Intergenerational Income Mobility and the Role of Family Background in the US and Europe

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November 28, 2010
Outline

1. Introduction
2. Describing family associations in income
3. Cross-national evidence on family associations
4. Drivers of family associations in income
5. Concluding remarks
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Why be concerned?

- relation to equality of opportunity
  Family background is not chosen, so great importance of it may violate equality of opportunity.

- other social effects
  E.g. strong intergenerational class persistence → strong political left [Erikson and Goldthorpe, 1992].

- causal effects of parental income or other parental factors on socio-economic position of offspring
  Can point to policy interventions.
The evolution of estimates of income persistence in the US

- Karl Marx and Milton Friedman: US mobility high.
- Gary Becker: correlation on the order of .10 (in log income or wealth), mobility high.
- Gary Solon; David Zimmerman; Joseph Altonji and Thomas Dunn (early 1990s): persistence on the order of 0.4: mobility much lower than previously believed
- Björklund and Jäntti (1997): Sweden has lower persistence than US (stat. insign.)
- [Jäntti et al., 2006] [Bratsberg et al., 2007]; [Raaum et al., 2007].
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4 Drivers of family associations in income

5 Concluding remarks
Describing intergenerational associations

- approaches:
  - log-linear regression $y_s = \alpha + \beta y_f + \epsilon$
    - $\beta$ is the intergenerational elasticity (IGE)
    - requires long-run income on RHS (not left) as long as both $y_s$ and $y_f$ for each individual are unbiased estimates of long-run income;
  - the correlation coefficient $\varrho = \sigma_f / \sigma_s \beta$
    - requires long-run income of both $s$ and $f$; abstracts from marginal distributions
  - “flexible” regressions (splines; non-parametric regression; quantile regressions)
    - measurement problems apply here too; use of these depends on purpose of study
  - transition matrices
ditto
Describing sibling associations

- the sibling correlation: let sibling $j$ in family $i$ have income

  \[ y_{ij} = \mu + a_i + b_{ij}, \quad \sigma_y^2 = \sigma_a^2 + \sigma_b^2. \]  

- the share of the overall variance due to family, the sibling correlation, is

  \[ \rho = \frac{\sigma_a^2}{\sigma_a^2 + \sigma_b^2} \]  

- what siblings share depends on parental income and other family characteristics, so that we have

  \[ a_i = \beta y_i^f + z_i \quad \Rightarrow \quad y_{ij} = \beta y_i^f + z_i + b_{ij} \]

  \[ \Rightarrow \quad \rho = \beta^2 + \sigma_z^2 \]
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Evidence on intergenerational associations
Evidence on intergenerational associations: remarks

- well-known patterns: US high, Nordic countries low persistence
- less well-known: France and Italy high persistence; Australia, Canada, Germany low and UK in between
- estimates based on survey data tend to have very wide confidence intervals
- the inequality of the marginal distributions has moved in different directions
## A mobility matrix: US(NLSY)

**USNLSY** (n = 1798)

<table>
<thead>
<tr>
<th>Father</th>
<th>Son</th>
<th>oq1</th>
<th>oq2</th>
<th>oq3</th>
<th>oq4</th>
<th>oq5</th>
</tr>
</thead>
<tbody>
<tr>
<td>fq1</td>
<td></td>
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Markus Jäntti (ÅA)
Corner probabilities
Trends

- Little evidence on changes in US IGE
- Conflicting evidence for UK 1958-1970 (IGE may have increased, class mobility did not)
- Sweden: 1932-1950: increased mobility
- Finland 1930-1950: increased mobility
Evidence on sibling associations
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Non-linearities in father-son dependence: US

Non-linearities in father-son dependence: Norway

### Persistence across the distribution

<table>
<thead>
<tr>
<th></th>
<th>De</th>
<th>Fi</th>
<th>No</th>
<th>UK</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Linear model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elasticity</td>
<td>0.121</td>
<td>0.189</td>
<td>0.156</td>
<td>0.450</td>
<td>0.542</td>
</tr>
<tr>
<td><strong>Nonlinear model</strong>: at indicated percentile</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At 10th</td>
<td>0.063</td>
<td>0.138</td>
<td>0.168</td>
<td>0.346</td>
<td>0.489</td>
</tr>
<tr>
<td>At 50th</td>
<td>0.241</td>
<td>0.259</td>
<td>0.281</td>
<td>0.424</td>
<td>0.575</td>
</tr>
<tr>
<td>At 90th</td>
<td>0.312</td>
<td>0.339</td>
<td>0.368</td>
<td>0.531</td>
<td>0.646</td>
</tr>
</tbody>
</table>
Father-son and brother correlations compared
Policy interventions

- Comprehensive school reform in Sweden, Finland had sizeable impact on IGE
Comprehensive school reform in Finland
Impact on sibling and intergenerational correlations compared

Prior to comprehensive school

<table>
<thead>
<tr>
<th>( \rho )</th>
<th>( \beta^2 )</th>
<th>( \sigma_z^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.321</td>
<td>0.298</td>
<td>0.232</td>
</tr>
</tbody>
</table>

\[ \Leftrightarrow \quad 0.321 = 0.298 + 0.232 \]

\[ \Leftrightarrow \quad 100.0\% = 27.7\% + 72.3\% \]

After comprehensive school

<table>
<thead>
<tr>
<th>( \rho )</th>
<th>( \beta^2 )</th>
<th>( \sigma_z^2 )</th>
</tr>
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<tr>
<td>0.226</td>
<td>(0.298 − 0.066)^2</td>
<td>0.172</td>
</tr>
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\[ \Leftrightarrow \quad 0.226 = (0.298 - 0.066)^2 + 0.172 \]

\[ \Leftrightarrow \quad 0.226 = 0.232^2 + 0.172 \]

\[ \Leftrightarrow \quad 0.226 = 0.054 + 0.172 \]

\[ \Leftrightarrow \quad 100.0\% = 23.9\% + 76.1\% \]
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- country order on strength of association may change after intergenerational correlations and sibling correlations provided for more countries
- the role of women is largely unexplored in comparative literature [Raaum et al., 2007] (women’s mobility; the role of women’s labor market association)
- the role of differences in family structure
- trends in intergenerational associations
- comparative evidence on mechanisms
Concluding remarks


