srm

Logistics integration between ports and the railway system: the North Western Mediterranean

maritime economy

2015

This text is extracted from the 2nd Annual Report
"Italian Maritime Economy. Terminals, logistics and its players:
challenges from a pivotal Mediterranean position"
published in 2015 by SRM Permanent Observatory
on Maritime Economy: www.srm-maritimeconomy.com

This report was written by Oliviero BACCELLI, Director of CERTeT
Centre for Research on Regional Economics, Transport and Tourism,
and Director, Master in Economics and Management of Transport, Logistics,
and Infrastructure, Bocconi University, Milan

Graphic design: Marina RIPOLI

TABLE OF CONTENTS

Introduction

The aim of this paper is to deepen, through analysis of benchmarks and best practices, the role of public policy in supporting intermodal rail to and from the ports aimed at raising their competitiveness and at mitigating the environmental externalities that affect the relationship between the port and the city, in Green port logic.

The work is introduced by a summary of the EU policies that encourage modal shift from road to rail and by some reflections on the role of ports within sustainable logistics systems and on the institutional modes of governance that may or may not enhance this aspect. EU policies, particularly those relating to the trans-European network (TEN-T), the Marco Polo program to promote pilot projects for modal shift and the guidelines for state aid to railway companies are the main regulatory framework for policies at a national and local scale. The core of this work is focused on the cases of leading ports in order to identify the organizational and trade aspects of direct investment promoted by the public sector and aimed at promoting intermodal rail transportation to and from the ports within the North Western Mediterranean. The policies analyzed here are those carried out by Port Authorities, local and national administrations and by public-private partnerships and they are related to the leading import-export ports in the Northern Mediterranean between Valencia and Koper whose market of reference is Southern Europe.

The study is structured to address the issue from the methodological point of view, taking account of the technological and organizational evolutions of ports caused by the significant growth rate of unitized traffic (container and Ro/Ro). A further aim of the study is to address the operational and management issues, which are different from the ones related to the railway system. The work concludes with some food for thought and policy indications.

Expectations of Community policy in terms of modal shift to and from the ports

The possibility of combining different modes of transport in a flexible way and to be able to implement the concept of “sustainable mobility” represents an utmost priority for European transportation policies in general and for the development of ports in particular (Haralambides, H., & Acciaro, M., 2013). The European Commission has promoted and carried out many programs, such as the ones of the Trans-European Network (TEN-T) and the pilot projects for modal shift (Marco Polo) aimed at

encouraging investments and at supporting the implementation of an integrated services and networks system which will empower all modes of transport.

The main general European planning document that contains specific proposals to be adopted in favor of modal shift is the White Paper, whose last draft dates back to March 2011. The centrality of modal shift in Europe is due to the fact that 31,8% of primary energy is consumed by the transport sector which is also responsible for 23,7% of total CO_2 emissions and 19.7% of greenhouse gas emissions[1]. It is road transport that gives the uppermost contribution to this value and it corresponds to 25% of all the EU emissions. More and more effective laws have been passed in order to reduce this figure. The White Paper "Roadmap to a single European transport area – towards a competitive and resource-efficient transport system" points out the need to develop the transport sector and outlines future challenges and political initiatives to be carried out in order to face these tests. One of the key aspects – defined as "crucial" – of the Commission's political stance is to reduce European dependence on oil. Its availability will be reduced and the sources of supply less secure in the next decades as it is also well known that its price will tend to rise if consumption is not reduced. The increase in fuel prices will not only have a strong impact on transport but it will also influence inflation and the balance of trade. If the development route of the mobility system does not change, in 2050 the dependence of transport on oil will probably still be slightly less than 90% and the renewable energy sources will only marginally exceed the goal of 10% fixed for 2020. The reduction of greenhouse gas emissions is another important goal and the European Union has set itself the objective to reduce it by 80-90% before 2050 (compared to 1990 levels). The White Paper will undergo a mid-term review process, which includes a stakeholders' consultancy aimed at pointing out the need to develop policies that are consistent with the general goals outlined in 2011. This will make it possible to empower the tools needed to give transport policies the chance to positively influence economic development.

These policy choices involve multimodal solutions based on transport by inland waterways and rail. Especially for flows to and from the ports where the economies of scale and specialization to be activated are relevant and where policies of modal shift are among the main instruments available for the mitigation of environmental impact aimed at achieving the goals set by the Green Port policies (Mc Kinnon, 2013). These aspects must ensure low congestion and low administrative/operative costs at the same time. In relation to the carriage of goods by rail, the White Paper

points out the need for dedicated corridors optimized in terms of energy use, emis-

[1] Source: Eu Transport Statistical Pocketbook 2014, data referring to 2012.

sions and environmental impact. These should be attractive due to the reliability of transport, the low congestion and the low operative and administrative costs. However, the attractiveness of rail transport has to deal with the current poor quality and inefficiency of the service, which is the cause of its inability to adequately compete with the other modalities and especially with the road one.

The White Paper identifies a number of specific objectives for a transport system to and from the ports that could be competitive and efficient in terms of resource:

1. Optimizing multimodal logistics chains by shifting 50% of road freight over 300 km to other modes such as rail or waterborne transport. Objective to be achieved by 2050 through an adjustment of infrastructure.
2. Making a multimodal TEN-T "core network" operational by 2030 and completing a high quality and capacity network with a corresponding set of information services by 2050.
3. Guaranteeing better connections between the core seaports and the rail freight by 2050.
4. Establishing a common European framework for multimodal transport information, management and payment system.
5. Moving towards full application of 'user pays' and 'polluter pays' principles.

With regards to the policies of modern infrastructure development, smart pricing and financing the EU policy has been focusing on cross-border aspects (TEN-T networks) which will make it possible to reduce times and costs of people and goods interchanges between EU countries. This is surely one of the most ambitious and complex policies carried out by the European Union (Baccelli, 2001 and Baccelli et al., 2013). The notion of trans-European networks was born in 1992 with the signing of the Maastricht Treaty. The articles 154, 155 and 156 of Title XV established that the European Communities would contribute to the development of trans-European networks in the sectors of transport, telecommunications and energy as key elements in the creation and consolidation of the internal market while identifying common interest projects, undertaking the actions needed to pursue the harmonization and interoperability of the networks and contributing to fund them[2].

We are talking about transportation corridors whose aim is to bring down the barriers that prevent the free movement of goods and people within the EU's member states.

The implementation of these projects is mainly comprised of the construction of

[2] In the Consolidated Version of the Treaty on European Union and of the Treaty on the Functioning of the European Union the articles 155, 156, 157 have been respectively named 170, 171, 172.

infrastructure that will help us to get rid of bottlenecks along European lines of communication. For the transport sector the EU has identified the so-called "core network" which provides a clear definition of TEN-T corridors on which to concentrate investments by 2030. In order to further boost the development of the network the Commission has established European coordinators who will make it possible to get the main stakeholders involved under a single leadership. This will give them the chance to focus on the completion of the cross-border sections and on the development of intermodality and interoperability.

The upgrade and evolution of the policies aimed at developing the TEN-T networks have been constant over time and at the end of 2013 the EU approved a revision of the priorities and tools available. This brought to an end a political debate that lasted almost two years and was aimed at clarifying and strengthening the role of the EU in this field. The complexity and high cost of most of the TEN-T corridors has forced the various parties involved (European Commission, INEA, Central Government Agencies, Local Authorities and the companies created for the realization of the project) to imagine innovative financing tools both for the infrastructure and for the specific policies of modal shift that will secure the future use of the works planned.

