Complementary Policy for ICT

Erik van der Marel
ECIPE, SIIA, DIGITALEUROPE
Seminar, December 4, 2015
Study, two parts

• ICT / software for wider “downstream” economy*
  • Productivity

• ICT sector’s competitiveness itself
  • Value-added (traded)
Productivity growth

• Productivity (TFP) lagging in EU
  • Particularly in Business services (Corrado and Jager, 2014; etc...)

• ICT is one of the factors that may play a role (van Ark et al., 2009)
  • Intangible capital of ICT is *software* (intan-invest)

• Is there a link between ICT/software and productivity?
Productivity growth across EU

<table>
<thead>
<tr>
<th>Sector</th>
<th>Software investment in GDP</th>
<th>TFP growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agri</td>
<td>-0.7</td>
<td>1.9</td>
</tr>
<tr>
<td>Mining</td>
<td>0.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Manuf</td>
<td>1.4</td>
<td>1.1</td>
</tr>
<tr>
<td>Utilities</td>
<td>0.4</td>
<td>0.5</td>
</tr>
<tr>
<td>Constr</td>
<td>-0.6</td>
<td>1.2</td>
</tr>
<tr>
<td>Trade</td>
<td>0.9</td>
<td>2.1</td>
</tr>
<tr>
<td>Services</td>
<td>1.5</td>
<td>-0.4</td>
</tr>
<tr>
<td>Fin</td>
<td>1.3</td>
<td>4.5</td>
</tr>
</tbody>
</table>
Productivity in EU Business services

![Graph showing productivity trends in Business services and Computer / Software services from 1995 to 2010. The graph indicates a significant increase in productivity for both categories, with a notable spike in 2007.]
Productivity growth & software

• Does ICT / software play any role?
  • Economist think yes, but how?
  • Van Ark (2014): “Third generation” of ICT diffusion

• Software stocks varies a lot between EU countries
Software stock per EU country
Complementary policies

• However, software unlikely to sole factor to explain TFP

• Why is one country better able to capitalize on software?
• Have to look at other policies, so effects of software are “unleashed”
  • Bertelsman et al. (2010, 2008); OECD (2013)
No clear pattern between TFP and Software
Complementary role

• Study looks at these complementary policies

• Distinguishes between levels and growth rates of productivity
  • Productivity in the “wider” downstream economy
Complementary policies: TFP level

- Temporary employment protection
- Product Market Regulations
- Patent applications non-residents
- Private sector credit
- R&D expenditure as % GDP (OECD)
- Share R&D financed by abroad
- R&D expenditure as % GDP (WDI)
Complementary policies: TFP growth

- Temporary employment protection (3)
- Trade secret protection index
- Procedure required to start business
- Temporary employment protection (1)
- Private sector credit
Conclusion

• Software in combination with other policies
  • ICT / software unleashed to be productive
  • Software as an enabler of the economy for growth

• Could enhance productivity particularly in services?

• Policy: DSM and services de-regulation