

Value added chains in exports of Italian regions

From gross flows to labor activation by skill level

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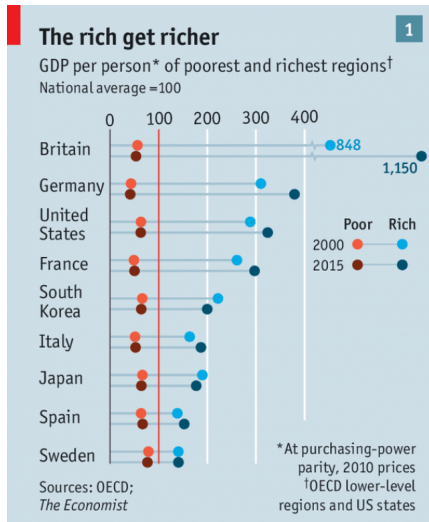
Motivations

The rise of ICT technologies and the ensuing spreading of GVCs have coincided with a change in the nature of globalization.

- i. Fall in income inequality between developed and (a group of) developing countries and a rise in inequality (especially) within developed countries (e.g., Milanovic, 2016).
- ii. Weakening of advantages stemming from the co-location of firms within the same supply chain, so as it is envisioned by theories of industrial districts and New Economic Geography (e.g., Baldwin, 2016).

Whereas participating and advancing in GVCs is thought to be a crucial step in the road to regional development, little is known about its impact in terms of within- and between regional income inequality.

Motivations (*con't*)



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Our contribution

- i. We exploit our previous work on GVCs in a I-O framework (Bentivogli et al., *forth.*, 2017a,b) which provided i) an interregional-intercountry I-O structure; ii) a decomposition of regional bilateral exports and outflows starting from bilateral intersector flows; iii) characterization of Italian regions in terms of their degree of embeddedness of GVCs
- ii. We provide first evidence about how the structure of regions' international as well as interregional trade is related to labor activation by skill level

Summary of the main results

- i. The degree of embeddedness of Italian regions in GVCs varies much, especially when comparing Northern to Southern areas, and greatly affects the geography of interregional trade
- ii. The differences in terms of participation to GVCs are also reflected in a heterogeneous labor activation by skill level
- iii. In particular, labor activation in the South is 'biased' towards managers and white collars

Related studies

Although born in the fields of sociology and international business, GVCs have been more recently studied through Input-Output (I-O) analysis.

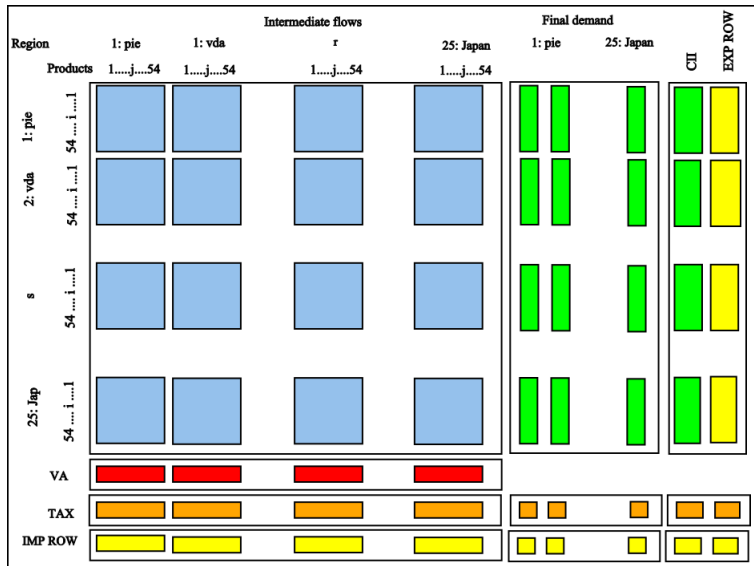
- i. Approaches via I-O tables at the country level: e.g., Hummels et al. (2001), Johnson & Noguera (2012), Dietzenbacher et al. (2013a), Timmer et al. (2013), and Koopman et al. (KWW, 2014), Borin and Mancini (2015) → development of World I-O databases (e.g., WIOD, GTAP, ICIO etc.)
- ii. Approaches via I-O tables at the regional-country level: Dietzenbacher et al. (2013a), Meng et al. (2013), Meng et al. (2017), Bentivogli et al. (*forth*, 2017a,b)

In Bentivogli et al. (*forth*, 2017a,b) we provide an analytical framework to study interregional and international value chains starting from bilateral intersector trade.

