

DETERMINANTS OF THE DECISION TO IMPORT: A CROSS-COUNTRY COMPARISON

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Paper available at <http://www.bde.es/f/webbde/SES/Secciones/Publicaciones/InformesBoletinesRevistas/BoletinEconomico/12/Oct/Files/art2e.pdf>

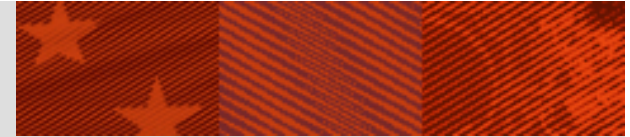
COMPNET. THE COMPETITIVENESS RESEARCH NETWORK

Frankfurt

10th of December 2012

DIRECTORATE GENERAL OF ECONOMICS, STATISTICS AND RESEARCH

OUTLINE OF THE PRESENTATION



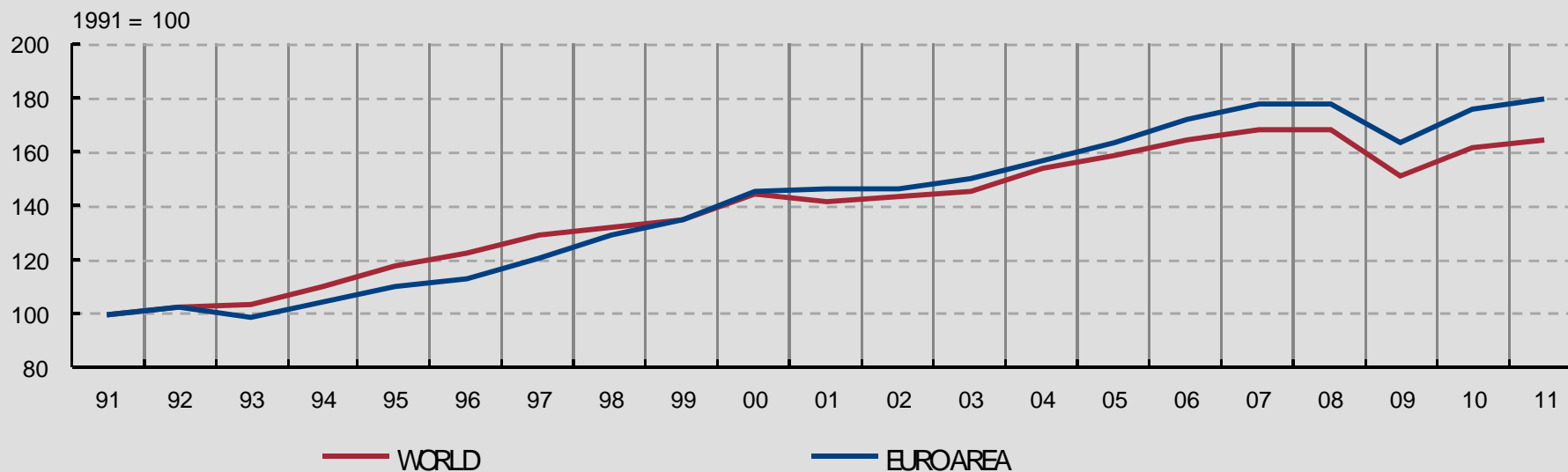
- **Motivation and literature review**
- **Dataset: Stylized facts**
- **Which are the determinants of importing at the firm-level?**
- **Conclusions**

MOTIVATION (I)



