Long distance coach transport in Italy: state of the art and perspectives.

Beria, Paolo and Grimaldi, Raffaele and Laurino, Antonio

Politecnico di Milano

February 2013

LONG DISTANCE COACH TRANSPORT IN ITALY. STATE OF THE ART AND PERSPECTIVES.

Paolo Beria - Department of Architecture and Urban Studies (DAStU), Politecnico di Milano, Italy email: paolo.beria@polimi.it

Raffaele Grimaldi - Department of Architecture and Urban Studies (DIAP), Politecnico di Milano, Italy email: raffaele.grimaldi@polimi.it

Antonio Laurino - Department of Architecture and Urban Studies (DIAP), Politecnico di Milano, Italy email: antonio.laurino@polimi.it

ABSTRACT

Long distance coach services in Italy represent an almost unknown mode of transport to the general public, often ignored even by policy markers. The industry has been liberalised since 2007, and service regulation is gradually changing from exclusive concessions to non-exclusive authorisations.

This paper aims at shedding a light on this sector, underlining its importance, evidencing its specific strengths and weaknesses starting from the results of the first numerical research specifically focused on long distance coach transport in Italy, carried out by the authors (Beria et al., 2012). We provide policy indications for this evolving and promising industry, looking at what happened in other countries and at what can be learnt from the European air industry after the liberalisation of the 90's.

We developed a geographical database of the long distance coaches supply and a database of the operating firms. Moreover, we interviewed managers and directors of some operating firms. According to our estimations, that are not present in the Italian transport statistics, the industry supplied more than 90m bus*kilometres in 2010. Our database shows the geographical areas where coach services are more present and some considerations about bus companies. To compare the industry with the long distance rail sector, which is partially subsidised in Italy, we referred to and analysed the official *Ferrovie dello Stato* (the national railway company) economic figures, to make comparisons on supply and estimated passengers.

Today coach and rail are mainly complementary, often filling the qualitative and quantitative gaps of the rail. However, this is expected to evolve as a consequence of liberalization. Policy scenarios appear to be three: the consolidation of the existing market, inside the new liberalised context; an expansion of the market towards new users; a different attitude of the national planner towards a broader use of coach for the subsidised long distance "universal service" , now supplied only by rail.

Keywords: long, distance, bus, coach, transport, rail, subsides, public service contract, Italy, perspectives

INTRODUCTION

Long distance coach services in Italy represent an almost unknown mode of transport to the general public, often ignored even by policy makers and with very poor reliable statistics available. The industry has been liberalised since 2007, and service regulation is gradually changing from exclusive concessions to non-exclusive authorisations.

This paper aims at shedding a first light on this sector, evidencing its specific strengths and weaknesses starting from the results of the first numerical research specifically focused on long distance coach transport in Italy, carried out by the authors (Beria et al., 2012).[1]

Starting from the analysis of the state of the art of coach supply in Italy, we provide policy indications for this evolving and promising industry, looking at what happened in other countries and at what can be learnt from the European air industry after the liberalisation of the 90's.

STATE OF THE ART

Coach transport regulation in Italy

Long distance coach transport in Italy is referred to by the law as *"interregional road services of State competence"*, to distinguish it from local and regional bus transport which, at present, is responsibility of regional governments. The *Legislative Decree 285/2005* defines them as *"passenger services supplied by coaches on road, with undifferentiated supply, continuously or periodically operated on paths linking more than two regions"*.

The sector has been liberalised since 2007: services, now regulated by exclusive concessions, should gradually switch towards non-exclusive authorisations.

Exclusive concessions for a line or a service, whose characteristics were fixed in detail and could be changed only after a quite long consultation with many stakeholders, guaranteed that other companies could not operate competing services in a range of 30 kilometres on the same traffic relations (that is, origin-destination pairs). New authorisations simply allow services, after the release of a go-ahead,[2] without any obligation, but also without any exclusivity.[3]

During a transitional period – established to last up to 31 December 2013 – firms can keep existing concessions or voluntarily switch to authorisations, losing the exclusivity but gaining more operational freedom. A monitoring activity by the Ministry is foreseen to control liberalisation effects and avoid possible disruptive competition. The specification "more than two regions" in the 2005 Decree means that all those services linking only two regions, even though having long distance characteristics (many hundreds of kilometres), are responsibility of the regions and thus differently regulated (public tendering or, more often, direct awarding).

