Divided Landscapes of Economic Opportunity

The Canadian Geography of Intergenerational Mobility

Miles Corak
Graduate School of Public and International Affairs
University of Ottawa, Ottawa Canada
MilesCorak.com @MilesCorak

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For children from almost all 266 Census Divisions, average adult income is higher than average parent income.
Three measures of intergenerational mobility we care about

1. incomes

\[ \ln Y_{i,t} = \alpha_j + \beta_j \ln Y_{i,t-1} + \varepsilon_{i,j} \]

average incomes of children from different communities vary for at least three statistical reasons related to differences in:

- **absolute income mobility** (\(\alpha_j\)): the overall change in average adult income of all children compared to the average of their parents
- **relative income mobility** (\(\beta_j\)): how much the gap between parent incomes is closed in the next generation
- **average community income** (\(\bar{Y}_{t-1}\)): differences in the average parent incomes
The expected percentile rank of bottom half children varies across Census Divisions from less than 30 to over 50.

Expected percentile rank of children with parents in the bottom half
Three measures of intergenerational mobility we care about

1. incomes

2. position

\[ y_{i,t} = a_j + b_j y_{i,t-1} + \epsilon_{i,j} \]

the average rank in the national income distribution of children from different communities depends upon:

- **absolute rank mobility** \((a_j)\): how much a child born to bottom ranking parents rises
- **relative rank mobility** \((b_j)\): how much the rank of a child increases for higher ranking parents
The intergenerational cycle of bottom income

Probability of staying in the bottom quintile for men and women having bottom quintile parents:
- 0.40 or higher
- 0.35 to 0.40
- 0.30 to 0.35
- 0.25 to 0.30
- 0.20 to 0.25
- Less than 0.20
Rags to riches mobility

Probability of moving to the top quintile for men and women having bottom quintile parents:

- 0.20 or more
- 0.15 to 0.20
- 0.10 to 0.15
- 0.05 to 0.10
- 0.025 to 0.05
- less than 0.025

Map showing the probability of moving to the top quintile for men and women having bottom quintile parents across different regions in Canada.
Three measures of intergenerational mobility we care about

1. incomes

2. position

3. upward mobility, avoiding poverty

- **rags to riches** ($P_{1,5}$): moving to the top, given bottom income parents
- **the cycle of poverty** ($P_{1,1}$): staying in the bottom, given bottom income parents
- **the cycle of privilege** ($P_{5,5}$): staying in the top, given top income parents
Three measures of intergenerational mobility we care about

1. Income mobility **Regression to the mean of incomes**
   - Absolute: $\alpha_j$ least squares estimate of intercept
   - Relative: $\beta_j$ least squares estimate of slope
   - Average income: $\bar{Y}_j$ average permanent income of parents

2. Rank Mobility **Percentile rank-rank regression**
   - Absolute: $a_j$ least squares estimate of intercept
   - Relative: $b_j$ least squares estimate of slope

3. Directional mobility **Cells of quintile transition matrix**
   - Rags to riches: $P_{1,5}$ conditional probability of top income
   - Intergenerational low income: $P_{1,1}$ conditional probability of bottom income
   - Intergenerational privilege: $P_{5,5}$ conditional probability of top income
Table 1: Average child and parent ‘family’ incomes by province

<table>
<thead>
<tr>
<th>Province/Territory</th>
<th>Number of Children</th>
<th>Child Income</th>
<th>Parent Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newfoundland and Labrador</td>
<td>84,050</td>
<td>45,900</td>
<td>29,400</td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>16,750</td>
<td>45,600</td>
<td>30,750</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>112,900</td>
<td>45,350</td>
<td>35,150</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>91,500</td>
<td>44,200</td>
<td>32,850</td>
</tr>
<tr>
<td>Quebec</td>
<td>796,650</td>
<td>50,800</td>
<td>39,700</td>
</tr>
<tr>
<td>Ontario</td>
<td>1,057,550</td>
<td>57,950</td>
<td>44,250</td>
</tr>
<tr>
<td>Manitoba</td>
<td>122,150</td>
<td>48,550</td>
<td>36,500</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>122,500</td>
<td>56,550</td>
<td>39,750</td>
</tr>
<tr>
<td>Alberta</td>
<td>284,550</td>
<td>65,200</td>
<td>48,550</td>
</tr>
<tr>
<td>British Columbia</td>
<td>304,250</td>
<td>53,200</td>
<td>47,200</td>
</tr>
<tr>
<td>Yukon</td>
<td>2,950</td>
<td>50,700</td>
<td>42,450</td>
</tr>
<tr>
<td>Northwest Territories, Nunavut</td>
<td>7,150</td>
<td>46,100</td>
<td>29,050</td>
</tr>
<tr>
<td>Canada</td>
<td>3,002,950</td>
<td>54,500</td>
<td>42,050</td>
</tr>
</tbody>
</table>

Note: Numbers are weighted totals, incomes expressed in 2014 dollars, and everything rounded to the nearest 50.
Clustering communities with unsupervised machine learning
The landscape of “us and them”
Four divides in the landscape of economic opportunity

Census Division Clusters (determined by Hierarchical Agglomerative Clustering)

- 1
- 2
- 3
- 4
- unclassified
Correlates of economic opportunity

Poverty rate in the parent's generation
(Percent of population in the Census Division below the LICO)

Probability of intergenerational low income

Number of Children in bottom quintile families
Public policy for economic opportunity

Demand side policy

1. The nature of growth and income security policy
2. Cities as poles of inclusive growth
   - Toronto, no more?
   - diversity of employment opportunities
   - public goods and non monetary aspects of well-being

Supply side policy

1. some First Nations communities
2. boys in lower income families
3. education
4. geographic mobility as human capital
5. immigration
   - age at arrival
   - access to jobs, implicit bias, TFW
Miles Corak
University of Ottawa
@MilesCorak
The full paper and associated appendices are available
MilesCorak.com/equality-of-opportunity