The Technical Support Instrument (TSI): Year One: Achievements and way ahead

NPB Workshop
EU Commission, Brussels
13/12/2023

This project has received funding from the European Commission; Directorate-general for Structural Reform Support under grant agreement No 101101853.
Roadmap

- Economic motivation for using MICRO information
- The Microdata platform for productivity (TSI): concept and results
- The Microdata Infrastructure (MDI)
- Conclusions
Firm performance distribution is very disperse and asymmetric

... lot of firms with low productivity and only a few in the "right-tail"

France’s curve shifted to the right direction... Higher productivity for more firms (i.e., higher AVERAGE aggregate productivity)
There is therefore not such a thing as a representative firm

...considering averages (without looking at distribution) can generate wrong policy recommendations

CompNet allows cross-country comparisons along these dimensions leveraging on official balance-sheet information of European firms...i.e., of HIGH QUALITY
Let's take the case of Unit Labour costs (ULC)

\[ ULC = \frac{\text{tot labor cost}}{\text{productivity}} \]

- When ULC \( \uparrow \) Competitiveness \( \downarrow \)

**GERMANY**
- Overall rising ULC...loss of competitiveness
- Flat productivity of both least and most productive firms
- Rising wages of top productive firms...
- ...but totally out of whack with their productivity for the least performing firms

**POLAND**
- Broadly constant ULC
- Rising productivity for top and bottom firms
- Stagnant wages of top productive firms compensating for rising wages of least productive firms

\( \Rightarrow \) Cannot have an AVERAGE wage policy
The TSI: Objectives

- Develop microdata infrastructure and train NPBs to use it for concrete policy research projects.

- **First year**: USE existing micro-founded dataset (CompNet)
  - Train NPBs staff and develop research out of it
  - in parallel, work with the respective NSIs on more granular and modular micro-data infrastructure (MDI)

- **Second year**: USE the MDI for policy research applications
About the project

Project Information: Microdata platform for productivity

Participating Countries: Slovakia, Slovenia, France, Germany, Portugal, Latvia and Austria.

Coordinated by: Halle Institute for Economic Research (IWH)


Motivation: Access to cross-country comparable micro-based data entails many challenges due to confidentiality concerns. The Microdata platform for productivity aims to provide national authorities of participating productivity boards with the tools to improve their ability to analyze productivity and development and design policy reforms.

Implementation: This ambitious objective is achieved by providing the beneficiaries with

1) harmonized data (micro-aggregated and cross-country comparable) to conduct policy analysis and produce policy recommendations,

2) the necessary training to ensure that the beneficiaries can fully exploit the potential of the micro-based data infrastructure, and

3) finally with a network to share best practices and common goals.

It started in October 2022 for a period of 24 months.

This project has received funding from the European Commission; Directorate-general for Structural Reform Support under grant agreement No. 101101853 and No. 101140673 (Austria).
The CompNet Dataset

- Unbalanced panel of **productivity and competitiveness indicators**
- **Started in 2012** at the ECB
- Our data providers (NCBs, NSIs, other academic Institutions) run our codes on the best existing national FIRM LEVEL datasets
- **They give us in return aggregate cross-country harmonized info**
- Confidentiality is ensured
- **9th Vintage** (July 2023): **22 European countries, 1999-2020/21**

<table>
<thead>
<tr>
<th>Countries</th>
<th>Aggregation levels</th>
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</thead>
<tbody>
<tr>
<td>Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Hungary, Italy, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland.</td>
<td>Country, Macro-Sector, Macro-Sector-Size-Class, 2-digits NACE Industry, NUTS Region</td>
</tr>
<tr>
<td><strong>New:</strong> Latvia, Lithuania, Malta, UK</td>
<td><strong>New:</strong> Technology Class and Age</td>
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</table>
The CompNet Dataset – 9th Vintage

**Productivity**
- Labour productivity
- VA and revenue TFP; various estimation techniques
- ULC
- Firm size
- Capital Intensity
- Marginal revenue productivity of inputs
- Static and dynamic allocative efficiency
- Energy cost

**Financial**
- Investment ratio
- RoA
- Cash holdings
- Leverage
- Financing gap
- Collateral
- Equity to Debt
- Cash flow
- Interest coverage ratio
- Trade Credit/Debt
- Debt burden
- Credit constraint index
- Share of “distressed” firms

**Trade**
- % permanent exp.
- % sporadic exp.
- Export intensity
- Characteristics of top exporters
- Productivity premium of exporters
- Characteristics of firms that export AND import
- Exports by destination

**Competition**
- Price-cost margins
- Mark Ups – various estimation techniques
- Herfindahl index
- Concentration of sales in top 10 firms of a sector
- % firms that change employment between t and t+3 (t+1)
- Share of high-growth firms
- Job creation and job destruction rates
- Wage premium (proxy for human capital)

**Labour**
- Firm entry and exit

Previously we had added
- Zombie firms
- Regional dimension within countries
- Intangibles proxies
The CompNet Dataset – Joint Distributions

Example type of question: **Are low productive firms in a country-sector characterized by higher credit constraints?**
The TSI First Year: CompNet related activities

• Provided training to NPBs to use CompNet dataset for research and policy

• Set Up common research agenda across participating NPBs

• Written in collaboration with NPBs Firm productivity report
The 2023 CompNet Firm Productivity Report

EU-TSI Weblink

- **Coordinators**: Marco Matani and Marcelo Piemonte Ribeiro (both CompNet)
- **Contributors**: CompNet Team together with
  - Urska Cede (IMAD, Slovenia)
  - Eva Pereira (GEE, Portugal)
  - Jan Sebo (UVSR, Slovakia)
How did COVID-19 impact post-COVID firm-level productivity?

