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The Vienna Institute
for International
Economic Studies



Seminar in International Economics **12 May 2015**

Europe's Export Superstars – it's the Organization!

Dalia Marin (with Jan Schymik and Jan Tscheke)
LMU Munich

This seminar series is an activity in the framework of FIW ('Forschungsschwerpunkt Internationale Wirtschaft'), which is a project designed to build a center of excellence in research on International Economics, funded by the Austrian Ministry of Science, Research and Economy (BMWFW).

Europe's Export Superstars – it's the Organization

Dalia Marin, Jan Schymik, Jan Tscheke
University of Munich

Vienna Institute for International Economic Studies
Mai 2015

Questions

What explains Germany's superb export performance compared to other European countries?

What does the organizational behavior of the **'typical exporter'** in each of the **7 European countries** look like?

How are the **top 1 % of exporters** in each country **becoming superstars**?

Data

EFIGE Data of 14.000 firms in 7

European Countries: Austria, Germany, Italy, France, UK, Spain, Hungary, information on organization

Amadeus Data, balance sheet information

UN Comtrade Data WITS Database, trade data

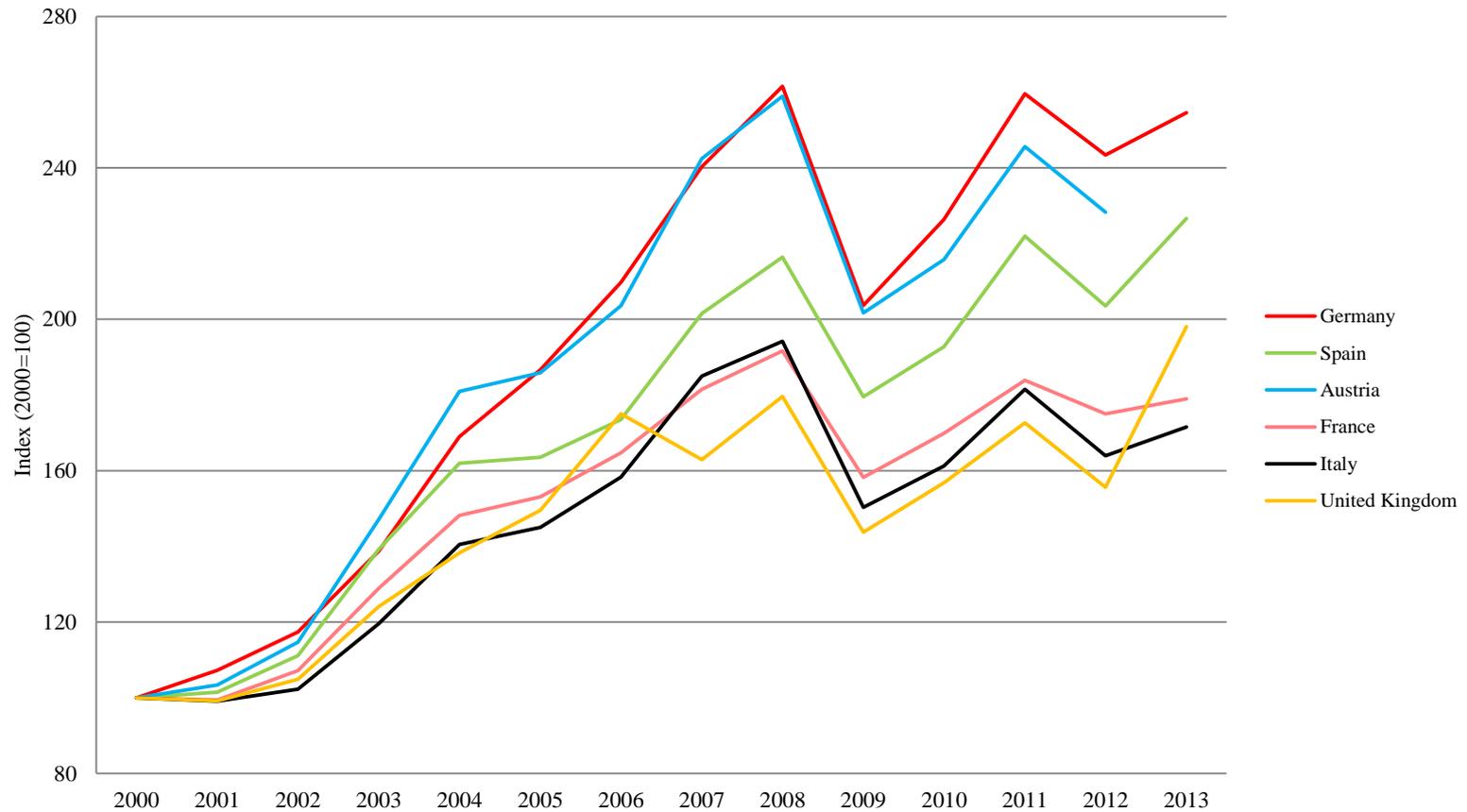
The Macro View

Germany's Super Competiveness

From the 'sick man of Europe' to the economic powerhouse today

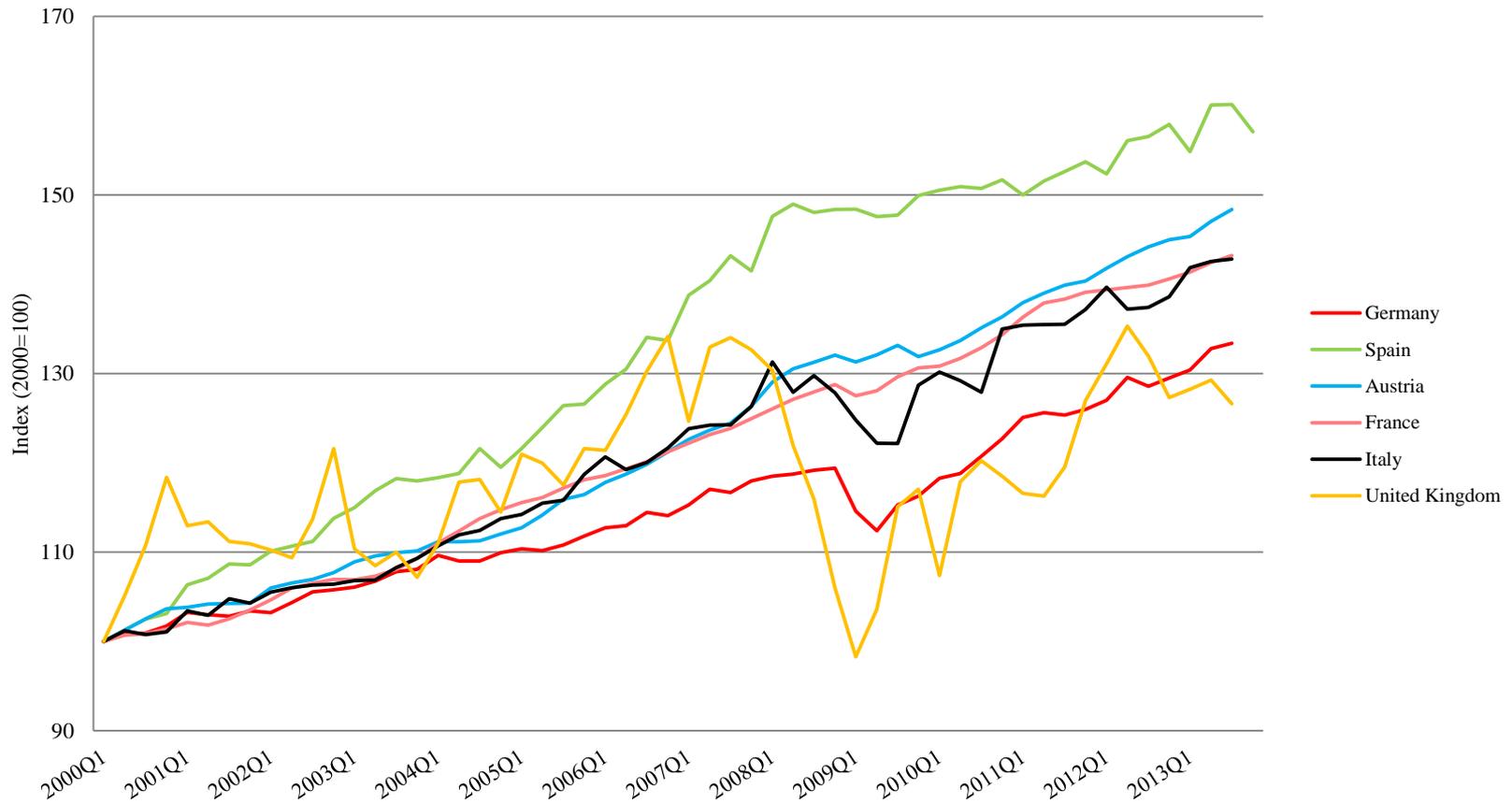
Has it been **wage restraint**, as is commonly argued, or something else?

