CompNet The Competitiveness Research Network

Introductory remarks

CompNet-EBRD Workshop

London, 9 October 2018

Filippo di Mauro
Chairman of CompNet

Meet the CompNet Team

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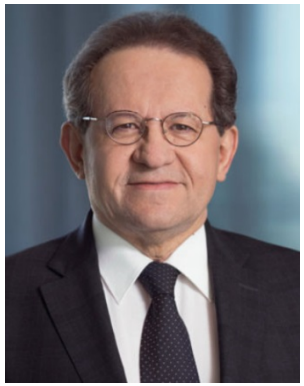

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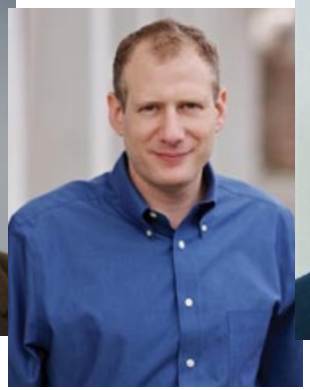

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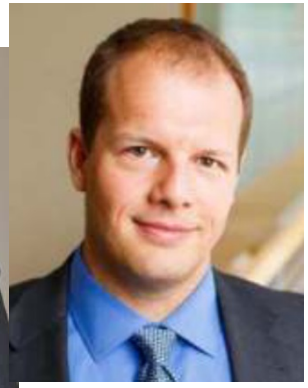


Chad Syverson

Meet the CompNet Team

Executive Committee

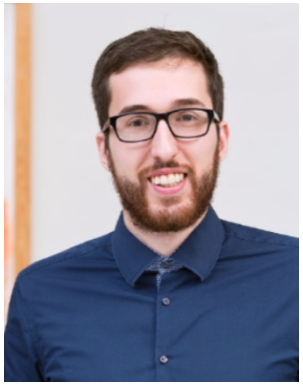
Filippo Di Mauro

Ettore Dorrucci

Steffen Muller

Research Team

Richard Brauer



Matthias Mertens

Roberta Serafini

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Meet the CompNet Team

Secretariat

Peter Haug

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Tim Gebauer

Matteo Sartori

Daan Beijersbergen

Dimitri Trofimenkov

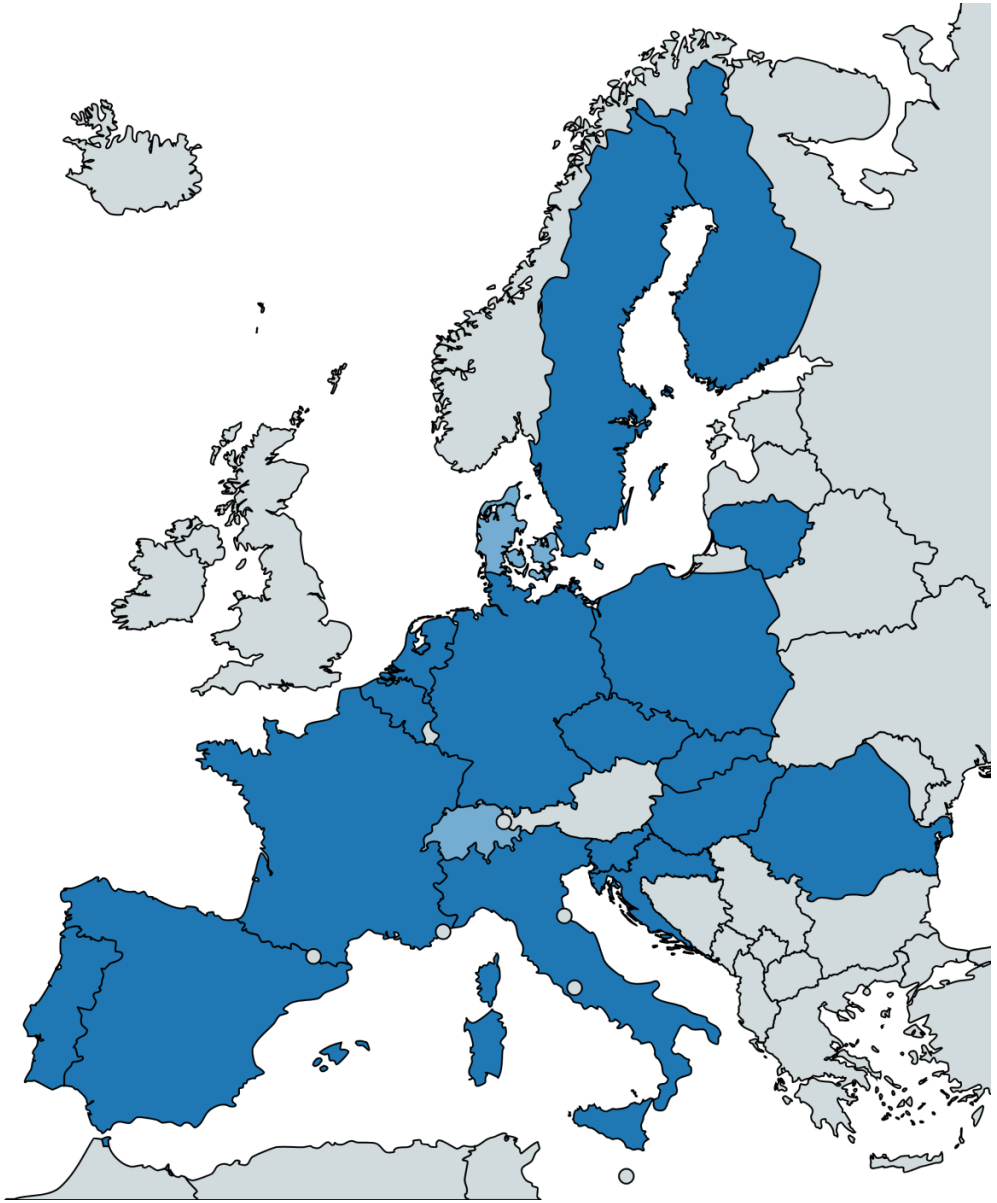
Jan Paul Van De Kerke

Latest achievements

- **Enlargement** of the Network:
  - More statistical offices are now data providers (lately, INSEE (France), Swiss Statistical institute and possibly ONS (UK))
  - More country teams participating
- Improvement of the **codes** (less time to run the codes)
- Active in **research** …
  - over 40 ongoing research projects based on CompNet data
  - 7 Working Papers since 2016
  - 22 refereed journal articles from members of the CompNet network
- … and in **policy**
  - European Commission: Country Report Spain 2018
  - EBRD: Transition Report 2017/18, chapter 2
  - Articles in the ECB Economic Bulletin and in VOXEU.org

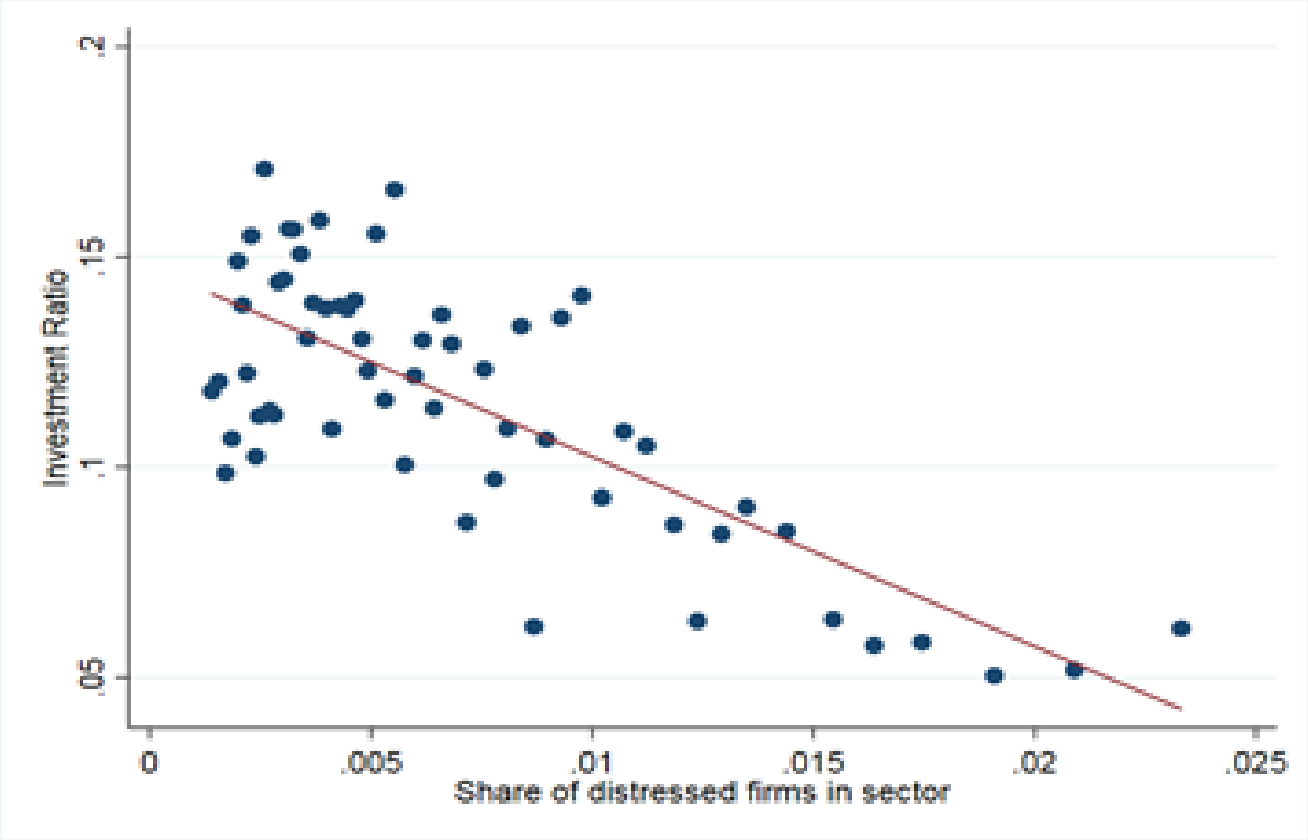
The 6th wave of the CompNet database

- Time period:
  - **1999 – 2015 (added 2 years)**
- Data coverage:
  - (up to) **78% in firms**
  - (up to) **99% in employees**
- Geographical coverage:
  - **18 EU countries**
- Data collection:
  - Richer set of **variables**
  - More efficient **codes**
- Data are available:
  - **on line** for CompNet members
  - **upon request** for others



Stylized facts: 1) Distressed firms and investments

Do distressed firms have a sizeable economic impact?