As far as the infrastructural aspect is concerned, the most recent financial supports established by the European Commission to ease the realization of the trans-European network are ruled by the European program "Connecting Europe Facility" (Regulation No. 1316 of December 2013) which lays down the general principles for the granting of a financial contribution of the Community in the field of trans-European transport and energy. The European Union has a role as a co-financier of TEN projects and it mainly uses 4 tools: funds linked to the TEN program, the European Regional Development Fund (ERDF) and loans from the European Investment Bank (EIB). The Regulations provide that Community funding cannot exceed 50% of the eligible costs for studies and 20% of the eligible cost for the work, with up to 30% in the case of cross-border sections and 40% for cross-border sections in particularly sensitive areas from the environmental point of view (such as the Alps).

The new TEN-T are comprised of two network levels: the core network and the comprehensive network. The former being the entire network for the whole of Europe and the latter being the selection of its main parts to be completed by 2030. The core network consists of 10 fundamental corridors and will group 85 economical centers with their airports, 138 sea and inland ports and 28 border crossing points with third countries. The INEA Agency provides funding and promotion for the projects within the new network. Funding is provided through annual calls.

Another program directly funded by the European Union is the Marco Polo program and it is aimed at granting community financial assistance to improve the

environmental performances of the freight transport system. The regulation (EC) No. 1692/2006 of the European Parliament and of the Council of 24th October 2006 establishes the second Marco Polo program which incorporates the objectives of the first (EC Regulation no. 1382/2003): reducing congestion on the roads and improving the environmental performance of intermodal freight transport to achieve an efficient and sustainable mobility system that adds value to the European Union, while promoting the economic, social or territorial cohesion. During the period 2003-2012 the Marco Polo program has provided more than € 430 million for 200 new transport services and new proposals to support the modal shift, which have involved more than 720 European companies. The goal is to shift part of the international road freight traffic (measured in tonnes/km) to short sea shipping, rail and inland waterway or to a combination of modes of transport, which will help minimize the use of road journeys.

The program aims at:

- Overcoming barriers and obstacles which prevent the correct functioning of the European freight market, the competitiveness of rail, inland waterways, short sea shipping, the efficiency of the transport chain and the modification or creation of accessory infrastructure.
- Shifting road freight to short range waterborne transport, to rail and inland waterways transport or to a combination of modes in which road journeys are as short as possible.
- Minimizing road freight without compromising global productivity or employment rate.
- Improving cooperation to reach high levels in methods and procedures within the goods transport chain according to logistics needs.

There are six types of actions eligible for funding:

- Catalyst actions aimed at overcoming the obstacles of the goods transport market. The main goal of these actions is to maximize the use of existing infrastructure (including motorways of the sea) to improve synergy between rail freight, inland navigation and short sea shipping.
- Actions of intermodal shifting aimed at shifting road freight to other modes or at combining the different modes to minimize road journeys. These actions are funded for a maximum of six months after which they must be completed autonomously.

- Common actions of awareness aimed at improving cooperation and structurally

optimizing the methods and procedures of work in the goods transport chain according to logistics needs. These projects are funded for a maximum of 24 months.

- Actions for the motorways of the sea whose main aim is to shift road freight to the other modes. The motorways of the sea were introduced by the 2001 White Paper on European transport policy. The projects can be funded for a maximum of 60 months.
- Actions for the reduction of traffic aimed at studying new solutions to make transport more sustainable without compromising competitiveness and the communities' wealth. The projects can be funded for a maximum of 60 months.

The contribution paid by the EU is based either on the number of tonnes per kilometer shifted from road to other modes of transport or on the number of vehicles per kilometer shifted from road. The aim of this criterion is to reward high quality projects. The program is particularly attentive to sensitive areas and to high urban density areas. For the latter the European Commission evaluates the actions presented by taking into account their positive impact on the congestion of the road system but it also considers very highly their advantages for the environment and their sustainability.

The 2014 program is managed by INEA that also manages the TEN-T program. In order to be awarded a grant the projects need to have some specific characteristics:

- Proven non profitability of the projects without grants in the start-up phase.
- The amount of goods shifted from road to other more sustainable modes must not be inferior to: 60 million ton/km for the intermodal actions (13 million ton/km if they are concerned with projects for waterborne transport), 30 million ton/km for catalyst actions, 200 million ton/km for the motorways of the sea and 80 million ton/km for the actions that are concerned with the reduction of traffic.
- The grant cannot be higher than € 2.00 per 500 ton/km or, in case of actions concerned with the reduction of traffic, € 2.00 every 25 vehicles/km.

Among the projects funded in 2014 within the Marco Polo program which concern the rail interconnections market to and from the ports we can find: the project Kamel presented by Hannibal S.p.A. of Eurogate Group aimed at developing a new train between Melzo (Milan) and Karlsruhe to revamp the container traffic to and from Liguria ports and other destinations/origins such as Padova, Frosinone, Prato and Pescara; the project LogoPort promoted by the Agency for promotion and development of the German inland port of Duisburg to support railway connections to the Belgian ports of Antwerp and Zeebrugge.

The Marco Polo program used all the funds available and became an example for

similar projects on the national and regional scale as in Emilia Romagna[3] and Friuli Venezia Giulia[4]. The Marco Polo program has been radically revised to further strengthen the development of technological innovations and economic coordination which are specifically funded within the wider *Connecting Europe Facility Programme*.

Sectorial policies for modal shift

The EU guidelines on state aid for railway companies (2008/C 184/07) were published in 2008 and move on from the fact that rail transport in Europe is not attractive. The Commission observes that from the '60s to the end of the 20th century the sector had been in constant decline. Not only did the traffic of goods and people on railway decrease in relative terms compared to all other modes of transport but it also decreased in absolute terms because the volumes transported had been higher in 1970 than in 2000. The commission also points out how traditional railway companies hadn't been able to meet the levels of reliability and punctuality required by customers and how this resulted in a shift of traffic from railways to other forms of transport, above all road.

According to the commission the relative decline of the European Railway sector is mainly due to the organization of the transport offer which has always been characterized by national and monopoly models that have some important consequences:

- Because of the lack of competition on national railways companies haven't been pushed to lower functioning costs and to develop new services. Their activity hasn't produced sufficient incomes to cover the overall costs and the expenses for necessary investments. Sometimes important investments haven't been carried out and sometimes the states have forced the national companies to make the investment even when they did not have sufficient resources to finance them. This resulted in heavy indebtedness for railway companies and prevented them from developing.
- The lack of normalization and interoperability in the networks of other sectors (maritime and air transport above all) has produced a mosaic of national railways characterized by different gauges, railway signaling and safety measures that make them incompatible preventing the railway companies from taking ad-

[3] Regional Act n° 15/2009, updated by the Regional Act n° 10/2014.
[4] Regional Act n° 15/2004, updated and reviewed many times.

vantage of the economies of scale. These could arise from an infrastructure and from a rolling stock designed for a great and unique market instead of 26 small national markets[5].

To revamp the use of railways the EU is carrying out a policy based on three main routes:

6. gradually creating the necessary conditions for competition to become an important part of the railway services market
7. promoting technical normalization and harmonization on European railways aimed at developing full interoperability on a European scale
8. granting financial contributions at the EU level through the CEF program and structural funds.

With regard to public intervention in favor of the railway sector, the Commission considers this type of support justified in some cases, given the high costs of adjustment that the sector requires. It is therefore widely recognized that the injection of public funds in the rail transport sector has always been conspicuous.

In light of these considerations, the Commission states that aid to the railway industry can be authorized when they contribute to the realization of an integrated European market, open to competition and interoperable and to Community objectives of sustainable mobility. In this context it is necessary to determine whether the financial aid paid by public authorities causes distortions of competition contrary to the common interest.

The guidelines regard the public financing of railway companies in the following sections:

- Public aid to railway companies through financing of infrastructures.
- Aid for purchase and refurbishment of rolling stock.
- Forgiveness of debts carried out by states with the aim of rebalancing the railway companies.
- Aid for reorganization of railway companies in the goods branch.
- Aid for coordination of transport.
- Granting of state guarantees to railway companies.

With regards to “coordination” the Commission points out that article 73 of the treaty states that aid demanded for coordination needs must be compatible with the treaty itself.