- **Increasing import dependence over the last few decades...**

IMPORTS/GDP RATIO



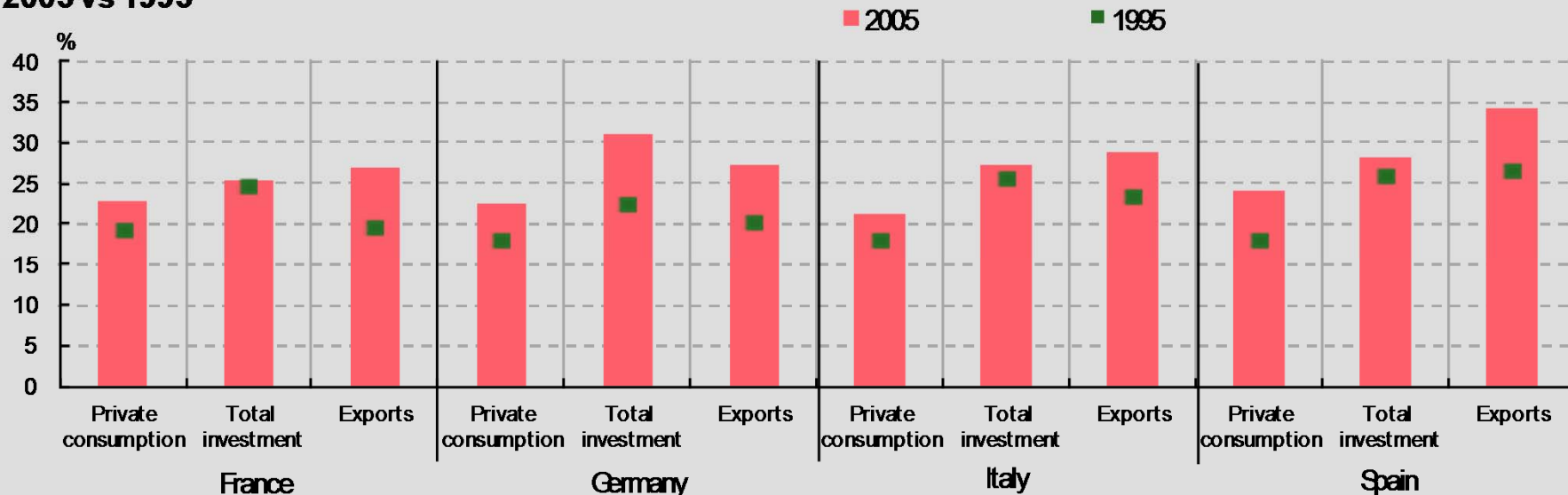
SOURCES: IMF and Eurostat.

MOTIVATION (II)



- ...and persistent differences across countries, NOT ONLY in the LEVEL of their import dependency...

**TOTAL IMPORT CONTENT OF MAIN GDP COMPONENTS
2005 vs 1995**



SOURCE: Bussière et al. (2011).

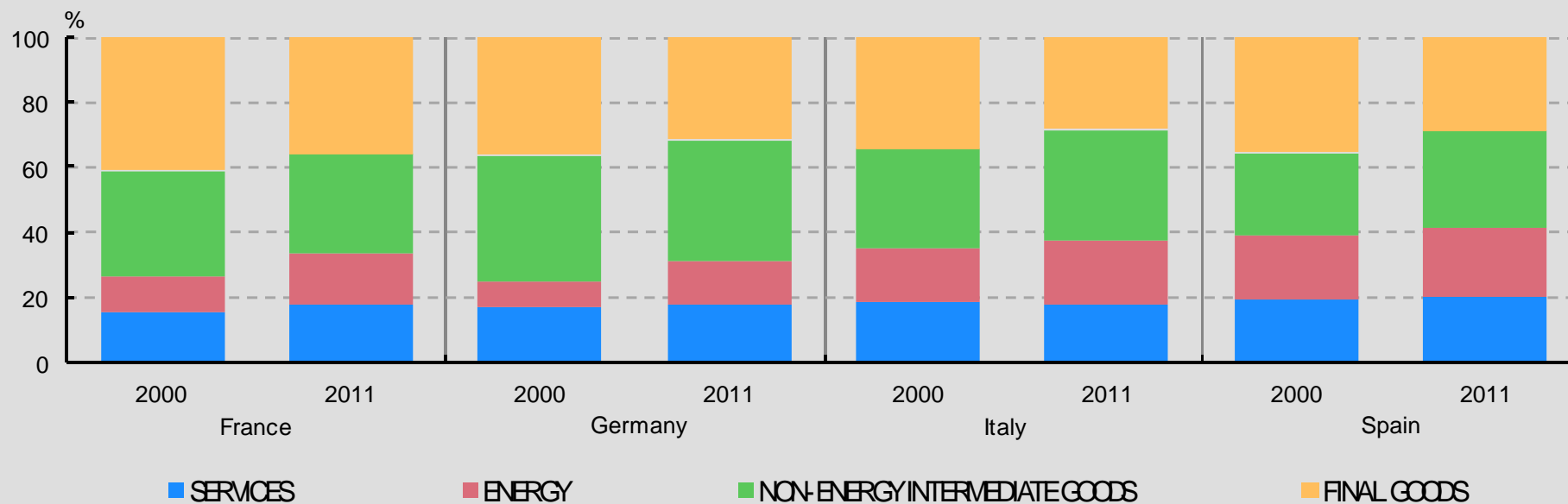
MOTIVATION (III)



- ...but **ALSO** in their imports' **STRUCTURE**.

