Geography of Intergenerational Mobility

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Motivation

"What is an **American Dream**?"

- ▶ Anyone can succeed in the US regardless of immutable characteristics and social background

- ▶ Chances of succeeding do not depend heavily on parents' social background

- ▶ For our purpose, we consider **income** as a measure of social background. We want to see to what extent a child's income is dependent on parents' income. (i.e. Intergenrational Income Mobility)

- ▶ Vast literature is available covering this issue, but results are debated due to the data limitation

Coverage of studies for our purpose

- Chetty, Raj, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez (2014). "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States." Quarterly Journal of Economics. 129 (4): 1553–1623.

- Connolly, Marie, Miles Corak, and Catherine Haeck (2019). "Intergenerational Mobility between and within Canada and the United States." Journal of Labor Economics

- Miles Corak (2019), The Canadian Geography of Intergenerational Income Mobility, The Economic Journal
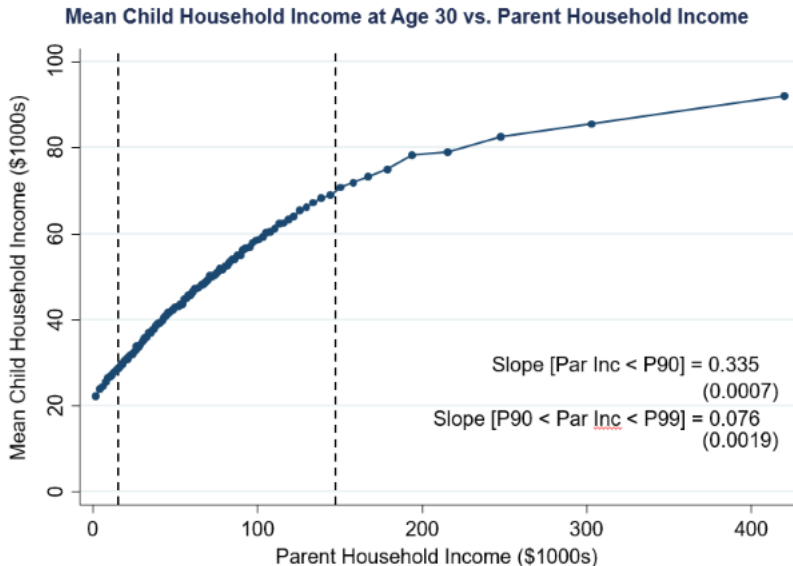
Study in Focus

▶ Chetty, Raj, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez (2014). **"Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States."** Quarterly Journal of Economics. 129 (4): 1553–1623.

  ▶ Study of intergenerational mobility in the U.S. using administrative data on 40 million children

▶ Key Findings

  ▶ Substantial variation in intergenerational mobility within the US

  ▶ Some regions represent lands of opportunity, whereas others have persistant inequality

Data

- Data source: IRS Databank [Chetty, Friedman, Hilger, Saez, Yagan 2011]
  - Selected de-identified data from 1996-2012 income tax returns
  - Includes non-filers via information forms (e.g. W-2's)
- Primary sample
  - Current U.S. citizens in 1980-81 birth cohorts
  - 6.3 million children, age 30-32 in 2012
- Expanded sample: 1980-1991 birth cohorts for robustness checks
  - 40 million children, age 20-32 in 2012
- Linking Children to Parents
  - Most children are linked to parents based on tax returns in 1996
  - They managed to link about 95 % of children to their parents

