The CompNet Firms Productivity report 2020

Data Provider Forum

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We are hit by an Epochal crisis and today's presentation offers an opportunity to reflect on how CompNet as a network of researchers and policy makers is and can contribute to the debate.

Productivity is not in the radar as yet; but being a key for welfare it will need to be soon.

The Report was prepared well before the crisis hit, but we will show you that our dataset and analysis can provide nevertheless critical support to policies.

Our emphasis on structural issues taking a firm perspective is essential these days.

This will be our focus today: discuss how and why our micro-perspective can help already and what else we need to reflect on (or collect in terms of data) to provide value added.

We thank you already in advance for the further contribution you will provide to implement together an appropriate plan of action.
Acknowledgement 1/2

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The team preparing the report

ECB:
- Roberta Serafini, Philipp Meinen, Annalisa Ferrando, Ottavia Papagalli, Tibor Lalinsky

IWH:
- Matthias Mertens, Peter Haug, Tommaso Bighelli, Jonathan Deist, Roman Blyzniuk, Mirja Hälbig, Verena Plümpe, Marco Christophori, Johannes Amlung, Sergio Inferrera
- Marc Melitz
- Tim Philipp’s (CEPR)
Welcome to new members

- Sachverstaendigen Rat ➔ new Funding Member

- Additional Statistical institutes willing to support our datawork
  - Nordic Countries (Denmark, Finland, Norway and Sweden)
    - out of the MICROPROD project
  - Malta
  - Ireland
CompNet Productivity report: key messages

2. What is new in the dataset
   - Introduced more variables
   - Added new countries

3. Productivity developments

4. Allocative Efficiency

5. Trade developments and productivity

6. Financial Constraints and productivity

7. Firms Concentration in Europe and Aggregate Productivity
### The 7th Vintage of the CompNet Dataset - variables

<table>
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<tr>
<th>Productivity</th>
<th>Financial</th>
<th>Trade</th>
<th>Competition</th>
<th>Labour</th>
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<tr>
<td>Labour productivity</td>
<td>Investment ratio</td>
<td>% permanent exp.</td>
<td>Price-cost margins</td>
<td>% firms that change employment between t and t+3 (t+1)</td>
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<td>VA and revenue TFP;</td>
<td>RoA</td>
<td>% sporadic exp.</td>
<td>Mark Ups – various estimation</td>
<td>Share of high-growth firms</td>
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<td>various estimation</td>
<td>Cash holdings</td>
<td>Export intensity</td>
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<td>techniques</td>
<td>Leverage</td>
<td>Export intensity</td>
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<td>ULC</td>
<td>Financing gap</td>
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<td>Wage premium (proxy for</td>
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<td>Firm size</td>
<td>Collateral</td>
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<td>Characteristics of top</td>
<td>human capital)</td>
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<td>Capital Intensity</td>
<td>Equity to Debt</td>
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<td>Marginal revenue</td>
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<td>productivity of inputs</td>
<td>Interest coverage</td>
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<tr>
<td>Static and dynamic</td>
<td>Interest coverage</td>
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<td>Characteristics of firms that</td>
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<td>allocative efficiency</td>
<td>ratio</td>
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<td>export AND import</td>
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<td>Debt burden</td>
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<td>Share of</td>
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<td>“distressed” firms</td>
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**Previously we had added**
- Zombie firms
- Regional dimension within countries
- Intangibles proxies
The 7th Vintage of the CompNet Dataset

- We have now 16 countries fully included in the report
- ...and a few that we hope to include soon (Germany, NL)
- Technically, we have improved
  - outlier routines
  - parametric estimation
- More in the new User-Guide
CompNet Productivity report: key messages

2. What is new in the dataset

3. Productivity developments
   o Productivity growth has been muted in the latest years within sectors
   o Constant dispersion of productivity (top vs bottom performers)
   o Positive contribution of intangible assets to TFP

4. Allocative Efficiency

5. Trade developments and productivity

6. Financial Constraints and productivity

7. European Firm Concentration and Aggregate Productivity
Growth of TFP within sectors is declining

- Growth of TFP within sectors has further slowed-down lately. The trend is quite homogeneous across countries, with just a few deviating from the average.
- E.g. in Denmark, TFP growth was on average **almost one percentage point higher**
Dispersion of TFP is stable but more heterogeneous

- The EU difference between top and bottom performers is stable lately at around 90%
- However, it varies a lot across countries, which is critical as we look at COVID impacts
- (e.g. in Italy the best firms are 170 percent more productive than the worst, in Finland just about 40%)
Intangible Input Use and Productivity in Europe

Productivity and intangible inputs use across sectors (2016)

- Intangibles – patents, licences, copyrights, trademarks and goodwill - are increasingly important for production process and
- are positively related to productivity,
- but are also highly concentrated

- COVID: what are the possible impacts?
  - Widening the adoption of intangible input use (Productivity +)?
  - Simple reallocation of economic activity to firms able to adjust to new modes of production?

