

Istituto
Regionale
Programmazione
Economica
Toscana

•Research Project on a Multiregional Econometric Model for Italy: some key points

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Starting point:

(where do we stand in IRPET)

IRPET has a long tradition in estimating multiregional SUT and building models using the traditional multi-regional I-O framework.

Main features:

1. Supply-Use Table for each region (NUTS 2: 20 regions);
2. Multiregional trade table (main approach: initials estimates based on a modified gravity model);
3. High level of detail (30 sectors, 59 products, 12 cons. functions, ...)

Models intensively utilized for impact analysis of different types of policies/shocks.

Our Needs:

(reasons to go
further our model)

Go further demand driven economic analysis in order to:

- a) better analysis of structural evolution/changes
- b) better responses in terms of policy analysis



Main aspects:

1. Need to simulate long term structural forecast
2. Need to embody public finance variables in the model;
3. Need to use micro-data in order to take into consideration distributive causes and effects of policies and shocks

A possible solution:

Starting from MRIO model (which covers I-O tables for each Italian region, Regional Accounts, multiregional/international trade of Italian regions, ...) we would like to build a:

1. structural
2. multi-regional/sectoral
3. possibly with micro-macro linkage (households)

Model linked to **INFORUM SYSTEM**

WHY INFORUM
(for IRPET)?

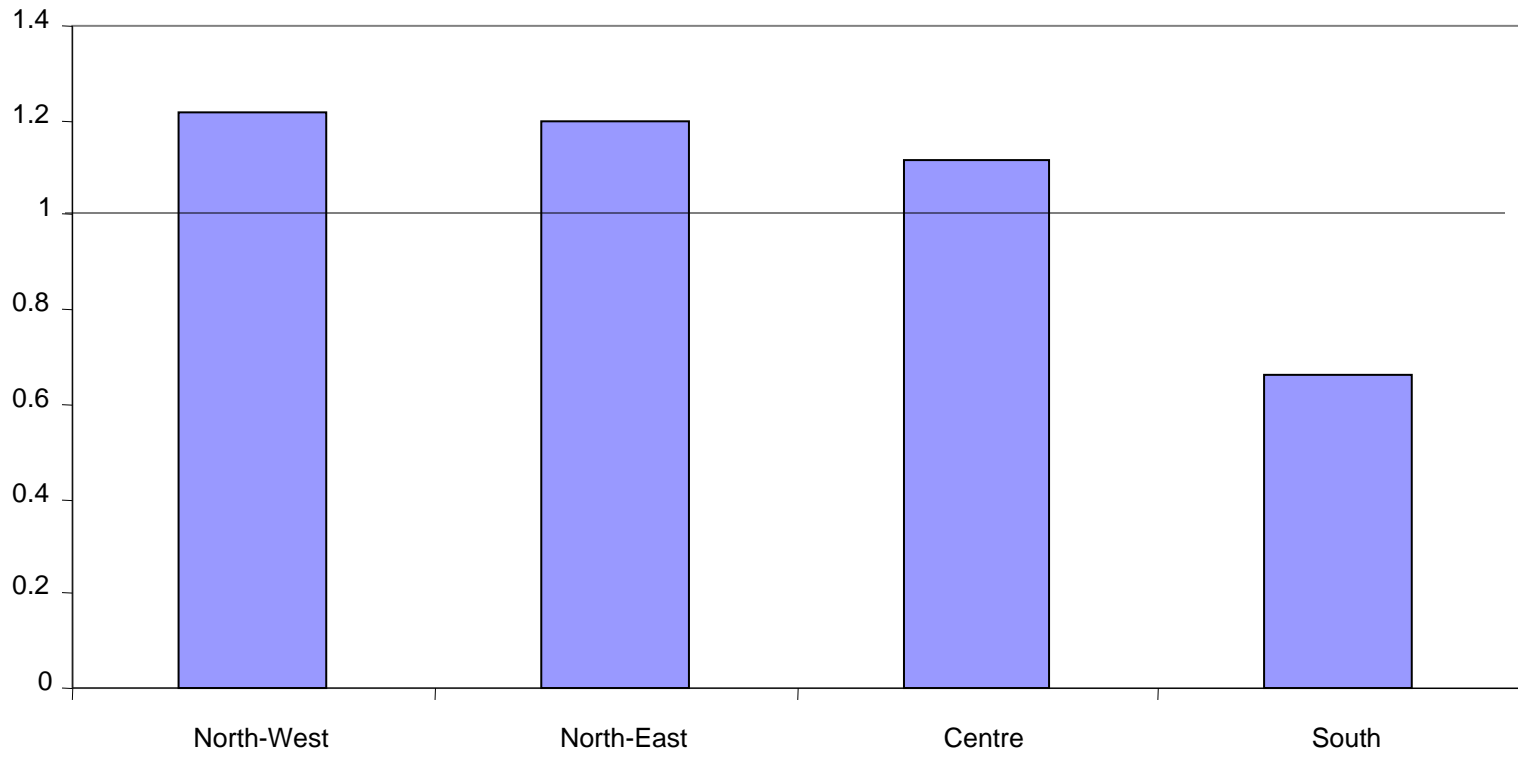
- To share your approach to economic analysis (dynamic, bottom-up, interindustry, macroeconomic);
- to develop a model that combines I-O structure and econometric equations;
- to tie our multiregional model to an international system of models in order to get a global consistent scenario.