National Level Summary Statistics

National Statistics

Mean Child Household Income at Age 30 vs. Parent Household Income

Slope [Par Inc < P90] = 0.335
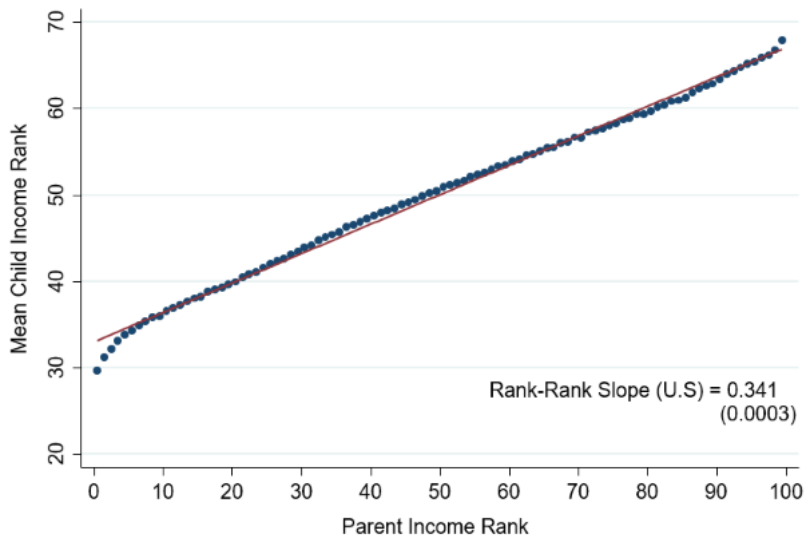(0.0007)
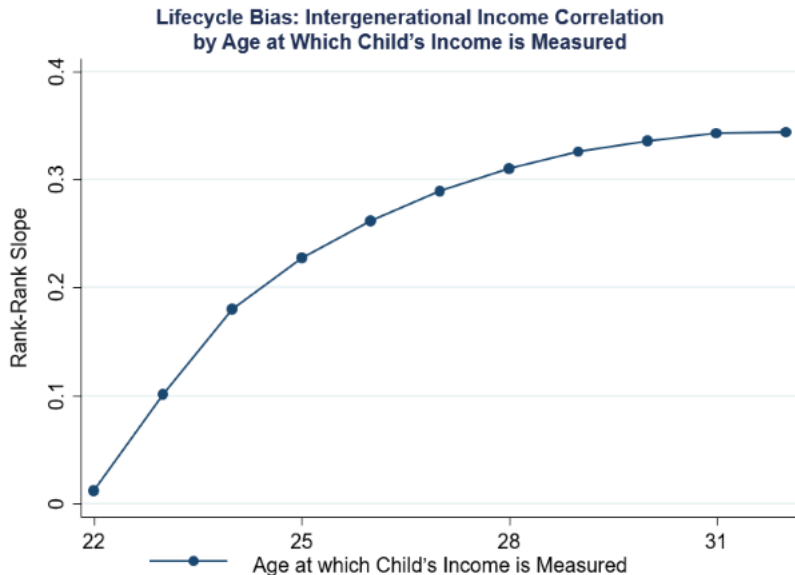Slope [P90 < Par Inc < P99] = 0.076
(0.0019)

Rank - Rank Specification

▶ The rank-rank slope measures the association between a child's position in the income distribution and his parents' position in the distribution using percentile rank (Useful measure to handle zeros and non linearity in the data)

  ▶ Rank children based on their incomes relative to other children same in birth cohort

  ▶ Rank parents of these children based on their incomes relative to other parents in this sample

  ▶ 100 points on the following graph. i.e. They sort all the observations in ascending order, calculate their percentile ranks. Each point here on the graph is a percentile and corresponding to that is a mean percentile rank of the respective bin.

