c} . Hence the justice function violates the Pareto Principle.

Welfarist Critique

At first glance, this seems perverse. However, the Kaplow-Shavell finding is less of a problem for deontological ethics than meets the eye.

The example does not say anything about how the elements of c are generated. Suppose that the choice of allocation is a choice of rules that generate it.

Then if I, as a policymaker, rule out all discriminatory allocations as unjust, I might choose a consumption allocation that reduces everyone's utility. This example is similar to one of Sen (1970) in which society refuses to implement censorship despite the fact it would raise the utility of both of the society's members.

Welfarist Critique

Kaplow and Shavell remind us that adherence to the principle that “the right is prior to the good” can lead to utility losses, so if we equate the good with a social welfare function, there is a tradeoff to consider.

But unless we work with a model that embodies ideas of the “right”, the reasonableness of such tradeoffs will be hidden.

Capabilities

Amartya Sen, Martha Nussbaum and others have developed a view of distributive justice that is premised on the idea that society should maximize capabilities of its members. James Foster will discuss in detail. Key idea: capabilities characterize lives one can lead/ability to flourish.

One asks about the potential lives a person can lead. Sen's framework is consequentialist, but unlike welfarism focuses on a conception of *freedom*.

“The ‘capability’ approach has something to offer both to the evaluation of *well-being* and to the assessment of *freedom*. Considering the former connection first, the capability approach to well-being differs from the traditional concentration on economic opulence (in the form of real income, consumption levels, etc.) in two distinct respects: (1) it shifts the focus from the space of *means* in the form of commodities and resources to that of functionings which are seen as *constitutive* elements of human well-being; and (2) it makes it possible-though not obligatory-to take note of the *set* of alternative functionings from which the person can choose. The ‘capability set’ can be seen as the overall freedom a person enjoys to pursue her well-being.

(1992, p. 150) -Amartya Sen, *Inequality Reexamined*

f. Overview of Explanations

1. Long run dynamics of capitalist economies
2. Social Interactions
3. Poverty Traps
4. Discrimination