

INTERNATIONAL TRADE IN OTHER SERVICES: A CROSS-COUNTRY COMPARISON USING FIRM LEVEL DATA (FRANCE/GERMANY/SPAIN)

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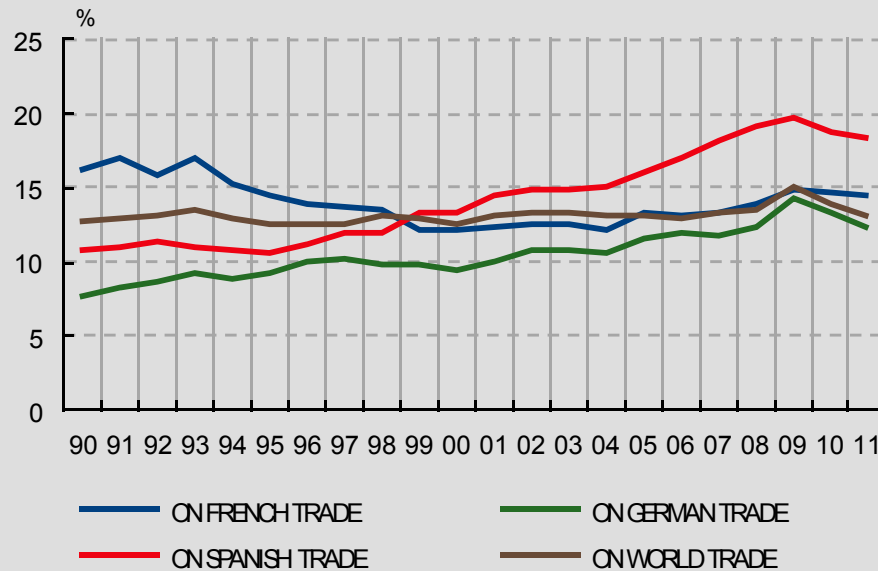
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MOTIVATION (I)

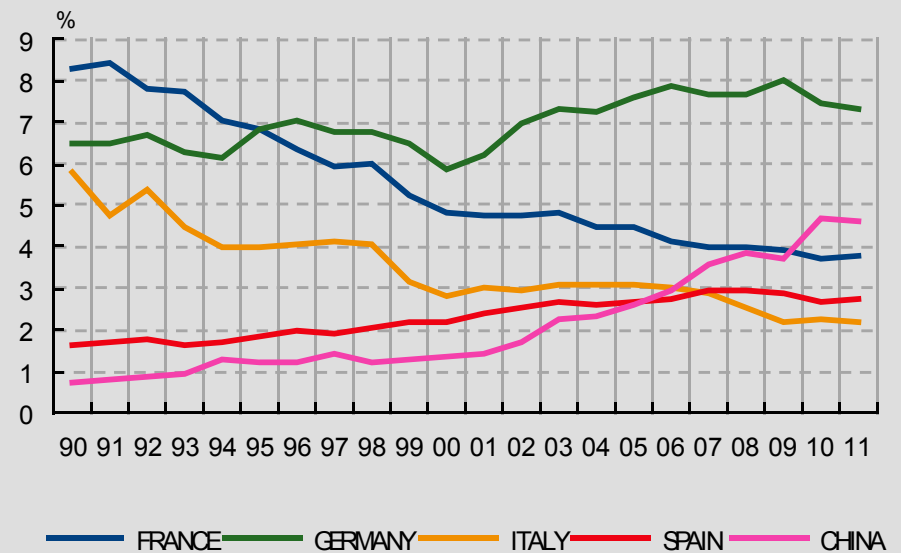


- Increasing importance of international trade in other services and significant heterogeneity in country performance

SERVICES SHARE (a)
Nominal terms



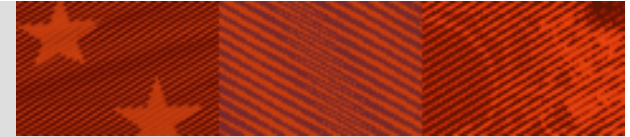
GLOBAL MARKET SHARES (SERVICES) (a)
Nominal terms



SOURCES: IMF, WTO and Banco de España.

a Excluded travel.

MOTIVATION (II)



➤ Why is international trade in services so important?

- Services play an *increasingly important role for manufacturers as inputs* in their production and organisational processes (ie. Royalties and Transportation services)
- But *also as outputs* (i.e. installation or maintenance of production)
 - High quality services improve **firm's competitiveness**
 - **Services trade liberalization** process gains relevance

A key issue now: “Gaining a better understanding of how international trade in services perform and what their main drivers are “

MOTIVATION (III)

- **Aggregate data show differences in the performance of trade in services between countries**
 - Are these differences explained by *country-specific characteristics*?
 - Or are they mainly driven by different *firms' characteristics*?
- **How does the research help to resolve this issue?**
 - *The usual empirical approach:* Most of the available research focuses on **aggregate data** (lack of an homogeneous firm-level database for a group of countries)
 - But aggregate statistics could mask differences in firm-level performance across countries
 - *What would we like to do?:* “To exploit both **aggregate and micro-level databases of France, Germany and Spain** (other countries are encouraged to join the project)”

AGGREGATE DATA: SOME STYLIZED FACTS (I)



➤ Some basic figures

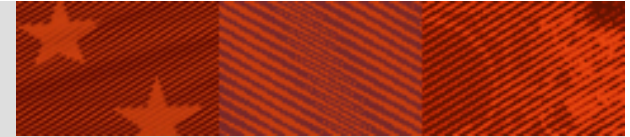
2011	GDP/ World GDP	Trade share (a)	Trade openness (b)	OS share (c)	OS X/ Total X	Services GVA/Total GVA (d)	Services employment/ Total
FRANCE	4.0	3.4	26.2	3.8	14.5	79.5	78.4
GERMANY	5.2	7.8	52.9	7.3	12.4	68.3	73.7
SPAIN	2.1	2.0	30.0	2.7	18.3	70.5	75.5

SOURCES: IMF, Eurostat and WTO.

a. Exports of goods and services as % of World goods and services trade. b. Exports of goods and services exports as a % of GDP. c. Exports of other services exports as % of World other services trade (travel excluded). d. Nominal terms. Non-seasonal adjusted.