STRUCTURE OF IMPORTS

Nominal terms



SOURCE: Eurostat.

A LITERATURE REVIEW



- **Reasons for higher import dependency/differences in the import dependency and type of imported goods across countries**
 - *International fragmentation of production/ Country specific factors/ Institutional factors/ Economic policy decisions/ Firms' characteristics*
- **Importing goods and services: is it good or bad? It depends**
 - *Augier et al. (2009), Altomonte and Békés (2009), Amiti and Konings (2007), Keller (2002)...*
- **Only the more productive firms import: (Sunk) costs of the importing activity and the ability to exploit new and better inputs**
 - *Altomonte and Békés (2009), Vogel and Wagner (2008), Muuls and Pisu (2007)...*
- **Set of firms' characteristics that influence both on the propensity of importing and the type of goods purchased abroad**
 - *Size, experience, human and technological capital, FDI/IO, EMN activity, financial constraints, spillover effects, importing hysteresis*

WHAT THIS PAPER DOES



- ***Which firms' characteristics increase the probability of being an importer?***
- ***Are there differences across countries?***
- ***Which firms' characteristics influence the type of imported goods? What lessons can we learn from the identified differences across countries?***

THE DATASET: A DESCRIPTION



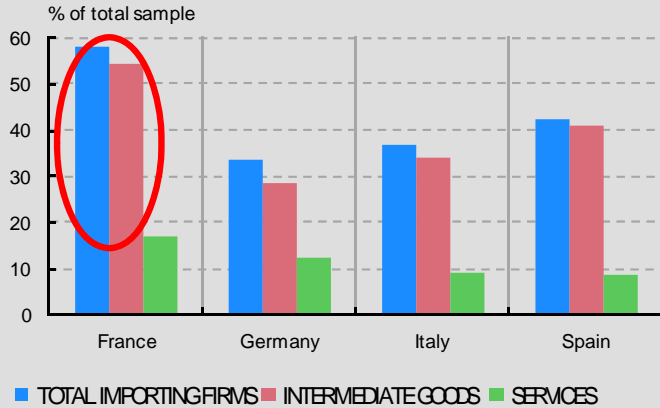
- **Source of information:** *EFIGE survey*
- **Type of information:** *Firms' characteristics (around 150 variables both qualitative and quantitative about the international activities, R&D , labour organization, financing and organizational activities and pricing behavior)*
- **Type of data:** *Manufacturing firm-level data. 2008 cross-section data. Some variables also 2007-2009 average*
- **Dataset STRENGTHS**
 - *Unique micro dataset: firm-level homogenous information for seven European countries*
 - ***It allows us to analyse the factors behind import propensity and the differences between countries***
- **Dataset WEAKNESSES**
 - *Manufacturing firms with 10 employees or more; sample representativeness (energy); cross-section data (future waves); types of information (qualitative)*
 - *This could bias the results: endogeneity problems/omitted variable bias/self-selection sample problems/correlations versus real causality*

THE DATASET: MAIN STYLIZED FACTS (I)