Rank- Rank Specification

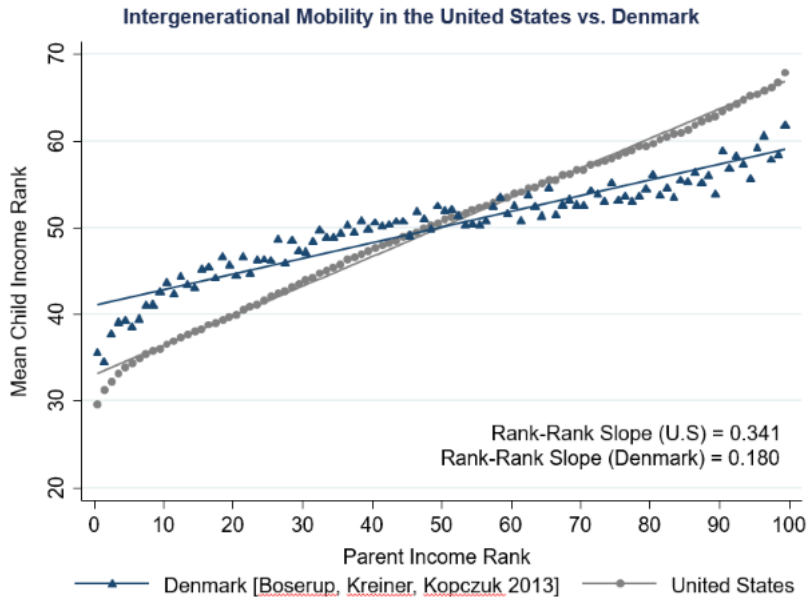**Mean Child Percentile Rank vs. Parent Percentile Rank**

Rank-Rank Slope (U.S) = 0.341
(0.0003)

Life Cycle Bias

Lifecycle Bias: Intergenerational Income Correlation
by Age at Which Child's Income is Measured

Geographic Variation

Comparison with Denmark

Intergenerational Mobility in the United States vs. Denmark

Rank-Rank Slope (U.S) = 0.341
Rank-Rank Slope (Denmark) = 0.180

Denmark [Boserup, Kreiner, Kopczuk 2013]   United States

Geographic Variation within the US

- ▶ Variation in intergenerational mobility at the level of Commuting Zones (CZ's)
- ▶ CZ's are aggregations of counties based on commuting patterns in 1990 census [Tolbert and Sizer 1996, Autor and Dorn 2012]
- ▶ Similar to metro areas but cover rural areas as well

Geogrpahical Definitions

- Divide children into locations based on where they grew up
  - CZ from which parents filed tax return when they first claimed the child as a dependent
  - Permanently assign child to this CZ, no matter where he or she lives now
- For 1980 cohort, this is typically location when child is age 16
  - Verify using younger cohorts that measuring location at earlier ages yields very similar results

Defining Income Ranks

- In every CZ, parent and child incomes are measured using ranks in the national income distribution
  - This allows to identify both relative and absolute mobility
  - Important because more relative mobility is not necessarily desirable from a normative perspective
  - Increases in relative mobility (i.e., a lower IGE or rank-rank slope) could be undesirable if they are caused by worse outcomes for the rich. In contrast, increases in absolute mobility at a given income level, holding fixed absolute mobility at other income levels, unambiguously increase welfare if one respects the Pareto principle (and if welfare depends purely on income).
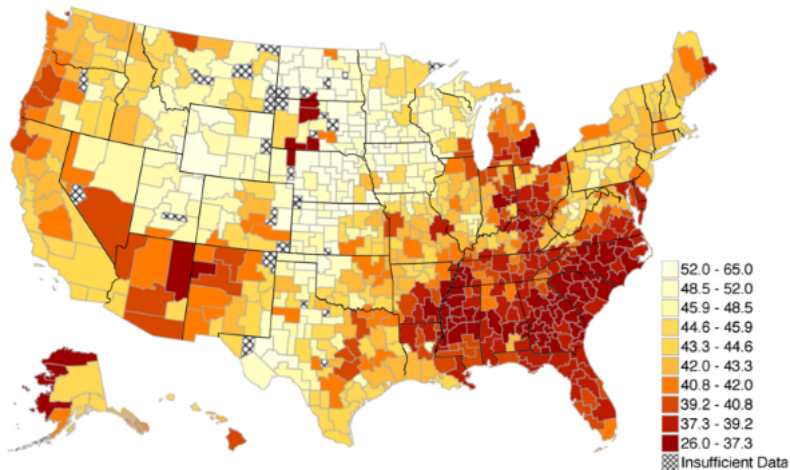
Mobility Estimates

