CompNet The Competitiveness Research Network

Market power, digital transformation and the COVID-19 catalyst

OECD and the German Ministry for Economic Affairs and Energy

3rd December 2020

Filippo di Mauro
Chairman of CompNet

What is CompNet?

1. We started in 2012 as a research network of the European Central Bank to:

   ➢ Provide a forum for research on productivity/competitiveness within and outside the EU system of central banks

   ➢ Generate top standard indicators on productivity drivers, which are firm-level based.

2. Since early 2017, all major European institutions joined the initiative in addition to the ECB (EIB, EU Commission, EBRD) and many statistical institutes (NSIs) have now become our data providers, in addition to several National Central banks.

> This allowed us to improve dramatically overtime the quality of the dataset and its cross-country comparability. This is for us top priority.

➔ Our members use systematically and independently our dataset for policy and research

➔ We encourage GFP members and researchers to use our dataset. www.comp-net.org

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The CompNet dataset (7th Vintage)

- Unbalanced panel of 19 European countries for the period 2000-2017

- Micro-aggregated indicators on productivity and drivers (including concentration and competitiveness)

- The indicators are computed using mostly administrative data which have better coverage than other sources (e.g. ORBIS)

Countries	Macro – Sectors
Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Hungary, Italy, Lithuania, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland	Manufacturing, Construction, Wholesale and retail trade; repair of motor vehicles and motorcycles, Transportation and storage, Accommodation and food service activities, ICT, Real Estate, Professional activities, Administrative and service

Motivation of the session today

There is evidence of rising firm concentration in both the US and Europe, and increasing concerns

- What are the consequences?

- **Negative view**
  - Firms concentration reflects increases in market power and markups

  - ...More lax antitrust enforcement

- **Positive view**

  - Changing nature of competition rewarding more efficient firms with increased market shares
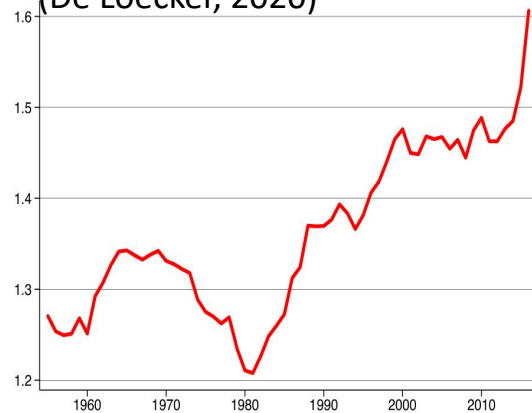
  - "Winner take all/most" Van Reenen (2018)

Road map

- Stylised facts on firms concentration

  o First source of controversy…need to work more on data quality

- Impacts

  o The CompNet view

- Taking a broader view

  o Research needs ahead

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# Trends in Europe and in the US: the evidence so far

US

- **Increases in aggregate markups** driven by market share reallocations towards high markup firms (DeLoecker et al, 2020)

- **Decreases in labor share** also driven by market share reallocations (Autor et al, 2020)

EU

- **Conflicting trends in last 20 years** based on data source
  - OECD Multiprod: Increasing concentration
  - Orbis: Decreasing concentration

- **CompNet** dataset,
 - trend for **increased concentration** at the *aggregate* level after 2008 (including DEU)

Average markup in the US economy
(De Loecker, 2020)

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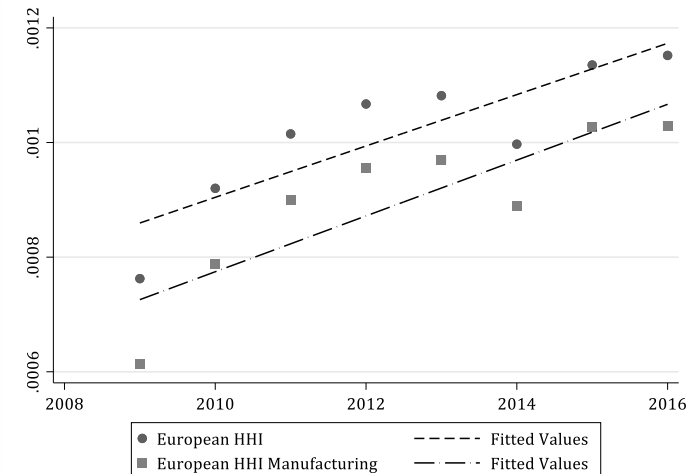
- We derive a *European* Index of Revenue Concentration to treat Europe as a whole starting from the <u>Herfinahl-Hirschman Index (HHI)</u>.

