Abstract

Previous literature has focused on combining national accounts data with household survey data to build a world income distribution and calculating inequality index based on that. However, it is subjected to inaccuracy and errors. This study uses night lights data (1992-2013) as a proxy for economic activities to build a uniform world income distribution. Since night lights cover almost all the inhabitant areas, for the first time, we can build a world income distribution on the same scale. Once the world income distribution is established, inequality index can be calculated accordingly. Using coefficient of variation (CV) as the measure of inequality, this study shows that overall world inequality tends to drop slightly over 1992-2002, but increases dramatically after that and becomes stable after 2009. Between-country inequality accounts for a bigger share in the overall inequality, but the overall inequality pattern is driven by within-country inequality. Preliminary regression results show that foreign aid tends to decrease between-country inequality while increase within-country inequality.

\[
\text{Inequality}_{t} = \alpha + \beta \ast a\text{id}_{t} + \epsilon_{t}
\]

<table>
<thead>
<tr>
<th>Aid (constant)</th>
<th>Overall</th>
<th>Between</th>
<th>Within</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 US$</td>
<td>5.66e-14</td>
<td>-2.67e-14**</td>
<td>8.32e-14*</td>
</tr>
<tr>
<td>(3.64e-14)</td>
<td>(1.20e-14)</td>
<td>(4.13e-14)</td>
<td></td>
</tr>
</tbody>
</table>

- \( N = 22 \)
- Adj R-squared: 0.0632, 0.1572, 0.1270
- p-value of F test: 0.1357, 0.0383, 0.0577

\[
\text{Inequality}_{it} = \alpha + \beta \ast a\text{id}_{it} + \delta X_{it} + \epsilon_{it}
\]

- \( \text{Adj R-squared} = 0.9617 \)
- p-value of F test: 0.0000

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