Assessing the railways subsidy in selected European countries: insights from the Italian case

Arrigo, Ugo and Di Foggia, Giacomo

University of Milano-Bicocca

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Assessing the railways subsidy in European countries: insights from the Italian case

Ugo Arrigo. Department of Business Administration, Finance, Management and Law, University of Milano-Bicocca.

Giacomo Di Foggia. Department of Business Administration, Finance, Management and Law, University of Milano-Bicocca.

Abstract:

This paper is aimed at analysing state aid to the railway sector in the Western countries of the European Union. Although this is a preliminary exercise, literature lacks of specificity. From the analysis, a highly differentiated situation in Europe emerges: a group of countries with permanently lower subsidies (the Iberians, the Scandinavians and Austria); a group of countries with a medium level of subsidies (all of the major countries: Germany, France and the UK) and a group of countries with permanently high subsidies (Italy, Denmark, Belgium and the Netherlands). This paper demonstrates that railways have so far benefited from weakened forms state aid control. This can be motivated (i) by the need for modal rebalance recognised by national transport policies, (ii) by the natural monopolistic character of the network whose duplication is not economically feasible and (iii) by the non-competitive traditional structure, from a legal point of view, of even the transport service. This situation, however, is set to change drastically with the opening up of services to competition, which has already been done in the European Union for the freight sector and in some countries, although only on a voluntary basis, even for the passenger sector. By focusing on Italy, this study finds that the elevated state aid to the rail sector consequently results in both a major public finance problem and a potential factor of competition distortion.

JEL Classification Numbers: H81, L92, L43

Keywords: Railways, State aid, Public finance, Subsidies, Europe, Competition

Introduction

State aid control should target sustainable growth-enhancing policies while encouraging budgetary consolidation, limiting distortions of competition and keeping the single market open. Knipes (2013) provides a short outline of the historical roots of the controversial debates on the role of the State and the markets, and the organization of competition in European railroad industries. State aid is defined as an advantage in any form whatsoever conferred on a selective basis to undertakings by national public authorities. Therefore, subsidies granted to individuals or general measures open to all enterprises are not covered by this prohibition and do not constitute State aid. In 2012 The EU Commission has proposed a recast of a directive establishing a single European railway area, aiming to increase competition in the rail market by improving access to terminals and maintenance facilities and strengthening the powers of national rail regulators (Directive 2012/34/EU). Prior research has analysed the reforms (Preston, 2009), methods to explore the impact of subsidies on competition (Nitsche & Heidhues, 2006), the effectiveness of State aid in increasing the efficiency in railways across Europe (Friederiszick, Röller, & Schulz, 2003). A number of reforms have affected the European rail market over the last two decades, Preston (2009) reviews what actual changes have occurred on the ground over this period. Knipes (2013) evaluates competition on the markets for rail services and public subsidies for rail infrastructures as well as subsidies for train services. Szekely (2009) sheds a light on the transformation schemes in Europe so that it would be possible for countries to set up better policies. EU rules require track access charges to be set on the basis of direct/marginal costs – the cost directly incurred as a result of operating a train service. As an exception for specific investment projects only, higher charges can be set on the basis of the long-term costs of such projects, (Directive 2012/34/EU).

Literature Review

The topic of subsidies to European railways has been less investigated because of the disparities in management systems, access charge models and ownership of incumbent operators. Also Beria et al., (2012) argue that entry in the industry has not yet developed its full potential and highlight that an issue emerging in this research is the opposing attitude of incumbent railways against liberalisation and the role of governments in backing this behaviour. To this regard, by comparing Sweden, Great Britain and Germany, the examination of subsidy levels finds that Germany has the slowest growth in public financial support for its railway, as well as the lowest increase in fares (Nash, Nilsson & Link, 2013) model. Nilsson *et al*., (2013) describe recent reforms in Sweden, and to address how the reforms have handled four critical issues for the success of the reforms: the allocation of infrastructure capacity; the provision of maintenance and terminal facilities; the access to rolling stock; and the provision of information and ticketing to travellers. Nilsson, J. E. (2002) describes the Swedish reorganisation, the subsequent process towards free entry and competition in parts of the sector and the consequences of these changes and argues that the policies have been mainly directed towards the sector's inability to recover costs.

The European Commission has been exercising and documenting its actions in favour of competition and the construction of the internal market for more than forty years. The control of state aid has become a key element within these policies to ensure fair competition. Member states sometimes use public resources to promote or protect certain economic activities. Despite state aid being prohibited by the Treaty of the Functioning of the European Union, there are certain exceptions that are justified by objectives of common interest (European Union, 2013).

The state aid system has been developed gradually from a situation in which a series of complex national regimes existed (Mayhew, 1998). In 1973, the Court of Justice gave the Commission legal authority to ask member states, and specifically the recipient companies, to pay back any aid that was received unlawfully according to the Treaty (European Commission, 1973). The subsequent decade saw the structured application of this principle within an effective and articulated policy framework and the 1989 Report on Competition Policy reaffirmed the notion that, although being tolerated in the past, state aid would be reviewed in order to evaluate its compatibility with the common market. The rules on state aid in Europe are very complex (Friederiszick, et al. 2006).

One of the consequences of the increased focus on regulation in the field of state aid, is the evolution of the aid itself, from being widely distributed to being reduced and allocated strictly since the total amount of aid given reduced from 1.2% of EU GDP in 1992 to less than half in 2011 (European Commission, 2012), excluding anti-crisis measures. Following the reforms mentioned, national competition authorities along with national courts were authorised to apply all EU antitrust rules, becoming equivalent to the Commission of the European Competition Network. While the above refers to the internal market, it should be emphasized that, since the nineties, the Commission has sought to encourage major trading partners to implement similar policies through bilateral negotiations. Title XII of the consolidated version of the Treaty on the Functioning of the European Union, Chapter 1 (Competition rules) Section 2, is comprised of Articles 107, 108 and 109 the contents of which are of particular interest to this study, TFUE (2008). Specifically, Article 107 states that any aid granted by a Member State, namely any State resources in any form, that favours specific enterprises or the production of certain goods falsifying or threatening to falsify competition, are incompatible with the internal market as they can affect trade between Member States. Article 107 of the TFUE provides a general definition of state aid that consists of the four cumulative factors given below (European Commission, 2012b):

- The aid must be granted by the state or through state resources;
- The aid must confer a selective advantage (i.e. favouring certain enterprises, the production of certain goods or the provision of certain services);
- The aid must lead to a (potential) distortion of competition;
- The aid must affect trade between Member States.