▶ In each CZ, regress child national rank on parent national rank in micro data:

$$R_c = \alpha + \beta R_p$$

▶ Relative mobility = 100 x β

▶ Absolute upward mobility = $\alpha + 25\beta$

Geography of Absolute Upward Mobility in the US

Mean Child Percentile Rank for Parents at 25th Percentile (Y_{25})

Legend:
- 52.0 - 65.0
- 48.5 - 52.0
- 45.9 - 48.5
- 44.6 - 45.9
- 43.3 - 44.6
- 42.0 - 43.3
- 40.8 - 42.0
- 39.2 - 40.8
- 37.3 - 39.2
- 26.0 - 37.3
- Insufficient Data

Note: Lighter Color = More Absolute Upward Mobility

Highest Absolute Mobility In The 50 Largest CZs

Upward Mobility Rank	CZ Name	Y_{25}	$Y_{100} - Y_0$	P(Child in Q5| Parent in Q1)
1	Salt Lake City, UT	46.2	0.264	10.83%
2	Pittsburgh, PA	45.2	0.359	9.51%
3	San Jose, CA	44.7	0.235	12.93%
4	Boston, MA	44.6	0.322	10.49%
5	San Francisco, CA	44.4	0.250	12.15%
6	San Diego, CA	44.3	0.237	10.44%
7	Manchester, NH	44.2	0.296	10.02%
8	Minneapolis, MN	44.2	0.338	8.52%
9	Newark, NJ	44.1	0.350	10.24%
10	New York, NY	43.8	0.330	10.50%

Lowest Absolute Mobility In The 50 Largest CZs

Upward Mobility Rank	CZ Name	Y_{25}	$Y_{100} - Y_0$	P(Child in Q5|Parent in Q1)
41	Nashville, TN	38.2	0.357	5.73%
42	New Orleans, LA	38.2	0.397	5.12%
43	Cincinnati, OH	37.9	0.429	5.12%
44	Columbus, OH	37.7	0.406	4.91%
45	Jacksonville, FL	37.5	0.361	4.92%
46	Detroit, MI	37.3	0.358	5.46%
47	Indianapolis, IN	37.2	0.398	4.90%
48	Raleigh, NC	36.9	0.389	5.00%
49	Atlanta, GA	36.0	0.366	4.53%
50	Charlotte, NC	35.8	0.397	4.38%

Geography of Relative Mobility in the US

Rank-Rank Slopes $(Y_{100} - Y_0)$ by Commuting Zone

Legend:
- 0.404 - 0.508
- 0.381 - 0.404
- 0.360 - 0.381
- 0.346 - 0.360
- 0.330 - 0.346
- 0.312 - 0.330
- 0.292 - 0.312
- 0.270 - 0.292
- 0.240 - 0.270
- 0.068 - 0.240
- Insufficient Data
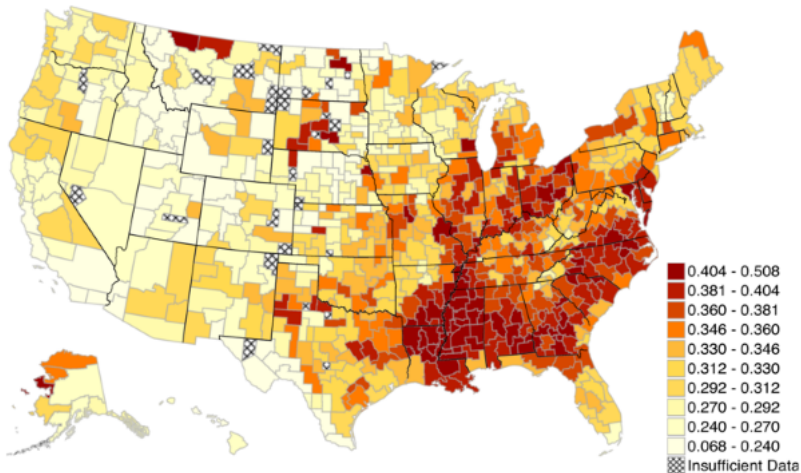
Corr. with baseline $\bar{y}_{25}$ = -0.68 (unweighted), -0.61 (pop-weighted)