Notes: Figure plots the relation between aggregate intangible fixed asset intensity and revenue-based log total factor productivity. All available sectors and countries are pooled. 20e sample.
2. What is new in the dataset

3. Productivity developments

4. Allocative Efficiency
   - Productivity-enhancing reallocation processes appear to have stopped in the latest years
   - Lower Job dynamism in EU may have contributed as it is negatively related to both reallocation and aggregate TFP growth

5. Trade developments and productivity

6. Financial Constraints and productivity

7. Firms Concentration in Europe and Aggregate Productivity
Reallocation in European sectors

Olley & Pakes (1996) decomposition

\[
\Omega_{jt} = \sum s_{it} \omega_{it} = \bar{\omega}_{jt} + \text{cov}_{jt}(s_{it}, \omega_{it}).
\]

Within-firm component
(unweighted avr.)

Aggregate Productivity

Between-firm component
Reallocation in European sectors

Allocative efficiency growth has stopped in the latest years.
This might have contributed to the slowing of TFP aggregate growth.
Slowing job dynamics coincide with slowing TFP growth

- Job dynamism (job creation and destruction; blue line) fell
- Econometric estimation shows that it had a negative impact both on TFP growth and reallocation processes
Slowing job dynamism in nearly ALL countries

France

Within-sector job dynamism in France

Italy

Within-sector job dynamism in Italy

Spain

Within-sector job dynamism in Spain

Switzerland

Within-sector job dynamism in Switzerland
2. What is new in the dataset

3. Productivity developments

4. Allocative Efficiency

5. Trade developments and productivity
   - COVID: Disruptions in GVCs may harm the already sluggish productivity growth

6. Financial Constraints and productivity

7. European Firm Concentration and Aggregate Productivity
Disruptions in GVCs is a threat for productivity growth

- The most productive firms are engaged in GVCSs by both exporting and importing (enjoying large premia).

- They are overall financially healthy, but disruptions in GVC due to Covid (trade barriers/ lockdowns) may have strong adverse effects on these firms (and thus on aggregate productivity).

⇒ Plan to look at the exposure of such firms to the pandemic.
2. What is new in the dataset

3. Productivity developments

4. Allocative Efficiency

5. Trade developments and productivity

6. Financial Constraints and productivity
   - The number of firms facing financing constraints diminished over time.
   - Policy action is crucial: OMT had a positive role in reducing such share.

7. European Firm Concentration and Aggregate Productivity
We found that the share of financially constrained firms in our dataset seems to have decreased after the GFC/sovereign debt crisis. The negative effect on productivity growth is alleviated by the OMT.

What is it going to happen with Covid-19?
- Government support will be critical to sustain business, but
- it may create Zombie firms as in GFC, lowering productivity.

➔ The CompNet dataset has a **regional dimension** that can help disentangling the likely impacts and help policy design.
CompNet Productivity report: Outline

2. What is new in the dataset
3. Productivity developments
4. Allocative Efficiency
5. Trade developments and productivity
6. Financial Constraints and productivity

7. Firm Concentration in Europe and Aggregate Productivity *(Special chapter)*
   
   1. Is concentration due to more efficient markets or excessive market power?
   2. Covid Shock might increase concentration. What would be the impact on productivity? E.g.:
      a. large vs small firms
Firm Concentration and Aggregate Productivity in Europe

Market concentration is, on average, increasing in Europe.
- Its effect on Productivity is positive but non-linear.
- Technology explains a large part of the increase in concentration.

What will be the effect of Covid crisis? Will it increase Market concentration?

The overall effect on productivity is uncertain:
- Positive
  - Adoption of IT and new technologies
  - Reallocation to more productive firms
- Negative
  - Barrier to entry to promising firms
  - No financial help to innovative firms
CompNet and Coronavirus crisis: a map for action

Which research questions
- How will the crisis affect aggregate productivity?
- How will the crisis affect productivity dispersion? (across firm dimension, sectors, countries)

Which data: How can CompNet contribute?
- Distributions
- Sectoral data
- Regional data

Which other data can be useful:
- High frequency data (business data, VAT authorities)
- Home working /automation diffusion
- Covid Risk by sector
- Any other you have or recommend to use?

To recap: plenty of questions with a few guesses for now on the Covid impacts that we are trying to verify, namely on

- Technology adoption (+)
- Cleansing / reallocation (+)
- Supply chain disruptions (-)
- Financial frictions (-)

➡ Any other channels we should look at?
Thanks for your attention. And thanks in advance for your comments and contribution going forward!