EUROPEAN CENTRAL BANK

EUROSYSTEM

CompNet The Competitiveness Research Network

News from CompNet

Exploring the value added of the new micro-based dataset for research and policy analysis

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Frankfurt, 24th April 2015

***Disclaimer**: the opinions expressed in this presentation are those of the authors and do not necessarily reflect the views of the ECB of the European system of Central Bank.*

Outline

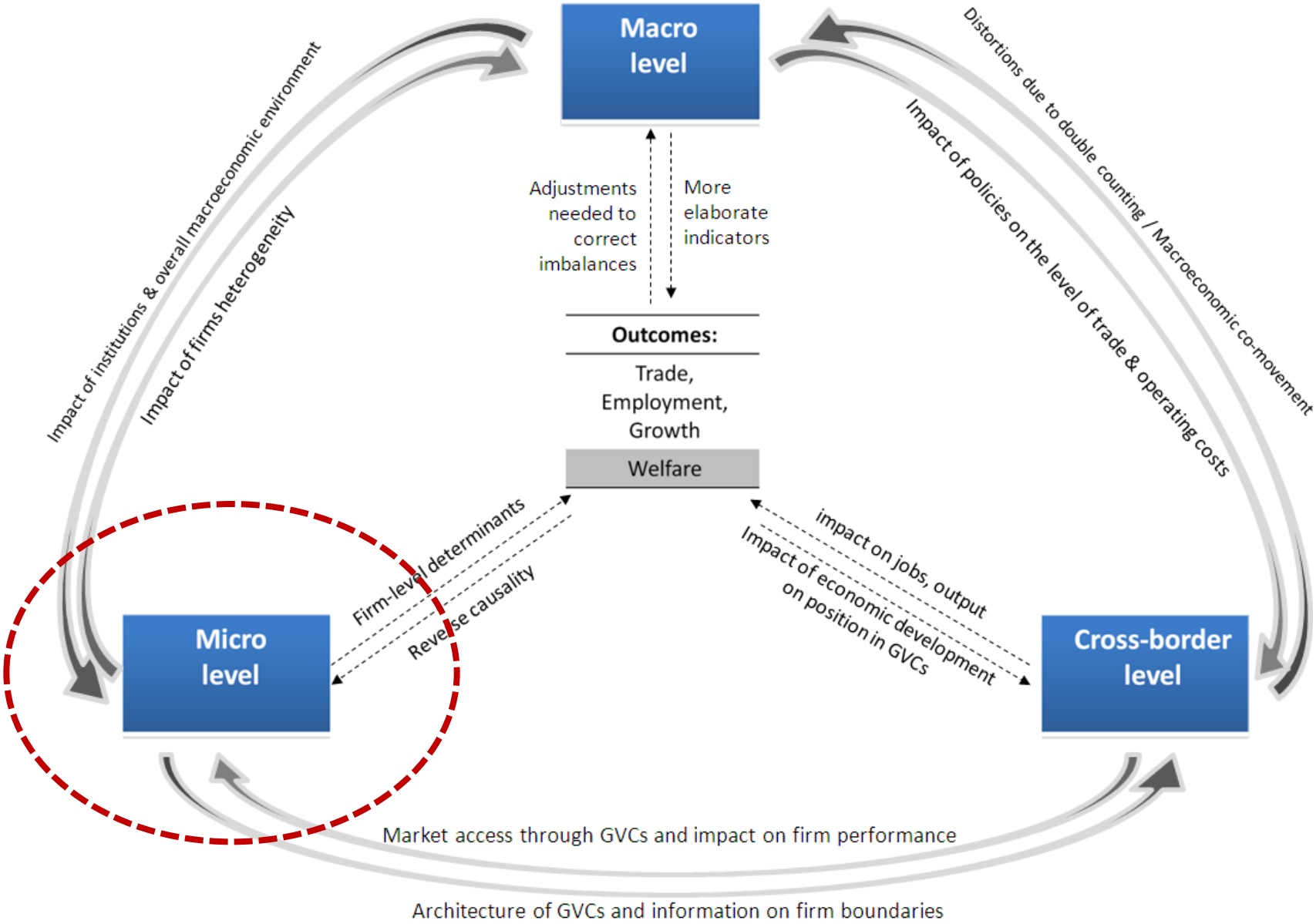
1. Overview of **CompNet**
   - Value-added of firm-level data
   - Main characteristics of the new micro-based dataset

2. The 4 areas of research in **Workstream 2**
   a. **Financial module**: assess the financial and financing conditions of firms in Europe
   b. **Trade module**: understand the linkages between productivity and export performance
   c. **Labor module**: evaluate the relationships between firm characteristics and firm growth
   d. **Mark-ups module**: Estimating harmonized measures of competition

3. Final remarks

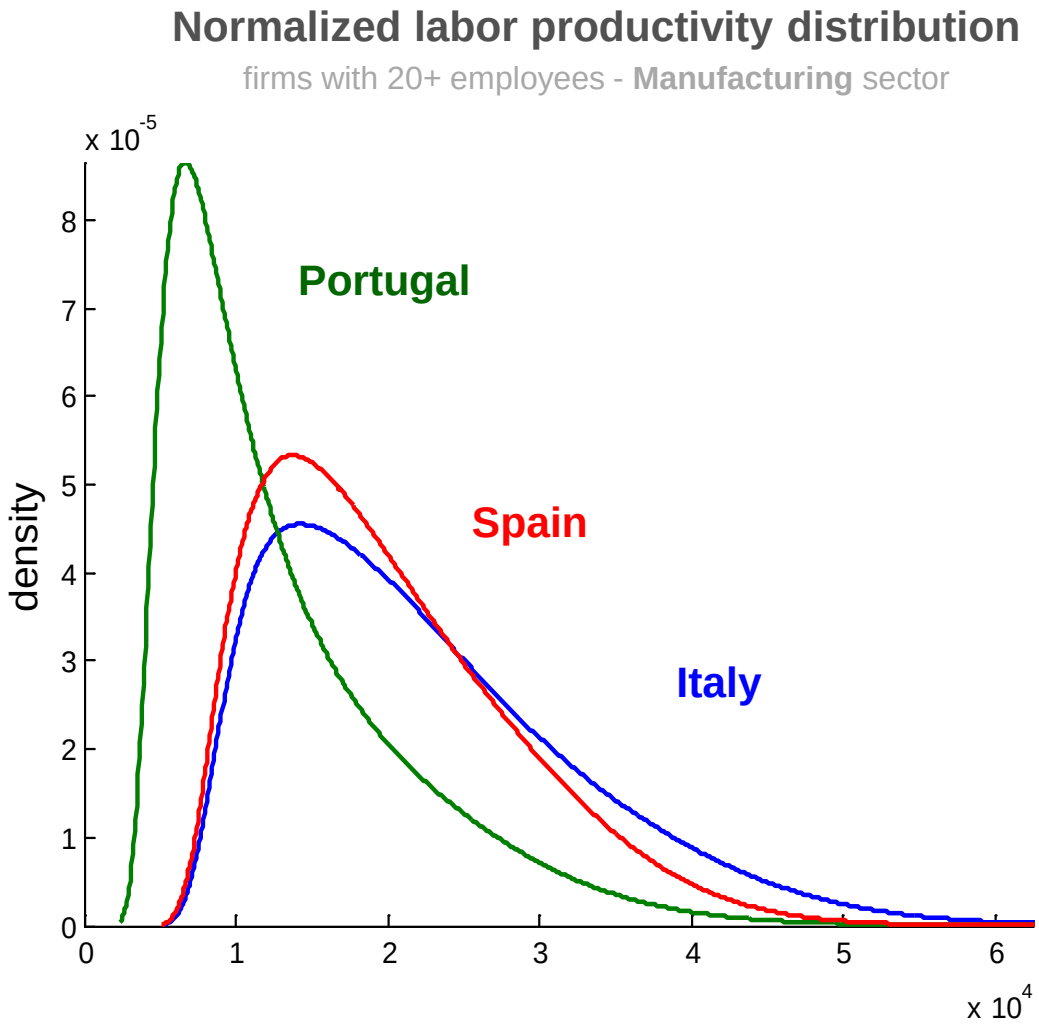
1. CompNet overview

CompNet holistic approach to competitiveness



Why are micro-based data so important ?

- Our dataset shows that firm performance distribution is **very disperse** and **asymmetric**



Implications for research and policy

1. **Aggregate** indicators alone, when interpreted as if they had been generated by the behavior of a **representative firm**, risk to give **partial** (if not wrong) messages and consequently incomplete policy recommendations
2. **Impact** of a macro **shock** or **policy** might **depend** on the shape of the **underlying distribution**

CompNet workstream 2 set up a new research infrastructure **to overcome confidentiality** and **comparability** issues of firm-level data

CompNet dataset: main characteristics

- ✓ **Common protocol** to **extract**, **aggregate** indicators from existing firm-level datasets available within each NCB or NSI
- ✓ **Common methodology** to **harmonize** the resulting set of indicators across countries

- For each indicator we get:
  - **Full distribution** considering all firms operating in a given industry, or level of aggregation (country, macro-sector, size class)

    i.e. information on **all the deciles of the distribution**
  - **Other statistics**: like mean, median, skewness, sd and IQR
  - **Full set of firms' characteristics** within a given level of aggregation for:
    - Exporting/non-exporting firms
    - Financially constrained/unconstrained firms
    - Growing firms/downsizing firms

CompNet dataset: main indicators

Production and allocative efficiency	*Financial*	*Trade*	*Competition*	*Labour*
Productivity	Investment ratio	Share of permanent exporters	Weighted PCM	Share of firms that increase/decrease employment, productivity or ULC bet. t and t+3
TFP	ROA	Share of sporadic exporters	Sector-specific mark-ups	Characteristics of growing and shrinking firms
ULC	Cash holdings	Export value	Sector-specific colletive bargaining power	Share of High-Growth Firms
LC per employee	Leverage	Export value added	Concentration measures	
Firm size	Financial gap	Productivity premium of exporters (both parametric and non-parametric)		
Capital intensity	Collateral			
Static allocative efficiency	Equity to Debt			
Dynamic allocative efficiency	Cash flow			
	Implicit interest rate			
	Trade credit			
	Trade debt			
	Debt burden			
	Credit constraint index			

The relevance of joint distribution

We can **connect** the **value** of selected **indicators**:

Real value added	Labour	Investment ratio	Collateral
TFP	Labour Costs	Leverage	Debt burden
Capital	ULC	ROA	Equity debt ratio
Capital intensity	Total Employment	Cash holdings	% of credit constrained
	Labour Productivity	Financing gap	

with the **different deciles** of other correlates

- Real value added
- ULC
- TFP
- Capital
- Capital intensity
- Labour
- Labour costs
- Labour growth
- Labour productivity
- Labour productivity growth

An example: investment ratio across productivity levels

We can **connect** the **value** of selected **indicators**:

Real value added	Labour	**Investment ratio**	Collateral
TFP	Labour Costs	Leverage	Debt burden
Capital	ULC	ROA	Equity debt ratio
Capital intensity	Total Employment	Cash holdings	% of credit constrained
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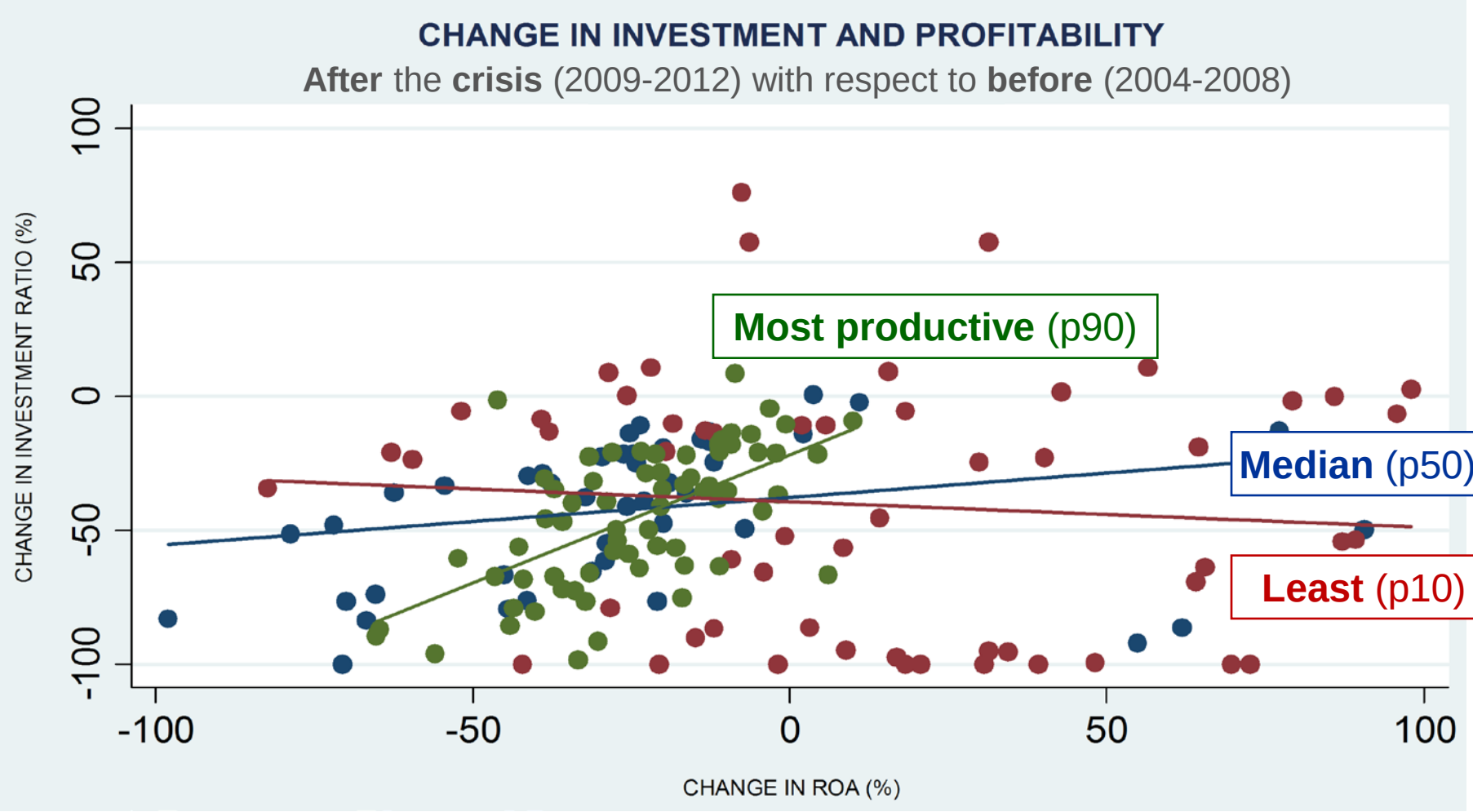
with the **different deciles** of