WHY IRPET (for
INFORUM)?

- Italy is characterized by a higher level of regional disparities
- A possible institutional change: **federalism**

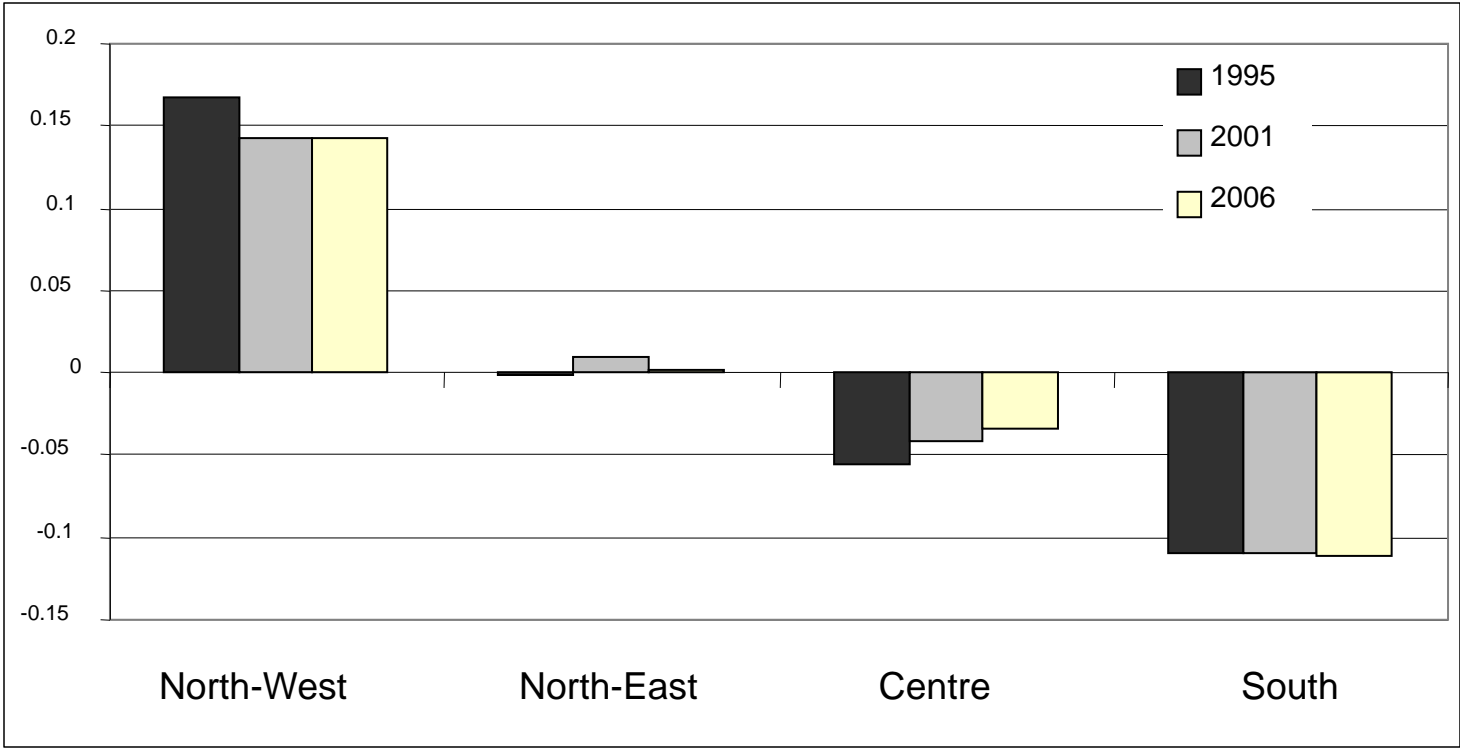
Italian Regional disparities: a quick look of pc GDP

