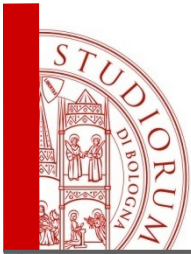


Centralized vs Decentralized Tourism (Economic) Policies: a Spatial Interaction Model Framework

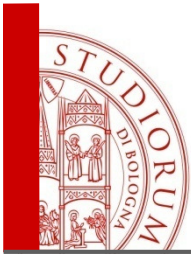
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Outline

1. Motivations
2. Research Questions
3. The Model
4. Empirical Results and Policy Implications
5. Future Research



Motivations

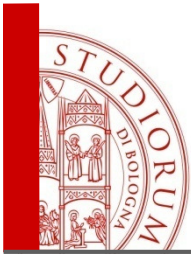
- **Centralized (national) vs decentralized (regional) tourism policies** → the choice of centralizing public policies at the national level or, on the contrary, of decentralizing them at the regional (or local) level is widely discussed in the literature, with pros and cons (Hayek 1945; Musgrave 1959; Tiebout 1956; Oates 1968, 1972; Salmon 1987; Ostrom *et al* 1993; Prud'Homme 1995; Breton 1996; Qian and Weingast 1997; Bardhan and Mookherjee 1998; Oates 1999; Yüksel *et al* 2005)
- **Decentralization pros and cons**
 - pros → better allocative efficiency, more efficiency, cost recovery, cooperation and vigilance, reduction of power abuses, improvement of political stability
 - cons → duplication and waste of resources, possibility of elites captures, lower local governments' capacity to manage effectively, increase of local public spending

Motivations (2)

- Potential **competition/complementarity between regions** in terms of their attractivity factors may imply a range of complex and competing interests at various geographical scales
- In particular, in a **framework of regional competition**, a central (national) policy may be necessary to offset or coordinate the competing and clashing regional interests
- In **Italy**, UNESCO's World Heritage Sites (WHS) endowment of neighbouring regions may have an overall negative effect on its inflows of tourists (Patuelli, Mussoni and Candela, 2013)
 - tourists consider, in forming their travelling choices, the UNESCO endowment of alternative destinations, generating spatial substitution (competition)

Motivations (3)

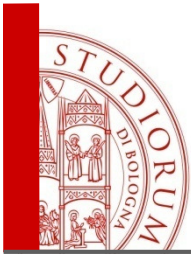
- **Case study: Italian domestic tourism**
 - Tourism is one of the fastest growing and most profitable sectors of the Italian economy
 - In Italy (20) regions take an active role in promoting tourism
 - Domestic tourism in Italy represents the greatest share of the entire tourism sector
 - Policy variables analysed (expected to affect tourism flows)
 - UNESCO's World Heritage Sites (WHS) endowment
 - public spending in recreational, cultural and religious activities (share of total regional public spending)
 - tourism specialization (share of total regional value added by "accommodation and restaurants, transports and communication, commerce, repairs")
 - museum quality (cultural demand per state institute)
 - diffusion of cultural and recreational events (tickets sold per inhabitant for theatrical and musical events)
 - off-season tourism (overnight stays per inhabitant)
 - prices index for hotels and restaurants
 - small and violent crime indices



Research Questions

Three research questions (two theoretical, one empirical):

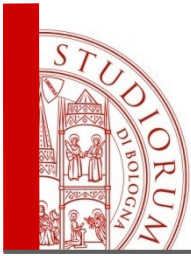
- 1) Which is the best choice between implementing tourism (economic) governance and policymaking at the **central (national)** or at the **local (regional)** level?
 - Regional endowment (i.e., attractivity factors) may positively influence arrivals to tourism destinations, providing a justification for local policies (e.g., lobbying towards the national government for obtaining UNESCO's designation)
 - However, regional competition may reduce the positive direct effect → the intervention of the central policy maker may be necessary to offset or coordinate local policies



Research Questions (2)

2) Which is the best way to **manage regional spillover effects**?

