

CompNet

The Competitiveness Research Network

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Microdata Platform for Productivity: Steering Committee Report #1

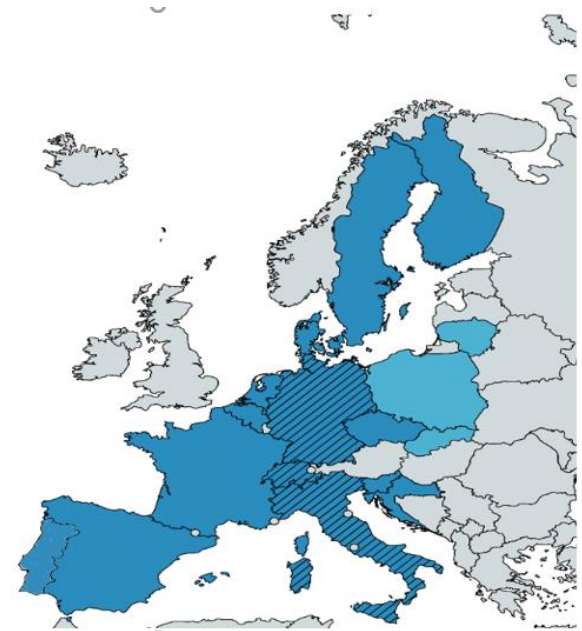
03 February 2023



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

Roadmap

- Where do we stand (TSI)
- Website
- Data Access
 - Training
 - Visualization
- NPB Projects
- MDI
- Workshop
- Milestones and Conclusion



Where do we stand



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Conference on innovation and productivity in the aftermath of the pandemic

Jointly organised by CompNet, ADBI,
IMF, CARF & Hitotsubashi University

15 November 2022 at the University
of Tokyo.

For the livestream and presentations
please click [here](#).



Asias for Developing Asia and the Pacific

About the program

Project information: MULTIMSPROD

Grant Agreement number: 101101853

Funded under: TSI-2022-MULTIMSPROD-IBA

EU contribution: €699,969.00

Coordinated by: Halle Institute for Economic Research (IWH)

Project Outline: Enhancing the Micro Foundation of the Research Output of National Productivity Board (NPBs). Using CompNet and expanding its Micro Data Infrastructure (MDI).

Motivation: Access to cross-country comparable micro-based data entails many challenges due to confidentiality concerns. MULTIMSPROD 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. The project is funded by the European Commission.

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

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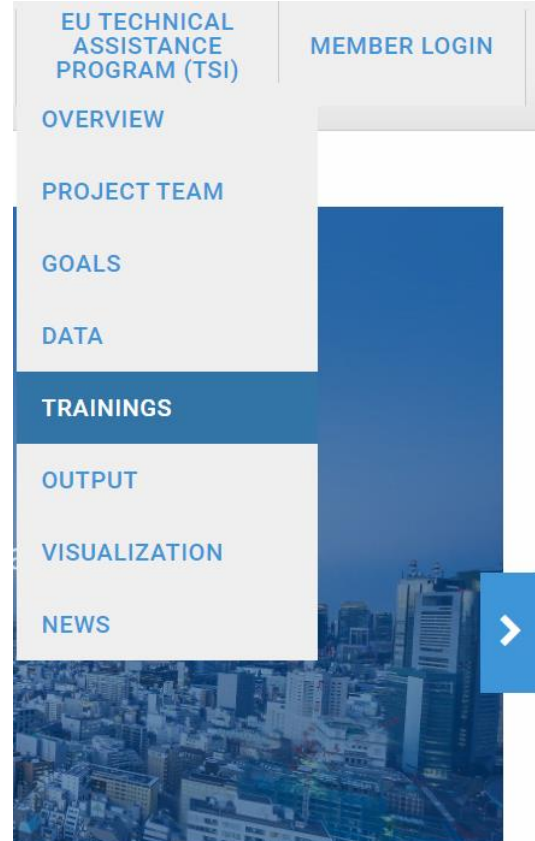
This website reflects only the author's view and that the Commission is not responsible for any use that may be made of the information it contains.