- We benchmark this newly derived indicator with the <u>top-10 revenue share</u>

- We use regression at 2-digits sector level to test the association between concentration and productivity
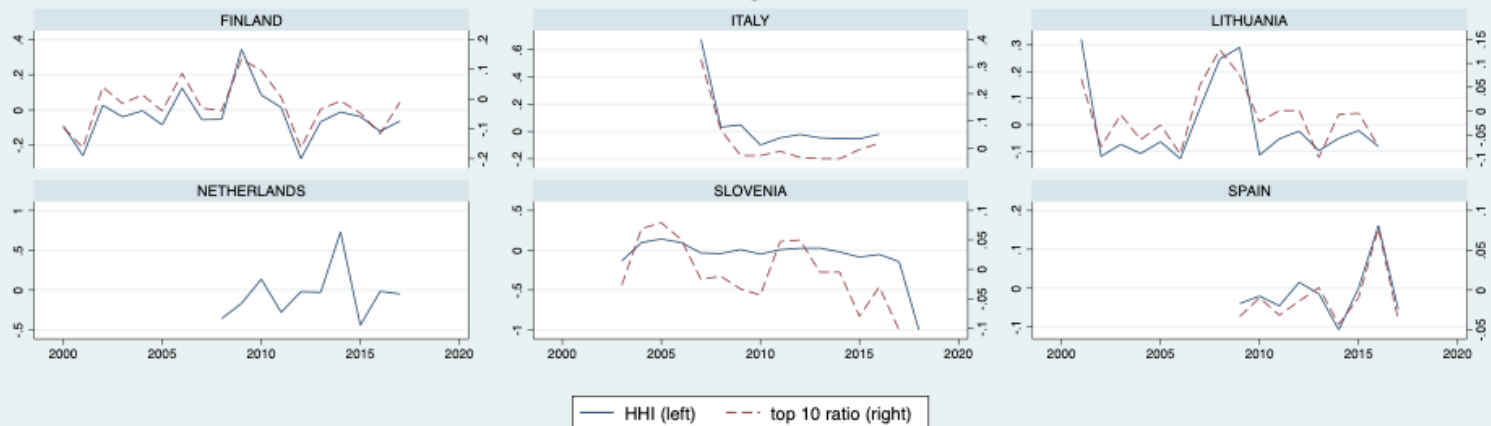
