Localisation, Globalisation & ICTs

The role, conditions and impact of technology on global welfare

A design for a paper to be submitted to the World Summit on the Information Society November 2005

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Locality vs Globality

- **Locality**
  - A feeling
  - Feature of social life
  - Ideology of local community
  - Habitus
    - Bourdieu, 1977

- **Globality**
  - Global village & Homogenisation of culture
    - McLuhan & Powers, 1989
  - No sense of place
    - Meyrowitz, 1985
  - Death of Distance
    - Cairncross, 1997
  - unbound
  - Culture constructs & deconstructs social relations
    - Crane, Kawashima & Kawasaki, 2002

Dialectic tension between cultural homogenisation & cultural heterogenisation
Appadurai, 1996
Dimensions & Impact of Globalisation

Globalisation:

- Ethnic
- Media
- Technology
- Financial
- Ideological

Narrow down to two research questions:
(1) How technology impacts welfare GDP/capita?
(2) What are the conditions for a positive impact?
Available Data Sources

• **UN Human development index**
  - Life expectancy
  - Enrolment
  - GDP/Capita
  • Critique
    - Srinivasan (1994)
    - Lüchters & Menkhoff, 1996
  • Support
    - Sen (2000)

• **Social Indicators & comparisons of living standards**, Dorwick, Dunlop, & Quiggin, 2003
  - Revealed preferences

• **Data on the Infostate** (Sciadas, 2003)
  - Info-density
    - Infrastructure
    - Info skills (also Archbugi & Coco, 2003)
  - Info-use
    - Info uptake
    - Info intensity

• **Governance matters** (Kaufmann, Kraay, & Mastruzzi, 2003) Voice and accountability
  - Political Stability
  - Government effectiveness
  - Regulatory Quality
  - Rule of law
  - Control of Corruption

• **World Development Indicators**
  - Economic Structure
  - Non-ICT’s (Technology)
  - etc
Type of Data

- Observations on all UN member states
- For some years: typically 1995(6) – 2001(2)
- Missing variables

Possible Quantitative methods:
- Factor analysis to reduce data bunch
- Regression analysis (with restrictions on parameters)
- Others?
### The Human Development Indicator

<table>
<thead>
<tr>
<th></th>
<th>High-ranked countries&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Medium ranked countries&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Low ranked countries&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HDI average</strong></td>
<td>2001</td>
<td>2001</td>
<td>2001</td>
</tr>
<tr>
<td><strong>HDI Stand dev</strong></td>
<td>0.88</td>
<td>0.70</td>
<td>0.41</td>
</tr>
<tr>
<td>Number</td>
<td>55</td>
<td>86</td>
<td>34</td>
</tr>
</tbody>
</table>

### The Infostate Indicator

<table>
<thead>
<tr>
<th></th>
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<tr>
<td><strong>INFOX average</strong></td>
<td>2001</td>
<td>2001</td>
<td>2001</td>
</tr>
<tr>
<td><strong>INFOX Stand dev</strong></td>
<td>0.66</td>
<td>0.22</td>
<td>0.07</td>
</tr>
<tr>
<td>Number of countries</td>
<td>50</td>
<td>56</td>
<td>25</td>
</tr>
</tbody>
</table>
HDI vs Infostate UN Member states 2001

Kernel Fit (Normal, \( h = 0.1500 \), degree = 2)
Some preliminary regressions (1)

\[ hdi_i - (hdi_i)_{-1} = \alpha (hdi_i)_{-1} + \beta + \gamma (dist_i) \]

<table>
<thead>
<tr>
<th>2001-1995</th>
<th>Past welfare ((\alpha))</th>
<th>Average cumulative growth ((\beta))</th>
<th>Core-periphery effect ((\gamma))</th>
<th>(R^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All countries</td>
<td>-0.212</td>
<td>0.227</td>
<td>-0.131</td>
<td>0.186</td>
</tr>
<tr>
<td></td>
<td>(-5.68)</td>
<td>(6.28)</td>
<td>(5.82)</td>
<td></td>
</tr>
<tr>
<td>High ranked</td>
<td>-0.479</td>
<td>0.468</td>
<td>-0.233</td>
<td>0.539</td>
</tr>
<tr>
<td></td>
<td>(-6.42)</td>
<td>(6.65)</td>
<td>(-5.33)</td>
<td></td>
</tr>
<tr>
<td>Medium ranked</td>
<td>-0.347</td>
<td>0.380</td>
<td>-0.227</td>
<td>0.295</td>
</tr>
<tr>
<td></td>
<td>(-4.93)</td>
<td>(-5.41)</td>
<td>(-5.22)</td>
<td></td>
</tr>
<tr>
<td>Low ranked</td>
<td>-0.957</td>
<td>1.301</td>
<td>-1.004</td>
<td>0.919</td>
</tr>
<tr>
<td></td>
<td>(-18.44)</td>
<td>(17.51)</td>
<td>(-22.8)</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion:

