

Immigration and Inequality in the Next Generation

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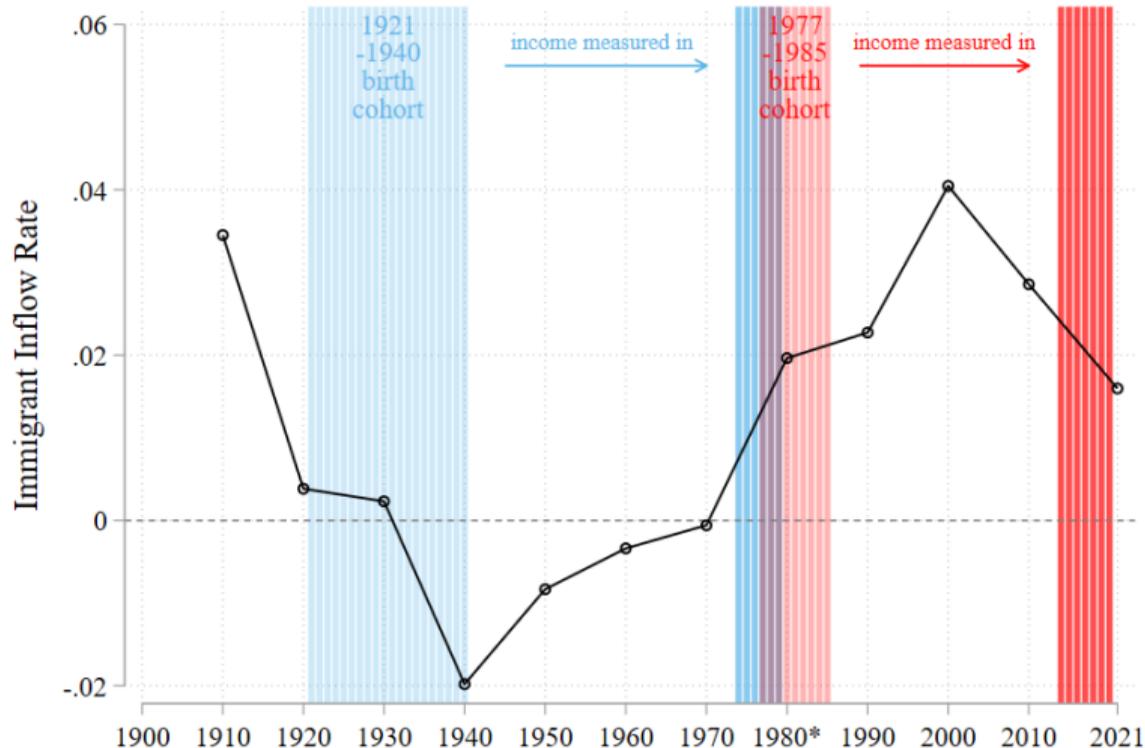
Hoover Institute Conference on the Economics of Immigration

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Research Question

What are the *long-run* effects of immigration to the United States on the intergenerational mobility of the children of natives?

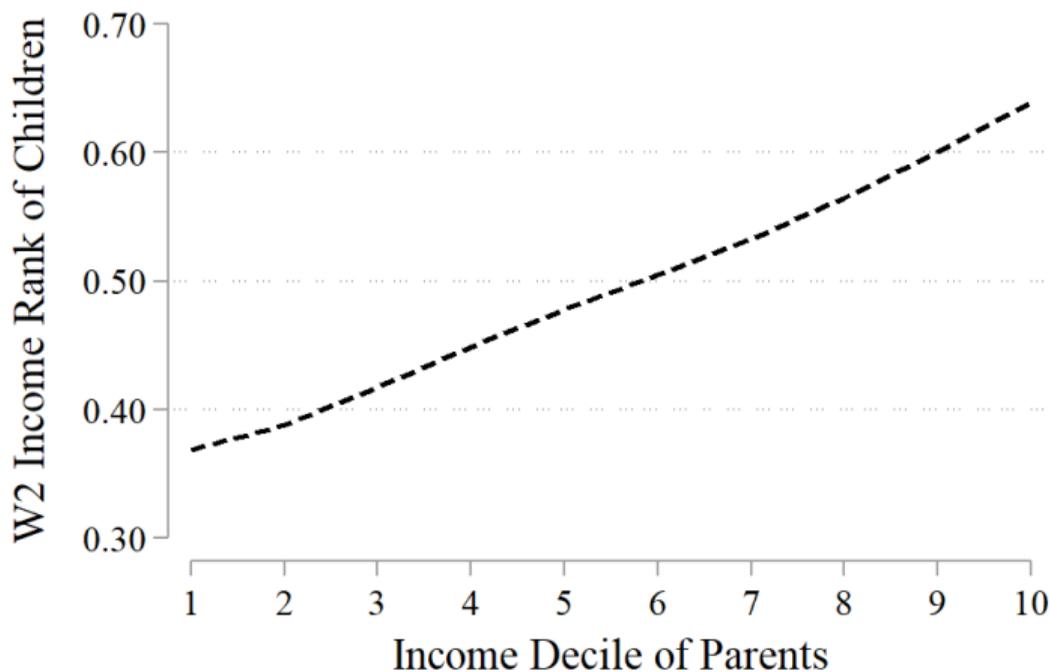
Immigrant Inflows and Sample Construction



Links between immigration and intergenerational outcomes

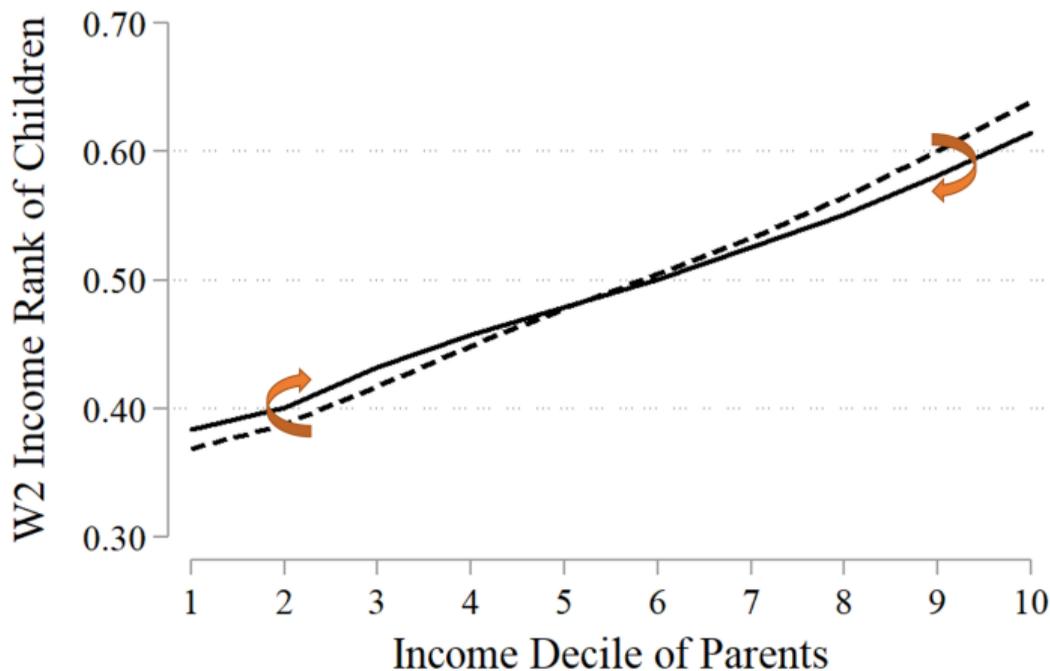
- ▶ Parental labor market outcomes
- ▶ Firms' choice of capital investment
- ▶ Innovation and productivity
- ▶ Educational choices
- ▶ Children of immigrants in schools, labor markets
- ▶ Internal migration
- ▶ Housing markets, including construction costs
- ▶ Public goods provision
- ▶ Local amenities
- ▶ Childcare markets

Expected W2 Rank of Children by Income Decile of Parents



Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

...after a 10 percentage point increase in immigrant inflow rate



Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

What We Do

- ▶ Study the impact of immigration during the 1980s on the adult earnings of children born in 1977-1985
 - Breakdown by parents' income to measure impact on intergenerational mobility
 - Results by race, gender and parental education
- ▶ Unique administrative data from the US Census Bureau
 - Parents and children linked across Census, ACS, IRS tax records, and SSA Numerical Identification System
- ▶ Identification: commuting-zone-level cross-section “enclave” instrument + control for economic mobility of 1940 cohorts in same CZ

Data

Microdata on parents and children

23 million children born between 1977 and 1985 in 214 commuting zones

- ▶ **Form 1040 tax filings** 1994, 1995 and 1998-2020
 - Children claimed as dependent when aged 16 (or 14 to 18 if not observed at 16)
 - **Total Money Income of parents**, which captures nearly all sources of household income, **averaged from 1998 to 2003**
 - Note: also use income measured in 1979 for pre-period measure of income
 - Family geographic location when child is 16
- ▶ **Form W-2 earnings** 2005-2020
 - **Children's (adult) income** from W2s, averaged between 2014 and 2020, when **aged 29 to 43**
- ▶ Classify parents and children by their **ranks in the national parent or child income distribution**

Microdata on parents and children

- ▶ 2000 and 2010 **decennial censuses** and 2001-2019 **ACS**
 - Race, ethnicity, geographic location, and educational attainment.
- ▶ SSA Numerical Identification System (**Numident**)
 - **Date and location of birth** (crosswalked to counties and CZ)
- ▶ We restrict analysis to **children born in the United States to native-born parents.**

Empirical Strategy

Estimating Equation (Card 2009)

Immigrant inflows and outcomes of children of natives:

$$y_{ic} = \alpha + \beta \frac{M_{c,90} - M_{c,80}}{Pop_{c,80}} + X'_{c,80} \gamma + W'_{c,40} \delta + e_{ic}$$

- ▶ y_{ic} : adult income, education, migration of individuals born between 1977 and 1985 in commuting zone c
- ▶ $(M_{c,90} - M_{c,80}) / (Pop_{c,80})$: immigrant inflow rate between 1980-90
 - M_{ct} : foreign born population in CZ c at time t
 - Pop_{ct} : total population in CZ c at time t

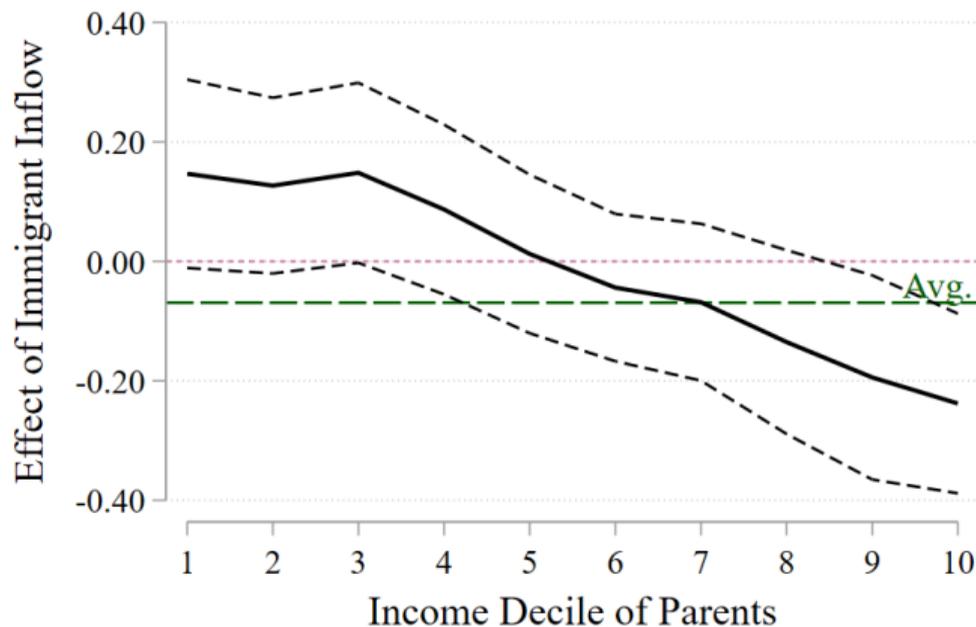
Estimating Equation

$$y_{ic} = \alpha + \beta \frac{M_{c,90} - M_{c,80}}{Pop_{c,80}} + X'_{c,80} \gamma + W'_{c,40} \delta + e_{ic}$$

- ▶ $X_{c,80}$: CZ-level covariates measured in 1980
 - log of CZ population, share of college graduates, and share employed in manufacturing, interacted with race and Hispanic origin (from Card 2009)
- ▶ $W_{c,40}$: Lagged intergenerational mobility by race
 - average income of children born in 1921-40 who have parents in the 3rd or 8th deciles of the 1940 national income distribution
 - income measured in 1974 and 1979
- ▶ Estimate for all and separately by decile of parental income

Results on Intergenerational Mobility

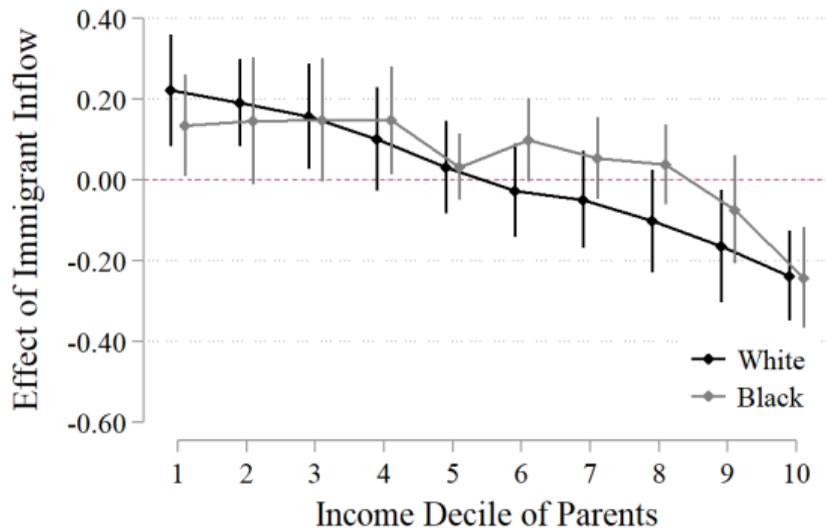
Coefficient estimates: W2 rank of children



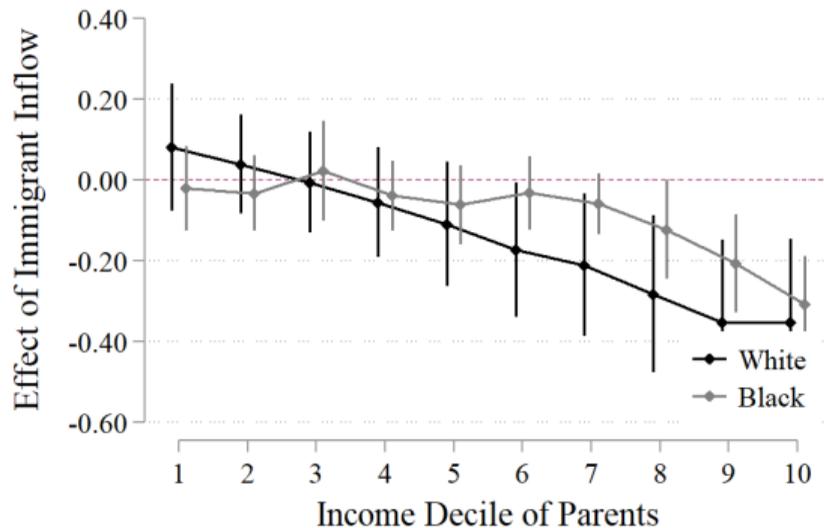
Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

Income: W2 rank of children by race and gender

(a) Male



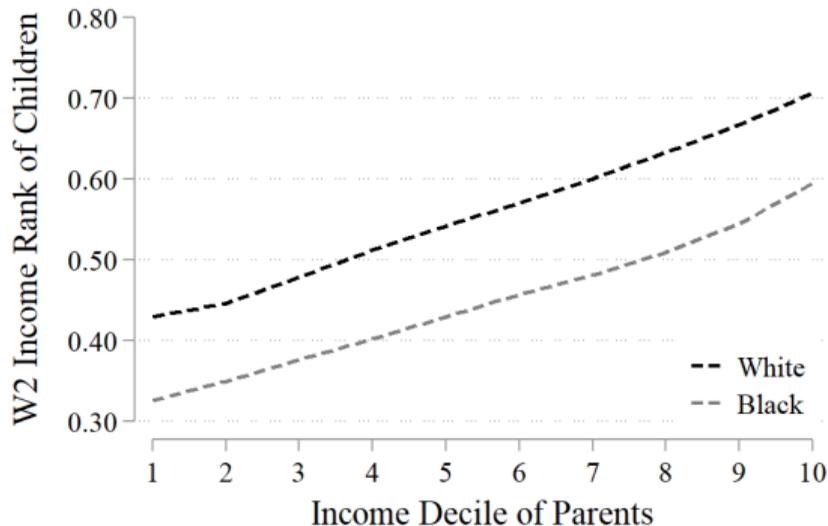
(b) Female



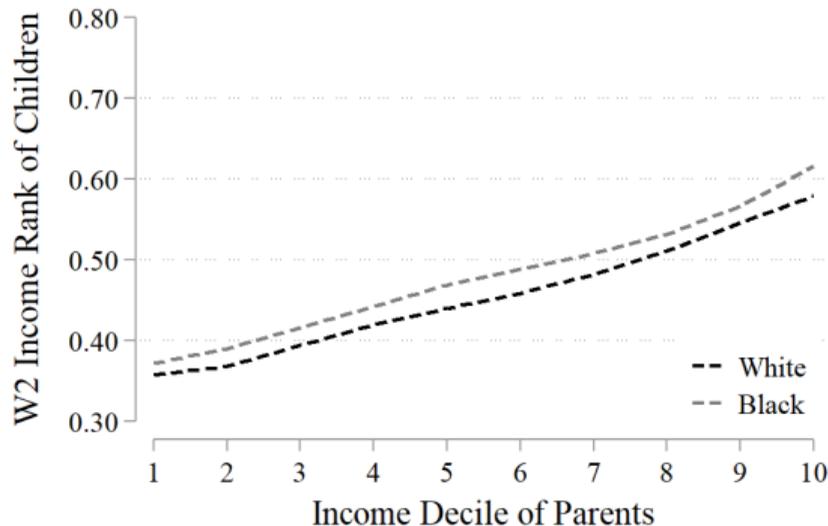
Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