- Real value added
- ULC
- TFP
- Capital
- Capital intensity

- Labour
- Labour costs
- Labour growth
- Labour productivity
- Labour productivity growth

Interaction between investments and RoA



Dataset coverage

Countries:

17 EU countries

13 of which EA, 80% of EA GDP

Period:

1995-2012

with delayed entrance of some countries

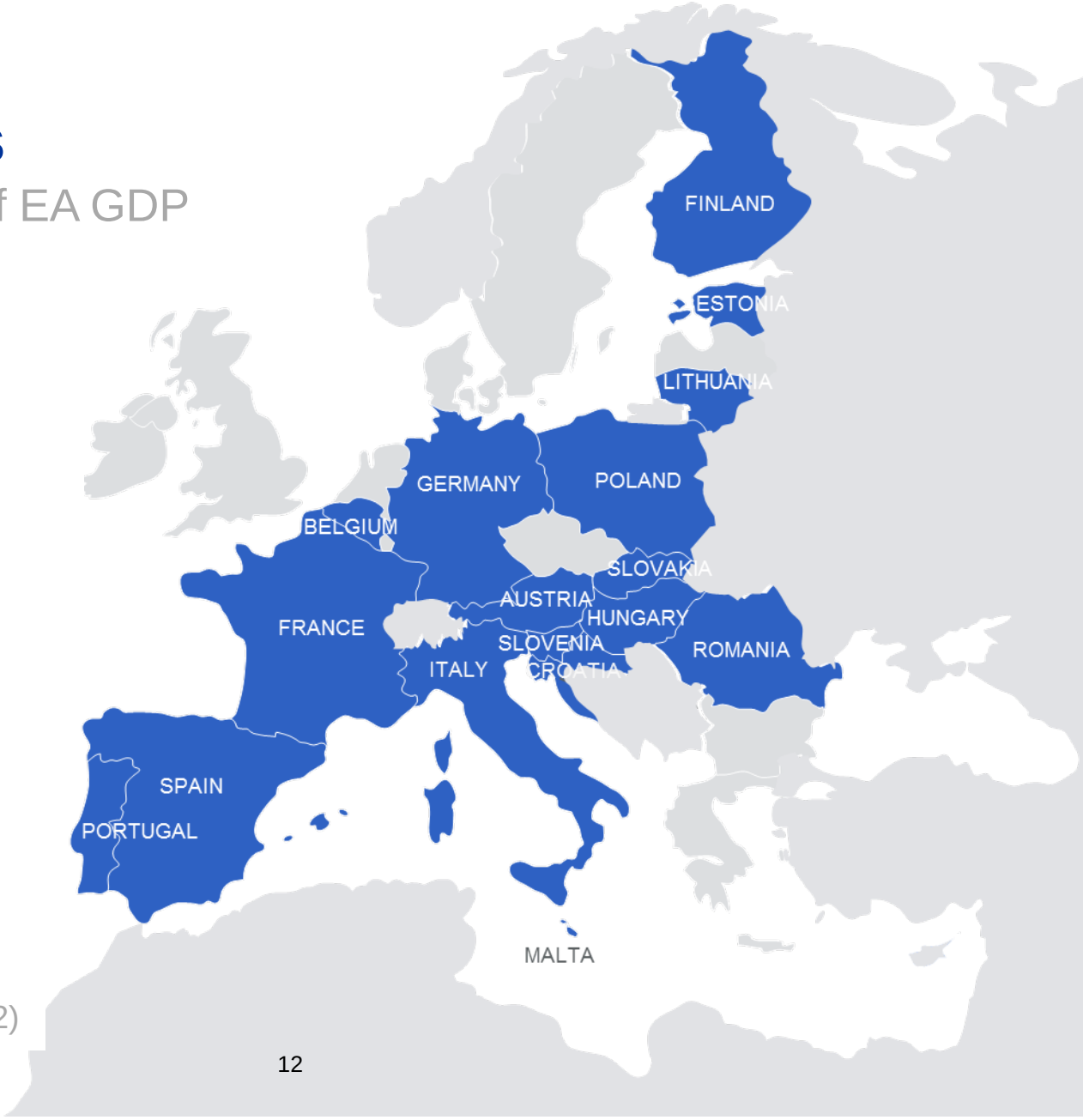
Sector:

9 macro-sector

1-digit industry

≈ 60 sectors

2-digit industry (NACE rev.2)



Timeline for research and policy use of dataset

January 2015

Methodological paper **published**

Lopez-Garcia, P., di Mauro, F. and the CompNet Task Force (2015):
"*Assessing European Competitiveness: The new CompNet micro-based database*",
ECB Working paper no. **1764**.

4 Work-stream modules

April 2015

Trade	**Financial**	**Labor**	**Mark-up**
Export status of the firm, export value	Firms position and indicator of credit constraints	Employment, productivity and transition matrices	Sector level mark-ups and bargaining power

Modules papers

ECB WP ***forthcoming*** | ***Almost completed*** *for submission* | *Still drafting*

18 on-going research projects within the Network

May 2015

Dataset **user-guide** available

June 2015

CompNet Final Conference in Frankfurt

Summer 2015

Data available to **external users**

Final report published

2. **Financial module**

Module coordinator: Annalisa Ferrando (ECB)

Documenting paper: “Assessing the financial and financing conditions of firms in Europe”, A. Ferrando, M. Iudice, C. Altomonte, S. Blank, M.H. Felt, P. Meinen, K. Neugebauer and I. Siedschlag, *work in progress*

Several indicators available

Performance

- Cash flow
- Investment ratio
- Profit margin
- Return on Assets

Structure of external funding

- Equity over debt
- Equity over TA
- Debt over TA
- Trade credit

Financial fragility

- Interest burden
- Implicit interest rate
- Inventory turnover

Financial independence

- Financing gap

Other financial indicators

- Cash over TA
- Collateral
- Depreciation rate
- Trade debt

Credit constraints

- ICC
- IFC

- with information at **all deciles** and growth rates
- **joint distributions** with other measures (e.g. ULC, productivity)

How can we measure financial constraints?

- Financial constraints are **empirically not observable**
  - there is no item on the balance sheet that tells us if, and the extent to which, a firm is financially constrained
- There are some specificities associated with a good measure of financial constraints:
  - ✓ firm-specific
  - ✓ time-varying
  - ✓ with different degrees of constraint
- Each firm may move along a spectrum of constraints over time.

- In the CompNet database, we apply **2 different approaches:**
  1. Exploit the information derived from a **survey** on financing constraints and **link** it with the financial characteristics of firms
  2. Use a "**a-priori**" classification scheme based on information from the **balance sheet** and **profit and loss account**

1st approach: ICC index (use of survey data)

a. Probit model

$$Prob_{credit\_contraint} = \alpha + \beta_1 \cdot finlev + \beta_2 \cdot ifp + \beta_3 \cdot profitmargin + \beta_4 \cdot collateral + \beta_5 \cdot cashholdings + \beta_6 \cdot lnTA + \gamma \cdot control\,var + \varepsilon$$

Constrained firms are defined as those reporting loan applications:
- which were rejected
- for which only a limited amount was granted,
- which were rejected by the firms because the borrowing costs were too high
- which did not apply for a loan for fear of rejection (i.e. discouraged borrowers)

SAFE **dataset matched** with financial statements (**Amadeus**): **Q210-Q113**.

b. Compute the **predicted SAFE score**

$$SAFE_{score} = -1.88 + 0.71 \cdot finlev + 0.28 \cdot ifp - 0.51 \cdot profitmargin - 0.21 \cdot collateral - 1.20 \cdot cashholdings - 0.05 \cdot lnTA$$

defined at the **firm level**, which **varies across time, and** used to rank firms, from the less to the more financially distressed.

How ICC index is constructed

c. Select firms which can be considered as credit constrained in the CompNet database

Idea: calibrate a **threshold** by selecting the top x% of the distribution of the SAFE score by country, where x is the average number of constrained firms over 2009-2012

We identify the value of the SAFE score at the x-percentile of its distribution.

For each year, **constrained firms** are identified as those with a value of the SAFE score greater than the threshold.

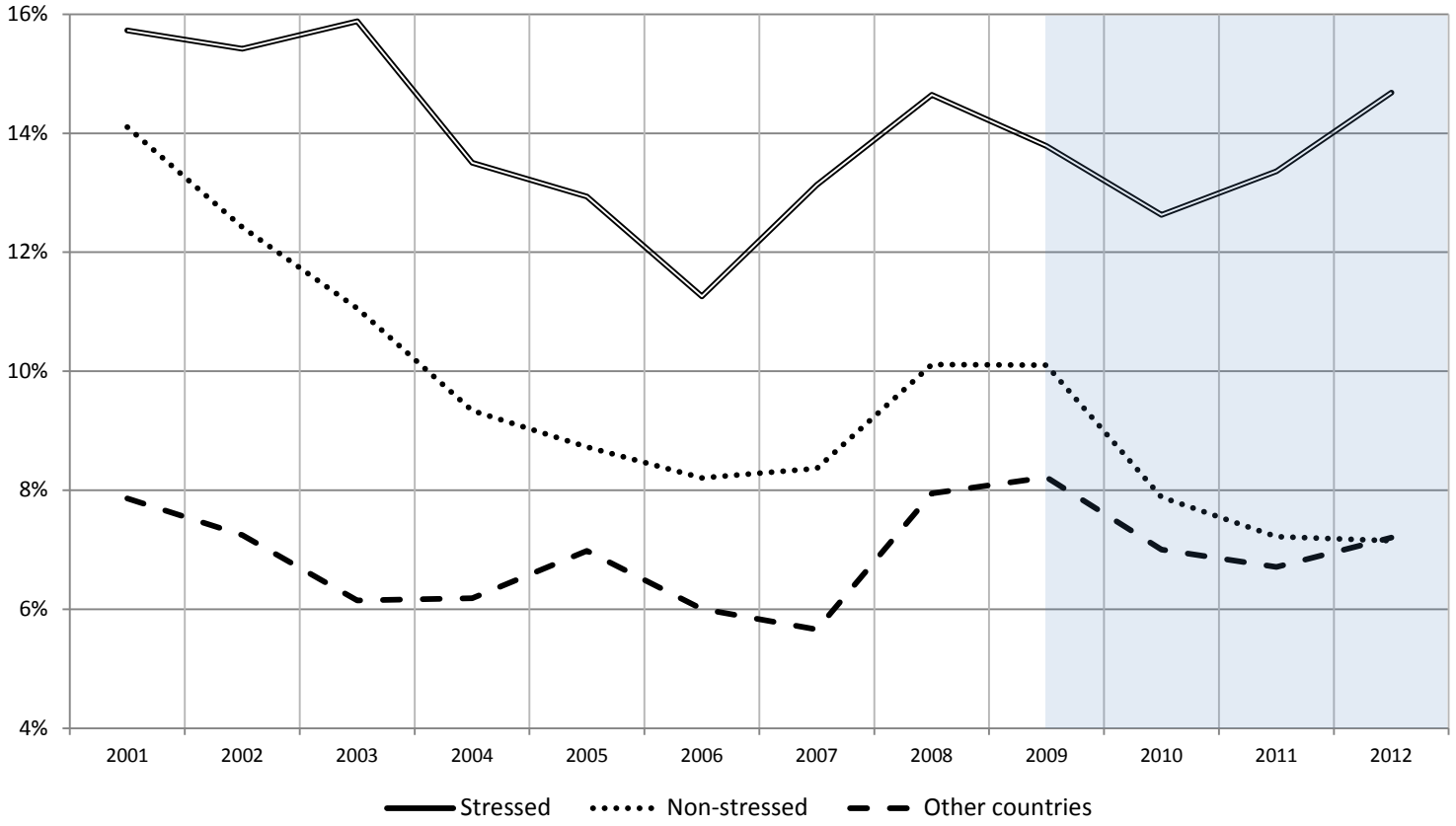
Country	Share of constrained firms
BE	9.95
DE	6.71
ES	17.39
FI	3.58
FR	10.25
IT	13.67
PT	10.92

This procedure implies the introduction of two assumptions:

1) the estimated coefficients are **time-invariant**
2) the threshold is **fixed over time**

ICC trend over time across group of countries

Share of credit constrained firms in the economy, 20E sample



2nd approach: the IFC indicator

- Use "**a-priori classification**" based on firms' financial conditions and their interrelations within some investment/financing scenarios.
- According to the classification, we are able to attach to **each firm** a different degree of financial constraints, which **varies over time**.