MULTIMSPROD



Enhancing the Micro Foundation of the Research Output of National Productivity Board. Using CompNet and expanding its Micro Data Infrastructure.





Training

Here you can find the trainings IWH-CompNet are making available to the productivity boards and CompNet members.

Through these trainings, users will gain expertise in the use of the CompNet database as well as the CompNet Reduced Dataset. The IWH-CompNet provides training in two modalities: self-guided, and directed.

The *self-guided program* is designed to allow users to take the course in their own time and at their desired pace. There are three self-guided courses: *Beginners*, *Intermediate*, and *Advanced*. This course is currently based on the 8th vintage of the CompNet database.

They will take the user from a basic introduction to the data, to more advanced exercises. The user will become familiar with the structure of the data, the variables, and how to combine them to create a report – including charts and regression output.

The *directed program* will provide theme specific training, for example, in the analysis of business dynamism, and market concentration. These courses will be developed as the need arises.

In addition, trainings in the use of the MDI infrastructure are offered in the form of [documentation](#), [reports](#) and guided learning. These will be made available as needed and as National Productivity Boards get access to the confidential microdata in collaboration with their National Statistical Offices.

Training Events at Tinbergen Institute in Amsterdam (Summer School)

The summer school welcomes second year (research) master students, PhD students, post-docs, and professionals from a wide variety of fields (e.g. macro, applied micro, industrial organization, international trade, labor, empirical finance, regional and urban) who are interested in learning state-of-the-art methods for (cross-country) firm-level panel data analysis.

This course provides a self-contained set of lectures to bring Master's and PhD students as well as practitioners up to speed in the area of empirical research using firm-level data. The course starts with an introduction to models of firm dynamics and innovation. Next, attention is paid to estimation of productivity, including methods to cope with sample selection, endogeneity of inputs, and lack of firm-level quality adjusted prices.

The insights from production function estimation are used to develop a framework to estimate markups using the so-called production approach. This framework is used to discuss the recent debate around rising market power. Finally, the course discusses recent empirical work on structural modeling of productivity, trade and growth. Besides theory, the course will include a set of lectures on data handling, programming, and algorithms for empirical applications, as well as daily hands-on practical sessions.

The Course serves as a training activity of CompNet and is open to its members and participating institutions.

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Training

Although the course is meant for autonomous learning, the CompNet staff will be available to answer technical questions and to receive feedback or suggestions, in order to help the data users to exploit this learning opportunity at their best.

Contents

The aim of the course is to learn how to use CompNet data to analyse competitiveness, by looking at different economic dynamics including productivity, financial conditions, international trade, labor, misallocation, market power, and other economic factors. The three modules touch upon the same topics going at a deeper level of analysis, by growing in analytical complexity from Beginners to Advanced. Before the three modules start, an introductory presentation explains the structure of the CompNet database:

- **Data collection process, data release and methodology;**
- **Coverage: countries, years and sectors;**
- **Samples: all and 20e;**
- **Data files: unconditional statistics, productivity decompositions, joint distributions, transition matrices, production function estimations, and reduced dataset;**
- **Categories and types of variables;**
- **Statistics: percentiles, moments (mean, variance, skewness, kurtosis), weights.**

The Beginners module is intended for CompNet first users with a limited knowledge of Stata, micro-data analysis and/or economic theory. The goal is to show how to download and open data using Stata, to make the user able to understand the basic structure of the database to carry out some initial analysis, as well as aggregating data. The final output includes tables and charts at country, macrosectoral and industry level. Stata .do files are prepared using the simplest commands, therefore a basic knowledge of Stata would be useful but is not required in this first session.

