



IRPET Istituto Regionale
Programmazione
Economica
della Toscana

TOWARDS NEW APPROACHES FOR DEVELOPMENT POLICIES

**Economic and Social Relations between Territories: a Value Chain
Approach applied to Local Market Areas (LMAs) in Tuscany**

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SIE Società Italiana di Economia

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THE CONCEPTUAL FRAMEWORK

The growth of territorial inequalities has re-opened the debate on development policies, in context conditions that are very different from those of the industrial take-off.

The main differences consist of:

- the environmental sustainability issue, which can no longer be postponed;
- the process of strong aging of the population, which has inverted the proportion between those who produce income and those who demand welfare services;
- the territorial problem of the two extremes, excess concentration (urban areas) and excess rarefaction (inner areas);
- the affirmation of liberal ideologies, which have pushed for the contraction of public spending well beyond the adjustments due to demographic evolution;
- the availability of new technologies, which open up new opportunities for the supply of goods and services.

THE CONTRIBUTION OF THIS WORK

The aim of this work is to show how the construction and use of analysis tools aimed at capturing economic relationships (supply chain ties, commuting ties) can improve the understanding of the drivers of local development and broaden the range of development policies.

In our conceptual framework, the economic development depends on 3 factors:

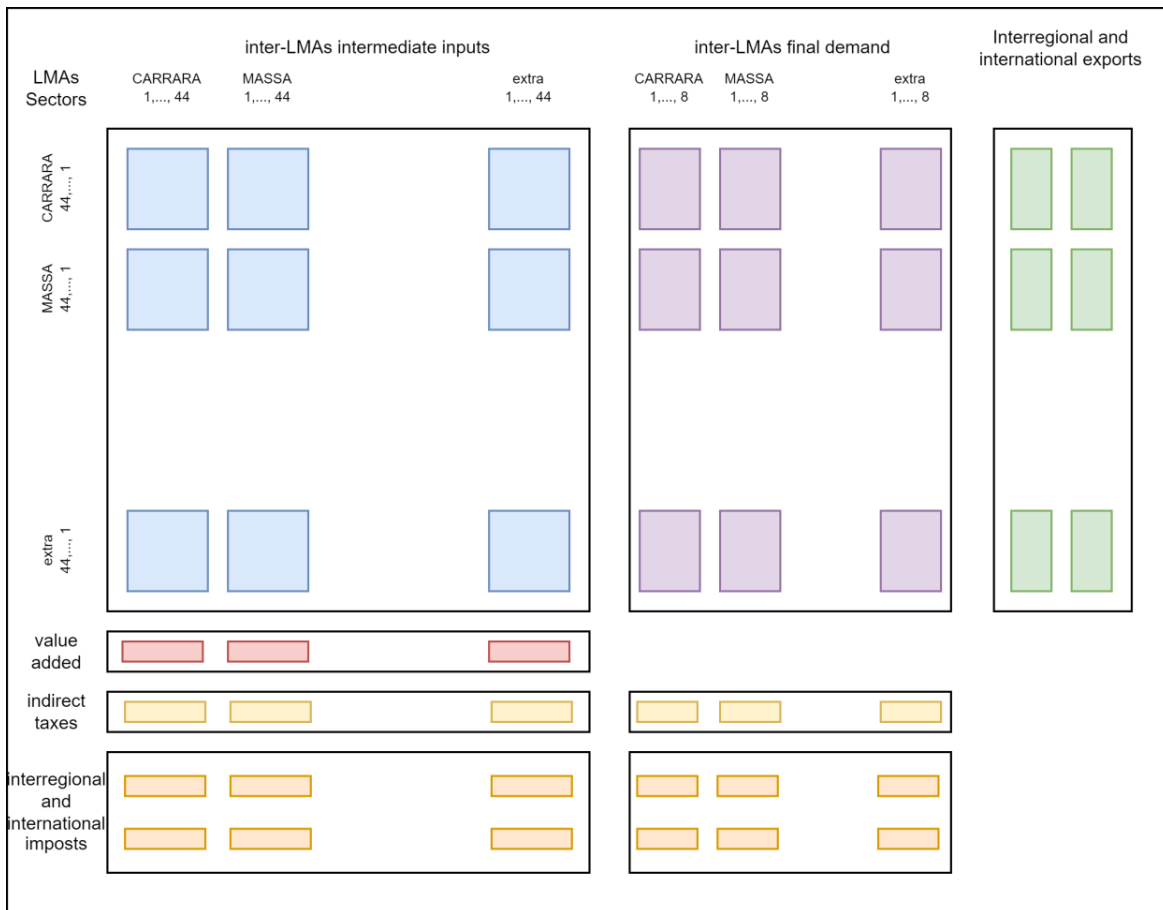
- 1) economic activities located in each area (firms able to intercept final demand);
- 2) territories' participation by local firms' involvement in multi-localized value chains (intermediate ties);
- 3) territories' participation in multi-localized value chains by commuting flows.