This granting is based on three main elements:

[5] Cyprus and the Republic of Malta have no railways.

- Transport activities produce relevant external diseconomies which cannot be taken into account due to the inherent difficulties of including external costs (as well as direct usage costs) in the pricing of access to transport infrastructure. This situation may produce disparities between the different modes of transport, which ought to be corrected by public authority support to those modes of transport that generate lower external costs.
- The transport sector may have to face problems of coordination in the economic sense of the term. This is the case when it becomes necessary to adopt a common interoperability standard for the railways or when it becomes necessary to connect different transport networks.
- Railway companies may find themselves in a situation where they are unable to get all the benefits they had expected because of the efforts made in research, development and innovation. This constitutes a market failure.

With regards to the railway sector, aid given to satisfy the needs of the coordination of transport may take different shapes:

1. aiuti Aid for use of infrastructure: they are given to the companies that bear the expense of the infrastructure they use. Companies that provide transport services through other modes do not bear such expense.
2. Aid for reduction of external costs: they are aimed at encouraging modal shift to railway because this modality usually produces lower external costs compared to other modes, such as road.
3. Aid for interoperability and, according to coordination needs, aid aimed at enforcing safety, eliminating technical obstacles and reducing noise pollution.
4. Aid for research and development in response to the needs of transport coordination.

Analyzing individual cases is beyond the scope of this work. But it is rather necessary to carry out an analysis of funding for “the reduction of external costs”, i.e. for all measures designed to produce a modal shift from road to rail transport. The Commission details the criteria for aid for rail infrastructure use, to reduce external costs and for interoperability:

With regards to aid for the reduction of external costs the expenses eligible are represented by the fraction of external costs that rail transport permits to avoid in comparison with those of other modes. Article 10 of directive law 2001/14/CE gives member States the possibility to establish a compensation system for: environmental costs, costs linked to accidents and infrastructure costs not covered in other competitor modes – if it is proven that there is no coverage of these costs and only if they exceed the equivalent specific costs of rail transport.

The Commission assumes that aid is necessary and proportionate when its intensity remains below 30% of the total cost of rail transport, in the limits of 50% of eligible costs. If these limits are exceeded Member States must demonstrate the necessity and proportionality of the aid measures. Aid must be strictly limited to a compensation of the higher cost-opportunity of rail transport in comparison to other more polluting modes. When the recipient of the aid is a railway company it must be proved that the aid has a real effect of encouraging the modal shift to rail. Theoretically this means that the aid must be reflected in the price paid by the passenger or charger, since these are the people who must make a choice between rail and more polluting transport modes such as road. Finally, there must be realistic prospects that the traffic transferred to rail will be maintained, so as to ensure that modal shift is permanent.

The limits to aid established by the guidelines are applicable both when the aid is financed entirely from public resources and when it is funded in whole or in part by Community resources. Authorized aid may not be combined with other State aid or with other forms of Community financing if such combination produces a level of aid higher than the one provided in these guidelines. In addition, all aid must be notified to the Commission and obtain a decision of compatibility and must be limited to a maximum period of five years, in order to allow the Commission to reconsider the aid in the light of the results obtained and, if necessary, authorize its renewal.

The promotion of intermodality and logistics as a strategic opportunity for the development of port activities: the cases of Spain, France and Slovenia

Port Authorities, Regions and European Union countries have promoted various initiatives both inside and outside of the walled ports with the aim of promoting intermodality and the development of new logistics services increasingly necessary to compete globally today (Notteboom 2008, Song 2003, Heaver, Meersman and van de Voorde 2001). For the growth of a modern port it is crucial to build an adequate rail connection network that will make it possible to shift goods to the logistics plants in dry port and to the target territory. The promotion of intermodal transport sets itself a series of specific aims in terms of economic benefits:

- Reduced costs of transport due to the use of the most suitable mode for each journey to be made (co-modality principle).

- Increased productivity and efficiency in response to the growing need for flexibility for port services arising from the phenomenon of gigantic ships.
- Reduced congestion on road infrastructure.
- Better return on public and private infrastructure investment in the sector of ports.
- Reduced energy consumption and contribution to improved air and environment quality.

In this context, the analysis will be mainly devoted to the policy promoted by various public sector actors (Port Authorities, local administrations, public-private companies promoted for this specific aim) to encourage modal shift of port traffic from road to rail in the main North Western Mediterranean hubs. These interventions are mainly aimed at mitigating the effects of market failures arising from the need to reduce environmental externalities, to encourage economic coordination between the various public and private actors involved in the maritime logistics chain and to enhance direct and indirect external positive effects arising from higher competition between ports which is achieved through expanded contestable lots for port services. The subject is of a strategic importance for the development of the port from the point of view of operativeness, in particular for container and RO/RO traffics. This is due to:

1. Commercial reasons: offering intermodal services is crucial to expand the commercial basin of reference of the ports for middle and long haul and to reduce monopolistic or oligopolistic contexts.
2. Optimized organization of port areas due to the fact that intermodality promotes a cycle of production based on continuous production (24 hours a day all week as is the case for activities in support of the cycle of the ship), which makes it possible to optimize the time and the space available. A situation that is very different from the one of road transport, which concentrates traffic in the first part of the day and suffers from many restrictions to movement throughout the year.

The analysis of the transport policy instruments carried out in this work takes into account the different underlying economic logics. In particular, four types of intervention can be outlined:

1. market based instruments: policies based on market incentives and disincentives aimed at encouraging modal shift;
2. regulation based instruments: policies regarding technical standards and restrictions arising from regulation elements, i.e. prescriptive constraints given in concessions;
3. instruments based on information and telecommunication development: policies related to information for the user and operator training, linked to forms of

"coordination" in the economic sense of the term;
4. instruments based on the construction of infrastructure or the provision of services: policies relating to the field of public infrastructure or public services.

The case of Spain: the promotion of intermodality through the construction of new infrastructure with European standards and the use of direct incentives

The policies for the development of intermodality in the transport sector are defined by the Ministerio de Fomento. The main national guidelines are included in the "Plan de Infraestructuras, Transporte y Vivienda (PITVI) 2012-2014" and in the "Estrategia Logística de España" where political priorities established by the EU are applied to the Spanish context. In these programs it is clearly stated that there is a need to rebalance land trade in favor of rail, also and especially with regard to connections with the hinterland of the port nodes[6]. The "Plan estratégico para el impulso del transporte ferroviario de mercancías en España" establishes the necessary measures to achieve modal rebalance in favor of rail. The Government aims at increasing the market share of rail from 4% in 2010 to 10% in 2020. In the scenario outlined by 2020 up to 77 million tonnes a year will have to be carried via rail. This is equivalent to 19000 heavy vehicles less every day and to savings in terms of environmental externalities equal to € 252 million a year. To achieve this ambitious goal the Ministerio de Fomento estimated that € 1.8 billion will have to be invested to get rid of the bottlenecks in the connections between ports and the national network[7].
It is in pursuit of these objectives that the Spanish government has recently announced its intention to establish an investment fund for the land accessibility to ports, which will have an estimated capacity of about € 1.5 billion and will be used to finance the investment in road and rail connections to seaports[8].
According to early rumors, the Fund will be fed by contributions from the same Iberian Port Authorities. This tool will provide grants for infrastructure work to improve the systems of terrestrial connection with ports in the form of loans.
Its implementation is closely linked to the recent change in the law on state concessions to port terminals, which gave private operators in the ports the opportunity

to extend the term of the concession from 35 to 50 years according to the investment programs which include funding for terrestrial connection infrastructure[9].