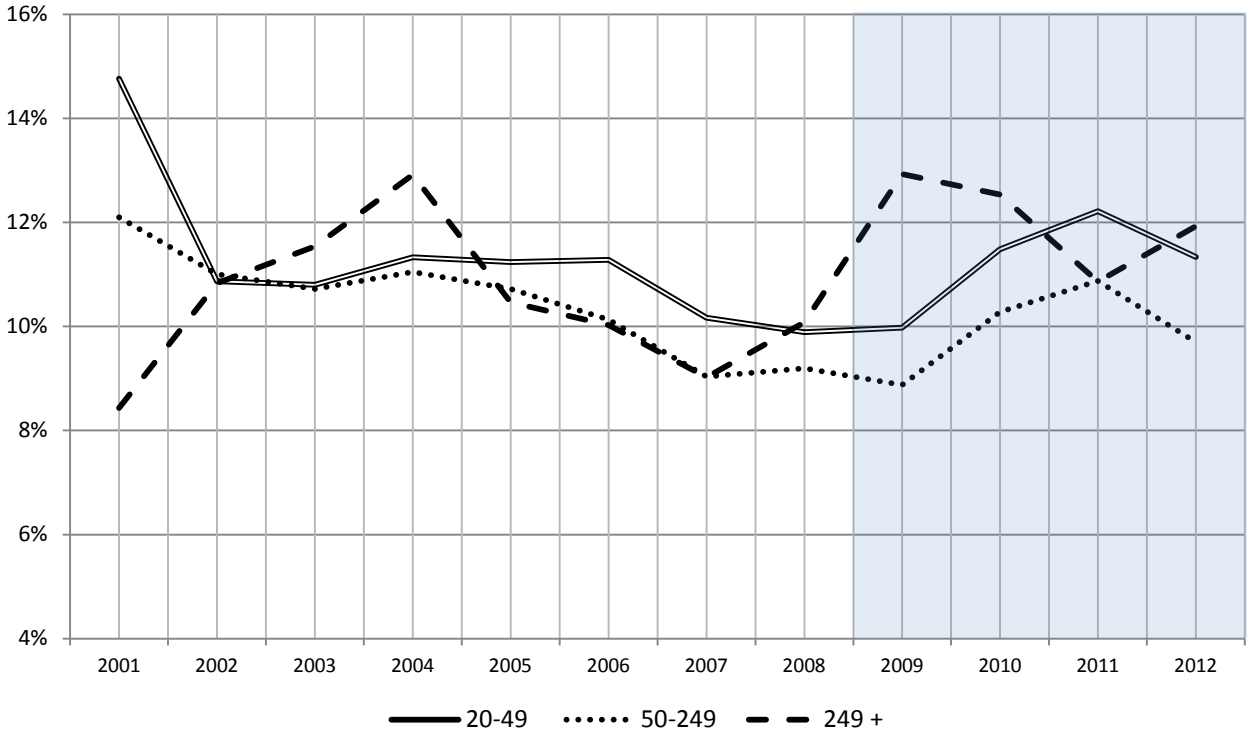
Financing conditions	Total investment	Financing gap	Changes in total debt	Issuance of new shares
	Strongly constrained			
1	≥ 0	≥ 0	≤0	≤0
2	< 0	≥ 0	-	-
	Relatively constrained			
1	≥ 0	<0	≤0	
2	≥ 0	≥ 0	≤0	>0
3	<0	<0	>0	≤0
	Unconstrained			
1	<0	<0	>0	>0
2	<0	<0	≤0	-
3	≥ 0	<0	>0	-
4	≥ 0	≥0	> 0	-

Source: based on Ferrando and Ruggieri (2015)

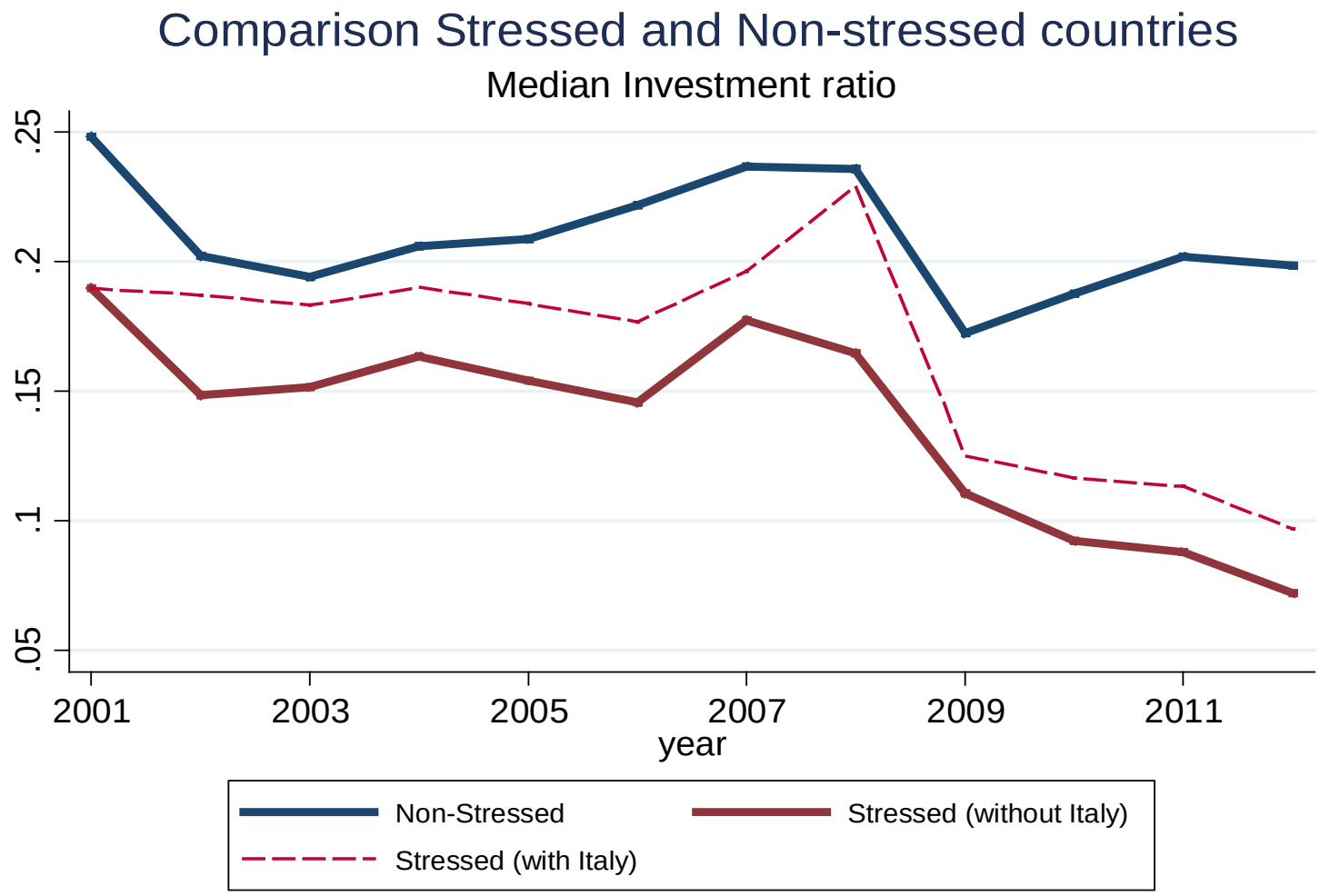
Investment and financing conditions (IFC) of firms

- Once firms are grouped according to the classification, the **IFC index** represents the **percentage** of **firms** that are **strongly constrained** out of the total sample for the various dimensions of the database: by country, by size classes and by sector.

IFC index over time across firm size, 20E sample

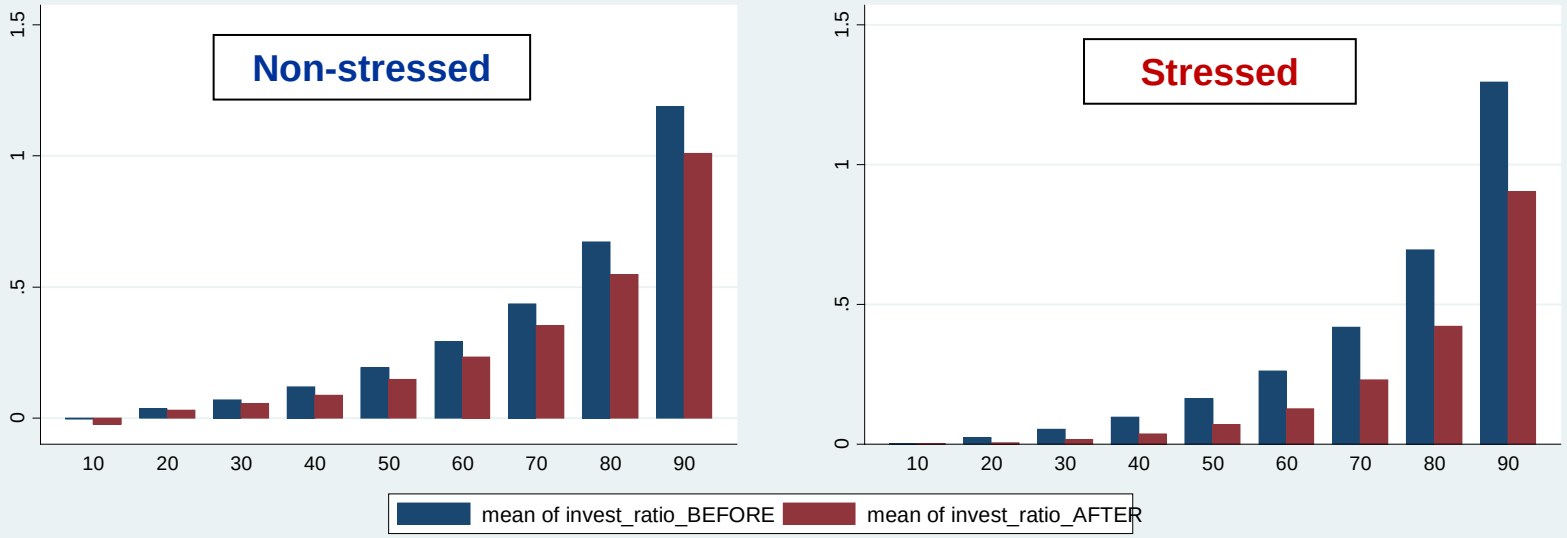


The 2009 investment collapse: diverging trends

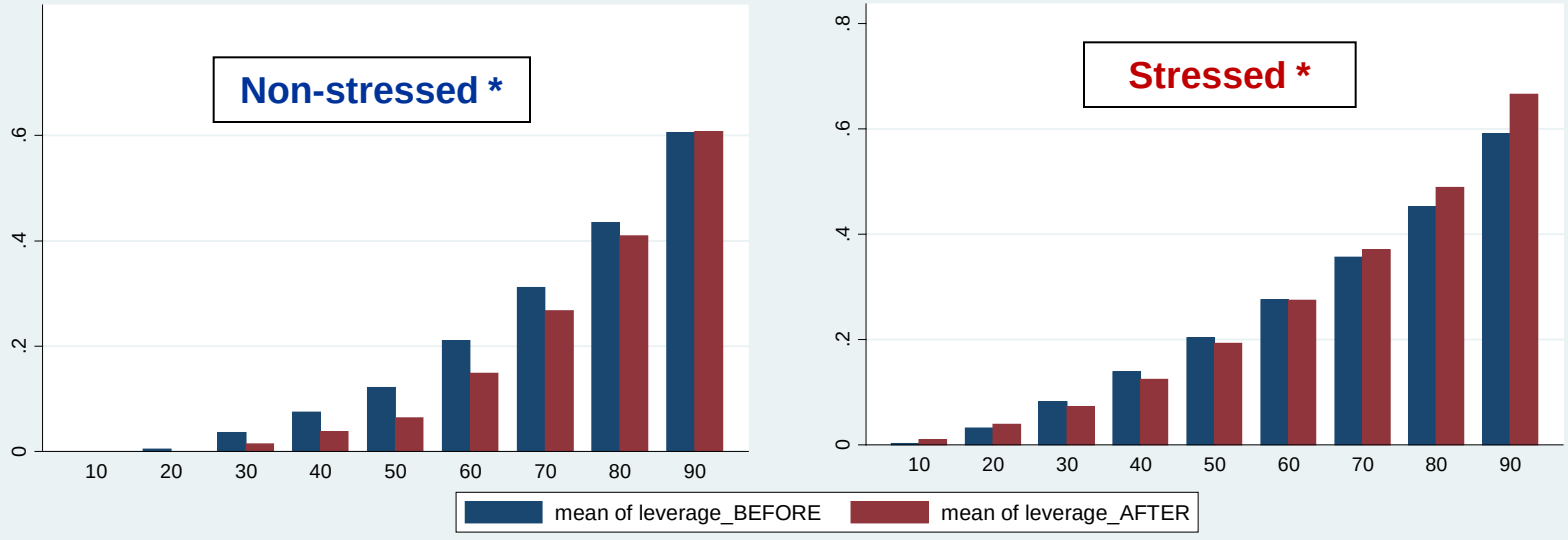


Values by deciles before and after the crisis

Investment ratio



Leverage



* Without Germany

* Without Slovenia

Specific role of leverage for investment during the crisis

- **Financial accelerator** (Bernanke-Gertler,1989)
  - Greater access to bank credit / diversification of funding options
    - boost productivity levels / reduction macro volatility
  - Excess indebtedeness can more than offset benefits
    - raise corporate vulnerabilities / amplify firms‘ sensitivity to income and interest shocks.
- Important **asymmetric effects** between **investment** decisions and **balance sheet positions**
    - *Cecchetti, Mohanty and Zampolli, 2010, Coricelli et al., 2010, Buca and Vermeulen, 2013, Goretti and Souto, 2013, Ferrando, Marchica and Mura, 2014, SIR 2015*
- Firms‘ **high leverage** is **legacy** of **pre-crisis period**
    - *SIR 2013, Kalemli- Ozcan, Laeven and Moreno, 2015*

The role of indebtedness for investment decisions

$$\overline{IK}_{ct} = \beta_1 \overline{IK}_{ct-1} + \beta_{21} \overline{SG}_{ct} + \beta_{22} \overline{SG}_{ct} \text{x } 1\{t \geq 2009\} + \beta_{31} \overline{CFK}_{ct-1} + \beta_{32} \overline{CFK}_{ct-1} \text{x } 1\{t \geq 2009\} + \beta_{41} \overline{Lev}_{ct-1} + \beta_{42} \overline{Lev}_{ct-1} \text{x } 1\{t \geq 2009\} + \bar{\mu}_c + \bar{v}_{ct}$$

IK_{it-1}	0.148*
SG_{it}	0.292**
SG_{it} x $1\{t \geq 2009\}$	-0.134
CFK_{it-1}	0.833
CFK_{it-1} x $1\{t \geq 2009\}$	-1.691***
Lev_{it-1}	2.394**
Lev_{it-1} x $1\{t \geq 2009\}$	1.873***
Lev^2_{it-1}	-0.0482**
Lev^2_{it-1} x $1\{t \geq 2009\}$	-0.0489***
Observations	1,049
N cells	157
N instruments	39
AR2(p-value)	0.579
H-test(p-value)	0.953

GMM estimator, Cell-based model for 4 countries (BE, DE, ES and IT) over the 2000-2012 period, 9 macro-sectors and 5 size classes.