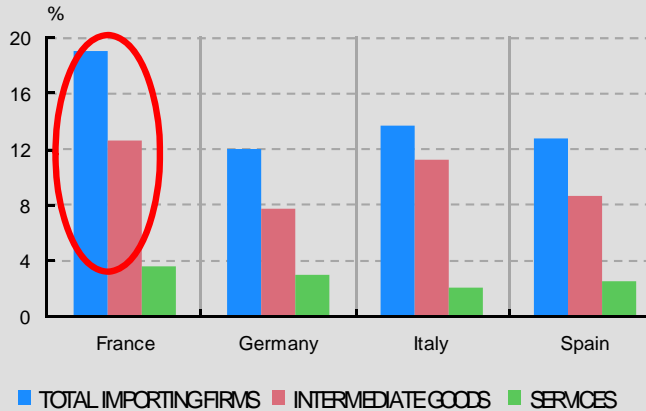


- Profile of importing firms in the largest Euro Area economies**

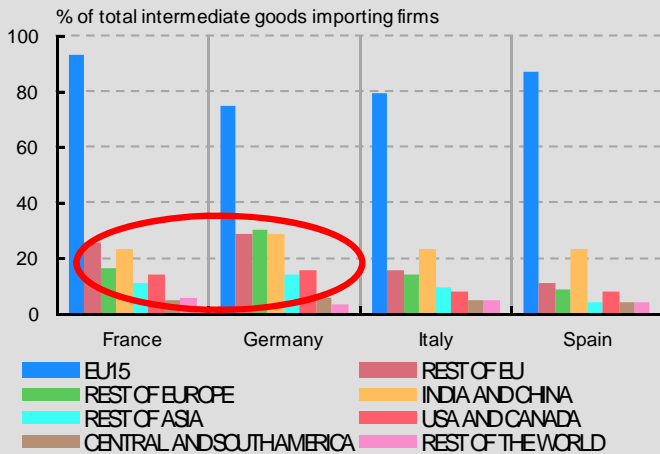
RELATIVE WEIGHT OF IMPORTING FIRMS



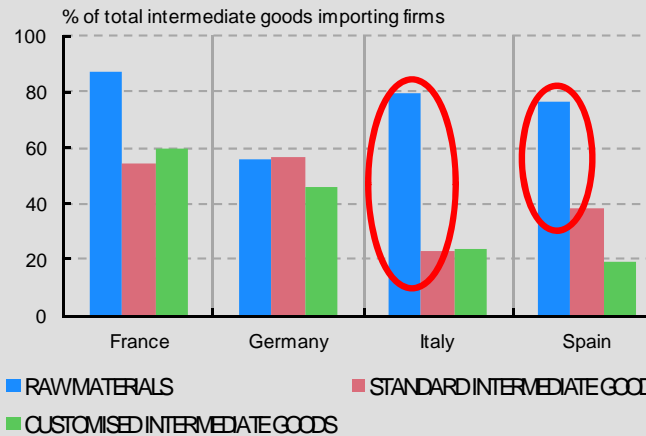
IMPORT INTENSITY (IMPORTED VALUE/NET TURNOVER)



GEOGRAPHICAL BREAKDOWN OF IMPORTED INTERMEDIATE GOODS



BREAKDOWN OF IMPORTED INTERMEDIATE GOODS BY COMPONENT



- Highest share of importers and import intensity in France, lowest in Germany**
- Most diversified imports (both geo and by type of products) in France and Germany**
- High dependency on raw materials in Spain and Italy**

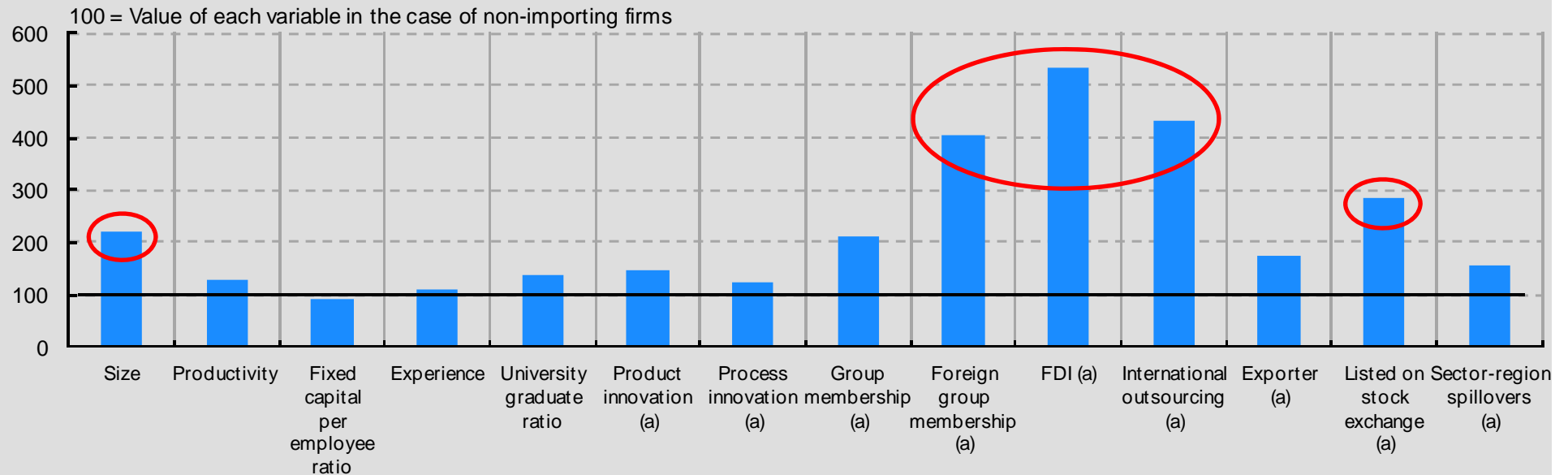
SOURCE: EU-EFIGE/Bruegel-UniCredit dataset.