Sectors with a higher share of distressed firms show significantly **lower investment** ratios and job creation rates

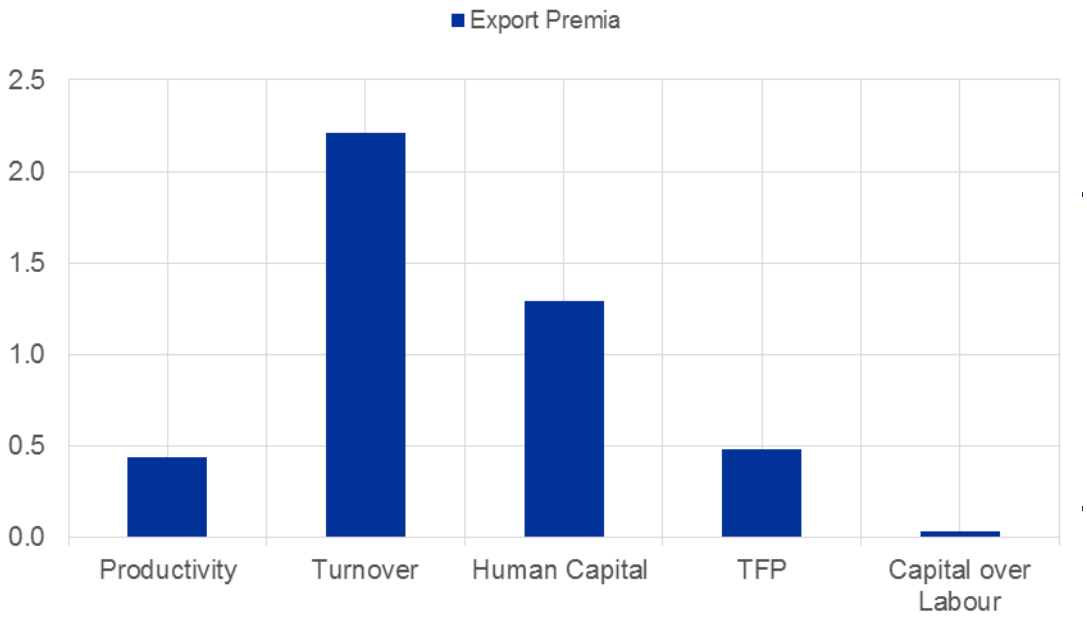
Sector investment and share of distressed firms

(median investment of the 2-digit industry and share of distressed firms)

Source: 6th vintage of CompNet, full sample.
Notes: Firms with interest payments higher than operating profits for 3 consecutive years, conditional on positive profits. Countries included: BE, CZ, FI,HU, IT, LT, PT,RO, SP, SE. Binscatter controlling for country FE.

Stylised facts: 2) How Happy are the Happy Few?

Performance premia of exporting firms over domestic firms in the same 2-digit industry
(Dummy coefficient for exporting firms after controlling for country and time FE)



Sources: 6th vintage, CompNet, full sample
Notes: The chart shows the coefficients of the export dummy, indicating whether the firm is exporter or not, from OLS regressions where the dependent variable is the log of the performance indicators, controlling for country, time and sector dummies. Countries included are HR, FI, FR, HU, IT, RO, SI and SE.

- The chart shows the coefficient of a dummy for exporting firms relative to non-exporting firms in same sector

Exporting firms are significantly larger, employ more skilled labor and are more productive

We have data for 60 sectors and 18 countries, which can be useful for benchmarking

Conclusions

1. CompNet is growing fast as a forum for research on productivity and as provider of top standard indicators on productivity drivers, which are firm level based.

2. The Cross country report on our 6th Vintage we have just presented and will launch today on our website underlines a number of findings, critical for policy and research.

3. A *Comparability Report*, written by a dedicated working group chaired by Prof. Melitz, confirms the high quality standards of our dataset.

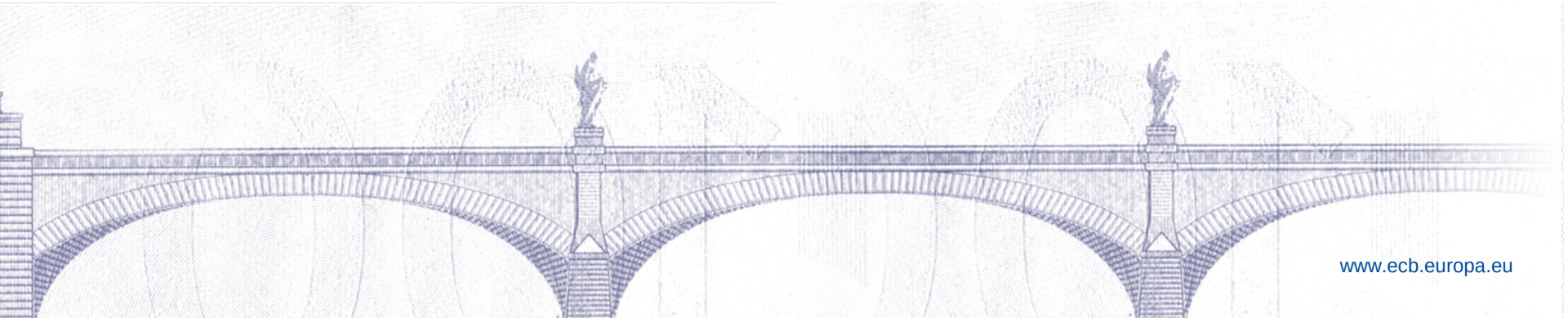
4. We want now to foster the use of the data set for **research** and **policy**. Hope to get further interest in our data and research during this workshop today.

We thank the

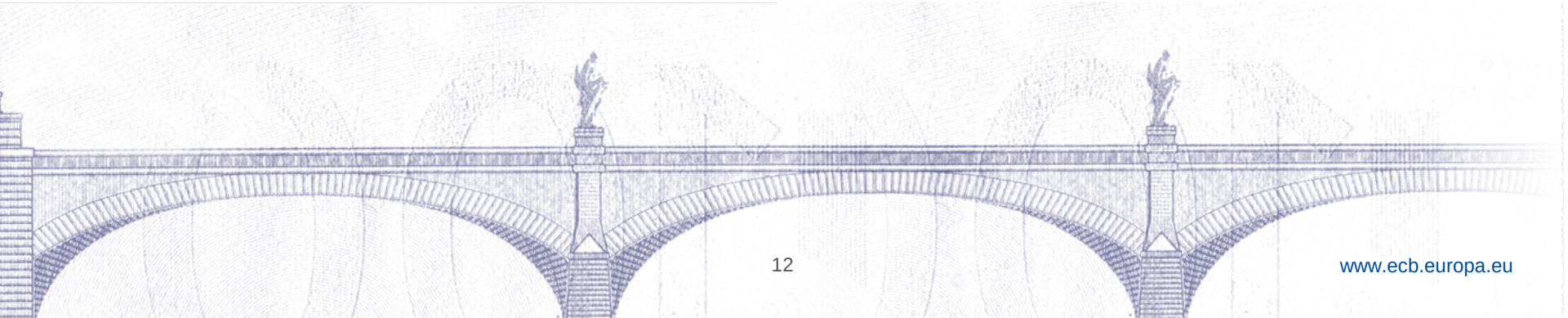
European Bank for Reconstruction and Development (EBRD)

for the wonderful welcome

Enjoy the workshop!



ANNEX



Why do we need CompNet? Firms are heterogeneous

Firm-level data is confidential, and relies on existing administrative databases: cross-country comparability is hindered

- One possibility is to use firm–level data for a given country
  - But benchmarking with other countries not possible
- Another is to use ORBIS data, from BvD
  - Limited coverage and representativeness for a number of countries
  - Limited information on employment and exports
- CompNet uses a micro-distributed methodology to fill the gap
  - Departs from firm-level data available at data providers
  - Collects distributions of competitiveness-related indicators to preserve confidentiality
  - Uses of same protocol in all countries to ensure harmonisation

What's new in CompNet

CompNet has been enriched with the participation of other European policy institutions, as well as NSIs and research centres (IWH)

- Wide country coverage and cross-country comparability have become a "must" of the network
- Reorganization has brought a pause to the data compilation process; this has been important to:
  - Rethink and improve existing indicators
  - Include a new dimension of analysis: the region (NUTS2)
  - Improve coding: efficiency, comparability, confidentiality checks
  - Incorporate new indicators relevant for stakeholders (distressed firms, job flows, human capital…)
  - Incorporate new countries to the database (SE, NL)

Country information: 18 countries as of October 2018

Country information as of today;

Country	Time Span	Sample Available	Export Information	Regional Information	Coverage vs. population	
					Employment	Number of firms
BE	2004-2015	Full and 20e	No	Yes	44%	19%
CZ	2003-2015	20e	Yes	Yes	72%*	72%*
DE**	1999-2014	20e	Yes	No	17%*	9%*
DK	2000-2015	Full and 20e	Yes	Yes	53%	87%
ES	2009-2015	Full and 20e	No	Yes	25%	15%
FI	1999-2015	Full and 20e	Yes	Yes	50%	45%
FR	2004-2014	Full and 20e	Yes	No	57%	41%
HR	2008-2015	Full and 20e	Yes	No	52%	38%
HU	1999-2015	Full and 20e	Yes	No	57%	44%
IT	2001-2014	Full and 20e	Yes	Yes	39%	11%
LT	2000-2015	Full and 20e	No	Yes	69%	37%
NL	2000-2014	Full and 20e	No	No	35%	18%
PL	2005-2015	20e	Yes	Yes	75%*	74%*
PT	2006-2015	Full and 20e	No	No	56%	31%
RO	2005-2015	Full and 20e	Yes	Yes	68%	76%
SI	2005-2016	Full and 20e	Yes	Yes	50%	28%
SE	2003-2015	Full and 20e	Yes	No	40%	32%
SK	2000-2015	20e	Yes	Yes	86%*	90%*

Sources: CompNet 6th vintage and Eurostat, 2011.
Notes: *20e sample.**For Germany data only available for the Manufacturing sector.

