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Study 'Interactions between
trade, investment and trends in
EU industry' R. Harte, L. Puccio,
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presentation by Laura Puccio

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Introduction and Methodology

- **Aim of the study:**
 - 1) analyse interactions between the evolution of EU and regional trade patterns and trends in manufacturing
 - 2) industrial and regional competitiveness factors and their influence on trade and industrial development
- **Methodology:** review of the theory, descriptive statistics with data from 13 regions
- **Methodological issues:** Econometrics, Data availability

Manufacturing decline in Europe

- Decline in Manufacturing employment
- Decline in certain [manufacturing sectors](#) (low-medium low technology intensive sectors versus high-medium high technology intensive sectors)

- Main factors given:
 - Trade
 - Technology (Automation and Digitalisation)
 - Services

- Trade as factor in changes in industrial patterns:
 - Change in comparative advantage and shift toward medium-high technology intensive skills
 - [Global value chain and offshoring](#)

Growth of EU industry and Sectors Growth in Regional Export



Growth of the EU industrial production by sectors, 2010 to 2016 (%)



* Main impact from manufacture of medical and dental instruments and supplies

ec.europa.eu/eurostat

Table 4 – EPRS study, page 36 (regional data from 2012-2016)

Sector	Count of Region Max	Count of Region Min
Agriculture and agro-Industry	4	0
Other non-metallic mineral products	2	1
Chemicals, rubber and plastics	2	4
Electronic and optical products, electrical equipment and machinery	1	3
Mining and quarrying	7	21
Metals	2	13
Pharmaceuticals	22	10
Vehicles	27	4
Textiles, apparel, leather and related products	3	5
Other	5	14
Grand Total	75	75
Low technology	16	33
High technology	52	21