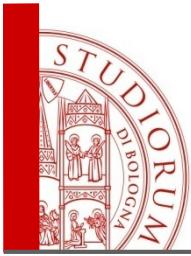
- Regions could use their attractivity factors to gain a competitive advantage over others, but at the same time they risk damaging the national interest to attract tourists (consumers) and increase the international market share
- It is therefore critical to correctly balance and coordinate tourism (economic) policies between the national and regional levels in order to effectively manage regional endowments to cater to demand



Research Questions (3)

- 3) In the case study of **Italian domestic tourism**, is it better to centralize or decentralize tourism policies (e.g., for obtaining and managing UNESCO designations)?

In summary, we deal with well-known issues, the management of regional spillover effects and (de)centralization of policies, but we use a different modeling framework: the **spatial interaction model framework**



Methodology

- 1. Spatial interaction model:** $T_{ij} = O^{\alpha} D^{\beta} d^{-\gamma}$
→ push variables (push effect), pull variables (pull effect), and deterrence variables (distance)
- 2. Keynesian multiplier**
→ economic impact of (tourism) policies (the tourism multiplier)
- 3. Regional economics framework**
→ management of regional spillover effects

The Model

1. Spatial interaction model

$$T_{ij} = x^{\alpha} y^{\beta} d^{-\gamma} \quad (\text{tourism flows from } i \text{ to } j)$$

$$T_{ji} = y^{\alpha} x^{\beta} d^{-\gamma} = x^{\beta} y^{\alpha} d^{-\gamma} \quad (\text{tourism flows from } j \text{ to } i)$$

where, for a generic policy variable, x is the value it takes in region i and y is its value in region j ; d is the distance between regions (deterrence); α is the parameter value of the policy variable evaluated at origin regions (generating outflows), β is the parameter value for destination regions (generating inflows); γ is the distance parameter

2. Keynesian multiplier

$$Y_i = m_i(T_{ji} - T_{ij}) = m_i d^{-\gamma} (x^{\beta} y^{\alpha} - x^{\alpha} y^{\beta}) \quad (\text{regional GDP of } i)$$

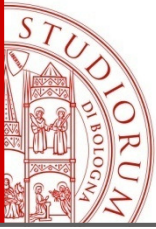
$$Y_j = m_j(T_{ij} - T_{ji}) = m_j d^{-\gamma} (x^{\alpha} y^{\beta} - x^{\beta} y^{\alpha}) \quad (\text{regional GDP of } j)$$

where $(T_{ji} - T_{ij})$ and $(T_{ij} - T_{ji})$ are proxies for regional (tourism) expenditures; m_i and m_j are the keynesian (tourism) multipliers of regions i and j . Here, we assume outgoing flows to be missed local expenditure

The Model (2)

3. Regional economics framework

- a) if α and $\beta = 0$ there is a complete lack of regional spillover effects (at the national level)
→ no effective regional policies (independent regions)
- b) if α or $\beta = 0$ only one region has spillover effects
→ only one effective regional policy, there is unilateral interaction between regions
- c) if α and $\beta \neq 0$ both regions have spillover effects
→ all effective regional policies, there is multilateral interaction between regions
- d) if $\alpha = \beta$ regional spillovers with the same intensity
→ regional policies compensate each other, regional policies being equal



The Model: 3 Scenarios

But which are the preferences on policy variables (x and y)?

We define three scenarios:

1. Unconditional optimal regional policies

→ let us assume each region can choose its own optimal policy, and also express a preference for other regions' policies (i.e., pursue its own exclusive interest)

$$\max_{x,y} Y_i = m_i d^{-\gamma} (x^\beta y^\alpha - x^\alpha y^\beta)$$

2. Conditional optimal regional policies

→ in reality, each region chooses its own optimal policy, given the policies chosen by other regions (administrative decentralization)

