Firm-level data and productivity measurement

Filippo di Mauro (IWH, CompNet)
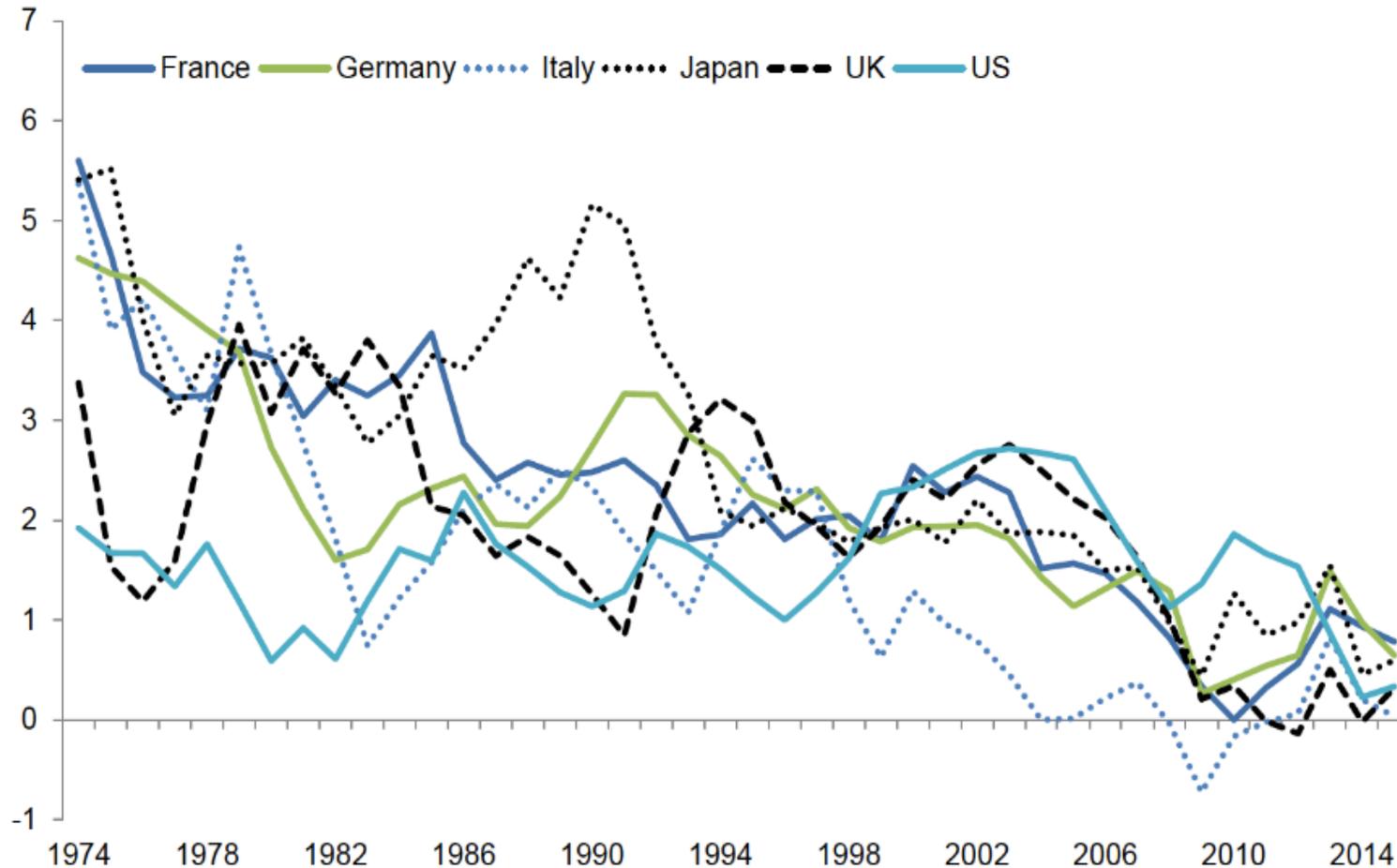
Policy Dialogue
4th December 2019, Brussels, Belgium