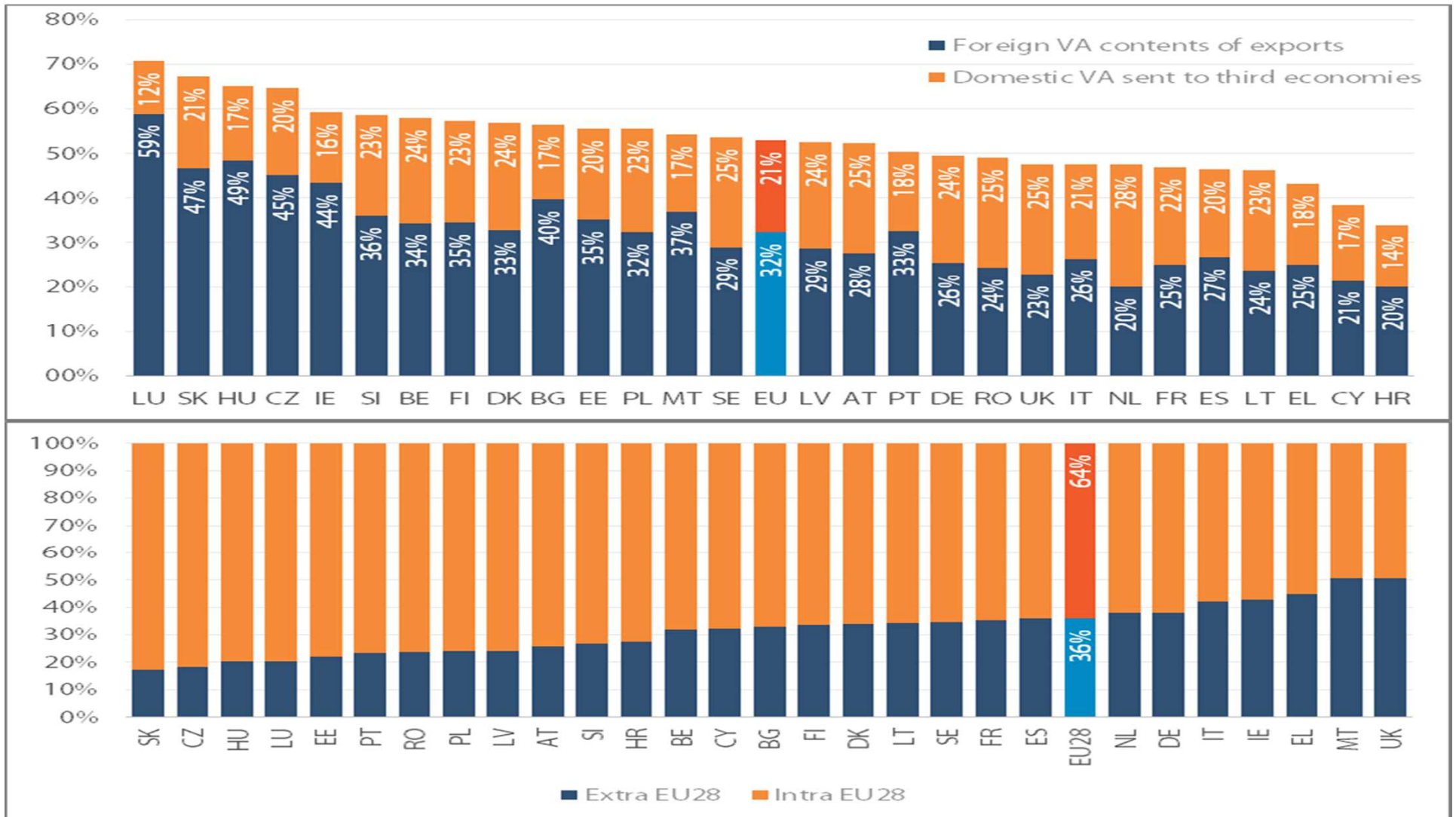
GVC and Offshoring and Re-shoring

- Global value chains (GVC)
 - GVC: production as part of a larger international value chain
 - EU high participation in GVC (WTO data on GVC)
 - Regional versus International value chains
- Offshoring vs Re-shoring
 - Offshoring has been decreasing
 - Some evidence of re-shoring

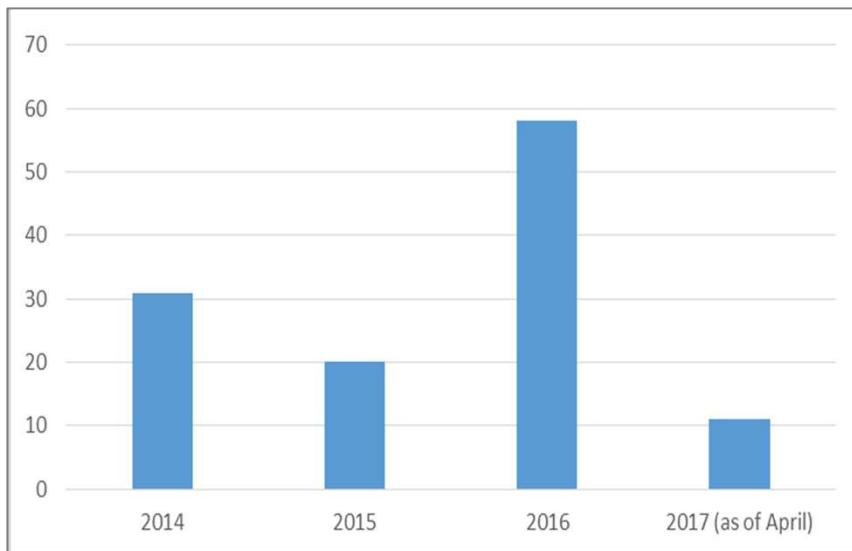
Global Value Chains



Figure 1: WTO data; Figure 2: Eurostat data



Offshoring and Reshoring



— **Figure 1:** Announced offshoring per year 2003-2016, European Restructuring Monitor

— **Figure 2:** Announced reshoring per year 2014-2017, European Reshoring Monitor

Comparative Advantage and regional trade specialisation

- Concept of comparative advantage
- Regional data and specialisation: preliminary conclusions
 - EU regions have generally diversified export base (low Herfindhal-Hirschman Index)
 - Trend toward diversification
 - Though there is an increase in export of high-medium high technology intensive goods, shift in specialisation are limited to some regions (countries such as Germany).
 - Specialisation remains vary varied

Diversification

- Herfindhal-Hirschman Index (HHI) calculated for Belgium, Croatia, France, Germany, Italy, Portugal, Romania, Spain
- Average regional HHI: 0.26
- HHI bigger than 0.5 was found for: Bremen, Basilicata, Melilla, Martinique, Midi-Pyrénées, Réunion, Sardegna and Sicilia

EPRS study Table 2 – Average HHI of the region in relation to the top 1 sector in the region

Sector	Average HHI
Agriculture and agro-Industry	0.255864986
Chemicals, rubber and plastics	0.180457824
Electronic and optical products, electrical equipment and machinery	0.224261607
Metals	0.311487432
Mining and quarrying	0.172680769
Other	0.437166687
Pharmaceuticals	0.211071569
Textiles, apparel, leather and related products	0.192213156
Vehicles	0.348527606