Exports of Manufacturing in 2000 prices



Source: Comtrade, Eurostat

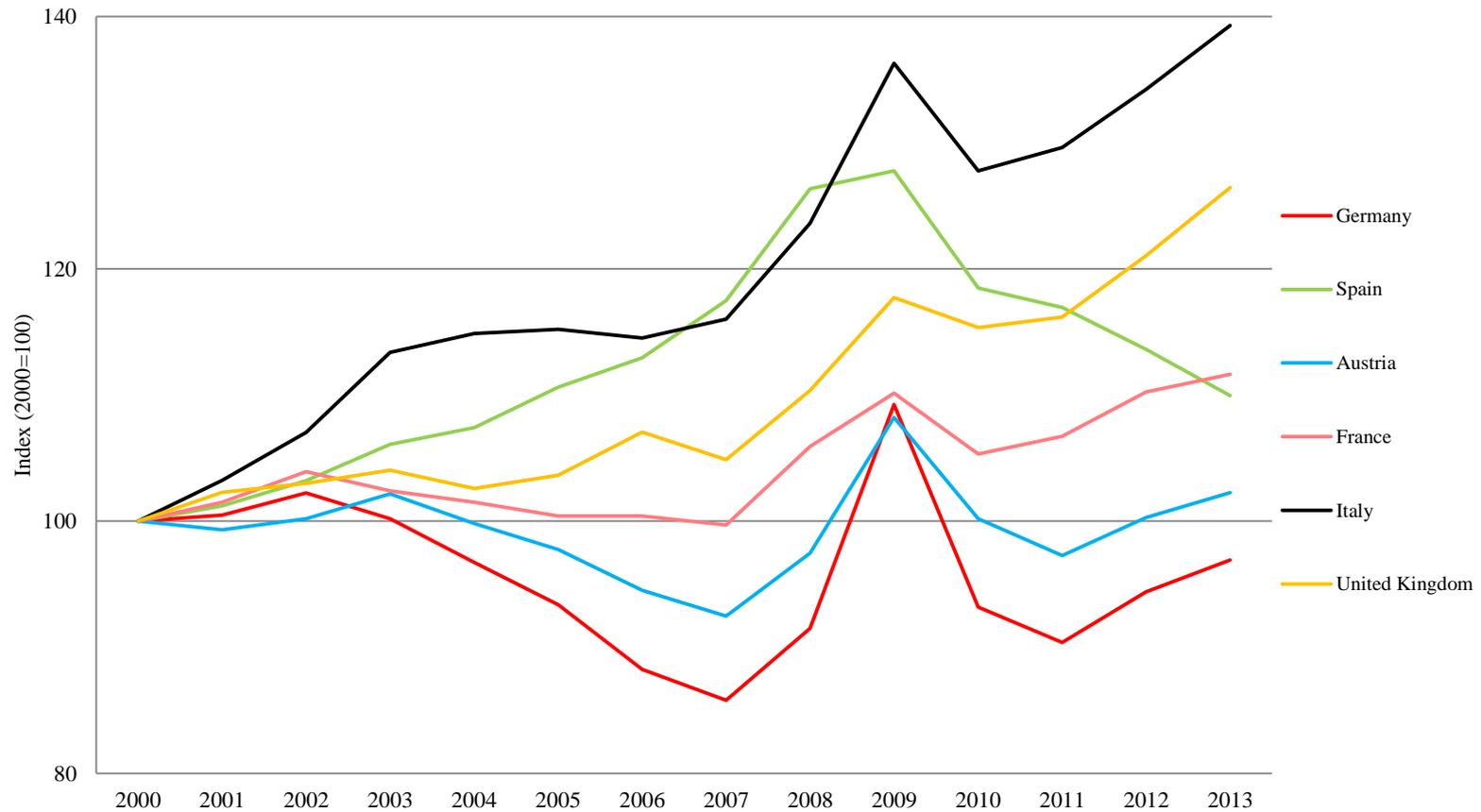
Nominal Wages in Manufacturing 2000=100



Source: Eurostat

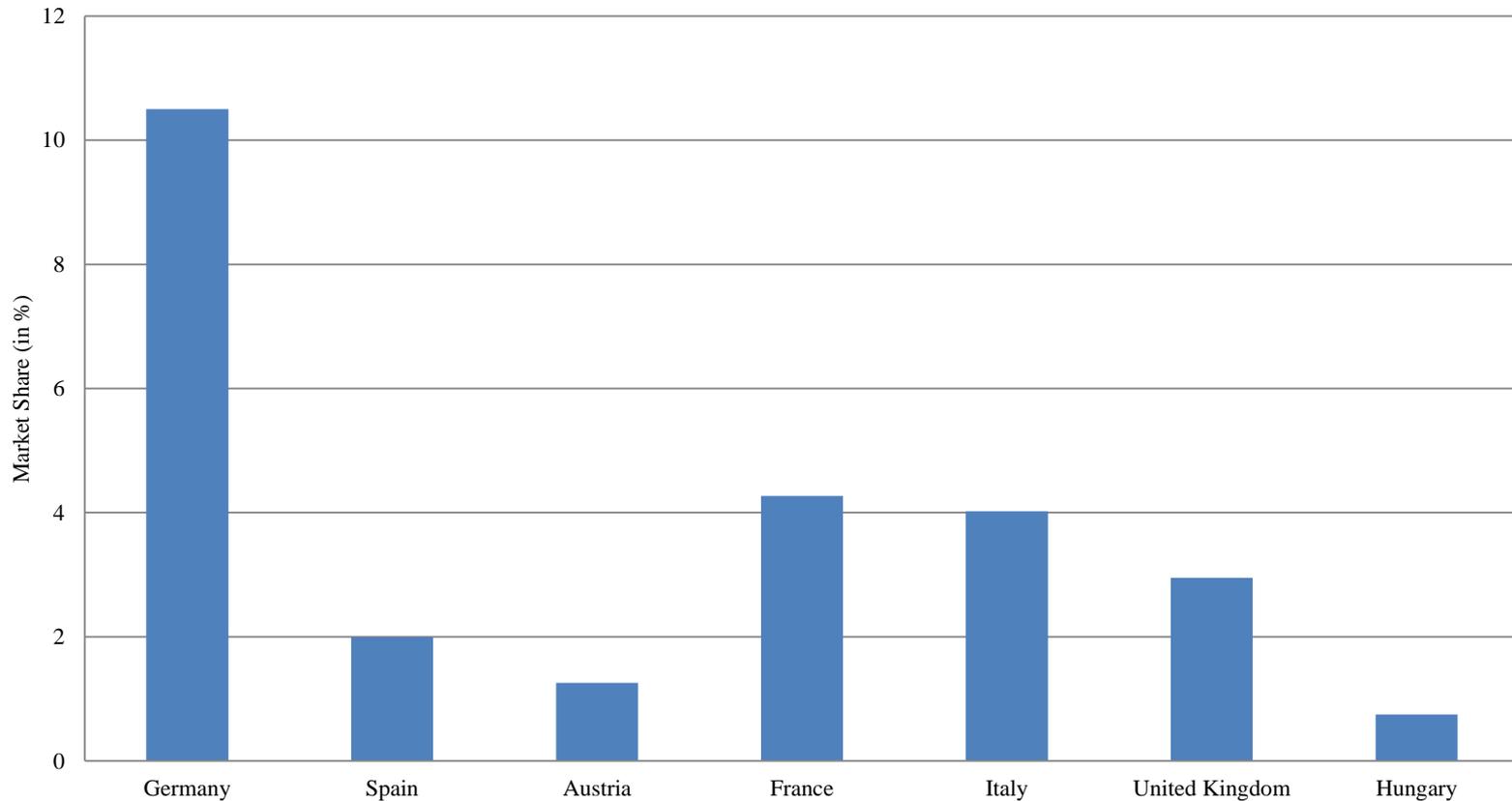
Unit Labor Costs

2000=100



Source: OECD Productivity Database

Market Share in the OECD in 2008



Source: OECD

Notes: The OECD export market share measures the degree of importance of a country's manufacturing industry within the total manufacturing exports of the OECD. It is calculated by dividing the exports of manufacturing goods of the country by OECD's total merchandise manufacturing exports.

Take away..

- Germany has the lowest increase in nominal wages (wage restraint)
- Exports continue to grow in Austria, Spain, and Germany (after 2009) in spite of rising wages
- Nominal wages appear downward sticky, they have not fallen after 2008 in spite of a big negative demand shock

The Firm View

Organizational Responses to Competition

Two responses to competition

- **Decentralized management** provides incentives for workers for product improvements allowing exporters to **compete on quality.**
- **Offshoring production to low wage countries** reduces costs allowing exporters to **compete on prices**

Measuring the Organizational Responses

- **Offshoring:** In 2008 has the firm purchased intermediate inputs for its production from abroad?
- **Decentralized Management:** Which statements better describe your firm situation: managers can take autonomous decisions in some business areas?

Offshoring and Decentralized Management

	Domestic Firms				Exporters			
	<i>none</i>	<i>dec</i>	<i>off</i>	<i>both</i>	<i>none</i>	<i>dec</i>	<i>off</i>	<i>both</i>
	in percent of domestic firms				in percent of exporters			
Germany	68.8%	17.2%	8.8%	5.2%	40.8%	21.8%	21.3%	16.0%
Spain	57.2%	26.3%	10.5%	6.0%	31.9%	22.1%	22.8%	23.2%
Austria	58.6%	15.3%	17.4%	8.6%	27.8%	21.4%	28.8%	21.9%
France	51.2%	13.2%	28.7%	6.9%	23.4%	8.8%	52.0%	15.8%
Italy	75.8%	8.8%	13.3%	2.0%	49.2%	9.4%	33.9%	7.5%
UK	60.0%	28.6%	7.8%	3.7%	39.3%	22.0%	20.8%	17.9%
Hungary	71.5%	9.3%	18.4%	0.8%	47.4%	6.9%	36.7%	9.1%
Average	64.8%	17.0%	13.5%	4.7%	40.1%	15.2%	30.7%	14.0%

Source: EFIGE

Take away ...

- Exporting firms engage significantly more often in decentralized management and/or offshoring.
- Austria, Germany, the UK, and Spain have the largest share of exporters with decentralized management
- In France and Italy a substantial share of exporters engage in offshoring

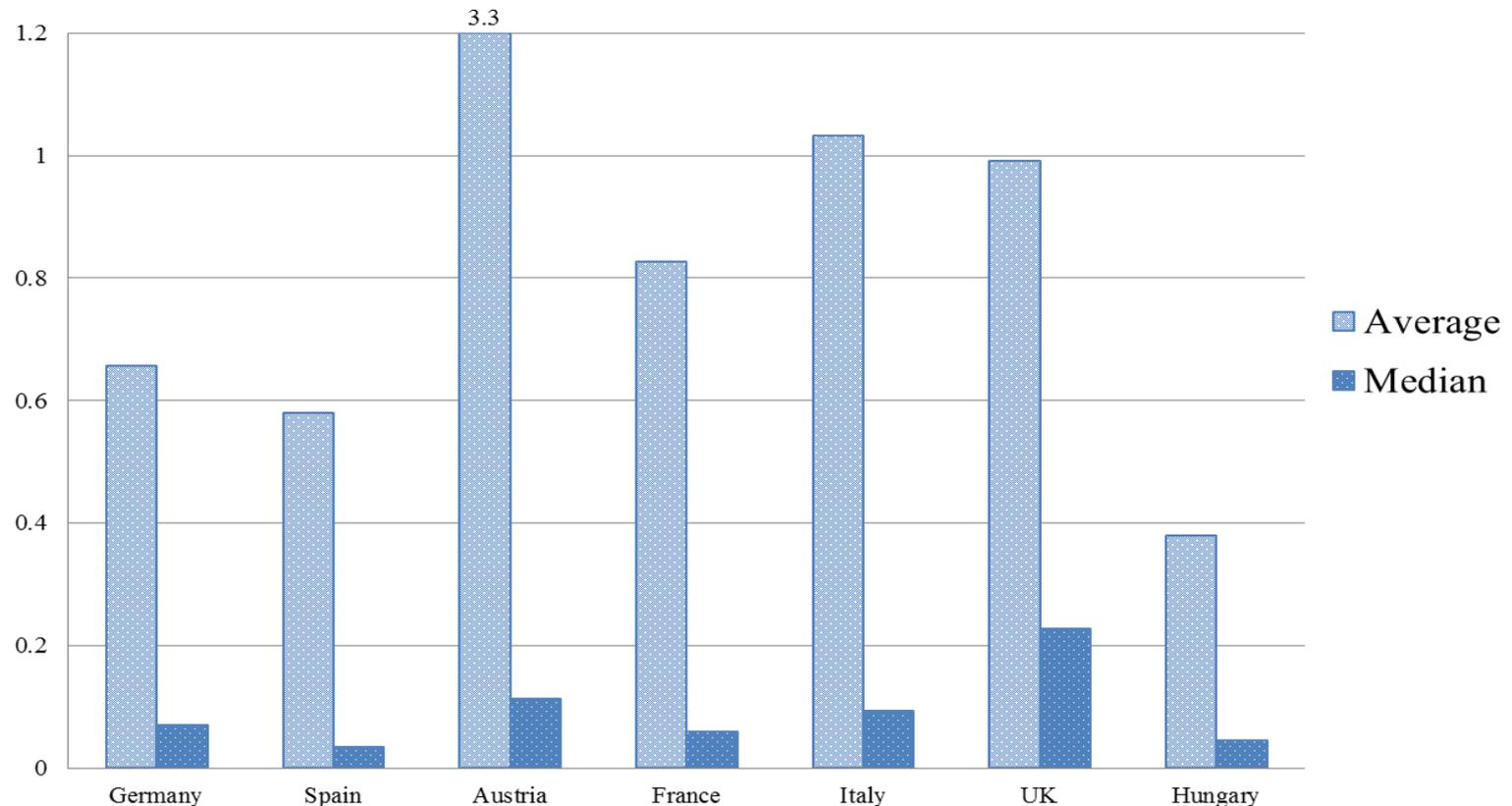
**How effective have these
organizational strategies been?**

A Firm Level Measure of Competitiveness

Export market share of a typical exporter in a
country

$$\text{EMS} = \frac{\textit{Total Firm Exports}}{\textit{Global Industry Imports}}$$

Average and Median Exporter's Market Share in the World (in per mille)



Source: EFIGE

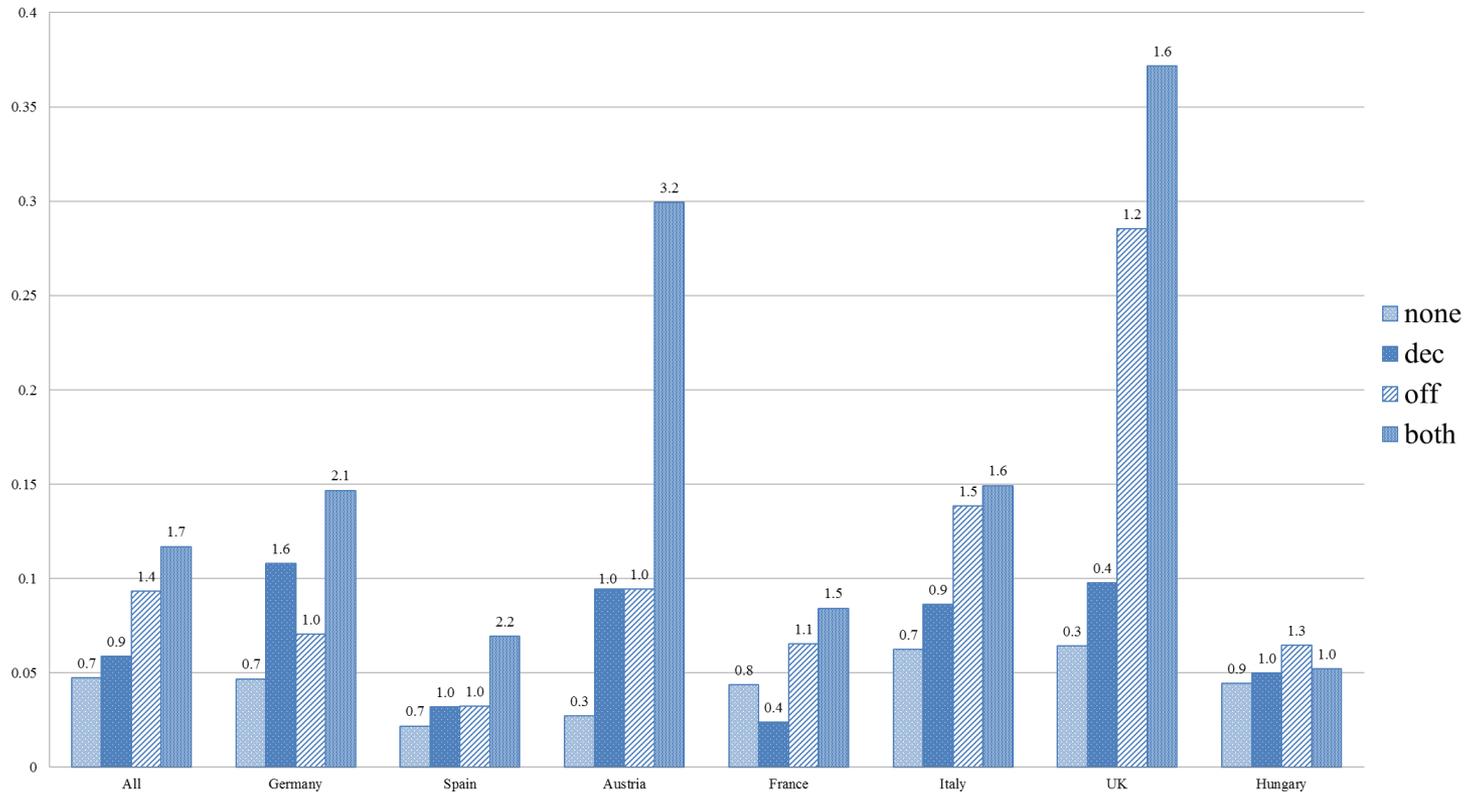
Notes: *Export Market Share: Average and median firm's export value/total imports of the world for the firm specific set of industries (in per mille).*

Take away...

