



CompNet The Competitiveness Research Network

# MULTIMSPROD – TSI 2022

## 4th Progress Report

March 18, 2024

Deliverable D1.5

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## Introduction

*Content: Brief introduction of TSI project, context and goal of progress report, structure of the report.*

Access to cross-country comparable micro-based data entails many challenges due to confidentiality concerns, different requirements for data access and lastly heterogeneity in data structure. MULTIMSPROD aims to provide national authorities of participating productivity boards with the tools to improve their ability to analyze productivity and economic development and design policy reforms.

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.

MULTIMSPROD started in October 2022 for a period of 24 months. Initial participating countries include Germany, France, Slovenia, Slovakia, Portugal and Latvia. After approval of the European Commission Austria became the 7<sup>th</sup> member of the program.

This report is the fourth of in total 5 quarterly progress reports which have the goal of documenting the current project status, highlighting achievements, and pointing out risks and problems.

The report is structured as follows: Section 1 documents the project progress and describes submitted deliverables, section 2 describes the country specific progress in constructing the MDI and section 3 describes recent activities in research projects in collaboration with NPBs, section 4 provides some insight on the MDI training and section 5 presents an outlook and the next milestones and planned steps.

## 1. General Progress Report

*Content: Description of recent events (i.e., 12th CompNet Annual Conference, 3<sup>rd</sup> TSI Workshop in Vienna) and activities (MDI Launch), with their current status. This report builds on the previous progress report dated October 5, 2023. In the last few months we have focused on retooling for the next phase of the TSI deliverable which centers primarily on continued development, training, and research with the Micro Data Infrastructure (MDI). While continuing working on the **Extended MDI** (delivery D2.3 and D4.1), we carried the first MDI Launch and introduced a Microsoft Teams Platform for MDI networking, and we are working to deliver an **MDI specific Special Training** (delivery D3.2).*

### Deliverables

*Content: listing and description of the submitted deliverables and those in progress*

- D1.1 Website (ongoing updates)
- D2.7 Workshop and Annual Conference
- D3.2 Special Training (ongoing)
- D2.2 Data Access Toolkit (MDI focus)
- D2.3 Extended MDI (ongoing)
- D4.1 Presentation of Extended MDI (ongoing)

## 12<sup>th</sup> CompNet Annual Conference

The **12<sup>th</sup> CompNet Annual Conference** on “Firm’s Performance in challenging times: Input costs, Technology, Productivity, and Market Power” took place on 19-20 October 2023 in Brussels at the European Commission. During the event, experts, researchers and policy makers explored relevant challenges for firms in the current economic landscape. Keynote speakers included Jan De Loecker (KU Leuven, CEPR) and Jan Eeckhout (UPF Barcelona, CEPR). In addition, relevant published works using CompNet data were presented and discussed<sup>1</sup>.

For more details visit our website: [12<sup>th</sup> CompNet Annual Conference](#)

## First MDI Launch

Starting from November 2023, we focused on the MDI research applications and on the delivery of an **Extended MDI** and an **Extended MDI Output** (D2.3; D4.1). After months of coordination and preparation among CompNet staff, NSIs and NPBs, on January 19<sup>th</sup> the First MDI Launch took place. The preparatory steps included various “pre-launch” (Launch 0) codes and checks to ensure and document the MDI status in each country. At the same time, research groups for four streams of research prepared their codes following general guidelines. The codes, assembled together, were then run in the country environments, with the assistance of relevant NSIs. The codes are available on [Github](#) and are currently under improvement. In fact, the First MDI Launch was a key milestone for understanding the current state of data harmonization and to identify criticalities. It also showed the importance of providing not only documentation and guidelines on code writing, but also training to both NSIs and NPBs. Results from the Launch code were presented during the 3<sup>rd</sup> TSI Workshop in Vienna (D2.7).