[6] Documents available on the website of the Ministerio de Fomento, www.fomento.es
[7] Ministerio de Fomento, "Plan Estratégico para el impulso del transporte ferroviario de mercancia en España", Madrid, 14th September 2010.
[8] The creation of this Fund was announced by press release in July 2014. See Ministerio de Fomento, Nota de prensa, Madrid, 4th July 2014.
[9] See: Real Decreto-ley 8/2014, de aprobación de medidas urgentes para el crecimiento, la competitividad y la eficiencia,

Along with this intervention the Ministry is also engaged in negotiating tables aimed at activating an aid instrument for intermodal transport which provides a single contribution to the operators that use rail instead of road for the traffic of goods with foreign countries. The contribution, which was calculated by taking into account similar experiences of French policies initiated more than a decade ago, was initially estimated at 21 Euro per intermodal transport unit (ITU). At the moment (March 2015), however, the measure has not entered into force yet[10].

In this context the role of Port Authorities in the rail sector is regulated by Ley 48/2003, modified by Ley 33/2010 and is mainly that of railway infrastructure administrators that determine the rules to gain access to the network and to operate within port boundary[11]. The competitive landscape of interest for Italy regarding intermodality to and from the ports is characterized by the major role of the ports of Barcelona and Valencia, important gateways for traffic to and from the continent and the Iberian Peninsula. Valencia handled 4,441,949 TEUs in 2014 and more than half of it was reshipped through transhipment to other ports, which means that Valencia has an enormous capability to attract international lines that run through the Mediterranean. On the other hand, Barcelona handled 1,893,299 TEUs of which only 312.314 TEUs through transhipment, which means that most of the goods arriving at the Catalan port are either sent to their final destinations by land or manufactured within the logistics areas of the port.

In this scenario it is clear that railway and intermodal connections between ports and inland areas are increasingly important because they determine the ability of a port to compete in the short, medium and long term. The Mediterranean corridor – one of the two TEN-T corridors that run through Spain – passes through these two ports. In this respect, it is appropriate to remind that the inclusion of an infrastructure in the TEN-T corridors determines its capability to attract investment aimed at developing it. Indeed, most of the intermodal traffic generated by the ports of Barcelona and Valencia develops on this route.

At the moment, several regular services are operated to and from these two ports: Barcelona is connected through rail with 26 destinations while Valencia with 14 destinations.

In detail, the port of Barcelona is the most projected towards European markets, in particular France, Italy, Germany, Belgium and Great Britain. In the railway connections to and from the port ten companies are currently operating. The share of

in BOE, num. 163, 5th July 2014.

[10] The implementation of these measures was announced by press release in July 2014. See Ministerio de Fomento, Nota de prensa, Madrid, 4th July 2014.

[11] See: Ley 48/2003, de régimen económico y de prestación de servicios de los puertos de interés general, 26th November 2003, in BOE núm. 284, 27th November 2003 and Ley 33/2010, de modificación de la Ley 48/2003, 5th August 2010, in BOE num. 191, 7th August 2010.

rail has increased from 2.6% in 2006 to 12% in 2014, thanks to the adjustment to 1435 mm of the gauge of some internal lines and of the networks that provide connections with France. The Autoridad Portuaria aims at reaching a modal share of rail of 20% by 2020[12].

In the container terminal a third bundle of tracks with international gauge was built in January 2011 to help to overcome the limitations represented by the Iberian gauge[13]. In addition to that, from December 2013 the Port Authority of Barcelona, in collaboration with RENFE, the main Spanish railway company, has boosted an expanded offering in intermodal port to and from Europe through the establishment of the company TP Nova, the result of the partnership between logistics operators Transportes Portuarios and Novatrans. TP Nova, which uses rolling stock provided by RENFE Mercancias, offers 4 weekly connections with Lyon, Perpiñan, Toulouse, Burdeos, Paris (Valenton) and Lille (Dourges). TP Nova expands and enriches the offer of railway between the Catalan capital and France, also characterized by the service Barcelyon. Barcelyon has been operative since 2009 and it is the result of a partnership between the Port Authority of Barcelona, Renfe and Naviland Cargo. This strategy has made it possible to increase the number of containers handled by rail from 154,522 TEUs of 2013 to 189,593 TEUs of 2014, marking an increase of 22.6%.

The Port Authority tries to expand its growth strategies also towards the dry port through the promotion and investment in several intermodal plants called "terminales marítimas interiores"[14]. Among these: Terminal Marítima de Zaragoza (tmZ), Puertos secos de Coslada (Madrid), Azuqueca de Henares y Yunquera de Henares (Guadalajara), Terminal Marítima Centro (tmC), Terminal Intermodal de Navarra, Terminal Marítima de Toulouse (tmT), Perpignan St Charles Conteneur Terminal (PSCCT). The Authority's aim is to build and participate in the management of a series of dry port infrastructures that will help to relieve congestion in the areas of the port and to create logistics centers that will attract bigger traffic to and from the Catalan port. As far as the port of Valencia is concerned, 4 railway companies are currently operative and they offer rail services to national destinations such as Abroñigal, Coslada, Azuqueca, Bilbao, León, Madrid, Valladolid and Zaragoza.

The ability of the port of Valencia to penetrate international markets is compromised by the persistence of an Iberian gauge system on the North line. The project to upgrade and modernize the line between Valencia, Castellon and Barcelona is

[12] Port de Barcelona, Un puerto diversificado, Dossier de prensa, Barcellona, January 2015.

[13] See the review Vía Líbre, "Barcelona, el primer puerto español con ancho internacional", Número 544, September 2010.

[14] Port de Barcelona, Un puerto diversificado, Dossier de prensa, Barcelona, January 2015.

nearing completion and the European gauge is expected to be active by the end of 2015. This will increase the capacity of the port to attack European markets[15].
The development of rail services to and from the port has recently been boosted by the traffic of cars thanks to the completion of new rail investment in Valencia Terminal Europa Grimaldi, an infrastructure dedicated to RO/RO traffic. Thanks to this investment two new bundles of rails are now available and they can simultaneously accommodate up to two trains of maximum length of 700 m. At the moment, there is a weekly connection to General Motors establishments in Zaragoza operated by Transfesa. Spanish authorities and especially the Ministerio de Fomento have also planned further investment to expand the rail catchment area of the port and among these the installation of a third electrified rail stands out because it will have international gauge and will run parallel to the ones already existing between Almussafes and Valencia. The Autoridad Portuaria approved in 2014 a 15% discount on port charges for cars loaded and unloaded by rail in the port as a further measure of support to rail traffic.
Another important initiative in support of intermodality to and from the port of Valencia is the participation of the Port Authority in the Valencia Plataforma Intermodal y Logistica, a special purpose entity dedicated to the development of logistics in a 683,000 Sq m area adjacent to the port and that will probably become the main attraction pole of high value services for the support to marine traffic to and from Southern Spain.

The case of France: national port strategies

In March 2014, the Directorate General for transport infrastructure and for the sea of the Ministry of Ecology, Sustainable Development and Energy approved the French "Stratégie nationale portuaire", in which the guidelines for the development of the port sector are outlined[16]. Among these, the aim is to build within the ports some "architecture" of logistics solutions projected onto a European hinterland and able to improve the commercial exchange between maritime, inland waterways and rail network systems. Among the various lines of development identified by the French government, one of the most important is the impulse to the conclusion of a framework agreement between the major seaports and the manager of the national railway network Réseau Ferré de France (RFF) to improve the quality of services and define a regulatory system. Looking to the Mediterranean, the strategic objecti-

[15] The completion of this intervention was announced by press release in December 2014. See Ministerio de Fomento, Nota de prensa, Madrid, 15th December 2014.
[16] Ministère de l'Ecologie, du Développement durable et de l'Energie, "Stratégie nationale portuaire", 21st March 2014.

ve concerning the rail and intermodal branch at the core of the joint programming between RFF and the Grand Port Maritime de Marseille (GPMM) is linked to the development of traffic between the port and the regions to the east of the Rhine, which will result in an expansion of market shares to other European countries such as Italy, Switzerland and Germany.