Sample representativeness: employment by size class

Use of indicator-specific population weights also for the full sample have improved a lot the representativeness of the samples

Representativeness in terms of employment

Country \ Size Classes	1 - 9 Employees	10 - 19 Employees	20 - 49 Employees	50 - 249 Employees	> 250 Employees
Belgium	21.5% (26.3%)	12.8% (7.78%)	20.3% (12.4%)	24.4% (16.8%)	20.8% (36.5%)
France	30.4% (25.7%)	14.5% (8.05%)	19.2% (11.3%)	24.9% (15.9%)	10.8% (38.9%)
Germany*	-	-	5.06% (7.33%)	27.5% (24.7%)	67.2% (53.4%)
Italy	23.0% (41.0%)	18.3% (11.8%)	21.2% (10.8%)	25.7% (14.2%)	11.6% (21.8%)
Netherlands	16.9% (26.2%)	13.4% (8.50%)	20.1% (11.5%)	30.1% (20.9%)	19.2% (32.8%)
Spain	33.3% (37.7%)	17.2% (9.54%)	20.2% (11.4%)	17.2% (14.6%)	11.8% (26.6%)

Note: representativeness is measured in 2011, number in parenthesis refer to the figures in Eurostat

* Figures rely on the 20e sample

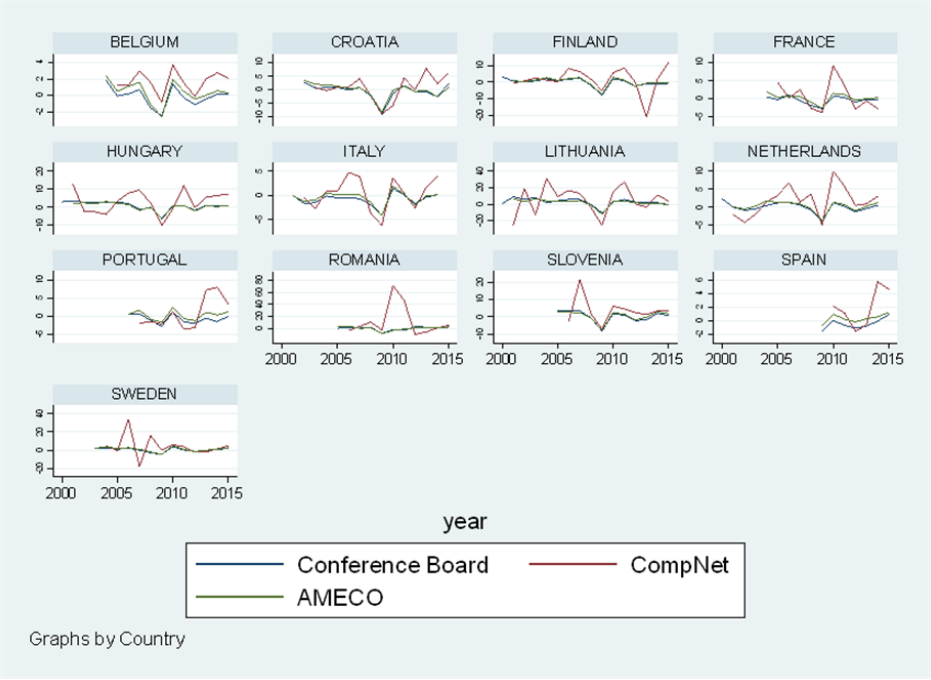
Here for macro-sectors and firms and for all countries.

Overview

Wide range of parametric and non-parametric productivity indicators to let the researcher choose the most convenient

Validation: TFP in CompNet, AMECO and Conference Board

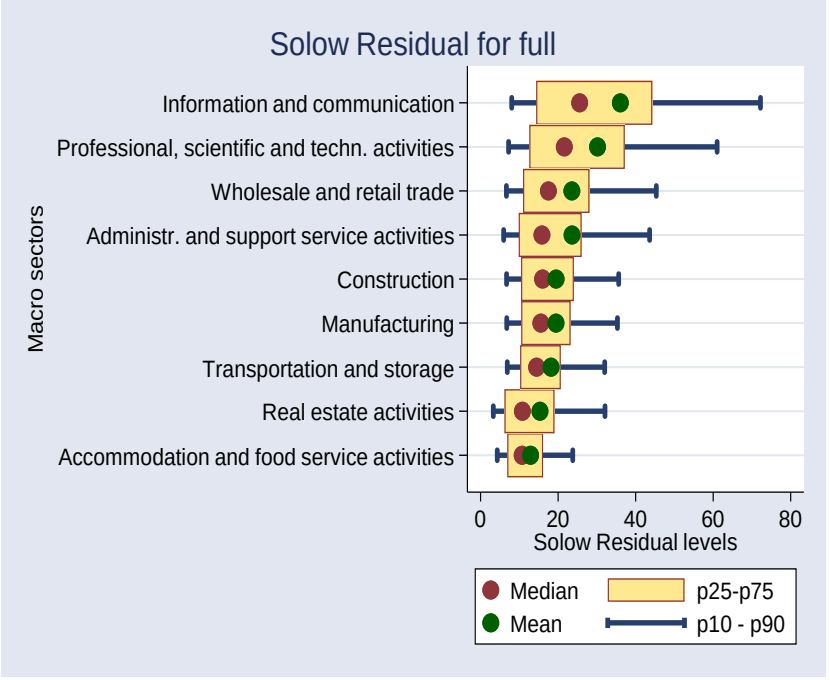
(TFP growth rates)



Source: 6th vintage of CompNet full sample, AMECO and Conference Board.
Notes: The TFP indicator used for CompNet is the SR.

Granularity: TFP distribution by sector, western countries

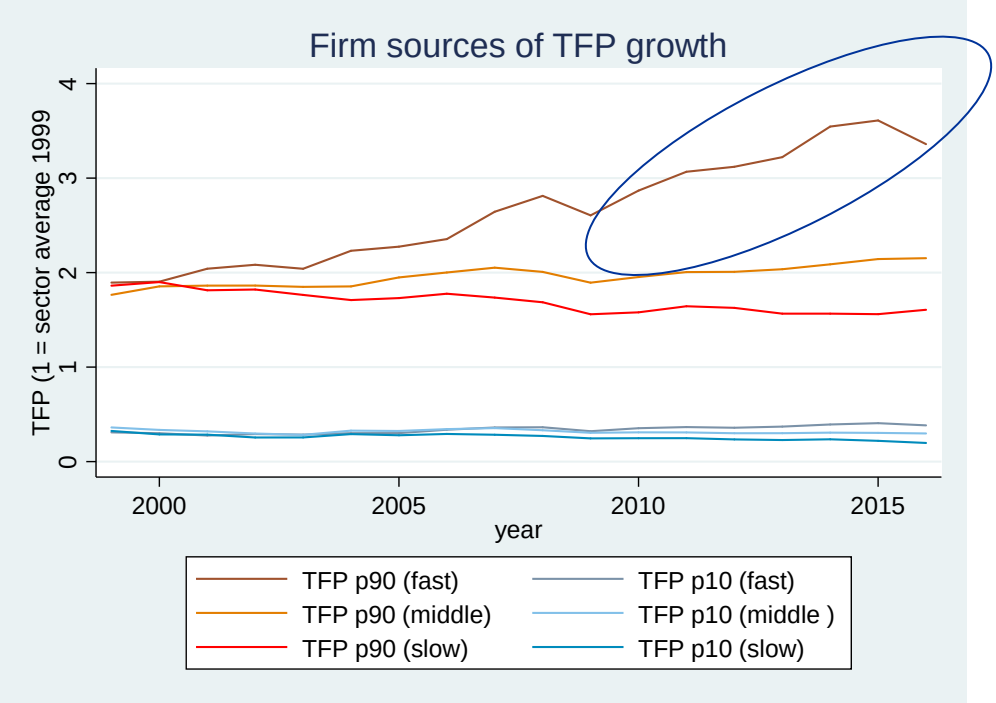
(TFP levels)



Sources: 6th vintage of CompNet, full sample, year 2010.
Note: Countries included are BE, DK, FI, FR, IT, NL, PT, ES and SE.

Productivity: Growth in the age of the superstars

Dynamics of high and low productive firms in fast-low growing sectors



Sources: 6th vintage of CompNet data, full sample.
Notes: TFP is indexed to average productivity in 1999, which is the start year.

What makes the difference between fast and slow growing sectors (in terms of TFP)?

