the Lisbon Council
making Europe fit for the future
Biographical pathways in human capital accounting

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Three levers for medium / long term economic performance

1. Create new human capital
2. Utilise human capital
3. Yield high human capital productivity

return on + financial capital = GDP
Human capital index published in 2006 and 2007

'No one has worked out the impact of knowledge like this before.'

The Economist
October 2006
“Your contribution is the highlight of our meeting here – you have helped our understanding where we should place our priorities”
Samuel BA Isaacs – CEO South African Qualifications Authority
Education determines wealth creation

Source: The Race between education and technology, Goldin and Katz 2008
Education determines wealth creation – but how?

<table>
<thead>
<tr>
<th>Period</th>
<th>Labor Productivity</th>
<th>Education Expansion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1915 – 1940</td>
<td>2.45</td>
<td>0.50</td>
</tr>
<tr>
<td>1940 – 1960</td>
<td>2.92</td>
<td>0.49</td>
</tr>
<tr>
<td>1960 – 1980</td>
<td>2.41</td>
<td>0.59</td>
</tr>
<tr>
<td>1980 – 2005</td>
<td>2.18</td>
<td>0.37</td>
</tr>
<tr>
<td>1915 – 2005</td>
<td>2.47</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Source: The Race between education and technology, Goldin and Katz 2008
Introducing:
Learning on the job in human capital accounting

Source: The Human Capital Center Lisbon Council and Deutschland Denken! eV
Introducing:
Talent = a measure of „learning to learn“ capacity

Source: The Human Capital Center Lisbon Council and Deutschland Denken! eV
Current effort: establishing robustness for methodology

The total sample pool of empirical evidence for economic growth

Why?:
NC+FC+SC+HC+Marketization=GDP

NC = Natural Capital is usually irrelevant
FC = in free markets Financial Capital flows to where the Human Capital is
SC = Social Capital is essentially equal

Good data available
Validation space
Supportive data
A business plan for Germany
Massive amounts of human capital investments required in Germany

Source: Deutschland Denken! eV
Our current methodological challenges

Close to resolution:

• Identifying cross-national and cross-temporal markers that allow us to map demographic, economic and educational status onto representative individuals of society (12 biographical pathways)

• Monetization – which discount rates to use?

• Germany as our primary case study

Open Challenges

• Depreciation periods < more empirical insights needed

• Immigration < national statistics are lousy

• Marketization < creating comparable baskets of services consumed, similar to the ppp-accounting
Some Audiences

Economic Policy Committee of the European Finance Ministers

World Bank, Chief Economist Series

OECD Education Department and their INES B expert network from 28 countries

US State Department, Intelligence and Research Bureau

Federal Government of Canada, Policy Research Initiative

Centre d'analyse stratégique of the French Prime Minister's Office

Korea Research Institute for Vocational Education and Training

European Union, Interreg IVb North Sea Region Programme

South African Qualification Authority

City of Madrid
Thank you

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Key data sources we utilized before

Main input data:

• Time spent with children
• Quality of schooling
• Participation in tertiary education
• Time spent on informal education
• Structure of labor- market participation
• Net and gross earnings per hour
• Forgetting curves
• Obsoletion experiences
• ppp values
Several issues

- Data are inconsistent
- Data are survey based and therefore unreliable
- Data are not comparable across countries or not existant
- Data have too much closed-loop causality
- Early invests pay back during which period in the work life?
- How to explain rising incomes long after education is finished?
- How to explain different earnings profiles?
Learning capacity of employees in the European car industry ($r^2 = 0.92$)

<table>
<thead>
<tr>
<th>Country</th>
<th>Learning Capacity</th>
<th>Value Added</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT</td>
<td>73</td>
<td>60</td>
</tr>
<tr>
<td>FR</td>
<td>68</td>
<td>70</td>
</tr>
<tr>
<td>DE</td>
<td>63</td>
<td>80</td>
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<td>IT</td>
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<td>73</td>
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<td>CZ</td>
<td>58</td>
<td>68</td>
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<tr>
<td>PL</td>
<td>20</td>
<td>63</td>
</tr>
<tr>
<td>SK</td>
<td>10</td>
<td>58</td>
</tr>
</tbody>
</table>

Source: Deutschland Denken! eV
Cross company comparison of human capital productivity 2002 – 2006 (Sales in $/HC endowment)

Source: Master Thesis at the Asian Institute of Technology under supervision of Ederer