Comparison with other European countries

---

[1] This research was funded by ANAV (the Italian association of private bus and coach companies).
[2] The legislative decree 285/2005 specifies the criterion that must be met in order to obtain the go-ahead: professional requirements, quality certification of the firm, application of labour contracts, accounting separation obligation, quantitatively fit workers and other structures, availability of rolling stock not purchased with exclusive public funds, safety of paths and stops, and other penal criterion. Moreover, firms are generally required to request authorisations for less profitable services too (we do not have further information on this request, in our opinion rather ambiguous).
[3] We do not have official information, but it seems that up to now only a few companies have spontaneously requested to change the regulatory regime of some of their services.

The exact definition of “long distance” changes from country to country (Van de Velde, 2009). As said in the former section, long distance coach services in Italy are responsibility of the State only if they connect more than two regions, otherwise they are responsibility of the Regions and differently regulated. In other countries, criteria are different. Distance is often considered as a criterion, but with substantial differences: more than 15 miles (about 24 kilometres) in Great Britain or more than 100 kilometres in Sweden. Other countries adopt administrative distinctions which are more similar to the Italian ones, for example in Norway or in Sweden, where such services must cross borders among different regional transport authorities (Van de Velde, 2009). Here we will briefly recall the current situation of long distance coach services in some European nations. From this analysis, in part due to the historical transport characteristics of a country. different approaches to the problem emerge.

In France national coach services are almost absent, because historically interregional transport is a rail monopoly (Van de Velde, 2009). Since December 2009, law allows international services to provide internal cabotage, under the condition that no more than half the passengers board inside France (Bus&Coach, 2011). In 2012 *iDBUS*, a new coach company owned by the State owned rail company *SNCF*, started operating international services with internal cabotage, in competition with the existing *Eurolines* services.

In Germany, despite the previous regulation that allowed new services only when they represented a significant improvement over existing service (Van de Velde, 2009), beginning in January 2013 a recent law allows for new long-distance bus lines to be established. Like in the French case, previous legislation was highly protective in favour of Germany's national railway operator, *Deutsche Bahn*. The historical bus company *Berlin Linien Bus* (partially owned by Deutsch Bahn itself) has long provided connections between the former Federal Republic of Germany and West Berlin, when Germany was divided, and continued to do so, maintaining the constraint of boarding or getting off in Berlin (Van de Velde, 2009).

Sweden and Norway have been among the first countries to deregulate the market; the Norwegian express bus market is characterized by the prevailing presence of one major actor (Leiren and Fearnly,2010). In fact the state-owned *NSB* dominates on medium distance routes, and is also the largest partner of *Nor-Way Bussekspress* which totally dominates long-distance coach services (Alexandersson et al., 2010). The Swedish coach market is mainly served by privately owned companies whereas three players provide 79% of the total supply in terms of coach-km (Van de Velde, 2009). Also in these two countries, long-distance buses had to face the opposition of railway companies that feared competition and worked to avoid the deregulation process (Alexandersson et al., 2010).

In Spain, intercity bus services are carried out mainly by private operators. Until 1990, these services where under state control and concessions were directly awarded, without public tendering (van de Velde, 2009). A franchise scheme was then introduced to regulate the sector according to competitive procedures for new services, whereas the level of supply (frequency, services, timing and schedules) was defined within a contract (Iglesias, 2012). Nonetheless, it seems that some concessions could be extended according to the previous scheme (Van de Velde, 2009).