- The chart shows the dynamics of top and bottom productive firms in 3 types of sectors:
  - Fast growing: top-third of distribution of TFP growth
  - So-so: middle third of the TFP growth distribution
  - Slow growing: bottom third
- What distinguishes fast growing sectors is the super-performance of top firms

Overview

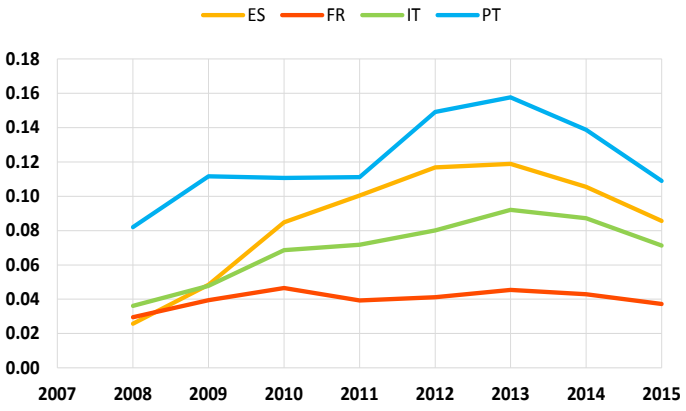
Distressed firms: Checking the data

Non-viable firms still in the market; we use different definitions (interest coverage ratio, negative profits excluding HGF)

Validation: CompNet, ORBIS and SAFE

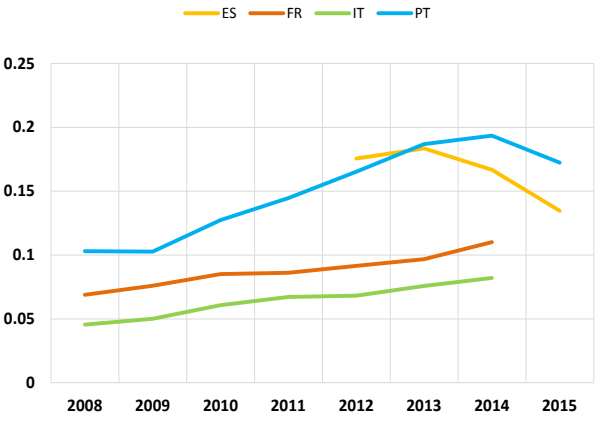
(share of distressed firms)

ORBIS: Storz et al. (2017)



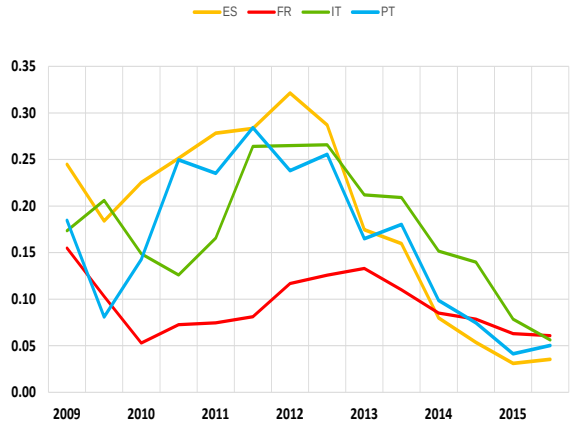
Source: ORBIS.
Note: Distressed firms are defined according to Storz et al. (ECB WP, No. 2104/2017): Non-financial firms with negative investment, negative return on assets and EBITDA to financial debt of less than 5% for two consecutive years.

CompNet: Persistent negative profits



Sources: 6th vintage of CompNet, drawing from the full sample.
Notes: Not high growth captures firms with negative operating profits for three consecutive years, excluding the firms that experienced high growth in employment during that period.

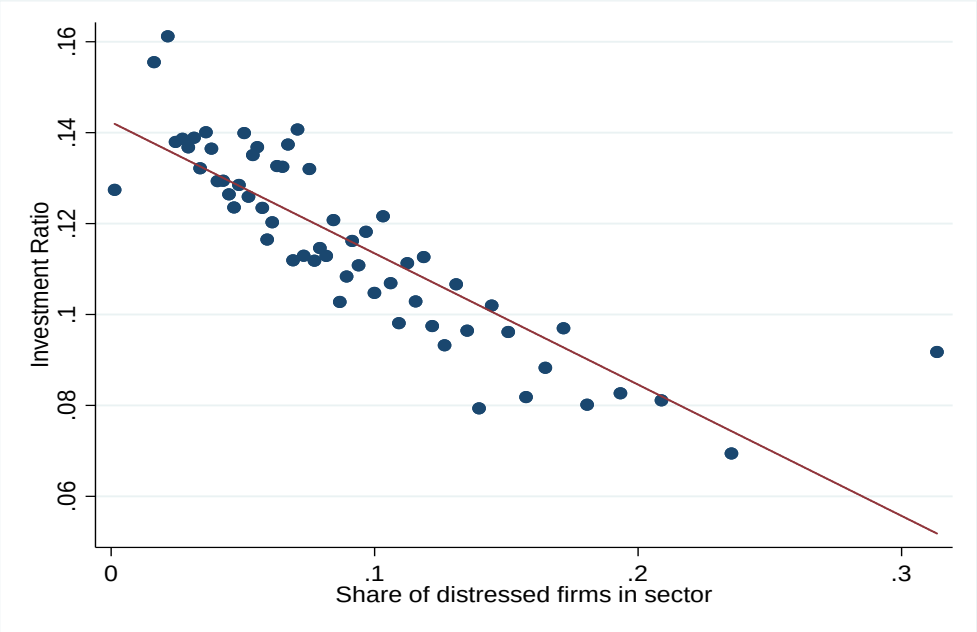
SAFE: Deterioration relative to previous 6 months



Sources: SAFE survey.
Notes: Distressed firms are defined as firms experiencing lower turnover, lower profits and higher interest expenses compared to the previous six months.

Distressed firms: Zombie congestion?

Sector investment and share of distressed firms
(median investment of the 2-digit industry and share of distressed firms)



Source: 6th vintage of CompNet, full sample.
Notes: Firms with interest payments higher than operating profits for 3 consecutive years, conditional on positive profits. Countries included: BE, HR, DK, FI, FR, HU, IT, LT, NL, PT, RO, ES, SI, and SE. *Bin-scatter controlling for country FE.*

Do distressed firms have a sizeable economic impact?

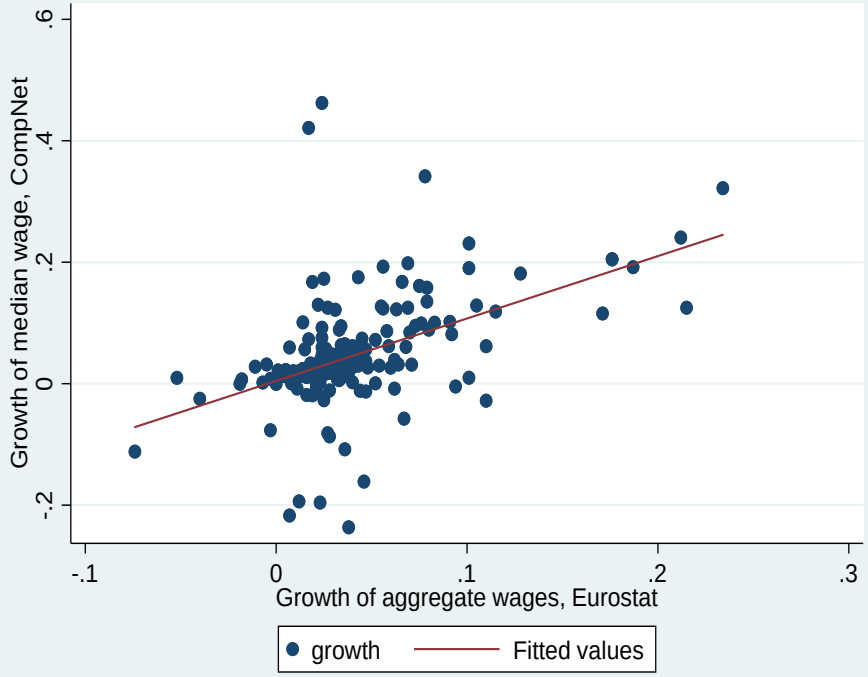
- The chart shows median investment in each country-sector-year and share of distressed firms
  - Share of distressed firms measured as share of firms with positive profits but below interest payments for 3 consecutive years
- Sector with a higher share of distressed firms show significantly lower investment ration and job creation rates

Overview

Gross wages + employers' social security contributions per employee; for the first time we also collect job flows

Validation: wage growth of median firm vs. growth of aggregate wages in Eurostat

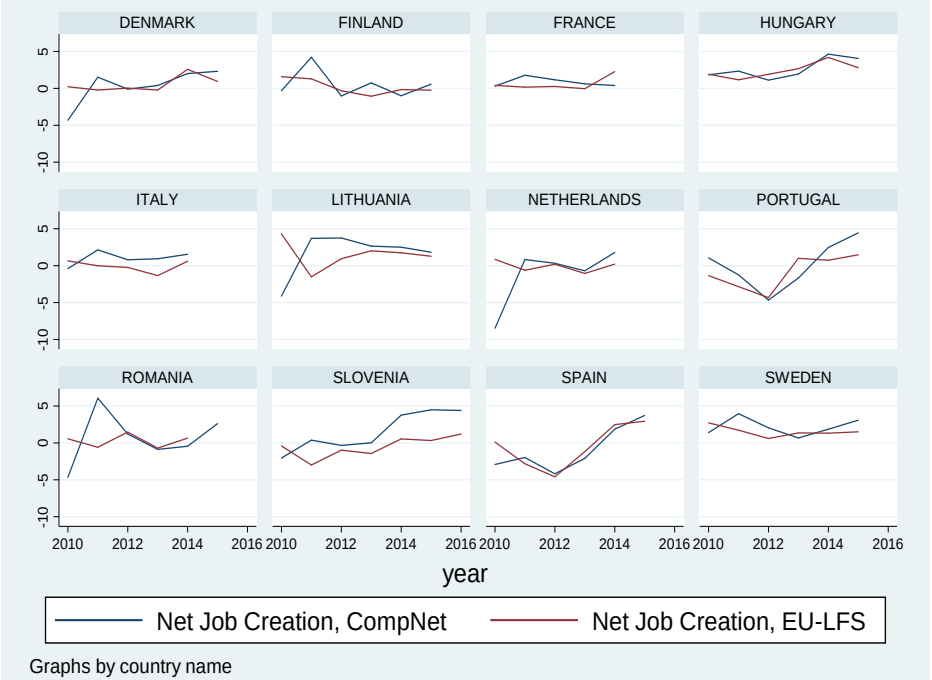
(growth rates)



Sources: 6th vintage of CompNet 20E sample and Eurostat.
Notes: countries included are BE, HR, CZ, DK, FI, FR, DE, HU, IT, LT, NL, PL, PT, RO, SK, SI, ES and SE over the period 2000-2015.