- **Large countries** have many and large exporters and, thus, large EMS (**UK, France**).
- **Small countries** have fewer and small exporters and, thus, small EMS (**Hungary**)
- **Exception: Germany** as large country with many small exporters (“Mittelstand”), **Austria** as small country with fewer but exceptionally large exporters
- Average EMS misleading (driven by few large exporters), **median EMS** better measure of competitiveness

Are firms with organizations better performers?

Export Market Share by Organizational Form



Source: EFIGE

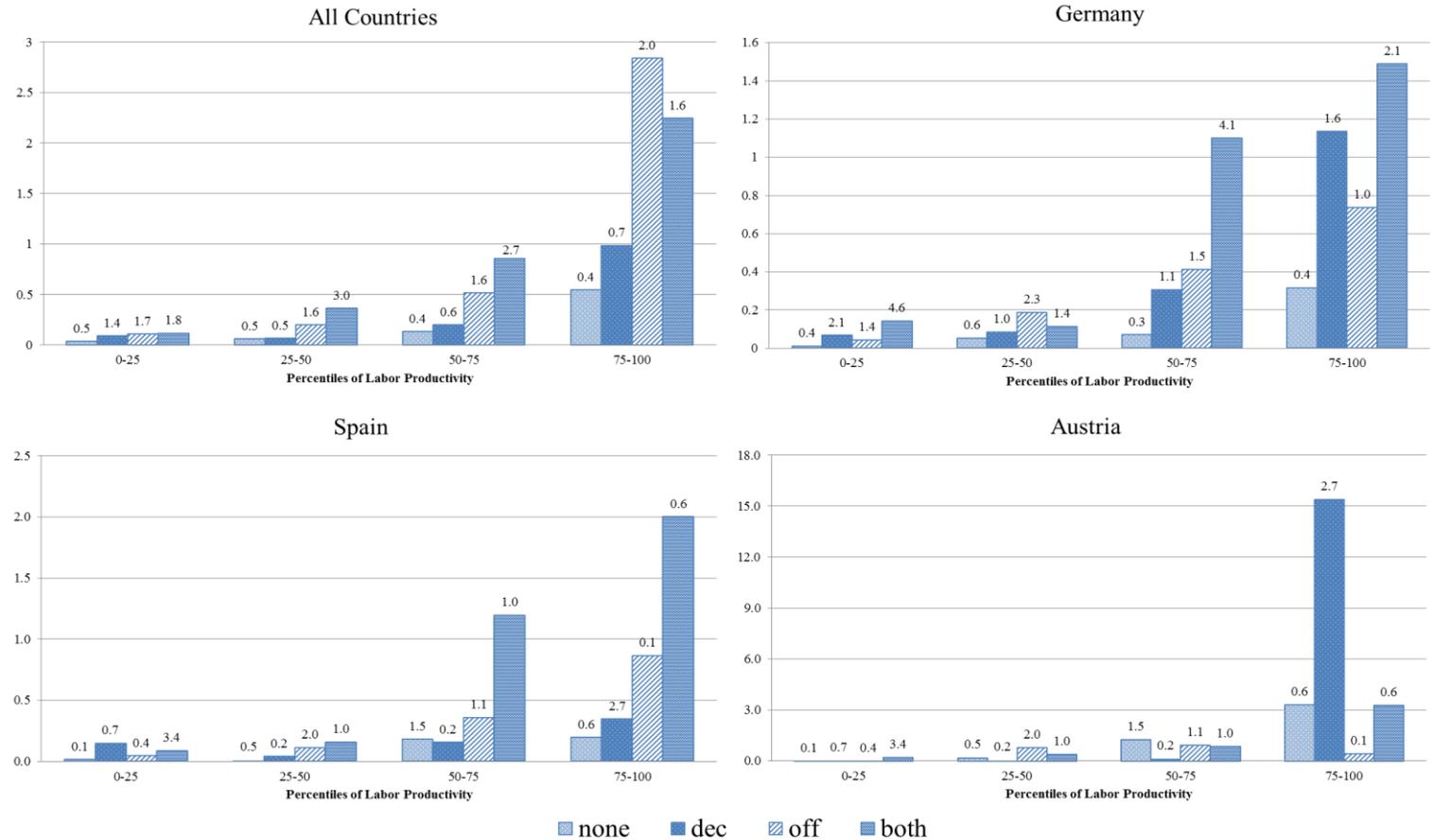
Notes: *Export Market Share*: Median firm's export value/total imports of the world for the firm specific set of industries. Numbers above bars are ratio of group specific median to country median. E.g. Offshoring exporters in Italy have a median export market share about 1.5 times as high as the median (across groups) Italian exporter.

Take away...

- Exporters **triple their EMS** when using **both** organizational margins (**Germany, Spain**), increase it by a **factor of 5 (UK)** and by a **factor of 11 (Austria)**
- **Offshoring** increase the EMS by a **factor of 4 (UK)**, and by a factor of **2 (Italy)**. **France** is the least effective offshorer inspite of leading exporter
- **Decentralized Management** increased the EMS by a **factor of 2 (Germany)** and by a **factor of 3 (Austria)**.

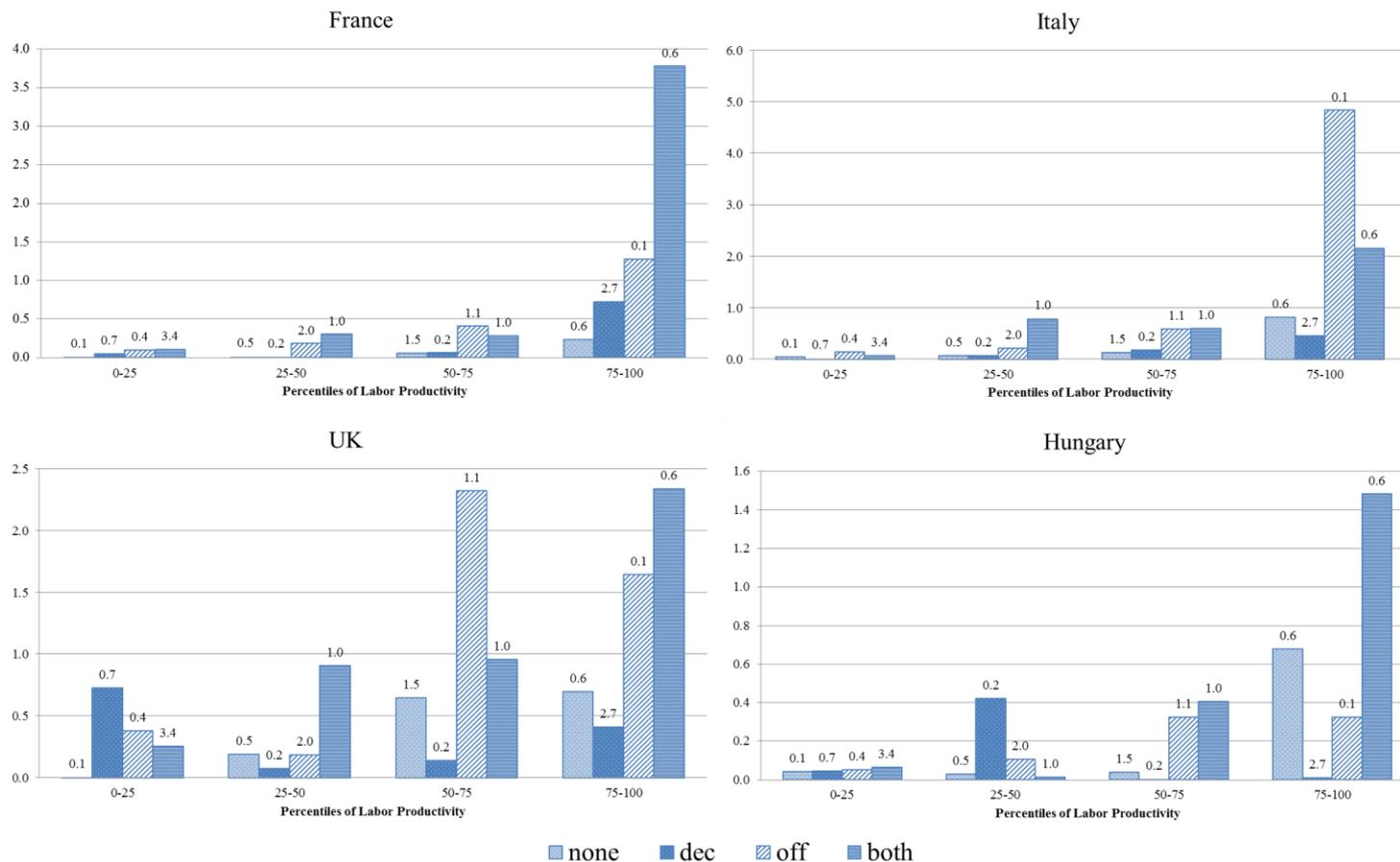
Firm Heterogeneity

Export Market Share by Organizational Form for different Productivity Levels (in per mille)



Notes: *Export Market Share*: Average firm's export value/total imports of the world for the firm specific set of industries. Numbers above bars are the ratio of group specific values to average (for a given percentile). E.g. Offshoring only firms between the 25th and the 50th percentile in the German productivity distribution have an export market share about 2.3 times as high as the average export market share of all German firms in the same productivity range

Export Market Share by Organizational Form for different Productivity Levels (in per mille)