Great Britain historically represents the first case of deregulation of long distance coach transport, with the Transport Act in 1980. The former public monopolist *National Bus Company* was then privatised in 1986 (its long distance branch was rebranded *National Express*). Results were, at first, quite disappointing: after a first phase of strong competition in the first half of the 80s, *British Coachways* - the main competitor of the former monopolist – went bankrupt and a *de facto* monopoly lasted up to 2003. Literature suggests among the possible causes for this situation (White and Robbins, 2010; Van de Velde, 2009) the existence of a former incumbent monopolist, moreover exclusively owning coach stations in strategic places (e.g., London Victoria) and the existence of relevant entrance marketing costs.[4] This situation finally changed when *Megabus UK* entered the market in 2003 – reaching a 10% market share, followed by *First Greyhound* in 2009: White and Robbins (2010) suggest that those entrance were mostly allowed by the sharp reduction in marketing costs allowed by the spread of the internet.

Characteristics of coach transport industry in Italy

No official public figures about the industry in Italy were available when we started our research: the *"Study on passenger transport by coach"* made by SDG (2009) collected some data, but their affordability was evaluated by themselves to be "very poor".

In order to analyse the characteristics of firms and existing coach transport services in Italy, we thus developed a new geographical database of the supply of long distance coach services and a database of the operating firms, all private. Our estimations on a 42 ANAV firms (which represent the vast majority of Italian firms, the rest being marginal operators) dataset and on timetables suggest a supply of more than 90 million vehicle-kilometres of national services in 2010. Figure 1 shows that private coach operating companies are medium- to small-sized in Italy, with only 4 firms producing more than 6 million kilometres per year and only 7 producing more than 2 million kilometres per year; all the other 31 firms produce less. The main companies are mostly based in southern regions, which is consistent with the geographical distribution of services we will discuss later.

In absence of data, assuming an average load factor of about 30 passengers per vehicle,[5] we can suggest an indicative value of about 3,000 million passenger-kilometres carried in 2010. We can compare this figure with Italian medium to long distance rail services which served 20,637 million passenger-kilometres (Trenitalia, Balance Sheet 2010), of which 7,012 million passenger-kilometres using subsidised "universal service" (*Servizio Universale*) long distance trains (see below).