In this landscape, characterized by increasing attention to the development of intermodality, we need to register the approval in June 2014 by the European Commission of a program of aid for combined transport fielded by the French Government for 2013-2017[17], This intervention follows a similar previous one for the period 2008-2012. The budget allocated by the French government for the five years between 2013 and 2017 is 140 million. In total, since 2003, the funds allocated by the French government for intermodality amount to over 362 million Euro. The aid takes the form of a lump sum contribution for each intermodal transport unit transported by rail in France and that was transshipped in a port and rail terminal and whose transport chain is characterized by a phase of pre- and post-haulage road. The contribution is € 18.00 for each movement.

In its plan for Southern France, RFF has given priority to strengthening the connections to and from the port of Fos Sur: the main container terminal of the French region which has been recently strengthened through the project Fos 2XL through which its capacity of handling was brought up to 1.5 million TEUs per year. RFF aims at improving technologies on the line Fos-Graveleau-Lavalduc that connects Marseille city and port and that currently does not allow to handle more than 21 trains a day. By the end of 2015, thanks to an improvement in signaling technologies and energy supply it will be possible to handle up to 60 trains per day on this line, allowing a significant development of the ability to raise sea containers by rail. The cost of this intervention (€ 8 million) is financed for 25% with resources of the GPMM.

Further work in progress is the expansion of the gabarit on the line Avignon-Marseille in the direction to Lyon within the TEN-T Corridor North Sea-Mediterranean, at a cost of € 24 million, with a contribution of € 8 million on behalf of GPMM, whose commissioning is scheduled for the end of 2016. Thanks to this intervention the port will be interconnected with Northern Europe and through the crux of Lyon with the Mediterranean corridor which, once completed, will be the main artery of transport on the East-West axis in Southern Europe[18].

[17] The information related to the decision of the European Commission are summarized in the Communication n° 4113 of 19th June 2014 and the details of this aid plan are available on the website of Ministère de l'Ecologie, du Développement durable et de l'Energie, www.developpement-durable.gouv.fr

[18] Réseau ferré de France, "Plan d'actions 2014 en Provence-Alpes-Côte d'Azur", 2014.

Among the projects being implemented for the increase of intermodality to and from the port of Marseille it is important to highlight the constitution in 2014 of the Mourepiane Combined Transport Terminal Company (MTTC), a purpose entity whose main shareholders are the GPMM (29%) and the shipping company CMA CGM (15.5%). The core business of this company is to attract investments for the construction of a terminal dedicated to the combined road-rail transport within the public lands of the port of Marseille. This is aimed at increasing the rail transport quota from the actual 15% to 30%. The start of construction of this infrastructure is planned for the summer of 2015 and its completion is expected in 2017. MTTC will contribute € 41.8 million to the total cost and the Port Authority will provide additional resources amounting to € 18.7 million[19].

The case of Slovenia: port and intermodal activities as general economic interest services managed by the public sector

Interventions in favor of intermodality in Slovenia refer mainly to the port of Koper, whose Port Authority is 51% owned by the Government of Slovenia and is actively pursuing a series of initiatives aimed at developing intermodality and logistics to and from the port. In particular, the Luka Koper Group manages most of the logistics and intermodal flows in transition in Slovenia through a series of subsidiary enterprises as well as jointly–controlled and associated companies[20]. The port is directly connected to the major national and European arteries that run through Slovenia and is also close to the Mediterranean Corridor that connects Trieste to Ljubljana.
The entire port has the status of a customs free zone, allowing operators to work the goods and perform machining and transformation operations under suspension of customs duties. The main terminals (container, grain, coal, timber, minerals, steel) are directly connected with the railway that joins the major national line in Divaça, where it is possible to reach Italy to the West and Hungary to the East.
Since 2005 Loka Koper has controlled the company Adria Transport, the main intermodal operator in the connections to and from the port that manages 6 weekly services to Graz, Austria and 2 weekly services to Slawkow, Poland.
Another important shareholding is in the 100% controlled Adria Terminali, through which Luka Koper manages the Sežana terminal where semi-manufactured products are handled and stored.

Adria Terminali manages the terminal and the warehouses, organizes transportation through Adria Transport and provides high value logistics services such as packaging

[19] ReporteR, Newsletter du Port de Marseille Fos, num. 16, January-February 2015.
[20] Luka Koper, 2013 Annual Report of the Luka Koper Group and Luka Koper, d. d., Capo d'Istria, 2013.

and labeling.
Through the controlled company RAILPORT Arad, Luka Koper participates in the management of the Arad terminal located close to the border between Romania and Hungary. Through the 96% owned Logis Nova, Luka Koper manages and controls the logistics area of Prekmurje, on the border between Hungary and Slovenia.

The case of Italy: the heterogeneousness of interventions of Port Authorities and Local Governments

In Italy, the main players capable of promoting this kind of initiatives are Port Authorities and Local Governments. In particular, the regulations regarding the strategies of Port Authorities were modified in 1998, 2011 and 2012 to encourage investments and favor initiatives aimed at promoting intermodality. Act 84/94 regulates port activities and establishes port rail services among the services of general interest defined for Port Authorities by the D.M. 14th November 1994 and by the D.M. 4th April 1996. These services of general interest must be offered to port customers upon payment.

The assignment of the service of general interest to an operator must comply with the requirements of free market access, competition and transparency through the use of public procedures.

Since 1998 (with the approval of article 6 paragraph 5 of Law 84/94 and paragraph 6 of the same Article replaced by article 8 bis of Legislative Decree 30th December 1997, No. 457, converted into Law 27th February 1998 n° 30) it is possible to "establish or participate in companies engaged in ancillary and instrumental activities with regard to the institutional tasks entrusted to the same authorities, including for the promotion and development of intermodality, logistics and the transport networks".

In recent years, the powers attributed to Port Authorities on this issue have been expanded with Article 46 of the decree "Salva Italia" on logistics systems published in the Gazzetta Ufficiale 27/12/2011 n° 300. In order to promote the execution of links between ports and dry ports, this regulation gives Port Authorities the power to create logistic systems able to intervene with the regions, provinces and municipalities involved as well as with the managers of rail infrastructures, through acts of understanding and coordination. These activities must be carried out in accordance

with the provisions of the community regulations, having regard to the trans-European corridors and without causing distortion of competition between the port systems. Interventions of coordination must be aimed at adapting strategic plans of the ports and towns to the development needs of port logistics systems that, as a consequence, become priorities in the criteria for intended use of the areas. The rule also provides that in the back of port terminals, referred to by the logistics system, the customs service is carried out by the same territorial administration responsible for performing the service in the ports of reference, without new or increased burdens on public finances.

The regulatory framework has been further enriched with the Decree Law 22nd June 2012 n ° 83, whose article 14 intervenes on the issue of financial autonomy of Port Authorities and on the fund for infrastructure projects in ports and intermodal connections. This norm creates a fund for infrastructure interventions in ports fed with 1% of the revenue from VAT and excise duties levied in the ports and inter-ports (but restricted to € 70 million a year). Inside Article 19 of the same law there was also the creation of a fund for the rail and road connections with ports powered with an allocation of 5% of the State resources given to ANAS and RFI in their program contracts, thus highlighting the strategic priority of efficient relations between land and ports.

In this context, Italian Port Authorities have promoted a series of initiatives:

- Shareholding in railway companies.
- Memoranda of understanding and agreements with Trenitalia, RFI, Local Public Authorities, Ministry of Infrastructure and Transport and private companies of rail services management or logistics centers.
- Creation or shareholding of companies for the promotion of intermodality and logistics.
- Acquisition of areas allocated to logistic activities.
- Purchase of maneuver or rail traction means.