HHI growth on average...
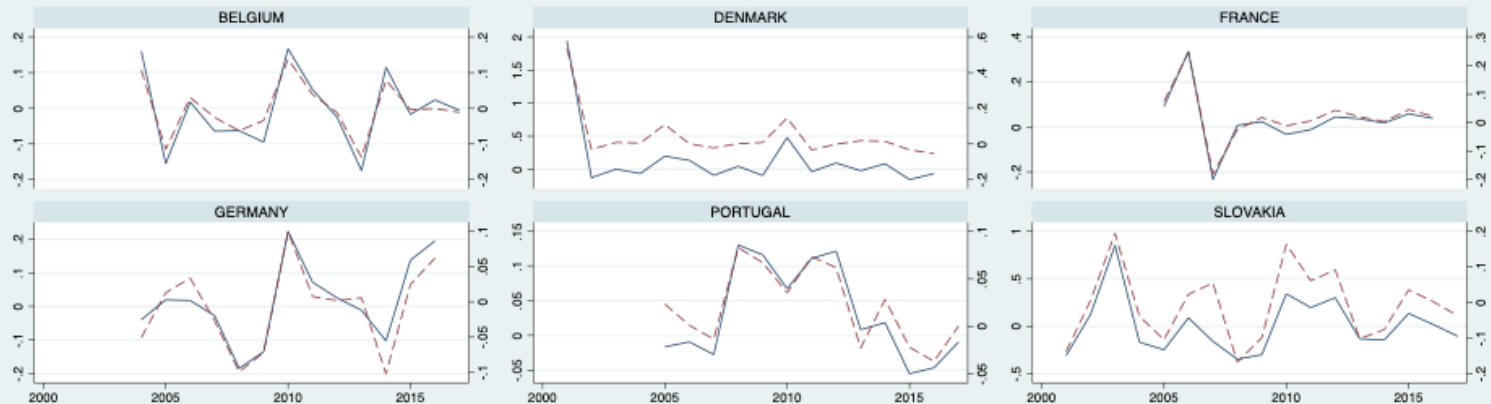
Aggregated HHI revenue concentration in Europe is rising
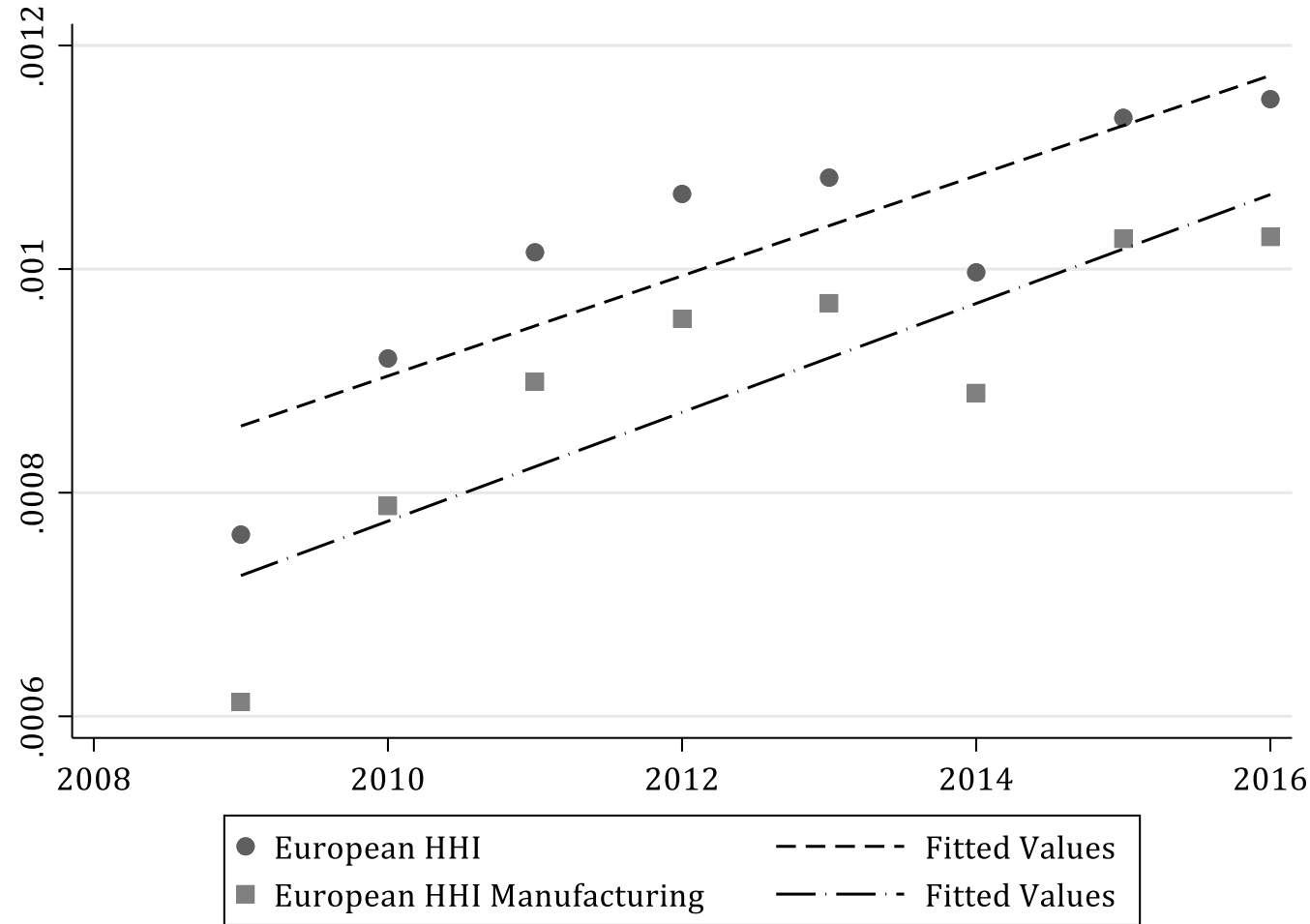
Concentration is highly correlated with sector productivity