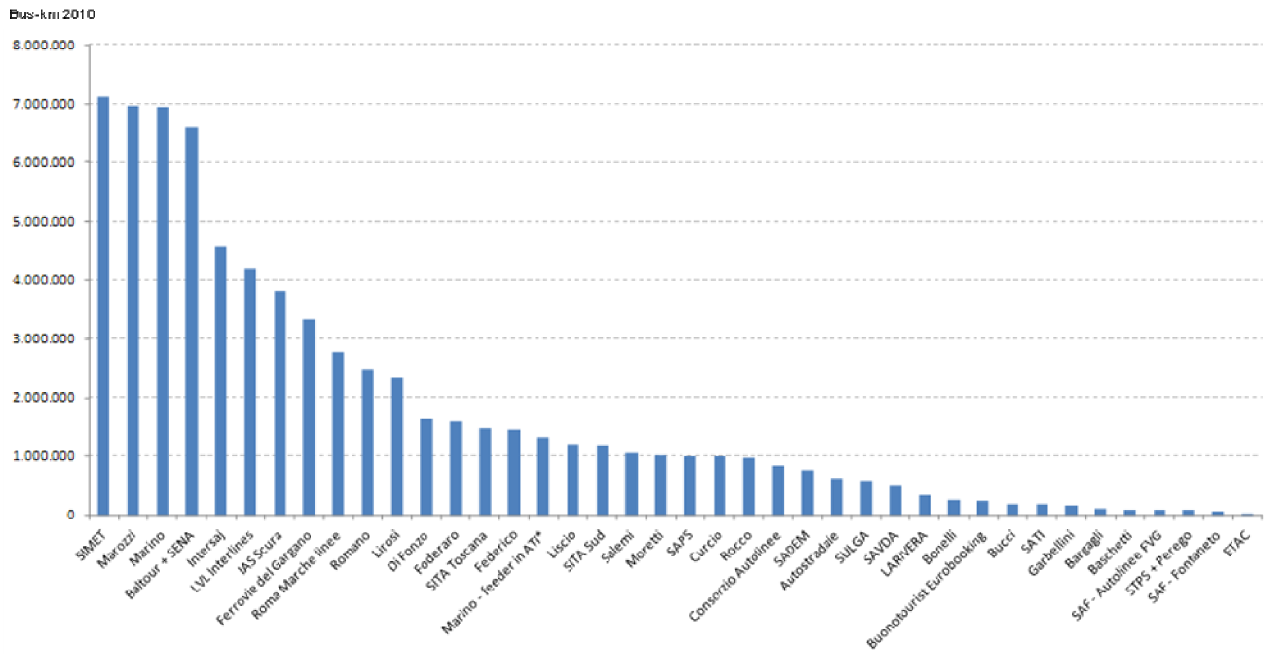


Figure 1 – Supply of long distance coach services produced by operating companies in Italy. ANAV dataset 2010, interregional road services of State competence only.

---

[4] As most of long distance coach users travel just a few times a year, services require many potential users to break even.
[5] SDG (2009) indicates similar values in Germany.

Long distance coach transport in Italy is clearly characterised by traditional strengths and weaknesses of this transport mode.[6] We can mention among the strengths:

- extensive geographical coverage;
- high flexibility and ability to adapt to changes in the demand;
- low costs and, thus, low fares, without any public subsidy;
- commercial sustainability for direct services even where rail services do not exist or need interchanges because of low demand density;
- high security perceived by passengers, in particular in comparison with night trains.

On the other hand, those services certainly have some weaknesses:

- low visibility and still developing marketing policies;
- low commercial speed, even though rather good on a door-to-door basis on many relations. In congested contexts, possible uncertainties about the arrival time;
- difficulty of movement on board for passengers, and thus need for rest stops on longer trips (further lowering commercial speed).

Detailed data about users' characteristics are still missing. According to our interviews with five among the biggest transport operators, long distance coach users are historically made of students, elderly people, people who do not have access to car and people with lower income in general (similarly to other European countries, according to SDG 2009). However, in time, it seems that those services are now attracting also other user groups, like professionals and leisure travellers.

Terminals represent an important topic for the industry, even though the possibility for coaches to make many kerbside stops represents one of its strengths, improving geographical coverage and door-to-door times. The British experience in fact showed as non-discriminating access to terminals represented a critical factor (Leiren, 2010). In Italy, the attitude of local administrations towards coach terminals is differentiated, with some episodes of criticism that in the worst cases ended with the displacement of terminals outside city centres, which eventually can bring to marginality, progressive loss of users and problems for existing users. City terminals in city centres are usually considered the best solutions, ensuring the best visibility and accessibility, but might introduce longer journey times inside the city and involve possible difficulties in integration with the city structure; another solution - uncommon in Italy – is represented by "coachway interchanges" close to major highways: if properly linked with effective public transport, they can ensure acceptable accessibility (though giving lower visibility) with higher commercial speeds and lower uncertainties on travel times for coach services and easier integration in the city (a significant example outside Italy can be found in Milton Keynes, UK).

National and international services

We have reconstructed the supply of national coach services on the basis of 2011 public timetables (and on data directly provided by some ANAV companies). We analysed 221 long distance services: 171 of them are operated all the year round while the remaining 50 are seasonal.

[6] PassengerFocus (2011) provides an analysis of strengths and weaknesses of coach travel in the UK, based on focus groups and interviews.