$$\max_x Y_i = m_i d^{-\gamma} (x^\beta y^\alpha - x^\alpha y^\beta)$$

$$\text{s.t. } x_{\min} \leq x \leq x_{\max} \text{ and given } y$$

$$\max_y Y_j = m_j d^{-\gamma} (x^\alpha y^\beta - x^\beta y^\alpha)$$

$$\text{s.t. } y_{\min} \leq y \leq y_{\max} \text{ and given } x$$

The Model: 3 Scenarios

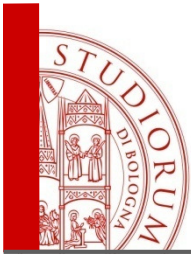
3. Optimal national policy

→ the central policymaker enforces a national policy in view of the national interest (max national income), independently from the regional distribution of income

$$\begin{aligned}\max_{x,y} W &= Y_i + Y_j \\ &= m_i d^{-\gamma} (x^\beta y^\alpha - x^\alpha y^\beta) + m_j d^{-\gamma} (x^\alpha y^\beta - x^\beta y^\alpha) \\ &= (m_i - m_j) d^{-\gamma} (x^\beta y^\alpha - x^\alpha y^\beta)\end{aligned}$$

with two different cases:

- if $m_i > m_j$ then $W = (m_i - m_j) d^{-\gamma} (x^\beta y^\alpha - x^\alpha y^\beta)$
→ national interest overlaps with region i 's interest
- if $m_i < m_j$ then $W = (m_j - m_i) d^{-\gamma} (x^\alpha y^\beta - x^\beta y^\alpha)$
→ national interest overlaps with region j 's interest



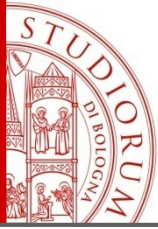
The Model Solutions

The pseudo-linear (monotonic) model is solved by bang-bang approach (corner solutions)

→ solutions given by the extreme values of the policy variables

$$x_{min} / x_{max} \text{ and } y_{min} / y_{max}$$

1. **Unconditional optimal regional policies** → Lemma 1
2. **Conditional optimal regional policies** → Theorem 1
3. **Optimal national policy** → Theorem 2



Scenario 1: Unconditional Optimal Regional Policies

Lemma 1: each region puts its own interest first, and prefers for the other region to implement an opposite regional policy → clashing regional interests

Table 1: Unconditional optimal regional policies (for region i , and $\beta \geq \alpha$)

	$\beta = 0$	$\beta > 0$	$\beta < 0$
$\alpha = 0$	Ineffective	$x_{max} ; y_{min}$	-
$\alpha > 0$	-	$x_{max} ; y_{min}$	-
$\alpha < 0$	$x_{max} ; y_{min}$	$x_{max} ; y_{min}$	$x_{max} ; y_{min}$

Scenario 2: Conditional Optimal Regional Policies

Theorem 1 (Cournot-Nash equilibrium): each region puts its own interest first, but can not condition other regions' policies, so that the interrelation of their choices produces the same regional policies → but, are these policies consistent with the national interest?

Table 2: Conditional optimal regional policies (for both regions, and $\beta \geq \alpha$)

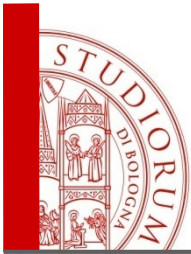
	$\beta = 0$	$\beta > 0$	$\beta < 0$
$\alpha = 0$	Ineffective	$x_{max} ; y_{max}$	-
$\alpha > 0$	-	$x_{max} ; y_{max}$	-
$\alpha < 0$	$x_{max} ; y_{max}$	$x_{max} ; y_{max}$	$x_{max} ; y_{max}$

Scenario 3: Optimal National Policy

Theorem 2: the national interest overlaps with the interest of the region with the higher tourism multiplier
 → it is necessary to coordinate the regional policies at a central level by opposite regional policies

Table 3: Optimal national policy (in the case $m_i > m_j$, and for $\beta \geq \alpha$)

	$\beta = 0$	$\beta > 0$	$\beta < 0$
$\alpha = 0$	Ineffective	$x_{max} ; y_{min}$	-
$\alpha > 0$	-	$x_{max} ; y_{min}$	-
$\alpha < 0$	$x_{max} ; y_{min}$	$x_{max} ; y_{min}$	$x_{max} ; y_{min}$