THE OUTLINE OF THE PRESENTATION

The presentation is organized as follows:

- 1) description of concepts, approaches and tools
- 2) description of data sources
- 3) examples of applications
 - we analyze two pairs of value chains (Tuscan internal consumption vs Tuscan international exports; final demand captured by high-tech vs traditional sectors)
 - we compare results in terms of spatial concentration in the distribution of I) final demand shock (according to where firms responding to the shock are located), II) income generated (according to where workers work), III) income distributed (according to where workers live)
 - finally, referring to two types of inner areas, we compare the role played by value chain relations and commuting in alleviating territorial disparities.

THE INTER-LMAs I/O TABLE



- An inter-LMAs IO table is an example of interregional table in which the region is represented by local market areas (LMAs)
- Rows track regional sectoral production in terms of destination (intermediate vs. final demand)
- Columns track regional sectoral production in terms of contributions of external (intermediates) vs. internal (value added) inputs
- Methodology: published in Paniccià and Rosignoli (2018)

THE VALUE CHAIN APPROACH (I/O LOGIC)



- We define a value chain as the bundle of production processes, possibly geographically dispersed, activated by a given (final) demand shock;
- Each production step is characterized by different tasks which are provided by workers employed in heterogeneous occupations

THE VALUE CHAIN APPROACH IN PRACTICE

$$(1) \quad Fd_{x,S} + A \cdot Fd_{x,S} + A \cdot (A) \cdot Fd_{x,S} + \dots + A \cdot (A^{n-1}) \cdot Fd_{x,S} = (I - A)^{-1} \cdot Fd_{x,S}$$

$$(2) \quad v \cdot (I - A)^{-1} \cdot Fd_{x,S}$$

$$(3) \quad C = c \cdot (I - A)^{-1} \cdot Fd_{x,S}$$

$$(4) \quad \hat{C} \cdot T_c$$

A value chain is defined by the different steps of production activated by a given demand shock (1). Equation (2) returns the results in terms of value added activation, whereas equation (3) reports them in terms of (internal) labour cost. Equation (3) represents an estimate of where income is generated within a given value chain. In equation (4), finally, income is distributed in space according to a matrix of inter-LMAs commuting.

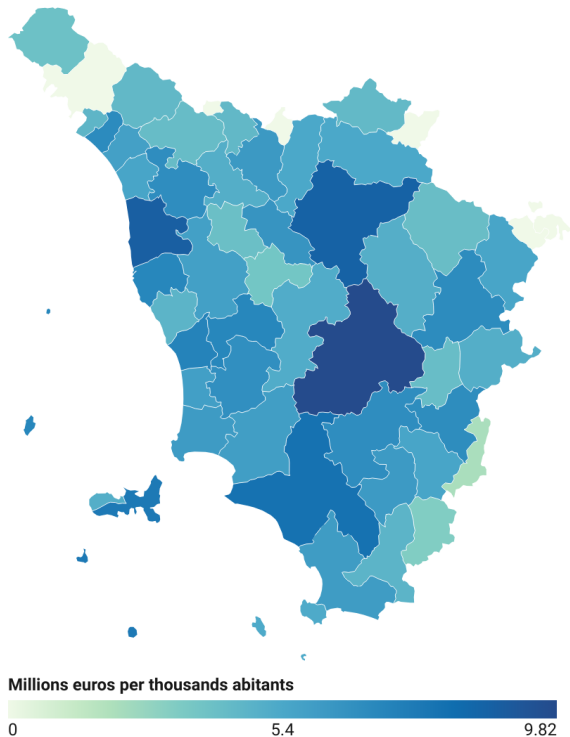
DATA ON EMPLOYMENT, LABOUR COST AND COMMUTING

- Employment data: different micro-sources (Asia Unità Locali; Asia agricoltura; Asia Istituzioni Pubbliche; Census data; Sistema Informativo Lavoro)
- Labour cost: different micro-sources (Asia Frame SBS; Tax Declarations; Aida)
- Commuting: LEED-data (linked employer employee data base) reconstructed starting from tax declarations of employees linked to firms via fiscal code (either «sostituto d'imposta» retrieved in tax declarations or via Sistema Informativo Lavoro)