The rules on state aid

With regards to state aid in the railway sector, it is evident that even if it assumes a monopolistic structure, which is gradually being overcome as a result of the development of the EU community rules, it is at least able to confer a selective advantage for rail transport to the detriment of competing modes, such as air transport. This aid can be justified, however, as the re-balancing of means of transport, dictated by the more favourable environmental impact of rail transport. The risks of competition distortion are much more significant when the monopolistic structure of the railway sector is overcome as a result of EU rules that are applied to the community as in the case of freight transport, or as a result of voluntary choices of the nation. In such cases, aid granted to individual railway companies requires deep insight and specific assessment of fairness and proportionality, while aid granted to network operators is less problematic, provided that they are adequately separated from transport companies and thus unable to offer cross-subsidies. The EEA (2007) attempts to define the structure and the amount of subsidies paid to the different modes of transport.

In the previously outlined general framework, aid of a social nature granted to individual consumers, (provided that they are given without discrimination related to the origin of the products), aid to cover costs arising from natural disasters or exceptional occurrences, and aid granted to the economy of certain regions, are all considered compatible.

Article 108 outlines that the Commission examines, along with the Member States, the existing aid systems in the same Member States. In the event that the Commission finds that aid granted by a State is not compatible with the internal market or it has been given unlawfully, it states that the country concerned must abolish or change it within the specified period of time. The regulation (EC) no. 800/2008, lists certain categories of aid that are compatible with the common market, authorising the Commission to exclude them from the notification obligation (Zahariadis, 2013). Railways sector aid does not fall among those exempt from the notification obligation. The examination of the compatibility of aid is carried out in accordance with the objective of common interest at which the aid aimed. In principle, when assessing the compatibility of aid, the Commission will apply specific criteria defined for each of the categories of aid related to the rail sector, such as, aid related to the needs of transport coordination, aid for the restructuring of railway companies, aid for small and medium-sized companies, aid for the protection of the environment, aid given to offset the costs of certain public service obligations and, in the context of public service contracts, regional aid. In a recent article, Wellings (2013) highlights that railway sector aid has risen significantly in recent years in several countries, and supports the need for further structural reforms in order to ease the burden for taxpayers.

Following are the criteria used for the evaluation of each typology. Public funding for infrastructure development may constitute state aid. According to the Court of Justice, it must be assessed whether the provision in favour of the infrastructure is able to generate a reduction in costs that burden the balance sheet of railway companies. In order for this to happen, the beneficiary companies must derive a selective advantage from the financing of infrastructure. In cases where the use of the infrastructure is open to all potential users in a non-discriminatory way, and the access fee is accounted for according to the methods and levels consistent with Community legislation (Directive 2001/14/CE), the Commission considers that public financing of infrastructure should not be regarded as state aid. The reforms initiated by the Directive 91/440/EEC have three main objectives: build traffic, enhance the quality of service and improve economic efficiency; Dehornoy (2011) attempts to assess the third objective.The paragraph concerning aid for the purchase and renewal of rolling stock is based on the consideration of the type and, in particular in Europe, the age of the fleet that is particularly dated in many countries. The Commission has set itself the goal of renewing the rolling stock – quantifiable as 1% per year – necessary for:

- The maintenance of the competitiveness of rail transport compared to other modes of transport;
- To reduce the environmental impact of rail transport.

Therefore, under certain conditions, aid classified as aid for the purchase and renewal of rolling stock, is compatible with Community rules on competition. Even if, in terms of regional aid for initial investments, expenditure on the purchase of rolling stock in the transport sector is not eligible for aid, this rule may be waived in the case of rail passenger transport. This is due to the fact that rolling stock in this sector can be permanently assigned to specific lines or services. Therefore, whilst subject to certain conditions, expenses for the purchase of rolling stock are deemed eligible for assistance.

This exemption applies to all types of investment, both for the initial purchase and the replacement of the material, provided it is used for services on lines that regularly serve a region that benefits from aid under Article 87 of the Treaty, an outermost region or a region with a low population density. Finally, if the recipient company is entrusted with the provision of SIEG involving, either or both, the buying or renewal of rolling stock and already in receipt of compensation, this must be taken into account when granting regional aid to the company, in order to avoid over compensation. After follows the cancellation of debt that is based on the historical consideration that railway companies have often experienced phases of heavy indebtedness due to investments, a phenomenon that still affects a number of network operators. Directive 91/440/CEE addresses this situation and states that the Member States must «ensure that existing publicly owned railway companies are given a sound financial structure» foreseeing the possibility of «financial restructuring». The Directive also states that Member States «establish, together with the existing publicly owned railway companies, appropriate mechanisms to help reduce the indebtedness of said companies to a level that does not impede sound financial management, and to help recover their financial situation». The same article also considers the hypothesis of giving state aid «to cancel the debts of those referred to in the article» and says that the granting of such aid must be in compliance with Articles 73, 87 and 88 of the EC Treaty. Following this Directive, the restructuring of debts is carried out using different instruments.

- The transfer of a part or all of the debt to the institution responsible for the management of infrastructure;

- The creation of separate entities for the financing of infrastructure projects (such as high-speed lines);
- The financial restructuration of railway companies, carried out in particular through the cancellation of a part or all of the debt.

State aid for the restructuring of a freight branch in economic difficulty is a special case, of minor interest for this paper. Generally, compatibility is assessed based on the 2004 guidelines in force on aid for restructuration, which do not foresee exemptions for railway companies. Additionally, restructuration aid is usually intended for economic entities with a legal personality, while railway companies do not normally separate the freight transport branch from the passenger branch. Aid requested for transport coordination needs is considered compatible with the Treaty provided that it does not harm the general interests of the Community. The term 'transport coordination' does not mean merely facilitating development, but specifically intervening to guide the evolution of the transport sector in the interests of the public. However, following the pro liberalisation measures, the need for coordination has lessened. In fact, in a liberalised and efficient market, coordination is carried out by the operators. Despite this, in many cases investments for the development of infrastructure continue to be given by the public sector and, even after liberalisation, there may be failures – e.g. diseconomies of scale and negative externalities like traffic or pollution – that justify state intervention. Finally, the Communication by the Commission on the application of Articles 87 and 88 of the Treaty to state aid given in the form of guarantees, defines the rules applicable to guarantees from the state in the rail transport sector. The communication of the Commission (GU C 71 of the 11.3.2000, p.14) states: «The Commission also considers preferential funding terms obtained by enterprises whose legal form excludes bankruptcy and other insolvency procedures or explicitly foresees the granting of state guarantees or the coverage of losses by the state, as state aid granted in the form of guarantees». In general, guarantees granted in relatively competitive sectors are incompatible with the EC Treaty. These guarantees represent effective aid and the interested Member States have to tell the Commission how they will grant this type of aid and the measures that they intend to take to remove it.

