Impact of industrial change on skills during economic transition in Central and Eastern Europe

Žilvinas Martinaitis, Aleksandr Christenko, Pijus Krūminas, Agnė Paliokaitė

Visionary Analytics (Lithuania)

The project is funded by Research Council of Lithuania (grant no: Nr. S-MOD-17-20).
Literature and research question

• Early transition of literature: expected smooth reallocation of labour;

• Subsequent studies: inherited skills were too specific and not useful. Therefore:
  – Significant outflows from the labour market + structural unemployment;
  – Decline in returns to experience and education acquired prior to transition;

Research question: to what extent has change in the structure of economy resulted in change in of skills or inter-generational change of workers?
Theoretical model: skill specificity problem

- The literature argues that narrow specific skills obstructed movement of labour.
- However, if we use Becker’s definition of specific skills, we get a tautology.

- Proposed approach: $\tau_{ij} = \eta_j + \lambda_A + \lambda_B + \lambda_C + \lambda_n$
Theoretical model: restructuring and change in skills
Obtaining deeper skill B: importance of human capital productivity
Data and operationalisation

• Life in Transition Survey (LiTS) carried out by the EBRD in 2006;
• Question on all job changes since 1989 (possible recall bias)
• 9 CEE countries: BG, CZ, EE, HU, LV, LT, PL, RO, SK;
• Change in skills:
  – Moderate reskilling: change of jobs within same occupational group (ISCO1 → ISCO1);
  – Reskilling: change of jobs within similar set of occupational groups (ISCO1 → ISCO2);
  – Deskilling: movement to lower occupational group (ISCO 2 → ISCO 4);
  – Upskilling: movement to higher occupational group (ISCO 4 → ISCO 2).
Findings: movement from manufacturing to services?

Persons in services in 2004=100%. What were they doing in 1989?

100 % = entrants from other sectors

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>New entrants not employed prior to transition</td>
<td>42.8%</td>
</tr>
<tr>
<td>Entrants from other sectors</td>
<td>8.2%</td>
</tr>
<tr>
<td>Still employed in the service sector</td>
<td>19.9%</td>
</tr>
<tr>
<td>Still employed at the same job</td>
<td>29.1%</td>
</tr>
</tbody>
</table>

- Same occupation: 35.45%
- Reskilled: 25.40%
- Upskilled: 22.22%
- Deskilled: 16.93%
Movement from manufacturing to other sectors?

Persons employed in manufacturing in 1989=100%. What was their status in 2004.

- Left labour market at retirement age: 18.2%
- Left labour market pre retirement age: 62.1%
- Moved to services: 14.5%
- Moved to other sectors: 5.2%
Which individuals prematurely left labour market?

Table 7. Ordinary Least Squares regression; dependent variable: no of years individuals did not exit labour market during transition

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-ratio</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>12.2265</td>
<td>0.494766</td>
<td>24.7116</td>
<td>&lt;0.0001 ***</td>
</tr>
<tr>
<td>Age in 2004</td>
<td>-0.211885</td>
<td>0.00616133</td>
<td>-34.3895</td>
<td>&lt;0.0001 ***</td>
</tr>
<tr>
<td>Education level</td>
<td>0.179866</td>
<td>0.0182519</td>
<td>9.8547</td>
<td>&lt;0.0001 ***</td>
</tr>
<tr>
<td>Mothers education level</td>
<td>-0.0947648</td>
<td>0.0148011</td>
<td>-6.4025</td>
<td>&lt;0.0001 ***</td>
</tr>
<tr>
<td>GDP per capita*</td>
<td>0.000488207</td>
<td>1.5839e-05</td>
<td>30.8231</td>
<td>&lt;0.0001 ***</td>
</tr>
<tr>
<td>Services</td>
<td>0.575547</td>
<td>0.145373</td>
<td>3.9591</td>
<td>&lt;0.0001 ***</td>
</tr>
<tr>
<td>High skilled white collar workers</td>
<td>0.301654</td>
<td>0.120973</td>
<td>2.4936</td>
<td>0.0127 **</td>
</tr>
<tr>
<td>Male</td>
<td>0.306699</td>
<td>0.120137</td>
<td>2.5529</td>
<td>0.0107 **</td>
</tr>
</tbody>
</table>

N = 3853
Conclusions

• Relatively little re/de/up skilling has taken place;

• Is this driven by:
  – Low “inherited” human factor productivity;
  – Scale of change;
  – Absence of state intervention;
  – Deficiencies in our data set?