Motivation 1

GDP per hour worked, constant prices
(4 year moving average of annual growth)

Legend: France — Germany — Italy ······ Japan ······· UK ─ ─ ─ US ─

Productivity growth has been declining over the last decade in advanced economies

Despite:
- Continuing technological advancements
- rise in intangible investments (R&D)
- Global integration

➔ **Why is this important?**

Two extreme interpretations

▶ **Optimists**

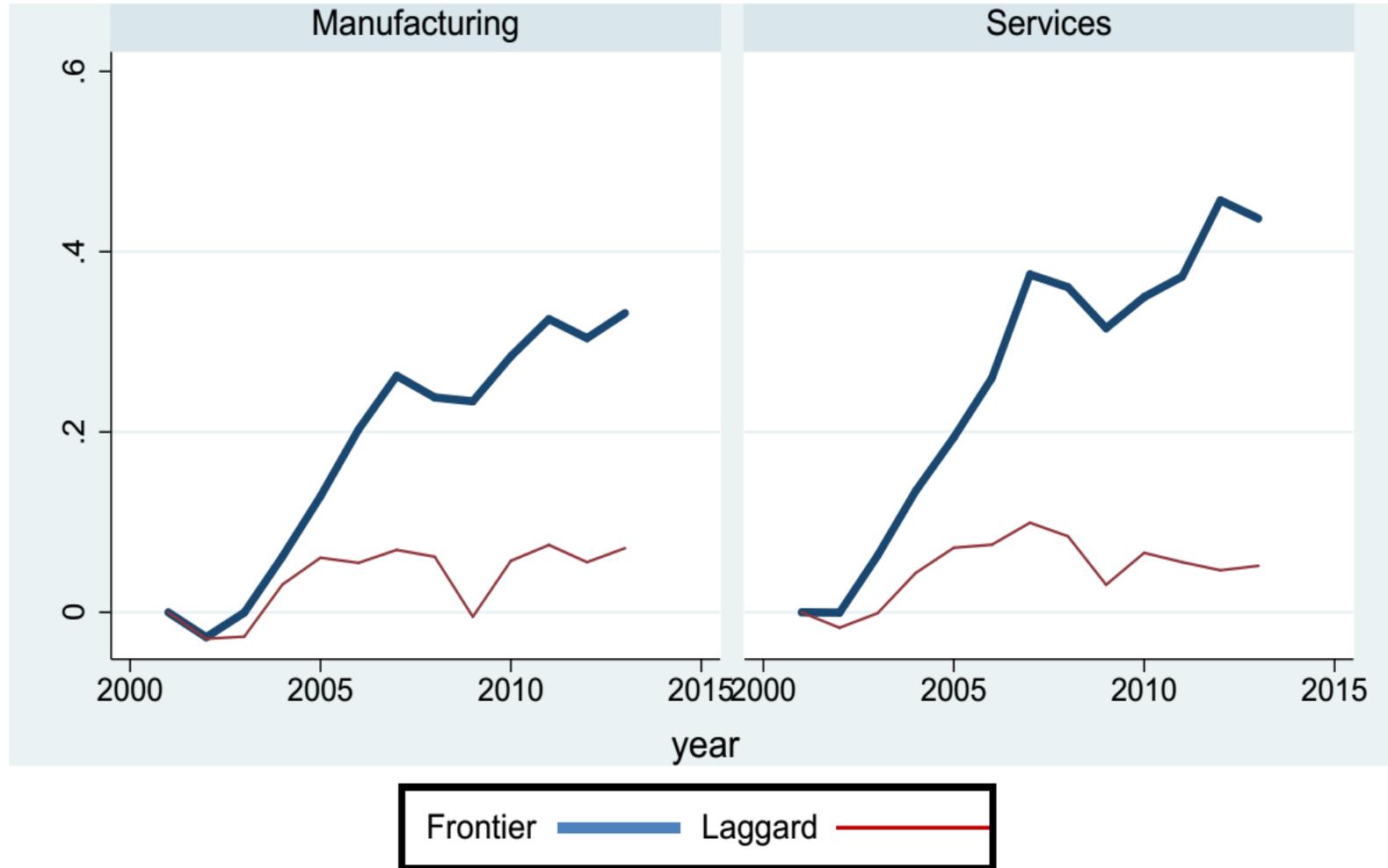▷ It will take time for innovation to spread, but eventually productivity growth will increase again