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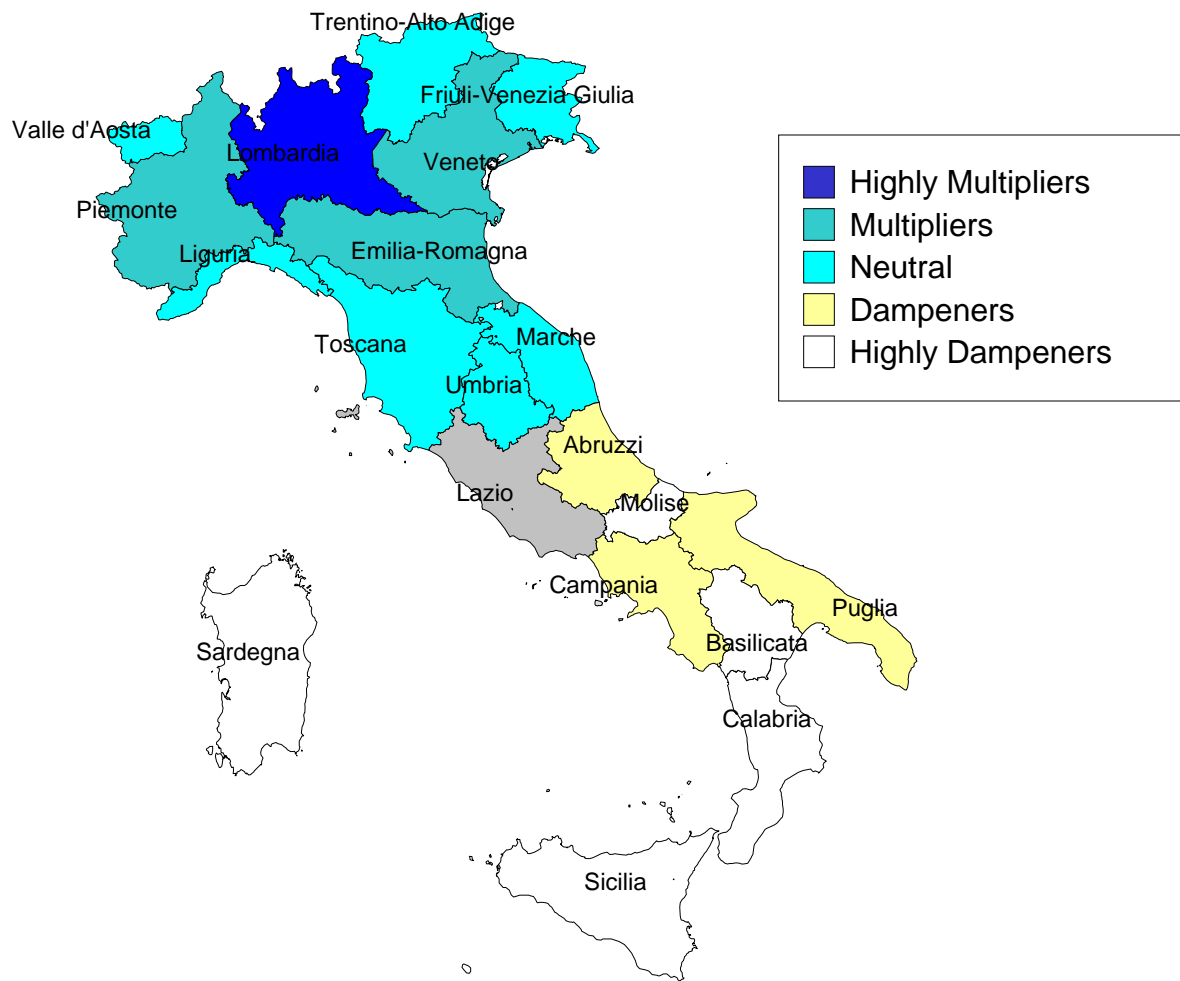