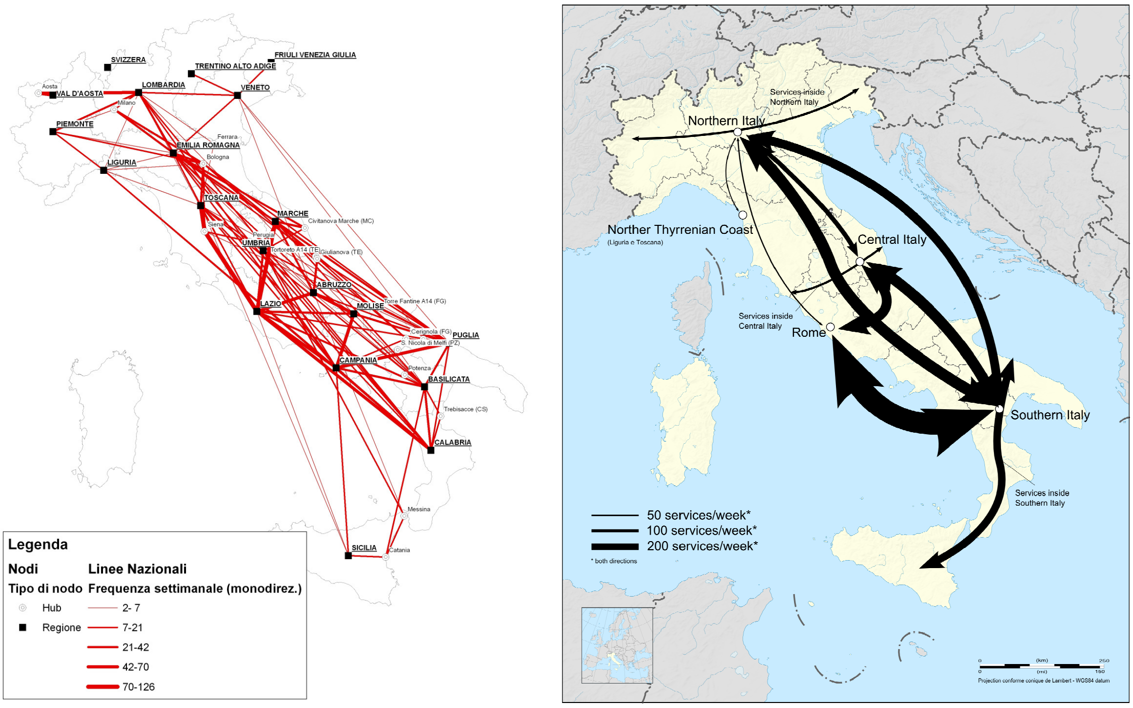


Figure 2 - Geographical representation of coach services in Italy, aggregated by different geographic areas. Weekly services, 2011.

Looking at the geographical coverage of coach services in Figure 2, we can observe that:

- many services exist on the North-South relations (connecting main cities with dispersed destinations);
- the maximum number of services is between Rome and the South;
- important internal relations exist in the Centre and in the South;
- the industry in the North is very small, limited essentially to some seasonal services.

National coaches in Italy nowadays supply mainly: a) long distance services, in partial competition with rail and air transport, b) medium distance services, where rail service is poor, uncomfortable (needs interchange, etc.), too expensive (high speed rail) or not existing at all, and c) tourist services, usually seasonal (not included in Figure 2). Comparing Figure 2 and Figure 3, we note that long distance coach services are geographically quite complementary to rail services, the latter being concentrated in the North - Centre.