Validation: net job creation in CompNet and in Eurostat's longitudinal LFS

(ULC levels, computed at the 2-digit industry)

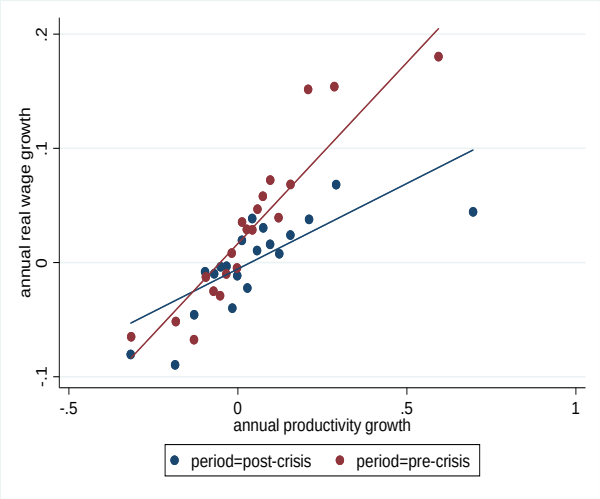


Source: 6th vintage of CompNet data full sample and Labour market transitions from the EU-LFS
Notes: JCR in Eurostat computed as flows from U and I to E; JDR as flows from E to U or I.

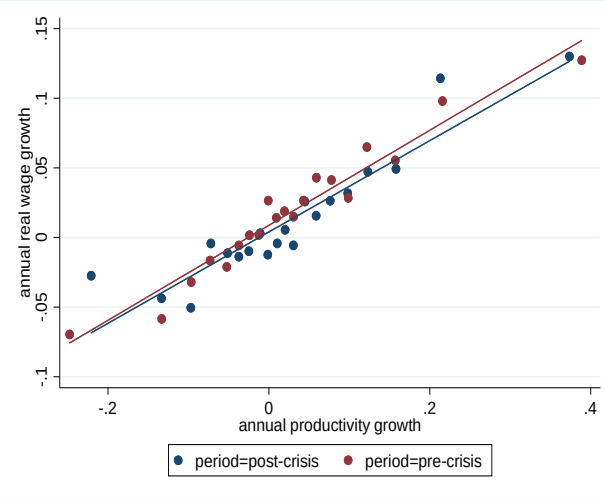
Wages: Subdued wage growth in the post-crisis period

*Median real wage and productivity growth of firms at tails of the TFP distribution in each country-sector-year, **pre** and **post**-crisis*
(growth rates in binscatter)

Bottom 10% productive firms in sector



Top 10% productive firms in sector



Sources: 6th vintage of CompNet, 20E sample.
Notes: countries included are Notes: countries included are BE, DK, DE, FI, FR, IT, NL, PT and SE.
Pre-crisis period is 2004-2007 and post-crisis 2013-2015.

Is real wage growth sub-dued in the post-crisis period?

- The (left) right chart shows the link real wage-productivity growth in (low) high productive firms in pre- and post-crisis

- We find lower wage growth for each level of productivity growth in the post-crisis period only for LOW productive firms

Overview

Concluding remarks

Policy-making in Europe needs to be informed with micro-founded analysis: we hope CompNet can help to that end

- The use of firm-level data from administrative sources in different countries makes perfect comparability impossible
- But we can do several things to attenuate problems:
  - Use of indicator-specific inverse weights to ensure a similar distribution of firms in sample and in population, by macro-sector and size
  - Construct two datasets: one with countries sampling small firms; one including also countries sampling firms above a certain threshold (20E)
  - Apply same treatment to raw data (to check and clean outliers, deflate nominal variables etc)
  - Provide guidelines in terms of variable and firm definition, as well as sector classification
- Most important: **document remaining biases**

Concluding remarks (II)

The new vintage of CompNet data comes with:

- A cross-country report providing an overview of the main novelties of the dataset
- A cross-country comparability report providing metadata and documenting existing differences across countries
- A comparability tool for the user to track cross-country differences in each indicator
- A user's guide with detailed information on definitions of and methodology used to compute some of the core indicators
- A "road-map" mapping indicators to data files and vice versa

All soon to be uploaded in **www.comp-net.org**

THANK YOU!

Background slides

What data can make competitiveness analyses more granular?

Individual country analysis	Shared firm-level data (project with BACH data)	Commercial databases (BvD)	Micro-aggregated data (CompNet, Dynemp)
✓ Detailed firm-level info	✓ Centralised firm-level data (e.g. at the ECB)	✓ Access to firm-level financial statements	✓ Confidentiality preserved
✓ Possibility to merge with other national firm-level databases	✓ Treatment and harmonisation done in DG-Statistics	✓ Complete country coverage	✓ Harmonisation of definitions and treatment
× No benchmark /cross-country analysis	× Legal constraints to share confidential data in many NCBs	✓ Harmonised accounting framework	✓ Good coverage of firms in most countries
		× Low firm coverage	✓ Export info for some countries
		× Biased sample of firms providing non-compulsory data (e.g. employment)	✓ Data users/ producers synergies
		× No info on exports	× No actual firm-level data
			× Not full country coverage so far

More

More

Improvements (ii)

3. A more representative German sample:

- *Sourced by Afid (Amtliche Firmendaten für Deutschland) – Germany's NSI*
- Unbalanced representative sample of manufacturing firms of 20 or more employees
- Information on export activity, inputs and output of production (services coming soon)

Average labour productivity by firm size class in DE manufacturing sector

year	size class	Labour Productivity Eurostat SBS	Labour Productivity old CompNet German data	Labour Productivity new CompNet German data
2008-2012	20-49	45,820	83,938	54,060
2008-2012	50-249	54,540	87,725	60,554
2008-2012	>=250	79,900	99,317	74,016

Bloomberg news (March 21, 2017)

Bloomberg Markets

EU Trade Restrictions Would Hamper Productivity Growth, ECB Says

by **Carolynn Look**
21 March 2017 10:00

- Exporting firms tend to be larger and more productive
- Trade barriers would lead to less efficient input allocation

Trade restrictions in the European Union would lower productivity growth, the European Central Bank said.

Exporters tend to be the most productive and largest firms in their respective sectors, meaning that shocks that affect these companies can have aggregate implications, according to an article to be published in the ECB's economic bulletin. Tighter regulation would lead to less efficient input allocation across firms, rendering them less competitive and thus less productive, it said.

Financial times (January 13th, 2017)

FINANCIAL TIMES

RLD US COMPANIES MARKETS OPINION WORK & CAREERS LIFE & ARTS

Eurozone economy + Add to myFT

Beware the zombies behind the world's productivity problem Premium

Companies that too easily cheat death take up a frighteningly large part of the economy

This hugely important finding, that the *diffusion* of innovation and productivity growth from leading to lagging companies has slowed down, was first established by the OECD in the summer of 2015 (Free Lunch covered it then). It was high time for senior policymakers to address this, and indeed it is extraordinary that it took them this long. Draghi and Haldane deserve credit for applying the OECD findings to their respective economies. Draghi included this chart in his speech:

Corriere della Sera & El Pais (March 14th, 2017)

CORRIERE DELLA SERA

PAESE :Italia
PAGINE :27
SUPERFICIE :106 %
PERIODICITÀ :Quotidiana

DIFFUSIONE :(686813)
AUTORE :Mario Sensini

▶ 14 marzo 2017 - N°61

CRESCITA & BANCHE CENTRALI

La Bce

La spinta di Draghi: più innovazione per affrontare la produttività debole

EL PAÍS

Productividad y función empresarial

Cada vez queda más claro que no hay creación de empleo sin una mejora en la capacidad de hacer más

funcionamiento de los mercados de productos y factores. Son conclusiones similares a las destacadas recientemente por el presidente del BCE (*Moving to the Frontier: Promoting the Diffusion of Innovation*) subrayando cómo la difusión tecnológica, no solo la propia generación de innovación, requiere de calidad de la

Micro-aggregated data: CompNet

Another possible solution is to use a micro-distributed approach, like in CompNet

- Write a code (in STATA) to compute different indicators of interest at the firm-level
  - In our case: competitiveness –related indicators; computed from items of the balance sheets, matched, if possible, with customs or exports info
- Harmonise definitions, target samples and cleaning and treatment of the raw data
- Distribute code to our national counterparts; they run the code in their computers (we do not see the data)
- Collect results, aggregated at a country/sector/size/year level to preserve confidentiality, but keeping much of the richness of the firm-level data

Keeping the richness of the firm-level data

- For each indicator, in addition to mean, median, sd and skewness, CompNet compiles:
  - Full distribution (10 deciles) considering all firms operating in a given level of aggregation (country, region, macro-sector, 2-digit industry and macro-sector/size class)
  - Full set of firms' characteristics within a given level of aggregation for different splits of firms (e.g. exporting vs. non-exporting firms)
  - Joint distributions: median characteristics of firms in a given decile of the productivity, size etc. distribution in each level of aggregation

Sample representativeness: employment by macro-sector

Use of indicator-specific population weights also for the full sample have improved a lot the representativeness of the samples