W2 Rank of Children by race and gender

(a) Male



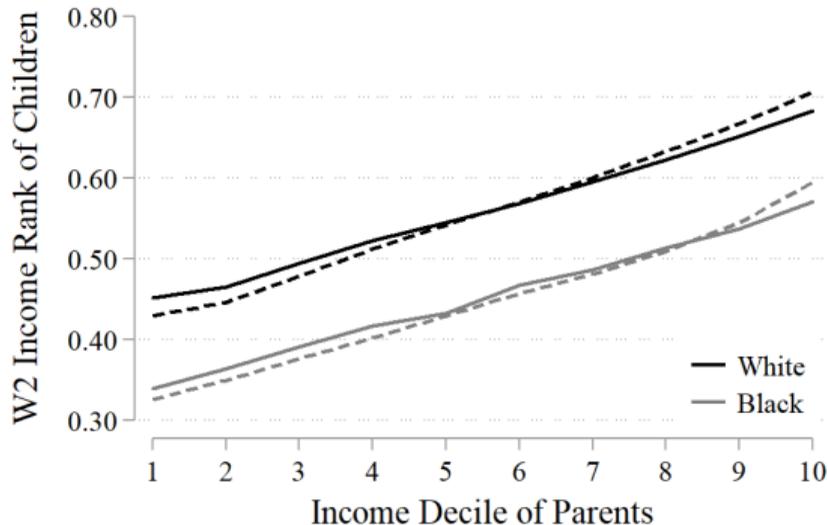
(b) Female



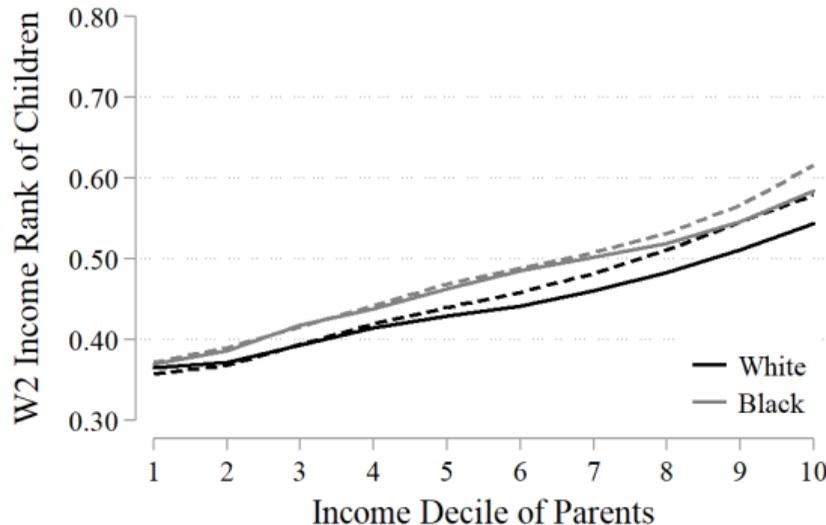
Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

...after a 10 percentage point increase in immigrant inflow rate

(a) Male



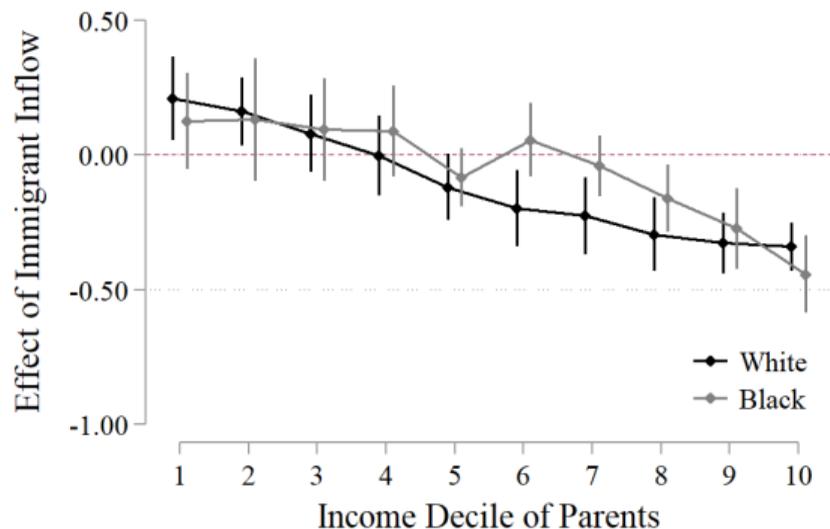
(b) Female



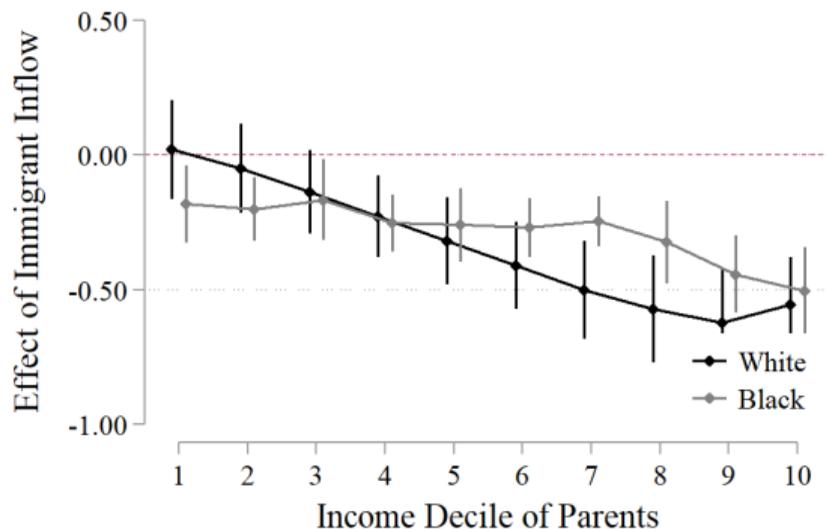
Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

Employment: Share of years with W2 income > minimum wage

(a) Male



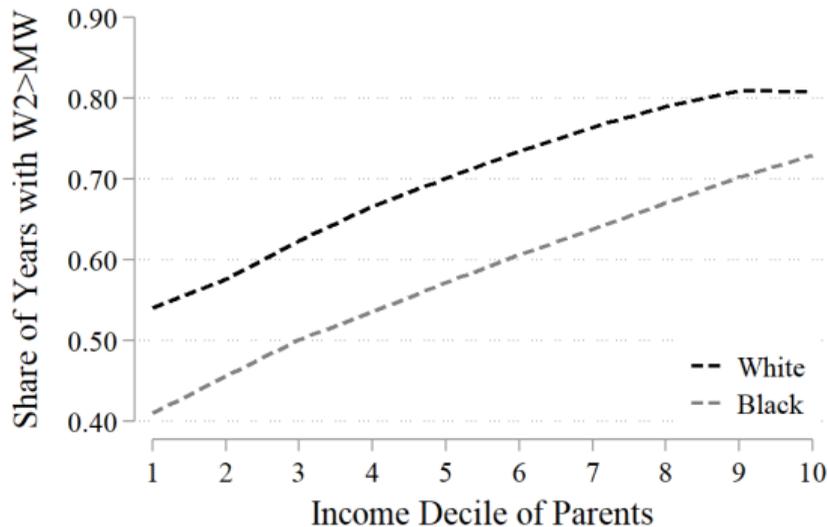
(b) Female



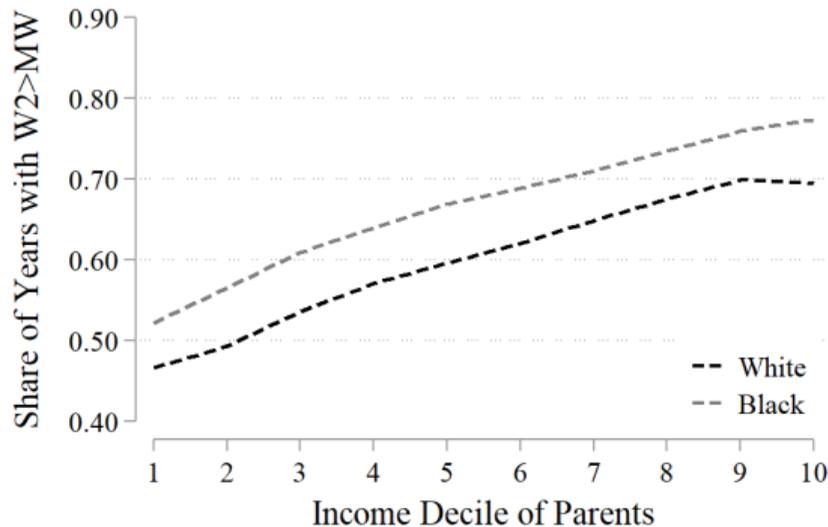
Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

Share of years with W2 income > MW

(a) Male



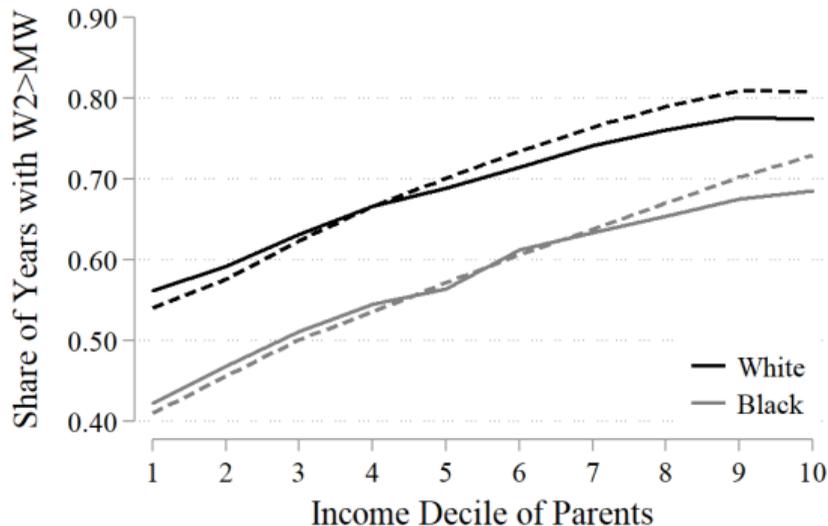
(b) Female



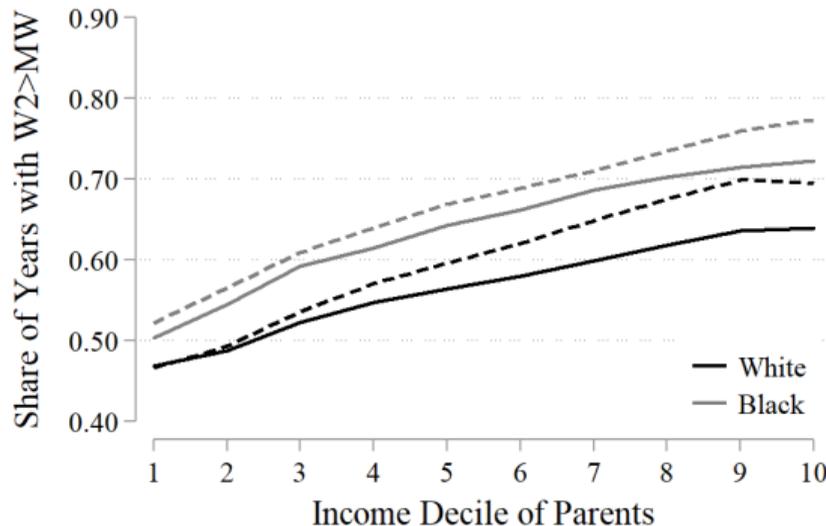
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...after a 10 percentage point increase in immigrant inflow rate

(a) Male



(b) Female

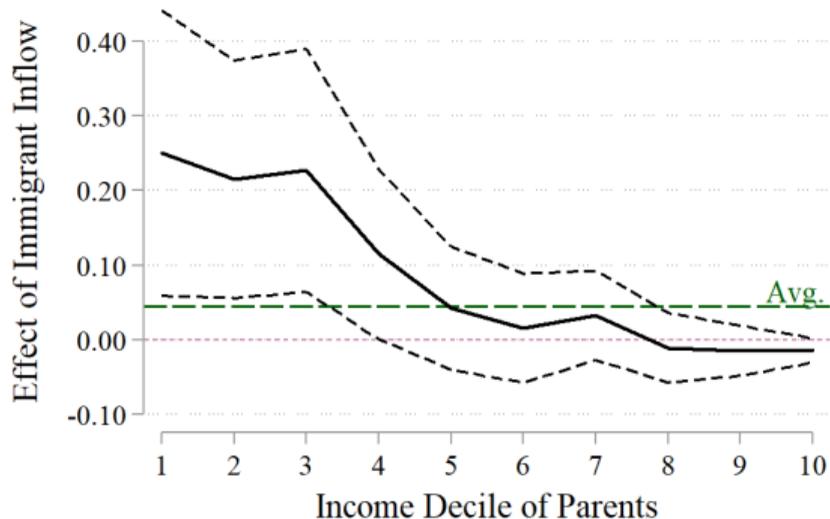


Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

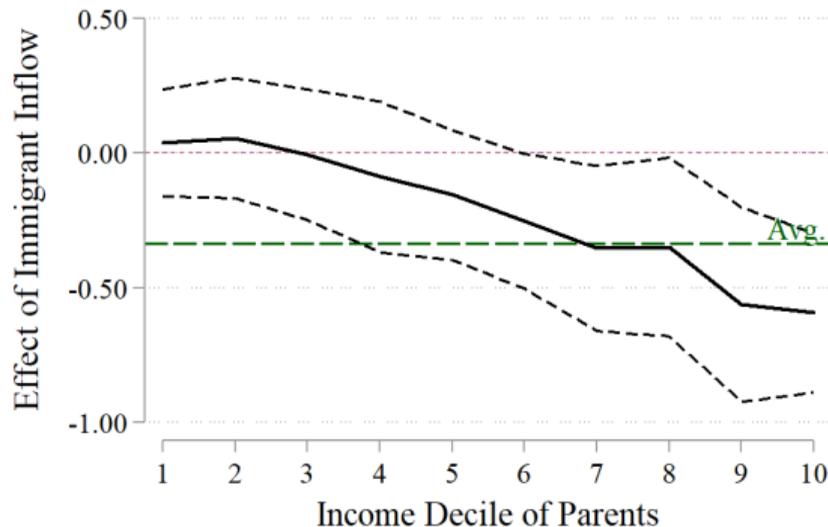
Education and migration

Coefficient estimates: Education

(a) High School Completion



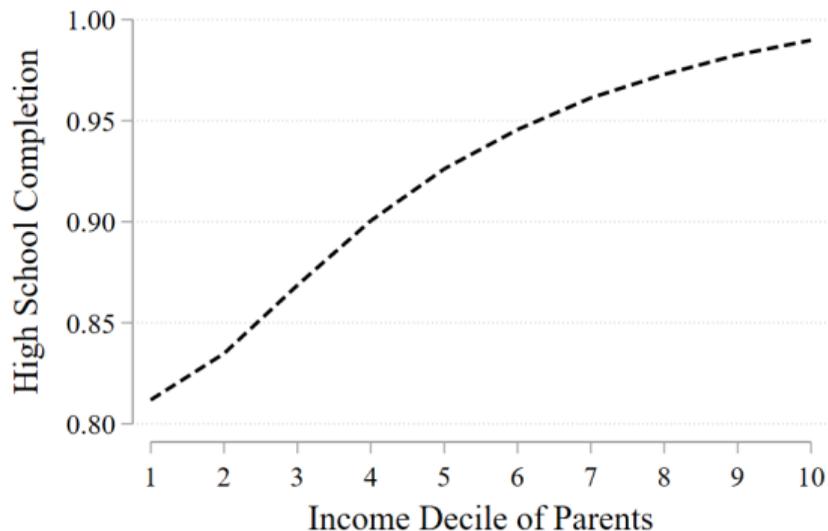
(b) BA Completion



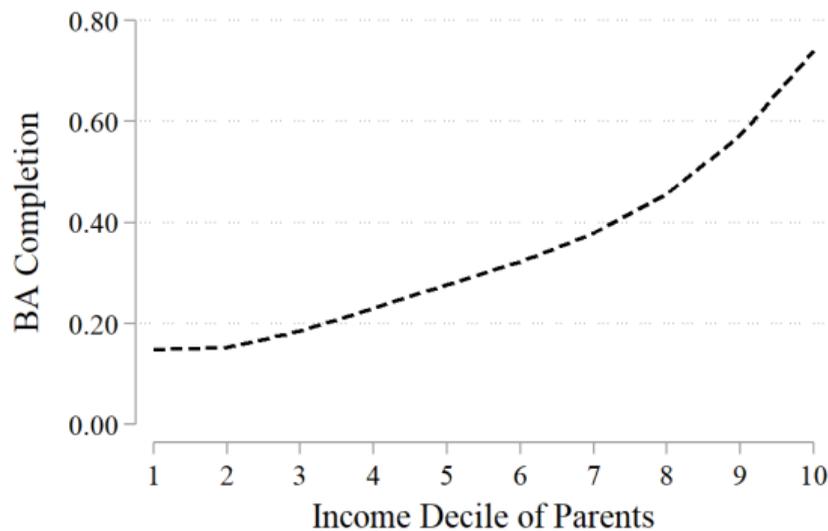
Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

Educational attainment by income decile of parents

(a) High School Completion



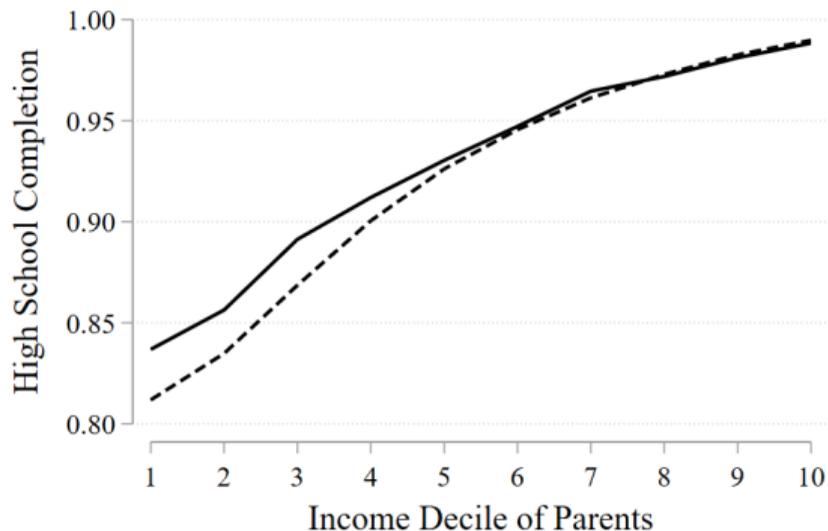
(b) BA Completion



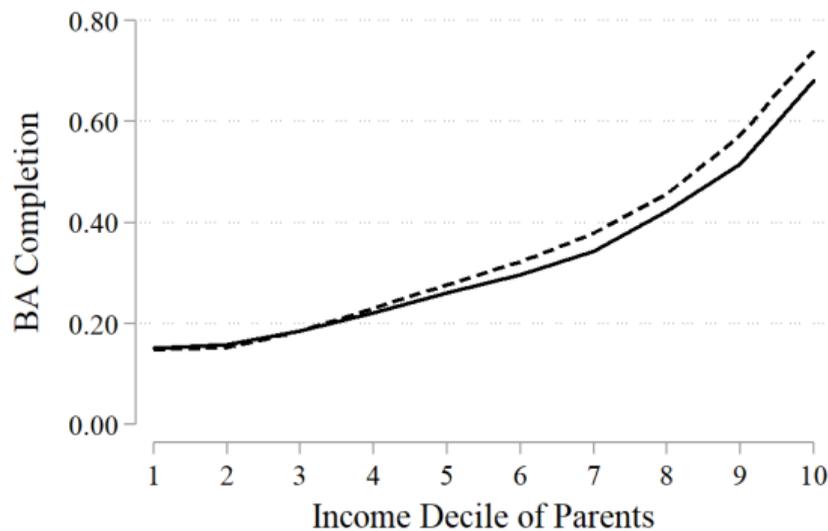
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...after a 10 percentage point increase in immigrant inflow rate