Italian Regional disparities: what does it mean in terms on impact (1)

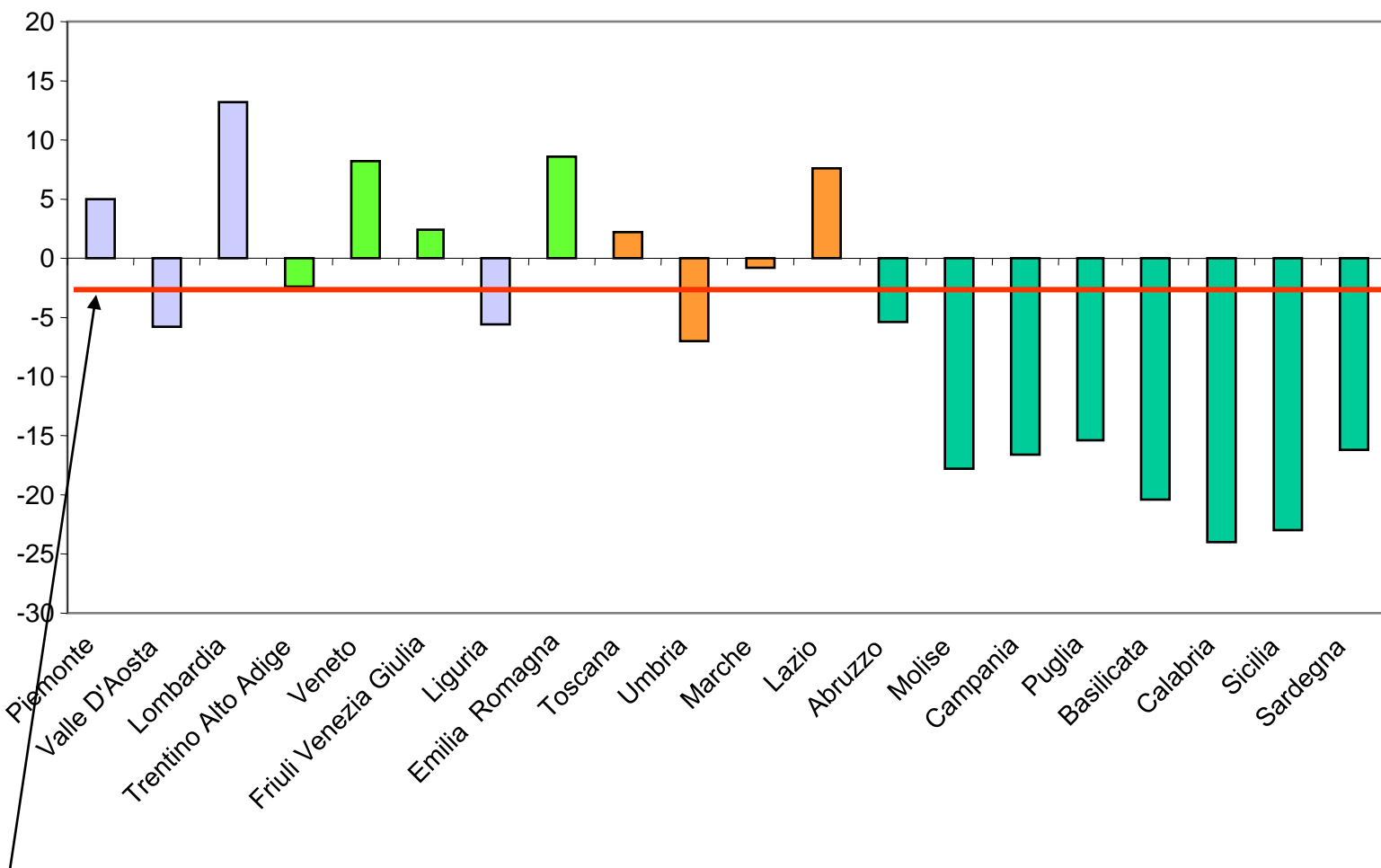
Marginal interregional trade balance over GDP