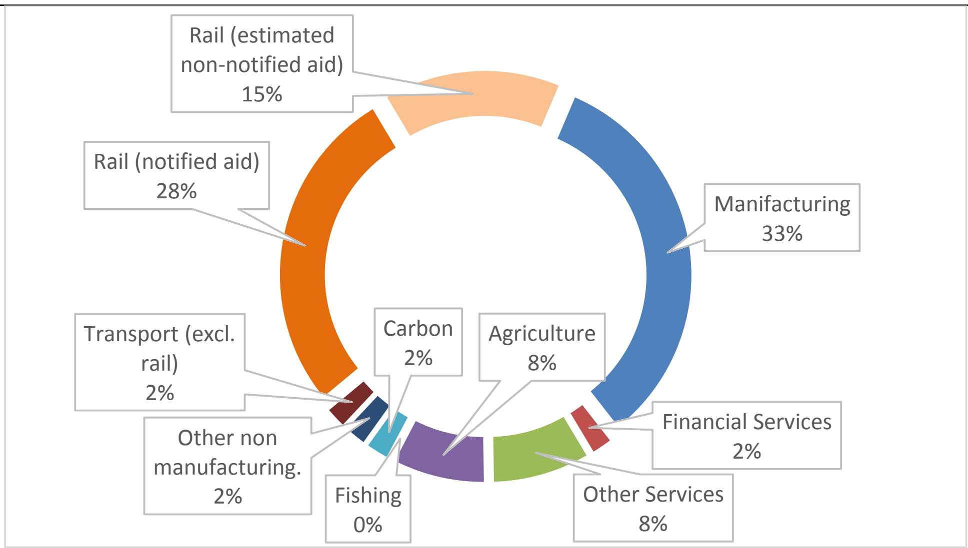
Dimensions and trends of state aid in the EU and Italy

Over a long period of time, the three decades since the eighties until today, the level of state aid in the European economies shows a clear downward trend. In fact, in the eighties, the total GDP share of the European Union amounted to around 2%, in the following decade it reduced to 1% before stabilising at levels ranging between 0.5 and 0.6% in recent years. In 2011, the latest year available (This paper is based on data available up to November 2013), EU states guaranteed financial coverage of just less than 64,3 billion Euros (the previous year was 74 billion Euros) of aid, classed as aid not related to crisis situations (non-crisis aid), equal to approximately 0.5% of European GDP. This data however, which can be distinguished based on the recipient sector (manufacturing, financial and non-financial services, agriculture, fisheries and transport companies), excludes rail transport aid, a sector that seems to benefit from a special regime even from a statistical point of view. In fact, while data on all other sectors is regularly updated and offers complete coverage, in the railway sector, there are many shortcomings and delays in reporting, and consequently (as you will see in the second part of this paper) the data cannot be integrated with that of others without altering its completeness and significance. For these reasons, the data is traditionally accounted for and published by the Commission separately.

In 2011, state aid for the railway sector submitted to the Commission amounted to 30.7 billion, however state aid granted by the states that had not yet been communicated needed to be added, estimated at just under 17 billion. Thus, the total amount of aid granted to the railway sector was more than 47 billion, and the total general state aid in Europe more than 111 billion. Of these, the sector that benefits from most aid, excluding railways, is that of manufacturing, with 39 billion and 33% of the total (Figure 1). The aid given to railways that was regularly reported represents 28% of the total, a figure that rises to 43% if we include the estimation for non-notified aid. The rail sector is therefore the number one beneficiary of state aid in the EU.

A second consideration is the fact that railway aid, as a share of GDP, does not appear to have reduced sharply over time unlike it has for state aid in all other sectors. As Figure 2 illustrates, aid has gone from 1.2% of GDP at the beginning of the 90s to 0.5% in 2011. As for aid given to the railway sector however, the decline was much less pronounced and was only seen in the 90s: from 0.5% of GDP in 1992 to just under 0.4% in the early 2000s. For the rest of the decade, the share instead remained stationary, except for its growth in the recession perhaps demonstrating a substantial inability to reduce public railway expenditure.

Figure 1: State aid in the European Union per recepient sector (2011)

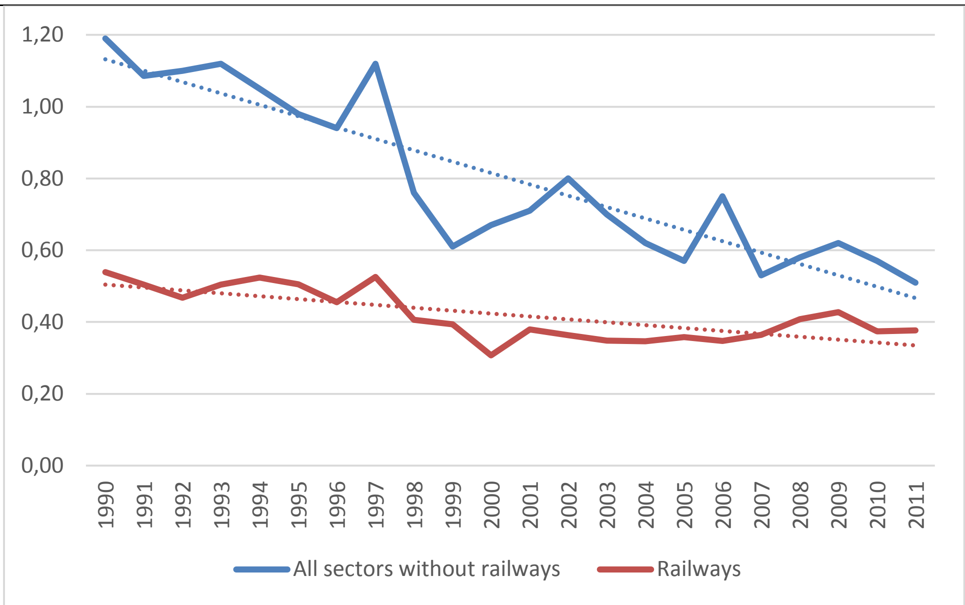


Source: Authors

*In % of total with the exception of 'crisis-aid

The different dynamic of state aid in the railway sector compared to other sectors in the EU is made particularly evident by the different inclination of the two trend lines drawn in Figure 2 in relation to the two variables. They highlight a convergence between the two values, with subsidies to rail transport supposedly destined, in the absence of interventions, to overtake all of the rest in a few years.