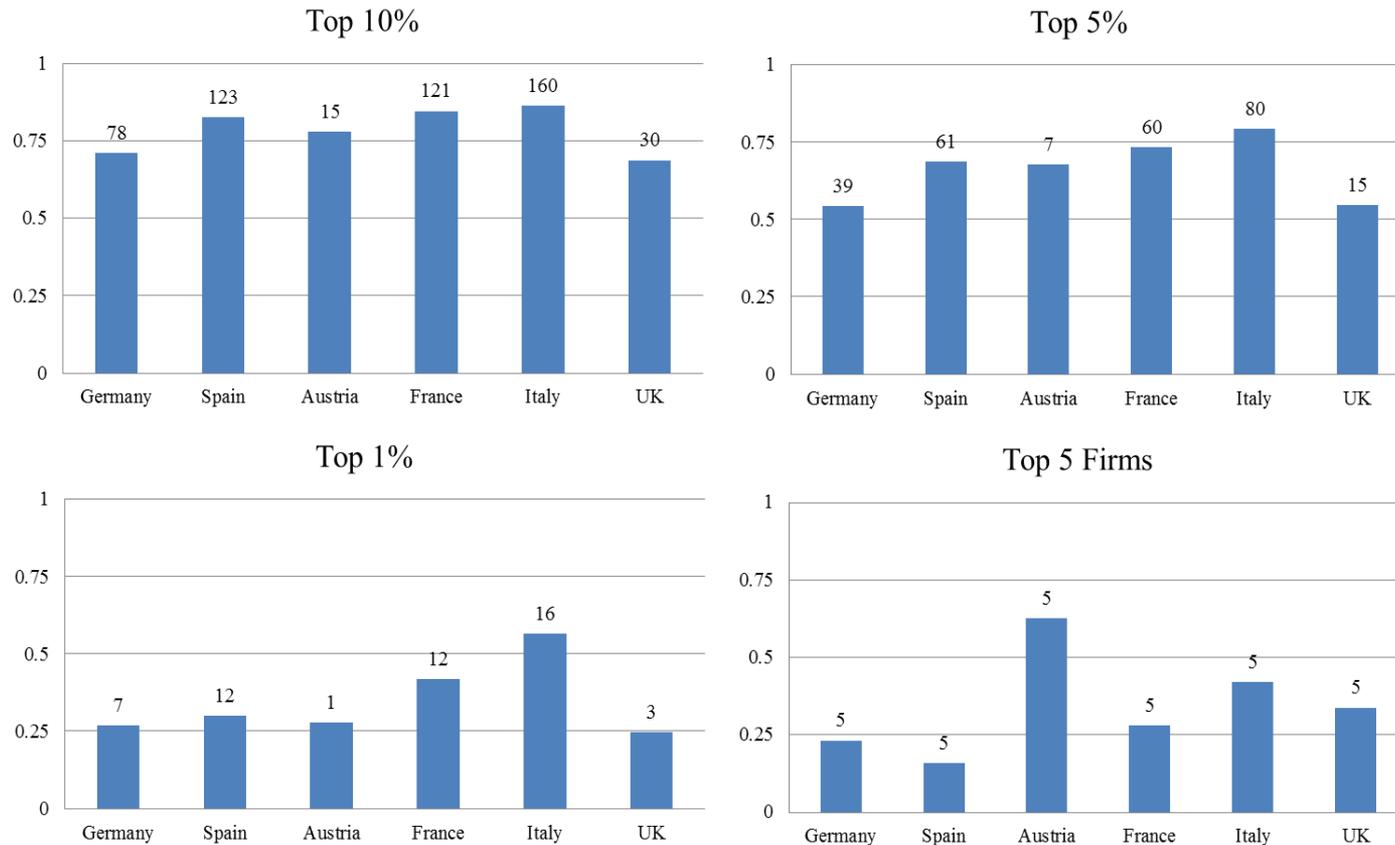
Notes: *Export Market Share*: Average firm's export value/total imports of the world for the firm specific set of industries. Numbers above bars are the ratio of group specific values to average (for a given percentile). E.g. Offshoring only firms between the 25th and the 50th percentile in the German productivity distribution have an export market share about 2.3 times as high as the average export market share of all German firms in the same productivity range

Take away...

- More productive firms have larger EMS (Melitz 2003)
- But organizational adjustments help lower productivity firms to boost their EMS (Germany: firms with bottom 25% productivity increase EMS by a factor 11, UK: firms with 25-50% productivity increase the EMS by a factor 4)

Superstar Exporters

The Top Exporters

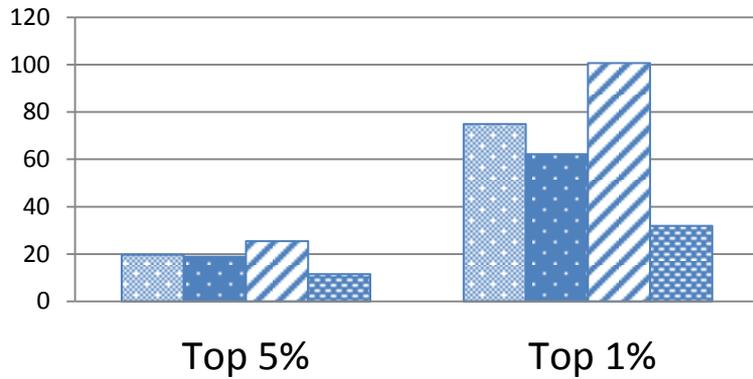


Notes: Export value of top firms in percent of total exports (EFIGE). Total EFIGE exports of a country are the sum of firms' export values multiplied by EFIGE absolute weights. EFIGE absolute weights tell how many firms of the population are represented by a given sampled firm. Thus, adding up weights for a given country sample yields the total number of firms in the population. Weights are chosen to match data on firms from EUROSTAT in terms of size and industry distribution. Firms belonging to the same sector/size cell share the same weight.

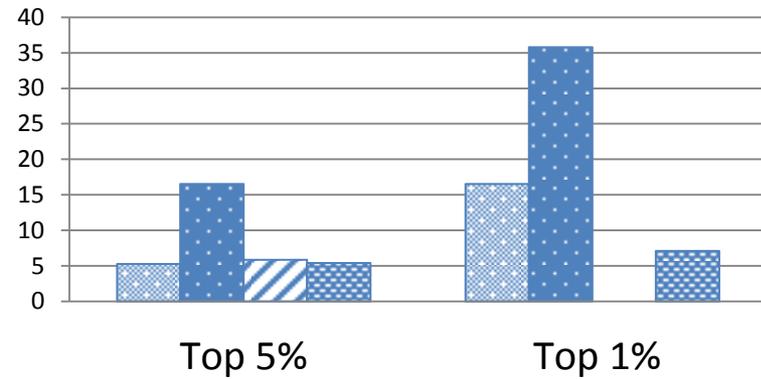
**What do these firms do to become
superstars?**

Export Market Share of Top Exporters

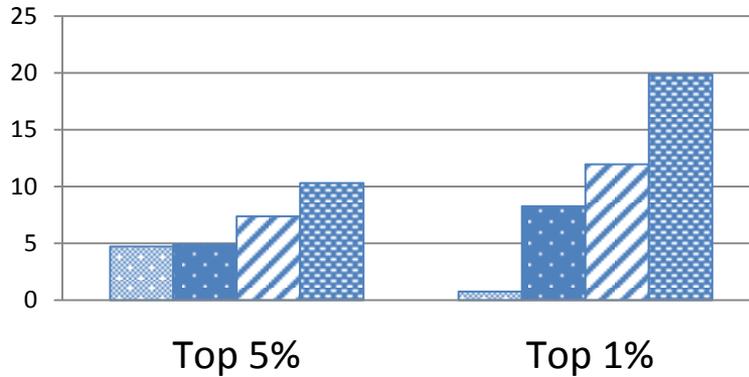
All Countries



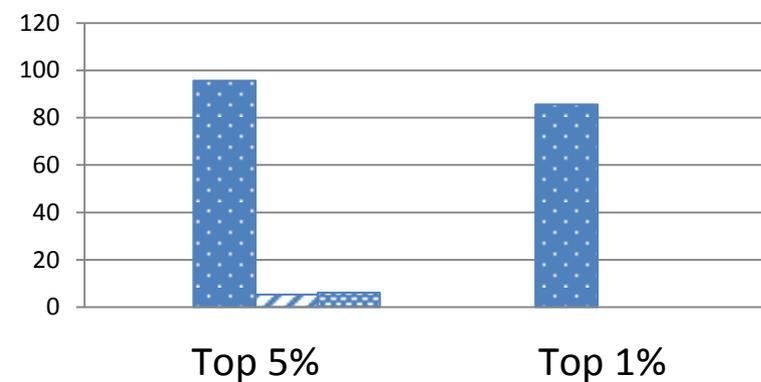
Germany



Spain



Austria



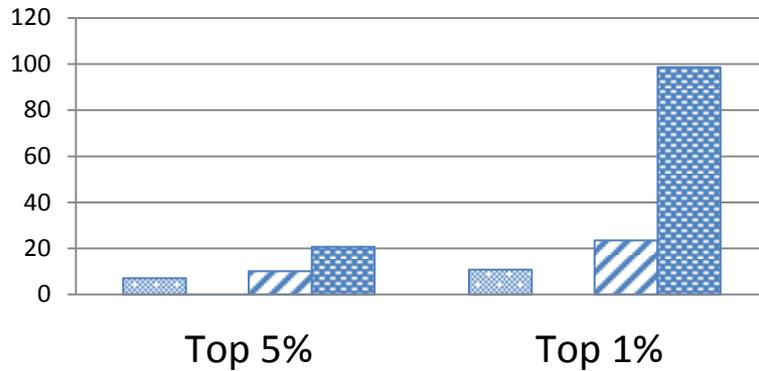
none
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Source: EFIGE

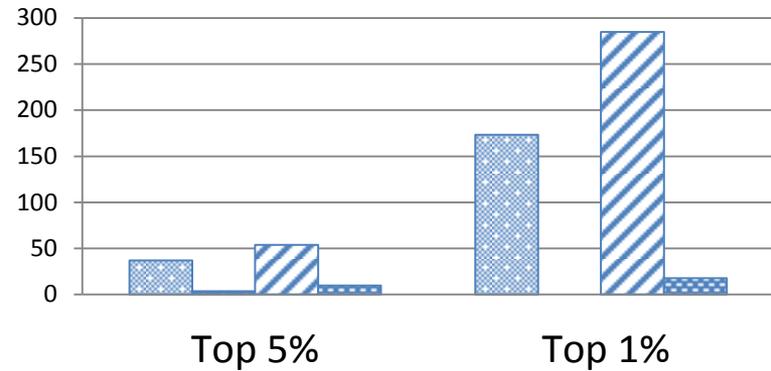
Notes: *Export Market Share*: Average firm's export value/total imports of the world for the firm specific set of industries. Top exporters are defined in terms of export value.

Export Market Share of Top Exporters

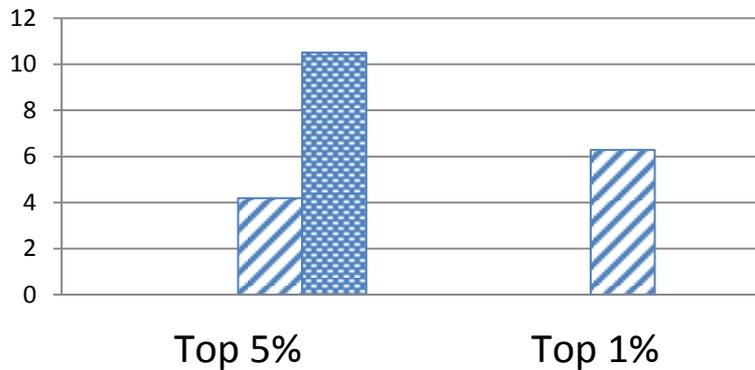
France



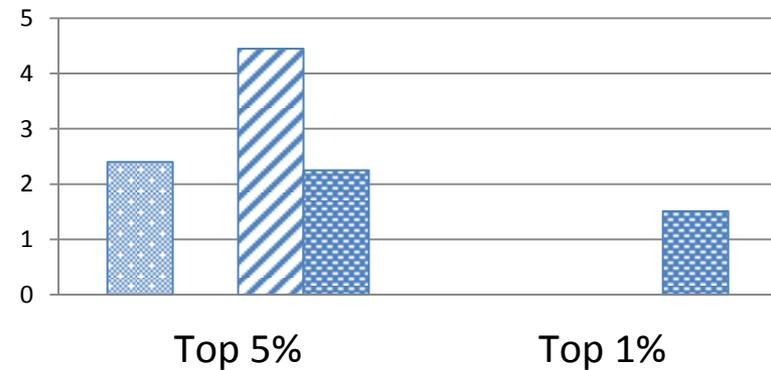
Italy



UK



Hungary



none
 dec
 off
 both

Source: EFIGE

Notes: *Export Market Share*: Average firm's export value/total imports of the world for the firm specific set of industries. Top exporters are defined in terms of export value.

Take away...