## 3<sup>rd</sup> TSI Workshop

The 3<sup>rd</sup> TSI Workshop was hosted in Vienna by the Oesterreichische Nationalbank on February 22<sup>nd</sup> and 23<sup>rd</sup>. It focused on the use of the MDI, including inputs from CompNet’s staff, NSIs and NPBs. CompNet staff presented results from the MDI Launch, focusing on the four streams of research identified: trade and competitiveness, energy, firm dynamics and monetary policy. These preliminary results are expected to be expanded through the MDI Launch 2 in May and will be delivered as delivery **D4.1 Presentation of the Extended MDI output**. During the Workshop NSIs and NPBs had the possibility to present issues and research work. It was an occasion to further involve NPBs to the existing streams of research and to allow NSIs to present issues they encountered during the building of the MDI, with the possibility to get feedback and get in touch with other countries NSIs. In addition, during the event an MDI Special Training was delivered in person, introducing some key aspect on the functioning of the MDI, with module writing and research applications interesting for NPBs. This training was one key step toward the setup of the final MDI Special training.

## MDI Special Training

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<sup>1</sup> Do Larger Firms Exert More Market Power? Markups and Markdowns along the Size Distribution by Matthias Mertens and Bernardo Mottironi ; Declining Job Reallocation in Europe: The Role of Shocks, Market Power, and Technology by Filippo Biondi, Sergio Inferrera, Matthias Mertens, Javier Miranda.

The progress of the MDI infrastructure has generated large interest of the participating productivity boards in using the data, but also the need for training on the usage of the MDI and its tools. As mentioned, a specific MDI Training was already provided in person during the 3<sup>rd</sup> TSI Workshop in Vienna and the slides are available on the [CompNet website](#). Additional documentation for training purposes as well as an MDI training course is in preparation and will be submitted as ***D3.2 Special Training on Policy Applications***.

## 2. Country specific MDI progress

*Content: Status of the current MDI set-up/data access; Description of efforts to access the data (accreditation, signing of contract) and data preparation (choosing datasets, data harmonization).*

### Austria

The formal agreement with the Statistical Office of Austria has been signed and at the moment two spots for the data access are available. Some work has already been done, especially regarding the extraction of some meta data. The work will continue with relatively high priority, in strict collaboration with Michael Weichselbaumer from the central bank of Austria. Currently, access can be obtained only by users linked to IWH Halle, EUI, VU Amsterdam or Bocconi University (soon).

### France

In France, direct access is available via the CASD boxes. Currently, access can be obtained only by users linked to IWH Halle or VU Amsterdam. To request a new box from CASD, we send an email and receive a module to fill out. After ensuring a secure environment, we return the completed module and payment, leading to the delivery of the box within a few weeks. As for the infrastructure and the data construction, they are at an advanced stage. Some modifications to the PRODCOM and ITGS dataset were carried out, especially to fix problems such as duplicates.

### Germany

In Germany, direct access to the data is available from Berlin or Wiesbaden, hence giving CompNet staff approval to work with the data. At the same time, there are two NSI staff members working on CompNet and the MDI. These are financed for 3 years by the Ministry of Finance via request from the Council of German Experts (i.e. productivity board in Germany). Some issues regarding the possibility of having R installed on the MDI environment were raised during the Vienna conference, but this issue will probably be worked out.

### Latvia

Latvia initially requested to the Central Statistical Bureau of Latvia the estimates of the costs for MDI data preparation. As the requested financing could not be covered by local institution nor by Multimsprod budget, the MDI build up is paused in the country. However, the cooperation between Latvia and CompNet materialized through the collaboration with the Baltic International Centre for Economic Policy Studies (BICEPS) to leverage on their direct data access, used for CompNet's 9<sup>th</sup> Vintage. Currently, a new financing of €3,000 will be allocated from the CompNet budget to continue accessing data through BICEPS, allowing for inclusion of Latvia in the CompNet 10<sup>th</sup> Vintage.

### Portugal

In Portugal the Statistical Office completed the whole construction of the datasets. They recently added the energy dataset to the MDI.