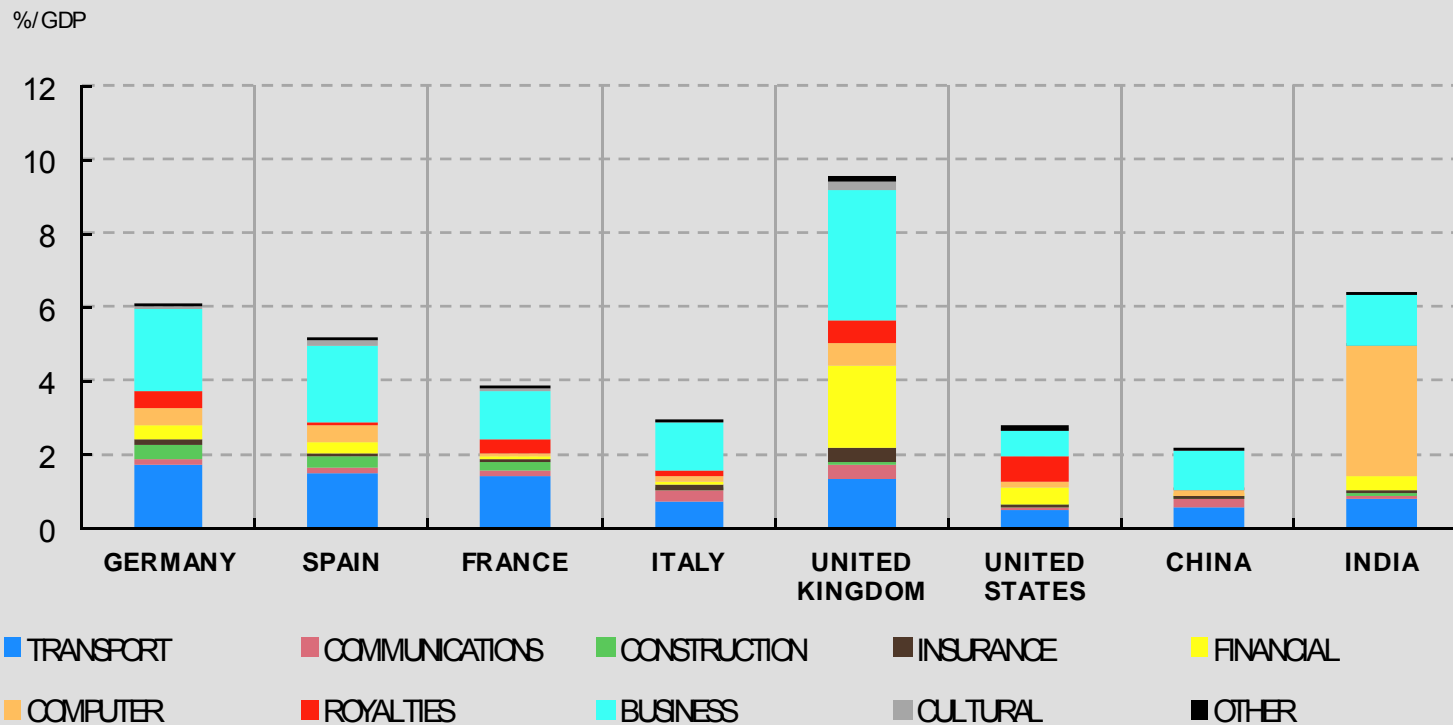
- The German economy is more open than that of Spain and France. But, more importantly, in these last two countries their weight in world trade is relatively low compared to their weight in global output
- While services represent around 70%-80% of GDP and employment, trade in services is lower than in goods, especially in Germany
- According to these figures, France and Spain could potentially have a bigger global market share

AGGREGATE DATA: SOME STYLIZED FACTS (II)



➤ Trade in other services by type of exported services

INTERNATIONAL TRADE OF SERVICES, EXPORTS (2010)