Trends toward diversification

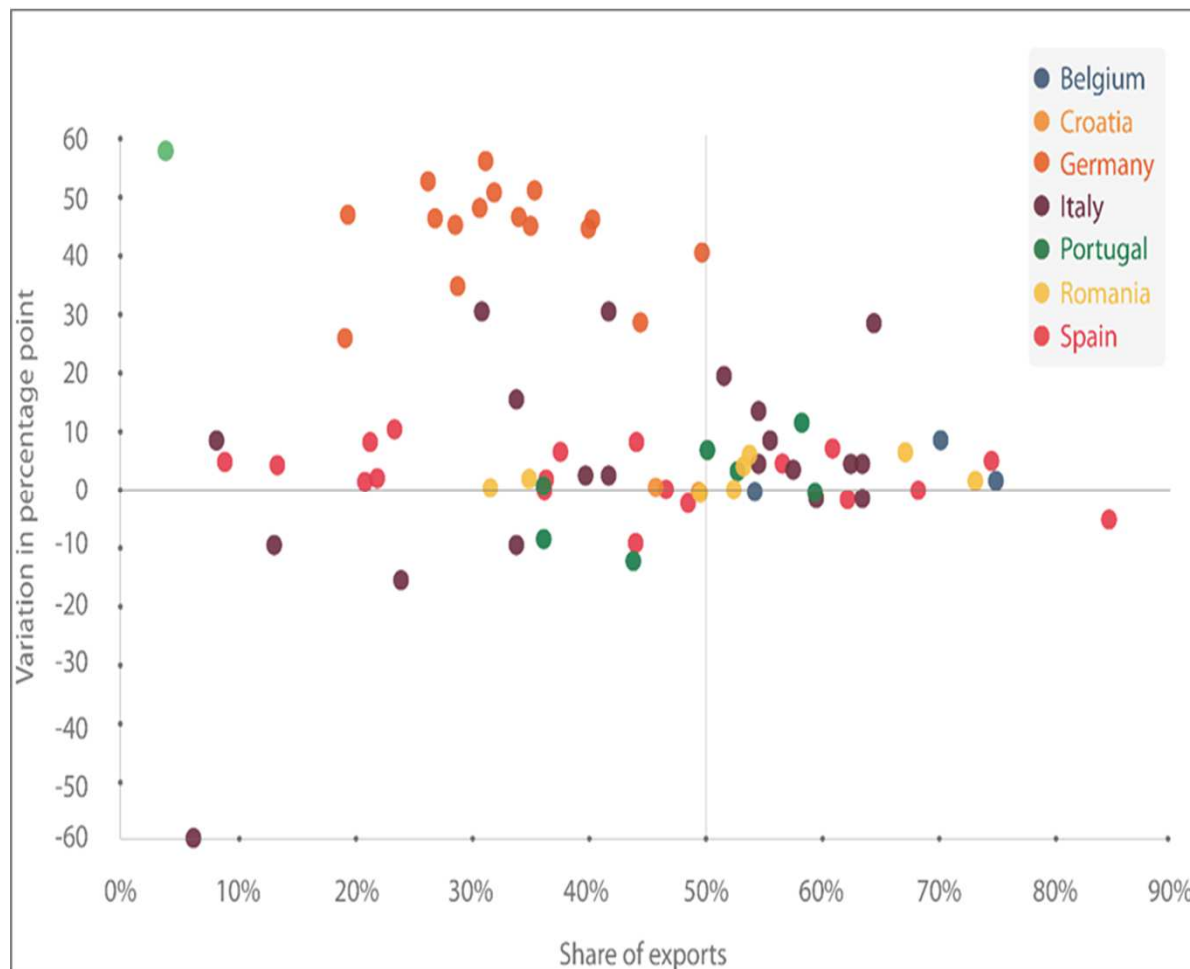


EPRS study Table 5 – Number of regions where one of the top three regional sectors is also the sector experiencing the maximum increase in exports or the minimum increase/maximum decrease in exports

Countries	Max=Top	Min=Top	Total regions
All	24	5	75
Italy	8	2	20
Germany	4	1	16
Spain	7	1	19
Belgium	1	0	3
Croatia*	0	1	2
Romania*	2	0	8
Portugal	2	0	7