The course is divided into five tasks:

- **Task 1 - Introduction:** how to download the data from the website, open and merge data files, and tailor the sample of interest; how to aggregate data; how to represent data in standard line charts, bar charts and scatter plots at different levels of aggregation.
- **Task 2 - Descriptives:** for users who are familiar with the basic structure of the CompNet database and the micro-based data, this module is showing some of the most common analyses which are typically implemented using CompNet for descriptive statistics. Participants will deal with parametric and non-parametric variables coming from different data files. The goal is to take advantage of the database richness to understand the different trends across the firms' distribution and to use joint distributions and transition matrices. Also, participants will perform some standard regressions and charts for a richer visual representation. Rigorous definitions of the different variables' and their economic meaning are explained in the provided material, in order to make the users aware of the economic reasoning behind their analysis.

- **Task 3 - Analyzing productivity:** TFP normalization and regression analysis of labor productivity and TFP, including scatter plots with fitted line and significance, comparison of punctual estimates and confidence intervals, contribution charts of the regressors' predictive power, and growth trend;
- **Task 4 - Analyzing dispersion:** trends combining mean/median values with the evolution of dispersion indicators, interquartile ranges, percentiles, and relative charts;
- **Task 5 - Further on aggregation:** how to aggregate more complex indicators, e.g. markups.

Course Material and Layout

To implement the training course and run the Stata codes, CompNet competitiveness data are needed and all researchers can apply to have access to them by submitting the [data request form](#) to the CompNet team via the IWH Research Data Centre.

The user is advised to start the course by consulting the introduction to CompNet and its database, at the following link:

[Introduction to CompNet and its Database](#)

Afterwards, the Beginners module presentation can be found at the following link:

[Beginners - Presentation](#)

The user is recommended to follow the module task by task, and reproduce the output of each task running the respective Stata .do file code. The Beginners module Stata .do file codes are available [here](#).

- **CompNet**
 - Documentation
 - Self-guided learning modules
 - In the next few weeks:
 - Code to elaborate on concrete research applications
 - Data quality reports with specifics about how to work with your country data
 - As we proceed: Advanced research topics and applications (e.g. productivity measurement)
- **MDI (country specific)**
 - Some trainings in place (documentation)
 - Additional trainings in development

Data Access: Visualizations

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3rd Finance and Productivity Conference (FINPRO)

8. - 9. Juni 2023

Call for paper (submission
closes 6 February 2023)

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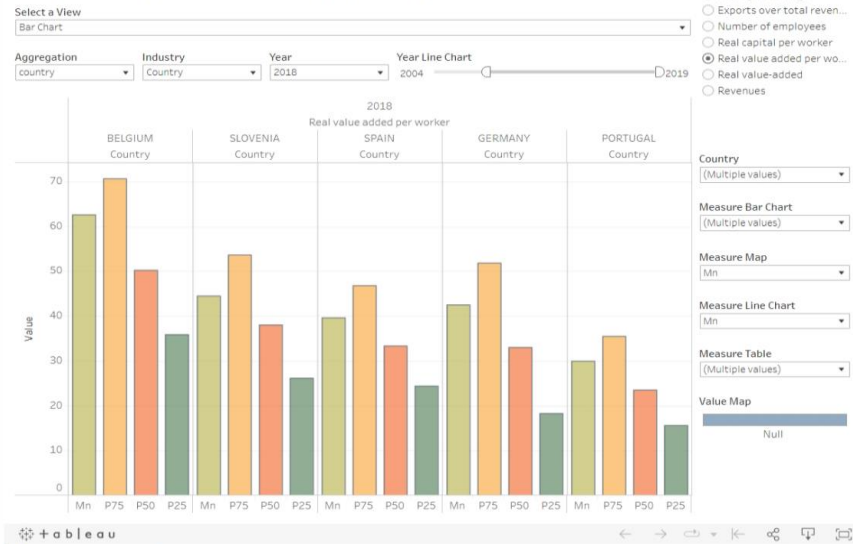
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Visualization

Below you can see a first application of the data visualization created using the CompNet Reduced Dataset. On the top of the graphs, there is a filter called "select a view" in which everyone can choose the preferred visualization between bar chart, map, line chart, and table. The visualization is a living tool and will grow over time.