STARTING ESTIMATES ARE CORRECTED IN ORDER TO MEET CONSTRAINTS
STEMMING FROM REGIONAL ACCOUNTS

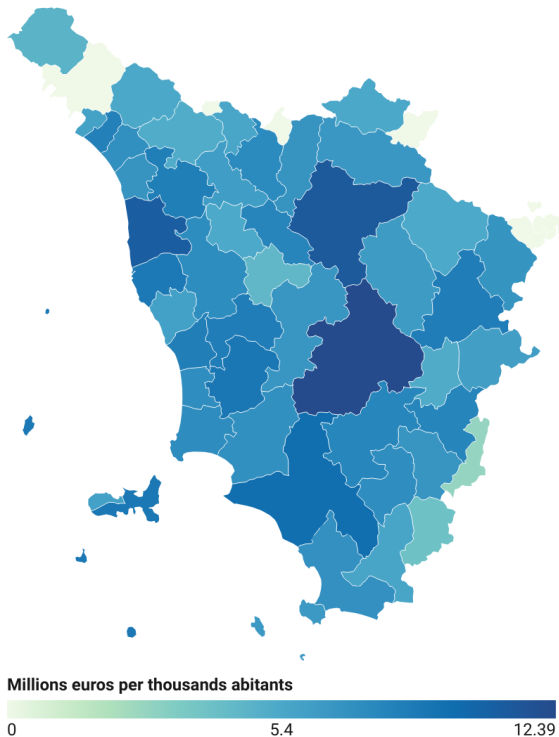
APP 1: TERRITORIAL DISTRIBUTION OF INTERNAL CONSUMPTION

Directly involved in the shock



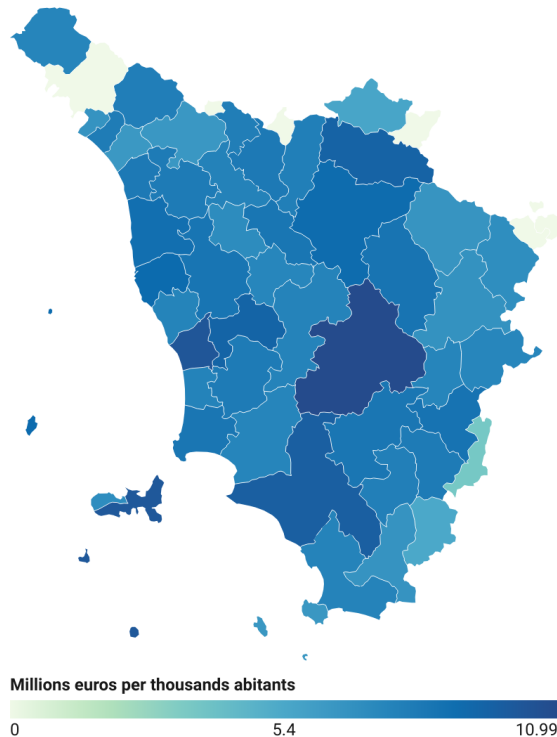
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Involved in the value chain



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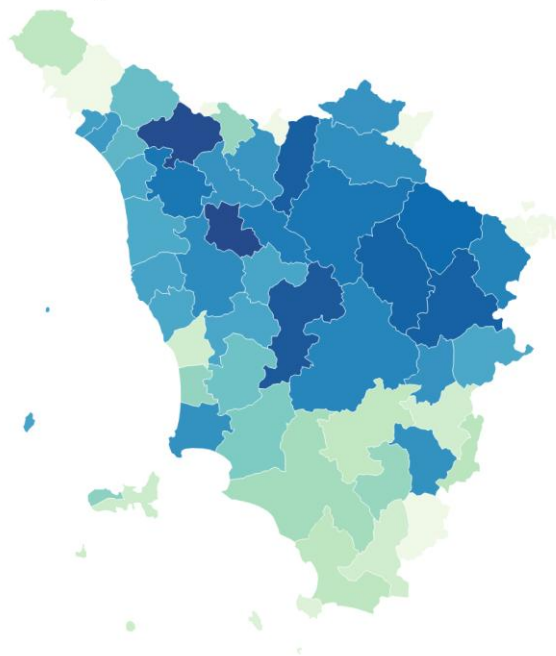
Involved in the value chain (distr.)



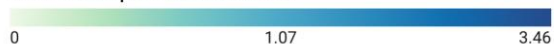
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APP 2: TERRITORIAL DISTRIBUTION OF INTERNATIONAL EXPORTS