Financial module paper (forthcoming on ECB WP)

Main results:

- **Determinants of profitability**
  - the procyclical nature of firm profitability;
  - firms that are financially constrained are also less profitable;
  - crisis dummy captures the sharp drop of profitability across sectors since 2008 with still only few instances of recovery.

- **Determinants of cash holdings**
  - while we know that small firms keep more cash on their balance sheets, being financially constrained implies a reduction in the amount of cash at disposal across all firm sizes.

Financial module pipeline: main ongoing projects

- ***Banks**, Credit and **Productivity** Growth* – di Mauro, Hassan and Ottaviano
- *When CompNet meets **AnaCredit**: some stylized facts* – Barbiero, Ferrando, Hassan, Maddaloni and Vaccarino
- *Financial development and **allocative efficiency*** - Ferrando and Manova
- *Firm **Profitability** and Productivity: a Moment Analysis* – Ferrando and Giombini
- *Determinants of corporate investment: **exploring non-linearities** using the micro-aggregated CompNet database* - Chen, Felt, Ferrando and Saiz

3. **Trade module:**

Understanding the linkages between productivity and export performance in European countries

Module coordinators: Antoine Berthou (Bank of France) and Emmanuel Dhyne (Bank of Belgium)

Documenting paper: “Assessing European Firms’ Exports and Productivity Distributions: The CompNet “Trade” Module”, forthcoming as ECB WP

The Trade Module: Indicators

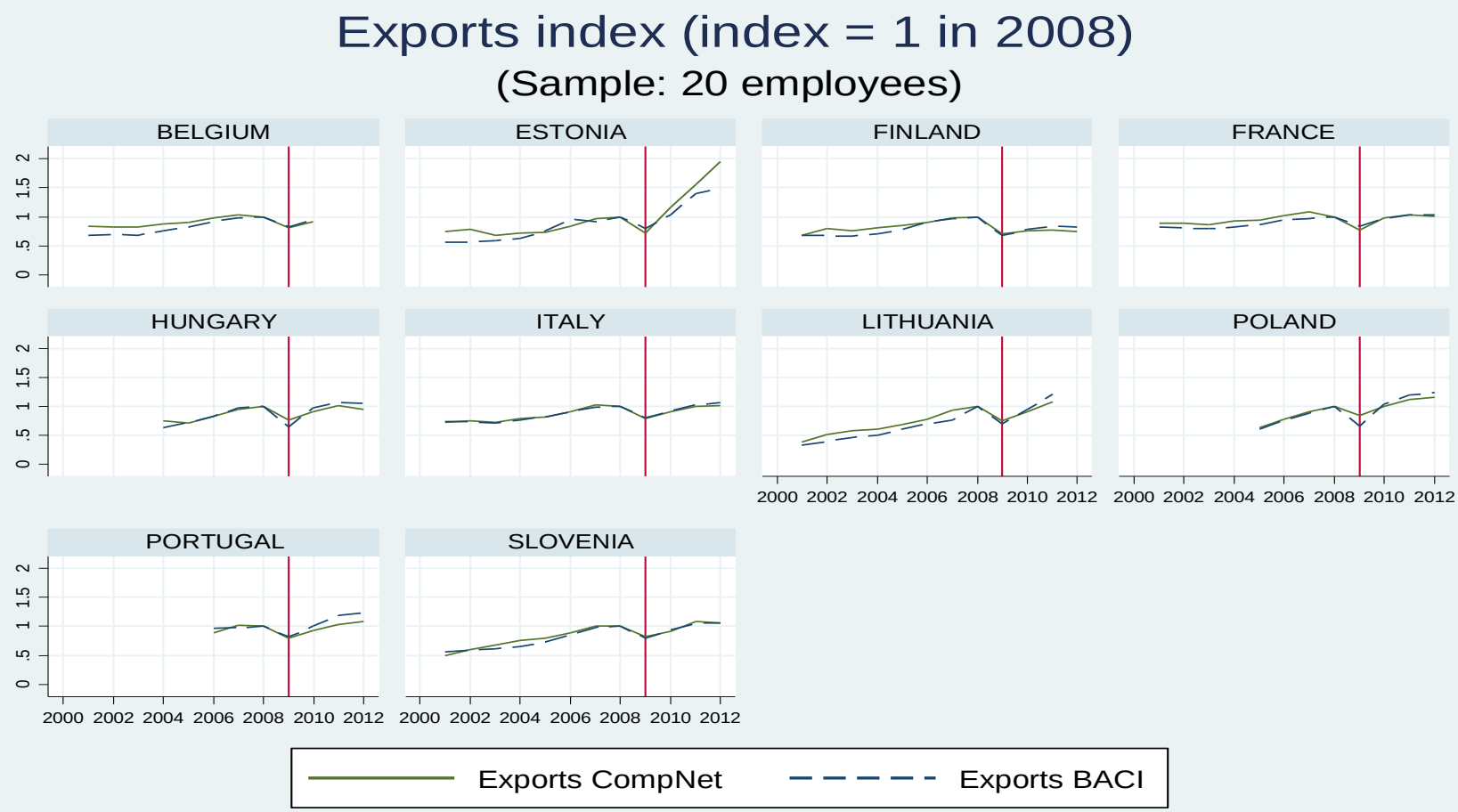
- Share of exporting/non-exporting firms, distinguishing between sporadic and permanent exporters
- Share of importing/non-importing firms
- Entry/exit into exporting markets (firms not exporting in t-1 and t but in t+1; firms exporting in t-1 and t but not in t+1)
- Export/import value
- Export/import intensity (export value over turnover, at the firm level)

These indicators are also available by size, VA, TFP and labor productivity deciles (joint distributions)

Plus, general descriptive statistics, such as VA, ULC, TFP for exporting and non-exporting firms in a given manufacturing industry

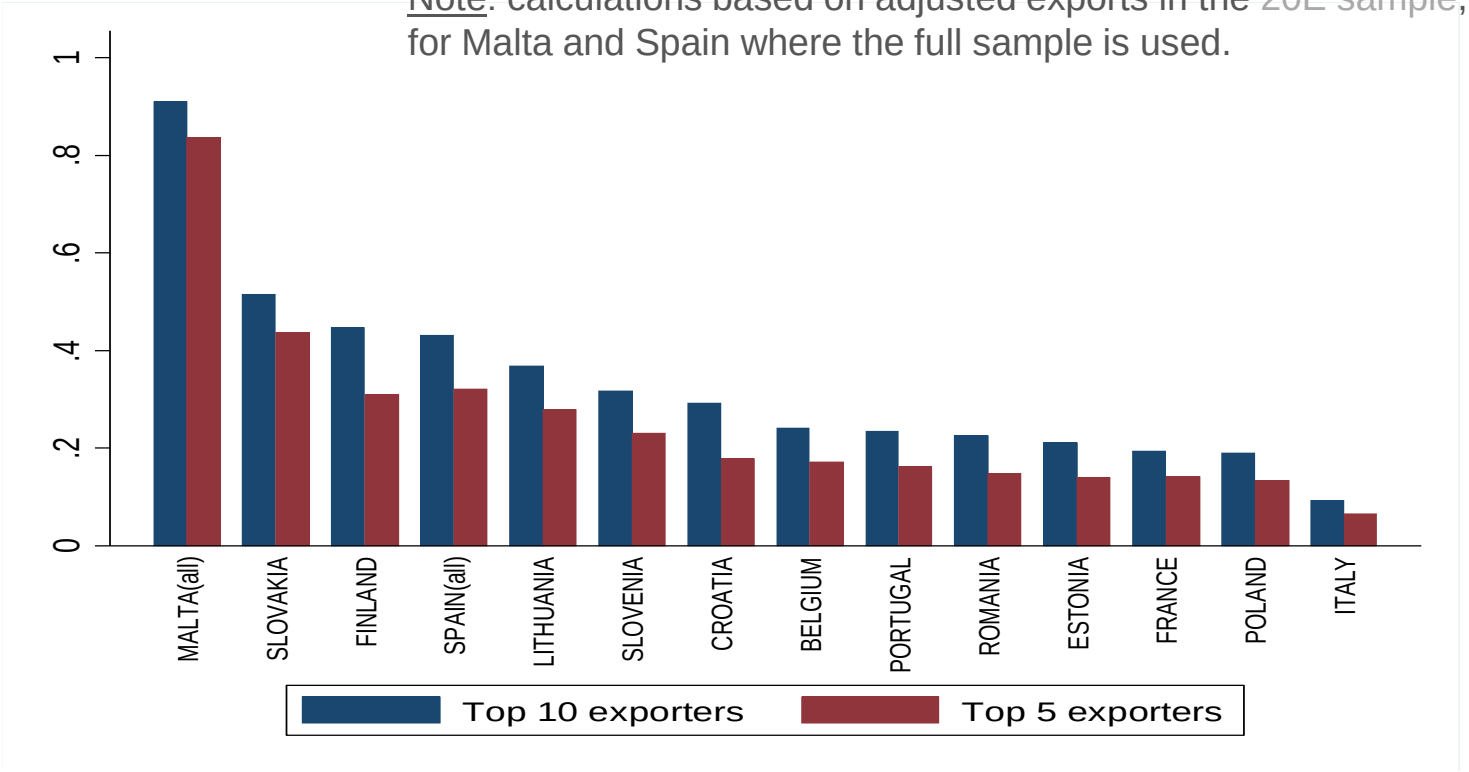
Data available for a panel of 15 countries, 23 manufacturing industries and 13 years

Comparison of growth rate of export value, CompNet vs. Eurostat (CEPII-BACI dataset)



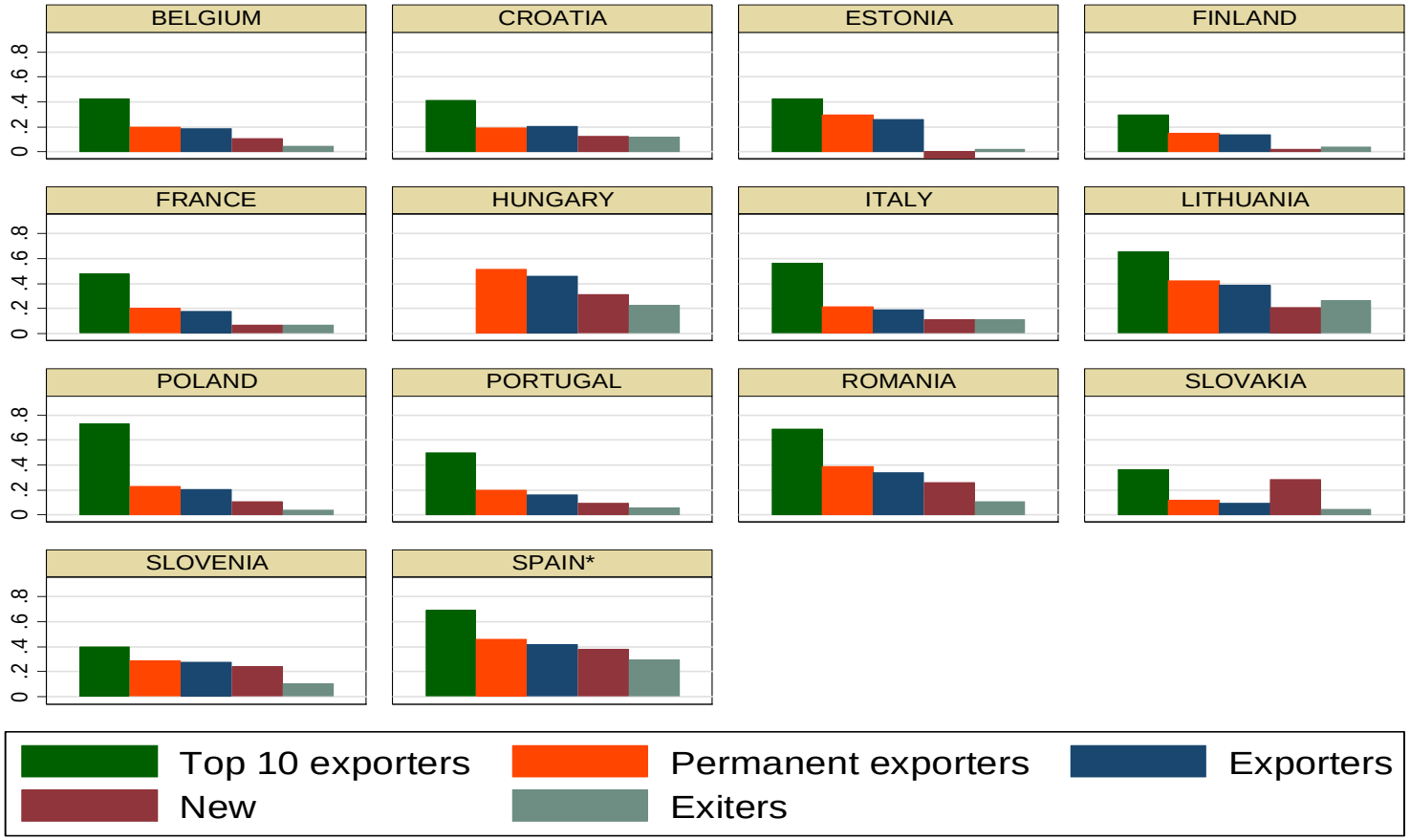
Share of top 5 and 10 exporters in aggregate export

Note: calculations based on adjusted exports in the 20E sample, except for Malta and Spain where the full sample is used.