CompNet Reduced Dataset - Application (1)



Documents

Here you can find the country reports

[Here you can find some more information on the 8th vintage use](#)




































The 8th vintage is the latest CompNet dataset on micro-aggregated firm-level data. The link provided, you can find information on how to generate, interpret and compare results about labor productivity as well as other indicators. The 9th vintage will be available soon.

Training

[Here you can find documentation, the definitions of variables, and the reduced dataset used for visualizations.](#) The Reduced Dataset is a carefully cleaned subset of the CompNet dataset that contains a few critical variables for policy-oriented users.

[Here you can find access on the reduced dataset training.](#) The link will provide assistance on how to start analyzing the essential parts of the CompNet dataset.

NPB Projects

Country	Areas of Interest and Possible Projects	Details
Austria	  	<ul style="list-style-type: none"> Relationship between Energy Prices Shocks and Firms Innovation/R&D
Belgium		
Croatia		
Czech Republic		
Denmark		
Finland		
France	    	<ul style="list-style-type: none"> Economic Uncertainty and Firm Productivity Box in the Productivity Report on Energy in DE and FR Impacts of Covid and Energy Crises on GVC Trade Effects of Delocalization/Offshoring Box in the Productivity Report on Intangibles using MDI together with NL
Germany	    	<ul style="list-style-type: none"> Box in the Productivity Report on Energy in DE and FR Special chapter on Finance and Trade Investigating consequences of the US Inflation Reduction Act
Italy		
Hungary		
Latvia	     	<ul style="list-style-type: none"> Economic Uncertainty and Firm Productivity Productivity Dynamics over a Firm's Life Cycle Explaining lagging LV Productivity against other Baltics Direction of Causality between FDI and Productivity Relationship between Energy Prices Shocks and Firms Innovation/R&D Integration of recent EU Member States in GVCs Creative Destruction in the Development Process SMEs response to Liquidity Shocks
Lithuania		
Malta		
Netherlands	   	<ul style="list-style-type: none"> Productivity measures (TFP, markups) Links between Productivity and Trade Box in the Productivity Report on Intangibles using MDI together with FR Creative Destruction in the Development Process
Poland		
Portugal	    	<ul style="list-style-type: none"> Economic Uncertainty and Firm Productivity Explaining Productivity differentials: the role of Creative Destruction Firm level-based Competitiveness indicators, proposed by J. Amador (BdP) Key Cost Drivers of SMEs
Romania		
Slovakia	   	<ul style="list-style-type: none"> Economic Uncertainty and Firm Productivity Productivity Dynamics over a Firm's Life Cycle Key Cost Drivers of SMEs SMEs response to Liquidity Shocks: reducing Assets or rising Borrowing?
Slovenia	  	<ul style="list-style-type: none"> Productivity measures: TFP Estimation Explaining Productivity differentials: the role of Creative Destruction/Job Dynamism (focus on lagging SI Productivity in Services)
Spain		
Sweden		
Switzerland		

