## $CompNet \ {\rm The \ Competitiveness \ Research \ Network}$

## The CompNet Firms Productivity report 2020

### **Data Provider Forum**

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## **CompNet Productivity report: Motivation**

- We are hit by an Epochal crisis and todays 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 <u>key for welfare</u> 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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- $\,\circ\,$  The team preparing the report
- **ECB**:
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- o IWH:
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- Additional Statistical institutes willing to support our datawork
  - Nordic Countries (Denmark, Finland, Norway and Sweden) out of the MICROPROD project
  - Malta
  - Ireland

#### 2. What is new in the dataset

- o 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 7<sup>th</sup> Vintage of the CompNet Dataset - variables

Productivity	Financial	Trade	Competition	Labour
Labour productivity	Investment ratio	% permanent exp.	Price-cost margins	% firms that change employment
VA and revenue TFP; various estimation techniques	RoA	% sporadic exp.	Mark Ups –various estimation techniques	between t and t+3 (t+1)
	Cash holdings	Export intensity		Share of high-growth firms
	Leverage	Characteristics of top	Herfindahl index	Job creation and job
ULC	Financing gap	exporters	Concentration of	destruction rates
Firm size	Collateral	Productivity premium of	sales in top 10 firms	for human capital)
Constal Interaction	Equity to Debt	exporters		Eirm entry and
Capital Intensity	Cash flow	Characteristics of firms that export AND import		exit
Marginal revenue productivity of inputs	Interest coverage ratio			
Static and dynamic allocative efficiency Energy cost	Trade Credit/Debt	Exports by destination	<ul> <li>Previously we had added</li> <li>Zombie firms</li> <li>Regional dimension within countries</li> <li>Intangibles proxies</li> </ul>	
	Debt burden			
	Credit constraint index			
	Share of "distressed" firms			

## The 7<sup>th</sup> 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
  - o parametric estimation

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• More in the new User-Guide

## CompNet Productivity report: key messages

#### 2. What is new in the dataset

#### 3. Productivity developments

- Productivity growth has been muted in the latest years within sectors
- Constant dispersion of productivity (top vs bottom performers)
- 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 0 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 Ο CompNet The Competitiveness Research Network

## 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%)

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## Intangible Input Use and Productivity in Europe

## Productivity and intangible inputs use across sectors (2016)



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.

- 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?

- 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

Olley & Pakes (1996) decomposition



## **Reallocation in European sectors**



— Within-sector cov. between firm size and labour productivity

- 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



---- Within-sector job dynamism in Europe - - - Within-sector total factor productivity

- Job dynamism (job creation and destruction; blue line) fell
- econometric estimation show that had a negative impact both on TFP growth and reallocation processes

## Slowing job dynamism in nearly ALL countries



- 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



#### Productivity premium by export status

 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

## Financial Constraints and productivity



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 <u>regional dimension</u> that can help disentangling the likely impacts and help policy design 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





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#### 7. Firm Concentration in Europe and Aggregate Productivity (Special chapter)

- Is concentration due to more efficient markets or excessive market power?
- Covid Shock might increase concentration. What would be the impact on productivity? E.g.: large vs small firms

## Firm Concentration and Aggregate Productivity in Europe



The overall effect on productivity is uncertain:

- Positive
  - $\circ~$  Adoption of IT and new technologies
  - $\circ$   $\,$  Reallocation to more productive firms
- $\circ$  Negative
  - Barrier to entry to promising firms
  - $\circ$   $\,$  No financial help to innovative firms

- 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?



### CompNet and Coronavirus crisis: a map for action

Which research questions	Which data: How can CompNet contribute?	Which other data can be useful:
<ul> <li>How will the crisis affect aggregate productivity?</li> <li>How will the crisis affect productivity dispersion? (across firm dimension, sectors, countries)</li> </ul>	<ul> <li>Distributions</li> <li>Sectoral data</li> <li>Regional data</li> </ul>	<ul> <li>High frequency data (business data, VAT authorities)</li> <li>Home working /automation diffusion</li> <li>Covid Risk by sector</li> <li>Any other you have or recommend to use?</li> </ul>

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!