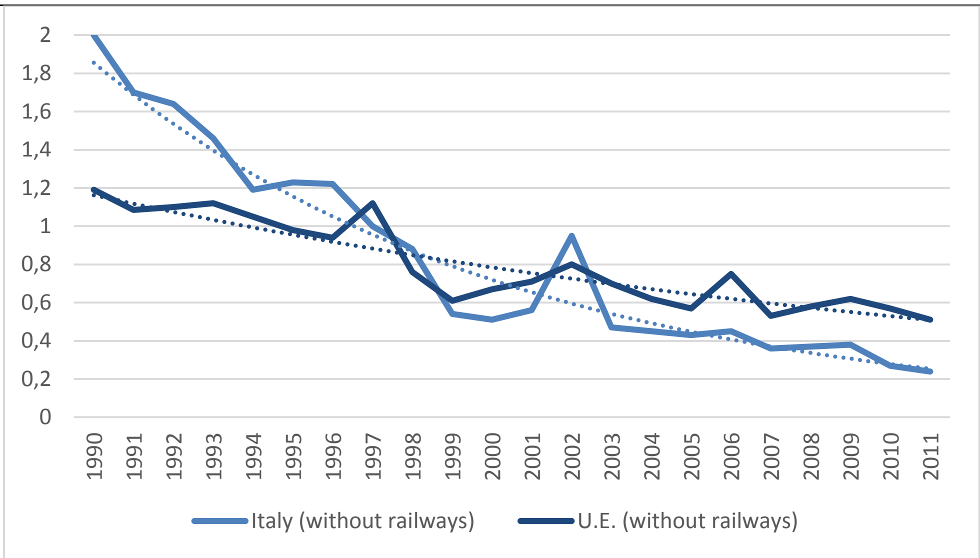
Figure 1: State aid in the European Union (1990-2011), % of GDP



Source: Based on data from the EU Commission

The previous analysis on the trends of EU state aid to the rail sector compared to the other sectors produces equivalent, if not more, interesting results when looking at Italy. In this case, it is necessary to point out that while it was easy to reconstruct absolute values of Italian aid excluding the rail sector and its weight on GDP, not much more can be said for this sector before the year 2000.

Figure 3: State aid in the EU and Italy, excluding the railway sector (1990-2011)

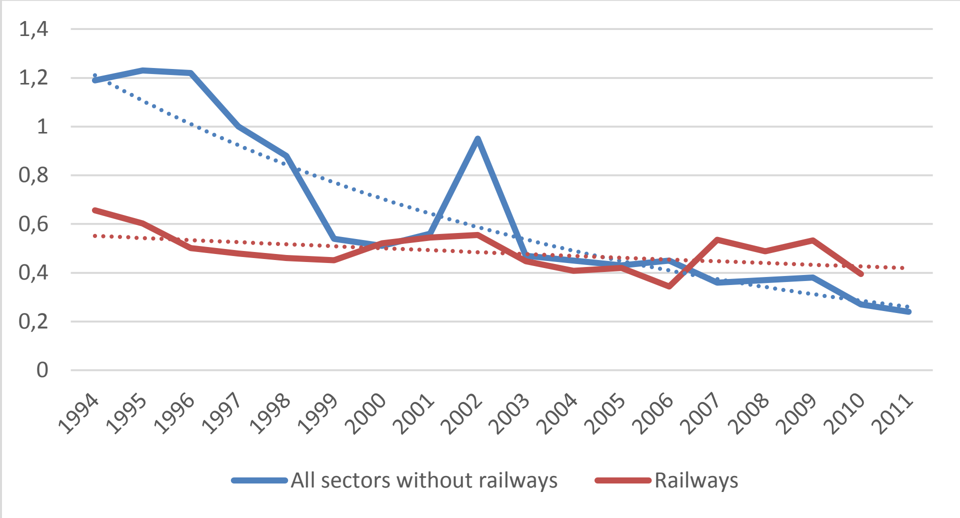


Source: Based on data from the EU Commission

Figure 3 shows the fastest reduction path regarding state aid excluding the rail sector in Italy compared to the EU: at the beginning of 90s, its weight on GDP was almost double compared to that of the European Union, but throughout the course of the decade, probably as a result of the public finance constraints that affected our country, it reduced by around three-quarters bringing it below the EU average. In 2011, it represented less than a quarter of a point of GDP, half compared to the entire EU.

This virtuous path of reduction has not yet extended to state aid for the Italian rail sector. As verified by Figure 4, there was a reduction in aid as a share of GDP in the second half of the 90s, but this was recuperated in early 2000. Additionally, from 2007 onwards, aid for railways was steadily more consistent compared to the total aid granted to all other economic sectors. This distinctive characteristic of the situation in Italy is illustrated by Arrigo & Di Foggia (2013), which highlight that almost 60% of the total state aid granted in our country in 2010, amounting to just under 10.5 billion euros, was given to the rail sector. It therefore seems necessary to try to identify which dimensional factors of rail transport or specific objectives of transport policy justify such a consistent and stable financial commitment for public coffers.

Figure 4: State aid in Italy (1994-2011) - Figures in % of GDP



Source: Based on data from the EU Commission

State aid for the railway sector in individual EU countries

After having given an overview of the institutional framework for the regulation of state aid to the railway sector in the European Union and the general dimensions of the phenomenon, we will now look in depth at each of the individual countries in an attempt to identify benchmarks with which to compare the Italian situation. The EU Commission annually renews a summary table, the latest version of which can be seen in Table 1, showing the total aid for each country, as reported by the states, that are awarded to the actors of rail transport: network operators and transport operators.

Table 1: **State aid to the rail sector in the EU-27, 2000-2011, in millions of €.**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
EU-27	-	-	-	-	-	-	42807	46345	43866	46216	38320	30674
Austria	649	649	664	647	632	533	637	636	1900	1593	1537	0
Bulgaria	-	-	-	-	-	-	61	102	121	155	168	173
Belgium	2.164	2.205	2.278	2.412	2.057	3.129	3.226	2.588	2.666	2.462	2.929	3.239
Czech Rep.	-	-	-	239	239	264	270	317	407	499	0	0
Denmark	672	731	714	813	813	916	891	9.45	1.125	1.140	1.195	1.281
Germany	9.308	9.385	9.515	9.144	8.239	8.114	8.001	8.435	13.234	13.485	9.390	9.496
Estonia	-	-	-	12	12	12	12	14	16	17	421	18
Greece	446	625	552	636	329	257	275	397	397	549	536	436
Spain	1.350	1.349	1.346	1.338	1.370	455	563	1.009	1.019	970	800	0
Finland	403	359	412	489	562	516	467	461	521	500	99	103
France	6.482	8.770	9.132	7.921	9.120	9.912	10.100	9.695	10.326	10.895	10.769	12.043
Ireland	373	440	491	544	416	576	603	797	728	613	587	400
Italy	6.246	6.839	7.236	6.006	5.699	6.040	5.126	8.320		8.104	6.125	0
Latvia	-	-	-	3	15	23	31	37	50	41	37	31
Lithuania	-	-	-	0	5	6	3	6	9	2	3	3
Luxemburg	208	255	264	293	310	315	394	418	411	281	290	0
Hungary	-	-	-	451	411	439	530	810	815	708	728	745
Netherlands	2.051	2.686	2.946	3.322	2.936	2.686	2.719	2.210	1.943	1.883	0	0
Poland	-	-	-	104	172	184	310	341	277	340	417	438
Portugal	16	22	25	58	56	64	74	80	84	91	93	0
Romania	-	-	-	-	-	-	3	11	553	445	543	525
Slovenia	-	-	-	125	331	176	186	148	153	42	49	48
Slovakia	-	-	-	0	165	218	223	266	286		0	0
Sweden	851	852	892	1.003	1.167	1.271	1.415	1.653	1.113	1.401	1.604	1.695
UK	2.061	6.817	4.261	4.002	5371	6.592	6.689	6.650	5.712		0	0