1. Productivity Benchmarking



2. Energy



3. Trade



4. Intangibles and Spillovers



5. Business Dynamism



6. Competitiveness



7. SMEs



NPB Projects: Next Steps

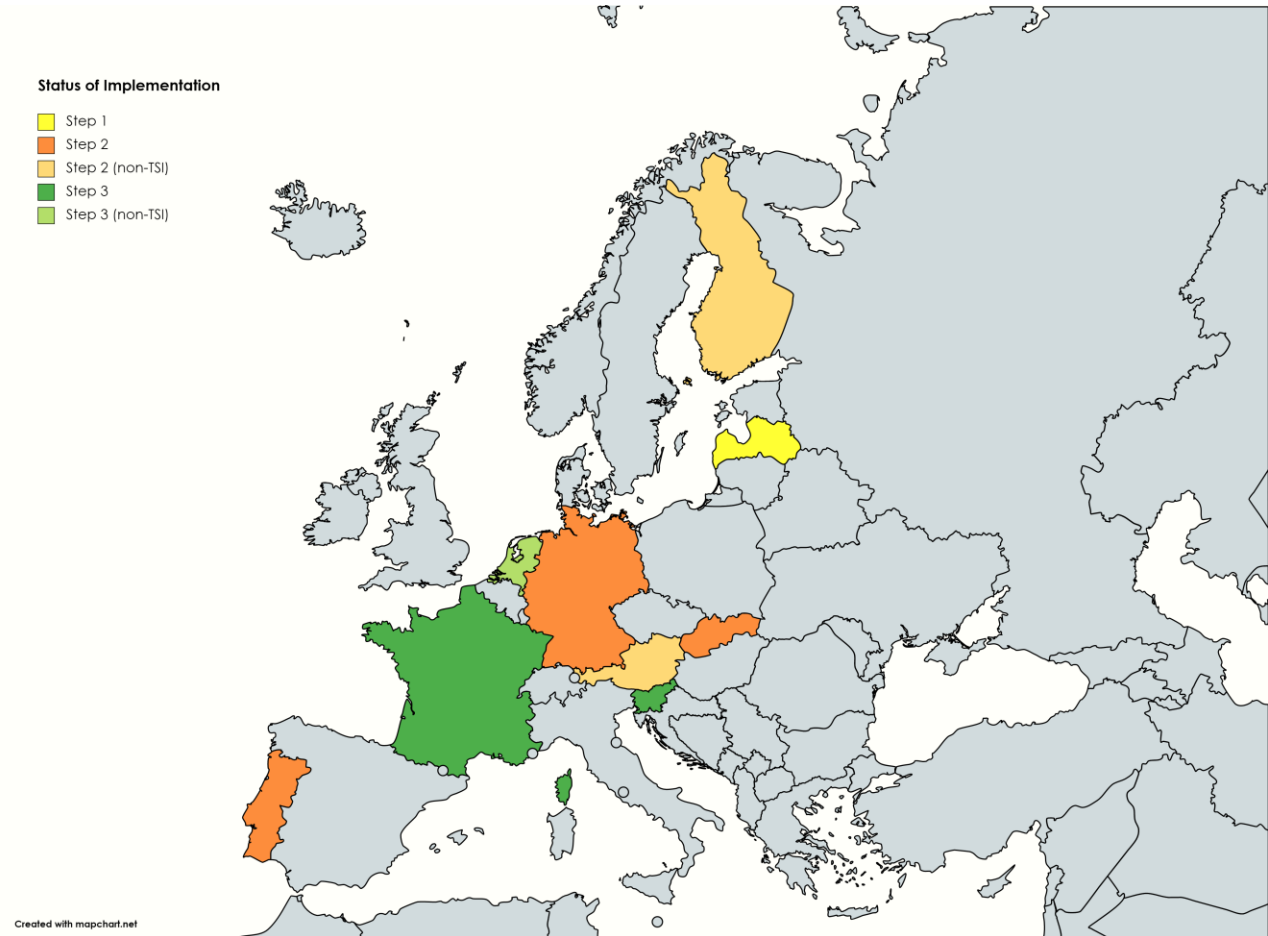
- Form specific research teams around each theme
- Ensure NPB assigned experts go through trainings
- Brainstorm together on 1st steps
 - Approach
 - Variables
 - Time frame
 - Challenges (e.g. need for other data)
- We will provide code for first set of analysis
- Regular meetings to discuss results/concerns/next steps

- MDI implementation is undergoing 3 major steps:



MDI infrastructure

- **Step 1:**
 - **LV:** currently assessing feasibility of the MDI setup with statistical office
 - **SK:** currently assessing best way of implementing data access
- **Step 2:**
 - **SI:** contract signed
 - **DE, PT:** dataset is being set-up
- **Step 3:**
 - **FR:** MDI is established, currently working on finalizing code infrastructure in cooperation with local NPB
- **Note on non-TSI countries**
 - The MDI is currently established in NL, while AT and FI are expressing interest in participating and integrating their data with our infrastructure independently.