THE DATASET: MAIN STYLIZED FACTS (II)



- **Main determinants of the decision to import**

IMPORTING vs NON-IMPORTING FIRMS. TOTAL SAMPLE 2008 average



SOURCES: EFIGE/Bruegel-UniCredit dataset and Amadeus.

a. The value of this variable indicates the percentage of firms having the characteristic in question (dummy variables).

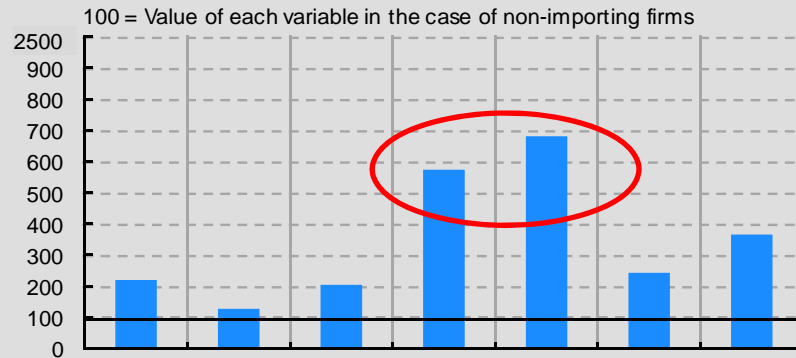
- **Internationalisation status, size, financial resources diversification...**

THE DATASET: MAIN STYLIZED FACTS (III)

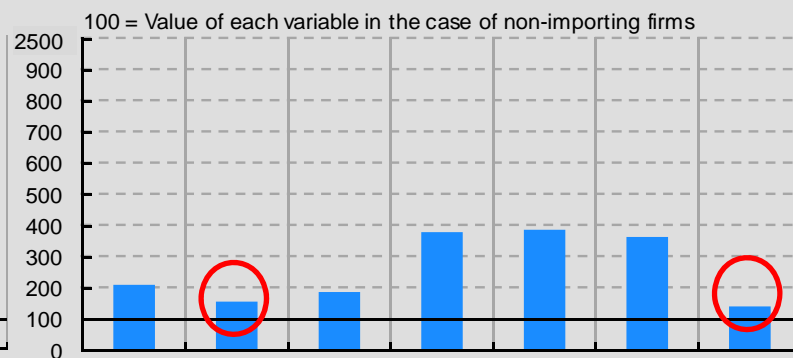


- Main determinants of the decision to import: cross-country differences

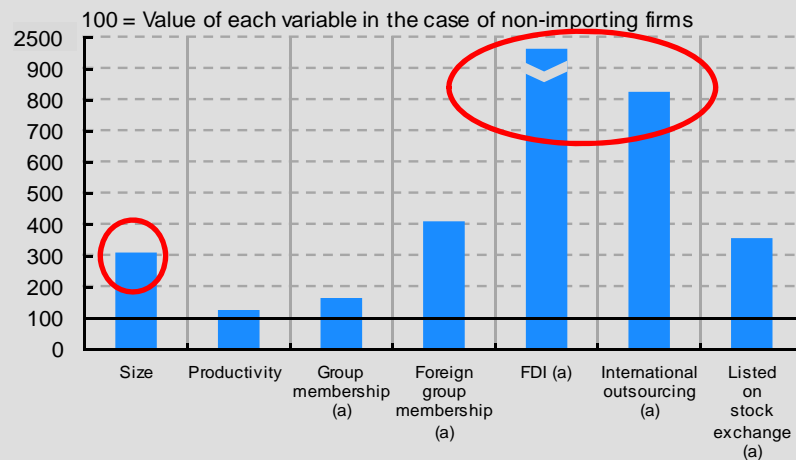
IMPORTING vs NON-IMPORTING FIRMS. SPAIN
2008 average