- **Austria and Germany:** top 1% of exporters use **decentralized management**
- **UK and Italy:** top 1 % of exporters use **offshoring**
- **France and Spain:** top 1% of exporters use **both**

Product Quality

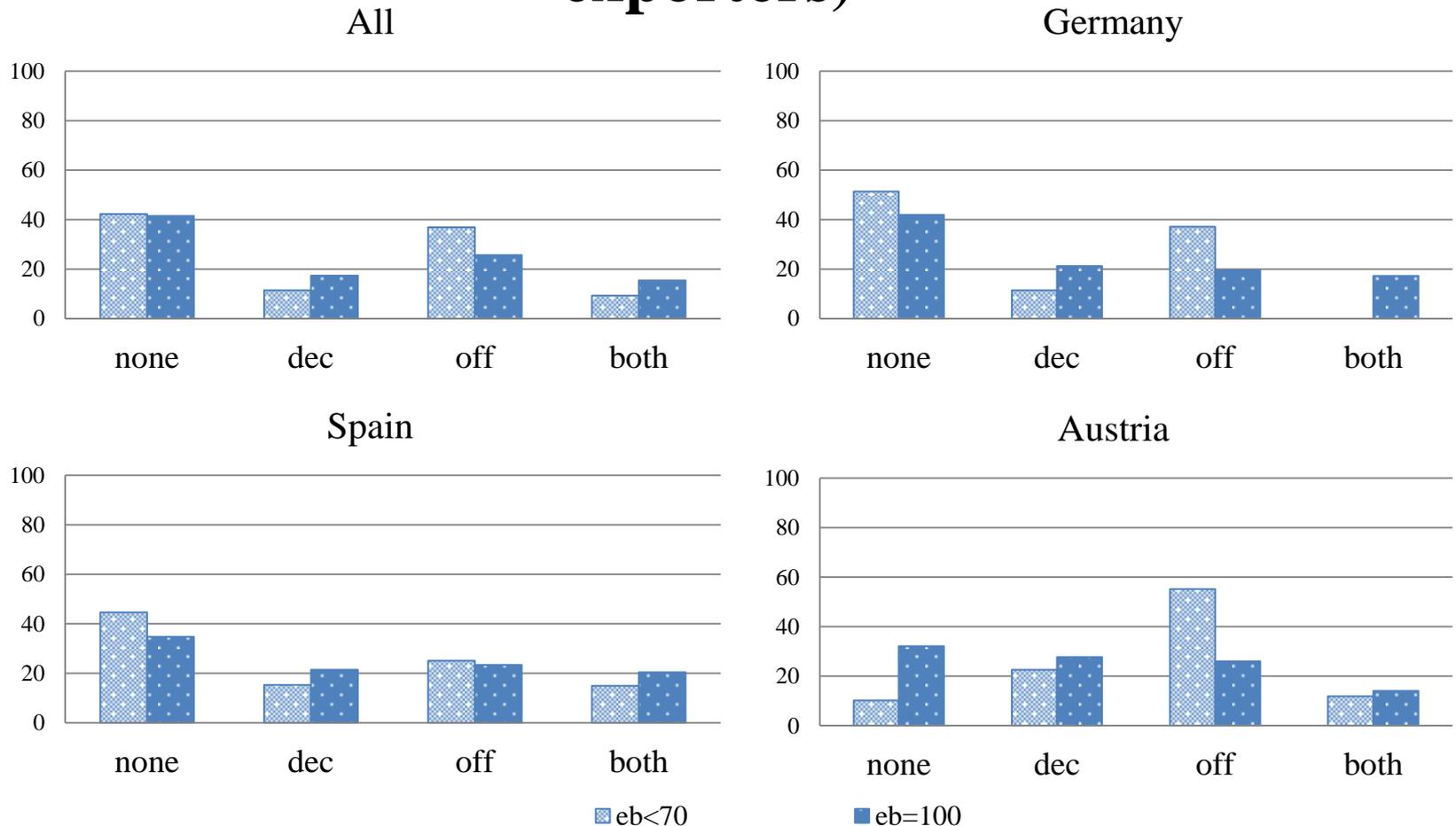
A subjective measure of perceived quality

Survey question:

How would you rate the quality of your main product, if you rank the maximum quality available in the market for this product equals to 100?

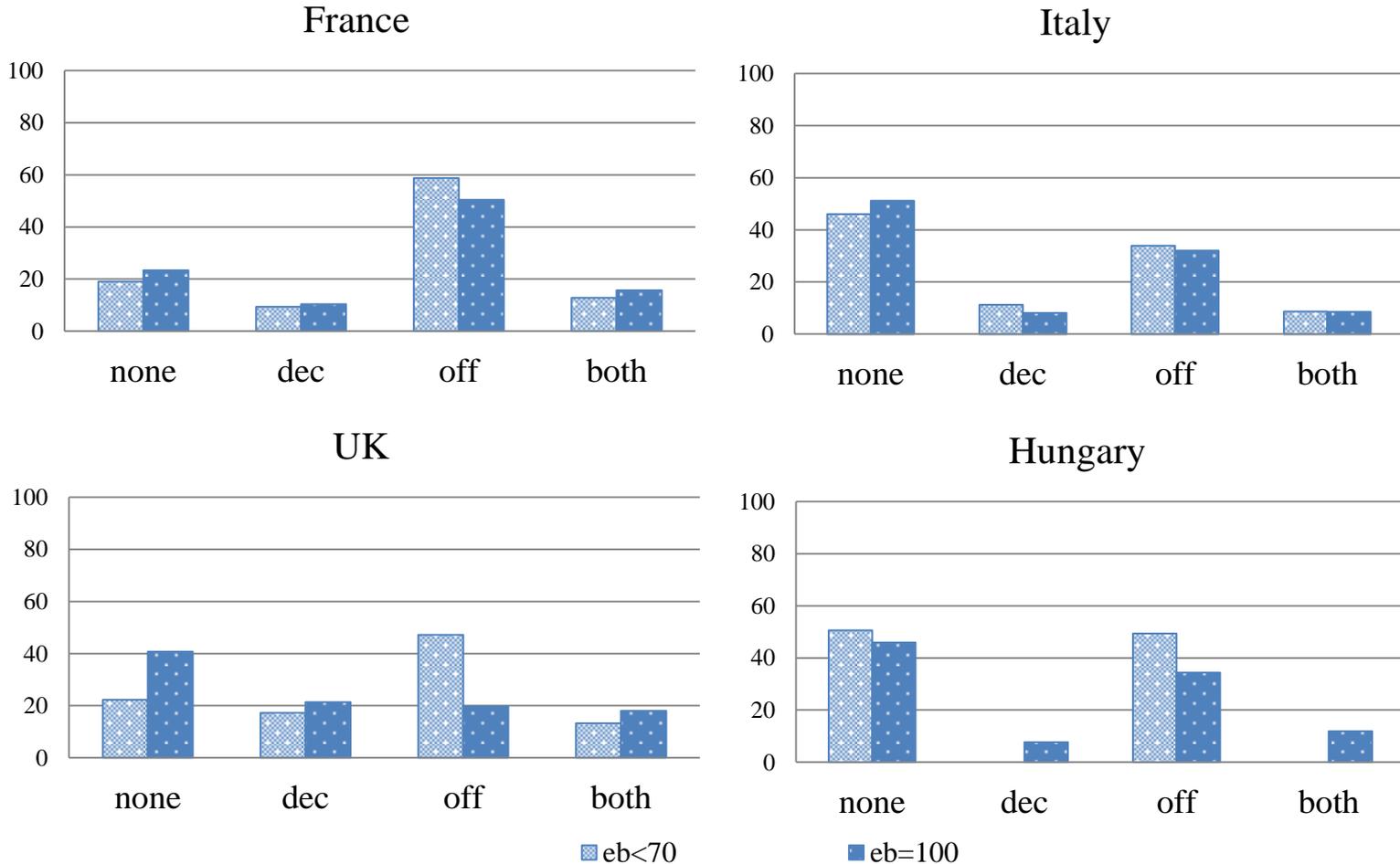
**Does decentralized management lead to
better product quality?**

Do exporters with top quality operate more often with decentralized management? (in percent of exporters)



Notes: eb is a subjective measure of product quality as perceived by firms from the survey question: "Now please think of the product category your main product belongs to. If we rank the maximum quality available in the market for this product equals to 100, how would you rate the quality of your own product?".

Do exporters with top quality operate more often with decentralized management?



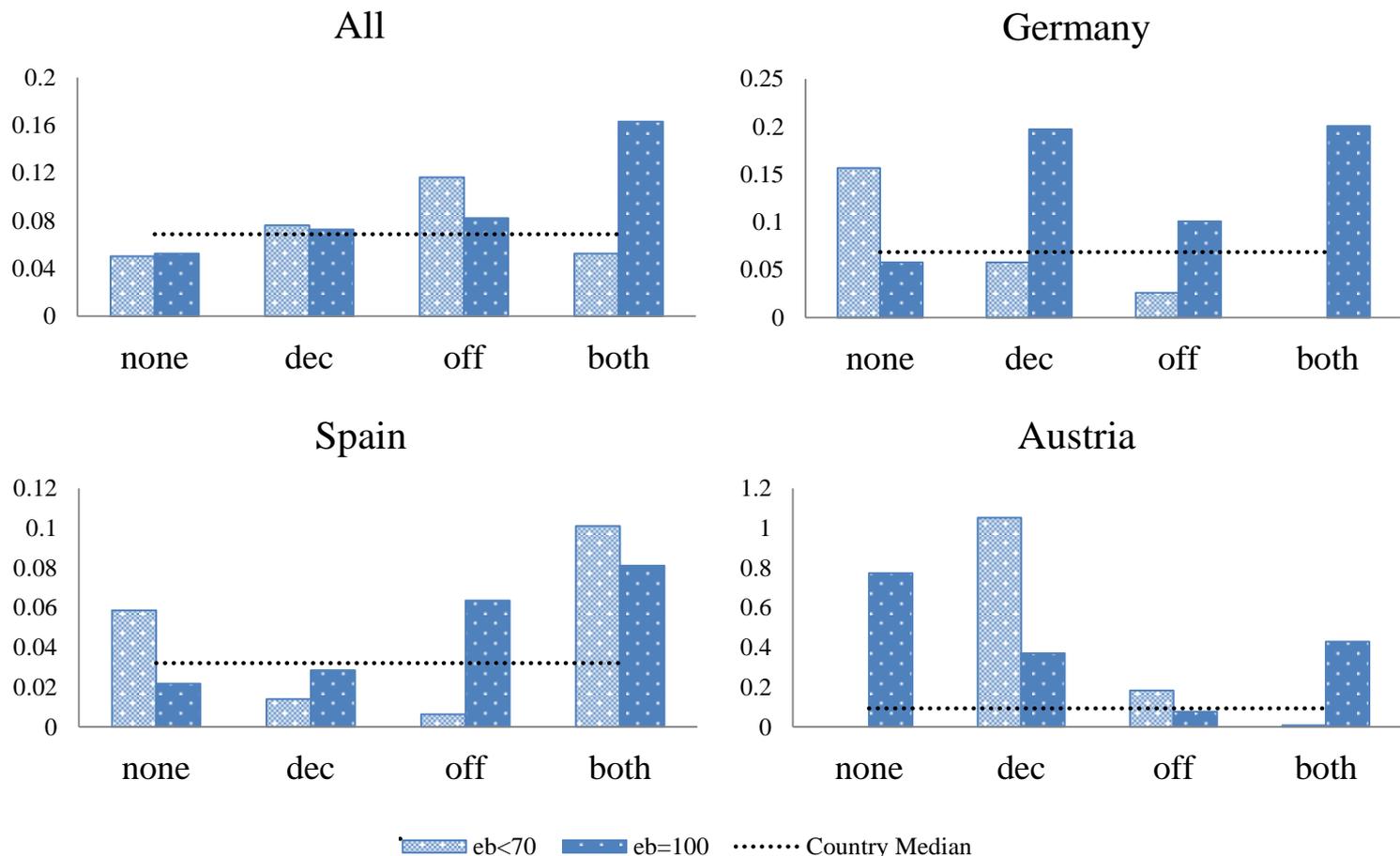
Notes: *eb* is a subjective measure of product quality as perceived by firms from the survey question: "Now please think of the product category your main product belongs to. If we rank the maximum quality available in the market for this product equals to 100, how would you rate the quality of your own product?".

Take away...