(a) High School Completion



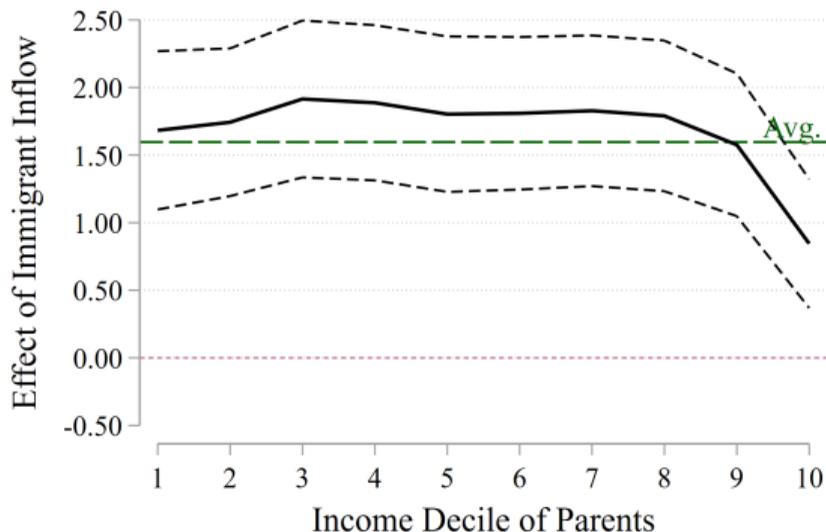
(b) BA Completion



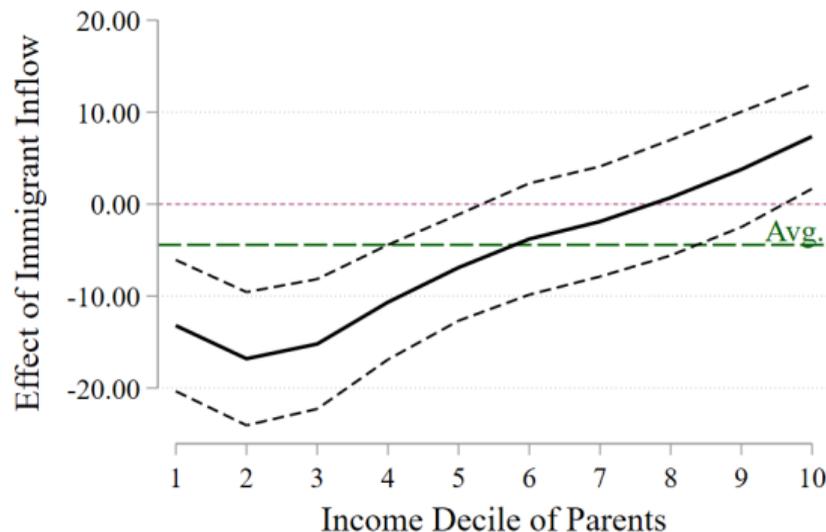
Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

Migration

(a) Change CZ?



(b) CZ Quality

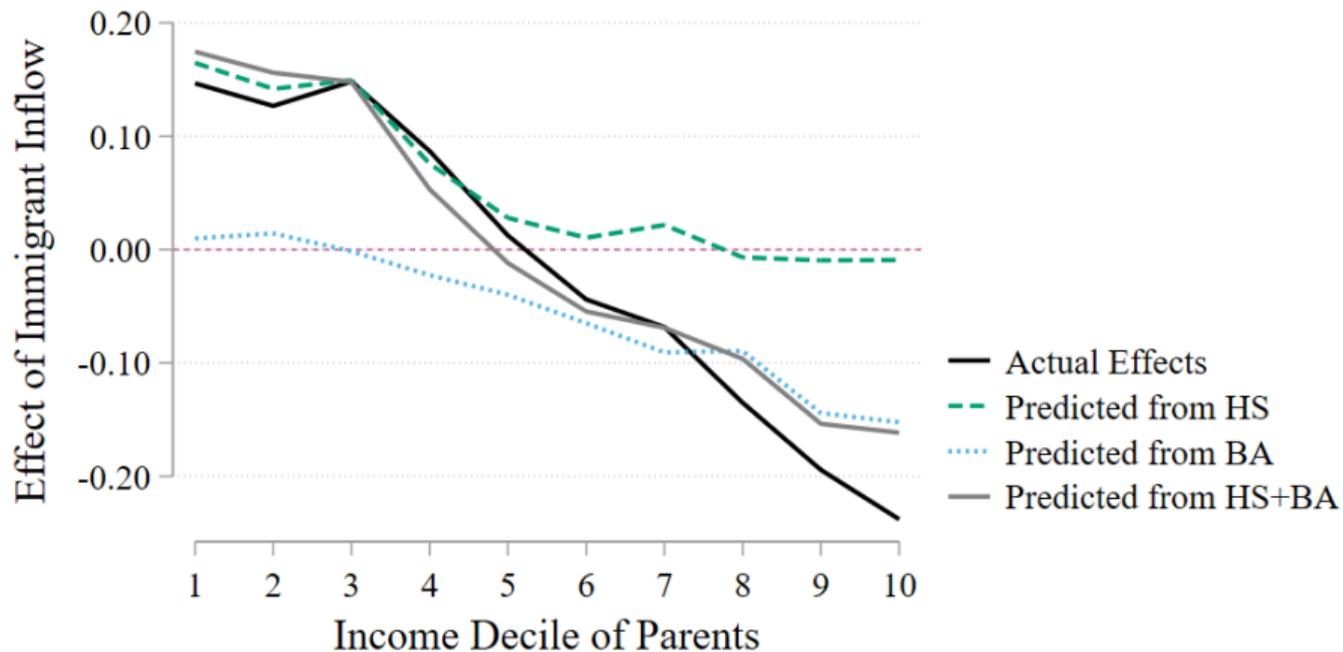


Note: Panel A models whether the individual's birth CZ is different than their CZ of resident at age 16-18. Panel B models the difference in the average income rank, by decile and race, among movers.

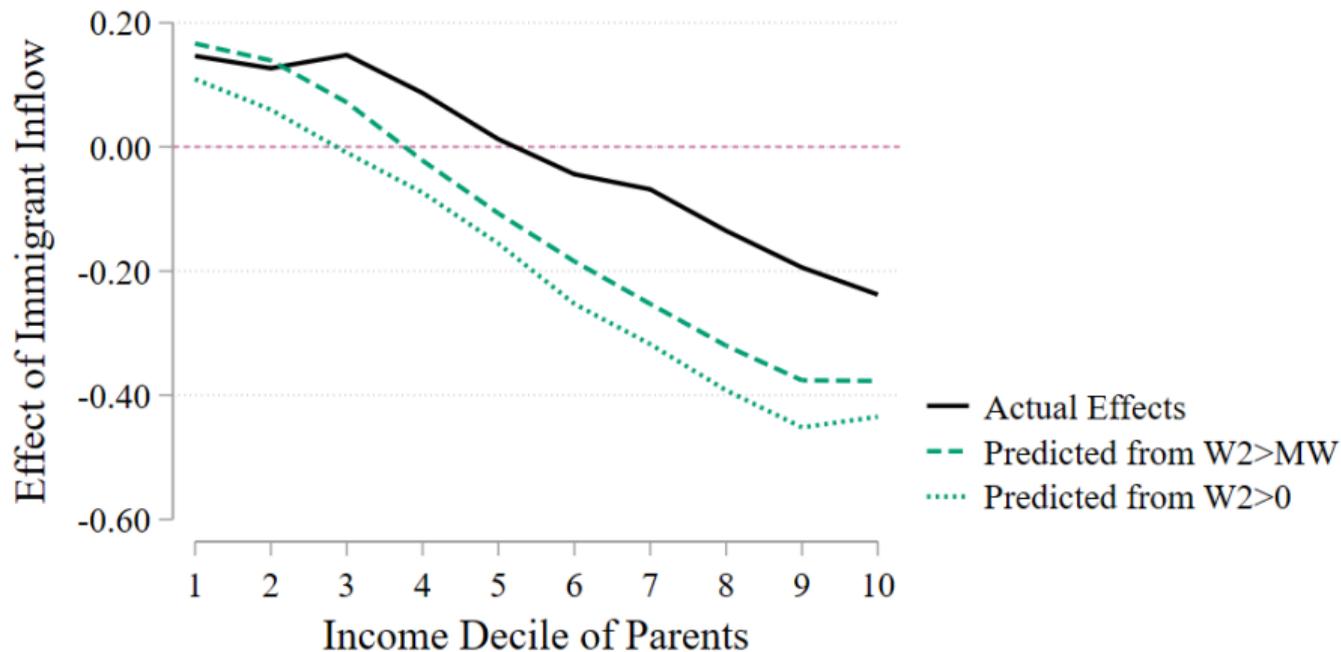
Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

Explaining Mobility Effects with Education and Employment

Effects on W2 Rank Predicted from Effects on Education



Effects on W2 Rank Predicted from Effects on Employment



Conclusion

Summary of Findings

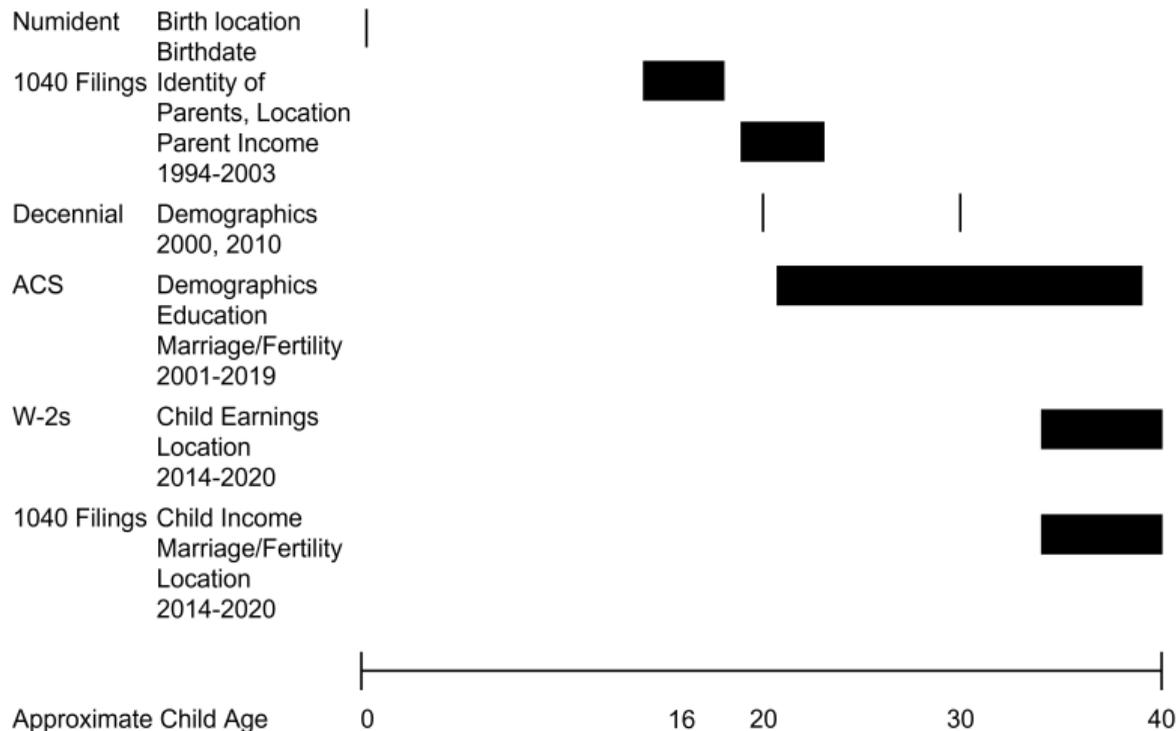
- ▶ Immigration tends to increase earnings and educational attainment among children from poorer families, while doing the opposite among children from richer families
- ▶ Labor market competition - whereby the earnings of low-skilled natives are harmed by immigration - is **not** the primary way that immigration affects subsequent generations
- ▶ Responses in education, migration, employment more pronounced than previous studies; increase in high school completion may explain positive effect for children from poor families

Thank you!

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Appendix Materials

Microdata on parents and children



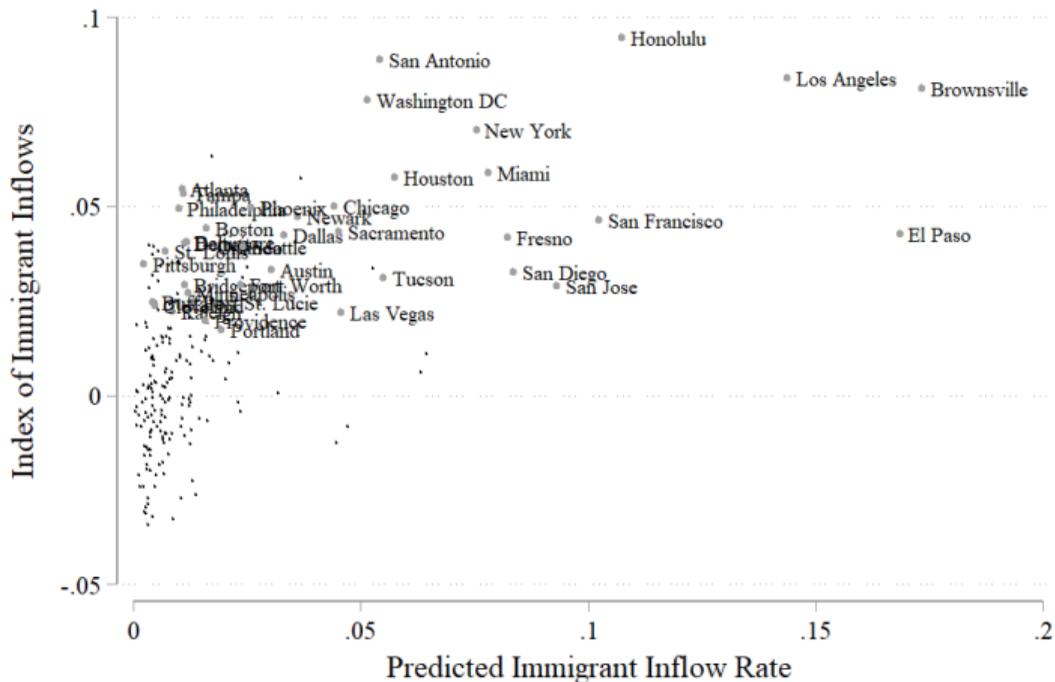
Shift-share Instrumental Variable

- ▶ Shift-share instrument for immigrant inflow rate captures migration based on presence of immigrant enclave (Bartik, 1991; Altonji and Card, 1991; Card, 2001)

$$z_c = \sum_o \frac{M_{oc,80}}{M_{o,80}} \frac{M_{o,90} - M_{o,80}}{Pop_{c,80}}$$

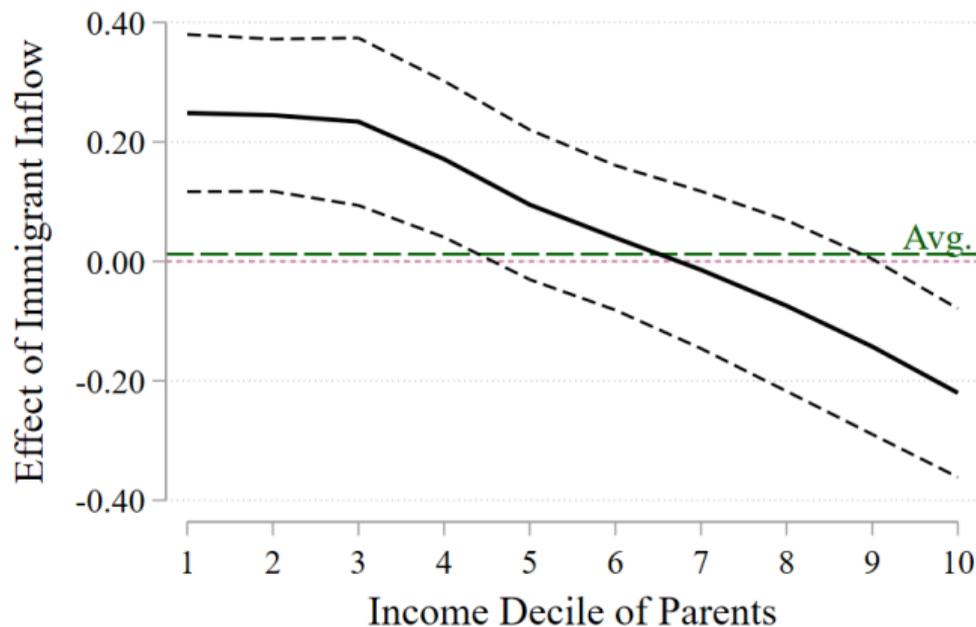
- $M_{oc,80}/M_{o,80}$: *share* imms from country o who live in CZ c in 1980
 - $M_{o,90} - M_{o,80}$: *growth* in national number of imms from country o from 1980 and 1990
- ▶ Assess validity of our design using multiple checks including recent developments in shift-share IV (e.g., Goldsmith-Pinkham et al. 2020)

Matching-based interpretation of Research Design



Source: Public-use decennial census data

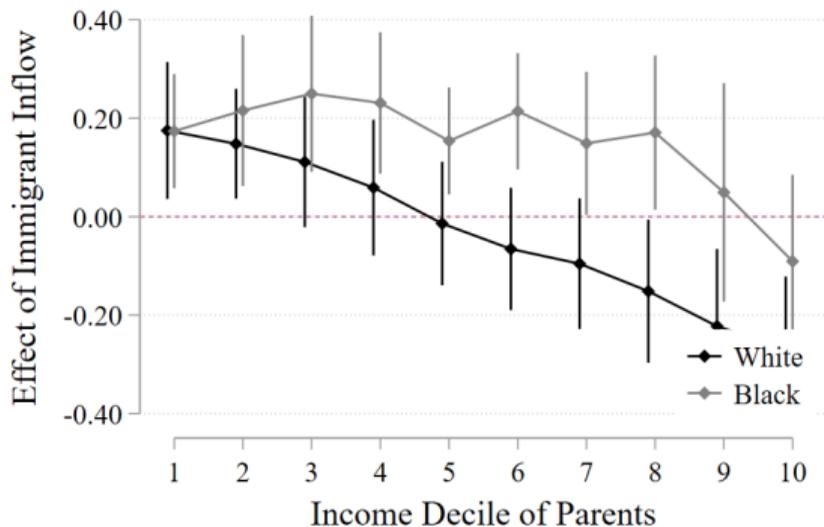
Coefficient estimates: 1040 Total Money Income rank of children