Country	Manufacturing	Construction	Services
Belgium	29.7% (27.5%)	12.3% (17.7%)	57.9% (54.7%)
Croatia	34.3% (43.4%)	12.3% (25.4%)	53.3% (31.1%)
Denmark	23.3% (31.3%)	12.8% (15.3%)	63.7% (53.3%)
Finland	30.6% (31.0%)	13.7% (16.9%)	55.6% (51.9%)
France	22.4% (24.9%)	14.3% (16.3%)	63.2% (58.6%)
Hungary	32.9% (34.9%)	8.90% (11.6%)	58.1% (53.3%)
Italy	37.8% (33.1%)	10.3% (15.5%)	51.8% (51.3%)
Lithuania	27.2% (30.2%)	12.7% (18.1%)	59.9% (51.5%)
Netherlands	19.5% (17.1%)	10.7% (13.7%)	69.6% (69.1%)
Portugal	28.4% (24.1%)	13.7% (15.6%)	57.8% (60.2%)
Romania	35.7% (40.1%)	12.4% (15.2%)	51.8% (44.6%)
Slovenia	45.9% (43.6%)	9.23% (18.5%)	44.7% (37.8%)
Spain	24.3% (21.8%)	12.9% (16.3%)	62.6% (61.7%)
Sweden	21.2% (28.0%)	13.9% (17.1%)	64.8% (54.8%)
Czech Republic*	52.3% (56.2%)	6.88% (9.34%)	40.8% (34.3%)
Germany**	-	-	-
Poland*	44.9% (54.7%)	8.21% (11.5%)	46.8% (33.6%)
Slovakia*	50.2% (64.3%)	5.95% (9.43%)	43.7% (26.1%)

Sample representativeness: firms by size class

Use of indicator-specific population weights also for the full sample have improved a lot the representativeness of the samples

Country \ Size Classes	1 - 9 Employees	10 - 19 Employees	20 - 49 Employees	50 - 249 Employees	> 250 Employees
Belgium	21.5% (26.3%)	12.8% (7.78%)	20.3% (12.4%)	24.4% (16.8%)	20.8% (36.5%)
Croatia	27.2% (9.29%)	13.9% (13.0%)	17.4% (15.1%)	26.4% (27.8%)	14.9% (34.6%)
Denmark	41.1% (23.0%)	14.0% (9.55%)	17.8% (12.6%)	19.3% (21.6%)	7.57% (33.1%)
Finland	28.7% (28.2%)	14.0% (8.73%)	18.5% (11.2%)	24.9% (18.4%)	13.7% (33.3%)
France	30.4% (25.7%)	14.5% (8.05%)	19.2% (11.3%)	24.9% (15.9%)	10.8% (38.9%)
Hungary	37.2% (37.1%)	15.1% (8.58%)	15.4% (9.34%)	20.5% (16.7%)	11.6% (28.1%)
Italy	23.0% (41.0%)	18.3% (11.8%)	21.2% (10.8%)	25.7% (14.2%)	11.6% (21.8%)
Lithuania	23.4% (28.8%)	13.9% (11.1%)	20.2% (15.7%)	29.4% (23.0%)	12.8% (21.1%)
Netherlands	16.9% (26.2%)	13.4% (8.50%)	20.1% (11.5%)	30.1% (20.9%)	19.2% (32.8%)
Portugal	36.5% (32.1%)	16.4% (11.8%)	19.4% (13.7%)	19.8% (18.4%)	7.66% (23.8%)
Romania	29.3% (21.7%)	13.3% (8.17%)	18.4% (12.4%)	28.2% (23.3%)	10.5% (34.2%)
Slovenia	24.3% (36.9%)	11.7% (9.96%)	16.3% (8.53%)	28.6% (22.6%)	18.8% (21.8%)
Spain	33.3% (37.7%)	17.2% (9.54%)	20.2% (11.4%)	17.2% (14.6%)	11.8% (26.6%)
Sweden	39.8% (21.9%)	17.7% (9.72%)	22.3% (13.4%)	17.9% (20.0%)	2.01% (34.8%)
Czech Republic*	-	-	16.2% (16.5%)	38.3% (32.8%)	45.3% (50.5%)
Germany*	-	-	5.06% (7.33%)	27.5% (24.7%)	67.2% (53.4%)
Poland*	-	-	13.4% (13.6%)	40.2% (34.4%)	46.2% (51.9%)
Slovakia*	-	-	13.9% (14.6%)	34.3% (32.9%)	51.7% (52.4%)

Within-cell (non) bias

Average firm in each macro-sector/size class cell in Compnet very similar to that in the population (other countries in report)

Belgium				
Sector	10-19 Employees	20-49 Employees	50-249 Employees	>250 Employees
Manufacturing	13.64 (13.24)	31.23 (30.90)	104.9 (103.8)	598.4 (736.3)
Construction	13.42 (13.23)	30.31 (29.94)	82.15 (97.46)	312 (514)
Services	13.48 (13.27)	30.37 (30.06)	90.19 (98.68)	718.2 (1301.9)

Croatia				
Sector	10-19 Employees	20-49 Employees	50-249 Employees	>250 Employees
Manufacturing	13.44 (13.22)	30.22 (29.88)	106.1 (102.2)	541.6 (548.5)
Construction	13.56 (13.35)	30.21 (29.71)	90.44 (99.08)	361.5 (587)
Services	13.25 (12.59)	29.84 (26.34)	91.45 (84.95)	387.3 (463.0)

Denmark				
Sector	10-19 Employees	20-49 Employees	50-249 Employees	>250 Employees
Manufacturing	14.09 (13.29)	31.34 (30.87)	98.45 (97.56)	585.6 (779.0)
Construction	13.80 (13.42)	29.83 (29.42)	80.15 (89.66)	n.a.
Services	13.83 (13.44)	29.90 (26.58)	87.52 (97.87)	410.0 (720.3)

Finland				
Sector	10-19 Employees	20-49 Employees	50-249 Employees	>250 Employees
Manufacturing	14.08 (13.28)	31.20 (30.29)	99.61 (102.1)	501.1 (790.4)
Construction	13.78 (13.77)	29.15 (29.20)	78.66 (90.14)	n.a.
Services	13.84 (14.98)	30.16 (31.54)	90.61 (116.1)	391.4 (886.1)

Hungary				
Sector	10-19 Employees	20-49 Employees	50-249 Employees	>250 Employees
Manufacturing	13.82 (13.75)	31.82 (31.59)	103.2 (106.3)	582.5 (769.3)
Construction	13.51 (13.45)	28.36 (29.54)	92.19 (92.90)	n.a.
Services	13.46 (13.41)	29.67 (30.04)	83.31 (96.65)	413.2 (940.48)

France				
Sector	10-19 Employees	20-49 Employees	50-249 Employees	>250 Employees
Manufacturing	13.51 (13.98)	31.16 (34.57)	103.2 (111.3)	511.8 (846.6)
Construction	13.35 (14.80)	29.94 (32.36)	80.32 (100.9)	n.a.
Services	13.30 (16.31)	30.60 (35.93)	95.09 (122.9)	410.7 (1763.)

Italy				
Sector	10-19 Employees	20-49 Employees	50-249 Employees	>250 Employees
Manufacturing	14.07 (13.33)	31.13 (30.08)	95.51 (96.78)	435.0 (722.3)
Construction	13.66 (12.90)	29.73 (28.81)	75.62 (85.76)	n.a.
Services	13.68 (12.94)	30.41 (29.69)	92.41 (97.66)	525.3 (1167.)

Lithuania				
Sector	10-19 Employees	20-49 Employees	50-249 Employees	>250 Employees
Manufacturing	13.65 (13.41)	30.98 (29.91)	98.80 (80.12)	436.9 (441.2)
Construction	13.52 (13.50)	29.97 (30.02)	89.33 (96.26)	374.2 (409.4)
Services	13.23 (13.18)	29.65 (32.31)	86.93 (78.39)	522.9 (784)

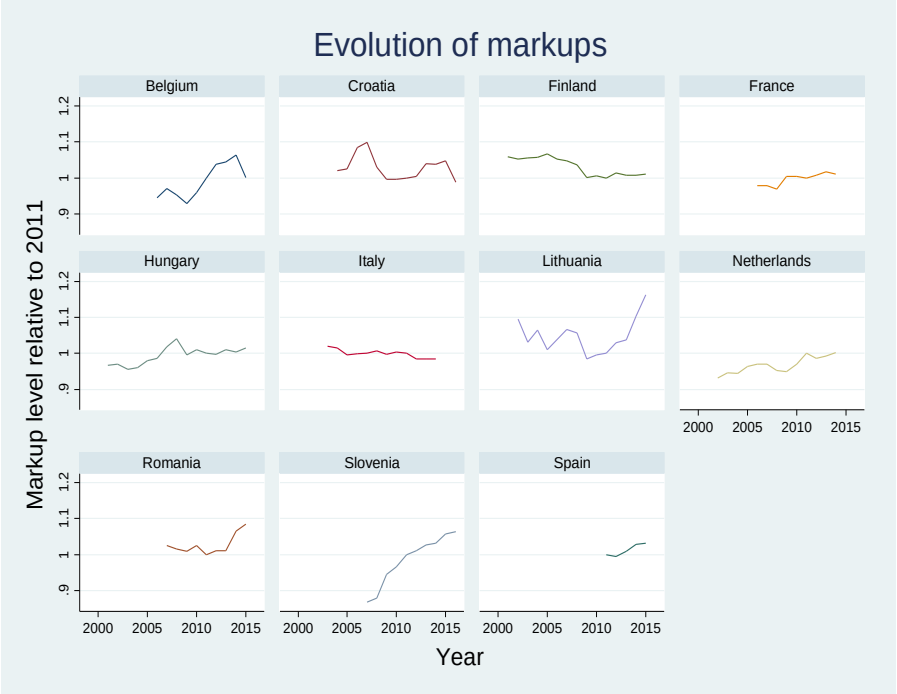
Overview: Other indicators

3	Main indicators: overview and suggestive evidence
3.3	Mark-ups
3.4	Trade
3.5	ULC

Non-parametric pcm and parametric mark-ups, estimated following De Loecker & Warzynski (2012)

Validation: Do our estimates behave as expected?