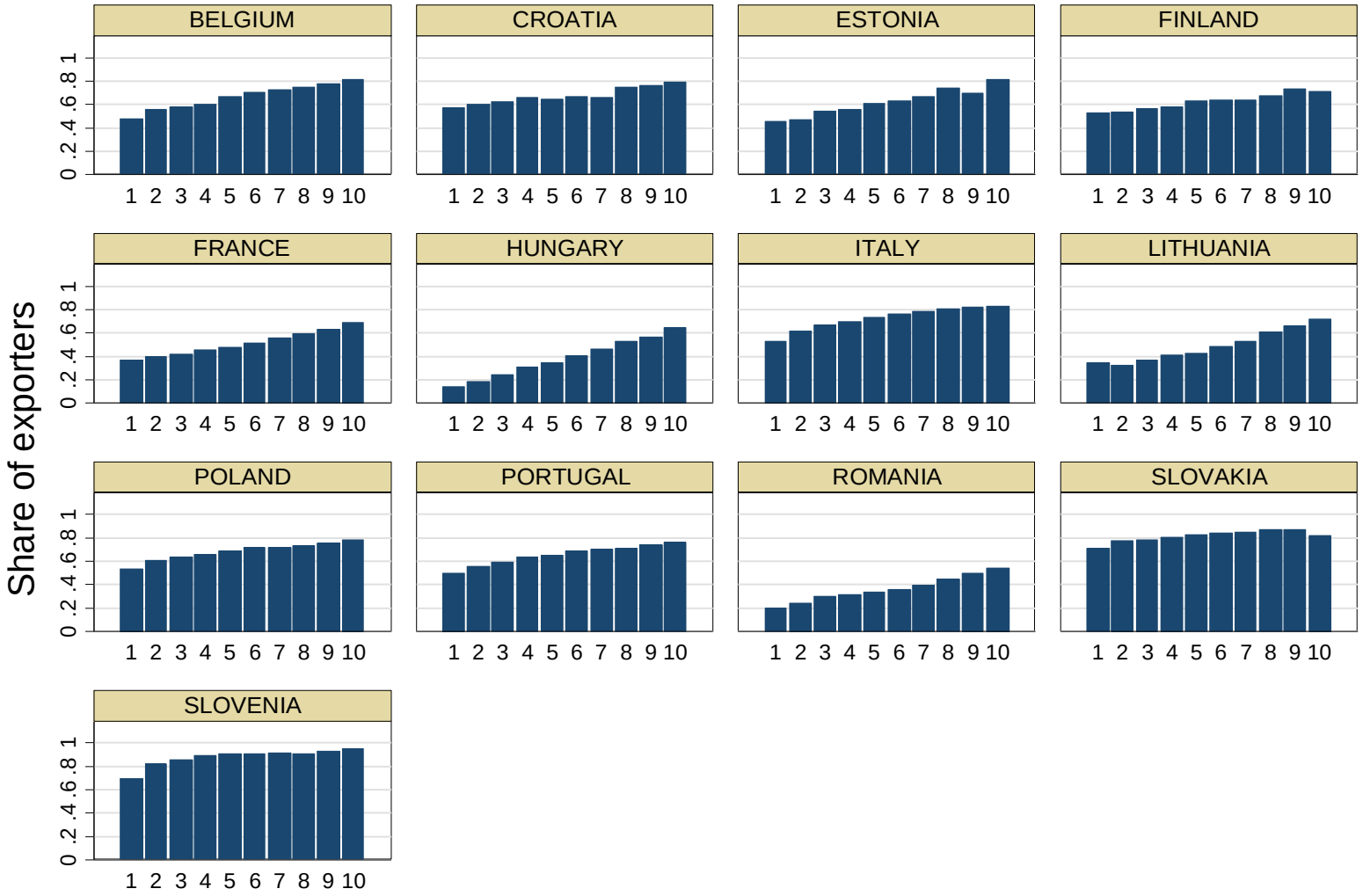
- Idiosyncratic shocks affecting large (exporting) firms have important macro effects
- Researchers exploring the pass-through of exchange rate movements could weight/calibrate countries according to this information

Export premia in labor productivity over export status (2004-2012)



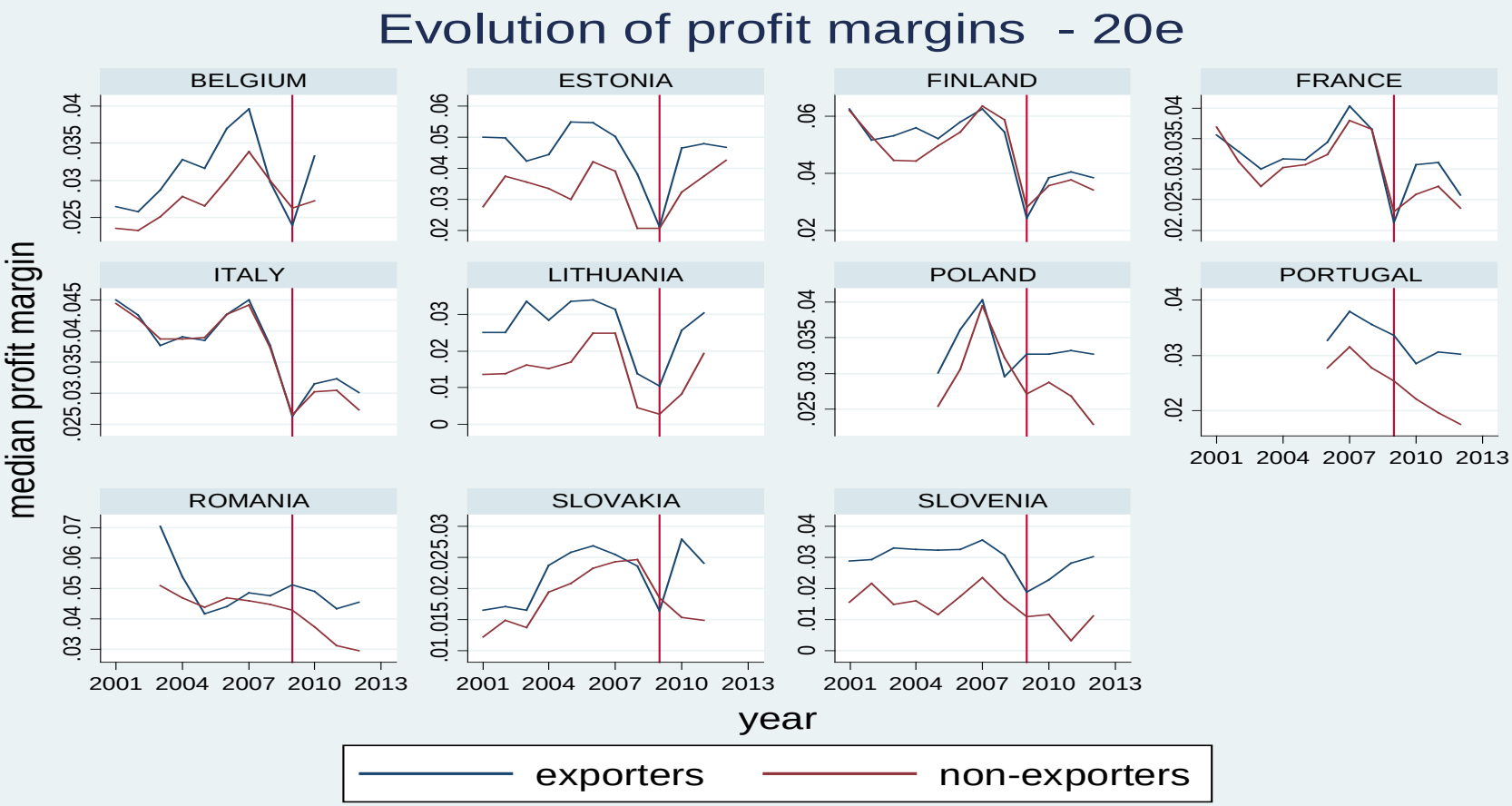
Note: 20E sample, with adjusted export threshold with the exception of Spain (full sample). Non-parametric export productivity premia computed as log productivity of exporting firms in an industry –log productivity of non-exporting in the same industry

Share of export by labor productivity deciles (2004-2012)



Numbers from 1 to 10 refer to labour productivity deciles

Profit margins collapsed in 2009 for exporting and non-exporting firms but rebounded in exporting firms



Note: Numbers based on the 20E sample

On going research

1. Current Account dynamics and firm productivity (Berthou et al)

- The reduction of external imbalances in stressed countries is driven by export growth of most productive firms
- Less productive firms were not able to survive/grow in international markets during the downturn

2. Exports and exchange rate movements: re-estimating aggregate elasticities

- Demian and Di Mauro investigate the link between exchange rate movements and *aggregate* exports by country, and identify the role played by the dispersion of productivity within sectors.
- Berthou, Manova and Sandoz investigate the effects of trade on misallocation and aggregate productivity.
- Barba Navaretti et al. investigate the link between the moments of firm-level productivity distribution and aggregate trade performance.

4. Labour module:

Understanding the linkages between firm characteristics and firm growth

Module coordinators: Roberta Serafini (ECB) and Benedicta Marzinotto (EC)

Documenting paper: “Assessing firm growth in Europe: The CompNet “Labour” Module”, work in progress

The Labour Module: Introduction

- The labour module exploits the **longitudinal dimension** of the **data.** It **follows the same firm over 3-year rolling windows**

- The data is organised in 3 datasets:

  - The *class size* dataset computes the share of firms moving to next or previous class size or staying in the same, over a given 3-year window. There are 5 size classes, defined by the n. employees (as in Eurostat)

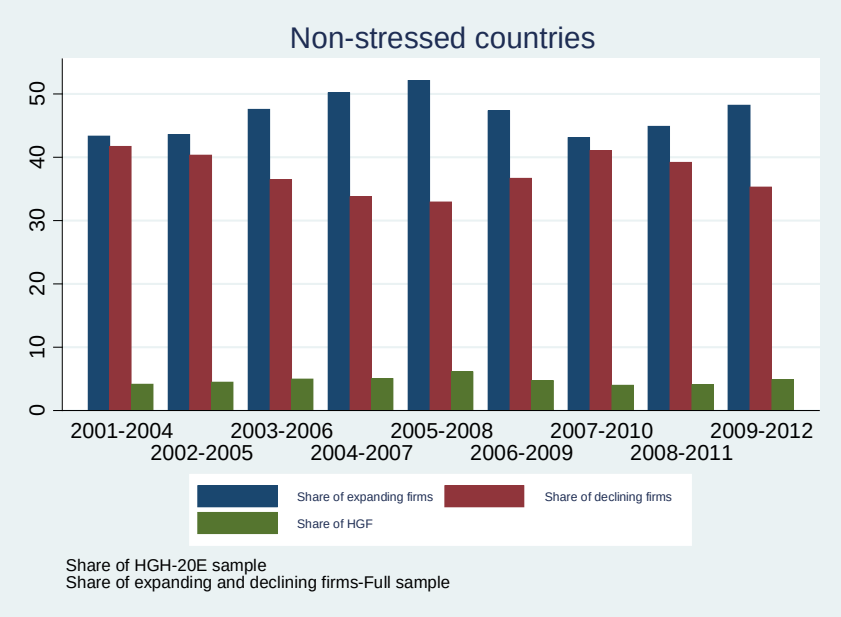
  - The quintile dataset computes the share of firms moving to the next or previous quintile or staying in the same, over a given 3-year window

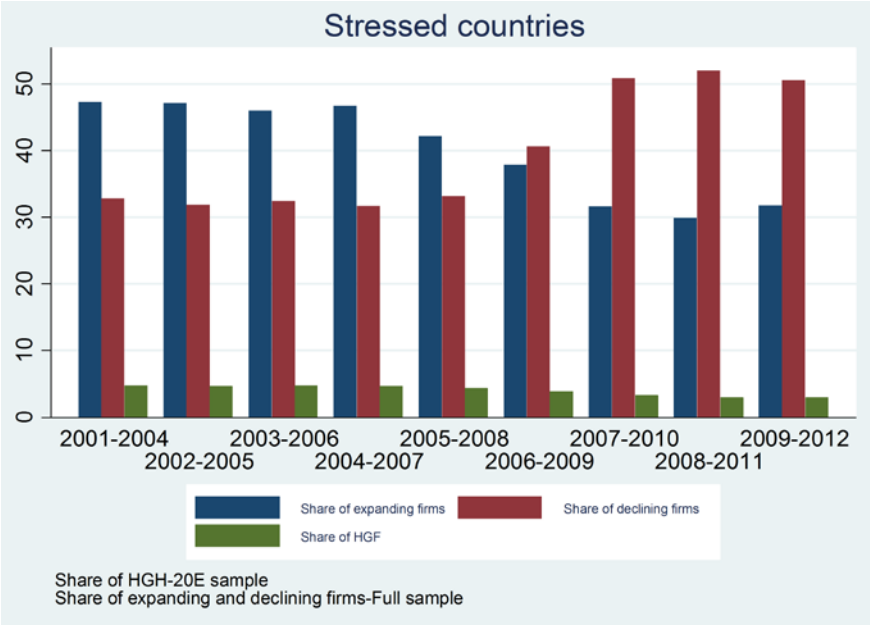
  - The percentage growth dataset computes the share of firms growing between X and Y %, over a given 3-year window (5 categories)

- **Firm growth** is measured also in terms of **productivity** and **ULC**
- **Firm characteristics** at the **beginning** of **each rolling window** are **computed**

What Can We Learn? Incidence of the crisis (I)

Share of firms expanding (**blue**) and shrinking (**red**) by period and group of countries; full sample 2001-2012