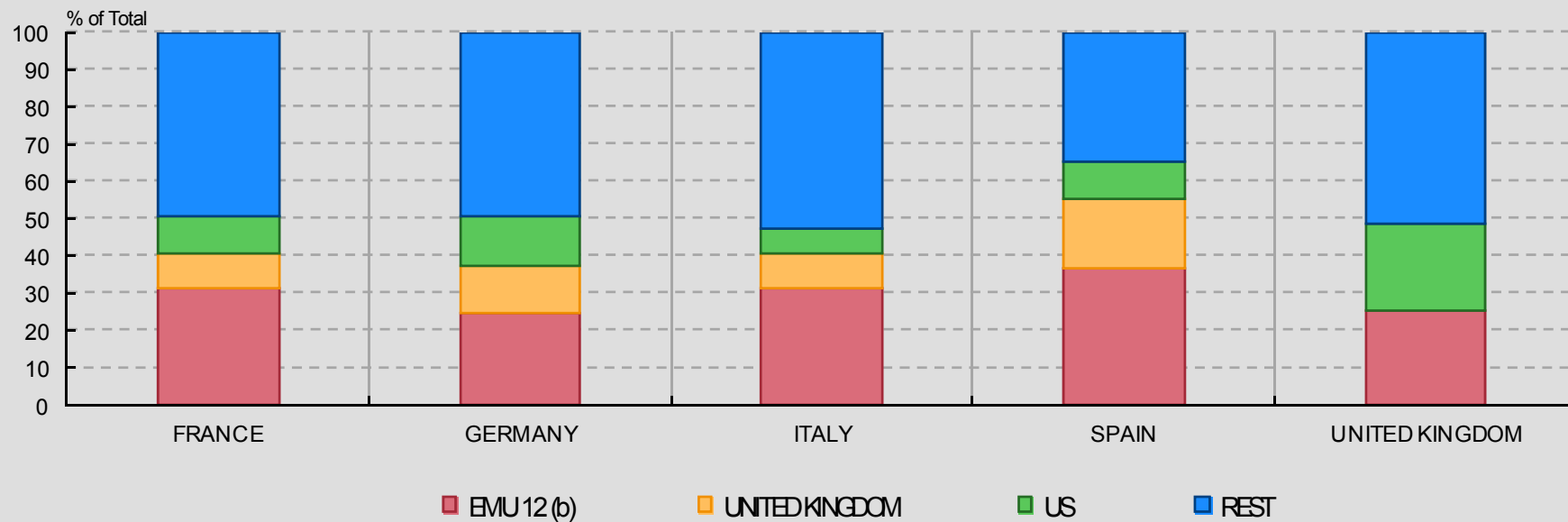
SOURCE: WTO and Eurostat (ITS).

AGGREGATE DATA: SOME STYLIZED FACTS (III)



➤ Trade in other services by destination country/area

INTERNATIONAL TRADE OF SERVICES, EXPORTS 2010 (a)
BY GEOGRAPHICAL AREA



SOURCES: IMF and UN Service Trade.

a. Travel excluded.

b. Ireland and Finland excluded.

TRADE IN SERVICES AT THE FIRM LEVEL: THE DATABASE (I)



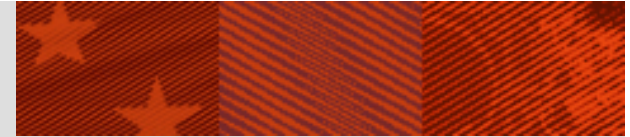
- **Source of information:** Balance of Payments (BoP) data (Balance sheet data where possible)
- **What is trade in services?:** BoP definition: only cross-border trade is measured

SERVICES CROSS-COUNTRY FIRM-LEVEL DATABASE: AN OVERVIEW

	UNIT OF REFERENCE	TIME SPAN	FREQUENCY	TYPE OF SERVICE	THRESHOLD	MATCHING FIRM'S CHARACTERISTICS DATABASES
FRANCE	Firm-country-type of service	1999-2008 (expansion to 2010 coming soon)	Monthly	21 categories (no travel, no transportation activity)	No threshold applies (a priori exhaustive)	Yes
GERMANY	Firm-country-type of service	2001-2011	Monthly	74 categories, travel included	12,500 € per service transaction	Only FDI data (MiDi)
SPAIN	Firm-country-type of service	2001-2011	Annual (Quarterly from 2003)	56 categories. Travel excluded	12,500 € per service transaction from 2001-2007/ 50,000€ from 2008	Yes

SOURCES: Banque de France, Bundesbank and Banco de España's Balance of Payment databases.

TRADE IN SERVICES AT THE FIRM LEVEL: THE DATABASE (II)



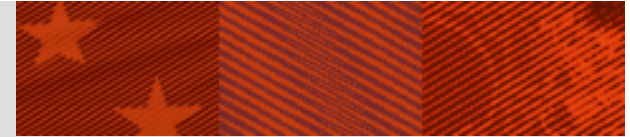
➤ STRENGTHS

- “Unique homogeneous micro dataset for international services trade in three Euro Area countries”

➤ It allows us to address relevant issues:

- To present the **main stylised facts of trade in services** using firm-level data
- To analyse **service-exporting/importing firm dynamics: exit, entry and persistence: are they similar (“differences in fixed entry-cost”)?**
- To describe **the role of the extensive and the intensive margins** in the international trade of services growth in each country: how similar are they across countries?
- What is **the relationship between the margins and the standard gravity variables** (i.e. GDP and distance)? (Breinlich and Criscuolo (2011), Federico and Tosti (2012)): Is the correlation between bilateral distance and partner country, on the one hand, and aggregate trade flows, on the other, similar across countries?
 - Gaulier , Milet and Mirza (2010), «Les firmes françaises dans le commerce de service»
 - Biewen and Blank (2012), «Margins of Service Trade»
 - González and Rodríguez (2010), «Las características de las empresas españolas exportadoras de servicios no turísticos», Martín and Rodríguez (2011), «Las empresas españolas exportadoras de bienes y servicios no turísticos: análisis comparativo e impacto de la crisis»

TRADE IN SERVICES AT THE FIRM LEVEL: THE DATABASE (III)



➤ WEAKNESSES

- Different thresholds with different impact in each country
- Services trade through foreign affiliates is excluded (FATS)
- Balance Sheet data “only available” for France and Spain (“*Matching issues*”) (only FDI data in Germany)

➤ Other issues that we would like to investigate (based on data availability)