## Slovakia

The Slovakian productivity board continues its negotiations with the Slovakian statistical office for: 1. getting access to, and 2. setting up the MDI database. However, challenges such as budget constraints and limited staffing are hindering the statistical office's progress. For this reason, the Slovakian productivity board has secured access to microdata through a consulting partner and is actively involved in establishing an MDI-like infrastructure.

## Slovenia

In Slovenia, we are in the process of completing the harmonization of the main firm-level datasets for the MDI, in collaboration with the Slovenian statistical office and productivity board. We continue to proceed sequentially and add data source by data source. We plan to complete the harmonization by the end of April. Currently, access can be obtained only by users linked to IWH Halle, EUI, Geneva University or VU Amsterdam.

## 3. Project Status

*Content: Description of recent activities in research projects using CompNet and MDI and their current status: Description includes communication/collaboration with NPB, datasets used (CompNet and MDI), and intended usage of research output (e.g. for country's productivity report, policy note, full paper).*

### Policy Briefs

The following are the ongoing collaborations with NPBs on the drafting of two policy briefs. In particular: in collaboration with Latvia NPBs, a policy brief on productivity and, in collaboration with Slovakia NPBs, a policy brief on credit constrained firms.

#### Latvia

In collaboration with Prof. Janis Priede (University of Latvia) and in coordination with the Latvian National Productivity Board, structural analysis has been carried using CompNet data (9<sup>th</sup> Vintage), with focus on measures of firm productivity. The work will assess Latvia's progress in catching up with other European Union members, particularly neighboring Lithuania. The first draft of the policy brief was completed in December 2023 and the second draft was presented during the 3<sup>rd</sup> TSI Workshop in Vienna. Next steps in the collaboration will expand the analysis considering the relevance and effect of structural reforms (in particular, the 2010 tax reform favoring micro-enterprises).

#### Slovakia

Building on the analysis published in the Firm Productivity Report Ch.V, the collaboration with the Slovakian Productivity Boards seeks to extend the research using granular Slovakian firm-level data to investigate the nexus of credit constraints and firms' demographics and productivity. The initial draft of the policy brief was completed in January 2024 and the CompNet's team, in conjunction with the Slovakian Productivity Boards, is actively working on refining the second draft.

### Research projects with the MDI

The following are the ongoing research projects using the MDI. All works were presented during the 3<sup>rd</sup> TSI Workshop, including preliminary results from Launch 1 that will be further expanded with Launch 2.

### Trade and competitiveness

The trade and competitiveness research project delves into the mechanisms through which productivity diffuses within Global Value Chains (GVC), assessing how national firms respond to changes in the overall productivity of their portfolio of trading partner countries. The project benefits from ongoing collaboration from IMAD (Slovenia) and the National Bank of Slovakia.

### Monetary Policy

The monetary policy research project sheds light on how productivity distribution influences the Phillips curve slope and explores how monetary policy shocks affect firms' financial decisions and price-setting behaviors. The ongoing research has risen the attention of NPBs and, in particular, Alain Durré from France Stratégie, who asked for collaboration on a research project focusing on the impact of monetary policy on natural interest rate and the impact of single monetary policy on competitiveness amid cross-country heterogeneity with the monetary union.

### Energy

The energy project focused on understanding the various channels through which energy efficiency is achieved within firms. The stream of work is currently focusing on three main topics: the mapping of energy prices by sources (and industry); focusing on energy efficiency, investigate the possibility to build a stochastic frontier model applied to energy efficiency; investigation of energy intensity/use by product through the use of Prodcom data. The project started as joint with German and French NPBs, focusing on the comparison of stylized facts from the two countries. After the 3<sup>rd</sup> TSI Workshop in Vienna, interest has been shown by IMAD (Slovenia) and Austrian NPBs. For this reason, thanks also to the Microsoft Teams Platform, the various interests of NPBs are under discussion and planning for the next months is expected soon.