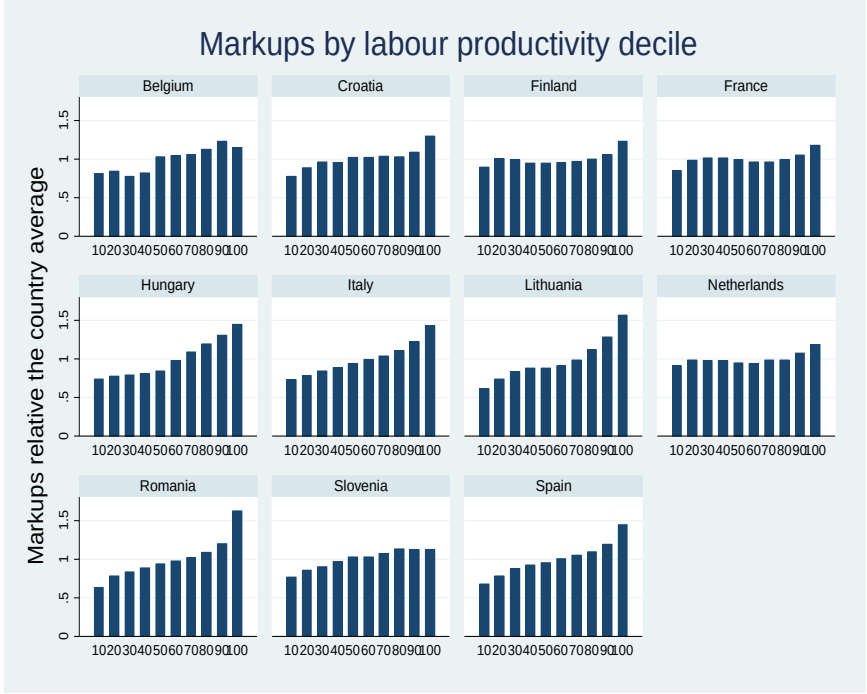
(2011=1)



Source: Own calculations based on the 6th vintage of CompNet full sample (manufacturing sector).
Notes: Values for the year 2011 are normalized to 1.

Granularity: Mark-ups by productivity decile

(median mark-ups)

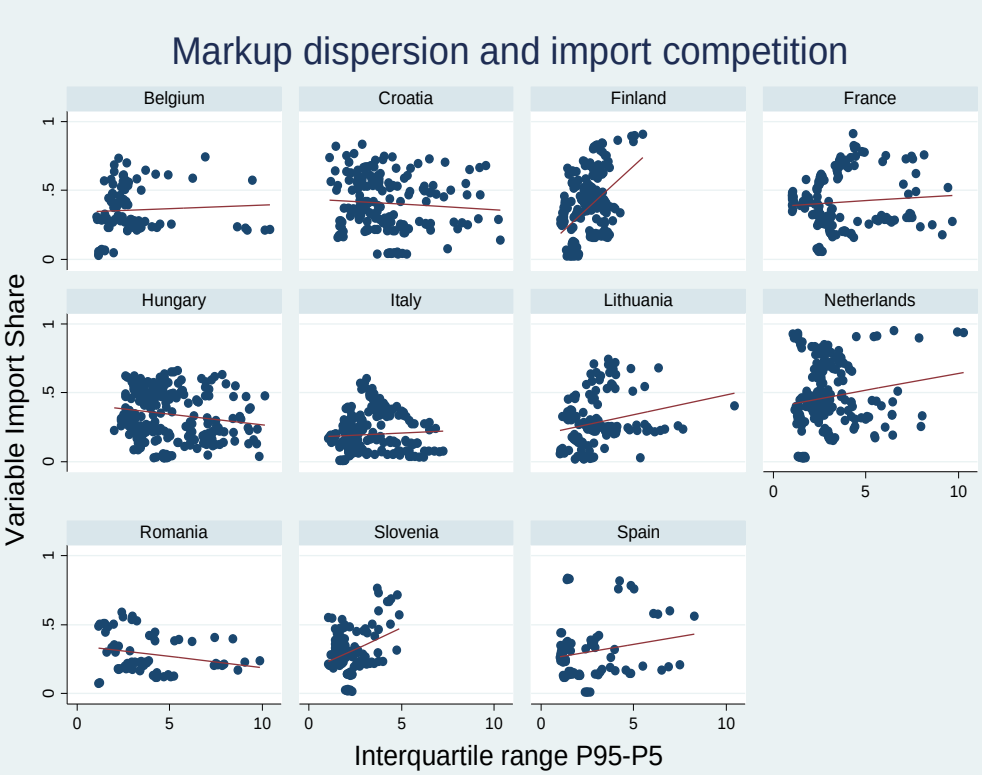


Source: Own calculations based on 6th vintage of CompNet data, full sample.
Notes: Median markups are normalized by country averages.

Mark-ups: Openness to trade and mark-up convergence

Within-sector mark-up dispersion and import penetration

(within-2 digit industries inter-quartile range)



Sources: 6th vintage of CompNet full sample (manufacturing sector) and United Nations Comtrade Database.

Notes: Based on the full sample. We dropped outliers with respect the interquartile ranges.

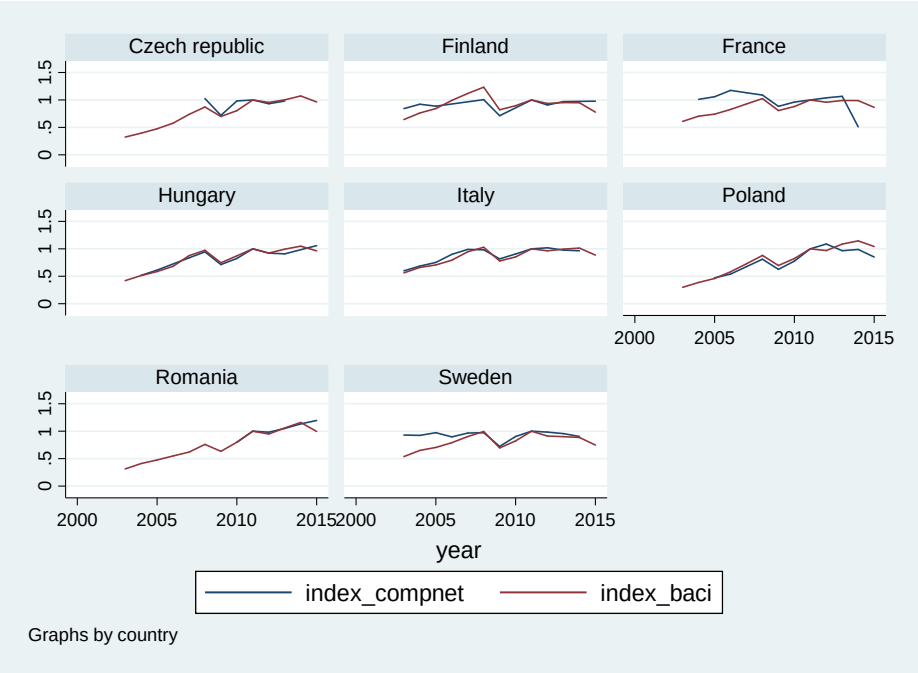
Is import competition reducing mark-up dispersion?

- The chart shows within-sector IQ range of mark-ups vs. import penetration in the sector
  - Import penetration measured as the share of imports out of sector production plus imports (COMTRADE)
- In most countries import shares and mark-up dispersion is positively correlated

Information on exporting firms in each manufacturing industry (hopefully to be improved)

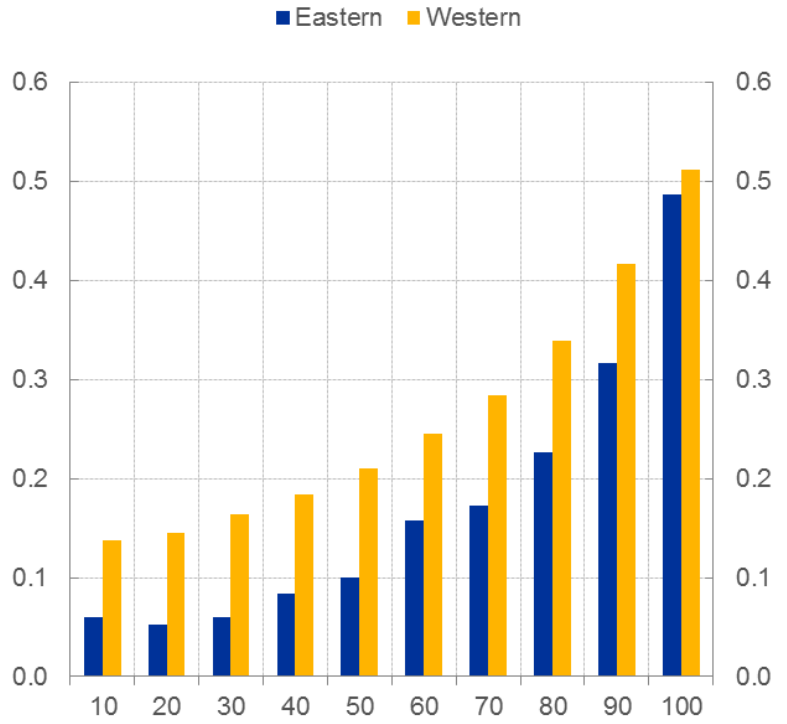
Validation: Dynamics of exports in CompNet and BACI

(2011=1)