The mix of activities planned by the Port Authority of Genoa, the main Italian port for volumes handled in import - export of goods transferred by rail (excluding, therefore, liquid bulks), illustrates clearly the different instruments of infrastructure policy that can be activated at local scale. The objectives that guide the choices of the Port Authority of Genoa in the development of the “Piano del Ferro” (Plan for Iron) within the port by 2020, linked to the decision to increase the market share of the railway (which in 2012 was only 14% in containers) and the number of freight trains to and from the port (which in 2012 were on average 37 per day for a total of 130 thousand wagons moved), may be summarized as follows:

- Pole of Voltri – implementation of the internal rail system in connection with the park A/P included in the project node of Genoa that will allow the formation and management of trains with features more in line with the European module (length over 600 meters) to be concluded by 2018.
- Port basin of Sampierdarena – minimization of maneuver activities through the electrification to the root of the main railway adduction points to be concluded by 2016.
- Improving connections between the park of Campasso and the new compendium of Sanità-Bettolo (gallery Molo Nuovo-Parco Rugna and electrification) with works to be completed by 2017.
- Maximizing the capabilities of the new compendium Ronco-Canepa-Libia (length of parks and interconnections with network) as well as multipurpose terminals also through Fuorimuro park, with works to be completed by 2016.
- Introduction of new laws for the formation and testing of trains within the operational areas.
- Investments on information systems aimed at speeding up the procedures related to rail transport.

In the following paragraphs we analyze the main instruments for promoting the development of rail services to and from ports in Northern Italy, in order to carry out a comparison between the different modes of public intervention.

Policies for the development of rail service for maneuver and shuttling: the case of Savona Port Authority

The case of the port of Savona-Vado is an interesting example of proactive public policies promoted by the Port Authority in a systemic way to favor the creation of a port logistics system based on the railroad. These policies use both the levers of direct investment (acquisition of direct control of railway sidings, locomotives and interports) and the levers of business development (setting up a company dedicated to the marketing of rail services), in addition to the promotion of technological development (economic support to the project Metrocargo).
The ultimate goal is to be able to effectively manage the important developments expected in the sector of containers by 2018, both from the point of view of operations and marketing.
The Port Authority of Savona has developed an autonomous rail service for the connection between the port and the hinterland, through selection by European call of a railway company, which has been given the exclusive management of port shunting and the ability to perform traction in line to the main inland destinations

under market laws. In further support of this initiative and to reduce initial investment costs for operators, the Authority has acquired eight maneuver locomotives and six electric locomotives. In addition, the Authority has also boosted the creation of Fernet, who plays the role of Multimodal Transport Operator and manages shuttling from the docks of the port to the airport areas, commercializing rail service and maintaining business contacts with customers. The Port Authority holds an equity stake of 10%, and other private parties in the logistics sector (Autofiori, Group Orsero and Gavio Group) have also made a contribution. In 2010 for the route Port of Savona-Parco Doria and in 2015 for the route Seaport of Vado-Parco Doria, the Authority acquired control of both rail links to the port areas to handle the technological upgrading more quickly and efficiently and in order to have a greater flexibility of the service. In this way the means of maneuver can travel continuously between the two basins and, following the downgrading of the track to line of connection, it is easier and cheaper to organize the transport of coaches to form freight trains in Parco Doria.

This setting of the management of rail service makes it possible to efficiently plan the transport by rail and to optimize the rolling stock used. Through an integrated approach it is possible to take advantage of the positive aspects offered by the rail system, recovering the fixed costs considerably higher than those of the other means of transport and offering services at competitive costs compared to road transport.

In 2015, the Authority also acquired the majority of the company "Interporto di Vado Intermodal Operator Spa" (VIO) which manages the interport of Vado Ligure, a structure that spreads on over 232,000 square meters inserted in the trans-European network and eligible for EU grants up to 30% of the possible extensions. On these areas the new rail terminal will be realized by 2018. This new plant will function as an interface for both the port and industrial areas, but especially for the new multipurpose platform where a central role is played by the container terminal operated by APM Terminals Vado Ligure Maersk Group. This investment, which is currently in progress, is expected to reach standard use from 2018 and will have a containers handling capacity of up to 820.000 TEUs. In order to respect the constraints imposed in the awarding of the concession, 40% of the total terrestrial traffic must take place by rail, requiring the preparation of a daily average of 12 to 18 freight trains.

In order to develop a policy of collaborative logistics, the Authority signed memoranda of understanding with the Polo Logistico Integrato di Mortara in 2010 and with the Rivalta Terminal Europa. In 2011 it collaborated in the planning of the Integrated Logistics Platform of Mondovì, still under completion at the moment.

La Spezia Shunting Railways S.p.A, a new company for the management of rail service in the port of La Spezia and in the dry port of Santo Stefano di Magra

By analyzing the operational problems of the railway system of the port of La Spezia it has been possible to establish that their main causes are the number of subjects involved and the lack of coordination between them. In 2013 the Port Authority of La Spezia created a management company for the port rail service extended to the dry port of Santo Stefano di Magra. The instrument for the management of the port rail service extended to the dry port follows the ideas of reform 28th January 1994 n° 84 issued at the end of 2011. This provides for the creation of port-logistics systems for the coordination of the activities of many ports and dry ports belonging to the same geographical basin or serving the same trans-European corridor, marking their starting point.

To comply with the provisions of the EU, at the end of 2013 a notice was published containing the invitation to show interest in the subscription of shares in the newly formed La Spezia Railways Shunting S.p.A. The object of the new company is to operate in the port of La Spezia, in the areas behind the port of Santo Stefano di Magra and in the territorial areas carrying out activities related to: rail transport according to the Legislative Decree no. 188/2003 directly or through authorized companies; rental of vehicles and railway equipment; technical railway consultancy; rail services and logistics. The company has a registered capital of € 1 million, represented by shares sorted by the following categories:

- Category A – the shares may be subscribed and owned only by the Port Authority of La Spezia and may not exceed the 20% of the total number of shares representing the equity capital.
- Category B – the shares may be subscribed and owned only by private holders of state maritime concessions granted pursuant to Law 28th January 1994 No. 84, Art. 18 in the port of La Spezia and by logistics operators permanently operating in the dry port areas of Santo Stefano di Magra, owners of facilities connected with the railway network. They may not exceed 40% of the total number of shares representing the equity capital.
- Category C – the shares may be subscribed and owned only by individual entrepreneurs or companies, individually or grouped together for the purpose, engaged in activities of MTO (multimodal transport operator) or of railway company licensed in accordance with Legislative Decree 8th July 2003 n° 188, art. 7, that operate stably in the port of La Spezia. They may not exceed 40% of the total number of shares representing the equity capital.

The company is open to participation and it is possible to buy shares even after the constitution, provided that the requirements for the different categories as established in the statute are met. The company adopts the system of dual governan-

ce with a supervisory board and a management board. The supervisory board is composed of three members appointed, of which the first acts as chairman and is appointed by the category-A partner while the second and the third members are appointed by the Category-B and Category-C partners. The management board is composed of five members appointed: the first acts as chairman and is appointed by the Category-A partner while two of the remaining members are appointed by the Category-B partner and two by the Category-C. On the one hand, the dual system makes it possible to maintain the Port Authority's role as guarantor of the impartiality of the company towards individual operators in categories B and C through the supervisory board; on the other, it allows to give professionals in the categories B and C the organizational and management responsibilities while enhancing the institutional role of the Port Authority as the guarantor of market access, free competition and transparency and the role of operators in a position to transfer know-how and operational capabilities in the society by adopting an effective business management.

The management board will draw up the business plan of the company after investigating the needs in the light of the findings of the market. The corporate structure is open to new shareholders that meet the requirements set by the founders even after the conclusion of the social contract, thus meeting the EU guidelines in the field of competition, free market access, transparency and publicity in contracting services. The company will acquire the operations in successive stages by acting primarily on the streamlining of operations without any changes to the infrastructure and then, on a longer timescale, by considering the new scenario of infrastructure as provided by the Port Plan.