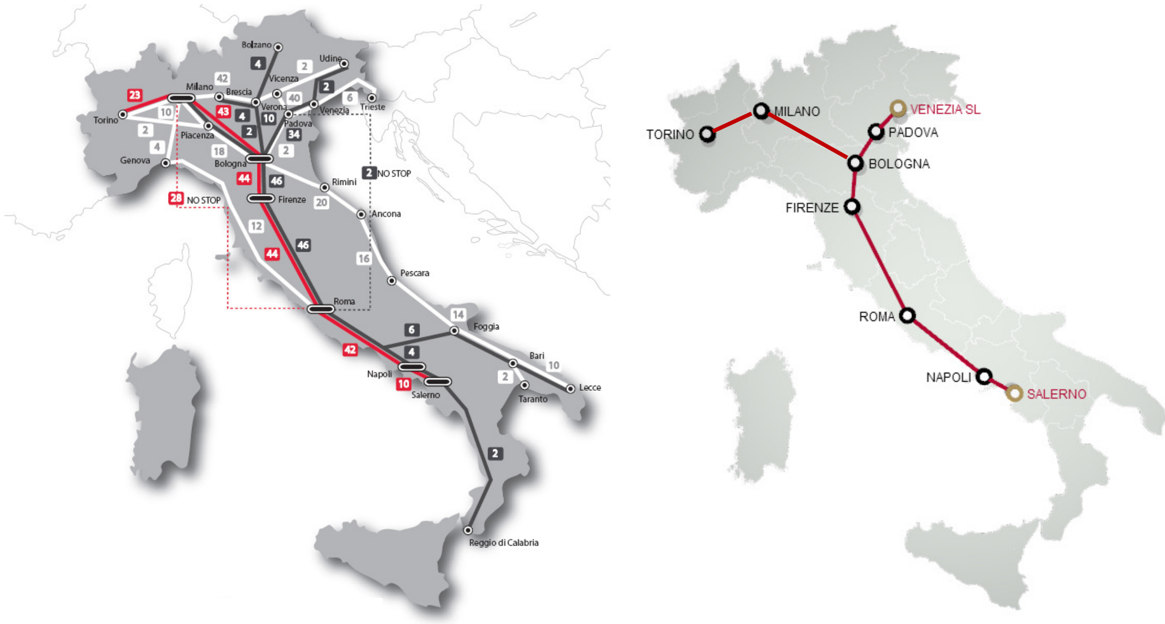


Figure 3 – Main 2012 long distance rail services in Italy, operated on a market basis. On the left Trenitalia "Frecciarossa" high speed services in red, "Frecciargento" medium/high speed services in grey and "Frecciabianca" fast intercity services in white. On the right NTV "Italo" high speed connections.

Figure 4 shows a representation of line length and weekly services (per direction) of non-seasonal long distance coach services, distinguishing among services that allow getting on and off the coach at all the stops from those that do not (constraints are due to overlapping concessions by other bus companies). Long distance coach services cover the whole range of distances (100 to 1,630 km). Despite being only those linking more than two regions, there exist both short-to-medium and long distance services. Frequencies are usually daily or bidaily, but there exist some medium distance services (200 to 700 km) having much higher frequencies (3 to 10 per day). 86 services are operated at least daily (7 per week), 27 services at least twice per day (14 per week). 134 services are however operated at least three times a week, but there are many sporadic services serving more remote places.