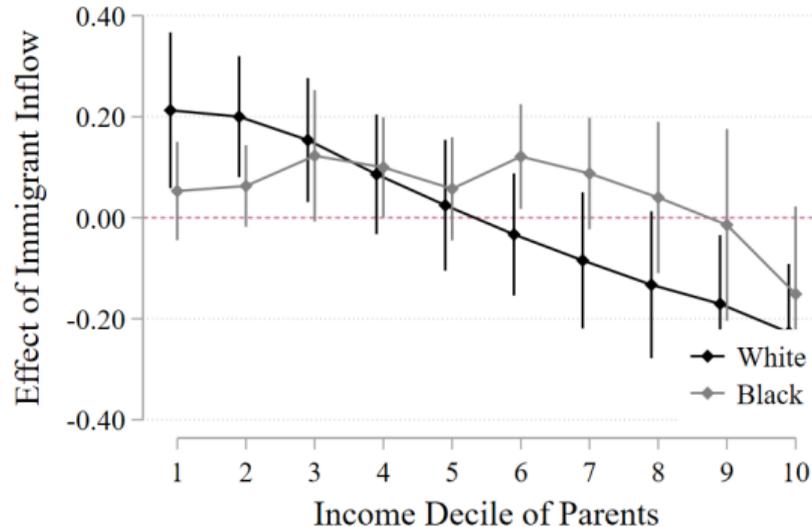
Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

1040 TMI Rank of Children by race and gender

(a) Male



(b) Female

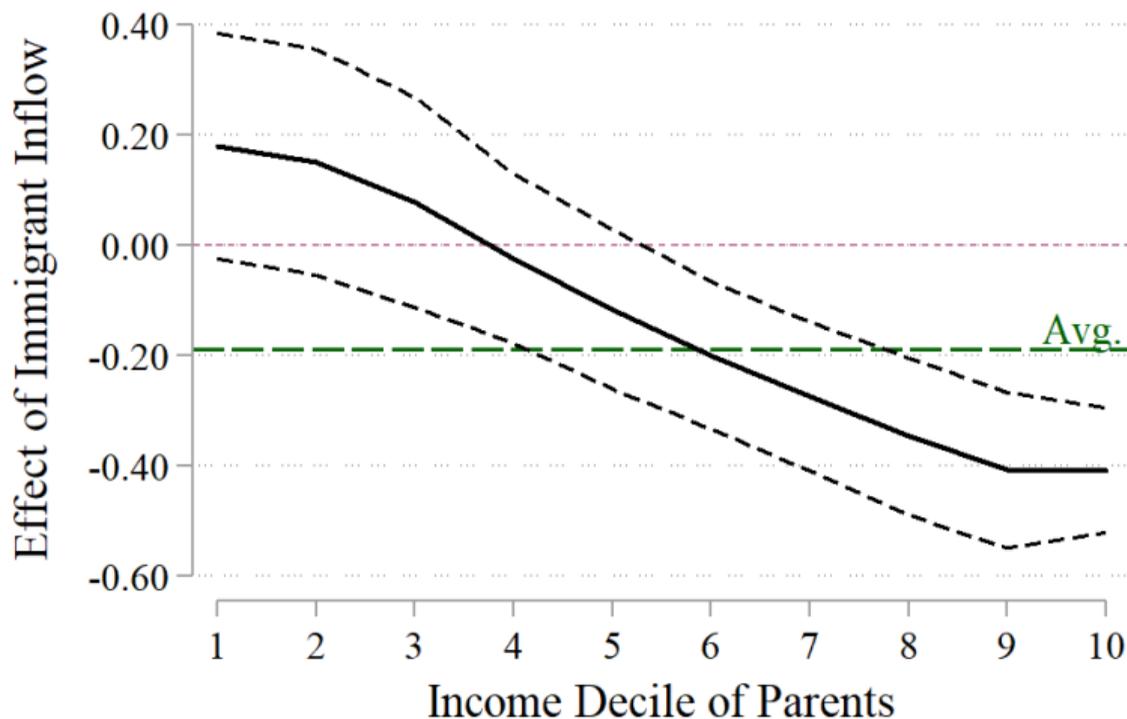


Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

Theories of Immigrant Impacts on Natives

1. Immigrants stretch resources (Borjas); labor markets through capital, schools, public goods
2. Immigrant impacts mediated by substitution, complementarity in production (Card); low-skill workers may be negatively impacted, high-skill workers gain
→ both imply negative effects on children from poor families
3. Alternative: Immigrants increase dynamism, specialization, and reduce “intergenerational rents”
→ more research needed here

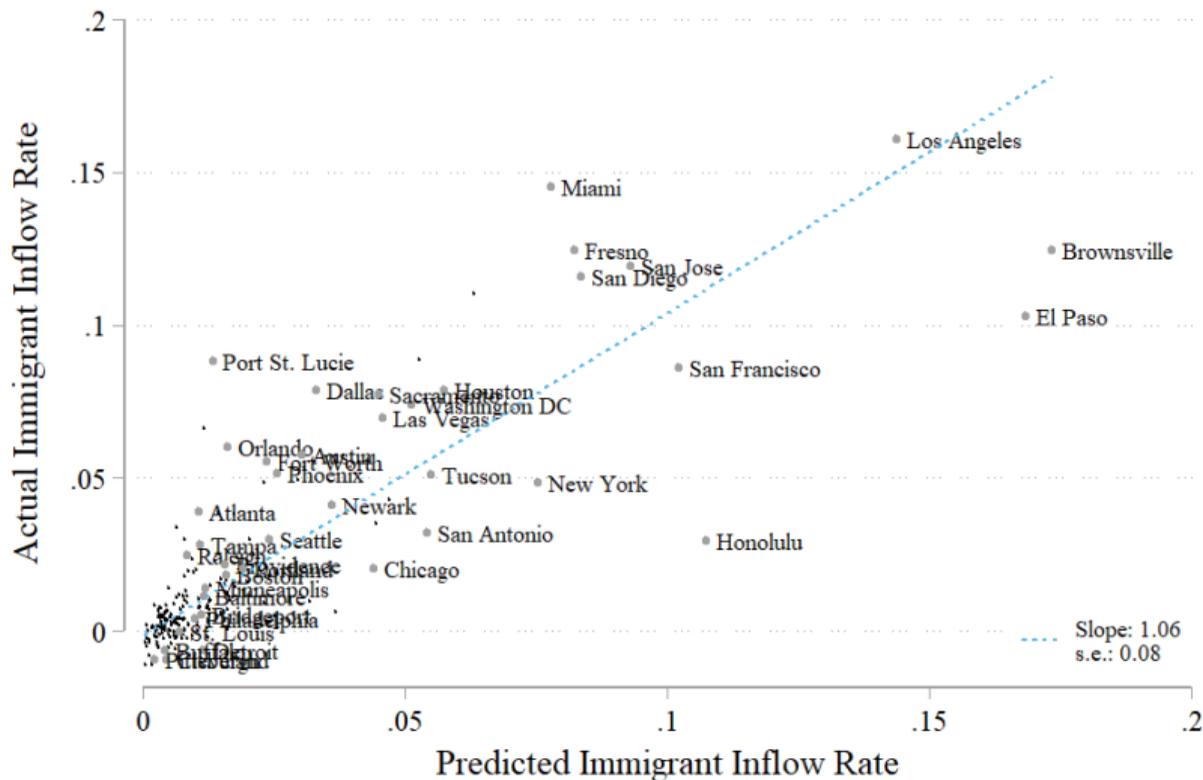
Employment: Share of Years with W2 Income $>$ Minimum Wage



Shift-share Instrumental Variable

- ▶ Key assumption is that either the shares $\frac{M_{oc,80}}{M_{o,80}}$ or the growth in the number of immigrants $M_{o,90} - M_{o,80}$ is exogenous.
 - We base identification on the exogeneity of the shares and provide supporting evidence below.
 - Intuitively, the research design compares CZs are differentially exposed to a common immigration shock.
- ▶ Serial correlation in unobserved shocks would violate exclusion restriction.
 - Use 1970 enclaves as robustness check.

First Stage Relationship: Immigrant Inflows 1980-90

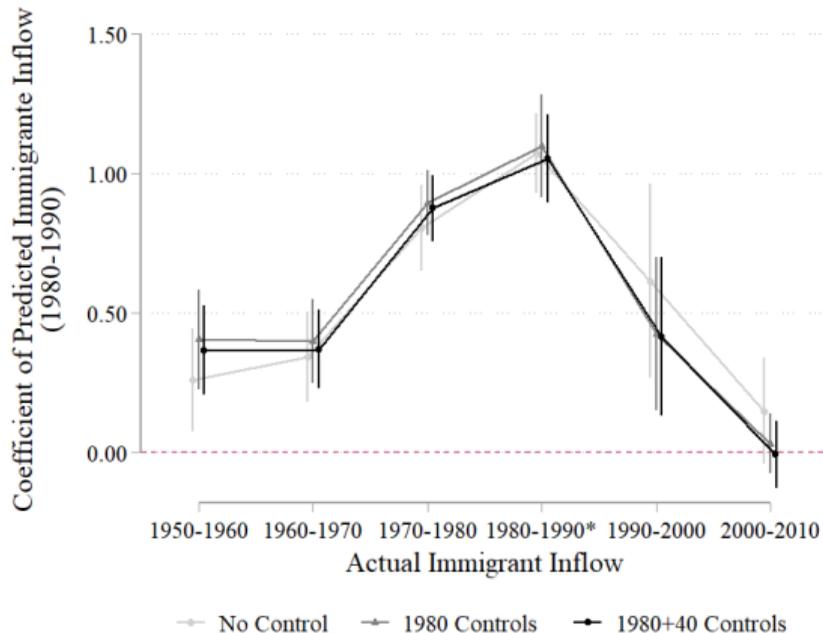


Matching-based interpretation of Research Design

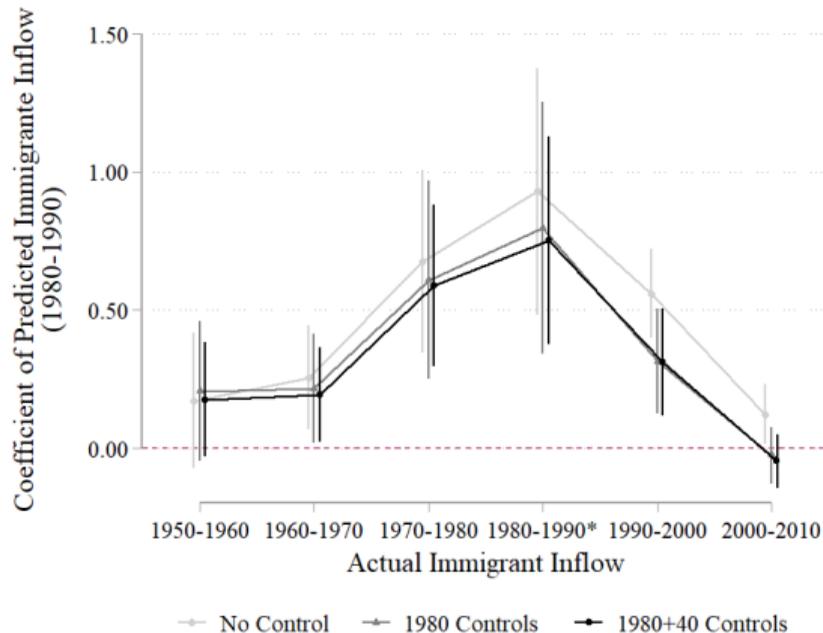
- ▶ We show the implicit comparisons being made to provide intuition for our research design.
- ▶ We create an index of immigrant inflows as the predicted inflow rate based on the covariates $X_{C,80}$ and $W_{C,40}$
 - $X_{C,80}$: covariates from 1980 (log CZ population, share of college graduates, and share employed in manufacturing)
 - $W_{C,40}$: lagged intergenerational mobility
- ▶ Our research design compares outcomes in CZs with similar values of $X_{C,80}$ and $W_{C,40}$ but different values of the instrument.

IV Correlated with Past and Future Inflows?

(a) 1980 Enclaves



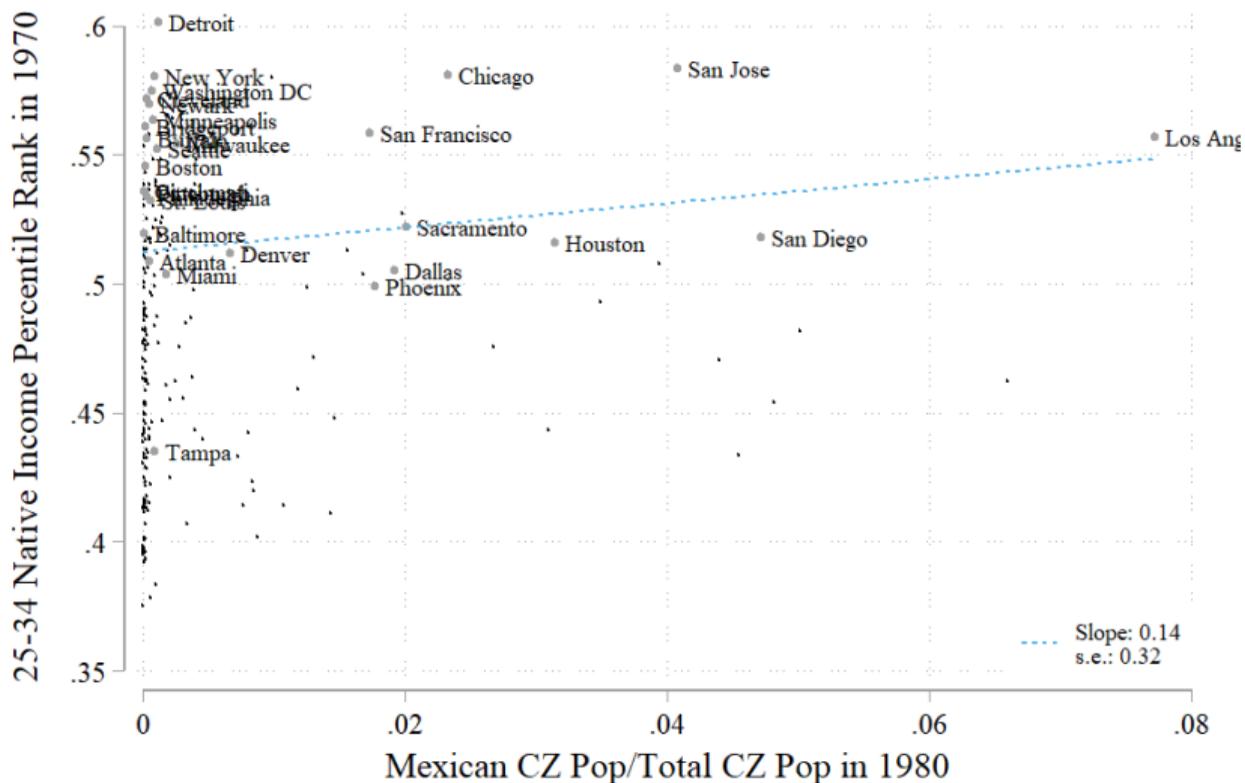
(b) 1970 Enclaves



Assessing the validity of the instrument

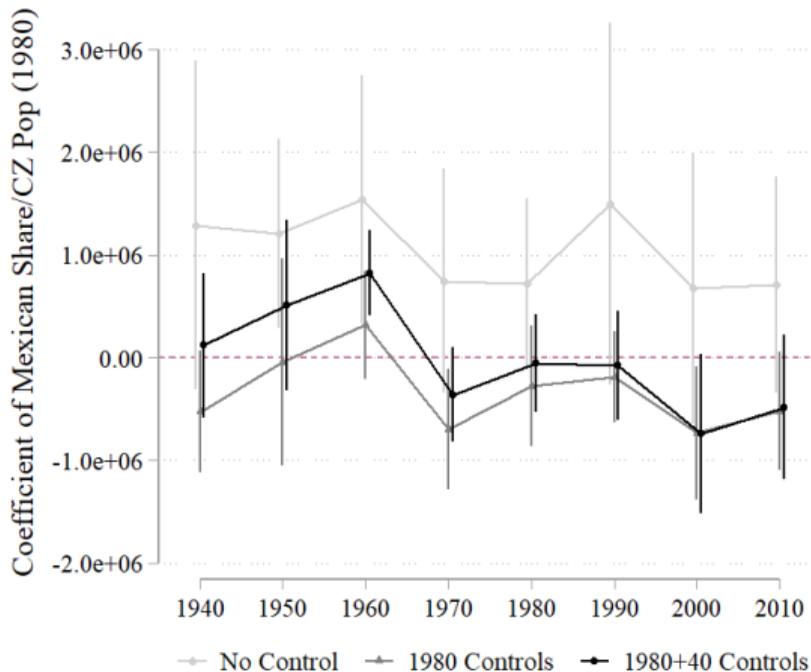
- ▶ Consistent estimation requires that the instrument is uncorrelated with other determinants of children's outcomes.
- ▶ To shed light on this, and the role of the controls, we assess whether the instrument is correlated with trends in outcomes.
- ▶ In what follows, we examine outcomes among native-born 25-34 year olds in the decennial Censuses.