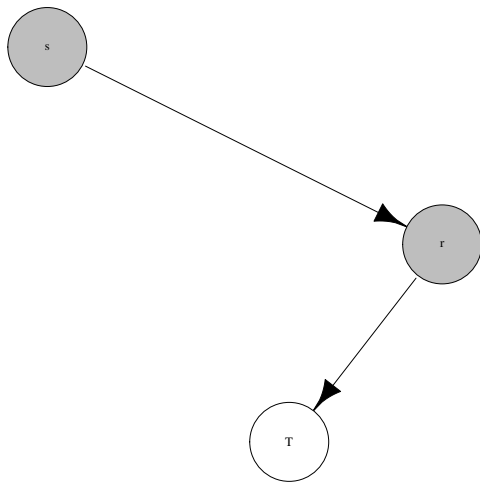
The data

- i. Starting point: availability of Italian multi-regional and country specific *SUT* for EU, US, Canada and Japan (Data from national statistical offices; Eurostat for EU; 2012)
- ii. Estimates of *country-by-country* intermediate and final product flows (OECD Trade by commodities, Eurostat Comext, OECD Trade in services by partner country)
- iii. Balancing multi-country and multi-regional trade flows
- iv. Symmetrization via *product-by-product* industry technology

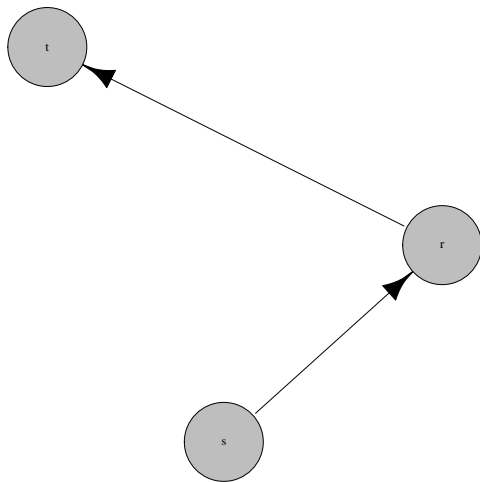
The Supermatrix



Interregional and international trade patterns: example 1



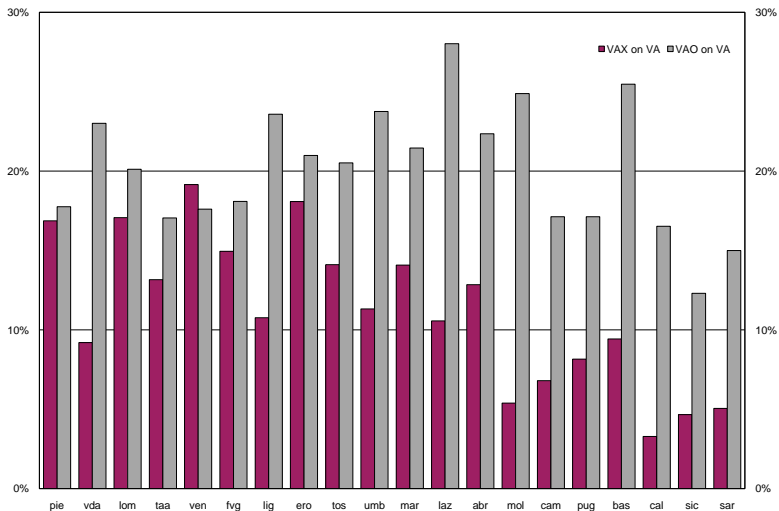
Interregional and international trade patterns: example 2