Source: DG MOVE

Considering the table 1. One shall note that data for EU-10 Member States are included from 2003 onwards, for Bulgaria and Romania from 2006. Includes all public subsidies communicated to the Commission as well as subsidies that have been notified and authorized by the Commission under relevant State aid rules. The figures exclude compensation for services of general economic interest. EU- 27: Represents all Member States, which the calculation includes as of the year when data were available. SK: DG TREN estimates for 2008; UK: DG TREN estimates for 2006, 2007 and 2008.

In the above table, the EU Commission includes aid communicated by the states that are obliged to do so according to the European Treaties as members of the union (therefore where indicated in the table, the zero value means that they did not communicate aid and not that the aid amounted to nothing). The most recently joined members are thus included only after their admission to the Union, and the data for previous years are not reported as there were no notification requirements. As a result, the data relative to the total EU-27 is only shown as of 2006, the year in which a total of 42.8 billion Euros of aid were distributed in the 25 countries (Cyprus and Malta do not have railways), while in the following year, 2007, this figure grew to 46.3 billion Euros. In 2008, this figure seemingly reduced to

43.9 billion, however the table highlights an absence of notification of state aid by Italy. Considering that the total amounts both in the previous and following years were around 8 billion Euros, we can estimate that the total payments of the 25 countries in that year amounted to around 52 billion.

In the following year, 2009, total state aid shown in the table was 46.2 billion, however the notifications of Great Britain and Slovakia are missing. Considering their total amounts, amounting to 6 billion for both countries together, we can estimate that, similarly, in this year total payment exceeded 52 billion. In 2010, the official total is 38.3 billion, however, the number of states that did not submit their notifications increased, now including the Netherlands and the Czech Republic as well as the UK and Slovakia. The estimated total for these four countries is 8.5 billion, bringing the total to just under 47 billion, a sharp reduction compared to the previous year.

Finally, in 2011, the latest year available, the official total amounted to 30.7 billion, however this is not very reliable due to the number of states not submitting notifications increasing to nine. Altogether, it can be estimated that the missing amount is around 17 billion, bringing the Union total to around 47-48 billion euros, probably higher than the previous year. Over the six-year period, 2006-11, total state aid in the Union is estimated at a little less than 290 billion, corresponding to an annual average of around 48 billion.

State aid to the railway sector in the EU pre-enlargement

The previous data, despite being incomplete, is very interesting and can be assessed for individual countries in comparison to the size of the national rail networks, the number of trains in circulation and the number of passengers and goods carried. Before proceeding with this analysis however, the 10 countries that have recently joined the EU should be excluded, both for their incomplete data over time and for their railway sectors being characterised differently from those of Western European Countries. Luxembourg, Ireland and Greece should also be excluded due to their small geographical size and limited rail networks.

For the remaining 12 countries that we will analyse, it should be noted that in 2011, half of them did not submit notifications for state aid. As a result, it is not possible to accurately reconstruct the missing values, and therefore, pending further updates from the EU Commission, the analysis is limited to the data from 2010.

Table 2: **State aid to the rail sector in the EU-12, 2000-2010, in millions of €.**

	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**TOTAL**
EU-12	**32.254**	**40.664**	**39.421**	**37.155**	**38.021**	**40.228**	**39.906**	**42.681**	**47.340**	**47.731**	**40.975**	**446.377**

Austria	649	649	664	647	632	533	637	636	1900	1593	1537	10.076
Belgium	2.164	2.205	2.278	2.412	2.057	3.129	3.226	2.588	2.666	2.462	2.929	28.115
Denmark	672	731	714	813	813	916	891	945	1.125	1.140	1.195	9956
Germany	9.308	9.385	9.515	9.144	8.239	8.114	8.001	8.435	13.234	13.485	9.390	106.250
Spain	1.350	1.349	1.346	1.338	1.370	455	563	1.009	1.019	970	800	11.568
Finland	403	359	412	489	562	516	467	461	521	500	99	4.789
France	6.482	8.770	9.132	7.921	9.120	9.912	10.100	9.695	10.326	10.895	10.769	103.121
Italy	**6.246**	**6.839**	**7.236**	**6.006**	**5.699**	**6.040**	**5.126**	**8.320**	**7.697**	**8.104**	**6.125**	**73.438**
Netherlands	2.051	2.686	2.946	3.322	2.936	2.686	2719	2.210	1.943	1.883	1.794	27.176
Portugal	16	22	25	58	56	64	74	80	84	91	93	664
Sweden	851	852	892	1.003	1.167	1.271	1.415	1.653	1.113	1.401	1.604	13.222
UK	2.061	6.817	4.261	4.002	5.371	6.592	6.689	6.650	5.712	5.207	4.640	58.003

Source: DG MOVE

The data contained in table 2 with a grey background have been estimated based on figures from regulators or the recipient national companies. The data used is show in Table 2. In this table, four values not reported by the states were estimated on the basis of information available from national regulators or financial statements of the entities concerned. For Italy, the 2008 data includes only the payments to companies of the FS group in that year, derived from company accounts. The result given, therefore, is underestimated as it does not include state aid given to minor railway companies and any transfers made to the FS group in 2008 pertaining to different financial years and consequently not reported in the financial accounts. As shown in Table 2, in the 11 years considered, the 12 EU countries have received a total of 446 billion in state aid, equivalent to a 40.6 billion annual average. The country with the largest amount of subsidies is Germany, with 106 billion in total for this period, followed by France with 103 billion and Italy with 73 billion. In Italy, however, the 13.1 billion of debt until 2006 for the construction of high-speed lines, borne by the Treasury, was not notified. Considering this considerable figure, Italy's total rises to nearly 87 billion over the period. Countries with sizable networks that have carried out important processes of market liberalisation are far apart in the total ranking of state aid: Great Britain with 58 billion and Sweden with only 13 billion.