Mexican Share in 1980 and Native Income Percentile Rank in 1970

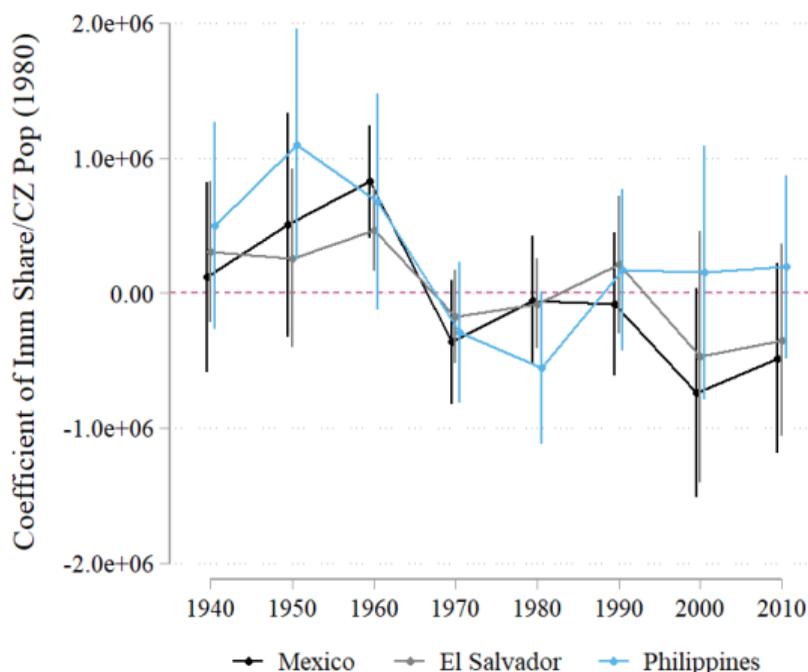


Shares Correlated with Native Outcomes?: Income Percentile Rank

(a) Mexico

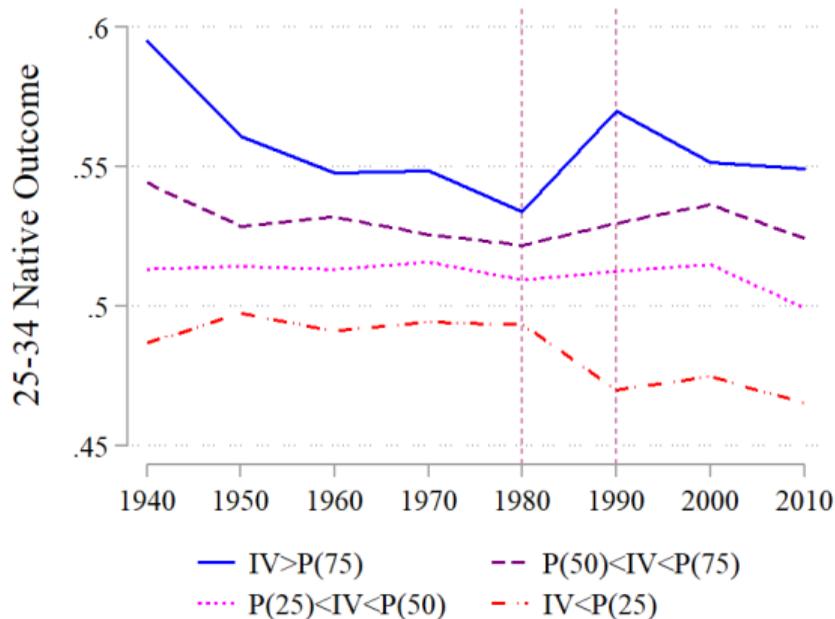


(b) Top 3 Rotemberg Weight Countries

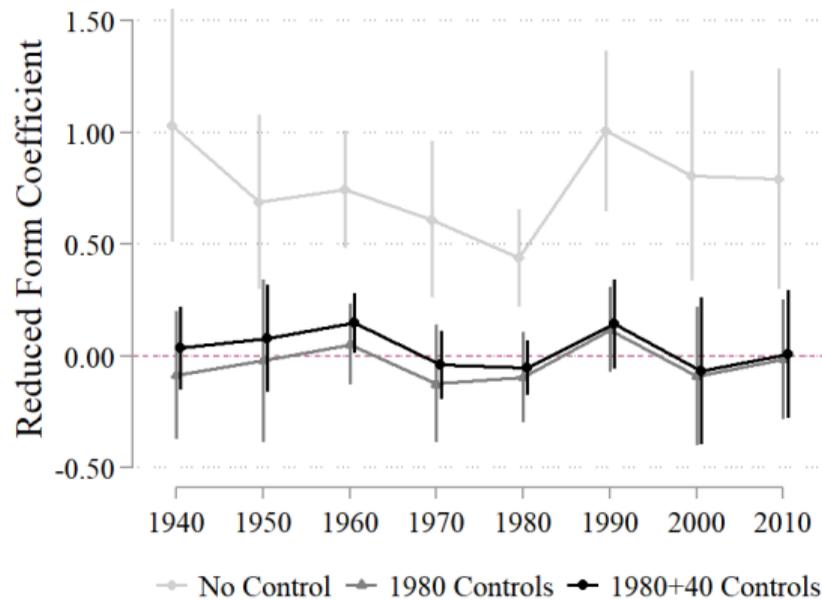


IV Correlated with Native Outcomes?: Income Percentile Rank

(a) Raw Trends

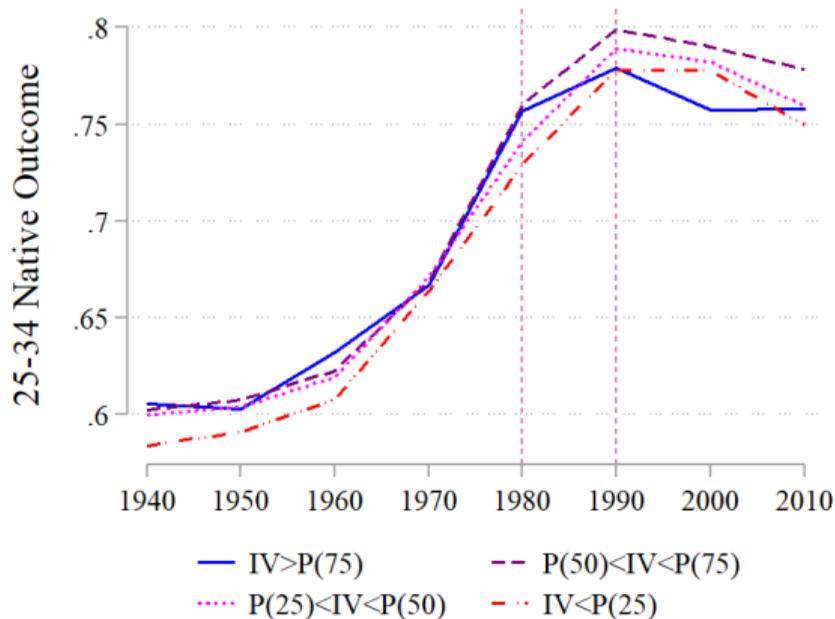


(b) IV Effects

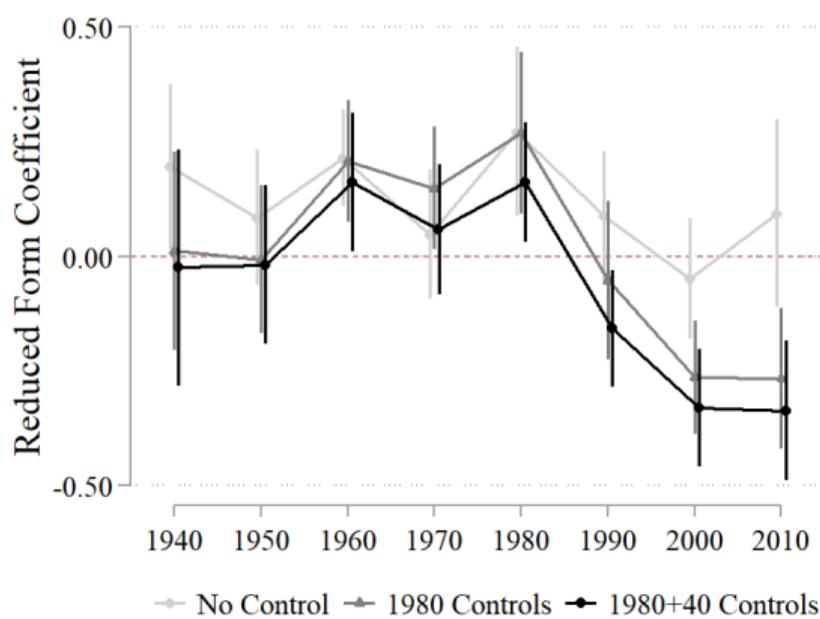


IV Correlated with Native Outcomes?: Employment Rate

(a) Raw Trends

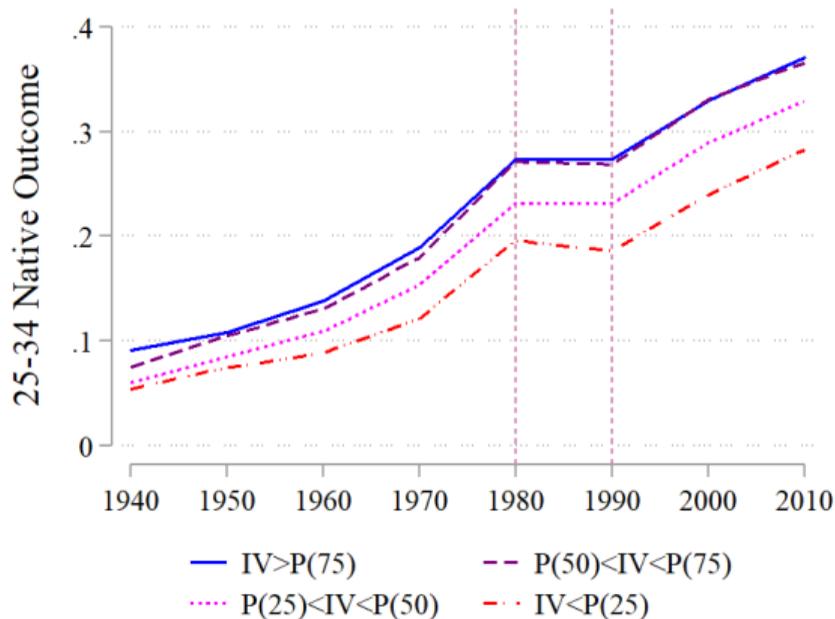


(b) IV Effects

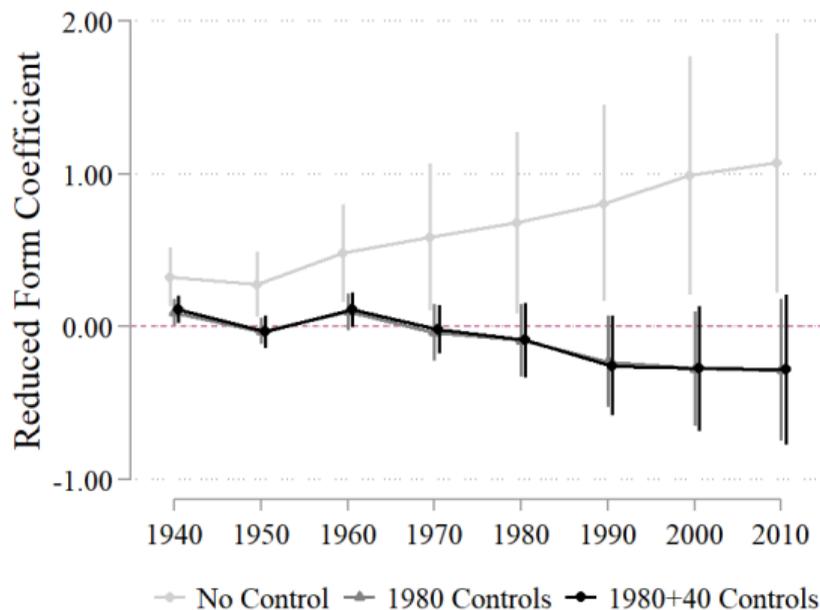


IV Correlated with Native Outcomes?: Share College Graduates

(a) Raw Trends

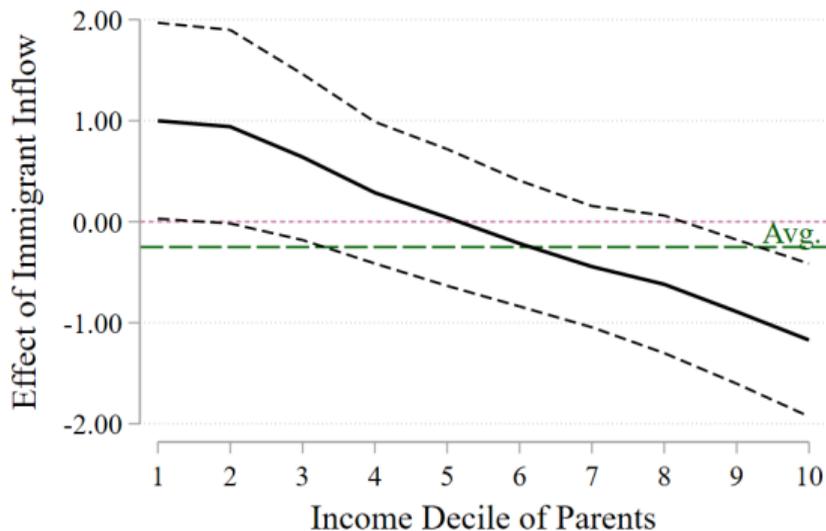


(b) IV Effects

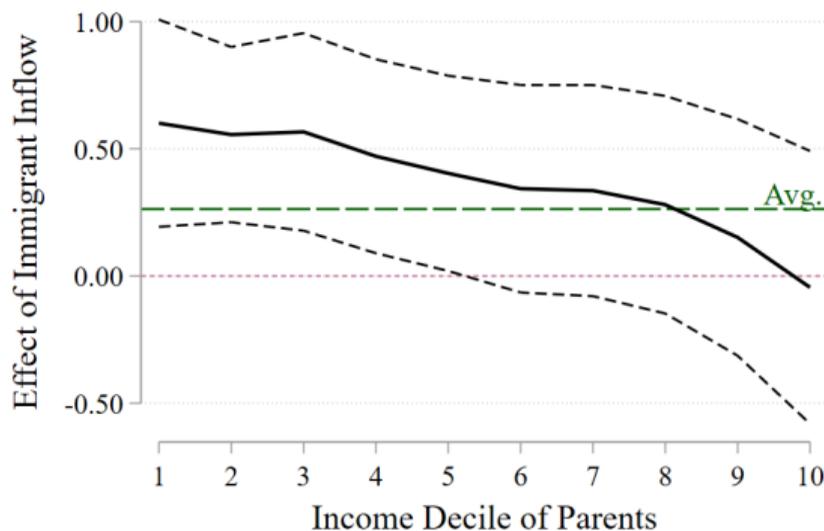


Income: Logarithm of W2 Earnings

(a) No Constraint



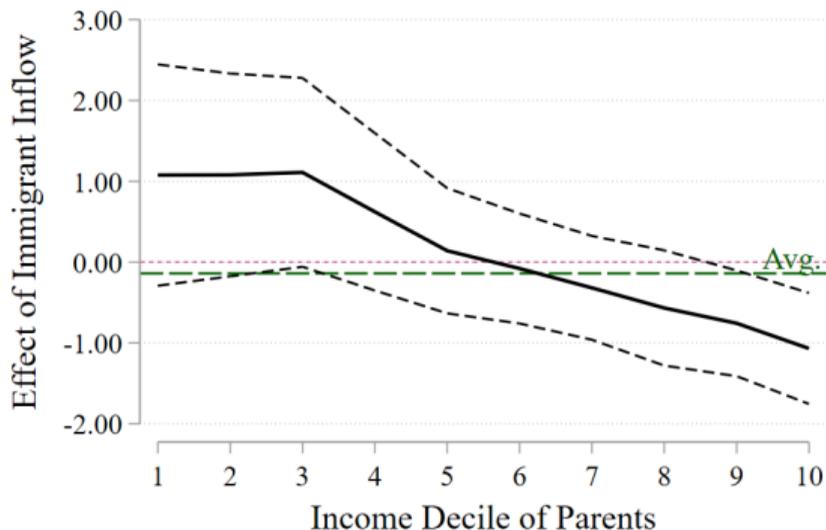
(b) Minimum Wage > 0 at Least Half of Years



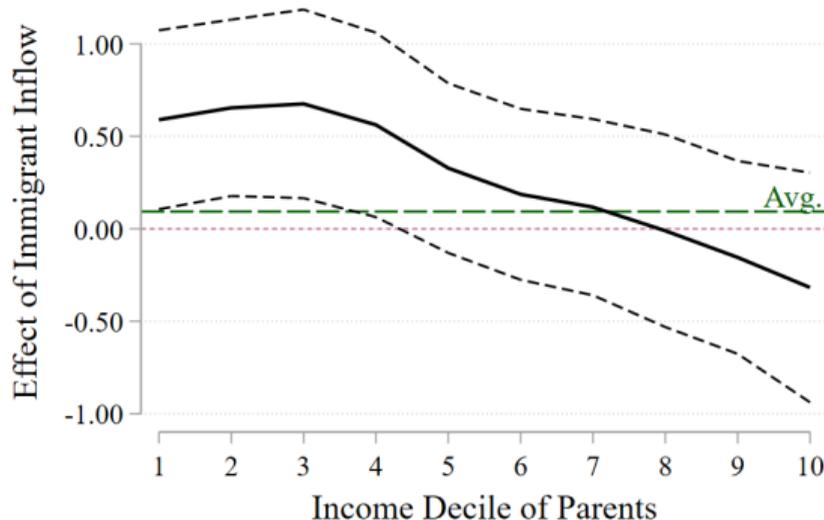
Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

Income: Logarithm of 1040 TMI Earnings

(a) No Constraint



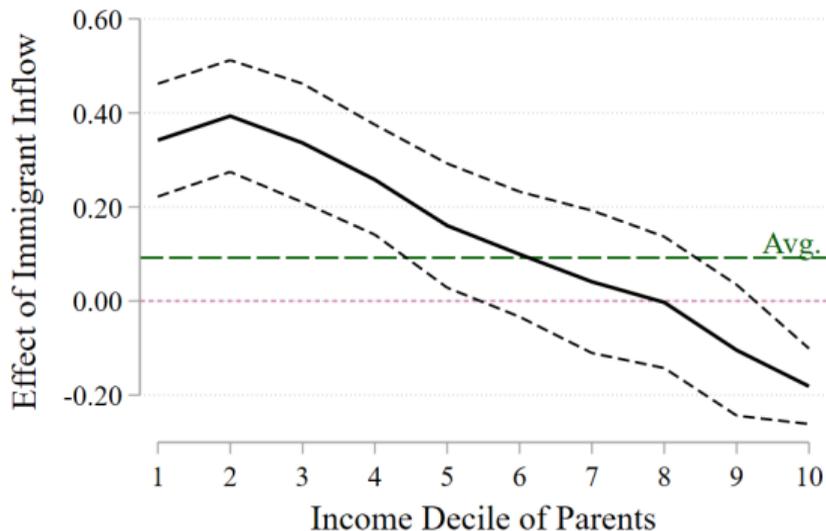
(b) Minimum Wage > 0 at Least Half of Years



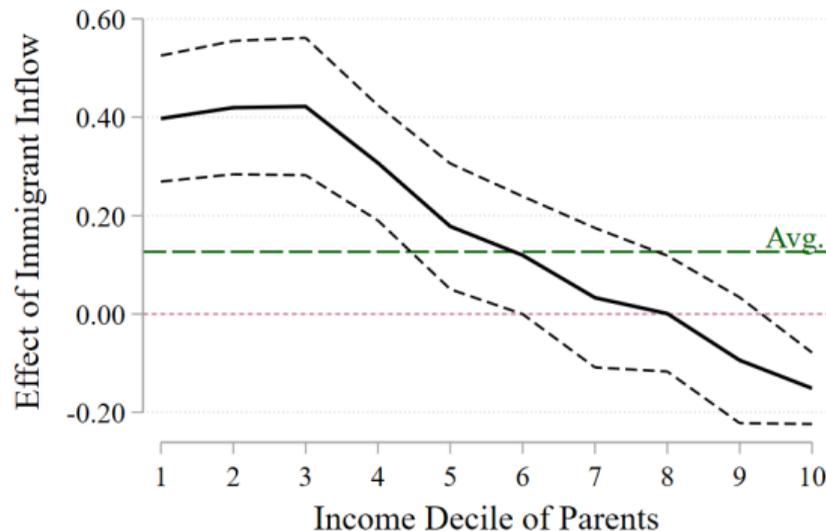
Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

Marriage (tax filing)