Directly involved in the shock

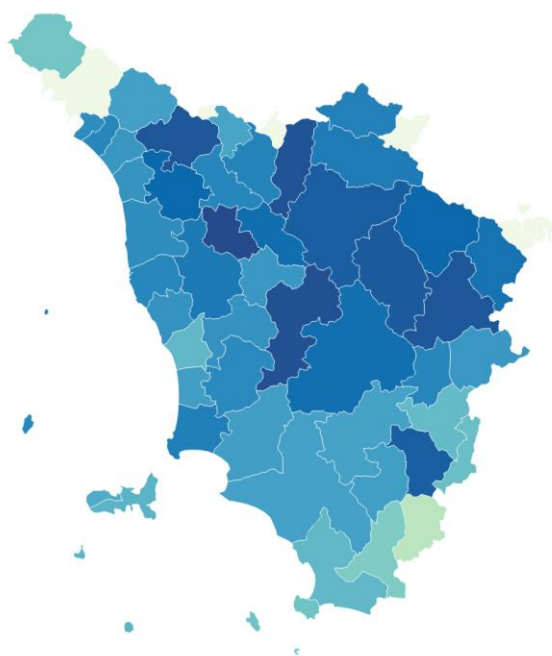


Millions euros per thousands abitanti

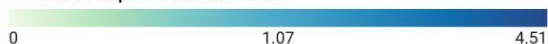


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Involved in the value chain

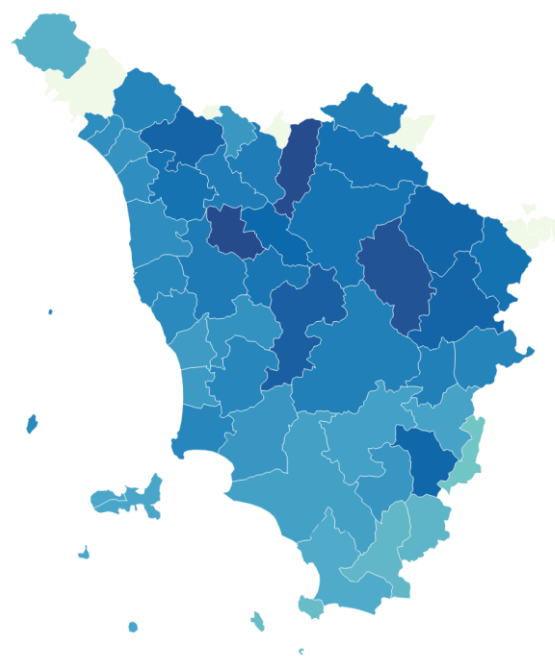


Millions euros per thousands abitanti



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Involved in the value chain (distr.)