- No, none-exporters are more often of top quality
- However, off-exporter are significantly more often of low quality (Austria, Germany, UK)
- However, in France, Italy and Spain off-exporter often of top quality

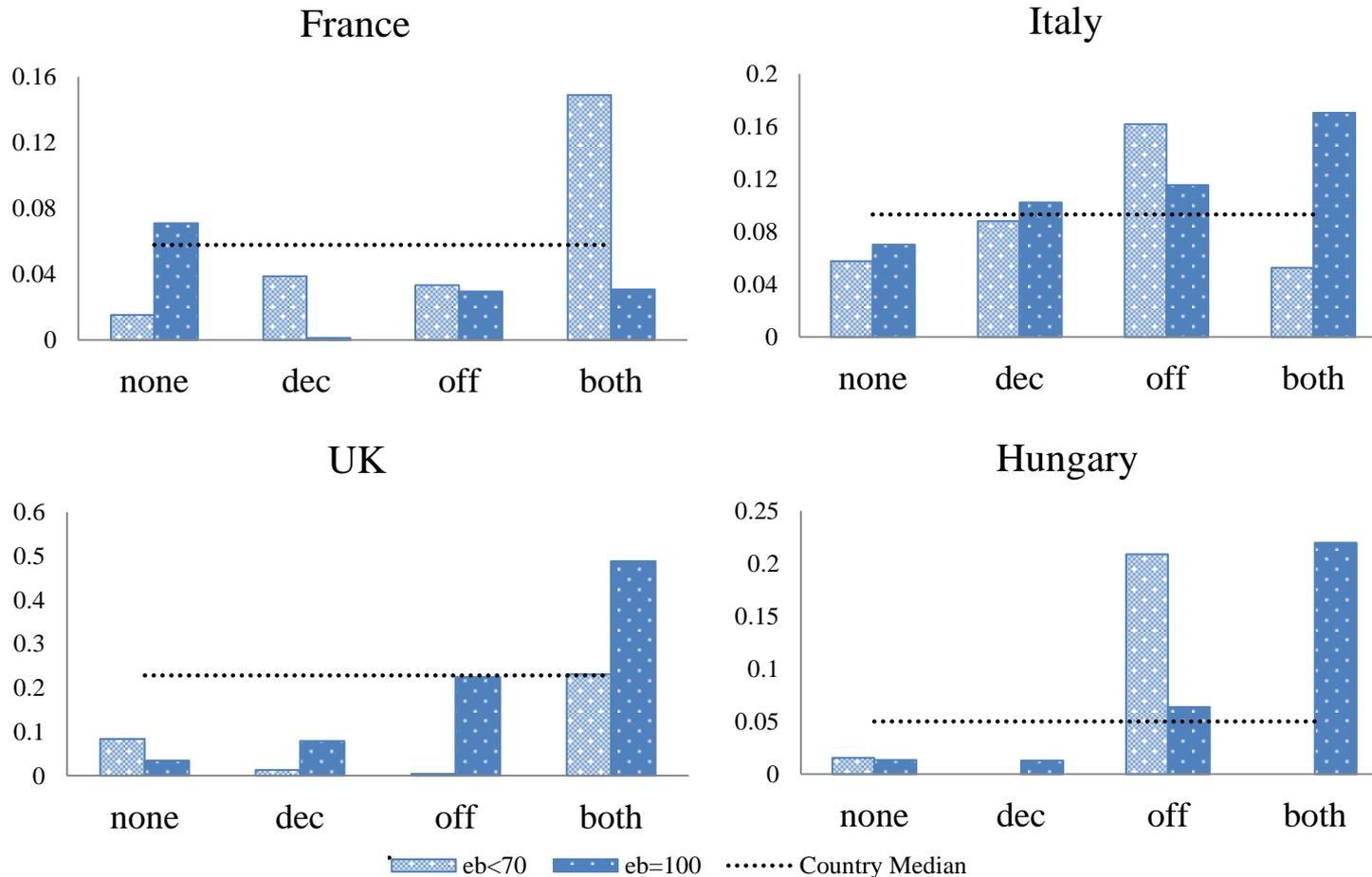
**Does decentralized management indeed
provide incentives for quality?**

Does decentralized management lead to an increase in the export market share of top quality goods?



eb is a subjective measure of product quality as perceived by firms and is obtained from the survey question: "Now please think of the product category your main product belongs to. If we rank the maximum quality available in the market for this product equals to 100, how would you rate the quality of your own product?"

Does decentralized management lead to an increase in the export market share of top quality goods?



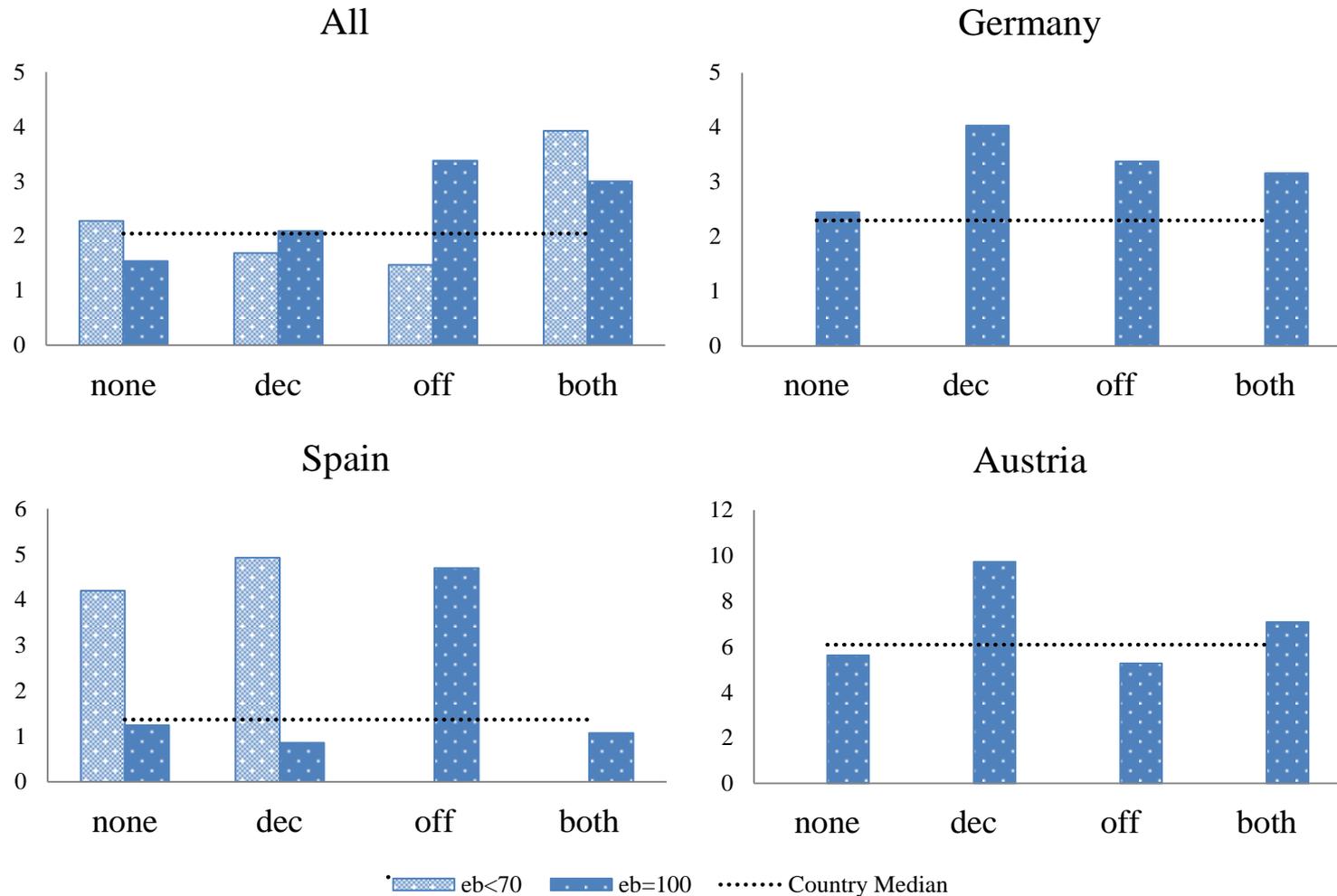
eb is a subjective measure of product quality as perceived by firms and is obtained from the survey question: "Now please think of the product category your main product belongs to. If we rank the maximum quality available in the market for this product equals to 100, how would you rate the quality of your own product?"

Take away...

- **Yes**, for **Germany** and **UK** and somewhat for **Spain**
- **No**, for **Austria** and **France**

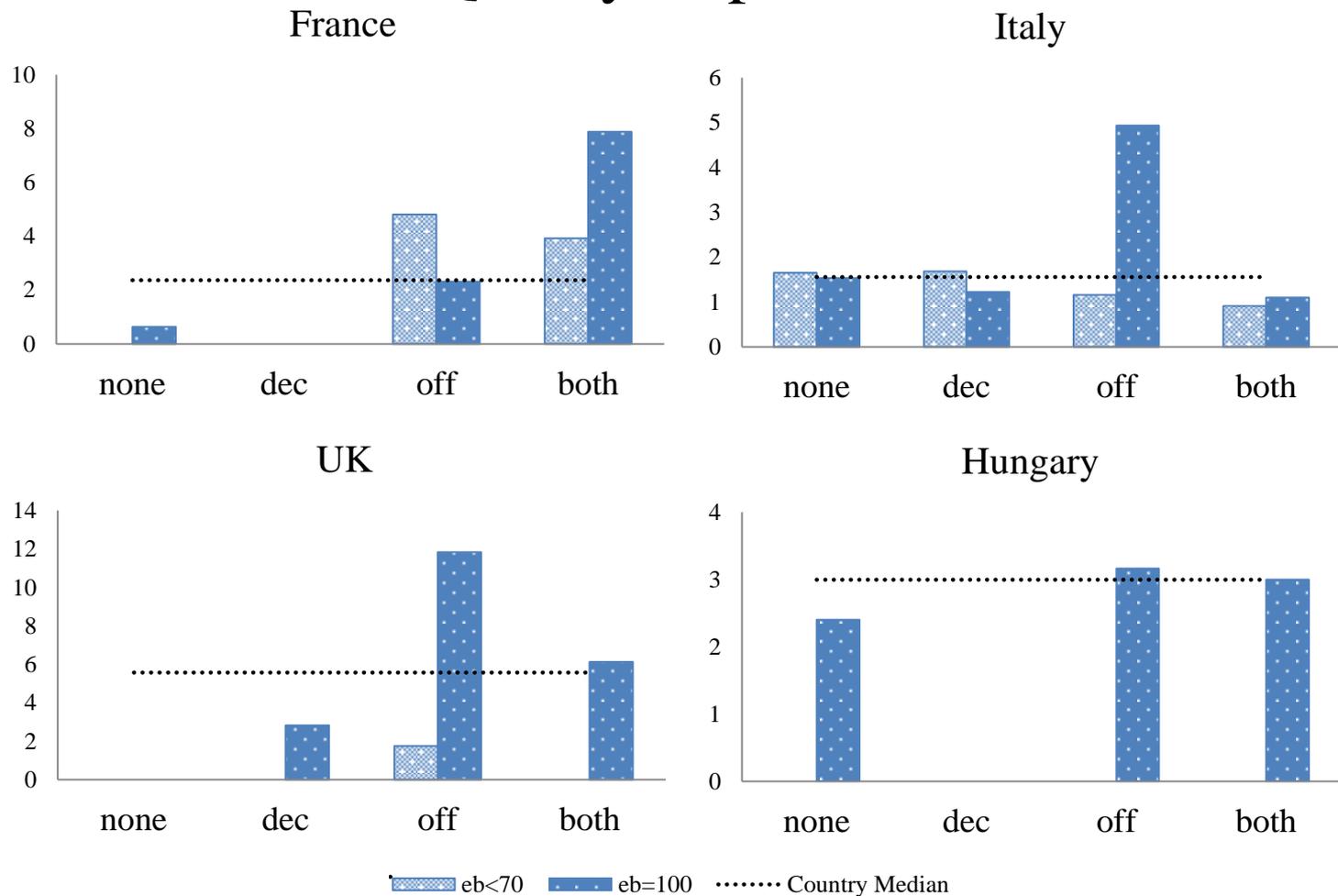
Top 10 % Exporters

Export Market Share by Top Quality Exporters of Top 10 % Exporters (in per mille)



Notes: eb is a subjective measure of product quality as perceived by firms and is obtained from the survey question: "Now please think of the product category your main product belongs to. If we rank the maximum quality available in the market for this product equals to 100, how would you rate the quality of your own product?"

Export Market Share of Top 10% Exporters by Top Quality Exporters



Notes: eb is a subjective measure of product quality as perceived by firms and is obtained from the survey question: "Now please think of the product category your main product belongs to. If we rank the maximum quality available in the market for this product equals to 100, how would you rate the quality of your own product?"

Take away...