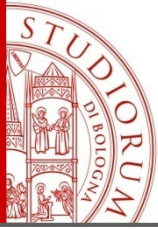


Theoretical Results

- **Theorem 1 (decentralized governance)** → if each region can choose its own optimal regional policy, but can not choose the other regional policies, every region would implement the same regional policies (Table 2)
 - this strategy would clash:
 - with other regions' interests (see Lemma 1)
 - potentially, with the national interest (see Theorem 2)
 - it is necessary a central (national) policy to coordinate and offset regional policies
- **Theorem 2 (centralized governance)** → from the point of view of the central policy maker, the national interest overlaps with those of the region with the higher tourism multiplier, and opposite regional policies must be enforced (Table 3)

Theoretical Results (2)

- **Centralized governance** is more efficient every time $\alpha \neq \beta$ (multilateral spillover effects), in order to coordinate or offset regional policies in view of the national interest
 - ❑ if α or $\beta = 0$ (only one region has spillover effects), there is unilateral interaction
 - ❑ if α and $\beta \neq 0$ (both regions have spillover effects), there is multilateral interaction
- **Decentralized governance** is more efficient
 - ❑ if $\alpha = \beta$ (same regional spillover effects), since regional policies compensate each other (regional policies being equal)
 - the central policy consists of monitoring the condition $\alpha = \beta$
 - ❑ if $m_i = m_j$ (same tourism multiplier), since regional policies have the same effects on national GDP (very rare)
- **Ineffective policies**
 - ❑ if α and $\beta = 0$ (no regional spillover effects), regional policies are ineffective



Empirical Analysis: the Case of Italy

- **Data**

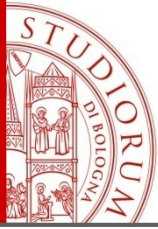
- Source: Italian Statistics Institute (ISTAT)
- 12-years panel (years 1998–2009) of domestic tourism flows, between the 20 Italian regions

- **Dependent variable** → arrivals (T_{ijt}), from region i to region j , at time t
- **Key variables** → policy variables affecting tourism flows
- **Control variables** → other regional characteristics (e.g., population, GDP)
- **Origin-related variables** (X_{it}) / **Destination-related variables** (X_{jt})
- **Bilateral variable** → distance, which drops because of fixed effects
- **Empirical model**

$$T_{ijt} = \exp(\mu_{ij} + \delta year_t + \alpha X_{it} + \beta X_{jt}) + \varepsilon_{ijt}$$

where μ_{ij} are individual fixed effects, and $year_t$ are time fixed effects

- **Equality test** → chi squared test against $H_0: \alpha = \beta$

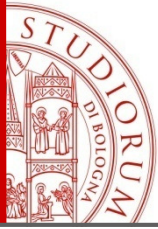


Empirical Results: Italian tourism

Variables		Coefficients	$\alpha = \beta$ test
1.	UNESCO World Heritage Sites	$\alpha < 0^*$ and $\beta > 0$	No
2.	Public spending in recreational, cultural and religious activities	α and $\beta = 0$	Yes
3.	Tourism specialization	$\alpha > 0$ and $\beta > 0^*$	Yes
4.	Museum quality	$\alpha < 0^*$ and $\beta > 0$	No
5.	Diffusion of cultural and recreational events	$\alpha = 0$ and $\beta > 0$	Yes
6.	Off-season tourism	$\alpha = 0$ and $\beta > 0$	No
7.	Prices of hotels and restaurants	$\alpha = 0$ and $\beta < 0$	No
8.	Small crime	$\alpha > 0$ and $\beta = 0$	No
9.	Violent crime	$\alpha > 0^*$ and $\beta = 0$	Yes
* = marginally significant			