▶ **Pessimists** (a la Professor Gordon)

▷ Todays innovations are not so revolutionary as electricity or the engine (…social media is a waste of time)

▶ However….

Motivation 2

Productivity growth is diverging.

4

Interpretation and research needs

What's going on?

▷ Is it because the GOOGLEs and other bigs are keeping innovation for themselves?

▷ Or because there are too many firms at the bottom which should exit but are kept alive (zombies)?

▷ The issue is therefore to understand why technological progress is not spreading

  ◇ Barriers to Reallocation
  ◇ Barriers to Entry
  ◇ Competition policies
  ◇ Global constraints?
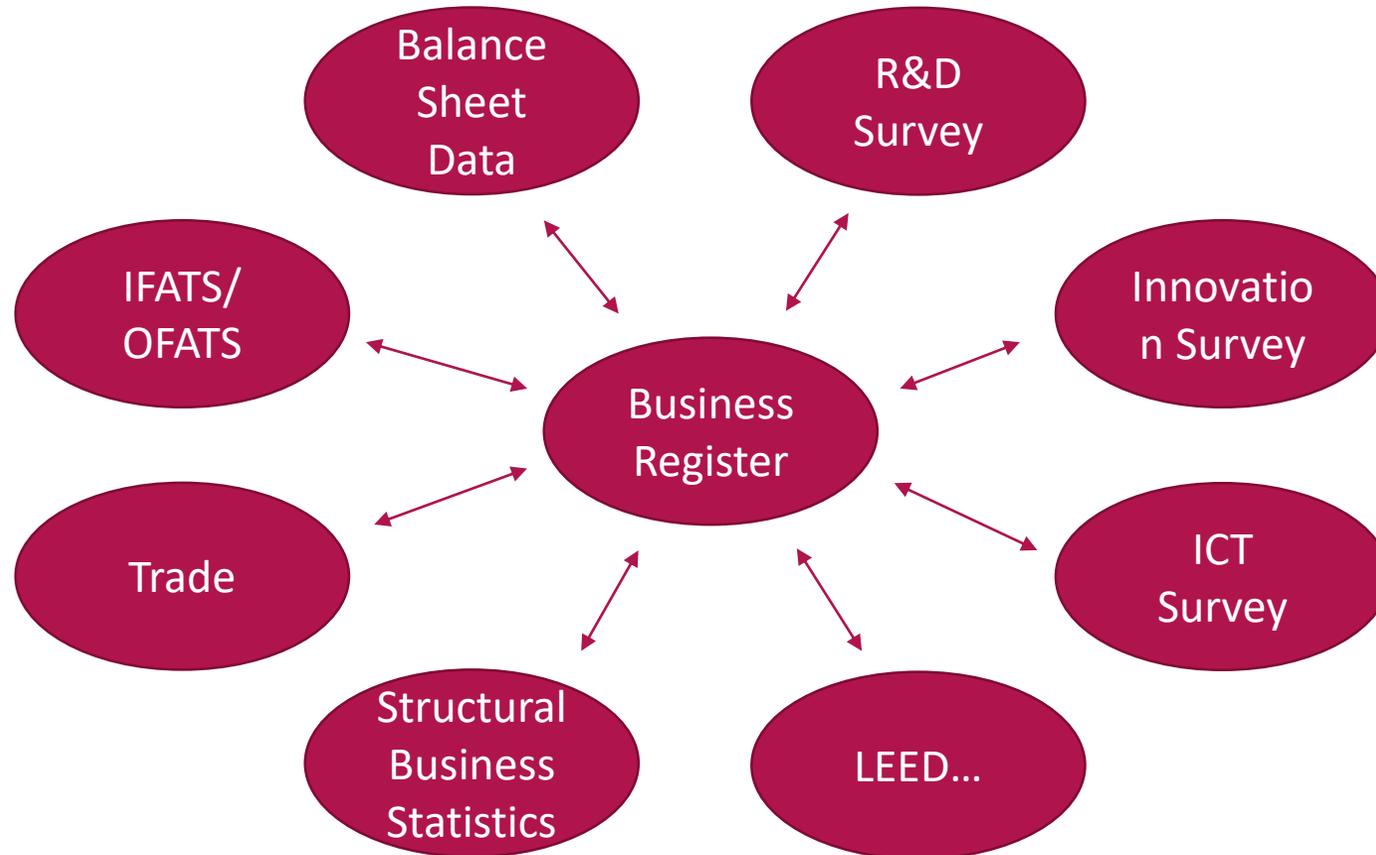
▶ We need much better data to be able to answer