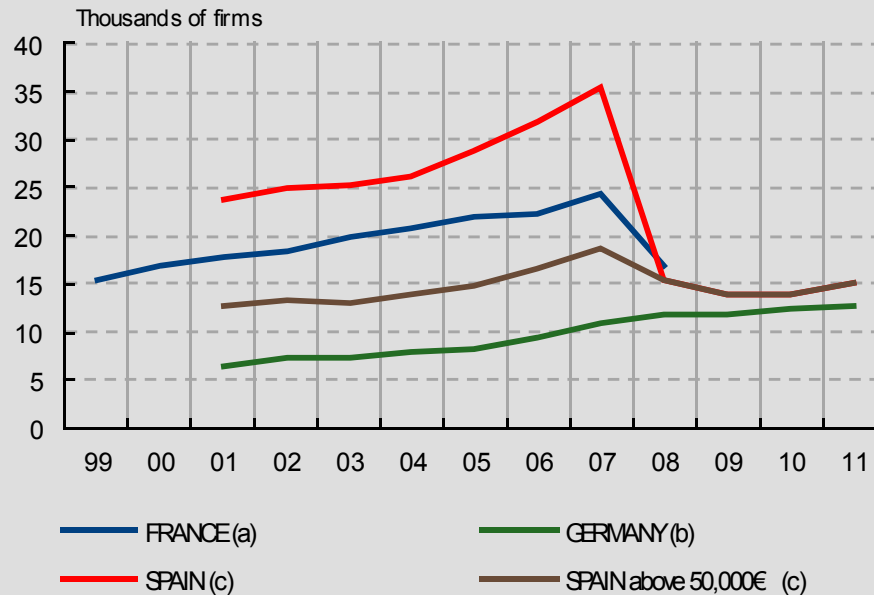
- ***Which firm characteristics determine the extensive and intensive margins (i.e. size or productivity)?*** (Breinlich and Criscuolo (2011), Kelle and Kleinert (2010), Federico and Tosti (2012))
- ***What kind of firm is more likely to engage in the international trade of services?*** (Martín and Rodríguez (2011) Eickelpasch and Vogel (2009))
- ***To identify similarities/differences between firms trading goods and/or services or non-traders (can the “International trade theory of goods” apply also to services?)*** (Breinlich and Criscuolo (2011), Martín and Rodríguez (2011), Ariu (2011))
- ***What is the role of service trade in firm’s performance (i.e. productivity or employment)?*** (Heijzen et al. (2006))

FIRM-LEVEL DATA: STYLIZED FACTS (I)

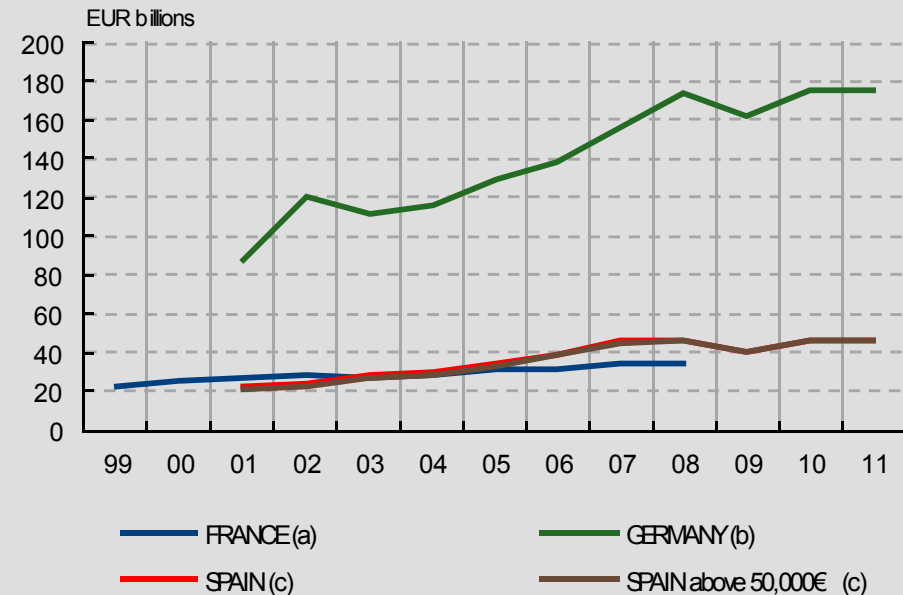


➤ Exporters and trade volume (very preliminary based on non-homogeneous dataset)

NUMBER OF SERVICES EXPORTING FIRMS



EXPORTS VOLUME. SERVICES



SOURCES: Banque de France, Bundesbank and Banco de España's Balance of Payment databases.

a It excludes transportation. b It includes travel. c It excludes financial, insurance and government services.

- The number of exporters has trended upwards in all three countries
- The number of Spanish exporters are higher than those of Germany and France
- Even so, export volume has grown more significantly in Germany

FIRM-LEVEL DATA: STYLIZED FACTS (II)



- **Trade patterns of other services exporters** (very preliminary based on non-homogeneous dataset)

FIRM-LEVEL HETEROGENEITY. SERVICES CROSS-COUNTRY DATABASE

	FRANCE (a) 2001-2008 average	GERMANY (b) 2001-2011 average	SPAIN (c) 2001-2011 average
EXPORTS			
Number of services	1.3	1.6	1.4
Number of countries	2.5	5.5	1.9
Average sales per firm-service-country (EUR thousand)	...	306	832
Total sales per firm (EUR thousand)	1,492	14,507	1,829
Observation number (firm-service-country-year)	...	106,674	51,982

SOURCES: Banque de France and Banco de España's Balance of Payment databases, Biewen and Blank (2012).

a. It excludes transportation services. b. It includes travel. c. It excludes financial, insurance and government services.