Italian Regional disparities: what does it mean in terms of impact (2)



Possible effects of Federalism starting point: PSB ratio (net of Debt interests) 2006



Italy: +1

-3% PSBR: Eurozone deficit/PIL threshold

More on:

1. Estimating procedure
2. I-O model structure



See for instance: L. Ghezzi, R. Panicià, S. Rosignoli, *The role of export in the process of growth, an analysis of Italian regions using a multiregional I-O model*, in "Energy Policy and International Competitiveness" (eds. M. Grassini e R. Bardazzi), Florence University Press, 2009

If you like, just a quick look.....



Foglio di lavoro
di Microsoft Excel

A research project step by step:

Two different stages:

1st stage: using an interdependent **top-down** approach (this is a preliminary step)

↳ Starting in
september

2nd stage: using an interdependent **bottom-up** approach

↳ Starting in January 2011
(hopefully)

1st stage

Building the model exploiting entirely a huge advantage: the **INTIMO** model



In this step INTIMO maintains its characteristics and continues to be linked with Bilateral Trade Model (BTM)

This preliminary step is used as a laboratory to test hypotheses, models linkages and ... last but not least making ourself more confident with INFORUM

Top- Down part

Macro-Regional blocks of equations in order to localize the national simulation, in terms of demand, produced by INTIMO to: Tuscany+Other MacroRegions (to be decided). INTIMO is also the ultimate constraint for all regional simulations

Interdependent part

Using the multi-regional trade model

Very concise formalization:

$$D_{reg} = \Phi(D_{intimo})$$

$$X_{reg} = \Theta(D_{reg})$$

Pros : simplest way

Cons : lack of regional differentiations in parameters and equations specifications so a quasi atheoretical approach

Gradual implementation of a multiregional intedependent bottom-up model in the INTIMO model.