(a) Male



(b) Female



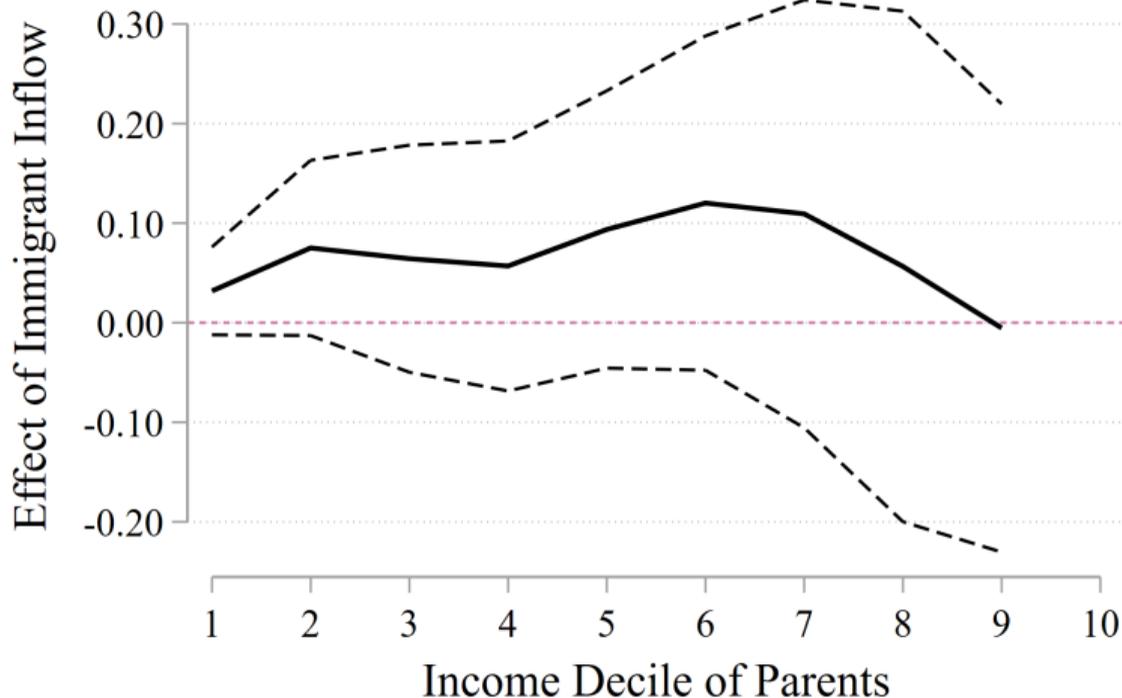
Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

Issues in Measurement of Parent Income

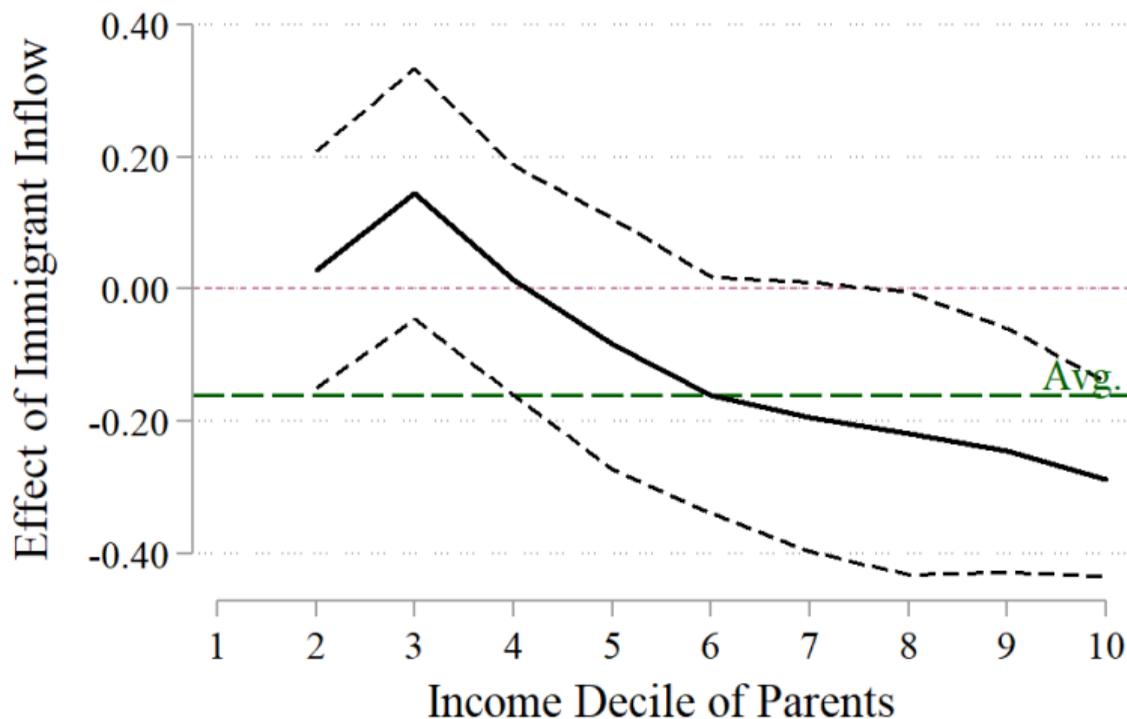
Issues in Measurement of Parent Income

- ▶ We stratify children by their parents' income measured in 1998 to 2003 to get a better measure of their permanent income.
- ▶ However, this income may be affected by immigrant inflows, which is problematic if parents' decile ranks are affected.
- ▶ We address this in two ways
 - First we assess whether immigration affects the probability a parent is at or below each decile
 - We stratify outcomes by parents income measure in 1979.
 - Also working on modeling counterfactual parental income.

Effect of immigration on parental income being at or below each decile

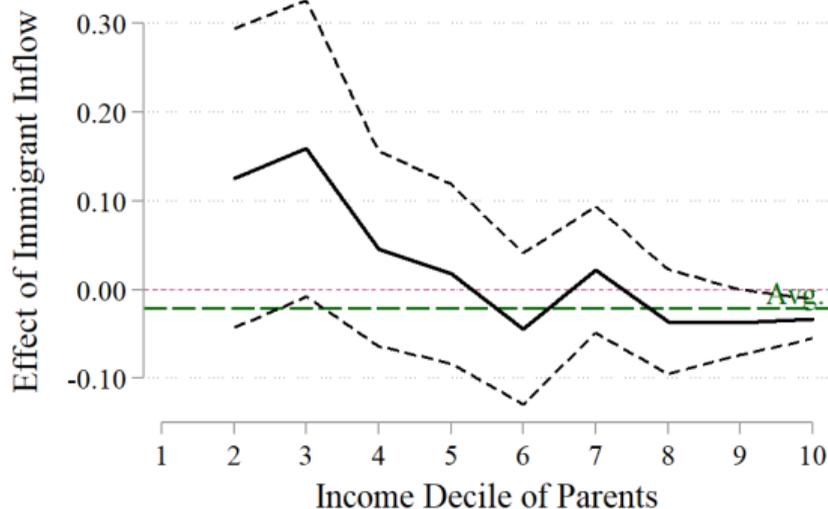


Income: W2 Rank of Children - parents' income measured in 1979

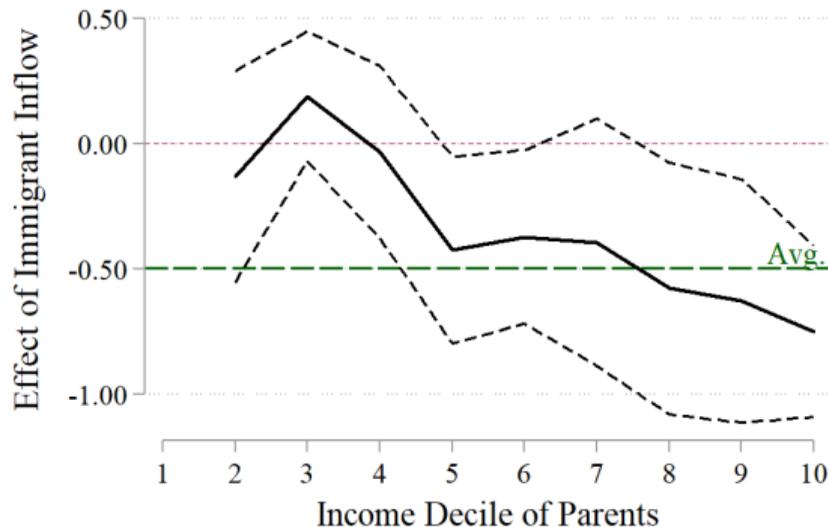


Education - parents' income measured in 1979

(a) High School Completion



(b) BA Completion

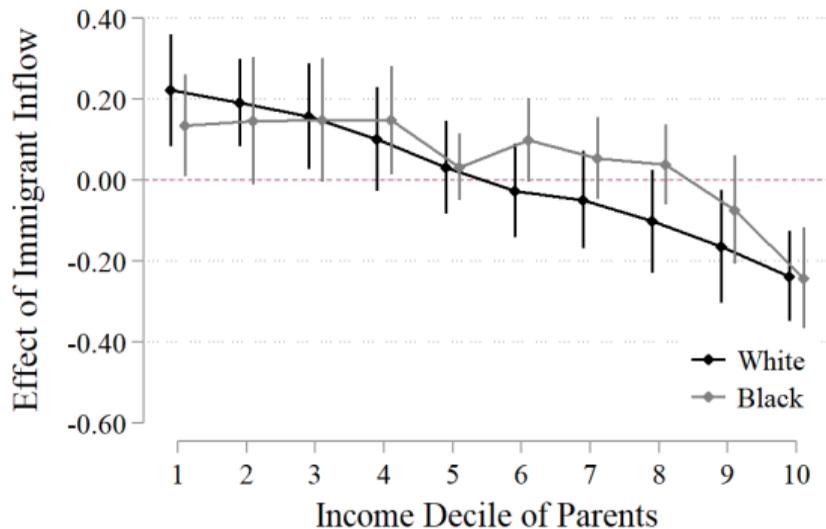


Source: 1994, 1995, 1998-2020 1040 tax filing data linked to the universe of W-2s from 2005 to 2020, the 2001-2019 American Community Survey, and the Numident file from the Social Security Administration.