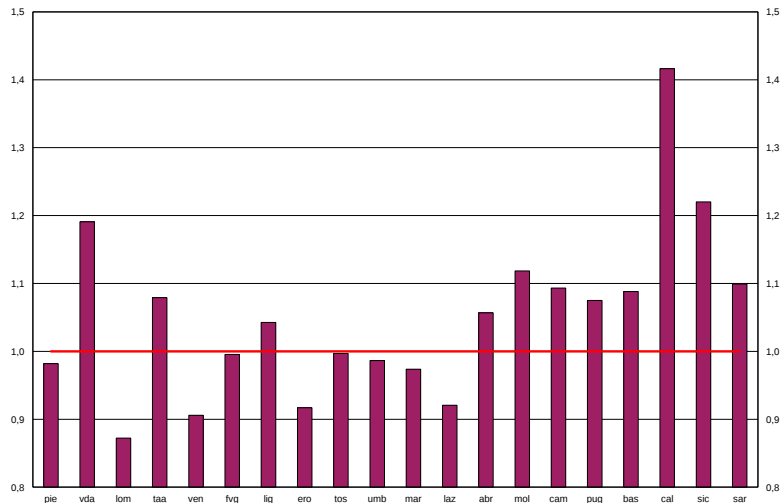
Decomposing intersectoral/bilateral flows: A receipt

- i. We start from bilateral trade (Borin and Mancini, 2015; BM), and further disaggregate it at the sectoral level
- ii. We disentangle *outflows* (interregional trade) from *exports* (international trade)
- iii. We distinguish, *domestic*, '*foreign*' *national* and '*foreign*' *international* value added exports and outflows
- iv. We pin down *domestic vis-à-vis international* segments of GVCs
- v. We recover domestic value added, reimported VA, double counted term, other countries' and other regions' VA and dc term for both exports and outflows

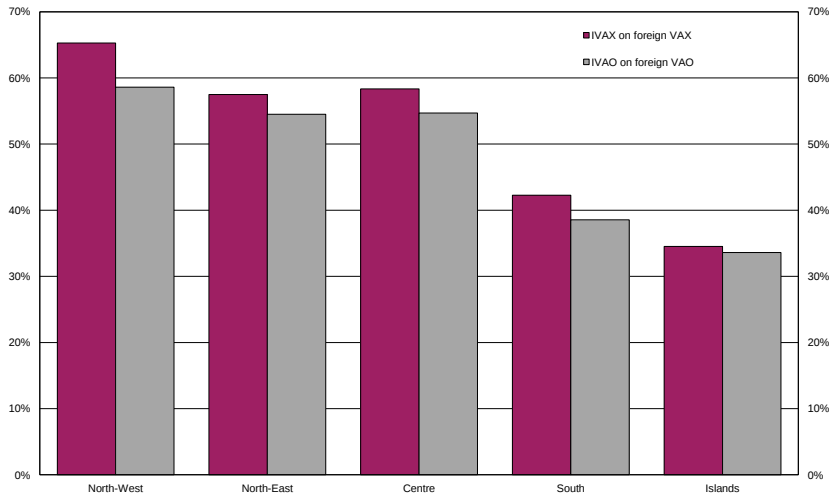
Domestic VAX and VAO as a % of regional value added



VA footprint: Produced VA over absorbed VA



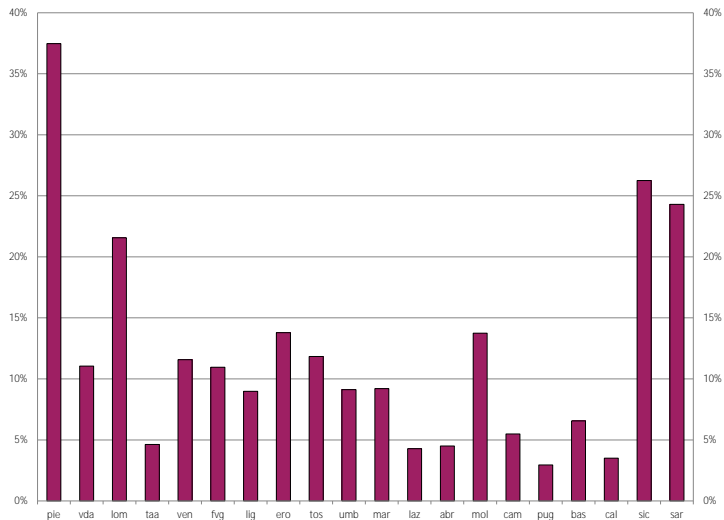
International VAX and VAO as % of 'foreign' component