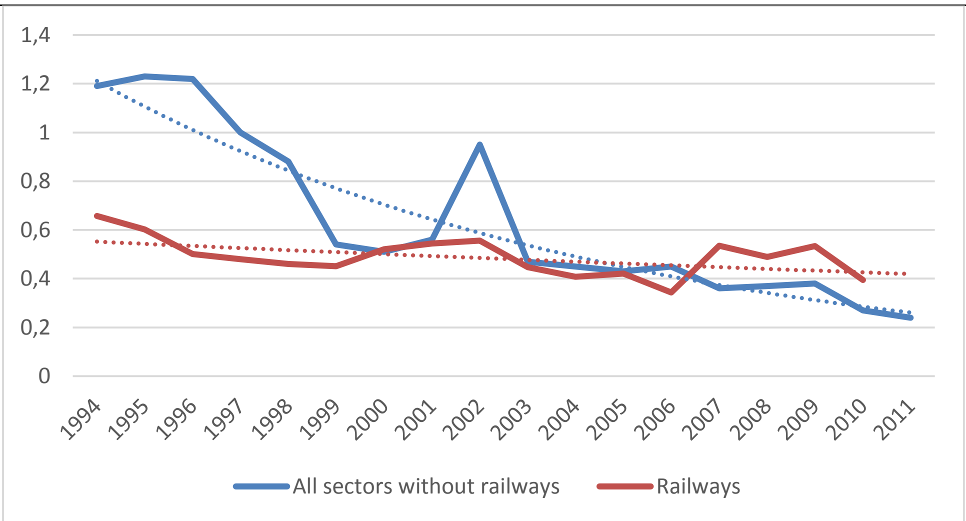
It is evident that in order to assess the importance of state aid to the railway sector in the different countries, their annual amounts should be compared to the size of the national networks and its traffic. Italy and Great Britain, for example, have similar networks in terms of lengths (between 16 and 17 thousand kilometres) and very different subsidies; Germany and France have recorded much larger amounts of aid in absolute value than both Italy and the United Kingdom, but have roughly double the networks: 34 thousand km in Germany and 30 thousand km in France. Finally, Spain and Sweden have much lower amounts of aid in absolute value, despite having relatively large networks: 14 thousand km in Spain and 11 thousand km in Sweden. This simple exercise does not seem, however, to have so far been carried out systematically, probably due to difficulty at a Community level in obtaining complete and consistent data on the size and characteristics of the national rail networks and associated traffic.

State aid in relation to the size of the rail sector

For the different countries included in the study, an analysis on state aid to the sector in relation to different dimension aspects is needed: (i) the total length of the network; (ii) the total length of the track, these two measures are justified by the fact that subsidies are mostly given to the networks; (iii) train km circulating on the network (variable as data for a larger number of countries is missing); (iv) total traffic (represented by traffic units that are conventionally given by passenger km plus tonne km of goods). In order to carry out this analysis, the length of the networks and tracks in the 12 countries have been verified by combining data available from Eurostat, the EU Commission and the UIC and verifying it with that of individual network operators where discrepancies or uncertainties were present.

The following graphs show these relationships for each of the 12 countries considered and for the 11 countries together with the exclusion of Italy. In relation to the extension of the network, the average annual state aid for the past four years (2007-10) has amounted to 457 thousand Euros per km of line in Italy compared to an average value for all of the other countries of 291 thousand Euros (Figure 5). The largest value for Italy compared to that given is 57%. Other major countries in the EU other than Italy (UK, FR, DE) recorded significantly lower values than outs between 330 and 350 thousand Euros per year per km of line; finally, greatly reduced, are the values of Sweden, 130 thousand Euros, and Spain, 71 thousand.

Figure 5: Annual state aid per km of network (Average value for the period 2007-2010 - Th. euros)



Source: Based on data from the EU Commission

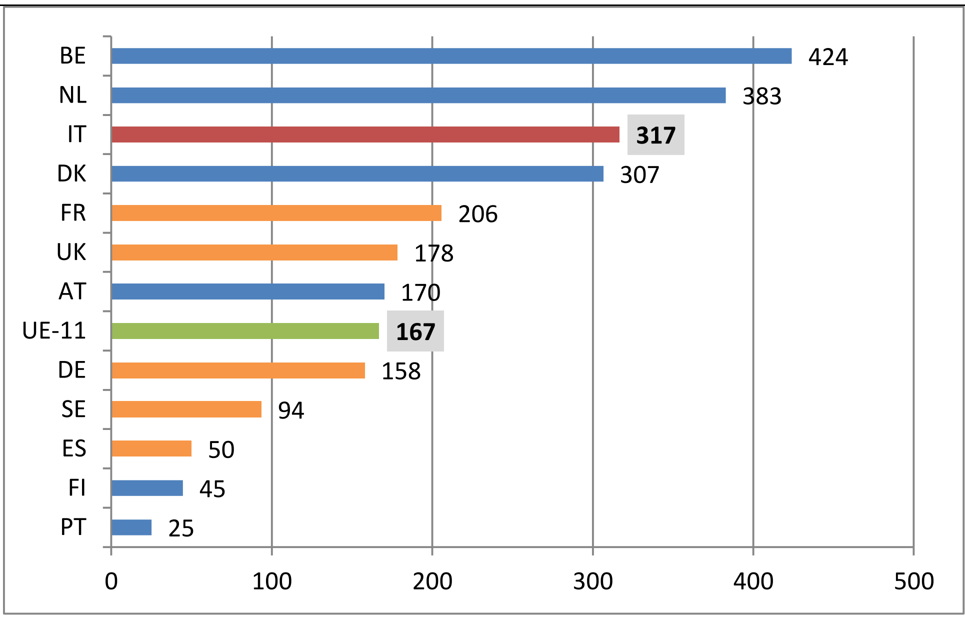
Since this data for Italy may be influenced in an anomalous way by the cost of the completion of high-speed lines (even if the assumption of 13 million Euros of debt until 2006 for the AV were not included), we redid the exercise for the entire 2001-2010 period, which shows that the average annual aid per km of network over the 11 years was 411 thousand Euros in Italy compared to an average value for the other 11 countries of 265 thousand Euros (Table 3). The highest value for Italy is 55%, thus almost identical to that of the most recent four years. All of the other countries total values are significantly less than ours: France and the UK around 320, Germany 280, Sweden 110 and Finland and Spain 70-80 thousand.