Source: 6th vintage of CompNet 20E sample and CEPII-BACI.
Notes: 2011=1

Granularity: Share of exporters by TFP decile, Western and Eastern countries,

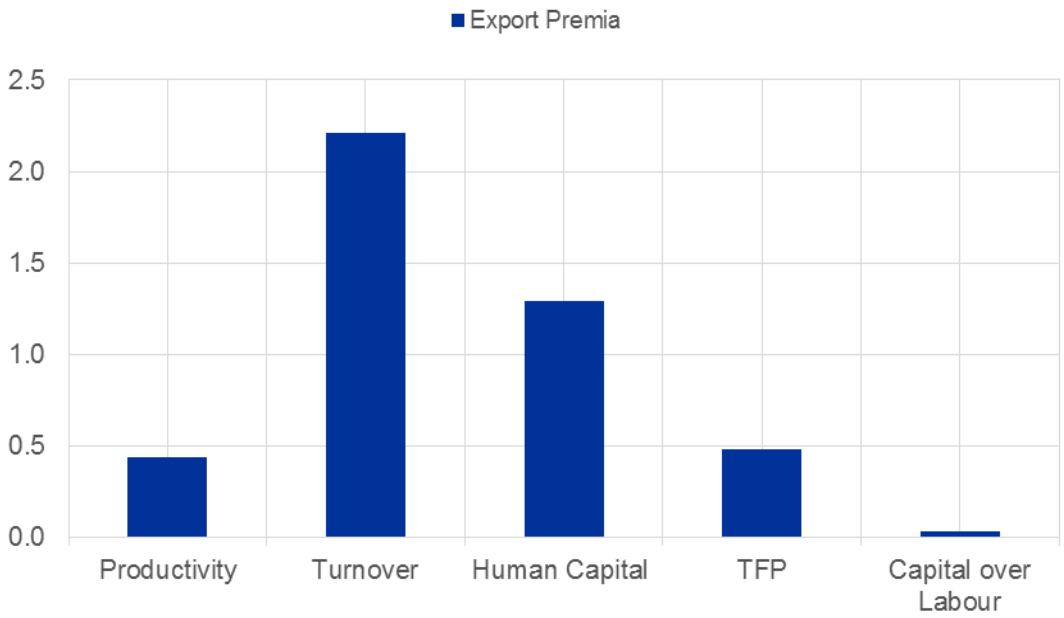


Sources: 6th vintage of CompNet full sample
Notes: Joint distribution by TFP computed as a SR. Countries included are: IT, SE, FI (Western), CZ, FI, HU and RO (Eastern) over the period 1999-2015.

Trade: The Happy Few

Performance premia of exporting firms over domestic firms in the same 2-digit industry

(Dummy coefficient for exporting firms after controlling for country and time FE)



Sources: 6th vintage, CompNet, full sample

Notes: The chart shows the coefficients of the export dummy, indicating whether the firm is exporter or not, from OLS regressions where the dependent variable is the log of the performance indicators, controlling for country, time and sector dummies. Countries included are HR, FI, FR, HU, IT, RO, SI and SE.

How happy are the happy few?

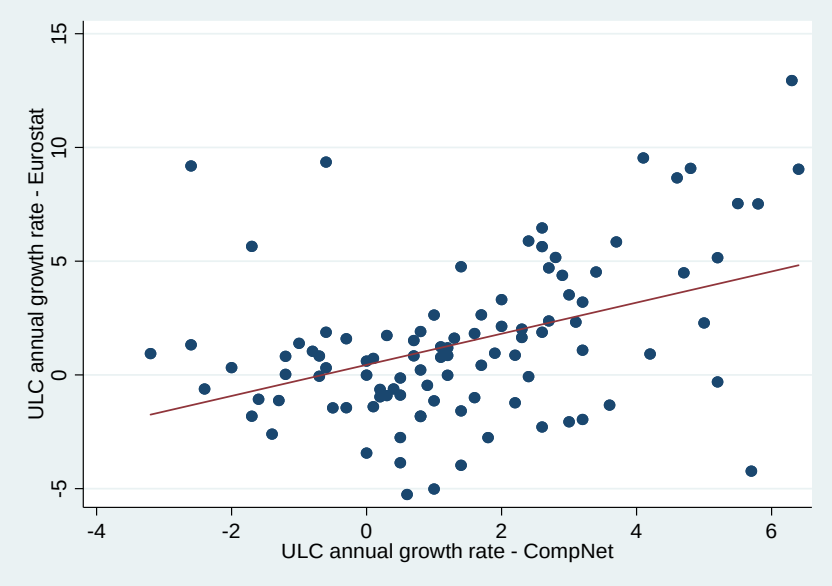
- The chart shows the coefficient of a dummy for exporting firms relative to non-exporting firms in same sector
  - Controls for country and time FE included

Exporting firms are significantly larger, employ more skilled labour and are more productive

Unit Labour Costs: Checking the data

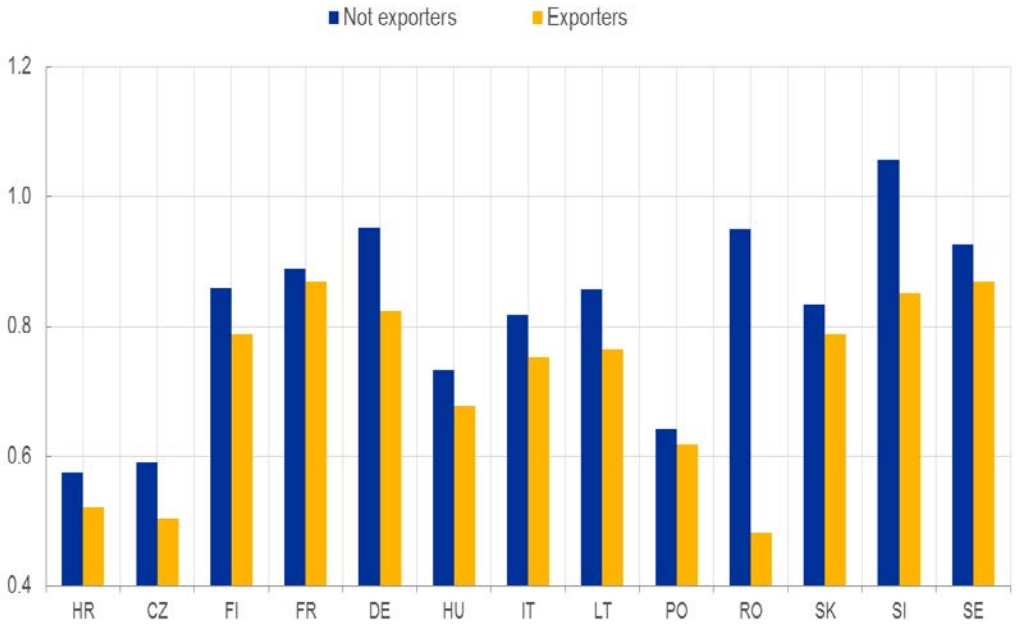
Computed as nominal labour cost per employee over real productivity of the firm, it is key for competitiveness analysis

Validation: ULC growth of median firm vs. growth of aggregate ULC in Eurostat
(growth rates)



Sources: Eurostat and 6th vintage of CompNet, sample of firms with at least 20 employees.
Notes: countries included are BE, HR, DE, CZ, FI, FR, HU, IT, LT, PL, NL, PT, ES, SK, SI, and SE over the period 2006-2015.

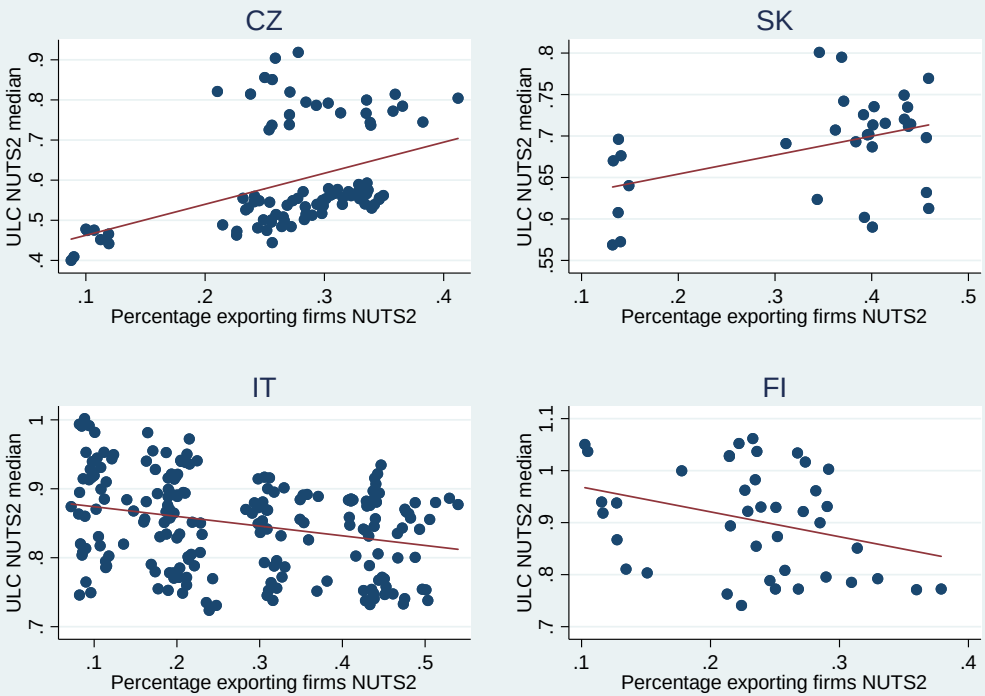
Granularity: ULC of exporters is lower across all countries
(ULC levels, computed at the 2-digit industry)



Sources: Own calculations on 6th vintage of CompNet, sample of firms with at least 20 employees.

Productivity: regional competitiveness

ULC growth and international exposure of regions



Sources: 6th vintage of CompNet, sample of firms with at least 20 employees
Notes: countries included are Czech Republic (CZ), Italy (IT), Slovakia (SK), Finland (FI) with 38 NUTS2 regions; 2005-2015.

Are more internationally exposed regions more competitive?

- The chart shows ULC growth of the median firm in each NUTS2 region vs. the international exposure of the region
  - International exposure measured as the share of exporting firms in each region
- In western Europe, more exposed regions show lower increases in ULC
- Not in Eastern Europe: GVCs?