	All sectors		
	(1) HHI	(2) HHI	(3) HHI
Sector Labor Productivity	0.390***	0.459***	0.379**
	(0.107)	(0.116)	(0.160)
Capital Intensity	-0.0788	-0.0733	-0.0558
	(0.0747)	(0.0669)	(0.0648)
Median Firm size		0.130	0.168
		(0.0914)	(0.112)
Weighted Average Markup		-0.399	-0.255
		(0.239)	(0.203)
Intangible K intensity			-0.00305
			(0.0250)
Observations	6,890	6,643	4,145
Year FE	YES	YES	YES
Sector- Country FE	YES	YES	YES
R-squared	0.867	0.873	0.881
# of Clusters	48	47	46

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Olley- Pakes decomposition

- Let y_{st} be the productivity in sector *s* at time *t,* measured as the weighted average of firm-level productivity y_{it} with weight s_{it} given by firm size

- y_{st} can be decomposed as follows:

$$y_{st} = \bar{y}_{st} + \sum_{i \in s} (s_{it} - \bar{s}_t)(y_{it} - \bar{y}_t)$$

- The second term is a <u>covariance between productivity and firm size</u>. It is an index of *allocative efficiency*

Concentration may boost allocative efficiency

	All sectors		
	(1) HHI	(2) HHI	(3) HHI
Covariance between Labor Prod and Firm Size	0.00614***	0.00654***	0.00748***
	(0.00119)	(0.00137)	(0.00107)
Capital Intensity	-0.00425	0.0199	0.0124
	(0.0666)	(0.0583)	(0.0547)
Median Firm size		0.109	0.147
		(0.0938)	(0.112)
Weighted Average Markup		-0.317	-0.187
		(0.221)	(0.149)
Intangible K intensity			-0.00135
			(0.0233)
Observations	6,890	6,643	4,145
Year FE	YES	YES	YES
Sector- Country FE	YES	YES	YES
R-squared	0.874	0.880	0.889
# of Clusters	48	47	46

Robust standard errors in parentheses
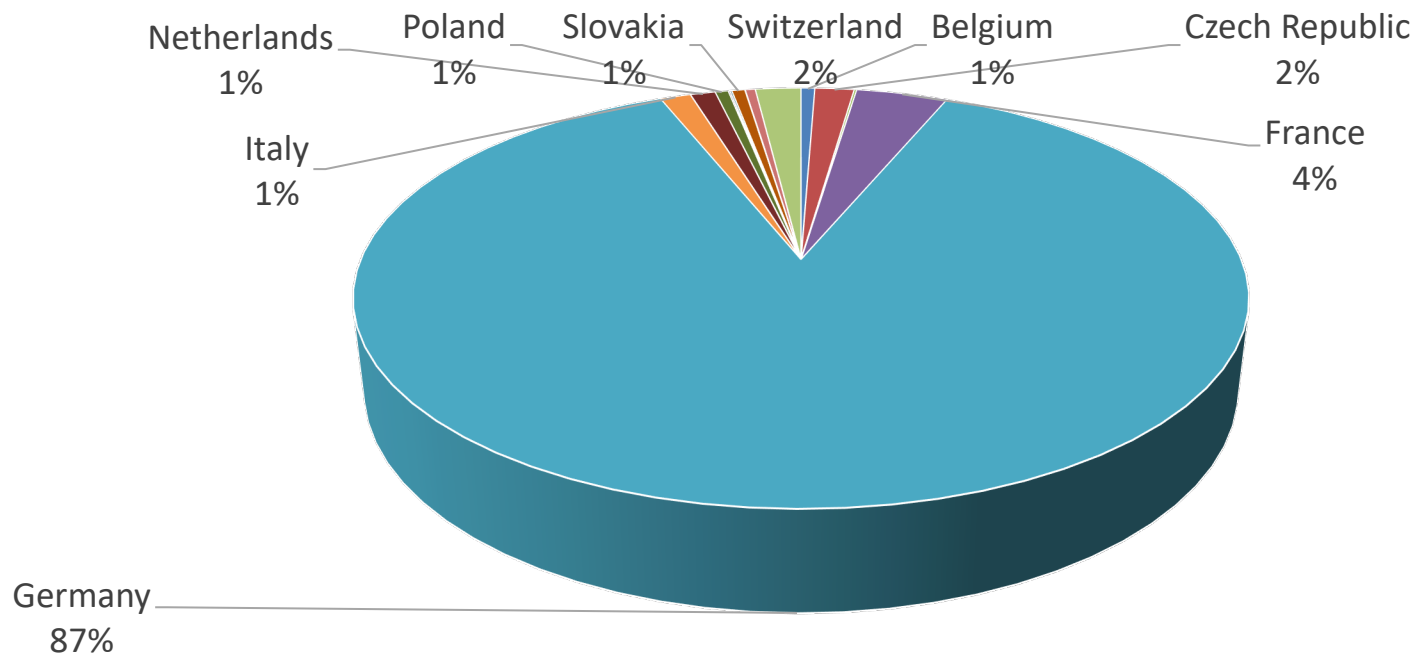
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Conclusions: The big picture