Table 2: **State aid to the railway sector per km of network, 2000-2010, in €/1000**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Mean
EU-11	201	262	249	240	253	270	273	268	310	311	273	265
Belgium	624	638	647	685	582	883	906	725	759	688	818	723
Denmark	241	262	256	292	307	346	337	357	425	431	452	337
Germany	254	261	266	254	237	237	234	249	391	400	279	278
Spain	110	110	109	106	107	35	43	75	76	73	58	82
France	221	298	311	271	312	338	343	324	345	364	361	317
Italy	391	426	453	376	358	372	315	509	466	486	367	411
Netherlands	732	956	1.050	1.182	1.045	960	971	765	671	652	622	873
Austria	114	114	115	112	111	94	109	109	335	297	305	165
Portugal	6	8	9	21	20	23	26	28	30	32	33	21
Finland	69	61	70	84	98	90	79	78	88	84	17	74
Sweden	77	77	80	91	106	115	128	151	101	126	144	109
UK	121	400	250	235	325	407	413	410	352	322	287	320

Source: Authors and DG MOVE (for aid), EUROSTAT and UIC (for network lengths).

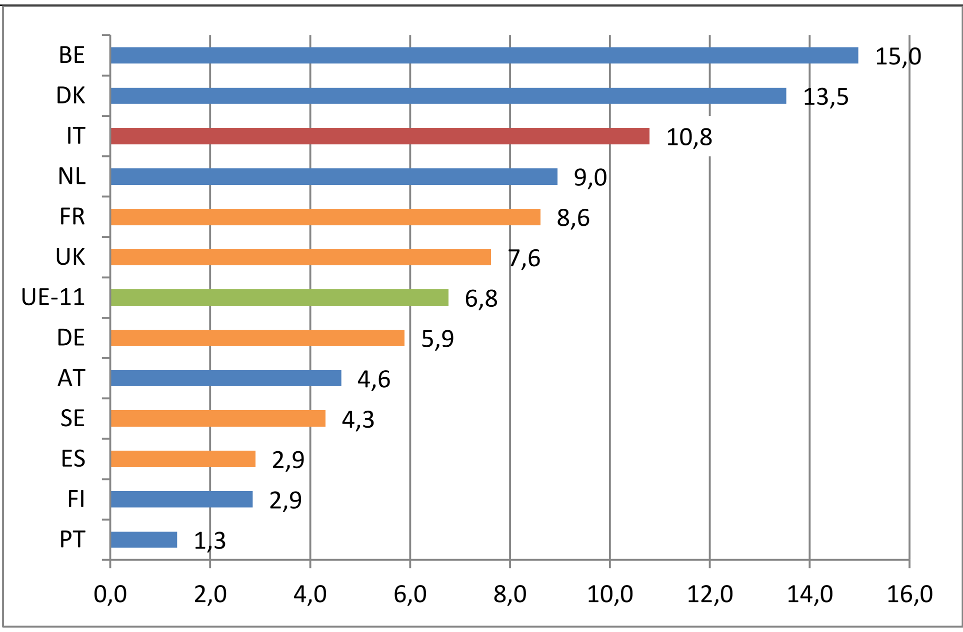
Figure 6: State aid per year per km of track (Average value for the 2007-2010 period - th. euros)



Source: Based on data from DG MOVE, EUROSTAT and UIC.

A refinement of the previous analysis is relating the annual subsidies to the railway sector not in terms of network km, but in terms of track km, a relationship that can be considered more accurate than previous years (given the apparent correlation between management and construction costs and track lengths) and one that is able to avoid distortions in favour of countries that have a number of single-track lines that is lower than average (e.g. Sweden and Finland) and to the detriment of countries that have a number that is above-average (e.g. Belgium and the Netherlands). In relation to km of track, the average yearly subsidy in the last four years in Italy was 317 thousand Euros compared to an average total of 167 thousand for the other 11 countries (Figure 6). Italy consequently results as 90% higher. Even in this case all of the other major EU countries have significantly lower values than that of Italy: France around 210, the UK 180, Germany 160 and Sweden 90. The final analysis, in not having enough statistical data in relation to annual train km circulating on the networks, we will examine subsidies in relation to the total traffic of passengers and goods measured by the units of traffic (conventionally given by passenger km plus tonne km of goods transported). Over the four-year period considered, the average annual subsidy per unit of traffic in Italy was 10.8 cents compared to an average value of the other 11 countries of 6.8 cents (Figure 7). In this case, the aid given to Italy is 59% higher than the European average. The other three major countries (UK, FR, DE) reported values between 5.9 and 8.6 cents per km, Sweden only 4.3 cents.

Figure 7: State aid per year per unit of traffic (passenger km + tonne km of goods) (Average value for the period 2007-2010 in cents)



Source: Based on data from DG MOVE, EUROSTAT and UIC.

In summarising the results of the previous analyses, we can see that the subsidies given to the rail sector in Italy fall into the average of the previous four years for which data regarding state aid given by the EU countries is available (2007-2010):

- 55% higher than the average of the other 11 countries of Western Europe in relation to the length of the national railway network (km of line);
- 90% higher in relation to the length of the track of the national network;
- 59% higher in relation to the units of traffic, passenger and freight, transported on the network.

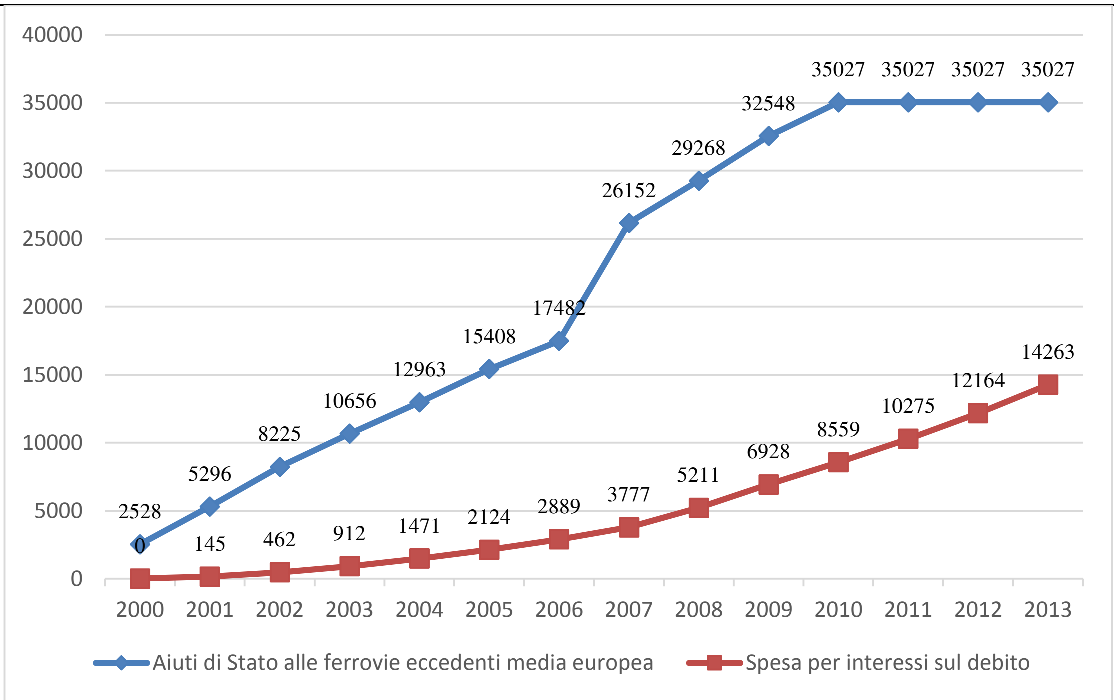
The average of the three values, equal to 68%, may be used as a summary measure of the excess public subsidies paid to the Italian railway system compared to the EU average. In essence, compared to the average behaviour of the other states concerned, around three-fifths of the subsidies granted in Italy were equally distributed, while the remaining two-fifths would remain in public coffers. This proportion, derived from the experience of the four most recent years, can be reasonably extended to the whole period taken into consideration.

