What about immigration?
An analysis of the closed-population assumption in research on intergenerational income mobility

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Main question

• Is there an association of intergenerational mobility with immigration and emigration?

• When estimating intergenerational mobility
  – Several years of income during the middle-age of parents need to be linked to several years of income during the middle-age of their children

• Studies on intergenerational income mobility are underrepresenting 1st and 2nd generations and undocumented immigrants (Chetty et al. 2020; Corak 2006, 2013; Grusky, Smeeding, Snipp 2015)
Closed-population assumption

• Underrepresentation of foreign stock in studies of intergenerational mobility
  – Adequate data on income for parental generation of immigrants is more likely to be missing
  – Difficult to capture income of parents of immigrants around the world

• Ignoring foreign stock generates inaccurate estimates pertinent to public policy debates
  – Due to increases in U.S. immigration after 1965, 1st and 2nd generations of immigrants compose around 25% of the population in the country (Trevelyan et al. 2016)
Biased estimates

• Differentials in 2nd generation income mobility are significant across countries
  – 1.5th and 2nd generations have higher levels of intergenerational mobility in the U.S. (Chetty et al. 2020; Farley, Alba 2002; Glick, Hohmann-Marriott 2007)
  – High levels of socioeconomic attainment in Canada, Australia, and the U.K. (Imoagene 2012; Liu 2014; Ngyuen et al. 2020)
  – Opportunities are more limited in France (Simon 2003; Algan et al. 2010), Netherlands (Crul 2000), Germany (Worbs 2003; Schneider, Lang 2014), and Denmark (Rytter 2011)

• Underrepresentation of 2nd generation could bias the results of cross-national comparisons
Immigration and emigration

- Immigration may affect intergenerational mobility for 3+ generation workers to the extent that their wages and employment are impacted (Borjas 2014; Borjas, Grogger, Hanson 2010; Card, Peri 2016; Hunt, Gauthier-Loiselle 2010; Kim, Sakamoto 2013; Ottoviano, Peri 2012)

- Emigration might benefit mobility for workers who do not emigrate (Aydemir, Borjas 2007)
Exploratory OLS models

- **Dependent variable:** *mobility for 3+ generation*
  - Intergenerational income elasticity (IGE) from regressions of child income to parental income
  - **Higher IGE means less intergenerational mobility**
  - Data from publications for 20 countries after 2001

- **Independent variables:** *migration*
  - Proportion of immigrants (primary educated)
  - Proportion of emigrants (overall and tertiary educated)

- **Control for differences in data and methodology**
  - Fixed effects for publications
  - Standard errors for intragroup correlation within publications
<table>
<thead>
<tr>
<th>Countries</th>
<th>Sample size</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Australia</td>
<td>12</td>
<td>9.23</td>
</tr>
<tr>
<td>2 Brazil</td>
<td>2</td>
<td>1.54</td>
</tr>
<tr>
<td>3 Canada</td>
<td>21</td>
<td>16.15</td>
</tr>
<tr>
<td>4 Chile</td>
<td>1</td>
<td>0.77</td>
</tr>
<tr>
<td>5 Denmark</td>
<td>18</td>
<td>13.85</td>
</tr>
<tr>
<td>6 Finland</td>
<td>4</td>
<td>3.08</td>
</tr>
<tr>
<td>7 France</td>
<td>3</td>
<td>2.31</td>
</tr>
<tr>
<td>8 Germany</td>
<td>4</td>
<td>3.08</td>
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<tr>
<td>9 Italy</td>
<td>3</td>
<td>2.31</td>
</tr>
<tr>
<td>10 Japan</td>
<td>1</td>
<td>0.77</td>
</tr>
<tr>
<td>11 New Zealand</td>
<td>1</td>
<td>0.77</td>
</tr>
<tr>
<td>12 Norway</td>
<td>4</td>
<td>3.08</td>
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<tr>
<td>13 Peru</td>
<td>1</td>
<td>0.77</td>
</tr>
<tr>
<td>14 Singapore</td>
<td>1</td>
<td>0.77</td>
</tr>
<tr>
<td>15 South Africa</td>
<td>2</td>
<td>1.54</td>
</tr>
<tr>
<td>16 Spain</td>
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<td>17 Sweden</td>
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<td>3.08</td>
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<tr>
<td>18 Switzerland</td>
<td>1</td>
<td>0.77</td>
</tr>
<tr>
<td>19 United Kingdom</td>
<td>13</td>
<td>10.00</td>
</tr>
<tr>
<td>20 United States</td>
<td>25</td>
<td>19.23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>130</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Source: OECD and mobility measures from a series of publications.
## Effects on intergenerational income elasticity (IGE)

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Model 1 (Beta)</th>
<th>Model 1 (Beta)</th>
<th>Model 2 (Beta)</th>
<th>Model 2 (Beta)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.379***</td>
<td>0.356***</td>
<td>0.067</td>
<td>0.050</td>
</tr>
<tr>
<td></td>
<td>(0.023)</td>
<td>(0.023)</td>
<td>(0.171)</td>
<td></td>
</tr>
<tr>
<td>Proportion of immigrants (primary educated)</td>
<td>0.036</td>
<td>0.027</td>
<td>0.050</td>
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</tr>
<tr>
<td></td>
<td>(0.174)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of emigrants</td>
<td>−1.847***</td>
<td>−0.323</td>
<td>−1.014**</td>
<td>−0.265</td>
</tr>
<tr>
<td></td>
<td>(0.522)</td>
<td></td>
<td>(0.464)</td>
<td></td>
</tr>
<tr>
<td>Proportion of emigrants (tertiary educated)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed effects for publications</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>R²</td>
<td>0.454</td>
<td>0.434</td>
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</tr>
<tr>
<td>Adjusted R²</td>
<td>0.336</td>
<td>0.311</td>
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</tr>
<tr>
<td>Observations</td>
<td>130</td>
<td>130</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** Significant at p<0.01. ** Significant at p<0.05. * Significant at p<0.1.

Source: OECD and mobility measures from a series of publications.
Summary of findings

• Larger proportions of emigrants may free up employment opportunities for those who did not emigrate

• We are unaware of any study of the IGE that mentions migration as a substantive issue

• We highlight theoretical and methodological implications of the closed-population assumption
  – Ignoring foreign stock seems unrealistic to understand intergenerational mobility in countries with significant levels of migration
  – Cross-national comparisons are compromised, because of different openness to immigration
  – These studies should clarify that they are about the 3+ generation, not the whole population
Simulations

• Simulation methods could use census-level information about distribution of immigrant and native groups in a population

• Compute expected IGE estimates for the full population based on group-specific rates

• Compare these simulations with IGE values based on only the 3+ generation
Middle-age vs. childhood income

- Middle-age income has been used as the “permanent income” in intergenerational mobility
  - However, parental income at later years has smaller associations with offspring income than parental income when offspring was a child (Chen, Song 2019)

- Childhood income may overstate intergenerational mobility (Black, Devereux 2011; Mazumder 2005)
  - Incomes of 1st generation may be substantially higher than parental income when they were children (Kaestner, Malamud 2014; Kim, Sakamoto 2010; Massey, Redstone-Akresh 2006)
  - But childhood income permits inclusion of immigrants into the conceptualization of intergenerational mobility
References