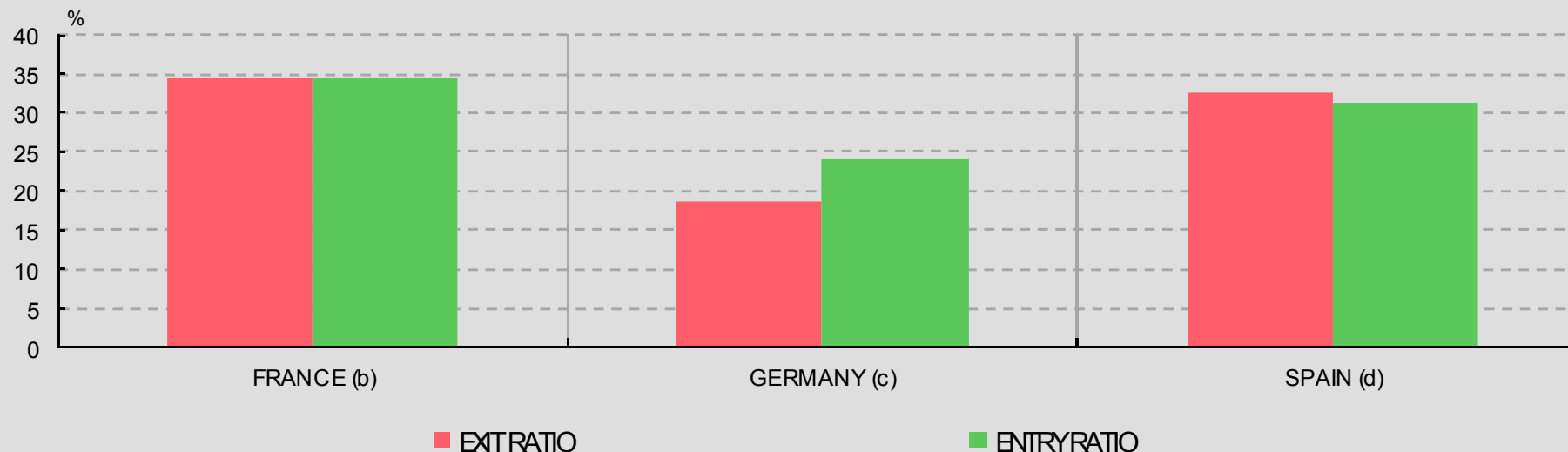
- Less diversification of Spanish and French exporters than case of Germany, mainly in the number of countries served
- Total sales per firm are significantly higher in Germany
- Then, the geographical diversification might provide a potential channel to increase Spanish and French market shares

FIRM-LEVEL DATA: STYLIZED FACTS (III)



➤ Entry and exit rates to export (very preliminary based on non-homogeneous dataset)

TRADE DYNAMICS: ENTRY AND EXIT RATIOS (a) 2002-2008 Average period



SOURCES: Banque de France, Bundesbank and Banco de España's Balance of Payment databases.

a. Entry ratio is defined as $\text{New firms}_n / (\text{New firms}_n + \text{Total firms}_{n-1})$. Exit ratio is defined as $\text{Exit firms}_n / (\text{Exit firms}_n + \text{Total firms}_{n-1})$.

b. It excludes transportation services. c. It includes travel. d. It excludes financial, insurance and government services.

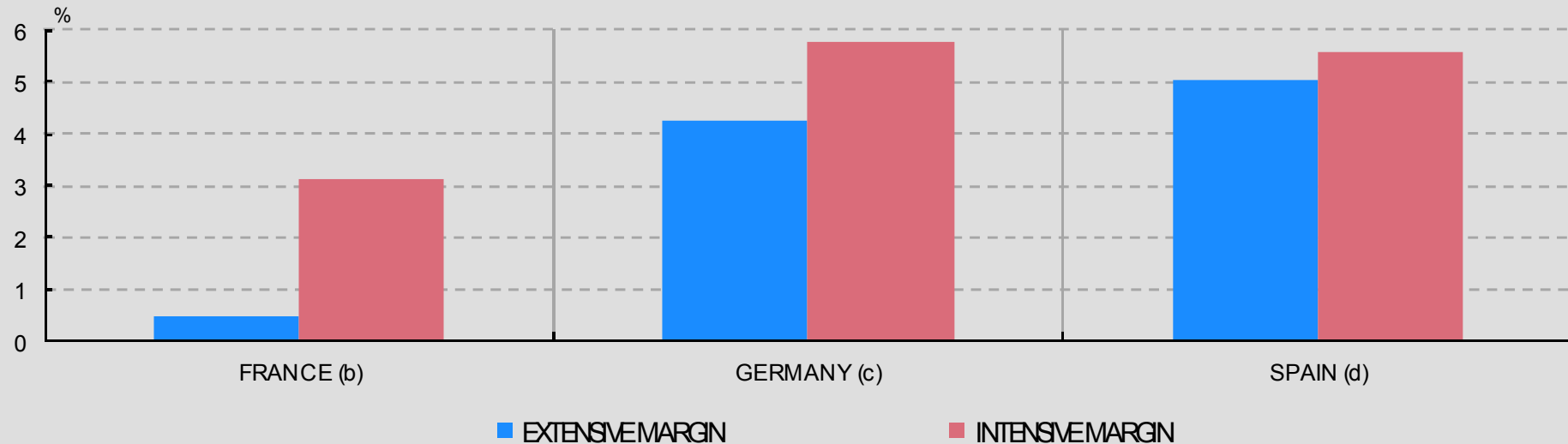
- High entry and exit ratios, mainly in Spain and France: They seem to have greater difficulties in consolidating overseas (low survival rates)
- A higher exit/entry rates could indicate lower fixed cost of entry into new foreign markets and/or specific firms' characteristics (such as size)
- The trade collapse increased exit rates and reduced entry rates