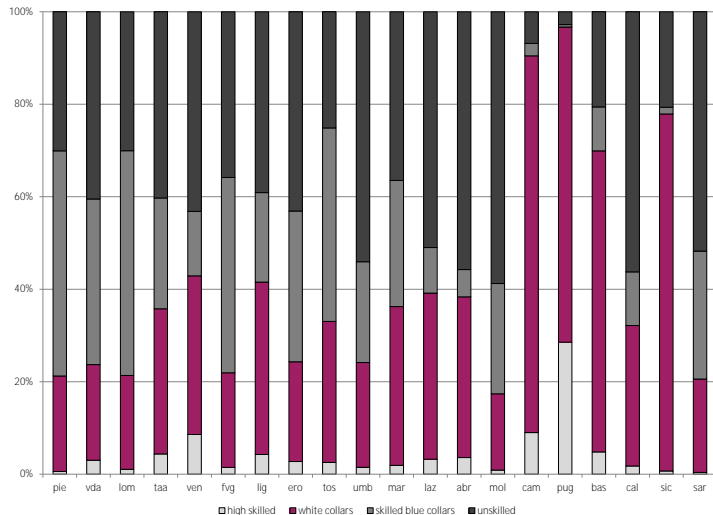
NUTS 1: Geographical composition of NVAX and NVAO

	North-West	North-East	Centre	South	Islands
<i>NVAX</i>					
North-West	0,0%	45,8%	28,8%	16,6%	8,8%
North-East	56,5%	0,0%	26,0%	12,3%	5,2%
Centre	43,5%	27,3%	0,0%	23,0%	6,2%
South	38,7%	19,4%	36,2%	0,0%	5,7%
Islands	38,3%	17,5%	23,7%	20,6%	0,0%
<i>NVAO</i>					
North-West	0,0%	44,3%	29,5%	16,7%	9,5%
North-East	54,4%	0,0%	27,1%	12,7%	5,8%
Centre	41,3%	25,4%	0,0%	26,6%	6,7%
South	35,5%	17,7%	39,6%	0,0%	7,2%
Islands	35,8%	18,0%	25,8%	20,4%	0,0%

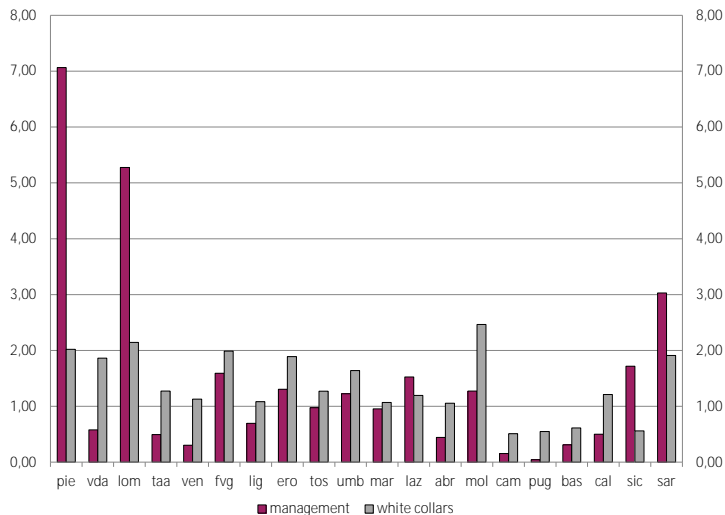
Workers in GVCs: exports



Labor activation by skill level: exports



High-skilled labor activation in exports



Preliminary conclusions

- i. Starting from an “augmented” version of IRPET MRIO model, we built up a framework to study the structure of gross exports and outflows of Italian regions
- ii. We exploited the existing literature on exports decompositions via I-O tables and moved further so as to measure the degree of embeddedness of Italian regions in national and international value chains
- iii. We documented the heterogenous participation of Italian regions in GVCs, stressing the differences between Northern vis-à-vis Southern areas
- iv. We extended the analysis to labor activation by skill level and found relevant regional differences; in particular, again between Northern vs. Southern economies

Future research

- i. WIOD integration (full world coverage) and more years
- ii. Dynamic empirical exercise: did integration in GVCs lead to higher labor market polarization?
- iii. Beyond sectors: need to embed firms (exporters, in every sector, are bigger, more productive, more innovative, pay higher wages, employ a higher share of high-skilled workers)