- Concentration may be beneficial for productivity and allocative efficiency in EU
➔ This reflect well on the EU competition policies (Philippon)
➔ But it should not be a cause of complacency

- The COVID epidemic has put squarely digital transformation on top of the list, but also shown that there are critical issues looming on the horizon – possibly going further than "pure" economics. Some of the questions include:
  - Is the process of digital transformation proceeding rapidly enough and is it adequately wide-spread?
  - How do we reconcile the need for larger data sharing with privacy protection?
  - Including setting limits to the power of States and some paramount large firms on such data?

➔ Let me repeat the recommendations for the discussion of today:
  ➔ Give importance to data quality in Europe for the assessment of firms concentration
  ➔ Not be complacent on the (rather positive) impacts measured so far
  ➔ Keep in mind the big picture

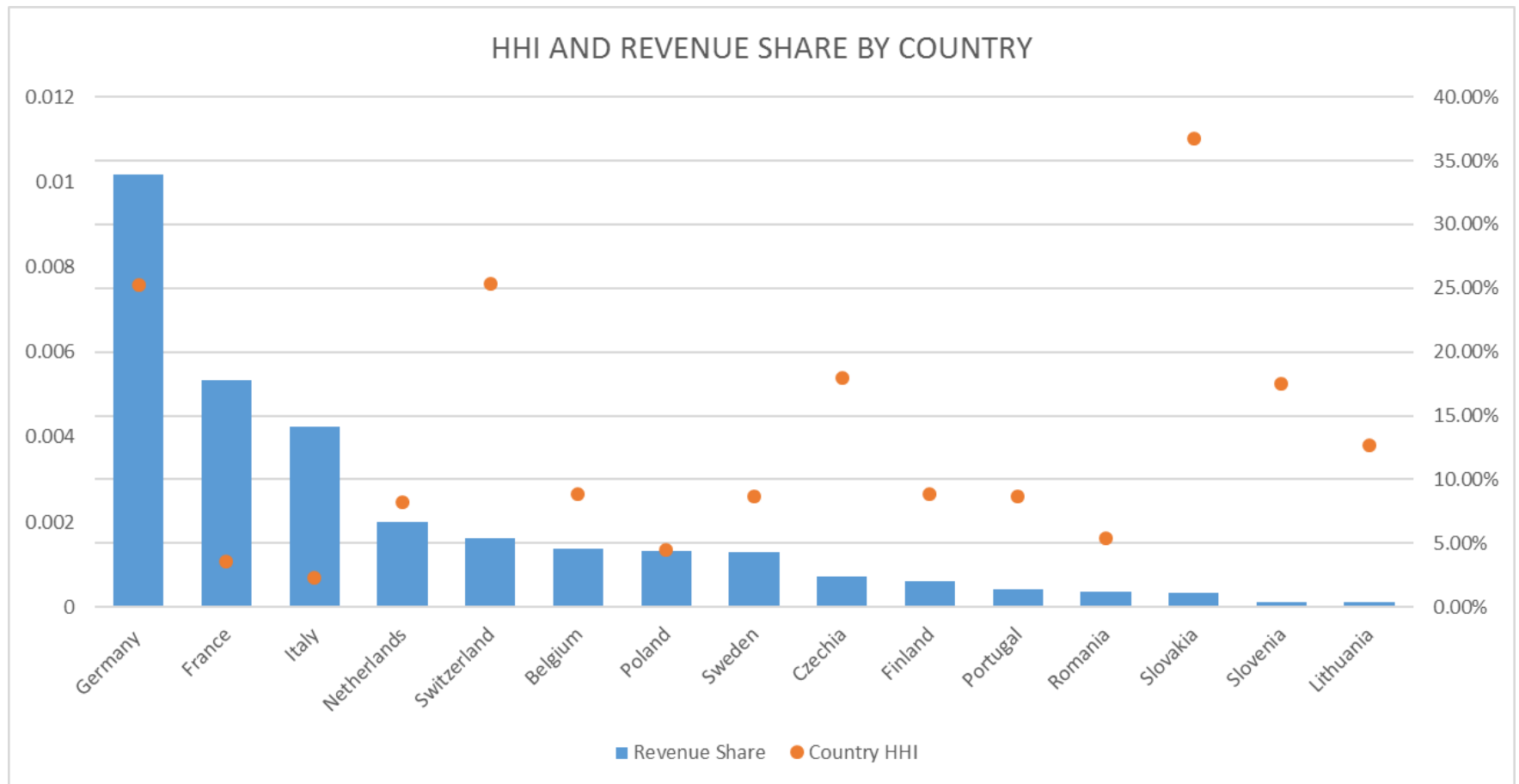CompNet The Competitiveness Research Network

Thanks for your attention…

…and looking forward to a stimulating session

Aggregated *HHI* decomposition by country

➔ The EU concentration is by large extent explained by Germany

HHI AND REVENUE SHARE BY COUNTRY

(Countries: Germany, France, Italy, Netherlands, Switzerland, Belgium, Poland, Sweden, Czechia, Finland, Portugal, Romania, Slovakia, Slovenia, Lithuania)

Legend: ■ Revenue Share ● Country HHI

- Germany has the second highest level of market concentration (red dots; left scale)
- It has by far the highest revenue share (double than France e.g.)
- Germany is big as well as highly concentrated

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How is this related to productivity?