FIRM-LEVEL DATA: STYLIZED FACTS (IV)



- **The extensive and intensive margins** (very preliminary based on non-homogeneous dataset)

TRADE DYNAMICS: MARGINS OF TRADE (a) 2002-2008 Average period



SOURCES: Banque de France, Bundesbank and Banco de España's Balance of Payment databases.

a. The extensive margin is defined as the contribution to the exports growth derived from the increase (decrease) in the number of the firms-country-type of service relations. The intensive margin is defined as the contribution to the exports growth derived from a change in the value exported of the existing firms-country-type of service relations. Methodology by Buono et al (2008). b. France data excludes transportation services. c. Germany data includes travel. d. Spain data excludes financial, insurance and government services.

- Export growth was based more on the intensive margin than on the extensive one
- The extensive margin has contributed more notably to Spanish and German export growth than to that in France

FIRM-LEVEL DATA: STYLIZED FACTS (V)



- **The extensive and intensive margins** (very preliminary based on non-homogeneous dataset)

COUNTRY-LEVEL MARGINS FOR TRADE IN SERVICES

MARGIN (a)	EXPORTS	
	GERMANY (2001-2011)	SPAIN (2001-2010)
Firms	0.385 (0.01)	0.640 (0.01)
Services	0.262 (0.00)	0.331 (0.00)
Density	-0.248 (0.00)	-0.372 (0.01)
Intensive	0.602 (0.01)	0.401 (0.01)
Observations	2632	2144

SOURCE: Biewen and Blank (2012) and Banco de España.
a. Clustered standard errors in parentheses

NEXT STEPS



- To build a homogeneous firm-level dataset across countries
- To describe in a greater detail the main features of international trade using this homogeneous dataset
- To choose the method used to calculate the extensive and intensive margins (i.e. period, data disaggregation level, frequency, survivability) and the scope of the analysis
- Main determinants of the extensive and intensive margins (i.e. gravity variables and/or main firms' characteristics)
- Timetable???



THANK YOU FOR YOUR ATTENTION

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AGGREGATE DATA: SOME STYLIZED FACTS (III)



➤ Trade in other services by destination country/area

TOP9 PARTNERS (% over TOTAL OTHER SERVICES). REST OF COUNTRIES (a)

FRANCE		GERMANY		SPAIN	
Switzerland	5.1%	Switzerland	8.1%	Switzerland	8.9%
China	4.6%	Denmark	1.5%	Mexico	1.5%
Northern Africa	4.2%	Poland	1.4%	Brazil	1.2%
Russian Federation	1.6%	Czech Rep.	1.1%	Venezuela	1.1%
Sweden	1.3%	Northern Africa	0.9%	Argentina	1.0%
Morocco	1.3%	Hungary	0.9%	Sweden	0.8%
Rep. of Korea	1.3%	Turkey	0.7%	Russian Federation	0.6%
Singapore	1.1%	Egypt	0.3%	Turkey	0.5%
Hong Kong	1.0%	Iran	0.2%	Norway	0.5%

SOURCE: UN Service Trade.

a. According to available data.

THE FIRM-LEVEL DATASET (II)



SERVICES CROSS-COUNTRY FIRM-LEVEL DATABASE: EXPORTS

	NUMBER OF FIRMS			EXPORTS VALUE (EUR million)			AVERAGE NUMBER OF COUNTRIES			AVERAGE NUMBER OF SERVICES		
	France (a)	Germany (b)	Spain (c)	France (a)	Germany (b)	Spain (c)	France (a)	Germany (b)	Spain (c)	France (a)	Germany (b)	Spain (c)
1999	15,394	...	...	22,700	...	...	2.7	...	...	1.4	...	...
2000	17,039	...	...	25,200	...	...	2.7	...	...	1.4	...	...
2001	17,893	6,414	23,695	27,000	71,211	21,959	2.7	5.7	1.9	1.4	1.7	1.4
2002	18,545	7,412	25,049	28,400	80,738	23,814	2.6	5.1	1.8	1.4	1.6	1.4
2003	20,025	7,437	25,364	27,200	84,052	27,814	2.5	5.1	1.9	1.4	1.6	1.4
2004	20,866	7,752	26,263	27,800	92,411	29,593	2.5	5.5	1.9	1.3	1.7	1.4
2005	22,120	8,295	28,802	30,600	109,520	34,357	2.5	5.6	1.9	1.3	1.7	1.4
2006	22,315	9,479	31,909	30,800	119,067	39,467	2.4	5.4	1.9	1.3	1.6	1.4
2007	24,459	10,879	35,616	34,000	131,080	45,945	2.3	5.4	1.9	1.3	1.6	1.4
2008	16,981	11,747	15,300	34,800	143,702	46,336	2.5	5.4	1.8	1.3	1.6	1.3
2009	...	11,794	13,990	...	139,286	39,530	...	5.5	1.8	...	1.6	1.3
2010	...	12,424	14,025	...	149,281	46,906	...	5.6	1.8	...	1.6	1.4
2011	...	12,836	15,052	...	152,741	46,618	...	5.6	1.9	...	1.6	1.4

SOURCES: Banque de France, Bundesbank and Banco de España's Balance of Payment databases.