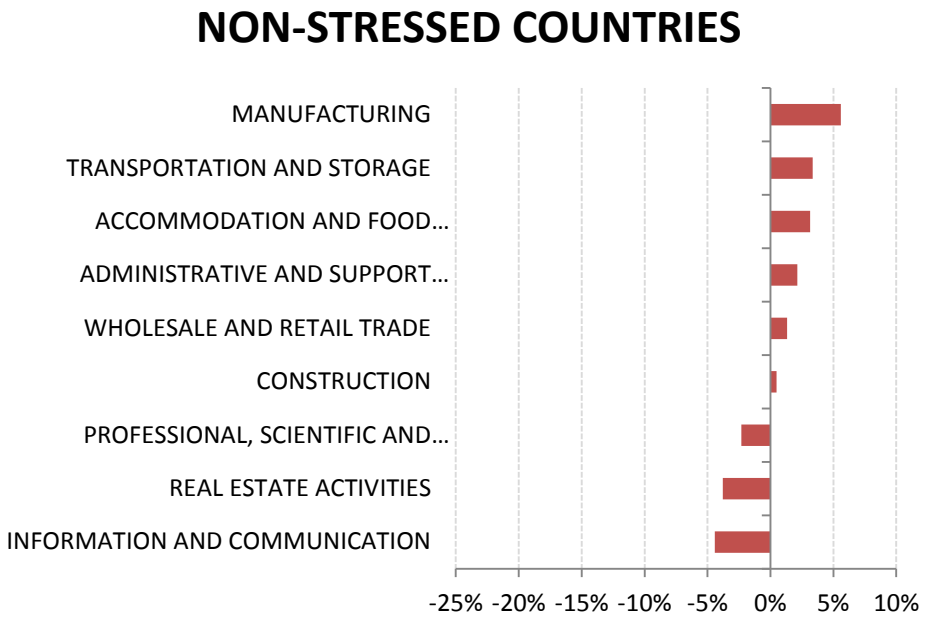


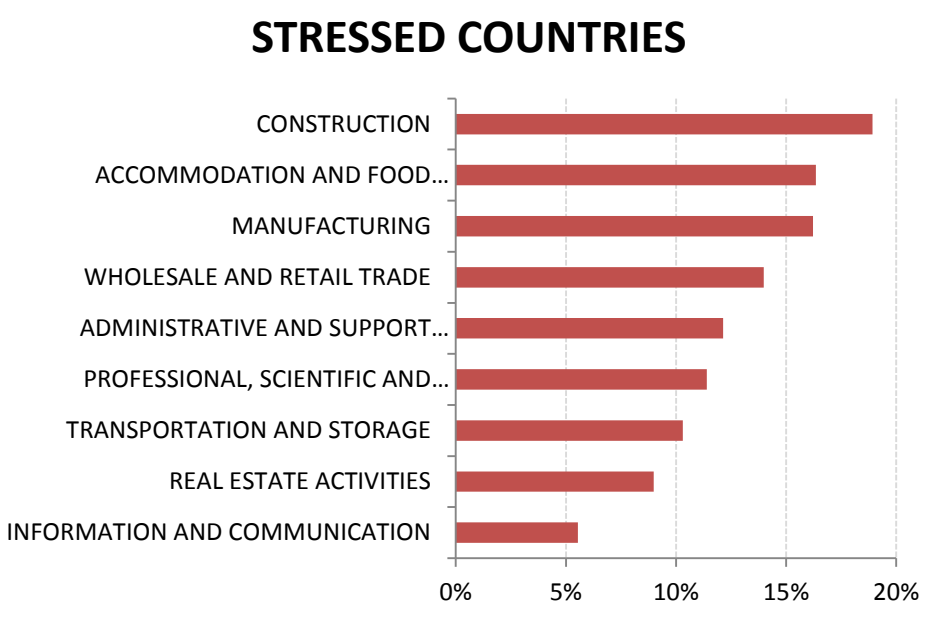


Non-stressed: AT, FI, DE

Stressed: SP, IT,

Change in the share of firms shrinking across sectors, crisis vs. pre-crisis; full sample

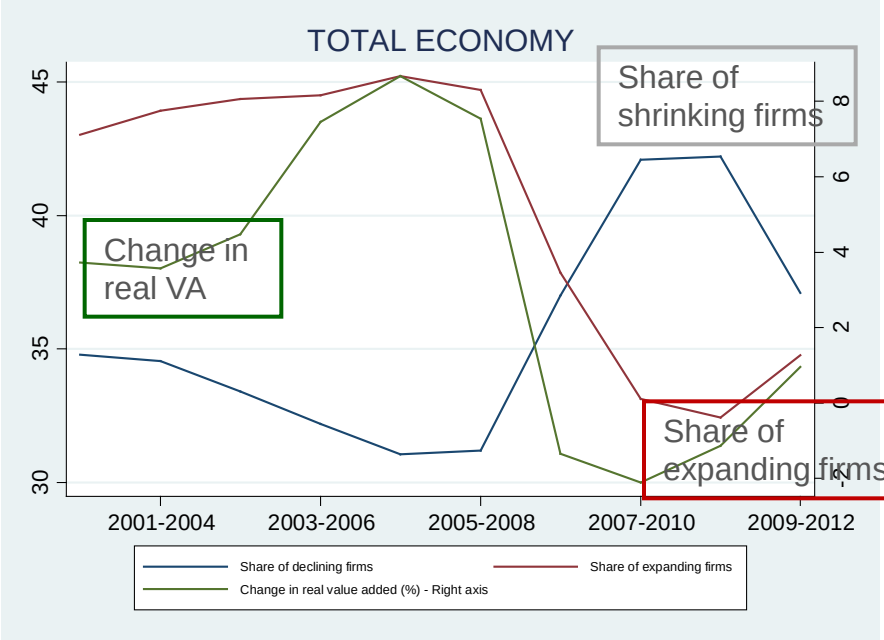


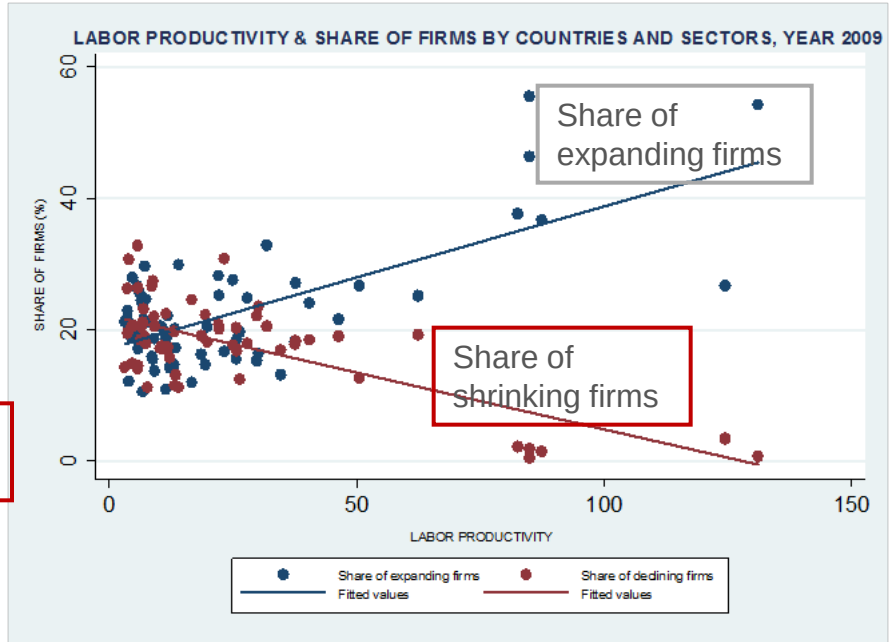


- Increase in more than 10pp in share of firms shrinking (20pp in construction) in stressed countries.
- Little change (and even decrease) in share of shrinking firms in non-stressed
- Non-stressed: AT, FI, DE; Stressed: SP, IT,

What Can We Learn? Reallocation and cleansing

- Share of firms expanding and shrinking move with the cycle
- High initial productivity is correlated with high SE and low SS





- Unweighted average across countries (Full sample); Real value added is taken from Eurostat
- In-depth analysis of cleansing effect of GR on-progress (Bartelsman, Lopez-Garcia and Presidente)

Initial characteristics of growing/shrinking firms

Average of period	Non-stressed euro area countries				stressed euro area countries (SP-IT)			
	shrink	same	expand	HGFs	shrink	same	expand	HGFs
Labour productivity	0.96	1.00	1.04	1.19	0.91	1.00	1.02	1.02
TFP	1.01	1.00	1.02	1.14	0.99	1.00	1.01	1.06
Unit labour costs	1.06	1.00	0.99	0.92	1.04	1.00	0.97	0.94
Labour cost / empl.	1.00	1.00	1.03	1.16	0.96	1.00	0.99	0.97
Investment ratio	0.98	1.00	1.18	1.61	0.99	1.00	1.17	1.64
Capital-labour ratio	0.82	1.00	0.85	1.24	0.87	1.00	0.98	0.95
Profit margin	0.69	1.00	1.07	0.94	0.70	1.00	1.05	0.90
Leverage	1.03	1.00	1.01	0.96	1.07	1.00	1.04	1.01
No. of employees	1.21	1.00	0.83	0.56	1.03	1.00	0.92	0.72

- Labour productivity is higher in expanding firms. In non-stressed countries HGF are much more productive, not so in stressed countries
- Labour cost per employee is also higher in expanding firms (although ULC lower). In non-stressed countries, wages are much higher in HGF. Not the case in stressed countries
- Investment much higher in expanding (HGF) firms, in all countries; leverage of shrinking firms larger
- Expanding firms are initially smaller

5. **Markup module:**
Estimating harmonised measures of competition

Module coordinators: Joao Amador and Ana Cristina Soares (Bank of Portugal)

Documenting paper: “The new CompNet database on European competition indicators”, work in progress

The **price-cost margin** is **computed** from **accounting information**

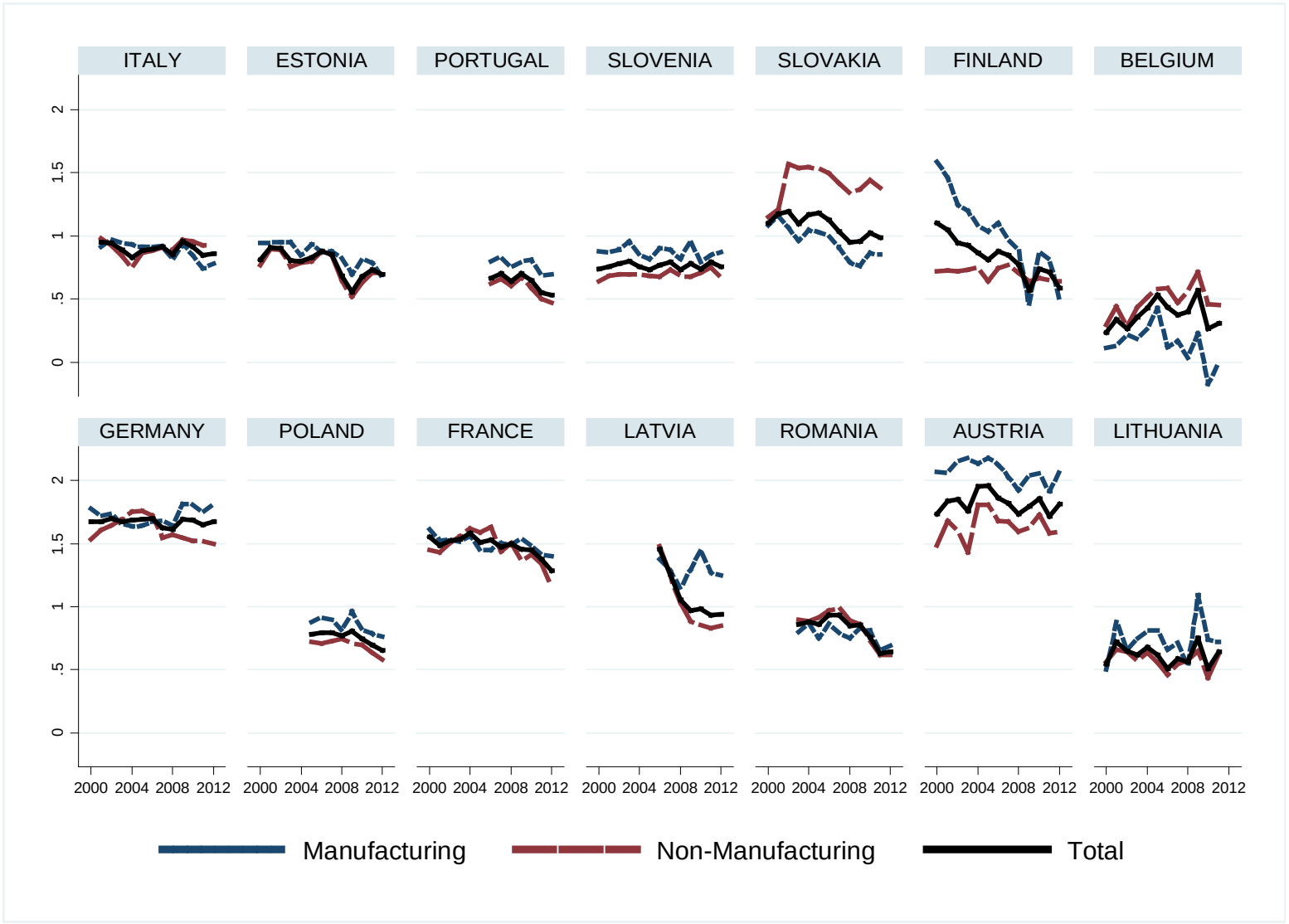
- **It is defined as** **PCM = (Sales - Variable Costs) / Sales**
  - Sales consist of incoming revenue from goods and services
  - Variable Costs consist of wage bill and cost of materials and services
  - There is an alternative definition considering as well the cost of capital

  See more details and caveats

- **Other measures of concentration** like the **Herfindahl-Index** are **also available**

- The module is working on a **parametric estimation of mark-ups** (using the approach of Roeger 1995) and **collective bargaining power**, at the sector level

What Can We Learn? Dynamics of mean PCM across sectors



- Weighted Price-cost margins were rescaled using the mean across all countries for the year of 2007. The weighted averages for each country and year were computed using turnover as weights.

The mark-up module: On going researh

- Exploring heterogeneity: **How do mark-ups differ for firms of different size, exporting status and age? Amador and Soares**

$$X_{csZt} = c + \alpha D_Z + \delta_c + \delta_s + \delta_t + \epsilon_{csZt} \quad (1)$$

$$X_{csZt} = c + \alpha D_Z + \beta D_Z D_{crisis} + \delta_c + \delta_s + \delta_t + \epsilon_{csZt} \quad (2)$$

Where D_Z is a dummy for the firm characteristic (age, export participation or size), d_c, d_s, d_t are, respectively country sector and year dummies, and X_{csZt} is the variable of interest (weighted average, median, interquartile range or standard deviation of PCM). We estimate the equation at the country-sector-Z-year level. D_{crisis} equals 1 from 2009 onwards.

