Firm-level data and productivity measurement

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Productivity growth has been declining over the last decade in advanced economies.

Despite:
- Continuing technological advancements
- Rise in intangible investments (R&D)
- Global integration

Why is this important?
Two extreme interpretations

- **Optimists**
  - It will take time for innovation to spread, but eventually productivity growth will increase again

- **Pessimists** *(a la Professor Gordon)*
  - Today’s innovations are not so revolutionary as electricity or the engine (…social media is a waste of time)

- However….
Motivation 2
Productivity growth is diverging.

Interpretation and research needs

What’s going on?

▷ Is it because the GOOGLEs and other bigs are keeping innovation for themselves?

▷ Or because there are too many firms at the bottom which should exit but are kept alive (zombies)?

▷ The issue is therefore to understand why technological progress is not spreading
  ◇ Barriers to Reallocation
  ◇ Barriers to Entry
  ◇ Competition policies
  ◇ Global constraints?

▷ We need much better data to be able to answer
OUR PROJECT in a nutshell

- use **existing** Business Statistics Databases LINKED in new ways to develop new measures and get a comprehensive understanding of firm heterogeneity

- harmonize databases to allow for cross-country firm-level comparisons along different dimensions
  - Firm choices
  - Market structure;
  - Financial and other constraints
  ➔ (from the above discussion…what are the most important frictions hampering innovation spreading?)

- Build a data infrastructure which is GRANULAR and cross-country homogenous

- Allow researchers to use it independently
THE LINKS WE ARE CREATING

Business Register

- Balance Sheet Data
- R&D Survey
- Innovation Survey
- ICT Survey
- LEED
- IFATS/OFATS
- Trade
- Structural Business Statistics
### EXAMPLE 1

**Intangibles**

<table>
<thead>
<tr>
<th>Type of Intangible Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Computerized Information</strong></td>
</tr>
<tr>
<td>1. Software</td>
</tr>
<tr>
<td>2. Databases</td>
</tr>
<tr>
<td><strong>Innovative Property</strong></td>
</tr>
<tr>
<td>1. Scientific R&amp;D</td>
</tr>
<tr>
<td>2. Non-scientific R&amp;D</td>
</tr>
<tr>
<td><strong>Economic Competencies</strong></td>
</tr>
<tr>
<td>1. Brand equity</td>
</tr>
<tr>
<td>2. Firm-specific resources</td>
</tr>
</tbody>
</table>

Will combine information from various sources

- Balance Sheet Data: Intangible Fixed Assets
- Innovation Data (CIS)
- R&D Survey
- Patent Survey
- ICT Survey
- Structural Business Statistics
- Linked-Employee-Employer Data (LEED)

Source: Corrado, Hulten, Sichel 2009
EXAMPLE 2
Integration in Global Value Chains

<table>
<thead>
<tr>
<th>Attributes of Firms’ International Orientation</th>
<th>Will combine information on</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group Relation</strong></td>
<td>◀ Foreign Affiliates abroad</td>
</tr>
<tr>
<td>• Independent vs dependent</td>
<td>(OFATS)</td>
</tr>
<tr>
<td><strong>Ownership</strong></td>
<td>◀ Foreign owned enterprises</td>
</tr>
<tr>
<td>• Foreign vs domestically owned</td>
<td>(IFATS)</td>
</tr>
<tr>
<td>with/without affiliates</td>
<td>◀ Trade Statistics</td>
</tr>
<tr>
<td><strong>Trading Status</strong></td>
<td>◀ Structural Business</td>
</tr>
<tr>
<td>• Importer/ exporter/ two-way-trader/none</td>
<td>Statistics (SBS)</td>
</tr>
<tr>
<td><strong>Type of traded good/service</strong></td>
<td></td>
</tr>
<tr>
<td>• Intermediate/ final/ consumption good</td>
<td></td>
</tr>
<tr>
<td><strong>International Sourcing</strong></td>
<td></td>
</tr>
<tr>
<td>• Business functions</td>
<td></td>
</tr>
</tbody>
</table>
Toward a cross-country micro-data research infrastructure

- collects metadata
- Provision of metadata
- Access approval
- Disclosure analysis
Conclusion

- Low productivity growth …and high disparity of performance across firms is a concern
- Good news is that there are and increasingly so firms which are over-performing
- Bad news is that we do know VERY LITTLE of why is happening
- More granular data dissecting the winners and the rest is our solution
Thanks for your attention and support
Toward a cross-country micro-data research infrastructure

- Allows researchers to write code modules that make use of a network of NSI partners
  - facilitated data access via remote access/execution for selected projects
  - the metadata, common mapping locations and names of datasets and variable names, allows common code to be run at each site
  - the NSI partners will run the code modules in their country and conduct disclosure analysis
- output is specific to research project, i.e. no collection of 'moments' that will be made available for later use (unlike ESSLait or CompNet)
  - along the lines of Nordic NSI's Database