The effects of excess subsidies on Italian public finance

Since Italian public finance granted the rail sector, according to the results of the EU Commission, 73.4 billion Euros between 2001 and 2010, rising to 86.5 billion Euros if we include the debt for the construction of the high speed lines transferred to the Treasury as of 2007, around **35 billion** would not have been awarded if these choices were made in line with others made in Europe. The public sector would have not only saved this 35 billion Euros in state aid, but it would also have spent less in interest on the public debt as a result of borrowing a lower sum to finance railway expenditure.

The costs accumulated by Italian public finance deriving from excess state aid, compared to the European average, given to the Italian railway sector between 2000 and 2010 are shown in Figure 8.

Figure 8: Cumulative burden of public finances in Italy as a result of excessive state aid (Mil. euros)



Source: Authors, DG MOVE (state aid) and Bank of Italiy (average cost of public debt)

As can be observed, to the 35 billion of excess transferred between 2000 and 2010, emerging for this study, an additional 15 billion Euros must be added for financial expenses accrued for interest on the public debt, estimated by assuming that the excess transfers to the rail sector were financed by the Treasury every year through borrowing and that annual interests paid on this borrowing is equal to the average cost of the public debt, calculated as the ratio between annual interest expenditure and the average debt stock over twelve months. This leads to a total estimated cost of just under 50 billion for Italian public finance. However, this amount is considered underestimated, as it does not include transfers to the rail sector in the three years between 2011-2013, since it was not notified according in accordance with the periodic statistics on state aid published by the EU Commission. Considering a rough estimate of the latter, the magnitude of the excess rail expenditure in Italy would increase to around 60 billion in total for the 2000-2013 period.

Concluding Observations

This study represents a first attempt at analysing state aid to the railway sector in the Western countries of the European Union, carried out with the aim of assessing the dimensions of aid in relation to the main size variables of the sector, such as the lengths of the networks and tracks and total passenger and freight traffic transported. Although this is a very simple and preliminary exercise compared to a more complex analysis, it would seem that it has never been done before, probably due to the absence, on a Community level, of comprehensive and reliable data on the length and other features of national rail networks (the information and data on the Eurostat database are incomplete and inconsistent). From the analysis, a highly differentiated situation in Europe emerges: (i) a group of countries with permanently lower subsidies (the Iberians, the Scandinavians and Austria); (ii) a group of countries with a medium level of subsidies (all of the major countries: Germany, France and the UK); (iii) a group of countries with permanently high subsidies (Italy, Denmark, Belgium and the Netherlands). These differences cannot be explained by analysing the relevant differences in network characteristics or levels of transport and therefore require important in-depth study in the future.

Over the last twenty years, the EU Commission has paid a lot of attention to the monitoring and comparison of state aid in many sectors of the economy, however, rail transport seems to represent a relevant exception, despite having been the major beneficiary of the aid in recent years, with a share higher than 40% of its total value in the Union, excluding those related to the economic crisis (and equal to nearly 60% in Italy). A consequence of the limited attention paid to state aid to the rail sector is that it is stationary over time in relation to EU GDP, contrasting with the tendency to lower it, which has instead occurred in all of the other remaining sectors and led to its reduction by half (and reduced to a quarter in Italy) in relation to GDP since the Commission began its systematic monitoring at the start of the 90s.

The idea that emerges from the reading of the specific rules and guidelines for the assessment of state aid to the rail sector, together with the severity demonstrated for other sectors and for different types of transport, for example aviation, is that rail transport has so far benefited from weakened forms of application that appear to be motivated: (i) partly by the need for modal rebalance recognised by national transport policies; (ii) partly by the natural monopolistic character of the network whose duplication is not economically feasible and thus does not adversely affect competition, at least intermodal, public financial support for construction, maintenance and exercise of the network; (iii) finally, by the non-competitive traditional structure, from a legal point of view, of even the transport service. This situation, however, is set to change drastically with the opening up of services to competition, which has already been done in the European Union for the freight sector and in some countries, although only on a voluntary basis, even for the passenger sector. Today, aid consequently risks being distortive in those countries that have chosen to spontaneously bring forward liberalisation of the national passenger transport sector, however, like Italy, they have failed to remove the high levels of subsidies or at least make their allocation means non-distortive.

One gets the impression that the Commission's approach has not yet been able to take these changes into account and that it is running the risk, in not opposing the aid as in the absence of competition it is not distortive, that potential competition is not able to occur due to state aid not being thwarted. The question that emerges is: *"In the past, there was no competition in the rail transport sector as it was against the law, and as a result, state aid to the rail transport sector could not be harmful. Now that, at least in some states, the possibility of competition has been legally introduced, does state aid continue to not be detrimental as there is no competition at all? Or is there no competition because state aid given impedes its manifestation and it is therefore the aid that is detrimental?".*

This can be, for example, the case in Italy, a country in which according to this study state aid to the railway sector has resulted on average, over the most recent four years of data available (2007-2010), 55% higher than the average of the other 11 Western European countries with regards to network length, 90% with regards to the length of the track and 59% with regards to the units of traffic, passengers and goods, transported. The average of these three values, equal to 68%, can be used as a summary measure of the excess aid to the rail transport sector compared to the European average. In monetary terms, this illustrates an excess of 35 billion Euros in public transfers in the 2000-2010 period, which highlighted an overall cost for public finance of around 50 billion Euros if we add the interest charges accrued as a result of financing the aid with public debt.

The elevated state aid to the rail sector consequently results in both a major public finance problem and a potential factor of competition distortion in markets such as Italy that have already been legally opened.

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