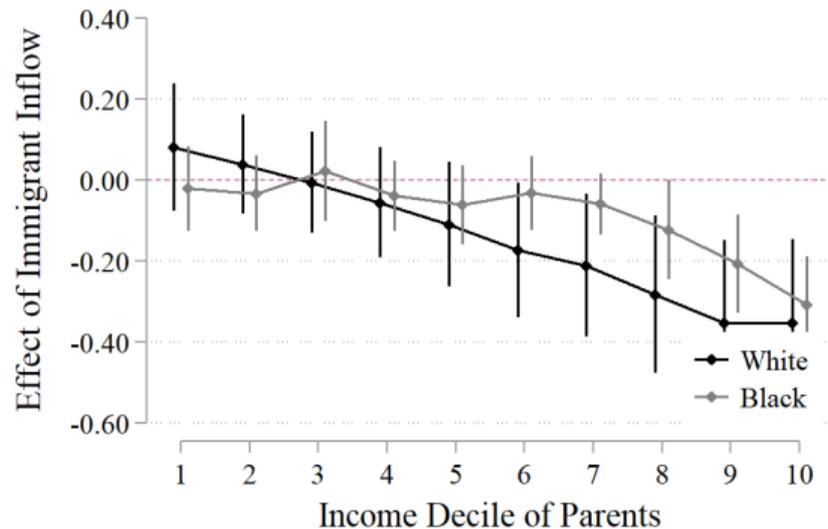
Heterogeneity by Race and Gender

Income: W2 Rank of Children

(a) Male

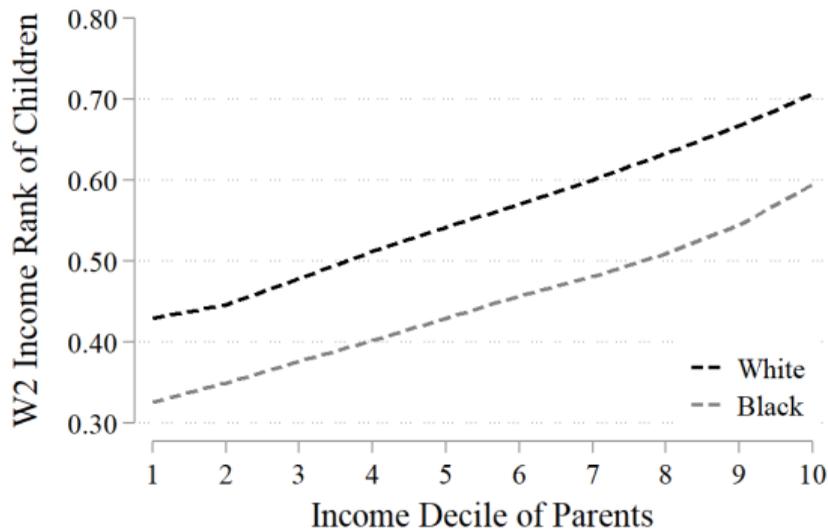


(b) Female

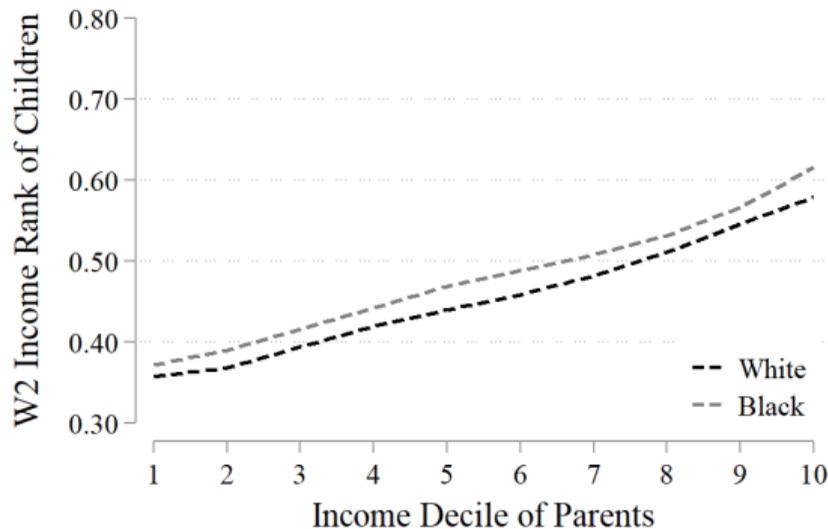


W2 Rank of Children by Income Decile of Parents

(a) Male

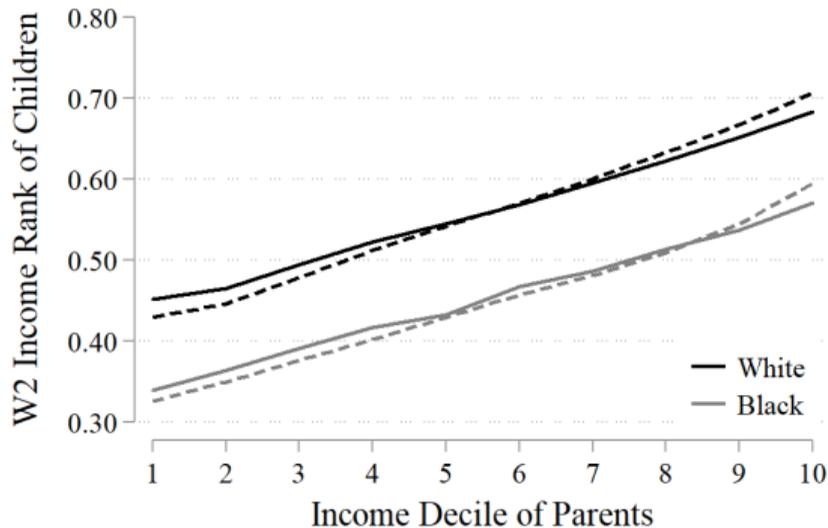


(b) Female

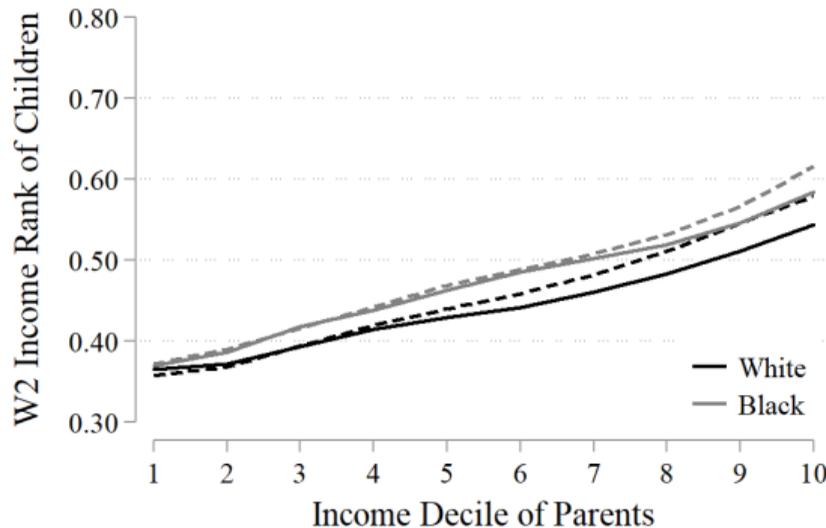


...after a 10 percentage point increase in immigrant inflow rate

(a) Male

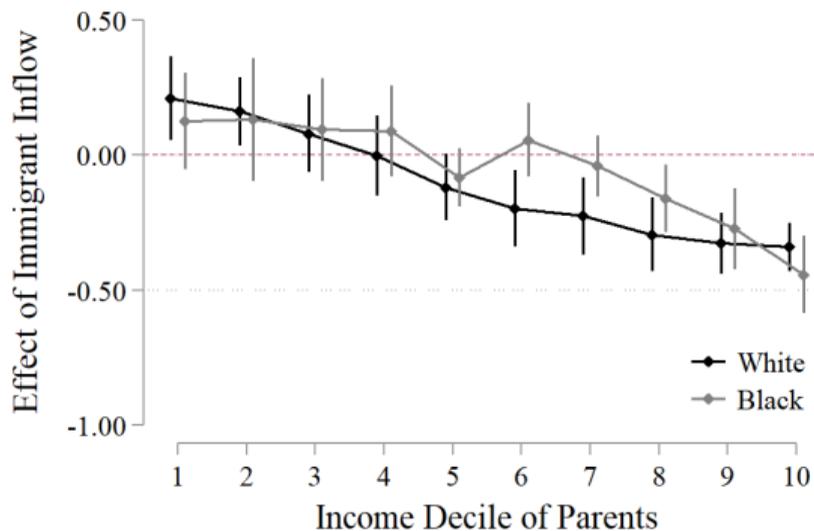


(b) Female

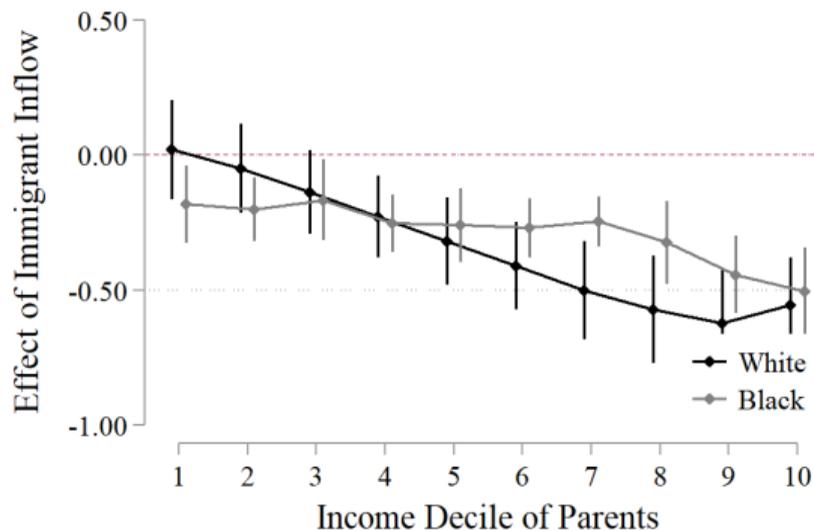


Employment: Share of Years with W2 Income > Minimum Wage

(a) Male

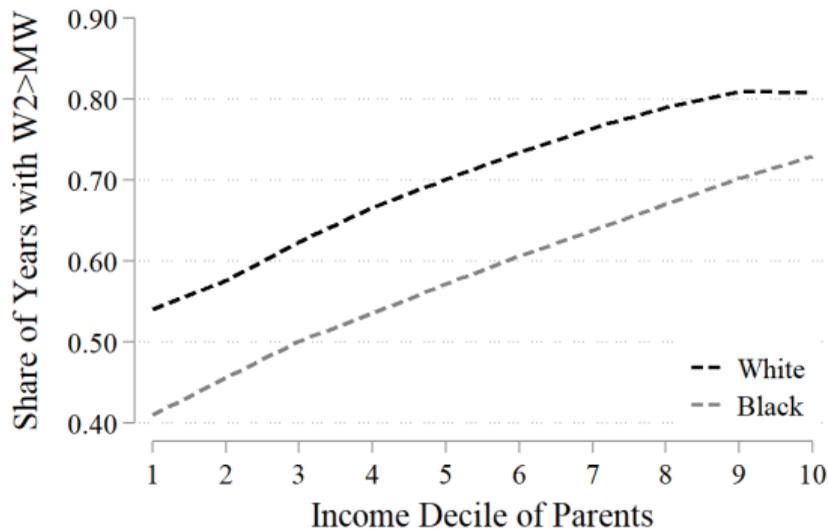


(b) Female

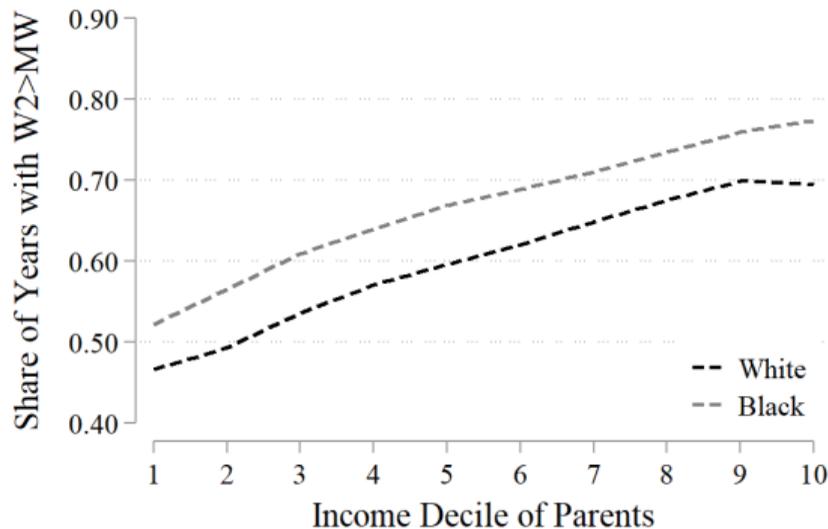


Share of Years with W2 Income > MW by Income Decile of Parents

(a) Male

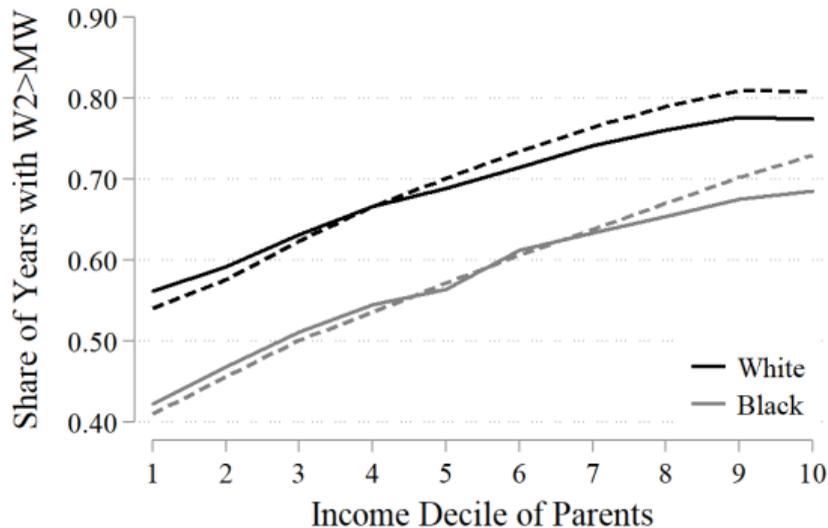


(b) Female

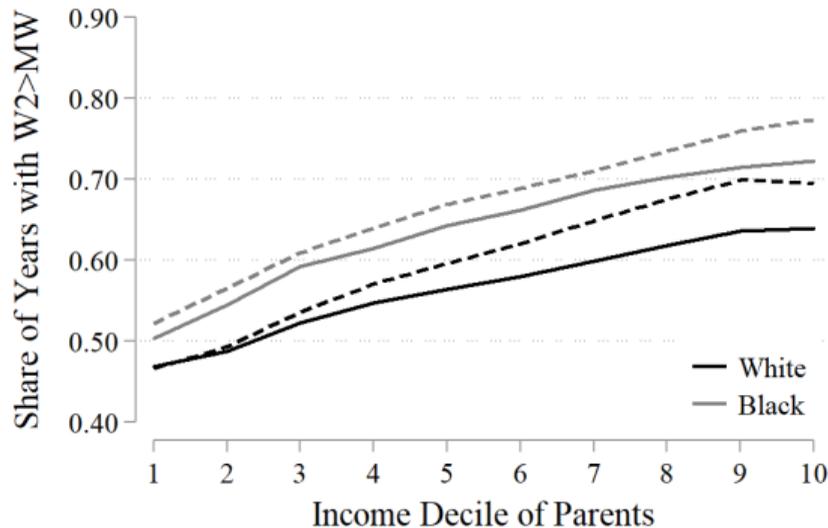


...after a 10 percentage point increase in immigrant inflow rate

(a) Male

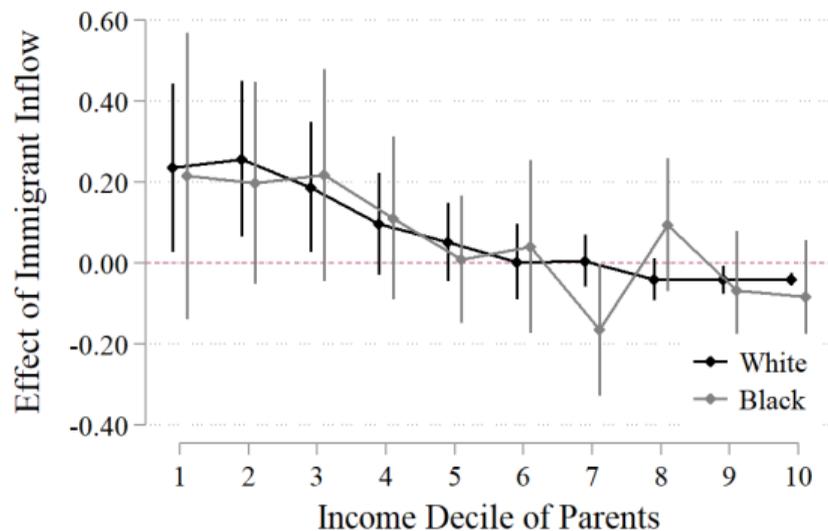


(b) Female

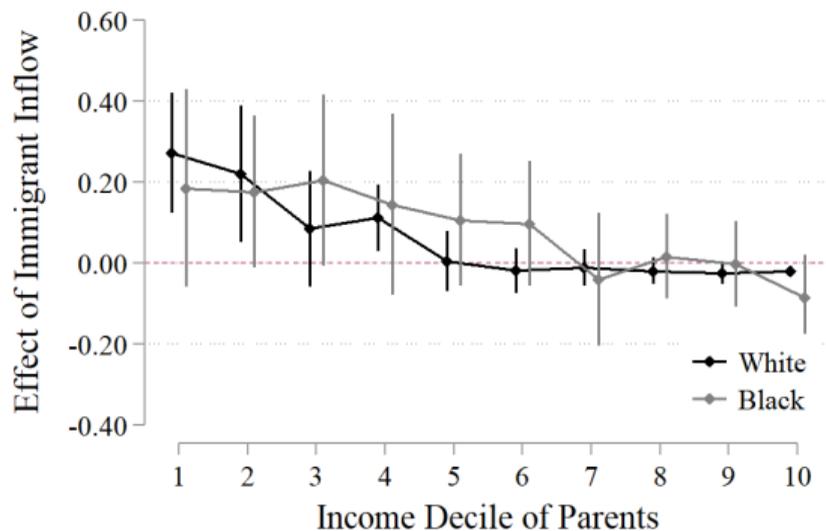


Education: High School Completion

(a) Male

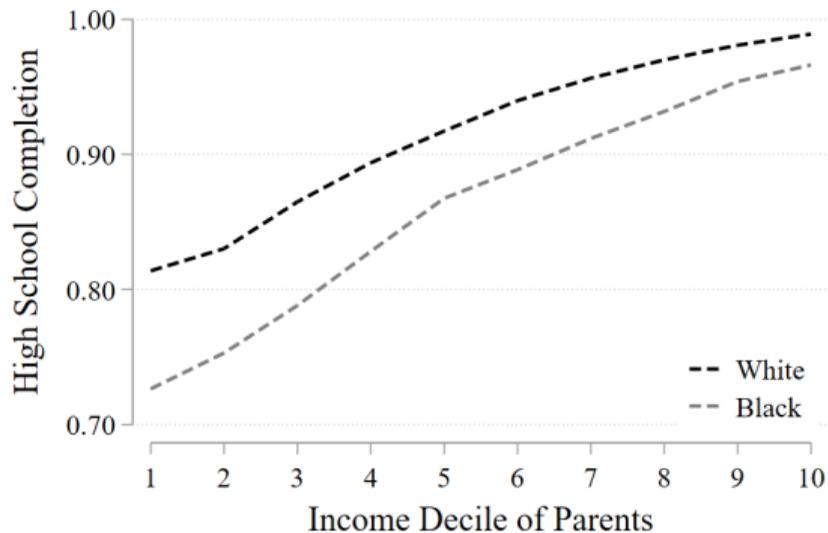


(b) Female

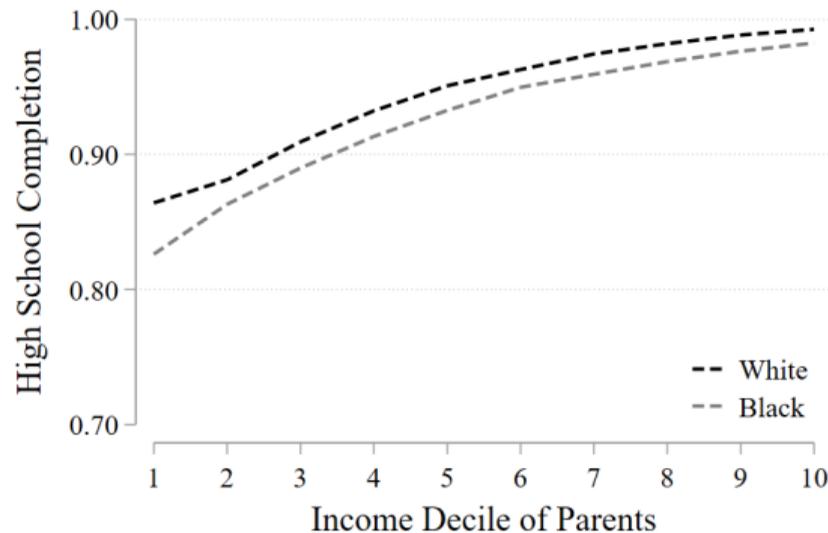


Mean High School Completion by Income Decile of Parents

(a) Male

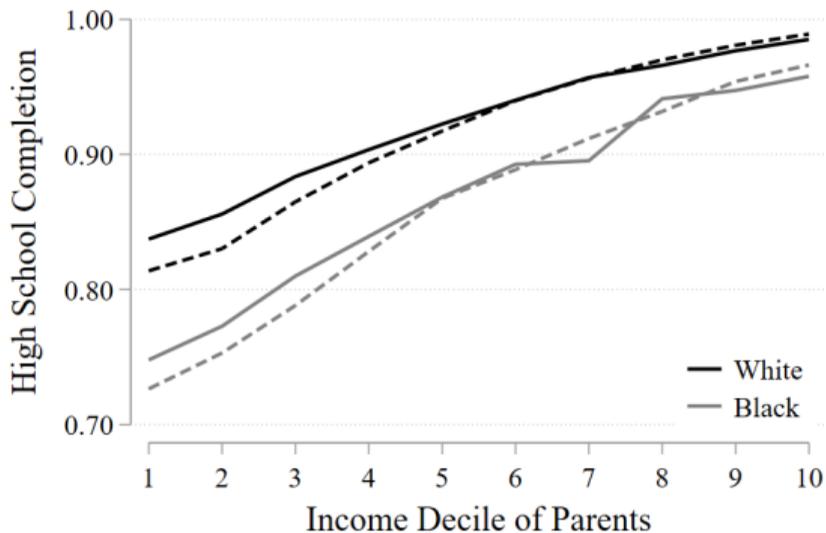