MR part of the model:

$$D_{reg} = \Phi(\text{RegVar}, \text{INTIMOvar})$$

$$X_{reg} = \Theta(D_{reg}, \text{INTIMOvar})$$

$$D_{ita} = \sum D_{reg}$$

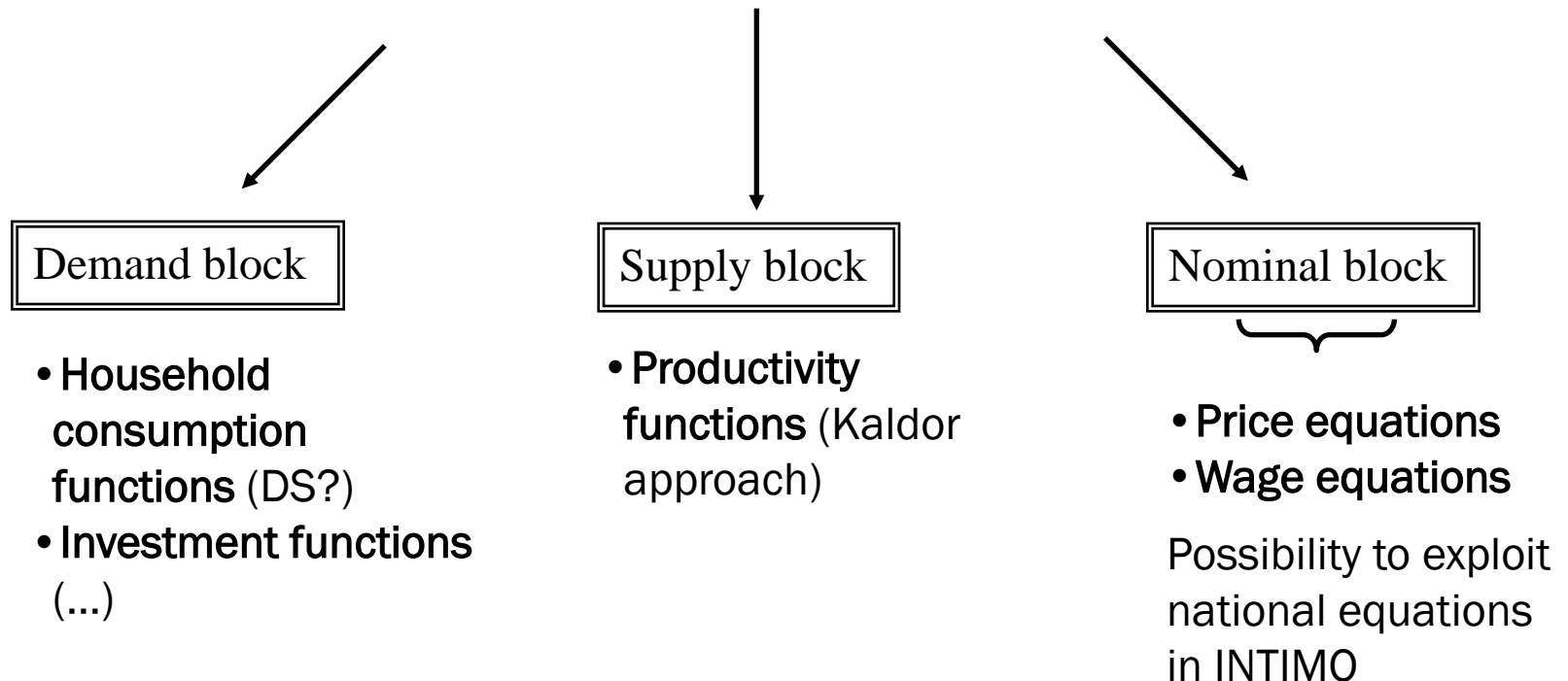
$$X_{ita} = \sum X_{reg}$$

Where: $\Phi = \Phi_1, \Phi_2, \dots, \Phi_i \dots \Phi_n$ i=1, n regions

$$\Theta = \Theta_1, \Theta_2, \dots, \Theta_i \dots \Theta_n$$

Something on theorethical features....

Less formalized: at the end for all regions at least equations on:



Potential implication: there will be a multiregional model for Italy ... could we extend the Bilateral Trade Model in order to include the Italian regions in the MR model?

Given that we are improving the MR trade estimation by using a survey jointly with Bank of Italy

That's all for now: in the next INFORUM conference we hope to present some results

Arrivederci