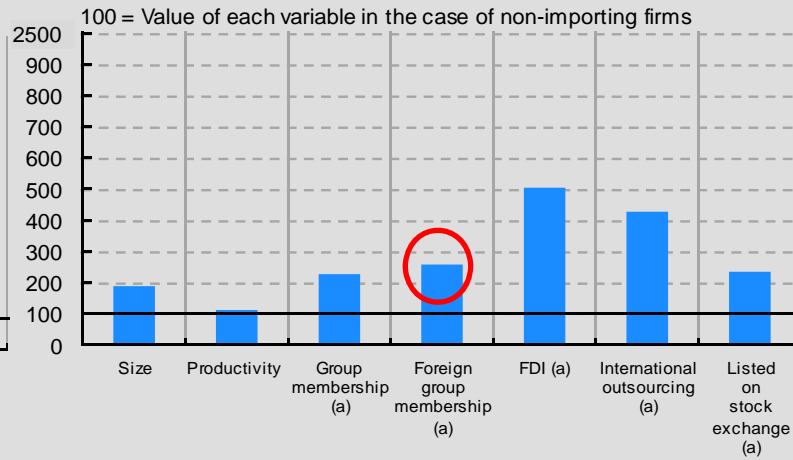
IMPORTING vs NON-IMPORTING FIRMS. ITALY
2008 average



IMPORTING vs NON-IMPORTING FIRMS. FRANCE
2008 average



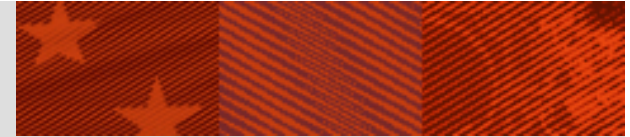
IMPORTING vs NON-IMPORTING FIRMS. GERMANY
2008 average



SOURCES: EFIGE/Bruegel-UniCredit dataset and Amadeus.

a. The value of this variable indicates the percentage of firms having the characteristic in question (dummy variable).

DETERMINANTS OF THE DECISION TO IMPORT (I)



- **The empirical strategy**

- **Econometric approach:** a **Probit** is estimated to identify which variables could help to explain differences in the import propensity (country/sector specific factors and firms' characteristics)
- **Dependent variable:** 1 if a firm imported in 2008 and/or regularly in previous years, 0 otherwise
- **Control variables:**
 - Country and sector dummies
 - Firms' characteristics (*size, experience, skills, R&D*)
 - Internationalisation status (*foreign ownership, exporter, FDI/IO, import hysteresis*)
 - Industrial linkages (*spillovers effects, group membership, IO, percentage of intermediate inputs on turnover*)
 - Financial constraints (*stock exchange, bank debt*)
- **Presented results:** coefficients reported are average marginal effects
- **Dataset:** EFIGE (Germany, France, Italy and Spain)

DETERMINANTS OF THE DECISION TO IMPORT (II)

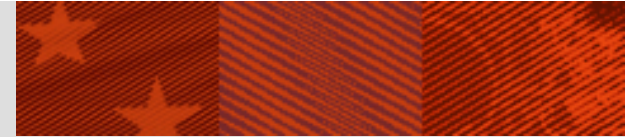


Dependent variable	IMPORTING FIRM (a)				
	[1]	[2]	[3]	[4]	[5]
France (b)	0.238*** (0.015)	0.239*** (0.014)	0.262*** (0.014)	0.243*** (0.014)	0.092*** (0.017)
Italy (b)	0.039*** (0.013)	0.022*** (0.013)	0.065*** (0.013)	0.022* (0.013)	-0.011 (0.013)
Spain (b)	0.104*** (0.014)	0.104*** (0.014)	0.131*** (0.014)	0.114*** (0.013)	0.043*** (0.014)
Size (c)			0.107*** (0.005)	0.063*** (0.006)	0.060*** (0.006)
University graduate ratio			0.283*** (0.042)	0.108*** (0.040)	0.100** (0.039)
Process innovation			0.050*** (0.010)	0.045*** (0.010)	0.040*** (0.009)
Product innovation			0.120*** (0.010)	0.074*** (0.010)	0.074*** (0.010)
Foreign group membership				0.101*** (0.023)	0.079*** (0.023)
FDI				0.146*** (0.025)	0.136*** (0.024)
International outsourcing				0.199*** (0.026)	0.195*** (0.025)
Exporter				0.236*** (0.009)	0.216*** (0.010)
Sector-region spillovers					0.582*** (0.033)

SOURCE: EU-EFIGE/Bruegel-UniCredit dataset.

a. Average marginal effects are reported. Standard deviations are in brackets. *, **, *** denote statistical significance at 10%, 5% and 1%, respectively. Full table available in the paper. b. Reference taken is Germany. c. As natural logarithm.