(b) Female

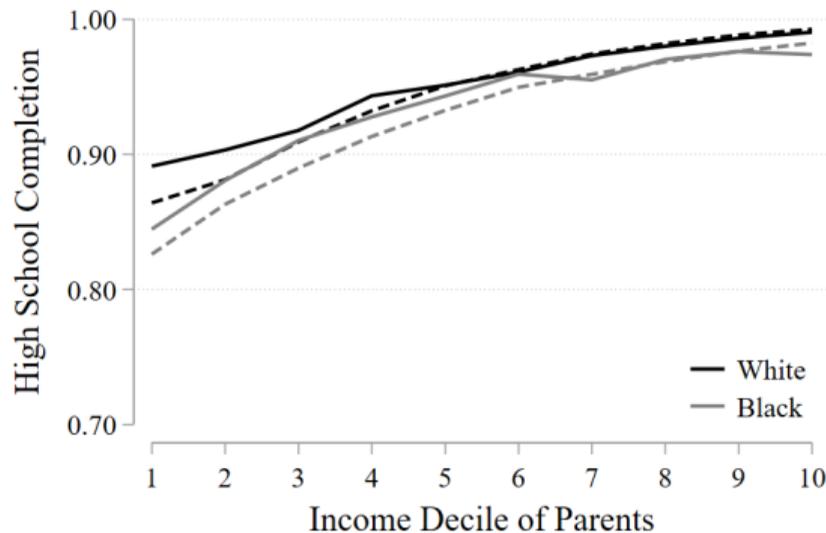


...after a 10 percentage point increase in immigrant inflow rate

(a) Male

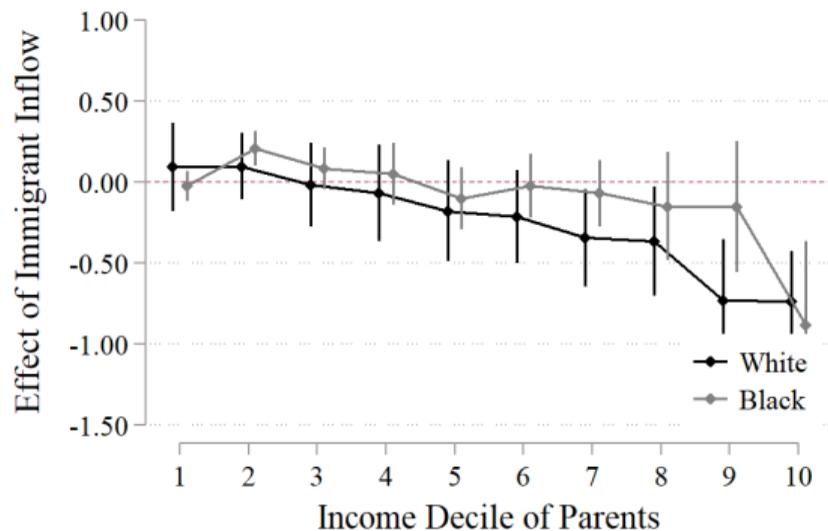


(b) Female

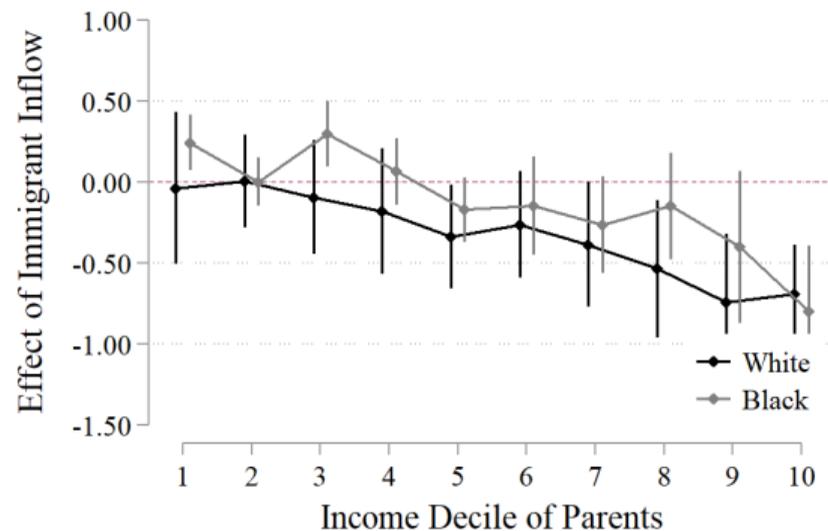


Education: BA Completion

(a) Male

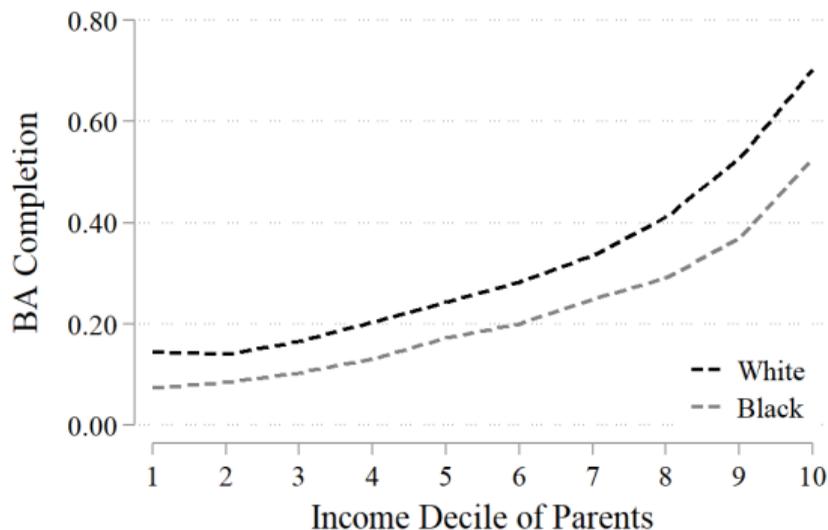


(b) Female

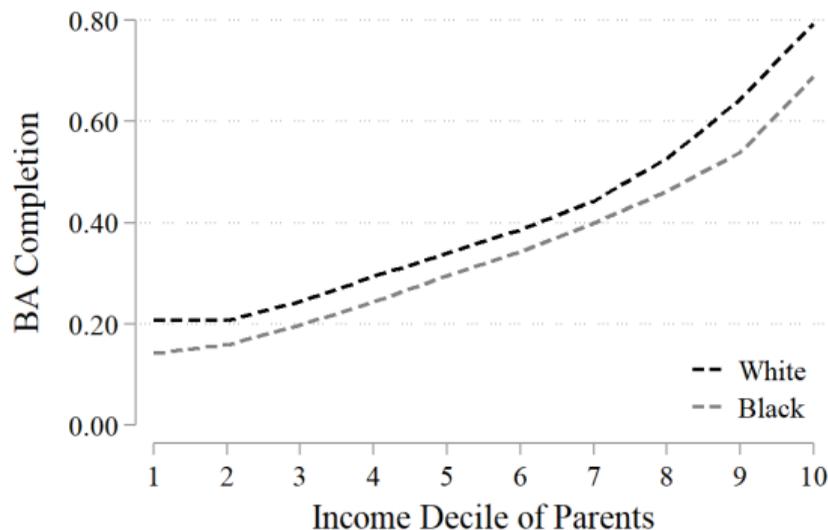


Mean BA Completion by Income Decile of Parents

(a) Male

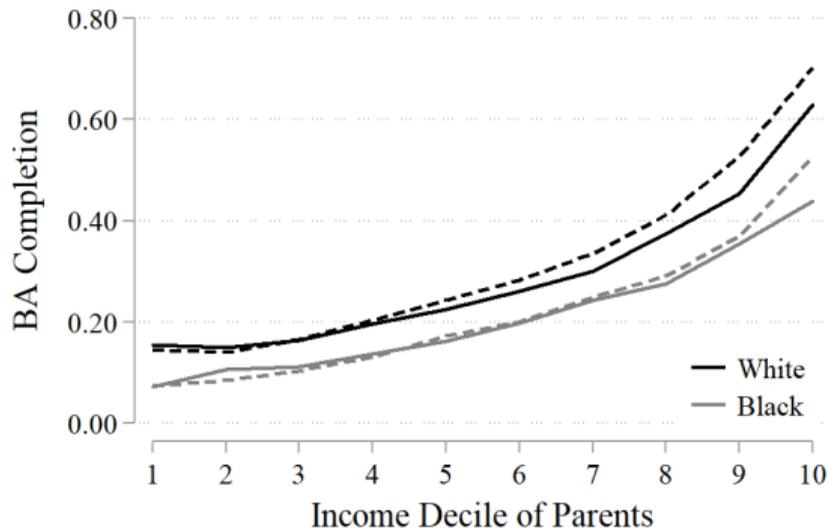


(b) Female

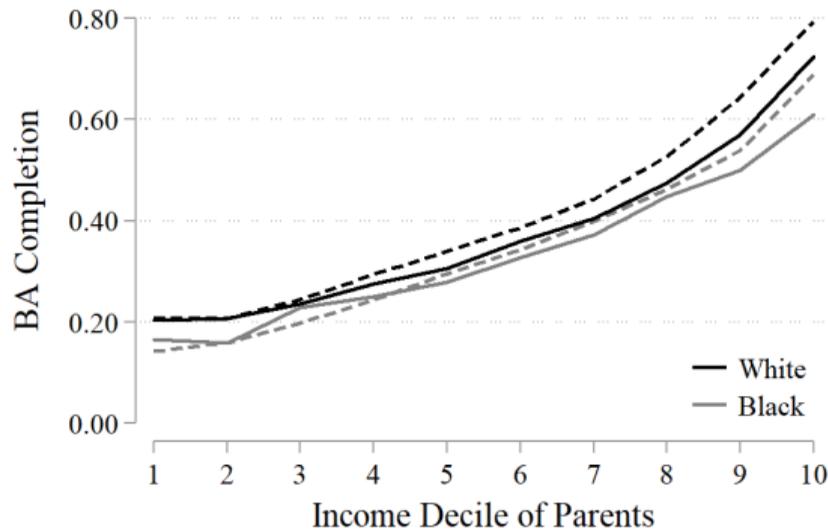


...after a 10 percentage point increase in immigrant inflow rate

(a) Male

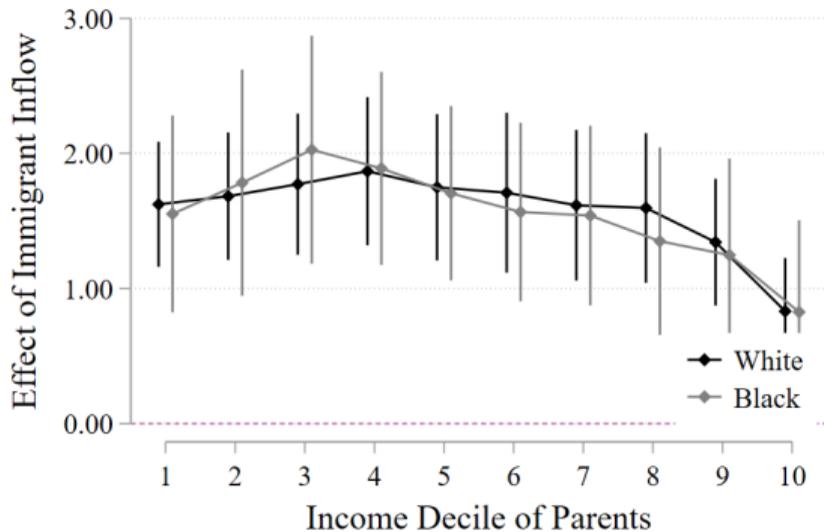


(b) Female

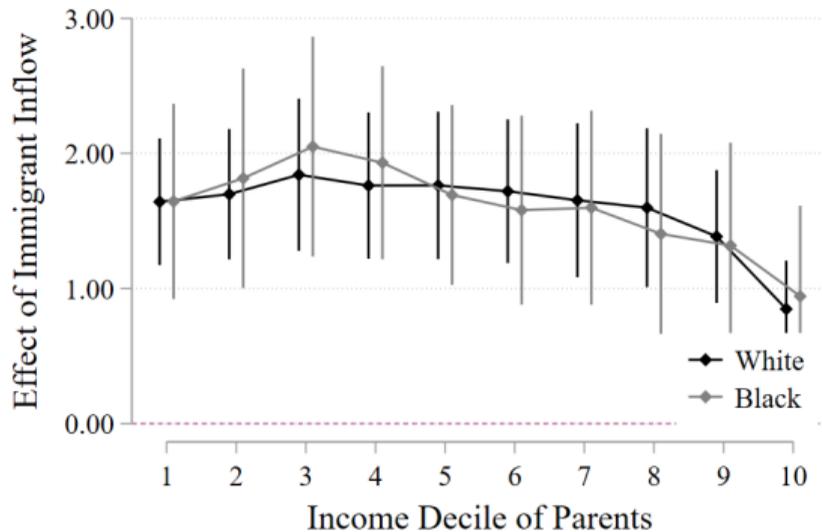


Migration: Change CZ

(a) Male

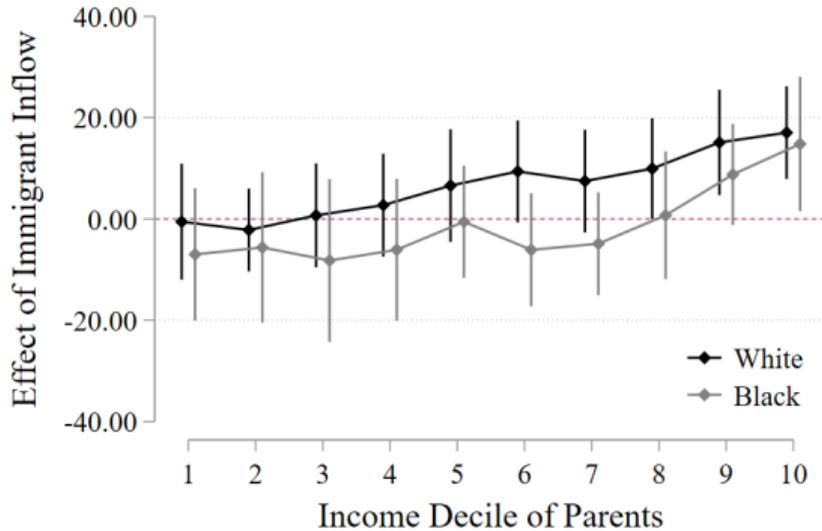


(b) Female

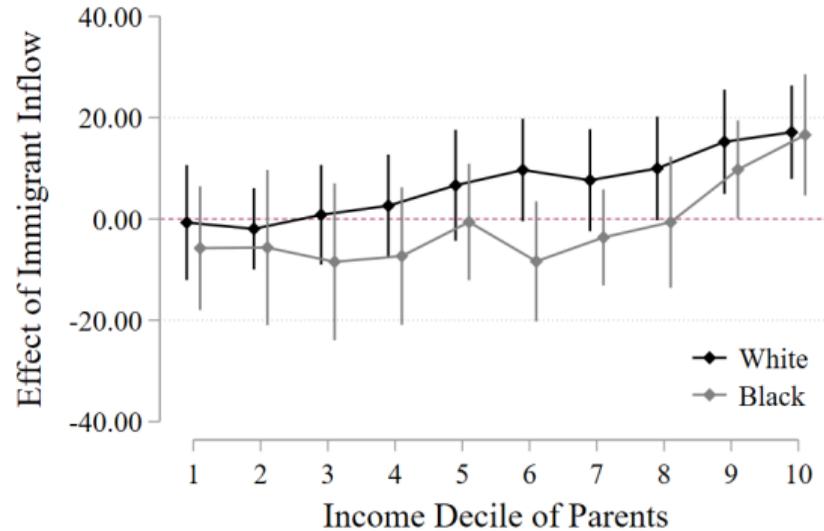


Migration: CZ Quality

(a) Male

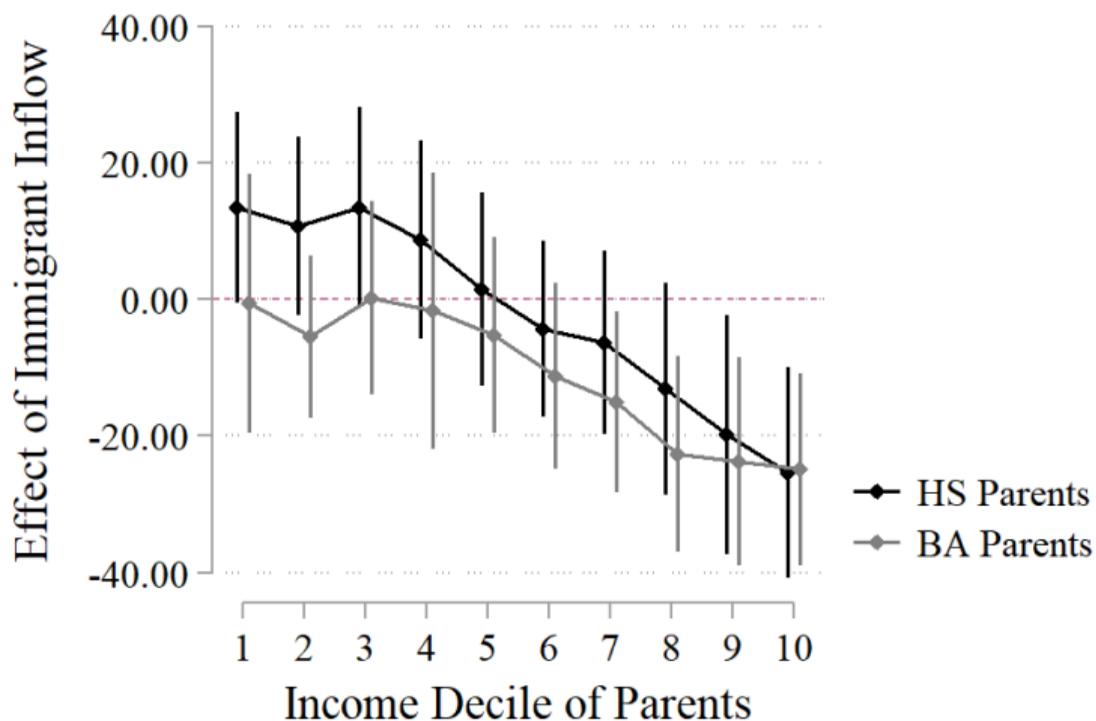


(b) Female

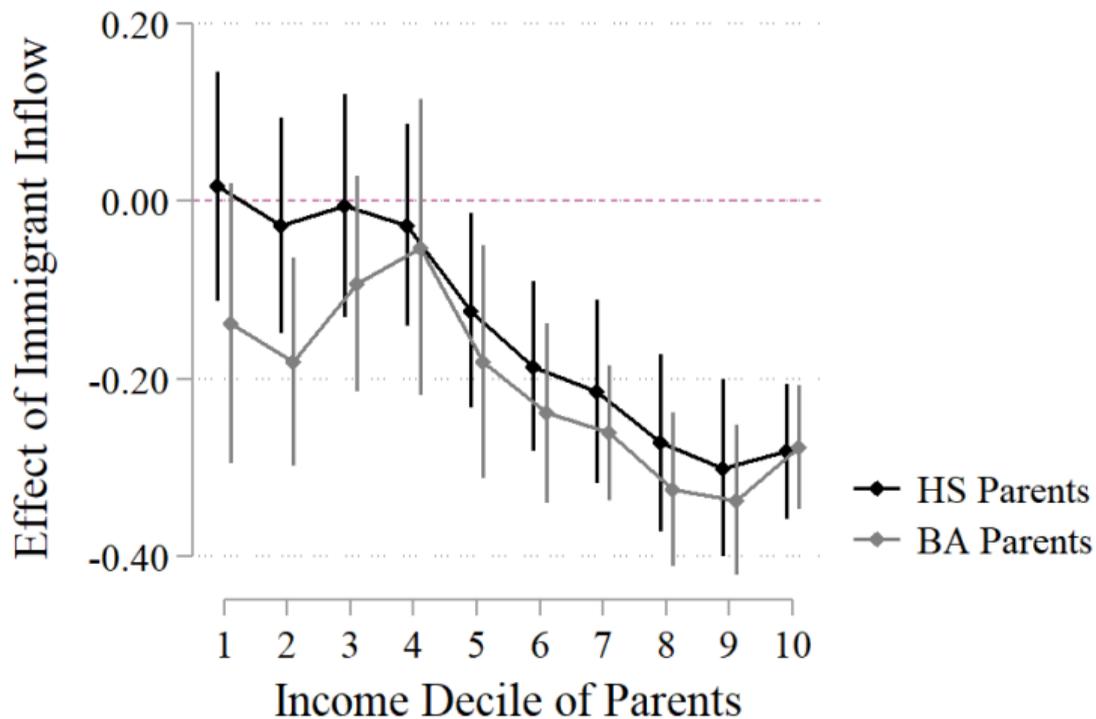


Heterogeneity by Parents' Education

Income: W2 Rank of Children

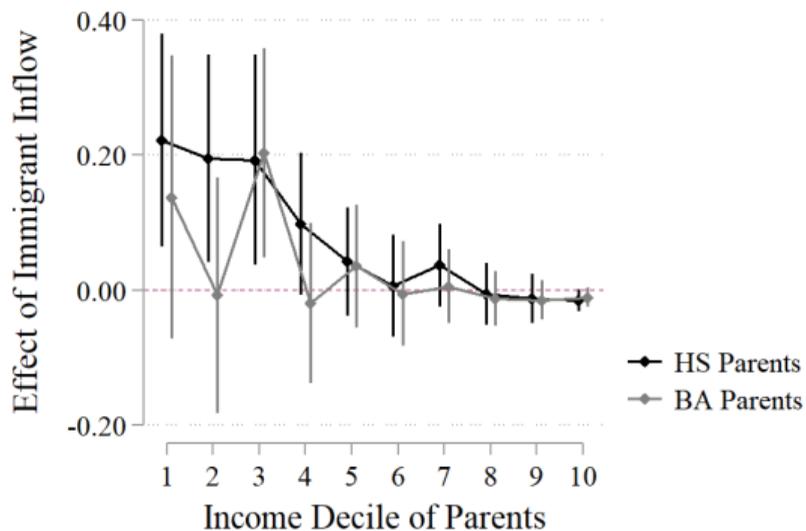


Employment: Share of Years with Positive W2

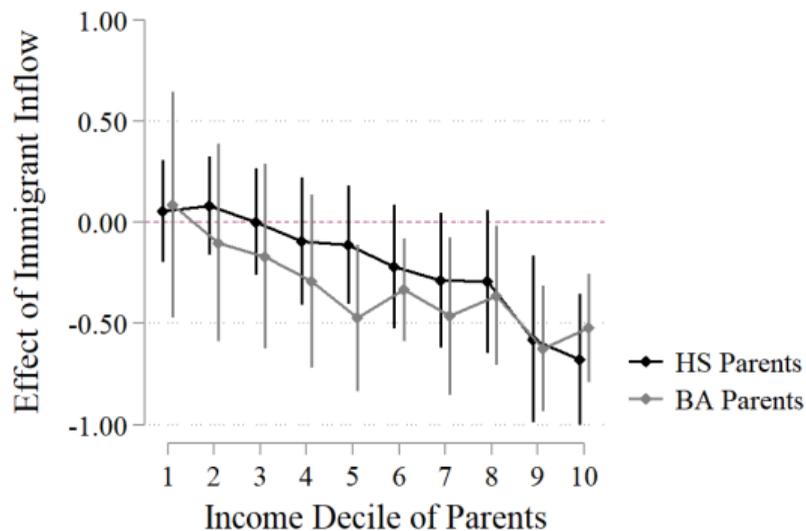


Education

(a) High School Completion

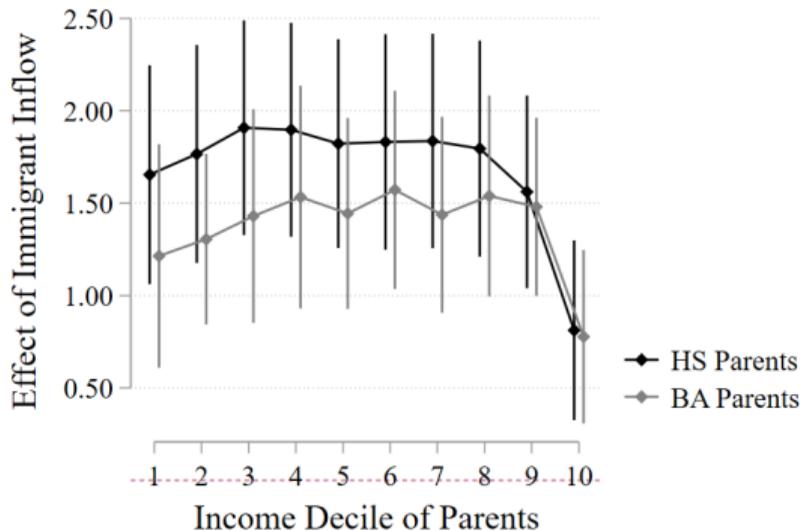


(b) BA Completion



Migration

(a) Change CZ?



(b) CZ Quality