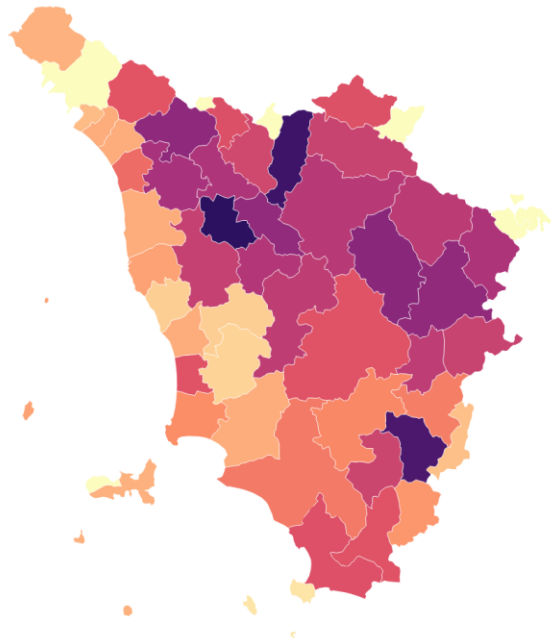
Millions euros per thousands abitanti



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APP 3: TERRITORIAL DISTRIBUTION OF TRADITIONAL SECTORS

Directly involved in the shock

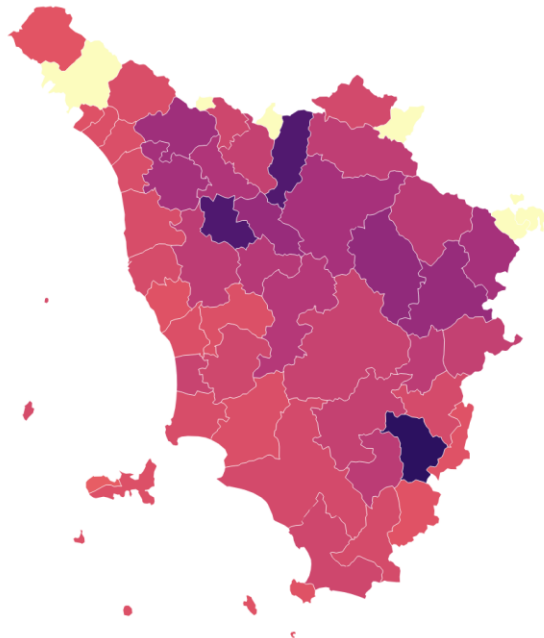


Millions euros per thousands abitants

0 0.35 4.27

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Involved in the value chain

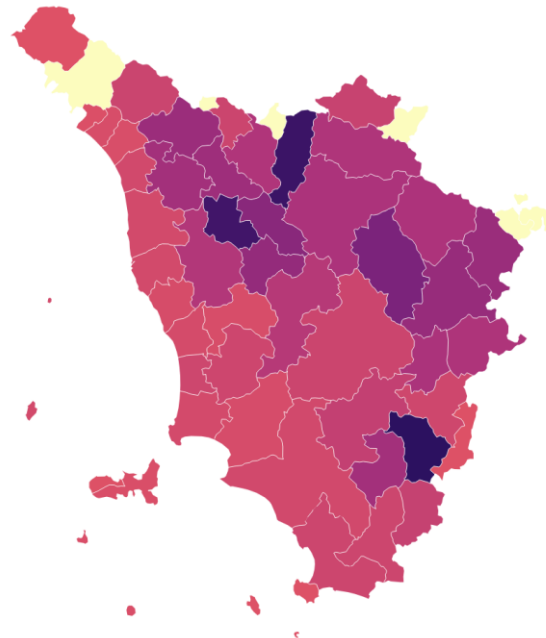


Millions euros per thousands abitants

0 0.35 6.34

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Involved in the value chain (distr.)



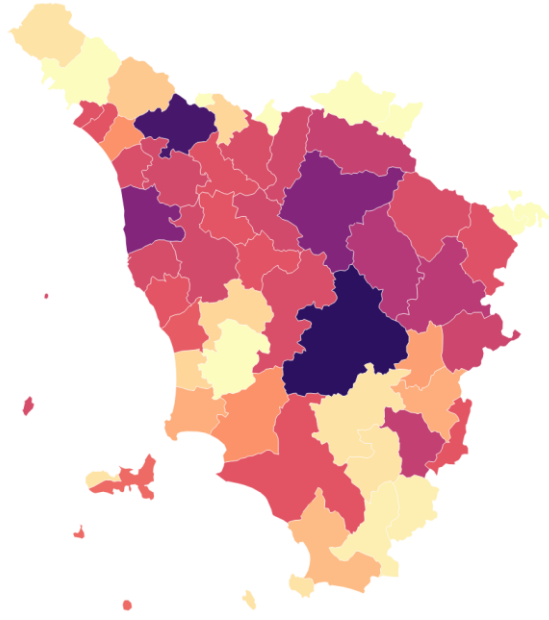
Millions euros per thousands abitants

0 0.35 5.67

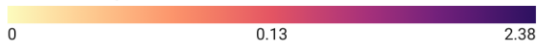
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APP 4: TERRITORIAL DISTRIBUTION OF HIGH-TECH SECTORS

Directly involved in the shock

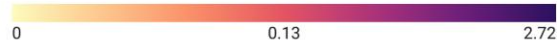
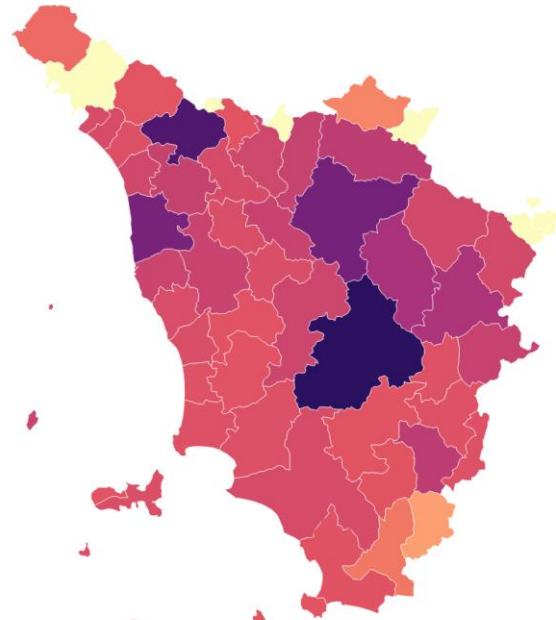


