Ports and regional economic development

GLOBAL PORTS AND URBAN DEVELOPMENT: CHALLENGES AND OPPORTUNITIES
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A. Smith (1776) argued: “As by means of water-carriage, a more extensive market is opened to every sort of industry than what land-carriage alone can afford it, so it is upon the sea-coast, and along the banks of navigable rivers, that industry of every kind naturally begins to subdivide and improve itself …”

A. Weber (1929): "break-in-bulk" locations, i.e. firms look for locations where two or more modes of transportation may connect

R. Goss (1990) stressed how ports drive the economic development as they increase competition through enlargement of the market areas of firms, thereby reducing prices for consumers

Gripaios-Gripaios (1995): rent generated by ports spreads through an economic system larger than the one in which the port is embedded

Musso (1996): ports are more and more necessary for other countries economies while more and more economically less significant for their regions

OECD (2010): Port-cities score lower on several economic indicators than the national average of their country
Dramatic changes occurred in a relatively short period of time:

- **In the economy:**
  - The boost of seaborne trade
  - Spatial relocation of production
  - The growing importance of logistics

- **In maritime transport:**
  - Ships’ size
  - Specialisation
  - Unitisation (containerisation)
  - Transhipment

- **In the industrial organization of transport industry:**
  - Cooperation: Strategic Alliances, M&As, vertical integration
  - Development of dry ports and inland terminals
  - Control of intermodal and logistic cycles, logistics outsourcing
Changes affecting the port sector

- Port operations become:
  - more capital intensive
  - labour saving
  - space consuming

- In port market:
  - more competition between ports, lower tariffs and lower port times (pressures from liners)
  - risk of overcapacity
  - decreases in producer’s (terminal operator) surpluses and increases in demand (liners, MTOs) surpluses (caption of port economic rent)

- In port economies:
  - relocation of formerly port-oriented industries
  - weaker spatial links with the port (intermodality, transshipment...)

How are those changes impacting on ports?

- Dramatic increase of port throughput, mainly in the containerized sector
- (consequently) increasing demand for new port areas
- Focus on the effectiveness of transport infrastructure in moving cargo to/from the port from/to the hinterland or from/to the inland terminals (or dry ports)
Methods for estimating port impact

- Direct surveys based on interviews and questionnaires or microeconomic data on firms (Coppens et al., 2007)
- Models based on productive specialization that use a mix of tools typical of applied economics, such as
  - comparison with a control region (Rietveld, 1994; Ferrari et al. 2010) or
  - analysis of productive specializations (Musso et al., 2000).
Port impact on regions

- The focus on one or more of the three components affects the results
- Direct impact today is less important than it was in the past
- Attracted and induced impacts are far from being clearly identifiable

Direct
- Transportation services
  - Port services

Attracted
- Export firms
  - Import firms

Induced
- Firms that gain some advantages from the port
The global-local mismatch

Local impact
- Jobs (+)
- Income (+)
- Noise (-)
- Congestion (-)

National or Regional impact
- Welfare (+)
- Jobs (+)
- Income (+)
Why does a mismatch occur?

- Labor usually comes from the local port economy and its payback stops in port region;
- Capital rarely originates from local systems while it is quite often provided by national and international systems (and consequently its payback doesn't stop in port regions);
- Firms may be local actors, but horizontal concentration (between big stevedoring and logistics companies) and vertical integration (between shipping companies and terminal operators) tend to internationalize firms ownership;
- Port land use is usually regulated by leasing and concession contracts but quite often land prices are a strategic tool for attracting companies and they don't reflect real value of the space;
- The use of the fixed social capital of the local system (namely transport infrastructures) is free or it pays fees sometimes lower than costs (e.g. subsidization) to economic agents who often operate on a wider territorial scale (rail, motorway operators);
- Taxes and duties are just partly earned and managed by local port systems;
- Port users benefits are more and more spread all over the world, while negative impacts affect mainly port regions.
How to manage the mismatch

- Highlighting the relevance of the port cluster
- Enhance the co-operation among ports (strengthening their role in respect to the huge ship-owners and carriers)
- Put in evidence some hidden relationships among the port and the production system
- The role of knowledge and human capital in the port activities (i.e. ITS, Hardware & Softwares, etc.)
  - The role of tertiary activities in the “maritime metropolitan areas” (Marchese, 1996)
- The role of port as innovators (i.e. Green ports concept)
The regional impact of Italian port sector

- Musso et al. (2000, IJME):
  - The port of Genova determined about 35,000 jobs (either direct, induced and indirect impact)

- Censis-Federazione del mare 2004:
  - port direct employment: 26,000 jobs
  - GDP: 4,467 million € (current value, 2003)

- Censis-Federazione del mare 2011:
  - port direct employment: 33,000 jobs
  - GDP: 6,718 million € (current value, 2009)
The cluster of the port of Genova

The darkest areas present the highest relationship degree with the port.
Joint research OECD, University of Genova & Bocconi University (Milan):

- Two-stage econometric model involving the estimation of a Tobit traffic model and the employment equation
- The dataset: several socioeconomic variables (market labour, population, productive structure, innovation propensity, etc.) collected at NUTS-2 or TL-3 scale
- The geography: 116 European ports (belonging to 10 Countries) selected through a threshold on port throughput (passengers and goods)
The sample of investigated ports

Requirements:
• At least 3 million tons of throughput on average in 2005-2009
• At least 1 million of passengers on average in 2005-2009
Representativeness of the sample of ports

GOODS TRAFFIC

PASSENGERS TRAFFIC
What do we aim at?

- Develop a tool to investigate this “frayed relation” between ports and their cities
- Support the idea that port infrastructures represent common capital for larger regions than the port regions
- Identify the order of magnitude of the economic impact of European ports on local development
- Investigate the role of European ports as driver of socioeconomic development
Port activities impact on the employment

Relation between port traffic and total employment in the TL3 (log)

Relation between services employment and port traffic in the TL3 (log)
Preliminary results

Taking into account that we are still working on the model in order to refine the results, it turns out that:

- There is a positive influence of port throughput on local development.
- That influence is weak (elasticity is less than 0.05) and weaker than that of other transport infrastructures (i.e. airports).
- The employment impact is positive and higher on tertiary activities than industrial ones.
Ports and regional economic development – C. Ferrari

Thanks for your attention!