### Firm Responsiveness

The Firm responsiveness research aims to investigate how firms' reactions to shifts in profitability impact job creation, job destruction, aggregate investment, and resource reallocation in the economy. Counter parties from IMAD (Slovenia) expressed high interest in the project applied to Slovenia, which will be employed as soon as data will be ready.

### Policy paper on “Reassessing the EU Comparative advantage”, joint work with Prof. Gianmarco Ottaviano

The research will aim at generating a policy paper to be presented during the CompNet Annual Conference in Malta on June 20<sup>th</sup> – 21<sup>st</sup> 2024. The starting point is the Working Paper by Huang and Ottaviano – “Rethinking Revealed Comparative Advantage with Micro and Macro Data”. Based on this work, which puts forth a methodology to quantify the exogenous components of countries' relative TFP across industries and reveals new facts on the export-productivity interaction of Chinese firms, the CompNet team together with Professor Ottaviano are working on understanding if the same facts hold true for the European case. Using CompNet data, stylized facts for Europe show similar dynamics to those in China, especially in the Central-Eastern-Southeastern EU countries. A first draft paper is expected by June and the finalized paper by September 2024.

## 4. NSIs and NPBs Training

### Training in Vienna

During the 3<sup>rd</sup> TSI Workshop in Vienna, Alessandro Zona Mattioli led a training session for NSIs and NPBs. The session began with a comprehensive review of metadata's significance, stressing the understanding of available variables and addressing missing data. Alessandro introduced essential metadata files like 'Microprod\_Metadata.xlsx' and 'MPnames\_CCnames.csv' to identify variable availability and missingness across countries. He emphasized the importance of ensuring necessary data availability within MDI, considering sample size and data unit critical for merges. Alessandro advocated for precise coding and testing, suggesting the use of mock data to replicate datasets and enhance code reliability.

The session further delved into MDI's R data.table infrastructure, highlighting querying data and performing analyses. It highlighted the benefits of standardized operations and scalability through scripts like 'run\_MPPilot.R'. In discussing module writing, Alessandro outlined the structure and provided dos and don'ts, including utilizing MDI tools, implementing country-specific operations with conditional statements, and avoiding internet downloads. He introduced general functions like 'mdi\_aggregate.R' for regression and summary statistics extraction, fostering effective and secure data handling within MDI.

### Teams platform

Introducing Teams into our workflow serves multiple crucial purposes. Firstly, it addresses the need of NSIs within the MDI to have a dedicated "data provider forum," providing a platform for them to engage and collaborate effectively. Additionally, Teams facilitates interactions between CompNet staff and external collaborators, including NSIs and NPBs, fostering a more streamlined exchange of ideas and best practices in constructing the MDI. Moreover, it promotes seamless collaboration on common research projects with NPBs, enhancing efficiency and productivity. Broadly, the platform provides a tool for NPBs, NSI, and MDI/CompNet staff to share news, events, best practices, trainings, and documentation as well as to build on existing collaborations and promote new collaborations. Importantly, by centralizing communication and collaboration within Teams, we aim to significantly reduce the reliance on email exchanges, thereby optimizing workflow and communication channels within the MDI ecosystem.

### Training material

Our internal training materials are currently being updated to reflect lessons learned from launch 0 and launch 1. Additionally, insights from the Vienna conference are prompting the integration of broader coding practices such as naming conventions, style guides, the `lintr` package, and documentation into our training framework for module writers.

## 5. Outlook

*Content: Outlook on the next milestones and steps ahead (particular on the horizon until the next progress report)*

In the next few months, on the research side efforts will be put into preparing for the MDI Launch 2, scheduled for May 17<sup>th</sup> 2024. The existing research streams will be expanded and refined following the necessities and interests of NPBs. On the MDI training side, the initial training provided during the 3<sup>rd</sup> TSI Workshop is planned to be expanded and work is in progress to provide an MDI manual. A training schedule is being considered to deliver to the NPB as their MDI become available.