Millions euros per thousands abitants



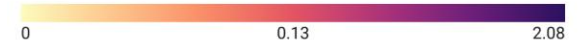
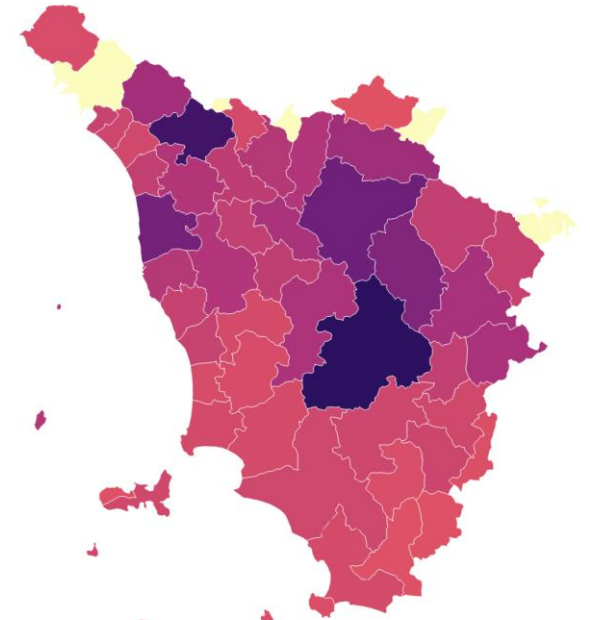
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Involved in the value chain



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Involved in the value chain (distr.)



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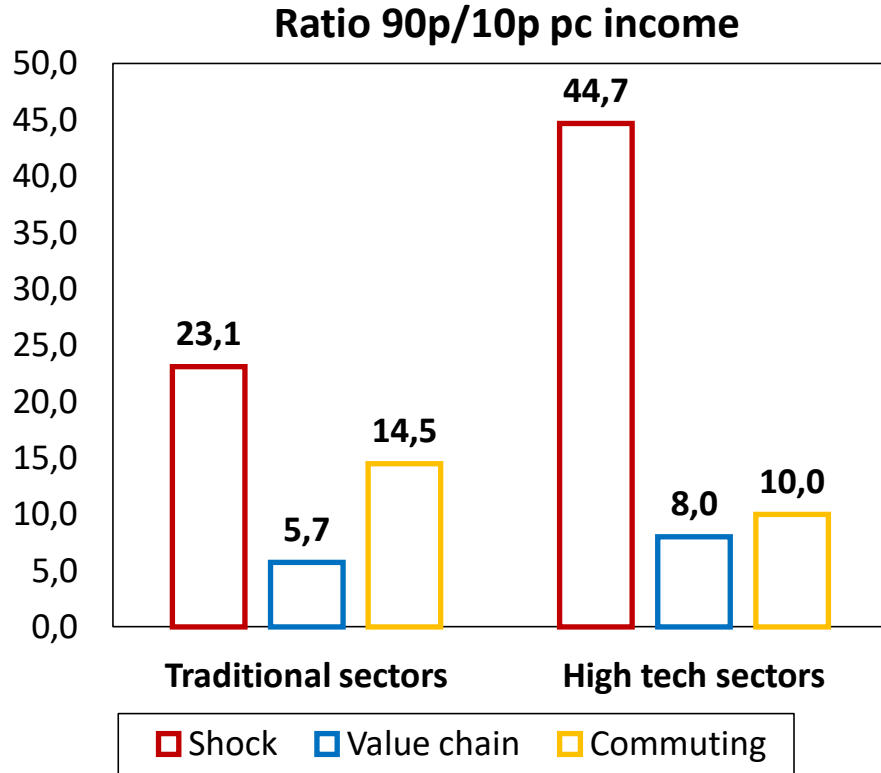
IMPACTS ON TERRITORIAL POLARIZATION

	Ratio p90/p10 pc income		
	Shock	Value chain (gen.)*	Value chain (distr.)**
Internal consumption	1,866	1,751	1,494
International export	14,103	4,965	3,746
Traditional sectors	23,073	5,719	4,849
High tech sectors	44,660	7,994	5,415

* only value chain; ** value chain + commuting

The 4 considered shocks do exert heterogeneous impacts on Tuscan LMAs. These are particularly concentrated in space in the case of high-tech sectors. However, the role played by value chain relations and commuting is extremely powerful.