COVID-19 crisis was followed by a decline in within-industry total factor productivity (TFP) growth in the short term in Europe.

Amidst unprecedented cross-country variation.
Competitiveness is key; we show 2 aspects:

1) Export drop during COVID-19
2) Role of EU Global Value Chains (GVCs) for productivity transmission

1) Were export drops driven by firm characteristics?
   - We disentangle **heterogeneity in export performance** by size classes, destination, and margin
     - **intensive**, i.e., same firms exporting more or less
     - **extensive**, i.e., change in the number of firms
Ch.2 - EU firms in the global economy: Export drop decomposed

Export y-o-y rates of change by margin. European countries, 2012-2020 (y-o-y growth rate)

- **Overall result:** drop in total export in 2019 and 2020 resulted from BOTH the extensive and intensive margin alike.

- **However,** for small exporters (20-49 employees) and for those exporting outside the EU the drop was due to the EXTENSIVE margin only, i.e., there has been a cut in number of firms exporting (only red histogram).
2) We find evidence that the GVCs set in motion a two-stages productivity diffusion within and between European countries

- **1st Stage**: From GVC to national frontier (most productive) firms
- **2nd Stage**: From national frontier to national mid-productive and laggard (least productive) firms

- **We see strong TFP transmission at both stages**
Ch.2 - EU firms in the global economy: Decomposing the TFP shock

• How do European GVCs affect TFP growth in Europe?

• Strong contribution of productivity gap Balassa-Samuelson "catching-up effect"
• The TFP contribution of EU GVC counterparts (dashed blue) becomes strongly negative during crises

Contributions to EU TFP y-o-y growth rates within EU global value chains

- GVC TFP growth
- TFP gap from GVC
- GVC participation
- Other GF Crisis
- Other COVID-19
- Country-Macrosector FE
- Residual
- TFP growth
Competitiveness at the core of the EU Agenda

- President von der Leyen put **competitiveness** at the top of the EU agenda (SOU address)
- Mario Draghi was tasked to prepare a report

- **Participating NPBs will be in a condition to provide support to the endeavour with solidly micro-founded research**

- ...and we have been already contributing to the debate

VoxEU Column "Talking about competitiveness in Europe: Productivity not protection"
The Micro-data Infrastructure (MDI)
Homogenized set of **datasets** (sourced from National Statistical Institutes) **LINKED**

- Much more **granular** than the traditional CompNet dataset
The MDI – Setup

1. Special research & publication
   - Output is obtained by CompNet/MDI Network
   - Code to build the infrastructure
   - Metadata preparation

2. Standard moments and indicators & publication
   - Code
   - Remote access (NL, FR, Slovenia)
   - Remote execution (Fin, Por)

NPB Researcher
- Research project and code
- Metadata and tools

CompNet/MDI Network
- Code
- Metadata preparation

Statistical institute
- Code to build the infrastructure

Obtains the output
## MDI: status of development by countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Fully Established</th>
<th>Advanced Preparation</th>
<th>Contract Signed</th>
<th>In Negotiation</th>
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<tbody>
<tr>
<td>Austria</td>
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<td>UK</td>
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### Non- TSI

- Finland: X
- Netherlands: X
- Italy: X
- Malta: X
- UK: X
The TSI project going forward
Second year TSI

• Make the MDI **fully operational** as a policy research tool

• Convert CompNet projects into the **MDI** whenever possible to enhance granularity

• **5 meta Research directions:**
  ❖ Trade and Competitiveness
  ❖ Phillips Curve and Monetary Policy
  ❖ Energy
  ❖ Firm Dynamics
  ❖ SME financial constraints

• Output expected over the next few months
TSI: Timeline

2023

- **Start**: 15 October 2022
- **1st TSI Workshop**: 24 February
  - Set-up common research agenda
- **2nd TSI Workshop**: 22-23 June
  - Discuss first results using CompNet
- **Firm Productivity Report**: 7 July
- **CompNet Conference**: 19-20 October
  - Set-up MDI based research projects

2024

- **3rd TSI Workshop**: 22-23 February, Vienna
- **4th TSI Workshop**: June
- **Final Conference and end of the Program**: October
Conclusions

- The TSI was very successfull in
  - Training NPBs staff in micro data analysis
  - Produce concrete joint output using CompNet dataset. Productivity Report
  - Set up at respective NSIs Micro Data Infrastructure

- In the coming second year the created MDI infrastructure will bear fruits

We look forward to interacting with participating NPB staff members

...but we will keep the door open for collaborations with other NPBs
Thank you! Looking forward to hearing your feedback also via email!
Important Links

- TSI Website

- The 2023 CompNet Firm Productivity Report