Workshops

- Every 4 Months
- First TSI-NPB Workshop
 - Lisbon
 - February 24, 2023
 - Travel/Accommodation: up to 2 per NPB
 - Requested Slovenia to gracefully host the 2nd Workshop
- Agenda
 - Introduction
 - CompNet Vintage 9: Status and Trends
 - CompNet: Energy Use Variables and Analysis
 - MDI Research: Intangible
 - MDI Progress Report: Status and Current Efforts.
 - NPB Session:
 - Project Presentations and Teams
 - Networking
 - Synergies



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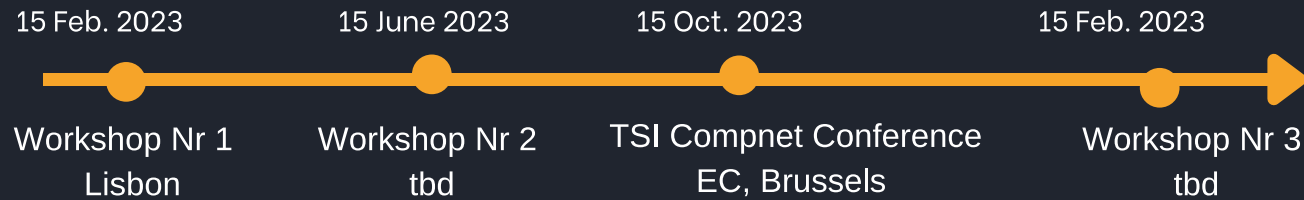
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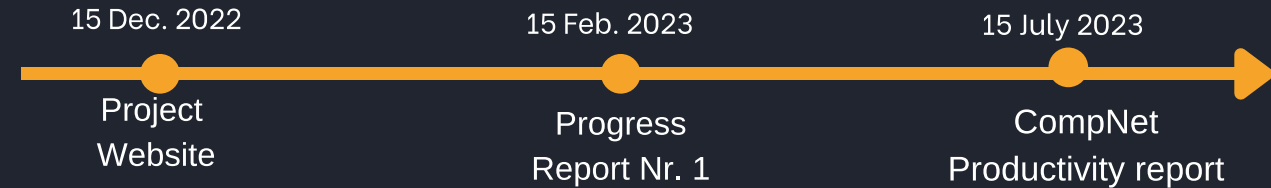
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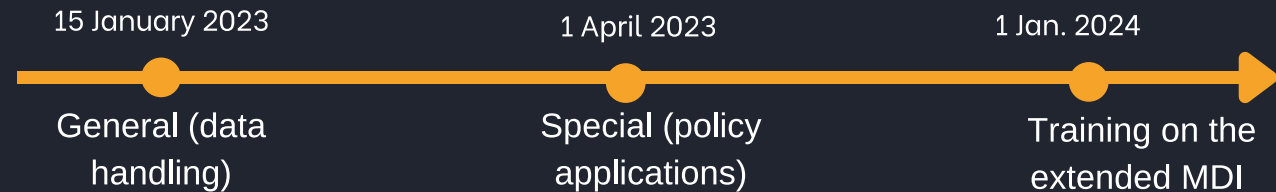
DATA INFRASTRUCTURE



REPORTS / COMMUNICATION



TRAINING



Conclusion

- Deliverable for this TSI Grant: On Target
- Data accessibility Improvements:
 - Visualizations, Reduced CompNet Data
 - Code forthcoming: GitHub and OneDrive
- Engagement with the NPBs:
 - Slow progress taking up the trainings: We are following up now that we have country assigned CompNet experts.
 - We expect to start working on specific projects immediately now that we have identified interest
- MDI Infrastructure: Some countries lack funding so little progress. Great progress in Slovenia and France....
- Productivity Report: Will be a compendium of the projects with the NPBs. Will be a work in progress. 1st Report expected in July.