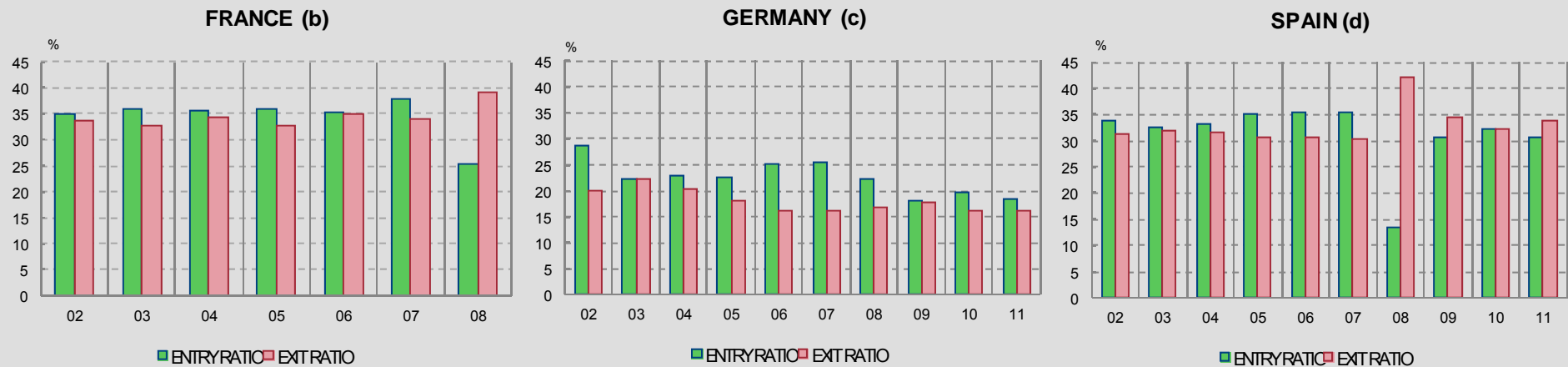
a. Transportation excluded. b. Travel included. c. Financial, services and government services are excluded.

FIRM-LEVEL DATA: STYLIZED FACTS (VI)



➤ Entry and exit rates to export (very preliminary based on non-homogeneous dataset)

TRADE DYNAMICS: EXIT AND ENTRY RATIOS (a)



SOURCES: Banque de France, Bundesbank and Banco de España's Balance of Payment databases.

a. Entry ratio is defined as $\text{New firms}_n / (\text{New firms}_n + \text{Total firms}_{n-1})$. Exit ratio is defined as $\text{Exit firms}_n / (\text{Exit firms}_n + \text{Total firms}_{n-1})$.

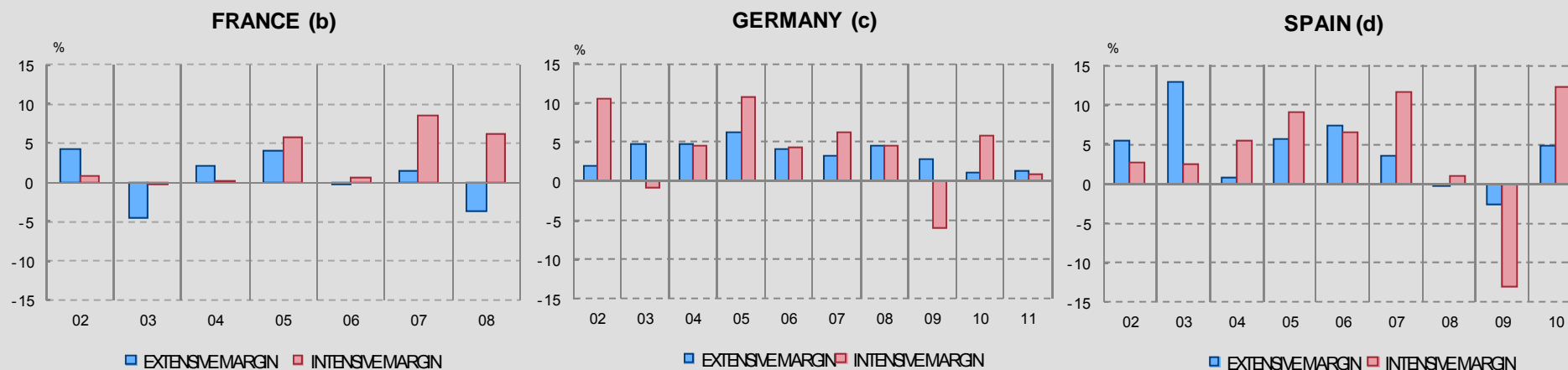
b. France data excludes transportation services. c. Germany data includes travel. d. Spain data excludes financial, insurance and government services.

FIRM-LEVEL DATA: STYLIZED FACTS (VII)



- **The extensive and intensive margins** (very preliminary based on non-homogeneous dataset)

TRADE DYNAMICS: MARGINS OF TRADE (a)



SOURCES: Banque de France, Bundesbank and Banco de España's Balance of Payment databases.