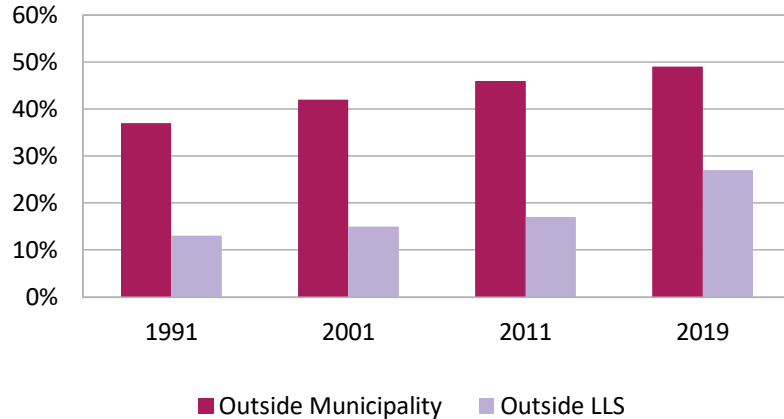
EFFECTIVENESS IN REDUCING TERRITORIAL POLARIZATION: VALUE CHAINS VS COMMUTING



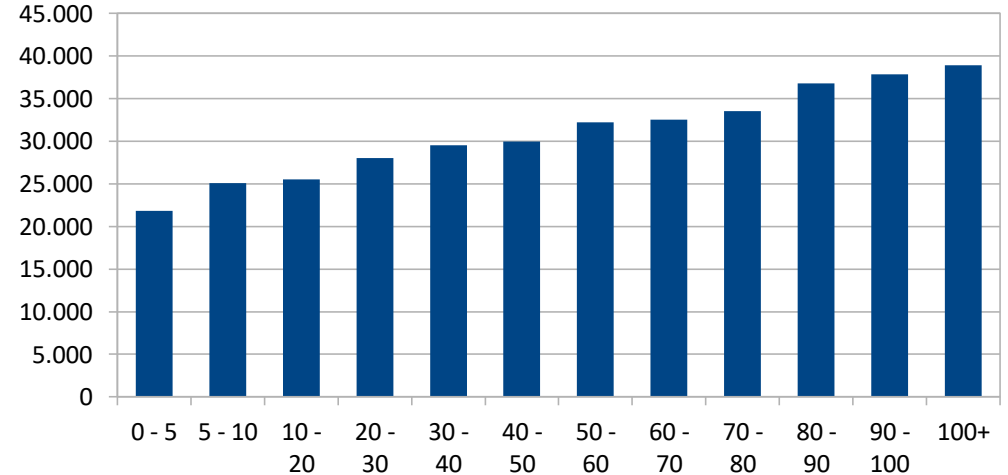
- Value chain and commuting also exert a very different role in mitigating territorial disparities depending on the types of shock
- E.g., for high-tech sectors commuting is comparable to value chain relations in reducing territorial disparities; for traditional sectors value chain relations are far more relevant

A SHORT FOCUS ON COMMUTING (1)

DAILY COMMUTERS BY DISTANCE (ISTAT DATA)