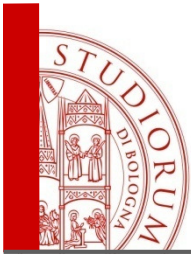
Policy Implications

- A **national governance** is optimal when $\alpha \neq \beta$ (multilateral spillover effects) \rightarrow the specific optimal policies for each pair of regions depend:
 - on the coefficients α and β
 - on the regional tourism multiplier
 - if $m_i > m_j$, the national policy overlaps with region i 's policy
 - if $m_i < m_j$, the national policy overlaps with region j 's policy
- A **regional governance** is optimal when $\alpha = \beta$ (same regional spillovers effects), since regional policies compensate each other (regional policies being equal)
- **Economic policies are ineffective**, both at the national and the regional level, when $\alpha = \beta = 0$ (no regional spillovers effects)



Policy Implications (2)

Variables	Coefficients	$\alpha = \beta$ test	Tourism Policies
1. UNESCO Sites	$\alpha < 0^*$ and $\beta > 0$	No	National
2. Public spending in recreational, cultural and religious activities	α and $\beta = 0$	Yes	<i>Ineffective Policies</i>
3. Tourism specialization	$\alpha > 0$ and $\beta > 0^*$	Yes	Regional
4. Museum quality	$\alpha < 0^*$ and $\beta > 0$	No	National
5. Diffusion of cultural and recreational events	$\alpha = 0$ and $\beta > 0$	Yes	Regional
6. Off-season tourism	$\alpha = 0$ and $\beta > 0$	No	National
7. Prices of hotels and restaurants	$\alpha = 0$ and $\beta < 0$	No	National
8. Small crime	$\alpha > 0$ and $\beta = 0$	No	National
9. Violent crime	$\alpha > 0^*$ and $\beta = 0$	Yes	Regional
* = marginally significant			



Policy Implications (3)

1) **National tourism policies** are more efficient for:

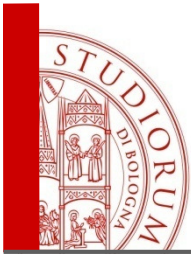
- UNESCO sites
- Museum quality
- Off-season tourism
- Prices of hotels and restaurants
- Small crime

2) **Regional tourism policies** are more efficient for:

- Tourism specialization
- Diffusion of cultural and recreational events
- Violent crime

3) **Tourism policies are ineffective** for

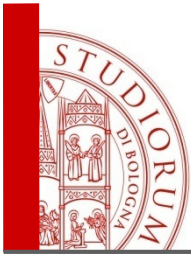
- Public spending in recreational, cultural and religious activities



Policy Implications (4)

E.g., for **UNESCO sites** national tourism policies are more efficient:

- since $\alpha < 0^*$ and $\beta > 0$, UNESCO sites do appear to influence arrivals to tourism destinations for Italian domestic tourism
- the local policymakers' lobbying towards the national government for obtaining UNESCO designation for additional cultural sites appears to be justified, but regional policies need to be coordinated at a national level



An example of re-centralisation

ITALIAN CONSTITUTIONAL LAW 3/2001

- Tourism is under regional exclusive jurisdiction
- Other strictly related fields are regional exclusive jurisdiction as well



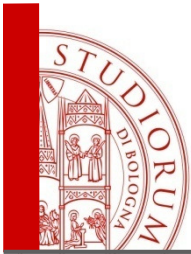
- ☐ transports (ports and civil airports, large transport networks and navigation)
- ☐ infrastructures
- ☐ sports

PROPOSAL OF CONSTITUTIONAL REFORM

- In the tourism sector, brings back almost all the powers to the State
- Tourism will become national exclusive jurisdiction together with other related fields



- ☐ infrastructures
- ☐ transports
- ☐ food safety
- ☐ security
- ☐ environment
- ☐ ecosystems
- ☐ cultural heritage
- ☐ landscapes
- ☐ ports and airports for civilian use



Future Research

- Evaluating the potential **spatial competition or spatial complementarity** between regions in terms of their attractivity factors, by introducing this aspect in the theoretical model
- **Updating the data**
- Performing an empirical analysis for **different nations** and for **international tourism**
- Applying the same modeling framework not only to tourism policies, but also to **any other spatial interaction context** (e.g., firms relocation, trade flows, migration or commuting)