Variation in export specialisation in low versus high technology intensive goods

EPRS study Figure 19 and Table 6



	Average of share of high/medium-high-technology-intensive goods, 2015	Average evolution in percentage points, 2012-2015
All	55.15517934	11.05865
Italy	48.07815988	3.483184
Spain	44.84903286	1.920398
Portugal	48.12358145	-0.34009
Belgium	69.78904349	2.77492
Germany	76.66267376	43.88997
France*	55.89925246	n.a.
Croatia*	47.50535556	-0.43431
Romania*	54.37599532	1.991603

Intra-Industry Trade

EPRS table 9 Regional average GLI for low/medium-low-technology-intensive goods and high/medium-high-technology-intensive goods

Simple average GLI	Low-tech	High-tech
Piemonte	0.480462686	0.617296356
Valle d'Aosta/Vallée d'Aoste	0.158182857	0.245297996
Lombardia	0.501866711	0.619785521
Liguria	0.444171336	0.510775396
Trentino-Alto Adige/Südtirol	0.475256791	0.420040584
Veneto	0.442386962	0.546439102
Toscana	0.402974521	0.494723669
Umbria	0.355034415	0.421255442
Marche	0.410784584	0.433612179
Lazio	0.481105987	0.539139742
Sardegna	0.291594523	0.29511575
Abruzzo	0.369240336	0.423943418
Molise	0.233078901	0.320222197
Campania	0.452414782	0.54251617
Puglia	0.426891011	0.414997885
Calabria	0.344110164	0.345425696
Basilicata	0.227045435	0.27930165

- Vertical and horizontal intra-industry trade
- Gruebel-Lloyd index (GLI)
- GLI higher for high to medium high technology sectors
- The ‘New Trade Theory’:
 - trade by fewer more competitive firms (lower prices and higher returns to scale for surviving firms),
 - more variety
- Firm-level data and the importance of size, innovation and skills
- clusters

Inequalities and regions



- Huge disparities in trade performance between ‘the export champion’ and other regions
- Importance of capital
- Very little convergence over the time analysed (though there is a need for a longer timeframe to confirm this finding)
- Finding of correlation between GDP and export performance

	Italy	France	Spain
Correlation between exports and GDP	0.90949261	0.85296623	0.937999167
Correlation between GDP per person and trade per person	0.873840736	0.481244391	0.801806669
Correlation between GDP per person and exports per person	0.858234557	0.476016408	0.751711321
Correlation between GLI and exports	0.385620875	0.561984635	0.65424734
Correlation between GLI and GDP	0.419241733	0.233364618	0.6392995

Correlations analysis



— Table above: EPRS study table 14

— Table left: EPRS study table 15

	Italy	France	Spain
Correlation between high-tech and GDP	0.638711753	0.775873734	0.904482406
Correlation between the share in high-tech and exports	0.384732008	0.417722067	0.354889391
Correlation between low/medium-low-technology goods and the RCI	0.5108566	0.70486669	0.364105822
Correlation between the share of low/medium-low-technology goods and the RCI	-0.301325093	-0.277631454	-0.493685323

RCI and competitiveness depending on specialisation



Table Extrapolated from A. Cordes et al. WIIW study, July 2016

EPRS Table 14, Correlation between RCI and 2015 regional export data

	Italy	France	Spain
RCI and total exports	0.594769754	0.858681377	0.504073197
the innovation sub-index and total exports	0.592108144	0.829513041	0.650852263
the basic sub-index and total exports	0.656257363	0.78347203	0.596025877
the efficiency sub-index and total exports	0.555860824	0.804998264	0.405982689

Regional Sector focus	Innovation	Structural charact.	Institutional
Low	Variable effect or negative	Impact of population for certain sectors clusters	Important for certain sectors
Medium	Significant effect	Significant effect of clusters	Negative coeff.
High	Significant	Cluster significant effect	Positive impact of certain var.

Other policies influencing regional competitiveness



- Micro-level: resources (raw material, capital and labour), demand conditions, size and clusters (economies of scale), firm strategy (entrepreneurship and innovation, operational and cost efficiency, technology and quality...)
- Macro-level: infrastructure, market regulation (including labour regulation), structural factors (population, education, health), financial market, etc.

- Selected other factors:
 - Energy costs
 - Environment legislation
 - Skill shortage and skill gap
 - R&D and innovation

FDI



- FDI and Trade: Vertical versus Horizontal FDI

- FDI and economic growth:
 - Facilitates transfer of technology
 - Increases competition
 - Human capital
 - Positive development of firms
 - Integrating the world economy

- Most literature present positive effect of FDI on growth, few studies have negative, weak or no effects of FDI

- 2006 study by the Commission on FDI and regional development found positive effects of FDI for the development of NUTS2 regions

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