Preliminary results

- **Mark-ups and bargaining power:** evidence for European countries using firm-level data – **parametric joint estimation of both proxies of labour and product market competition - Amador and Soares**

6. **Final remarks**

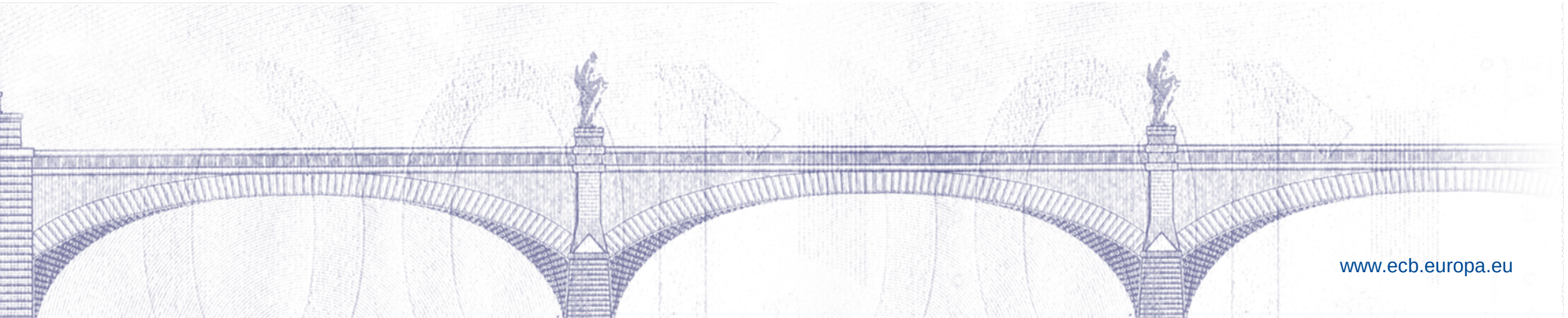
by Prof. **Altomonte** (Bocconi University)

and

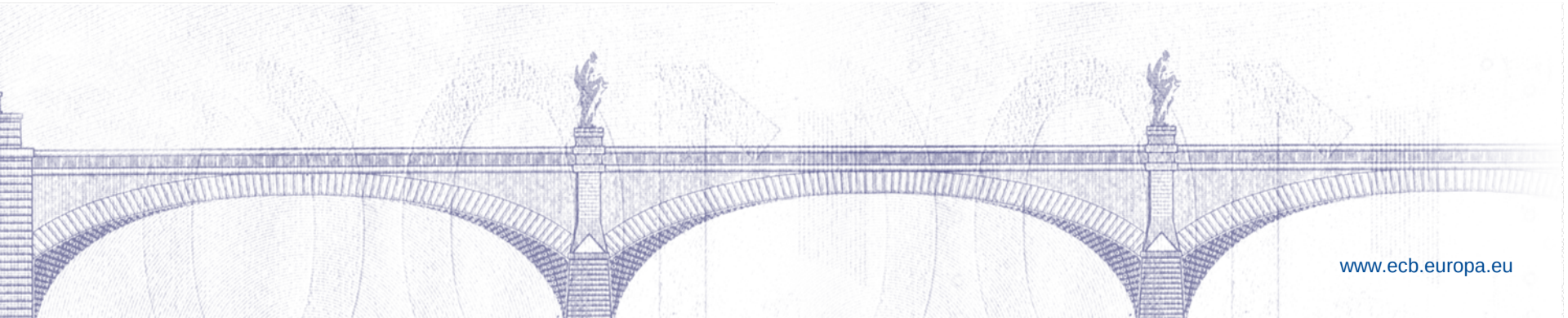
Prof. **Bartelsman** (Vrije Universiteit Amsterdam)

The **new micro-database** is being used by CompNet members and will be made available to **external users** in late summer 2015 for **research** and **policy use**

Thank you!

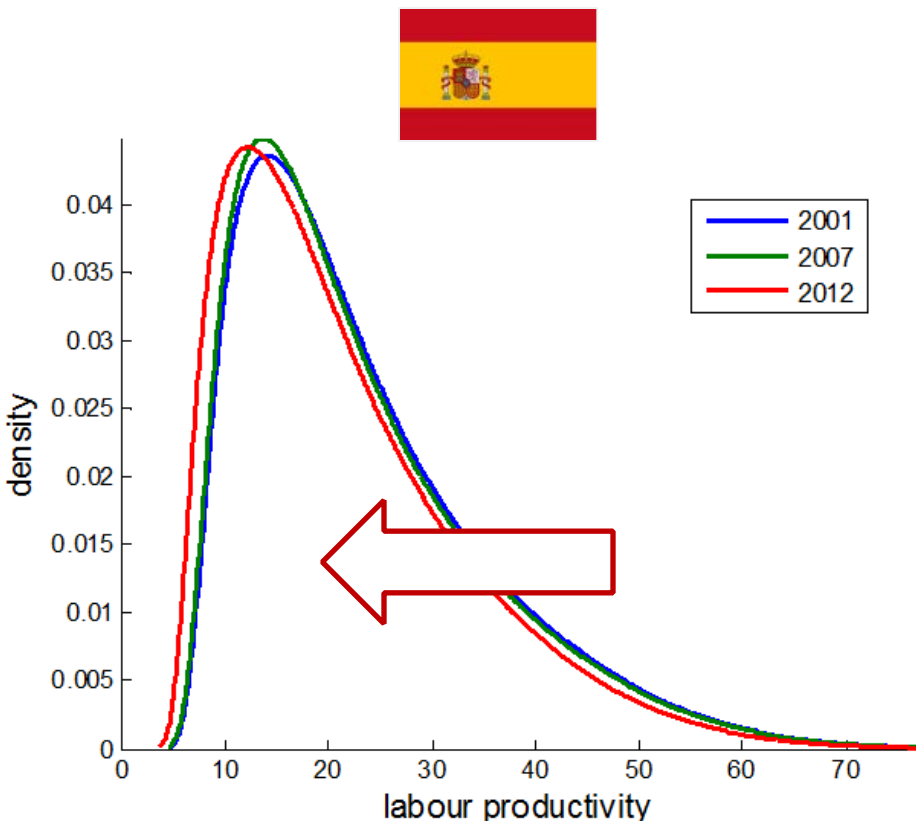


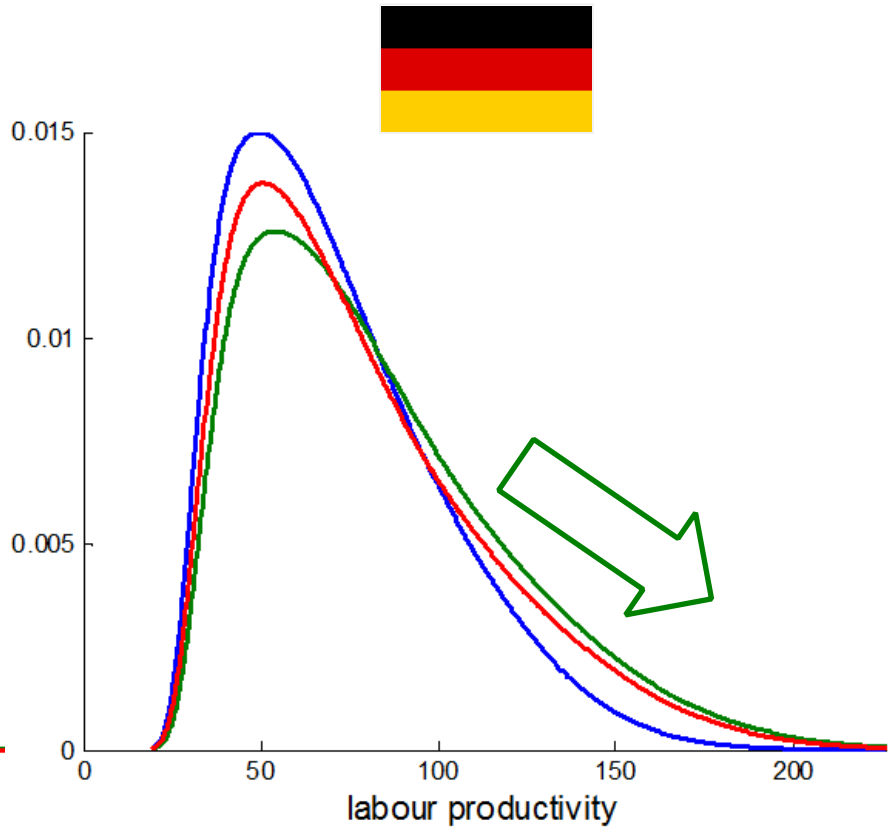
Reserve slides



With information on all deciles of the distribution...

- Study the **evolution** of each indicator in the last decade
- If we look at **labor productivity** in manufacturing sector: in opposite directions, with different policy implications

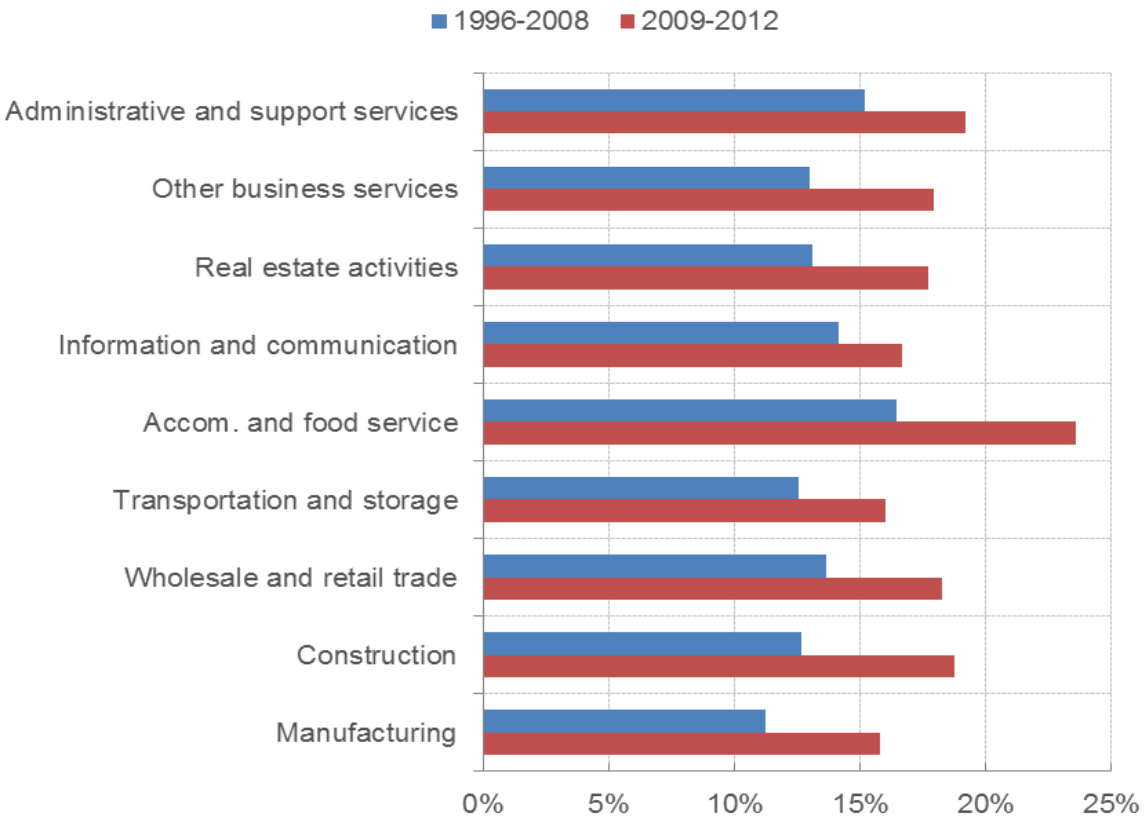




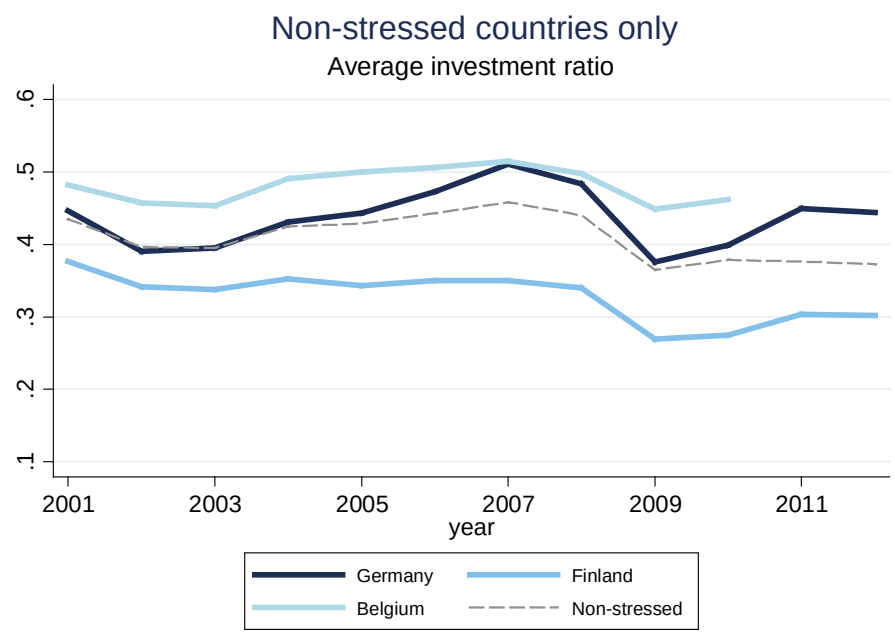
Source: CompNet Dataset, Full sample

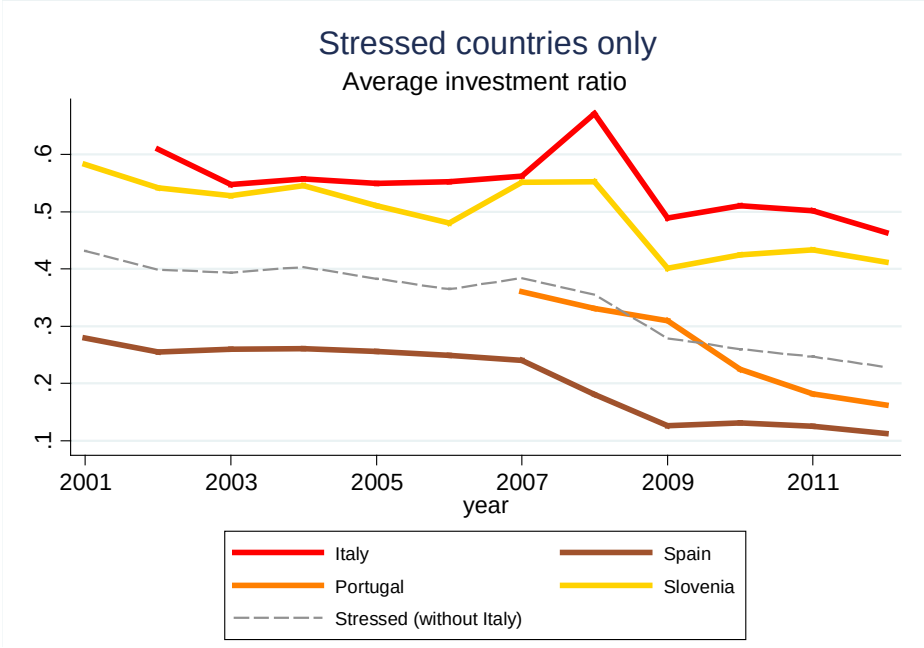
IFC across macro-sectors, before and after the crisis