Correlates of Intergenerational Mobility

Correlates of Intergenerational Mobility

- ▶ Correlate differences in mobility with observable factors
  - ▶ Focus on hypotheses proposed in sociology and economics literature and public debate
  - ▶ Goal: stylized facts to guide search for causal mechanisms
- ▶ First clues into potential mechanisms: timing
  - ▶ Spatial variation in inequality emerges at very early ages
  - ▶ Well before children start working

Correlates of Intergenerational Mobility

- ▶ Early emergence of gradients points to factors that affect children when growing up (or anticipatory responses to later factors)
  - ▶ E.g. schools or family characteristics [e.g., Mulligan 1999]
- ▶ Start by exploring racial differences
  - ▶ Most obvious pattern from map: upward mobility lower in areas with larger African-American population

Race and Upward Income Mobility

- Racial shares matter at community level for both blacks and whites
- One potential mechanism: racial and income segregation
  - Historical legacy of greater segregation in areas with larger African-American population
  - Racial segregation is associated with greater income segregation
  - Such segregation could affect both low-income blacks and whites [Wilson 1987, Massey and Denton 1988, Cutler and Glaeser 1997, Graham and Sharkey 2013]

Income Distribution and Upward Mobility

- Investigate properties of local income distribution: mean income levels and inequality

  - Many economic channels for link between static income distribution and intergenerational mobility [e.g. Becker and Tomes 1979, Han and Mulligan 2001, Solon 2004]

- Inequality is negatively correlated with intergenerational mobility across countries [e.g. Corak 2013]

Spatial Correlates of Upward Mobility
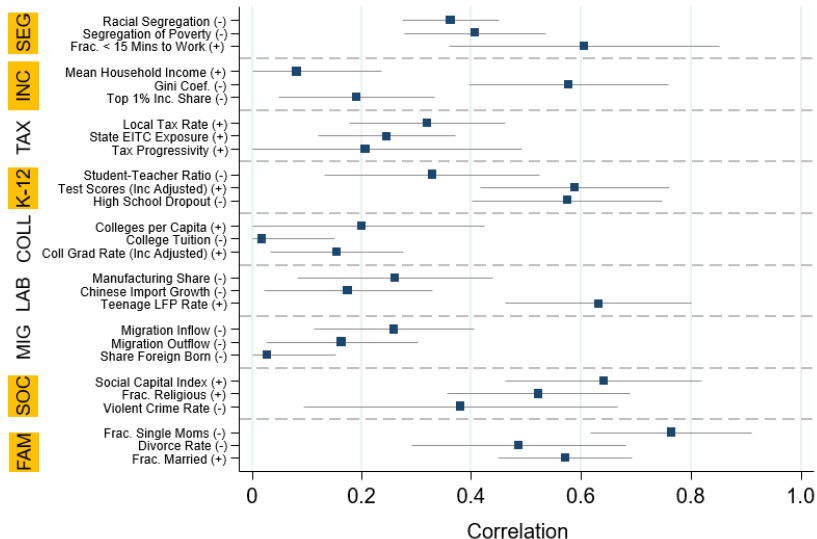
Conclusion

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- ▶ Why is it important?
  - ▶ Substantial variation in intergenrational mobility within the US, which is vital to our understanding of the social mobility.
    - ▶ Implies CZ-level neighborhood effects are 60% as large as parent-child income correlation
  - ▶ Intergenerational mobility is shaped by environment and may therefore be manipulable (not pure genetics)
  - ▶ Scope of making informed and targeted policy choices at an early age for socially disadvantaged kids. For instance, better neighbourhood, better local schools, instead of focusing just on labour markets
- ▶ Key questions moving forward
  - ▶ Is the variation due to differences in people (sorting) or places?
  - ▶ What are the causes? What could be potential policy implications?