New Technologies, Jobs, Growth and Development

Some remarks

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• David Autor's nuanced view on what we learn from the past about employment and productivity gains
  – Will it be the same story with the forthcoming (??) revolution?

• No doubt on initial negative desequilibrating effects of technological change on employment ... and the convergence towards a new equilibrium

• Doubts about how long and how painful the transition will be.
Issues

• Nature of new jobs and what kind of restructuration of the labor force will be involved?
• Will part of the income effect of the technical revolution be absorbed by shorter working time or less participation?
• The crucial distributional dimensions of the transition
  a) Distribution of the gains: rents vs. wages
     "Who owns the robots ?"
  b) More wage inequality
     Lower wages in contracting jobs and higher wages in expanding ones
  c) The need for enhanced redistribution and social assistance system – unemployment insurance, minimum income guarantee, retraining facilities, ..
  d) The geographical dimension of the adjustment
Illustration: the slow acceleration of growth and the rise in inequality in the first industrial revolution

Table 3  Sources of Economic Growth
(Growth rates, per cent, per year)

<table>
<thead>
<tr>
<th>Year</th>
<th>Capital Stock</th>
<th>Labour Force</th>
<th>Total Factor Inputs</th>
<th>Output (GDP)</th>
<th>Total Factor Productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1700-1760</td>
<td>0.7</td>
<td>0.3</td>
<td>0.4</td>
<td>0.7</td>
<td>0.3</td>
</tr>
<tr>
<td>1760-1800</td>
<td>1.0</td>
<td>0.8</td>
<td>0.8</td>
<td>1.0</td>
<td>0.2</td>
</tr>
<tr>
<td>1801-1831</td>
<td>1.5</td>
<td>1.4</td>
<td>1.3</td>
<td>2.0</td>
<td>0.7</td>
</tr>
<tr>
<td>1831-1860</td>
<td>2.0</td>
<td>1.4</td>
<td>1.5</td>
<td>2.5</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Source: Crafts [1], p.81. Note: Land is not shown separately, but is included in col. (3).

Fig. 1. Income inequality trends in the UK since 1688. (Sources: See text and the notes to Table 1.)

Source: Lindert (2000)
Where do we stand in the present (?) revolution?

• Difficulty to distinguish between technological change and globalization in recent evolution
• Decreasing labor share
• Job polarization
• Increase in wage inequality – although heterogeneous across countries
• Increasing precarity of employment in low-skill jobs

At the same time... apparent delay in picking up of growth
Implications for developing countries

• Automation likely to produce less effects in countries where labor is cheap

• But automation elsewhere likely to reduce the need for labor intensive production in low-income countries
  – Labor intensive industrialization not a development engine anymore

• Diffusion of 'mobile' technology in the developing world suggests there may be gains in the next steps of the technological evolution
  – Unclear they could unveil a new 'development engine'
Conclusion

BE PREPARED!