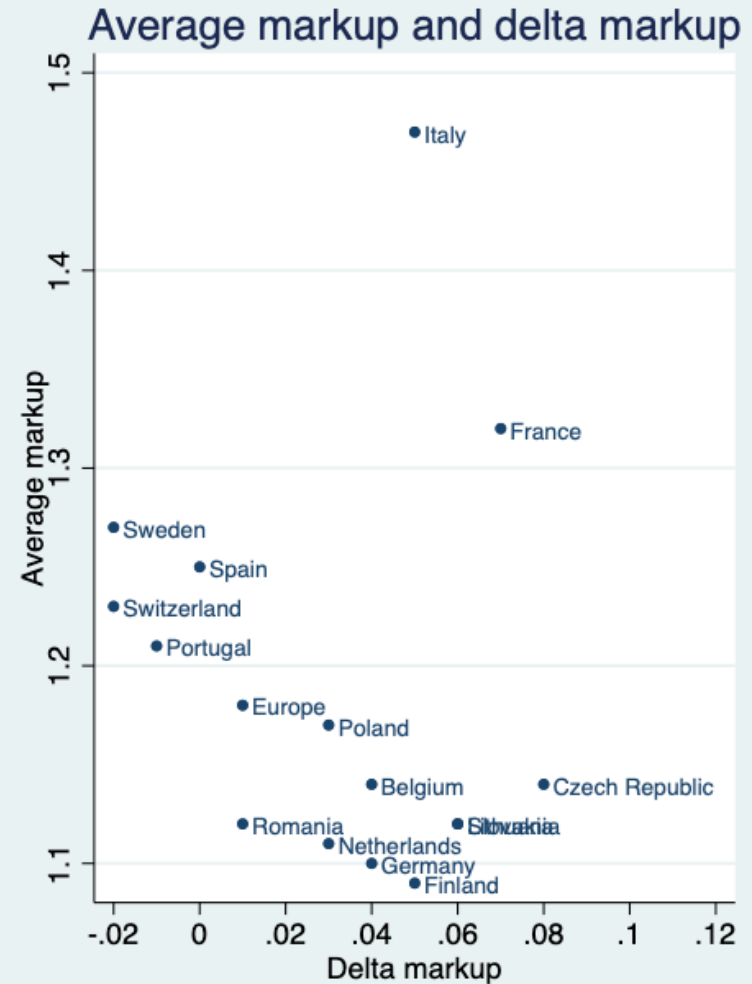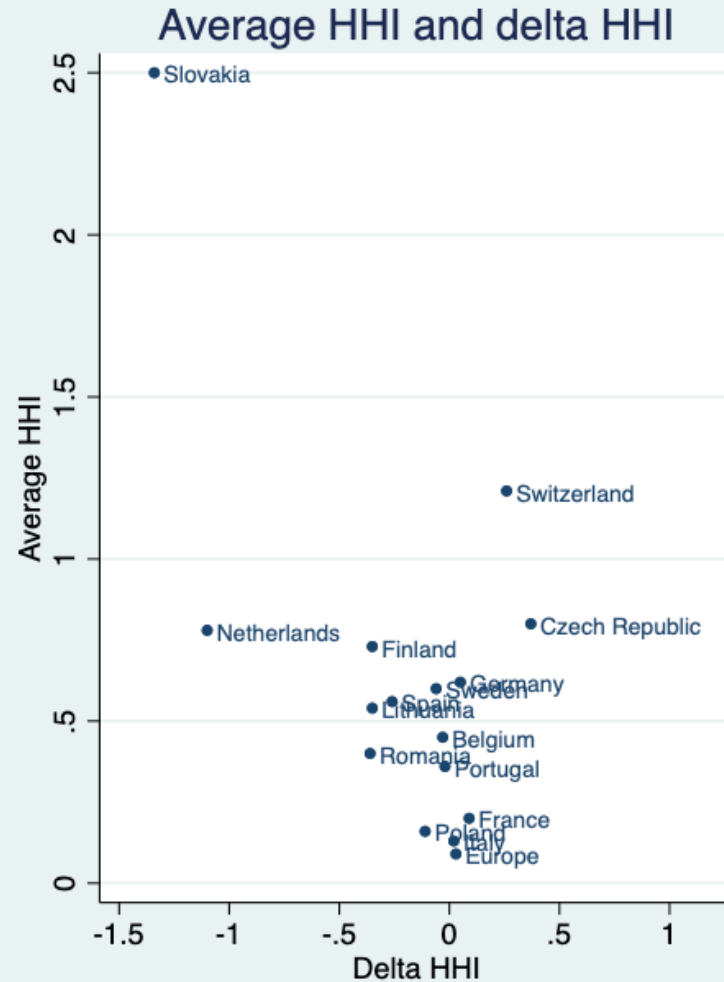The Within sector TFP growth in Europe:
- declining on average (left panel)
- with only marginal differences across countries afterall
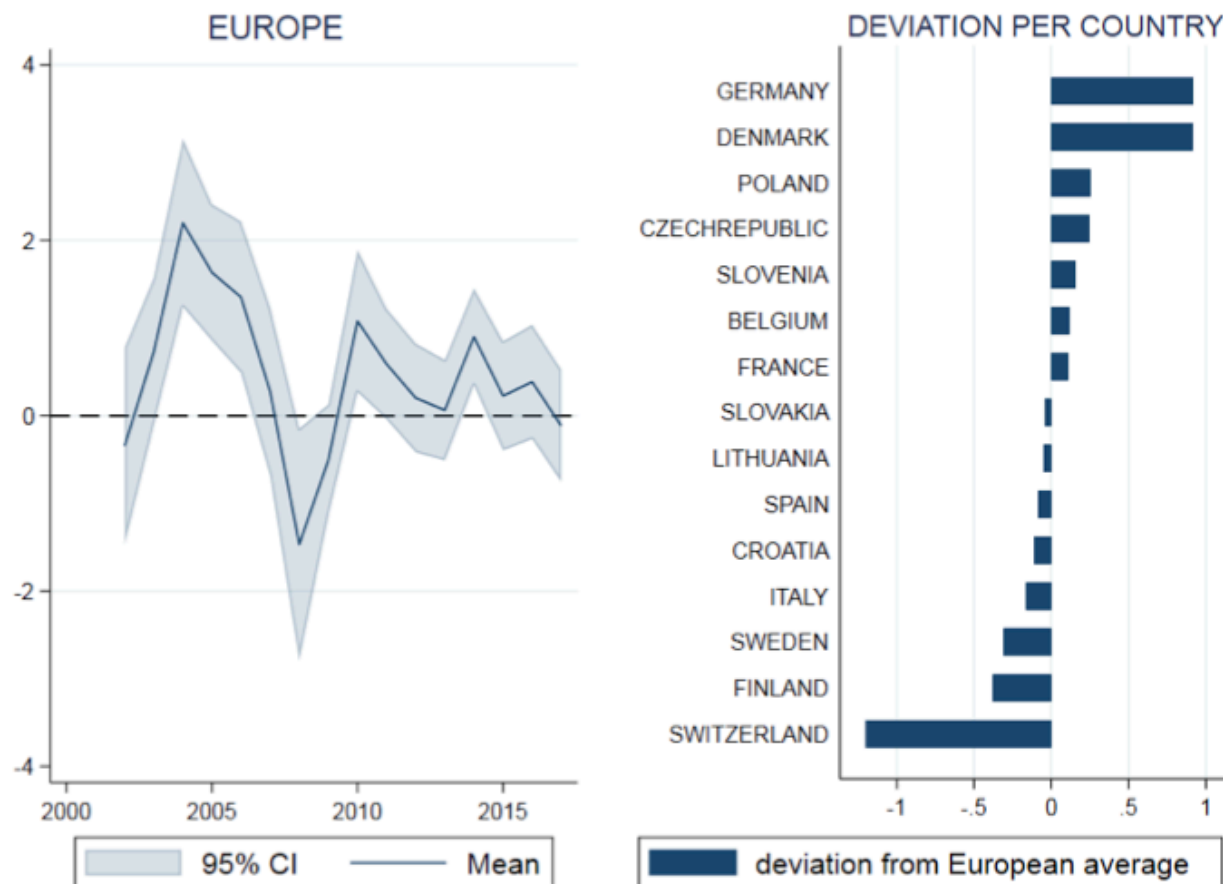
Source: CompNet

Correlation of:

HHI and Markups: level vs growth (2)

Country	Average HHI	ΔHHI	Average Markup	ΔMarkup
Belgium (2003-2017)	0,45	-0,03	1,14	0,04
Czech Republic (2005-2017)	0,8	0,37	1,14	0,08
Finland (1999-2017)	0,73	-0,35	1,09	0,05
France (2004-2016)	0,2	0,09	1,32	0,07
Germany (2003-2016)	0,62	0,05	1,1	0,04
Italy (2006-2016)	0,13	0,02	1,47	0,05
Lithuania (2000-2016)	0,54	-0,35	1,12	0,06
Netherlands (2007-2017)	0,78	-1,1	1,11	0,03
Poland (2005-2017)	0,16	-0,11	1,17	0,03
Portugal (2004-2017)*	0,36	-0,02	1,21	-0,01
Romania (2005-2016)	0,4	-0,36	1,12	0,01
Slovakia (2000-2017)	2,5	-1,34	1,12	0,06
Spain (2008-2017)	0,56	-0,26	1,25	0
Sweden (2003-2016)	0,6	-0,06	1,27	-0,02
Switzerland (2009-2017)	1,21	0,26	1,23	-0,02
Europe (2009-2016)	0,09	0,03	1,18	0,01

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