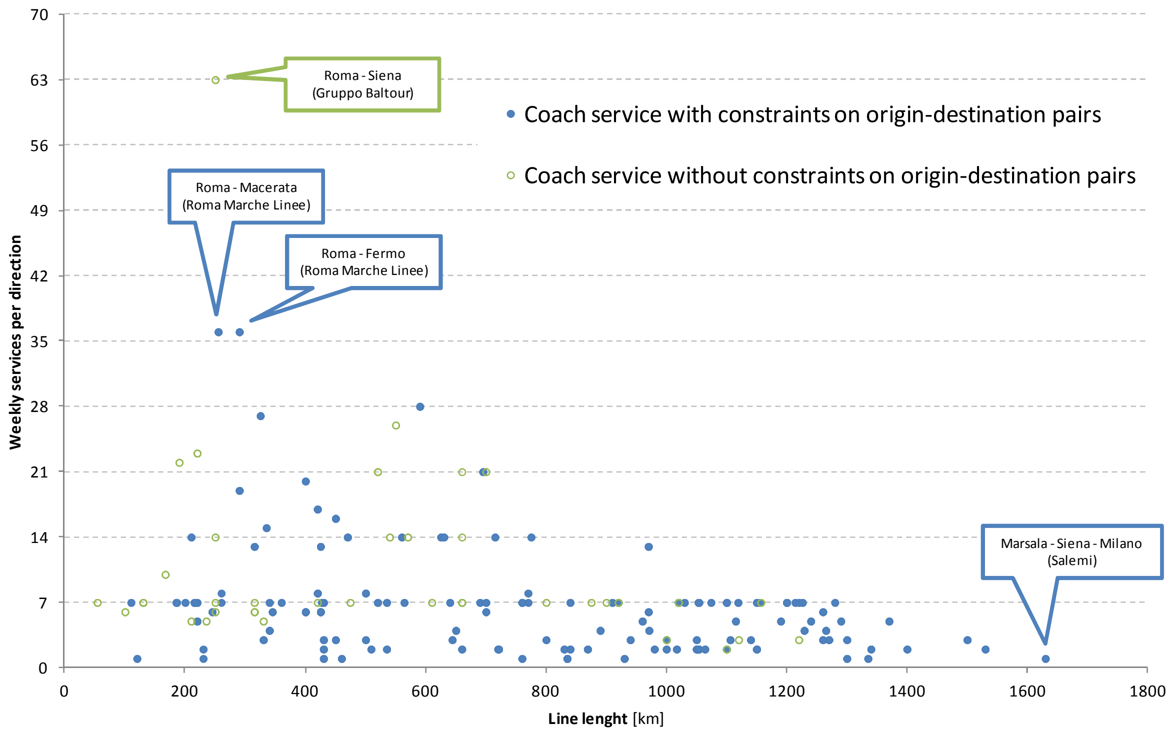


Figure 4 – Representation of line length and weekly services of non-seasonal long distance coach services in Italy, 2011 (our elaboration).

International services, not included in the data provided above, supply 215 relations per week as shown in Figure 5. The most significant destinations are France, Romania and Poland.

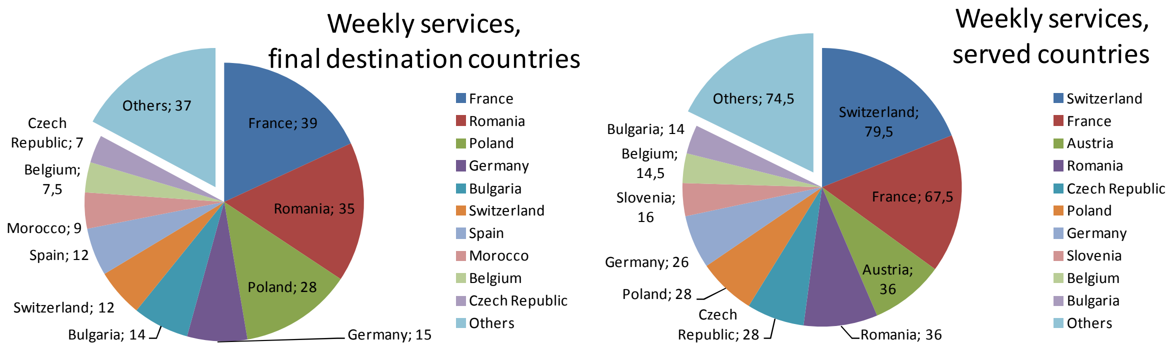


Figure 5 - International coach services from Italy. Weekly services 2011, per final destination country and per served country.

Since 2011, two new French operating companies started providing international service to France in competition with the existing ones of *Eurolines*: *iDBUS* providing 3 daily services on the Milan-Lyon-Paris line and *Starshipper* providing 2 daily services on the Turin-Chambery-Lyon line.

FUTURE PERSPECTIVES

Possible evolutions of the market

In the former section, we have provided a first picture of present long distance coach transport in Italy, starting from our database and from the information we have directly obtained from firms. Figures suggest that the industry is significant, even if small when compared with long distance rail transport (we estimated about 3 billion passenger-km on coaches with respect to about 20 billion on long distance trains). Today long distance coach and rail services are mainly complementary, and coach services have often filled the qualitative and quantitative gaps of rail ones.