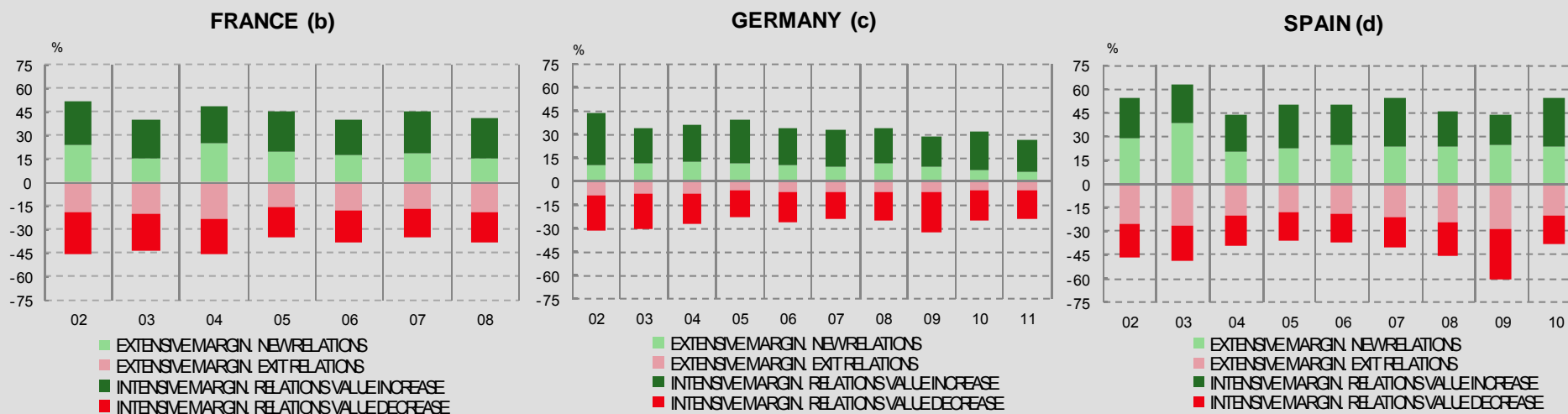
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FIRM-LEVEL DATA: STYLIZED FACTS (VIII)



- **The extensive and intensive margins** (very preliminary based on non-homogeneous dataset): The entry/exit and increase/decrease contribution of the trade relationships

TRADE DYNAMICS: MARGINS OF TRADE (a)



SOURCES: Banque de France, Bundesbank and Banco de España's Balance of Payment databases.

a. The extensive margin is defined as the contribution to the exports growth derived from the increase (decrease) in the number of the firms-country-type of service relations. The intensive margin is defined as the contribution to the exports growth derived from a change in the value exported of the existing firms-country-type of service relations. Methodology by Buono et al (2008). b. France data excludes transportation services. c. Germany data includes travel. d. Spain data excludes financial, insurance and government services.

SOME ISSUES TO BE DISCUSSED: EXTENSIVE AND INTENSIVE MARGINS (I)

➤ A review of the different approaches

How is the intensive and extensive margin measured?

	<u>Export growth</u>	<u>Extensive margin</u>	<u>Intensive margin</u>
<u>The Second EFIGE policy report (2011)</u>	$x = f\bar{x}$	Number Exporting firms/total firms	Export value/ total turnover
Bernard <i>et al</i> (2009); Behrens <i>et al.</i> (2011);	$\Delta x = \Delta\bar{x} \Delta f \Delta\bar{c} \Delta\bar{g}$	$\Delta f \Delta\bar{c} \Delta\bar{g}$	$\Delta\bar{x}$
Buono <i>et al.</i> (2008) Brigcogne <i>et al.</i> (2012)	$\Delta x = \Delta\text{Entry}_{icg} + \Delta\text{Exit}_{icg} + \Delta\text{Increase}_{icg} + \Delta\text{Decrease}_{icg}$ (midpoint- growth rate)	$\Delta\text{Entry}_{icg} + \Delta\text{Exit}_{icg}$	$\Delta\text{Increase}_{icg} + \Delta\text{Decrease}_{icg}$
<u>Besedes and Prusa (2011)</u>	$\Delta x = \text{Survival-stayers} + \text{Deepening} + \text{Failure} + \text{Entry}$ (hazard rate of the relationship)	Survival-stayers + Deepening	Failure + Entry

The unit of reference

The firm	The firm-country relationship	The firm-country-type of service relationship
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Data frequency

SOME ISSUES TO BE DISCUSSED: EXTENSIVE AND INTENSIVE MARGINS (II): DETERMINANTS



SPANISH SERVICE EXPORTS. EXTENSIVE AND INTENSIVE MARGINS

	Log (value of exp.)	Log (No. of export dest.)	Log (No. of services exported)	Log (exp. per dest/serv)
Panel A (a)				
Log (value of exports)	1	0.22	0.12	0.66
	(0.00) ***	(0.00) ***	(0.00) ***	(0.01) ***
R-squared	1	0.38	0.35	0.74
Panel B				
Log (employment)	0.45	0.16	0.11	0.18
	(0.01) ***	(0.00) ***	(0.00) ***	(0.01) ***
Log (labour prod.)	0.56	0.14	0.10	0.31
	(0.02) ***	(0.01) ***	(0.01) ***	(0.01) ***
Foreign Ownership (b)	0.49	0.01	0.07	0.41
	(0.04) ***	(0.02)	(0.27) ***	(0.03) ***
FDI (abroad) (b)	0.86	0.26	0.22	0.38
	(0.05) ***	(0.02) ***	(0.01) ***	(0.04) ***
R-squared	0.23	0.15	0.18	0.11

SOURCE: Banco de España.

a. Standart errors in brackets

b. Dummy variables.

*** Significance at 1% level.

- Firm-level variation is mainly driven by the intensive margin
- Firm's characteristics and the three margins
 - Size and productivity have a positive correlation with the three margins, mainly with the intensive ones
 - Being a multinational affects positively the three margins, while being an affiliate mainly the intensive margin