- **Austria and Germany** only top quality exporters, dec-exporters most successful quality exporter
- **Spain, Italy, UK** offshoring and top quality go together

An industry measure of price vulnerability

High quality goods are less vulnerable to price changes

Ranking of industries by the size of the elasticity of substitution

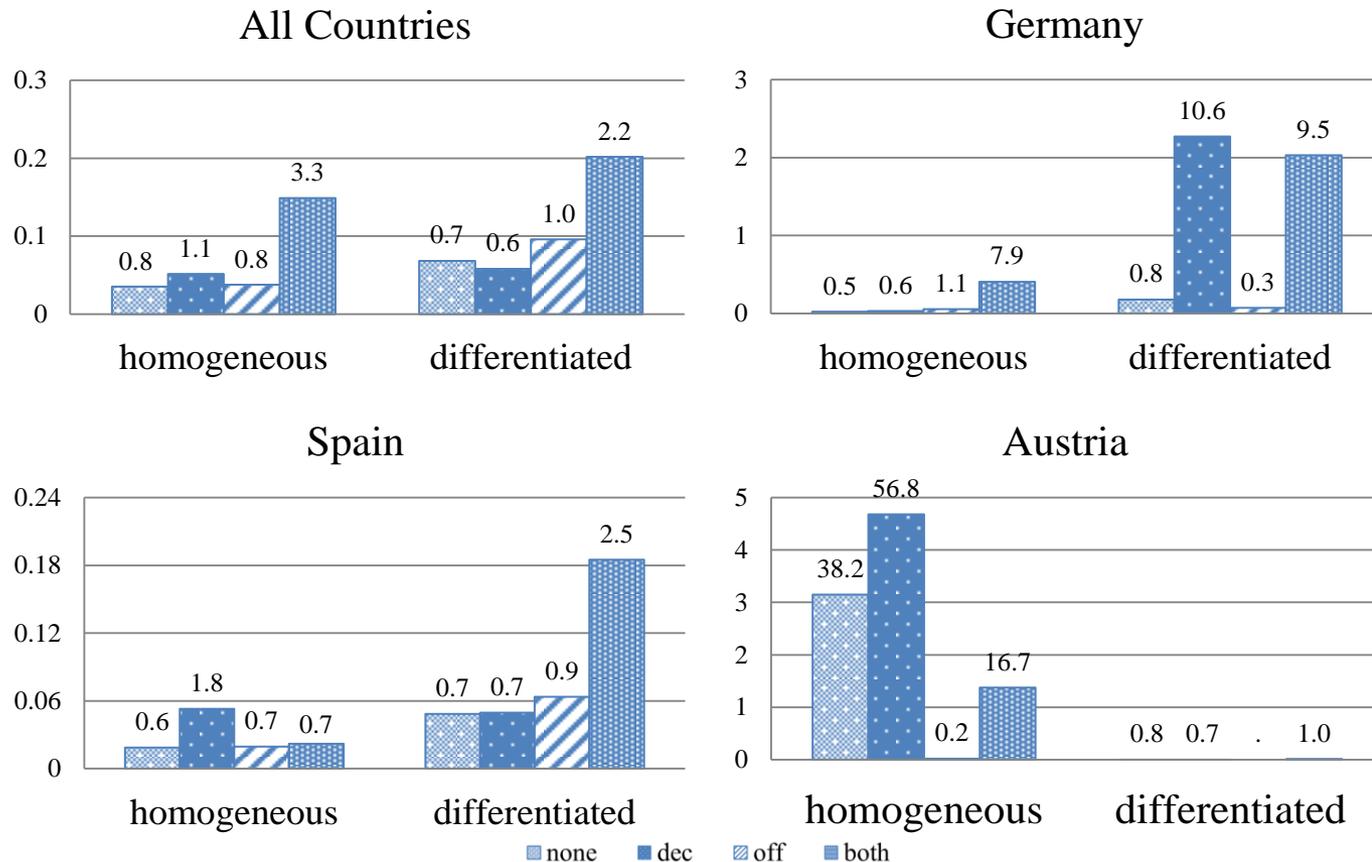
Top 10 percent  homogenous sector

Bottom 10 percent  differentiated sector

Question

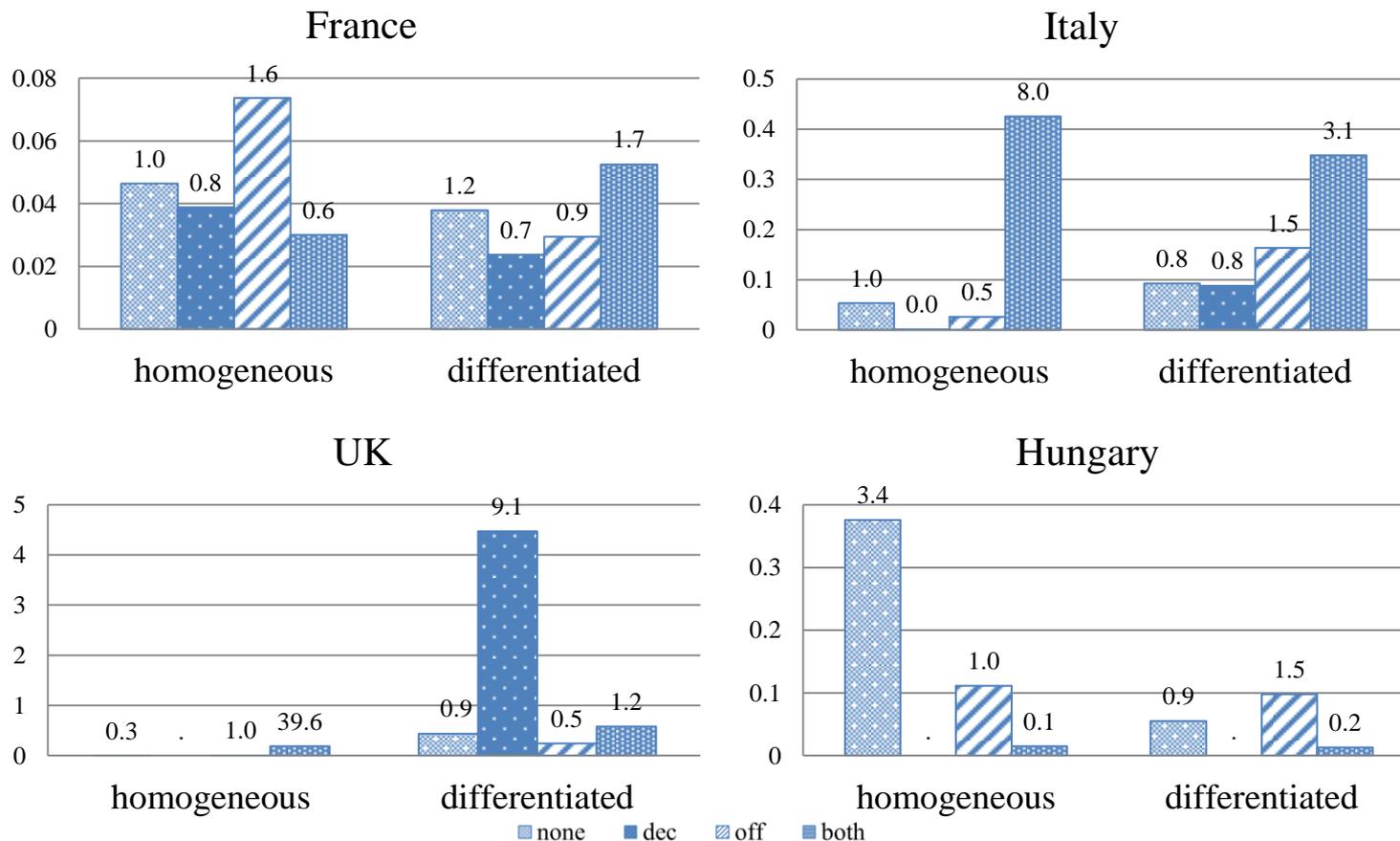
Do exporters of differentiated goods boost the EMS significantly when they decentralize management?

Export Market Share : Homogenous vs Differentiated Sector top 10 percent, bottom 10 percent



Notes: Median firm's export value/total imports of the world for the firm specific set of industries. Numbers above bars represent the ratio of the group specific median to the median across groups (for a given sub-sample). Firms belong to the sub-sample of homogeneous firms if the average import demand elasticity of the firm specific industry mix belongs to highest 10% in its country. Firms belong to the sub-sample of differentiated firms if the average import demand elasticity of the firm specific industry mix belongs to lowest 10% in its country. Import demand elasticities at the sectoral level are obtained from Broda, Greenfield and Weinstein (2006).

Export Market Share : Homogenous vs Differentiated Sector top 10 percent, bottom 10 percent



Notes: Median firm's export value/total imports of the world for the firm specific set of industries. Numbers above bars represent the ratio of the group specific median to the median across groups (for a given sub-sample). Firms belong to the sub-sample of homogeneous firms if the average import demand elasticity of the firm specific industry mix belongs to highest 10% in its country. Firms belong to the sub-sample of differentiated firms if the average import demand elasticity of the firm specific industry mix belongs to lowest 10% in its country. Import demand elasticities at the sectoral level are obtained from Broda, Greenfield and Weinstein (2006).

Take away...

- Offshoring boosts EMS of homogenous goods in France
- Dec and/or both boosts EMS of differentiated goods in Germany, Spain, UK

Summing Up

- **German** exporters use decentralized management to provide incentives for product quality and this leads to larger EMS of top quality goods (both quality measures), also somewhat true for **Austria** and **Spain**.
- **French** (and also **Italian**) exporters put less priority on product quality, high responsiveness to price changes, large benefits from offshoring

Why is decentralized management not effective in providing incentives for quality in some countries?

What drives decentralized management?

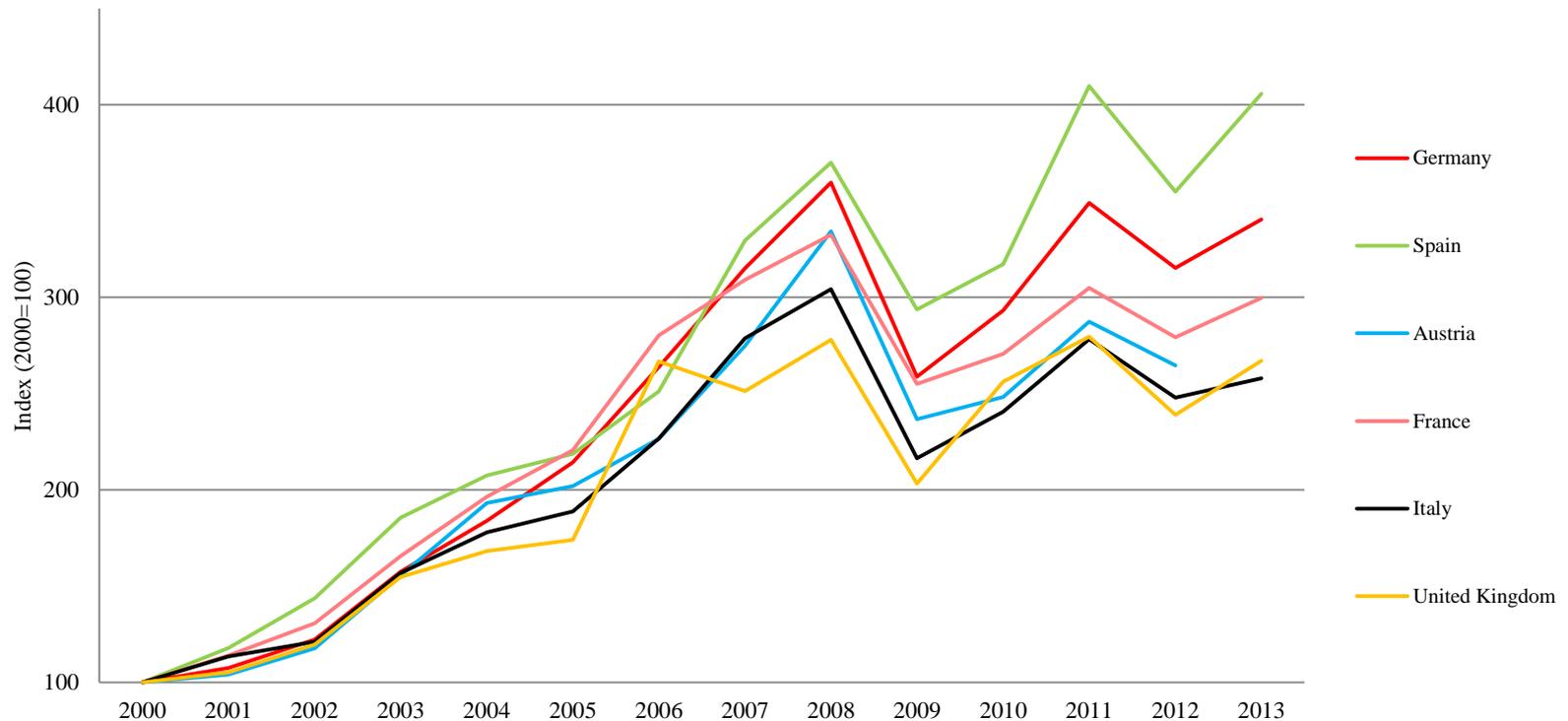
	Germany	Spain	Austria	France	Italy	UK	Hungary
Decentralized Management	37.9%	44.2%	43.3%	24.7%	17.0%	40.4%	15.9%
Potential Determinants:							
<i>Size of Exporters (Number of Employees)</i>	97	63	106	118	50	143	104
<i>Family Managed Exporters</i>	22.5%	24.9%	24.4%	17.1%	38.9%	11.0%	26.4%
<i>Exporters with Family Executives (not CEO)</i>	3.9%	3.7%	2.3%	1.3%	0.4%	2.8%	3.8%
<i>Trust</i>	40.7%	33.3%	37.4%	27.4%	34.9%	40.0%	21.3%

Notes: A firm is considered to be decentralized when it responds "decentralised: managers can take autonomous decisions in some business areas" to the question "With reference to strategic decisions which of the following statements better describe your firm situation?". *Family Managed:* firm's share of managers related to the controlling family is higher than the national average. *Exporters with Family Executives (not CEO):* firm has family members in the executive board, but top CEO is not a member of the family. *Trust:* "Generally speaking, would you say that most people can be trusted (1) or that you can't be too careful in dealing with people (0)". We use the average responses for NUTS-1 region of the exporter, source: European Value Survey.