OUR PROJECT in a nutshell

- use **existing** Business Statistics Databases LINKED in new ways to develop new measures and get a comprehensive understanding of firm heterogeneity

- harmonize databases to allow for cross-country firm-level comparisons along different dimensions
  - ▷ Firm choices
  - ▷ Market structure;
  - ▷ Financial and other constraints
  - ➔ (from the above discussion…what are the most important frictions hampering innovation spreading?)

- Build a data infrastructure which is GRANULAR and cross-country homogenous

- Allow researchers to use it independently

THE LINKS WE ARE CREATING

Balance Sheet Data

R&D Survey

IFATS/ OFATS

Innovation Survey

Business Register

Trade

ICT Survey

Structural Business Statistics

LEED...

EXAMPLE 1

Intangibles

Type of Intangible Assets
Computerized Information
1. Software 2. Databases
Innovative Property
1. Scientific R&D 2. Non-scientific R&D
Economic Competencies
1. Brand equity 2. Firm-specific resources

Source: Corrado, Hulten, Sichel 2009

▶ Will combine information from various sources

  ▷ Balance Sheet Data: Intangible Fixed Assets

  ▷ Innovation Data (CIS)

  ▷ R&D Survey

  ▷ Patent Survey

  ▷ ICT Survey

  ▷ Structural Business Statistics

  ▷ Linked-Employee-Employer Data (LEED)

EXAMPLE 2

Integration in Global Value Chains

| Attributes of Firms' International Orientation |
|---|
| *Group Relation* |
| • Independent vs dependent |
| *Ownership* |
| • Foreign vs domestically owned with/without affiliates |
| *Trading Status* |
| • Importer/ exporter/ two-way-trader/none |
| Type of traded good/service |
| • Intermediate/ final/ consumption good |
| International Sourcing |
| • Business functions |

▶ Will combine information on

- ▷ Foreign Affiliates abroad (OFATS)
- ▷ Foreign owned enterprises (IFATS)
- ▷ Trade Statistics
- ▷ Structural Business Statistics (SBS)