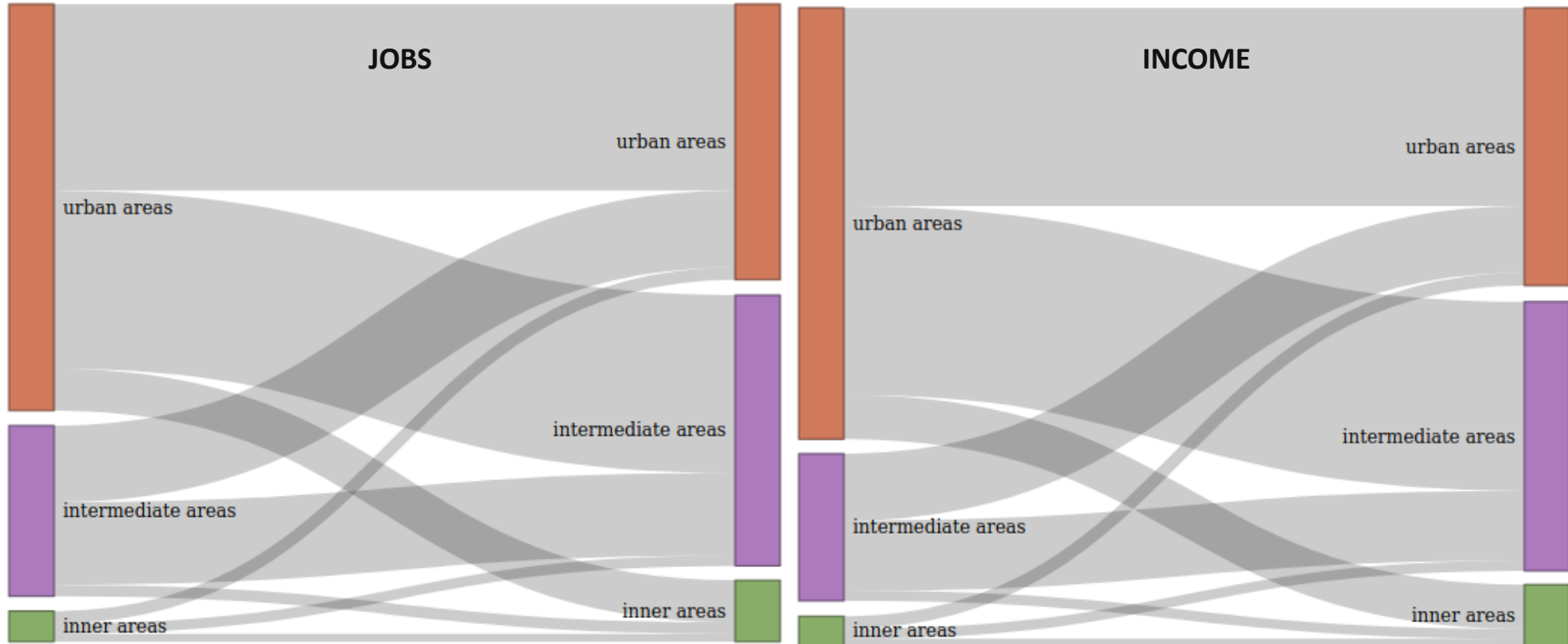


AVERAGE INCOME (EURO) BY DISTANCE IN KM



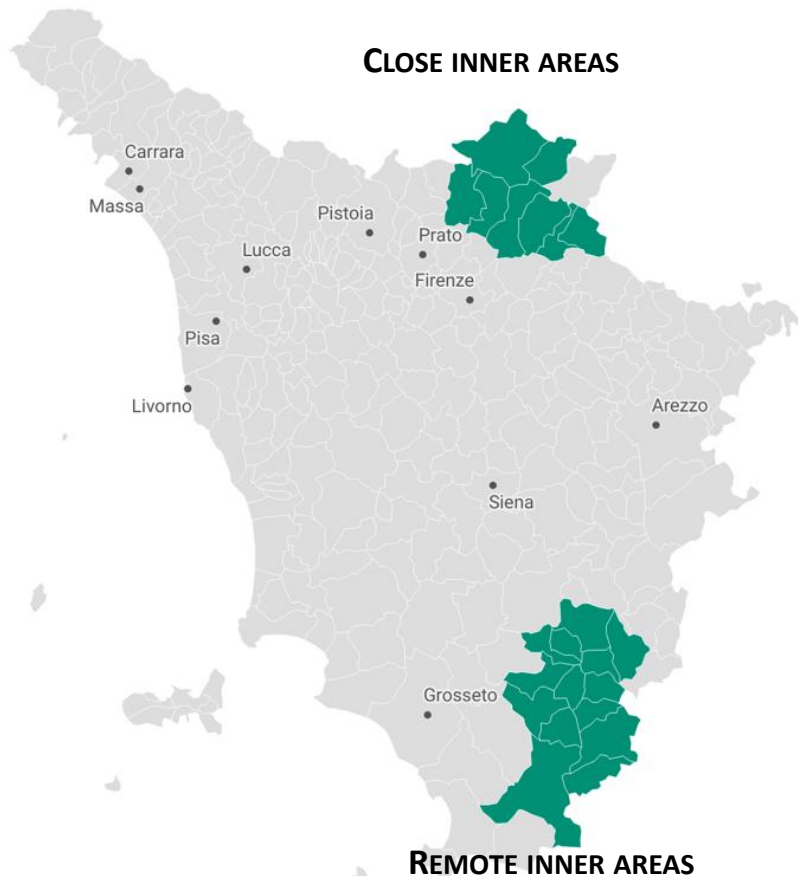
- Data show that commuting distances are growing
- Elaborations per head and per income show that workers with high income jobs commute on longer distance

A SHORT FOCUS ON COMMUTING (2)



The redistributive effect by a sankey diagram

APP 6: INNER AREAS CLOSE TO LARGE CITIES VS REMOTE INNER AREAS

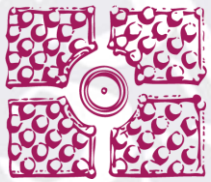


<i>Local income composition (%)</i>	Residents' total income (intern. + extern. earned)		Residents' partial income (only extern. earned)	
	CLOSE AREAS	REMOTE AREAS	CLOSE AREAS	REMOTE AREAS
FROM OTHER INNER AREAS	61,6%	78,4%	1,4%	7,0%
FROM INTERMEDIATE AREAS	4,1%	8,8%	10,6%	37,9%
FROM URBAN AREAS	34,3%	12,8%	88,1%	55,1%

Inner areas close to main cities can offer a significant share of job opportunities to their residents through commuting, while remote inner areas must rely more on attracting firms locally and on participating in value chains

CONCLUDING REMARKS (AND FUTURE WORK)

- the analysis tools presented, which allow for more in-depth knowledge of the territorial effects related to the different phases of income generation and distribution, are the basis for the implementation of more targeted and effective development policies (differentiated by type of territory);
- to measure the overall territorial effects of economic activation it is crucial to integrate the reconstruction of value chains (intermediate exchanges between firms) with commuting fluxes, which are growing, especially for the most qualified jobs;
- attention to commuting must also include the associated environmental costs and explore the possibilities offered by remote working;
- as for future work, IRPET is estimating a matrix of sub-regional distribution of consumption, aimed to complete the income cycle and to add induced impacts to direct and indirect ones.



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Thanks for your attention