(1) \(\beta\)-Convergence
(2) High Growth in low ranked countries
(3) … but the distance to the core really matters very much
Some preliminary regressions (2)

\[ hdi_t - (hdi)_{t-1} = \alpha (hdi)_{t-1} + \beta + \gamma (dist_t) + \delta (inx - (inx)_{t-1}) \]

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<th>Average cumulative growth ((\beta))</th>
<th>Core-periphery effect ((\gamma))</th>
<th>Infostate effect ((\delta))</th>
<th>(R^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All countries</td>
<td>-0.222</td>
<td>0.229</td>
<td>-0.126</td>
<td>0.06</td>
<td>0.207</td>
</tr>
<tr>
<td></td>
<td>(-5.71)</td>
<td>(6.18)</td>
<td>(5.58)</td>
<td>(1.75)</td>
<td></td>
</tr>
<tr>
<td>High ranked</td>
<td>-0.442</td>
<td>0.432</td>
<td>-0.220</td>
<td>0.029</td>
<td>0.553</td>
</tr>
<tr>
<td></td>
<td>(-5.78)</td>
<td>(5.96)</td>
<td>(-4.91)</td>
<td>(1.67)</td>
<td></td>
</tr>
<tr>
<td>Medium ranked</td>
<td>-0.367</td>
<td>0.382</td>
<td>-0.202</td>
<td>0.002</td>
<td>0.365</td>
</tr>
<tr>
<td></td>
<td>(-5.56)</td>
<td>(5.83)</td>
<td>(-4.98)</td>
<td>(0.02)</td>
<td></td>
</tr>
<tr>
<td>Low ranked</td>
<td>-0.961</td>
<td>1.283</td>
<td>-0.977</td>
<td>-0.092</td>
<td>0.952</td>
</tr>
<tr>
<td></td>
<td>(-19.38)</td>
<td>(19.20)</td>
<td>(-17.78)</td>
<td>(-1.08)</td>
<td></td>
</tr>
</tbody>
</table>

Conclusion:
(1) \(\beta\)-Convergence
(2) High Growth in the low ranked
(3) … the distance to the core matters less but still very much
(4) …and technology only matters for the high ranked
Cluster analysis

• Hierarchical cluster analysis
  – With 15 variables from three databases
    • Economic structure from WDI
    • Quality of Government from WBI
    • ICT from ITU
  – Yield three or more clusters:
    • WBI variables on quality of Government belong to at least two clusters
    • ITU and WDI belong to one cluster.
More advanced but still preliminary analysis (3)

15 Variables:
- Government Matters:
  - Voice and accountability
  - Political Stability
  - Government Effectiveness
  - Regulatory Quality
  - Rule of Law
  - Control of Corruption
- ICT matters
  - Telephone density
  - Internet density
- The Economy Matters
  - Agriculture % of GDP
  - Manufacturing % GDP
  - Services % of GDP
  - Money (M2) % GDP
  - Gross fixed Capital Formation % GDP
  - Export Goods & Services % GDP
  - Import Goods & Services % GDP

Factor analysis

Three Factors
- Factor 1: Degree of Post Industrialisation (Services, ICTs and Good Governance)
- Factor 2: Openness (International Trade)
- Factor 3: Degree of Industrialisation

Regression

These three factors are explanatory variables for GDP/Cap (in PPP’s 1995 US$)

Result:

\[ \ln(Y) = c + 0.75 F1 + 0.14 F2 + 0.35 F3 \]

R square (adj) 0.85
92 countries in 1996
• Appadurai, A., (1996)  

*A New Indicator of Technological Capabilities for Developed and Developing Countries*, World Development Vol. 32, No 4, p 629-654

• Bourdieu, P., (1977)  

• Cairncross F. (2001)  
The Death of Distance, Harvard University Press, 1997,2001


• Meyrowitz, J,(1985)  
*No Sense of Place: The Impact of Electronic Media on Social Behavior*, Oxford University Press, 1985