DETERMINANTS OF THE DECISION TO IMPORT (III)



- **The empirical strategy**

- **Econometric approach:** a **Probit** (*Heckman*) is estimated to identify which variables could help to explain differences in the type of goods imported
- **Dependent variable:** 1 if a firm imported **ONLY** one type of good, 0 otherwise
- **Control variables:**
 - Country and sector dummies
 - Firms' characteristics (*experience, skills, R&D*)
 - Internationalisation status (*foreign ownership, exporter, FDI/IO*)
 - Industrial linkages (*spillovers effects, group membership*)
 - Financial constraints (*stock exchange*)
- **Presented results :** coefficients reported are average marginal effects
- **Dataset:** EFIGE (Germany, France, Italy and Spain)

DETERMINANTS OF THE DECISION TO IMPORT (IV)



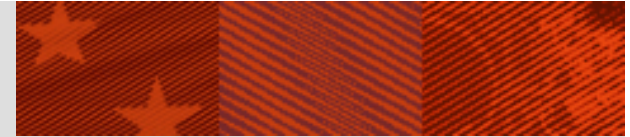
Dependent variable	IMPORTING FIRM (a)	ONLY RAW MATERIALS (a)	ONLY STANDARD INTERMEDIATE GOODS (a)	ONLY CUSTOMISED INTERMEDIATE GOODS (a)
	[1]	[2]	[3]	[4]
France (b)	0.092*** (0.017)	-0.054** (0.027)	-0.107*** (0.025)	-0.046*** (0.016)
Italy (b)	-0.011 (0.013)	0.301*** (0.040)	-0.051*** (0.014)	-0.015* (0.008)
Spain (b)	0.043*** (0.014)	0.187*** (0.038)	-0.014 (0.010)	-0.038*** (0.014)
Size	0.060*** (0.006)			
University graduate ratio	0.100** (0.039)	-0.010 (0.065)	0.061** (0.030)	0.037* (0.022)
Process innovation	0.040*** (0.009)	-0.041*** (0.014)	-0.004 (0.007)	0.002 (0.005)
Product innovation	0.074*** (0.010)	-0.085*** (0.015)	0.002 (0.008)	0.009 (0.005)
Foreign group membership	0.079*** (0.023)	-0.026 (0.028)	0.013 (0.014)	0.017* (0.010)
FDI	0.136*** (0.024)	-0.097*** (0.029)	-0.019 (0.015)	0.000 (0.011)
International outsourcing	0.195*** (0.025)	-0.194*** (0.033)	-0.011 (0.017)	0.028*** (0.010)
Exporter	0.216*** (0.010)	-0.096*** (0.026)	-0.010 (0.013)	0.011 (0.008)
Sector-region spillovers	0.582*** (0.033)	-0.156** (0.074)	0.065*** (0.021)	0.025 (0.018)

SOURCE: EU-EFIGE/Bruegel-UniCredit dataset.

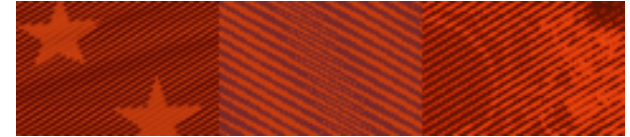
a. Average marginal effects are reported. *, **, *** denote statistical significance at 10%, 5% and 1%, respectively. Full table in the paper. b. Reference taken is Germany. c. As natural logarithm.

- **Most efficient firms show a LOWER propensity of importing ONLY raw materials (in general, the opposite to other intermediate goods)**
- **Country dummies are significant**

CONCLUSIONS



- **There are important differences in the import dependency across the four largest Euro Area countries and also in the type of products imported**
- **Firms' characteristics only explain part of these differences**
- **Country-specific characteristics are relevant as well as spillover effects**
- **Aggregate figures of import dependency don't have to be interpreted as a negative indicator of a country's competitiveness. It all depends on the type of goods imported. Fostering human and technological capital would help to take full advantage of international trade on imported inputs**