The society appointee of the port rail service (included primary and secondary maneuver) will operate within the remit of three stations: Marittima, Migliarina and Santo Stefano Magra. It was launched at the end of 2013 by the following founders: the Port Authority, Trenitalia S.p.A., Serfer - Servizi Ferroviari s.r.l., Terminal del Golfo S.p.a., SO.GE.MAR. Interporto S.p.A., LSCT, La Spezia Container Terminal S.p.A., Speter S.p.A., Oceanogate Italia S.p.A.; Nora S.p.A.; Contrepair Manovre Ferroviarie s.r.l..

In summary, starting from 2014 with LSSR (La Spezia Shunting Railways) the whole port rail service is managed in a unified manner with no distinction between primary and secondary operations. The result has been to streamline railway maneuvers eliminating overlaps, minimizing costs and thereby increasing the attractiveness and competitiveness of the port of La Spezia, as demonstrated by the 10% increase of rail traffic during the 2014, with approximately 118 thousand railway wagons for nearly 7 thousand trains arriving and departing and a market share of 35% in land transport, the highest value at national scale.

Regional policies: the case of the subsidies to rail transport in Emilia-Romagna

In order to avoid the decrease of rail traffic, in November 2009 Region Emilia-Romagna, after obtaining permission by the EU (State aid 483/2009 C 2009 7136), issued a law for subsidizing rail transport of goods (LR n° 15/2009), afterwards reviewed with the Legge Regionale 30th June 2014 n° 10.
This was aimed at stimulating the increase of rail transport of goods by subsidizing new traffics on routes already existing or on new routes so as to reduce the number of heavy vehicles with evident benefits for the environment, the congestion and the safety of traffic. With the Legge Regionale n° 15 of 2009 called "*Interventi per il trasporto ferroviario delle merci*" (Interventions for rail transport of goods) Region Emilia-Romagna aims at activating interventions in the sector of transport of goods consistent with the objectives indicated in the national and regional planning. The benefit expected thanks to the implementation of this law is an increase in the rail traffic of goods of about 2.3 million tonnes a year in the first three years of the subsidy, with a reduction of 246.000 28-tonnes heavy vehicles. Estimates say that when the subsidy finishes, traffic of 1.5 million tonnes of goods will be maintained on the railway.
In 2007 the multimodal and intermodal nodes of Emilia-Romagna handled a total freight traffic, incoming and outgoing, via road and iron, amounting to 41,518,231 tons / year, of which over 60% realized in the Port of Ravenna, which is the main entry point for goods and raw materials in the Region, 11% of which is handled by rail. The economic crisis that hit Italy since 2008 led to a decrease in regional rail traffic resulting in a -24% of tonnes handled in 2007-2009. The subsidies of the region made it possible to activate new forms of service and to cover the losses resulting from the reduction in traffic. The specific objectives of the interventions are:

- Stimulating growth by encouraging additional rail traffic with respect to the previous year, and maintaining these new traffics even after the end of the subsidy.
- Encouraging short and medium range links departing from or arriving to a regional node, namely intra-regional and inter-regional links with neighboring regions.
- Privileging dry ports as strategic areas for the development of the regional nodes and able to express plenty of room for growth of rail transport, giving priority to connections with the ports that are penalized by bottlenecks or infrastructure constraints.
- Encouraging both intermodal and traditional rail traffic as they are functional to the vocations of the regional production system by taking into account the rail costs related to incidental expenses such as audit, train forming and maneuvers.

- Encouraging the traffic of complete trains as they represent a model that is more functional to the creation of a sustainable traffic.

The subsidies may not be given to traditional traffic and to motorways.
Recipients of the contributions are all logistics and rail companies, even in consortium or cooperative form, having their registered office and constituted in a Member State of the EU. The indirect beneficiaries are loaders and industrial companies because the direct beneficiary must mark down the fee schedule applied to end users by the amount of the contribution received. Each company must commit to not increasing the price of the services in the two years following the end of the period subsidized. The application for subsidy must be accompanied by a written description of the initiative and, in addition to the elements identified by the Regional Council, it should also include:

- The characteristics of the services and planned expenditure.
- The benefits expected thanks to the implementation of the services.
- Any other public sources, as well as regional ones, to cover the planned expenditure.

The contributions may not exceed 30% of the total cost of rail transport, including incidental expenses. The maximum annual contribution granted to each company may not exceed € 400,000 if the additional services have a duration of one year, € 500,000 if they have a term of two years and € 600,000 if they have a term of three years.

The compensation of external costs is guaranteed by a contribution of € 0.01 per ton / km, equal to the difference between rail and road defined by the Marco Polo program, reduced by 50%. The budget of the scheme was judged positively as the expected reduction in road traffic of 246,000 heavy commercial vehicles can be widely confirmed. As reported on 31st December 2012, 25 new rail services had been provided by 17 companies selected through public notices and that carried 2,647,607 tonnes of goods more than in 2009. In the previous funding period all beneficiaries had been logistics companies rather than rail companies. The railway companies which have provided services of transportation are Trenitalia Cargo, T to, Oceanogate, NordCargo, Interporto Servizi Merci and DB.

The Regional Legislative Assembly, given the excellent results achieved, asked the Council to propose further measures for the development of rail freight and then, with regional law n° 10 of 30th June 2014, Regional Law 15/09 was repealed and the regulation “Interventi per il trasporto ferroviario e fluviomarittimo delle merci” (Interventions for rail and sea-river transportation of goods) was approved.

The new law identifies the new services eligible for contribution as follows:

1. Each train service in addition to those made in the reference period specified in the notice, having origin and/or destination at a railway junction located in Emilia-Romagna. The additional rail service must be made of at least thirty trains a year, or carry at least twenty thousand tonnes per year and must be kept active, at least to the minimum volumes, in the two years following the end of the contributions.
2. Each river or sea-river service additional to those carried out in the reference period specified in the notice having origin and/or destination at one of the ports of Boretto, Ferrara, Porto Garibaldi and Ravenna. The additional river and sea-river service must transport at least 10.000 tonnes per year.
3. Each journey related to special river or sea-river transport.

The contributions are calculated as follows:

1. For rail services, on the basis of mileage up to a maximum of 120 km, even if the journey is of a longer length. The level of support is determined in € 0.8 cents per tonne per kilometer (20% lower than the previous law). The contribution is reduced by a percentage equal to 30% if the recipient is a railway company.
2. For river or sea-river services, on the basis of the quantity of goods loaded or unloaded in the ports of Boretto, Ferrara, Ravenna and Porto Garibaldi. The amount of the contribution is established in € 1.5 per tonne and € 2,500.00 for each journey related to special transport.

The extent of the subsidy granted in the river sector is determined within the limit of the amount of the maximum general "de minimis" provided for in the EU Commission Regulation No. 1407 of 18th December 2013 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union and on "de minimis" aid, as required by the Community guidelines on state aid in the railway sector. For each additional service a contribution may be granted for the minimum duration of one year and a maximum of three years. In the allocation of contributions priority is given to three-year services. The contributions are non repayable and are calculated to produce a reduction of the costs of transport by rail and waterways equal to the higher external costs of transport on road. The maximum annual contribution that can be granted to each beneficiary company amounts to € 150.000.
The distribution of the resources available, € 800.000 per year for the period 2014 to 2016, takes place in a percentage of 90% for rail and 10% for river and sea-river transport.
Any remaining resources pertaining to the list related to one of the modes of transport may be used for the promotion of services eligible for funding and incorporated in the ranking, to be made with the other modes. The modes of supply of the contributions are mainly aimed at developing rail shuttling systems to and from the

port of Ravenna and the objective is to increase the market share from 15% to 25%. Among the beneficiaries of the contributions in the early years of activation of the policy, some of the most important are the companies of combined transport road-rail belonging to the UIRR (Union International Rail-Road) such as Kombiverkehr, Hupac and CEMAT, companies of management of interports such as Ce.P.I.M. Spa of Parma, Dinazzano Po Spa or Gestione Servizi Interporto Spa of Bologna, railway companies such as Trenitalia or big carriers and maritime companies such as Spinelli Srl, Ignazio Messina & C. Spa, Gab Spedizioni Internazionali and Sogermar, as well as big industrial groups like Marcegaglia Spa.