Toward a cross-country micro-data research infrastructure
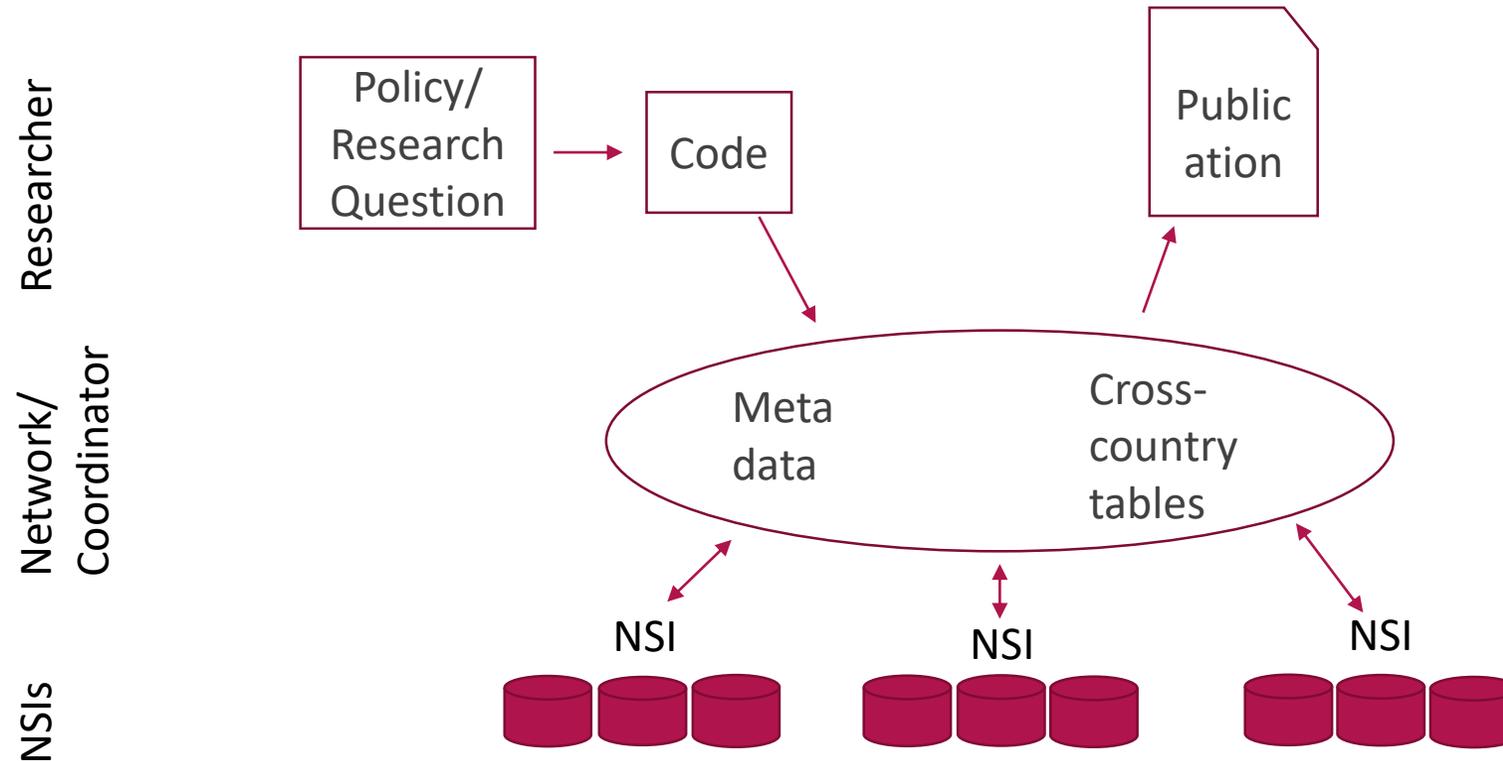
Conclusion

- **Low productivity growth …and high disparity of performance across firms is a concern**

- Good news is that there are and increasingly so firms which are over-performing

- Bad news is that we do know VERY LITTLE of why is happening

- More granular data dissecting the winners and the rest is our solution

Thanks for your attention and support

Toward a cross-country micro-data research infrastructure

▶ Allows researchers to write code modules that make use of a network of NSI partners

  ▷ facilitated data access via remote access/ execution for selected projects

  ▷ the metadata, common mapping locations and names of datasets and variable names, allows common code to be run at each site

  ▷ the NSI partners will run the code modules in their country and conduct disclosure analysis

▶ output is specific to research project, i.e. no collection of ‚moments' that will be made available for later use (unlike ESSLait or CompNet)

  ▷ along the lines of Nordic NSI's Database