The Rise of China and Eastern Europe

**Did Germany benefit more from the Opening
up of Eastern Europe and the Rise of China
than other countries?**

Exports of Manufacturing to Eastern Europe 2000 – 2013 (in 2000 prices)



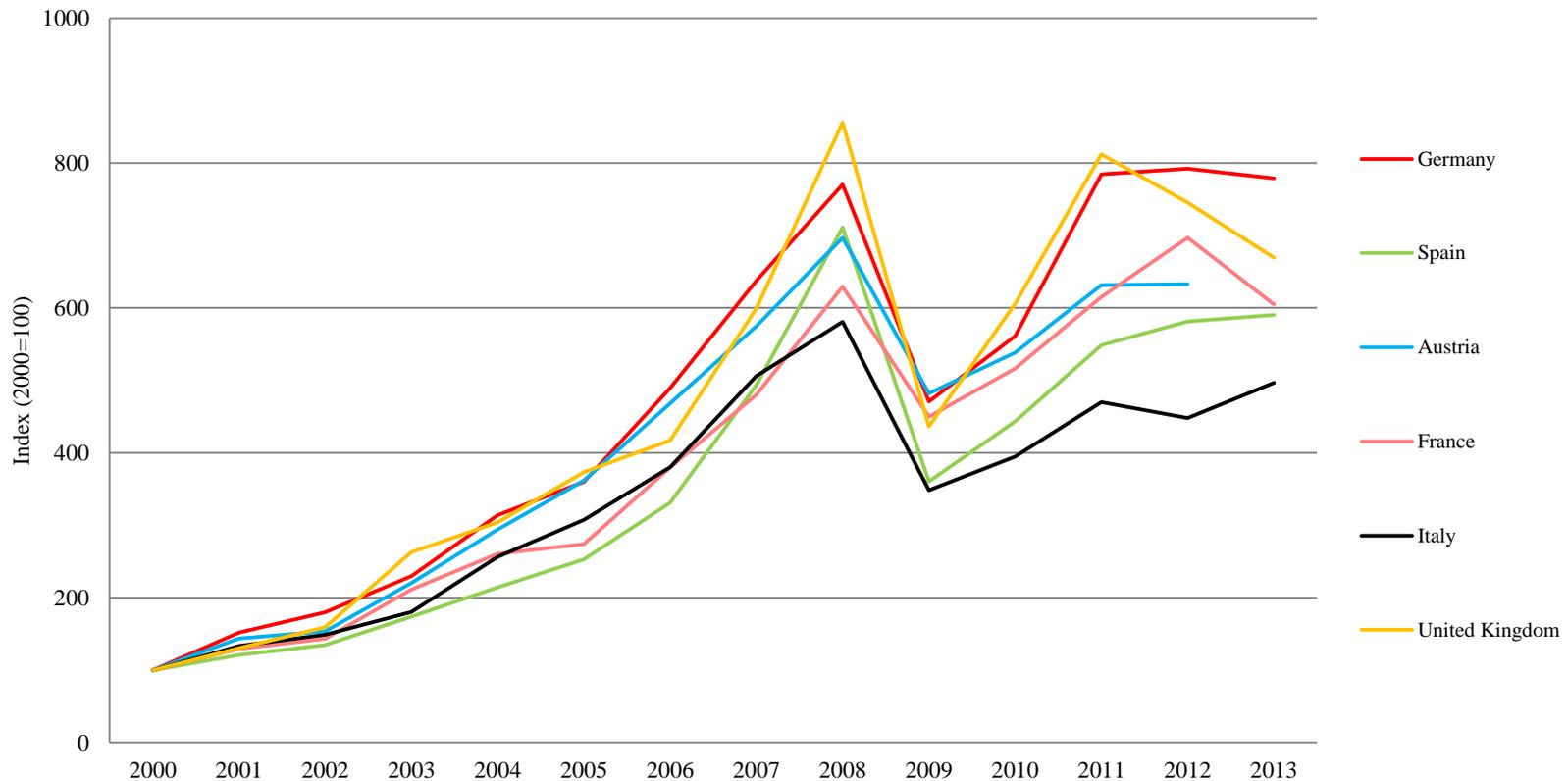
Source: Comtrade, Eurostat

Notes: Easter Europe includes: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic and Slovenia

Exports of Manufacturing to Russia

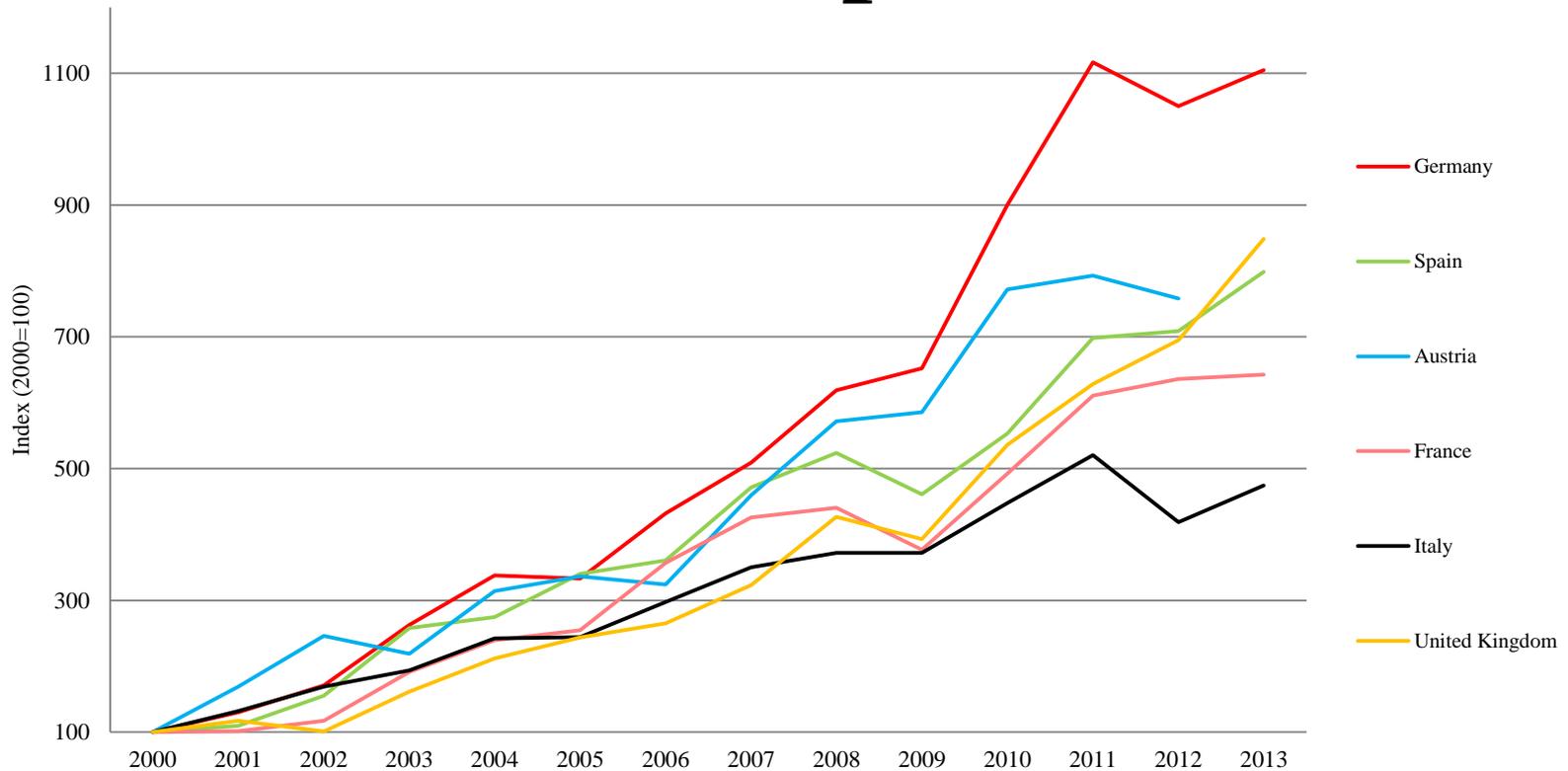
2000 – 2013

(in 2000 prices)



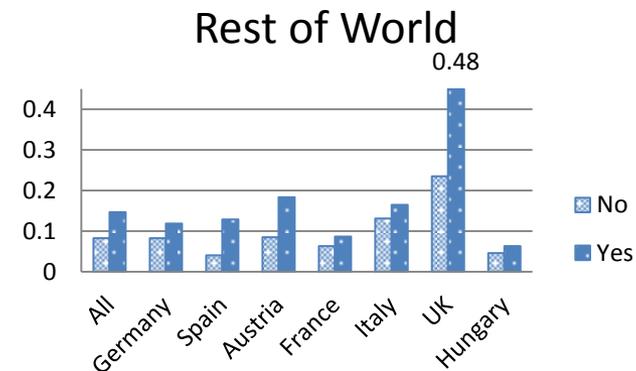
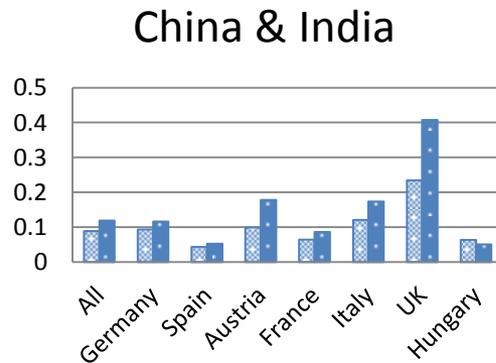
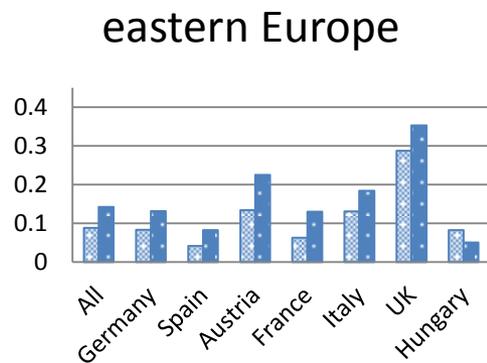
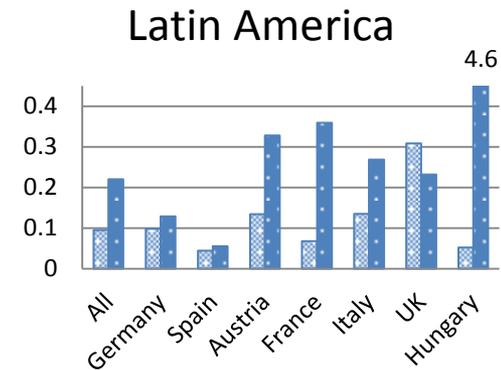
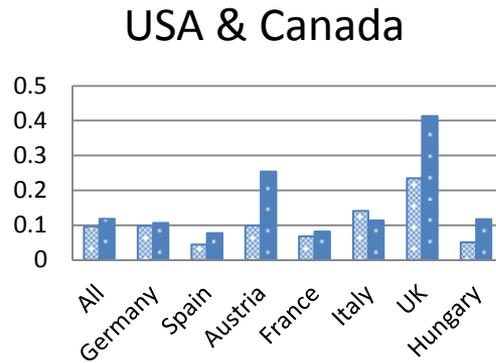
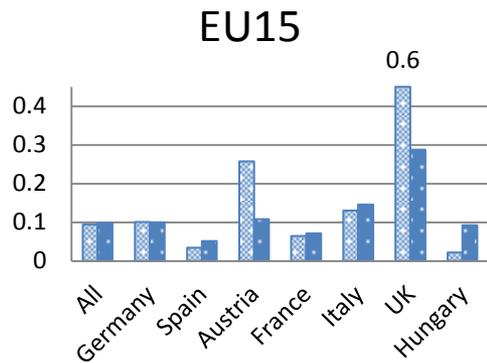
Source: Comtrade, Eurostat

Exports of Manufacturing to China 2000 – 2013 (in 2000 prices)



Source: Comtrade, Eurostat

Is sourcing from a particular region conducive to exporting?



Notes: *Export Market Share*: Median firm's export value/total imports of the world for the firm specific set of industries. *No*: offshoring exporter does not source from this region. *Yes*: offshoring exporter sources from this region. Latin America: Antigua, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Ecuador, El Salvador, Grenada, Guatemala, Guayana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Dominican Rep., St. Kitts-Nevis, St. Lucia, St. Vincent, Suriname, Trinidad Tobago, Uruguay, Venezuela. Other EU: Bulgaria, Cyprus, Estonia, Latvia, Lithuania, Malta, Poland, Czech Republic, Romania, Slovakia, Slovenia, Hungary.