THANK YOU FOR YOUR ATTENTION

BANCO DE **ESPAÑA**
Eurosistema

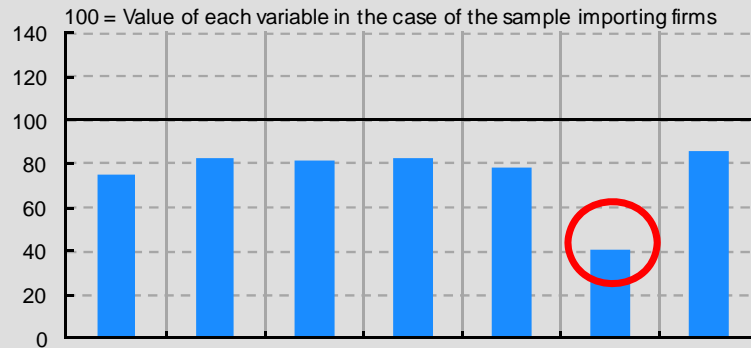
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THE DATASET: MAIN STYLIZED FACTS (IV)

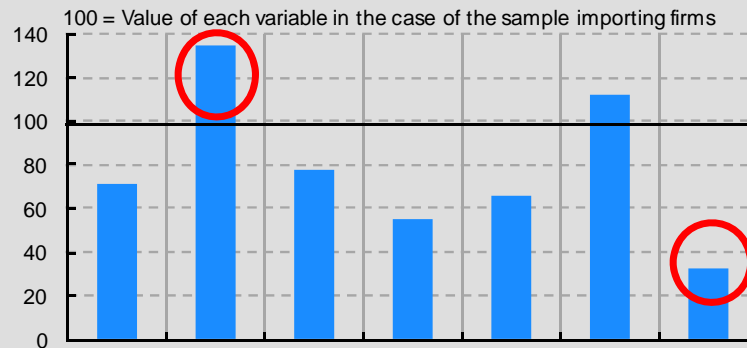


- Main determinants of the decision to import: cross-country differences. Importing firms compared to sample average

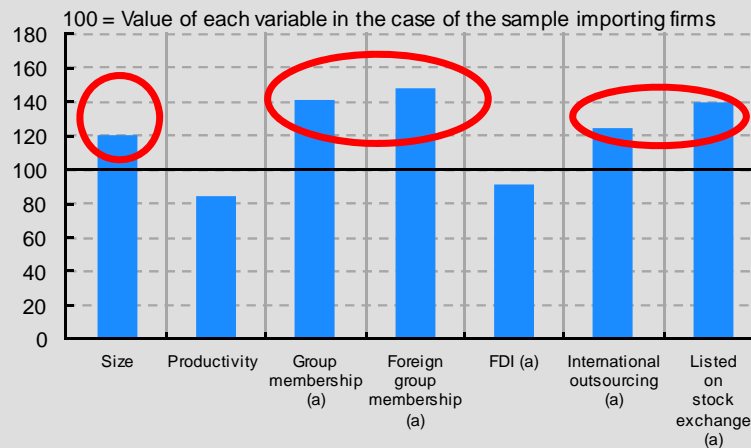
IMPORTING FIRMS. SPAIN vs SAMPLE
2008 average



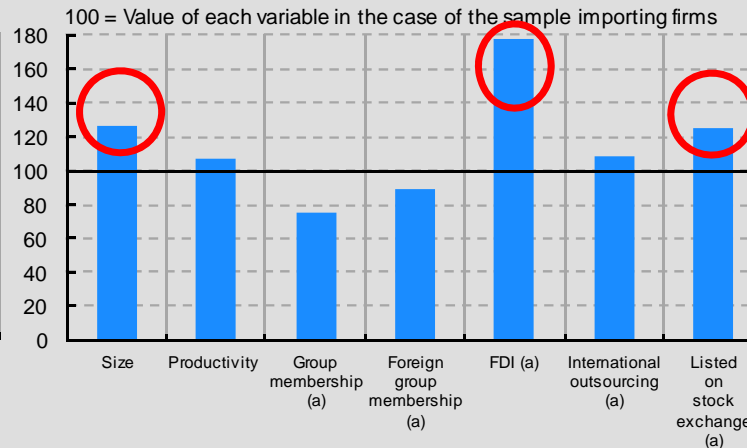
IMPORTING FIRMS. ITALY vs SAMPLE
2008 average



IMPORTING FIRMS. FRANCE vs SAMPLE
2008 average



IMPORTING FIRMS. GERMANY vs SAMPLE
2008 average



SOURCES: EFIGE/Bruegel-UniCredit dataset and Amadeus.

a. The value of this variable indicates the percentage of firms having the characteristic in question (dummy variables).