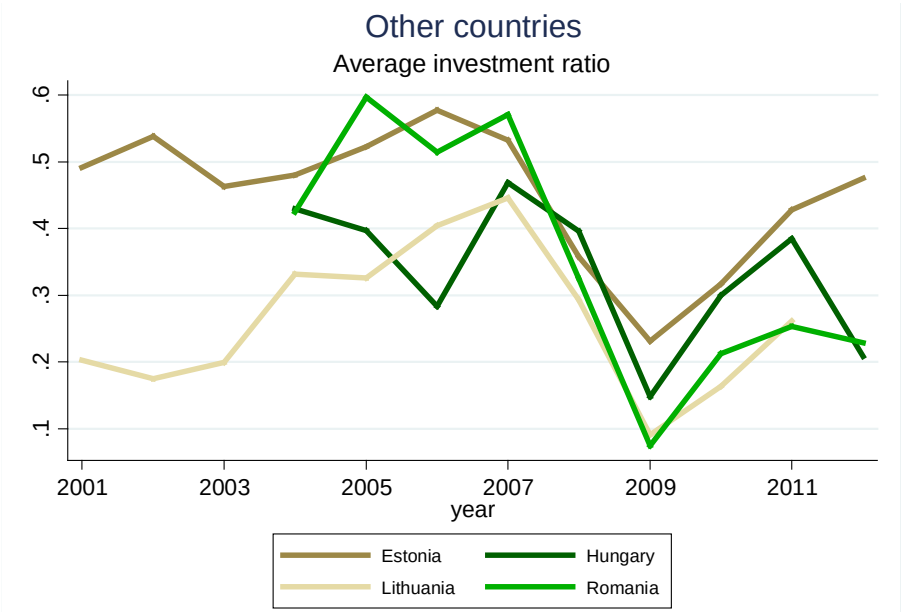
IFC index across macro sectors, Full sample



The 2009 investment collapse







The Trade Module: Coverage (I)

Share of exporters and value of exports

	Sample of firms with at least 1 employee	Sample of firms with at least 20 employee	Sample of firms with at least 1 employee
Country	Share fo exporters and comparison with reference papers	Share fo exporters and comparison with reference papers	Coverage of export value relative to that provided by Eurostat (2011)
BELGIUM	25.4 (23.7)	63 (80.3)	72.7
CROATIA	27.8	62.6	
ESTONIA	27.7 (23.9)	74.7	82.6
FINLAND	18.3	60	105.3
FRANCE	-	56.2 (67.3)	
HUNGARY	9.9 (27.7)	48.1	98.4
ITALY	47.3	73.1 (69.3)	91.1
LITHUANIA	27.9	60.1	58.5
POLAND	-	61.2	
PORTUGAL	27.7 (28.9)	60.7	96.5
ROMANIA	9.7	31.8	89.3
SLOVAKIA	-	81	
SLOVENIA	51.9 (45.8)	84.8	115.9
SPAIN	8.8	-	68

What can we learn? Importance of exporters

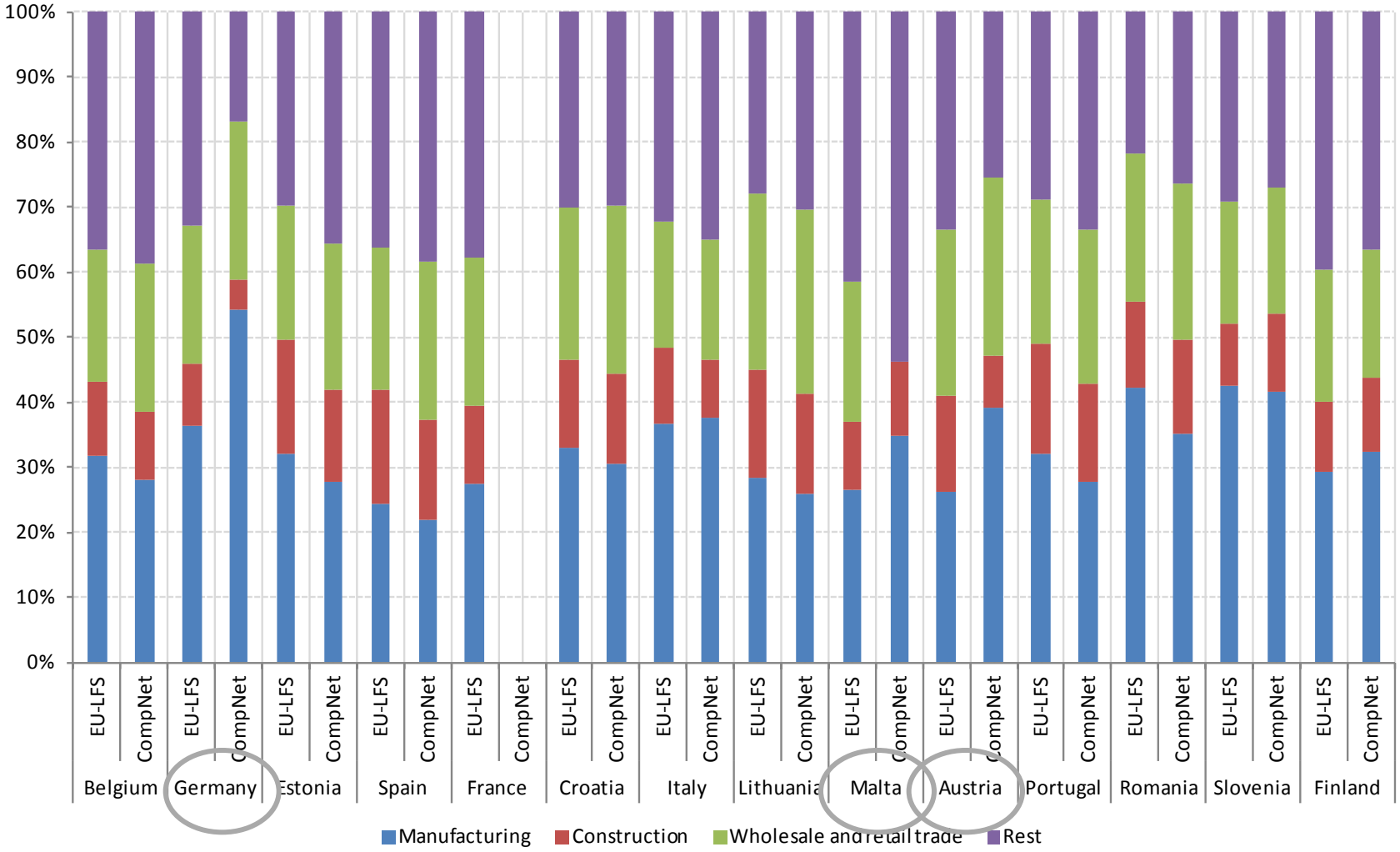
Exporters account for a large share of manufacturing employment and value added

	Employment		Real value added	
	2006	2010	2006	2010
BELGIUM	81%	80%	85%	85%
CROATIA	.	80%	.	87%
ESTONIA	80%	82%	85%	88%
FINLAND	84%	80%	91%	89%
FRANCE	75%	75%	81%	80%
HUNGARY	64%	70%	78%	80%
ITALY	82%	84%	86%	88%
LITHUANIA	66%	69%	76%	81%
MALTA*	71%	66%	73%	70%
POLAND	79%	79%	85%	83%
PORTUGAL	72%	74%	78%	80%
ROMANIA	48%	54%	55%	68%
SLOVAKIA	90%	90%	95%	93%
SLOVENIA	86%	88%	91%	93%
SPAIN*	53%	48%	66%	62%
Average	74%	75%	80%	82%

Note: calculations based on adjusted exports in the **20E sample**, except for Malta and Spain where the full sample is used.

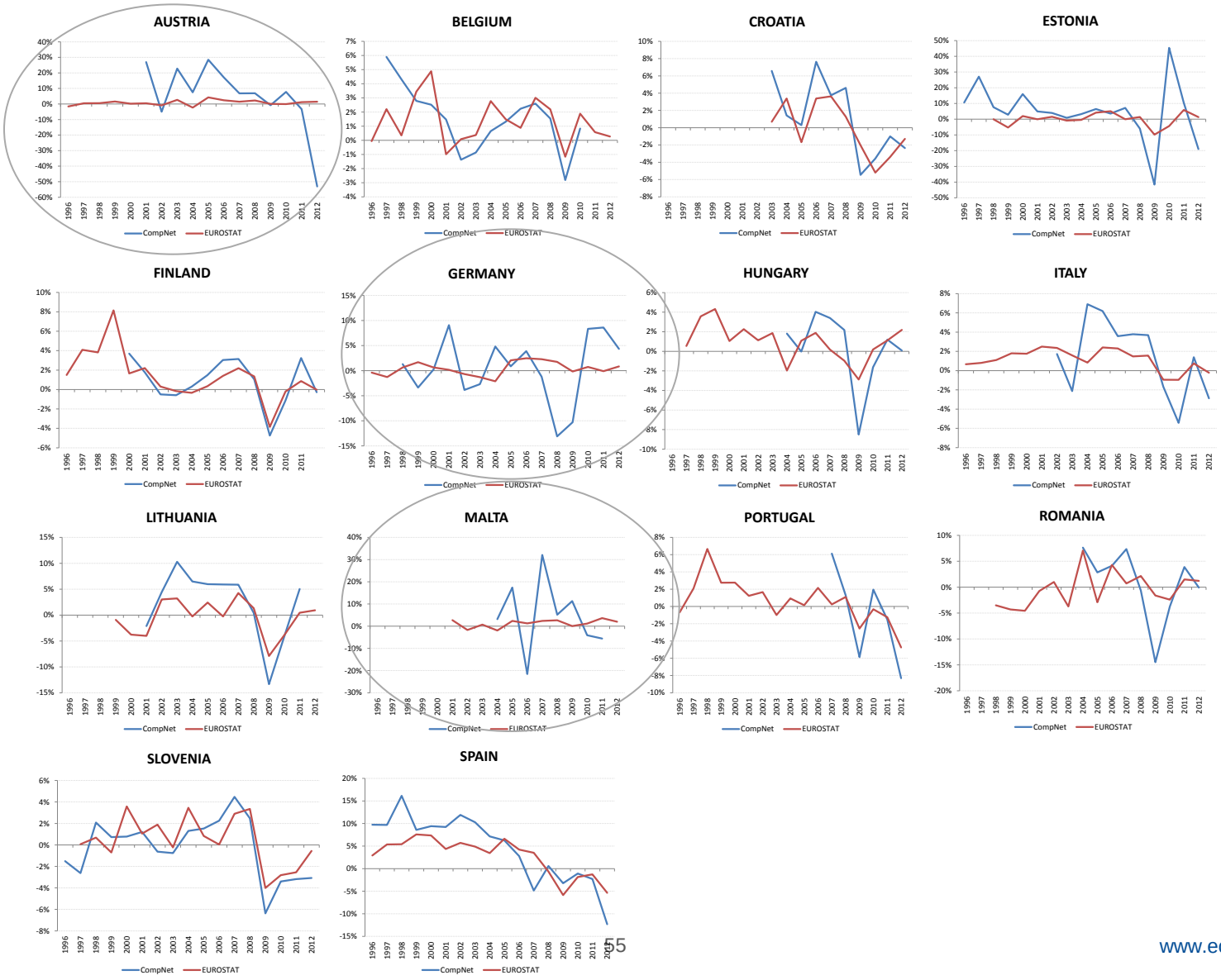
The Labour Module: Coverage (I)

Employment by sector; CompNet's labour module and EU-LFS; full sample; average across years



The Labour Module: Coverage (II)

Employment growth; CompNet and the EU-LFS; full sample



The Markup Module: Computing PCM

The PCM for a firm has been computed from accounting information and is defined as:

$$PCM=(Sales_i-Variable\ Costs)/Sales$$

- Sales consist of incoming revenue from goods and services and Variable Costs consist of wage bill (including other benefits) and cost of materials and services (e.g., subcontractors, electricity and fuels)
- In addition, versions with and without estimated of capital costs can be used. The estimated user cost of capital follows Jorgenson and Hall (1967) with the depreciation rate fixed at 8%

Measuring firms' market power with the PCM is subject to some caveats.

- Marginal costs are unobserved, average costs are used as a proxy
- PCMs may also reflect product quality and efficiency levels
- The market PCM is a measure not monotone in competition due to its inability to capture reallocation and selection effects.

Table 1 - Differences between young and old firms

	Price cost margin		PCM dispersion	
	weighted	median	std. dev.	Interquartile range
D_{age}	-0.018***	-0.005***	0.175***	0.025***
	(0.002)	(0.002)	(0.061)	(0.002)
Observations	6561	6561	6556	6561
R^2	0.357	0.334	0.056	0.422

Notes: All equations include country, sector and year dummies. Standard errors in parentheses, Countries covered include Estonia, France, Italy, Portugal, Slovenia and Spain.
D_{age}=1 for firms with at most 10 years
*** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.

Table 2 - Differences between young and old firms during the crisis

	Price cost margin		PCM dispersion	
	weighted	median	std. dev.	Interquartile range
D_{age}	-0.013***	-0.008***	0.227***	0.021***
	(0.003)	(0.002)	(0.084)	(0.003)
D_{age} D_{crisis}	-0.011**	0.007**	-0.110	0.007*
	(0.005)	(0.004)	(0.122)	(0.004)
Observations	6561	6561	6556	6561
R^2	0.358	0.334	0.056	0.422

Notes: All equations include country, sector and year dummies. Standard errors in parentheses,
Countries covered include Estonia, France, Italy, Portugal, Slovenia and Spain.
D_{crisis}= 1 from 2009 onwards; D_{age}=1 for firms with at most 10 years
*** significant at the 1% level, ** significant at the 5% level, * significant at the 10% level.