Conclusions

The importance of the role of ports in complex logistics systems depends increasingly on the efficiency of the organization of the inland routes. The developments of container traffic have led, in fact, to a market increasingly characterized by a large dispersion of the origins and destinations, spread over a vast hinterland port area, with a large number of operators in both directions, with stronger competition among port logistics systems, given the easy substitution of the points of embarkation and disembarkation. This increased competition between ports has led us to develop systems of forwarding by land, often based on an enhancement of rail intermodality.

These strategies imply the purchase of rolling stock and the creation of inland terminals of reference. Apart from those directly affected by the reduction of overall costs of shipping – whose maritime route is often a minority aspect – also other logistics supply chains (Ro/Ro and dry bulks) have benefited from them thanks to the development of economies of scale and scope in the investments in infrastructure and services.

The following table summarizes and orders the main instruments of transport policy aimed at favoring rail intermodality in the main ports of the North Western Mediterranean.

The main instruments of transport policy activated by Port Authorities to favor rail intermodality

Port Authority	Market-based instruments	Regulation based instruments	Instruments of economic coordination	Instruments that provide for direct public investments in infrastructure or superstructure
Valencia	National contribution to modal shift (measure in the study) for an amount of E 21 per ITU and 15% discount on port charges for cars loaded and unloaded by the railroad in the port	Extension of the term of the terminal concessions to operators in order to achieve also the infrastructure of terrestrial connection. Promoting competition between railway companies, with four active players in the market	Coordination of the relations with terrestrial intermodal centers	National fund for terrestrial accessibility to ports, coordinated at national scale and financed by Puertos del Estado. Adjustment of the railway network to the EU standards (by the end of 2015). Participation in the investment for the Valencia Plataforma Intermodal e Logistica.
Barcelona	National contribution to modal shift (measure in the study) for an amount of E 21 per ITU	Extension of the term of the terminal concessions to operators in order to achieve also the infrastructure of terrestrial connection. Promoting competition between railway companies, with ten active players in the market	Coordination of the relations with terrestrial intermodal centers and participation in the investment through seven projects for "terminales maritimas interiores"	National fund for terrestrial accessibility to ports, coordinated at national scale and financed by Puertos del Estado.
Marseille	National contribution to modal shift (measure in the study) for an amount of E 18 per ITU		Development of the coordination with terrestrial centers thanks to the national strategy related to the Grand Port	Co-investment by GPMM for rail accessibility to the port and participation in the investment for the Mourepiane Combined Transport Terminal Company
Savona	Direct support to the promotion of a high-tech pilot project (MetroCargo)	Inclusion in the concession agreement of the article for the provision of terrestrial forwarding of 40% of traffic for the new container terminal	Creation of the commercial company of rail services (FerNet)	Acquisition by the Port Authority of direct control of railway junctions, interports and maneuver locomotives
Genoa			Development of new information systems aimed at speeding the procedures for the formation of trains	Development of the interventions of the "Piano del ferro" (plan of iron) for the extension of the modules and electrification of railroads within the ports
La Spezia			Development and minority participation in La Spezia Shunting Railways	
Ravenna	Regional contribution for the activation of new incremental rail services			
Koper	The status of customs free zone reduces the administrative burden also for intermodal activities		Direct coordination of port and intermodal activities following a logic of vertical integration of public companies	Direct investments also in dry port terminals in Slovenia and other countries

Even though existing policies at Community, national, regional and local scale – as revealed in the summary table above – are characterized by high heterogeneou-

sness due to the differences in their contexts, they should all highlight some distinctive features that can enhance the motivations and objectives of a long-term strategy involving government grants in this area.

1. The incidence of direct and indirect operating costs of transport and logistics on the revenue of the manufacturing industry is growing also due to the continuous expansion of the international markets of reference for both imports and exports, so a reduction of these values can contribute indirectly to the maintenance of competitiveness of the production and distribution companies.
2. The need to initiate a virtuous circle to bring about a more sustainable mobility of goods in terms of economic, social and environmental impact is also evident because the transport sector is the only industry that, at a national and EU scale, does not seem to be able to reduce significantly external effects in terms of greenhouse gas emissions, air pollution, noise, accidents and congestion. Using the transport sector and the logic of smart mobility as a lever for a green economy is crucial to the mitigation of pollution, especially in very sensitive areas as most of the Italian territory.
3. Having a clear and far-sighted planning of the sector is the tool for greater involvement of private capital to improve infrastructure and superstructure to support transport and logistics such as intermodal terminals or logistics areas. This involvement can only be realistic if the different levels of planning of the policies for services and infrastructures are able to offer a clear interpretation of the goals, which can only be the enhancement of modal integration at big intercontinental access doors: the ports.

Generally speaking, for the Italian system (the only one among those analyzed that still lacks a national port strategy) creating economies of scale and network in railway services starting from the main ports is necessary to compete with the European logistics regions. It is also important to rebalance the flows in comparison with Northern European ports and to facilitate the localization of logistics companies with high added value (for example large-scale distribution centers or headquarters for Southern Europe of international shipping companies).

Bibliography

ACCIARO, M., & MCKINNON, A.C. (2013): "Efficient Hinterland Transport Infrastructure and Services for Large Container Ports." International Transport Forum Discussion Papers, Discussion Paper No. 2013-19.

BACCELLI, O., & BARONTINI, F. (2013). L'Italia in Europa. Le politiche dei trasporti per rimanere in rete, EGEA, Milan.

BACCELLI, O., RAVASIO, M., & SPARACINO, G. (2007). Porti italiani. Strategie per l'autonomia finanziaria e l'intermodalità. Il caso dei porti liguri, EGEA, Milan.

BACCELLI, O. (2001). La mobilità delle merci in Europa. Potenzialità del trasporto intermodale, EGEA, Milan.

BANK OF ITALY (2012). Indagine campionaria sui trasporti internazionali dell'Italia. Benchmark 2011, Rome, October 2012.

BANISTER, D., "European Transport Policy and Sustainable Mobility", Spon Press, London, 2000.

DOCHERTY, I., SHAW, J., & GATHER, M. (2004). "State intervention in contemporary transport", Journal of Transport Geography, Elsevier.

HARALAMBIDES, H.E., & ACCIARO, M. (2013): "The New European Port Policy: Old Issues, new solutions?", in: Bart Kuipers and Rob Zuidwijk (Eds) Smart Port Perspectives, Essays in honour of Hans Smits, Erasmus Smart Port Rotterdam: Rotterdam the Netherlands, 49-62.

HEAVER, T., MEERSMAN, H., & VAN DE VOORDE, E. (2001). "Co-operation and competition in international container transport: strategies for ports", Maritime Policy and Management, Vol. 28, No. 3, pp. 293-305.

MARTÍ-HENNEBERG, J. (2013). "European integration and national models for railway networks (1840–2010)", Journal of Transport Geography, Elsevier, January 2013.

MCKINNON, A.C. (2013). "Decarbonising the deep-sea container supply chain: the possible contribution of port-centric logistics" in: Proceedings of the 13th Annual Conference on Transportation Research Society, Rio de Janiero.

NOTTEBOOM, T. (2012). "Dynamics in port competition in Europe: implications for North Italian ports", University of Antwerp, Milano, IRSO Foundation Workshop "I porti del Nord".

NOTTEBOOM, T. (2008). "The Relationship between Seaports and the Inter-modal Hinterland in light of Global Supply Chain: European Challenges" Discussion paper No. 2008-10. Joint Transport Research Centre, OECD / International Transport Forum, Paris.

SONG, D. (2003). "Port Co-opetition in Concept and Practice", Maritime Policy and Management, Vol. 30, No. 1, pp. 29-44.

maritime