However, according to our analyses, the Italian coach industry has room to grow, especially when liberalisation will be complete at the end of 2013. Van de Velde (2009) outlines that *"the liberalisation and deregulation of the coach sector is perceived to be a success in those countries that have implemented it."* Moreover, the same author suggests that the proponents of deregulation observe *"that in countries that have removed railway protection and deregulated the coach sector, coaches tend to capture more passengers from the car than from rail, to conclude that coach deregulation would be beneficial from an overall transport policy point of view."*

Something can also be learnt from what happened in the air transport, which was liberalised in the late '70s in the USA and in the '90s in Europe. In fact, coach and air services share some common characteristics, for example lower entrance barriers and high factors mobility, and thus competition. Some evidence shows that air traffic liberalisation in Europe (Fu, Oum and Zhang, 2012) has led to substantial economic and traffic growth, mainly due to increased competition and efficiency gains in the airline industry. The sole Italian air passenger market grew from 60 million passengers in 2001 to 109 million in 2010 (Eurostat, 2012), with visible discontinuities when newcomers grew. However, Button (1996 and 2002) warned about the possibility that *"air transport markets are, in economic terms, inherently unstable (there is an empty core) and that this will lead to under supply of services. Equally, it could be argued that actions by the airlines, such as forming alliances, are a natural reaction to this and are preferable to Government actions."* Those aspects should thus be considered when looking at coach transport liberalisation or deregulation, and similar solutions should be considered by firms in order to better take advantage of free market (users' loyalty marketing, vertical integration, commercial networks for smaller firms, development of a unique internet website to let users perceive the network as unique, etc.). Moreover an independent authority – also responsible for preventing from disruptive competition – is needed, considering the possible potential instability of the industry (even if no similar situations have appeared in countries which have already deregulated coach services).

As we have already seen, liberalisation of long distance coach transport in Great Britain proved problematic, mainly because of the presence of the former incumbent which had been privatised (White and Robbins, 2012): it could benefit from possessing coach stations in strategic places (such as *Victoria Coach Station* in London) and from high marketing entrance costs for newcomers before the internet spread. In Italy this risk seems rather low as Figure 1 shows that there is no dominant player in the market and in 2013 the use of internet is rapidly spreading also in this "traditional" sector (even if it seems that many companies are still not exploiting its fullest potential).

The analysis of the present situation suggests us that there might be at least three paths for possible growth of long distance coach services in Italy:

1) consolidation of the existing market, inside the new liberalised context that is expected to provide even more efficiency and improve the quality of services. Possible criticisms, already discussed, are expected to be outweighed by the benefits of overcoming the present structure made only of many small independent markets (one for each exclusive concession) towards one single national market, potentially bigger than the sum of the existing ones. We expect this situation to push smaller firms to merge or at least to join commercial agreement in order to expand their network and afford needed marketing costs;
2) expansion of the market towards new users, both generated *ex novo* and diverted from other modes, through new kind of services (e.g. low cost alternative to existing rail services), new connections, more frequency on existing ones and increased use of marketing and communication tools. As seen in the former section, the present

structure of long distance coach services in Italy developed in time trying to compensate for non existing or inadequate rail services. However some factors are changing in recent times, both due to external factors and for the innovative thrust of the new regulatory regime:

a) The significant reduction in air fares (Fu, Oum and Zhang, 2012), with its competitive travel times, made historical long distance trains less and less competitive (notwithstanding subsides), and those services are now being reduced. However air transport is not capable of providing the necessary geographical coverage, and thus new feeder lines and medium distance services can become a new business opportunity for coach transport.

b) The improvement in medium distance rail services (now branded "Le Frecce"), both in terms of new or refurbished rolling stock and of travel times, was accompanied by an increase in fares,[7] which are not regulated in market services. This made rail travel in general less affordable for users with lower willingness to pay, especially when not able to book in advance, who now might be attracted by new coach services, which usually provide lower fares even with little advance.

3) integration, or even substitution, of some subsidised long distance rail "universal service".

While the first and the second point can be considered mainly internal to the industry and its dynamics, the third one is mainly related to political choices: we will discuss it in the following section.

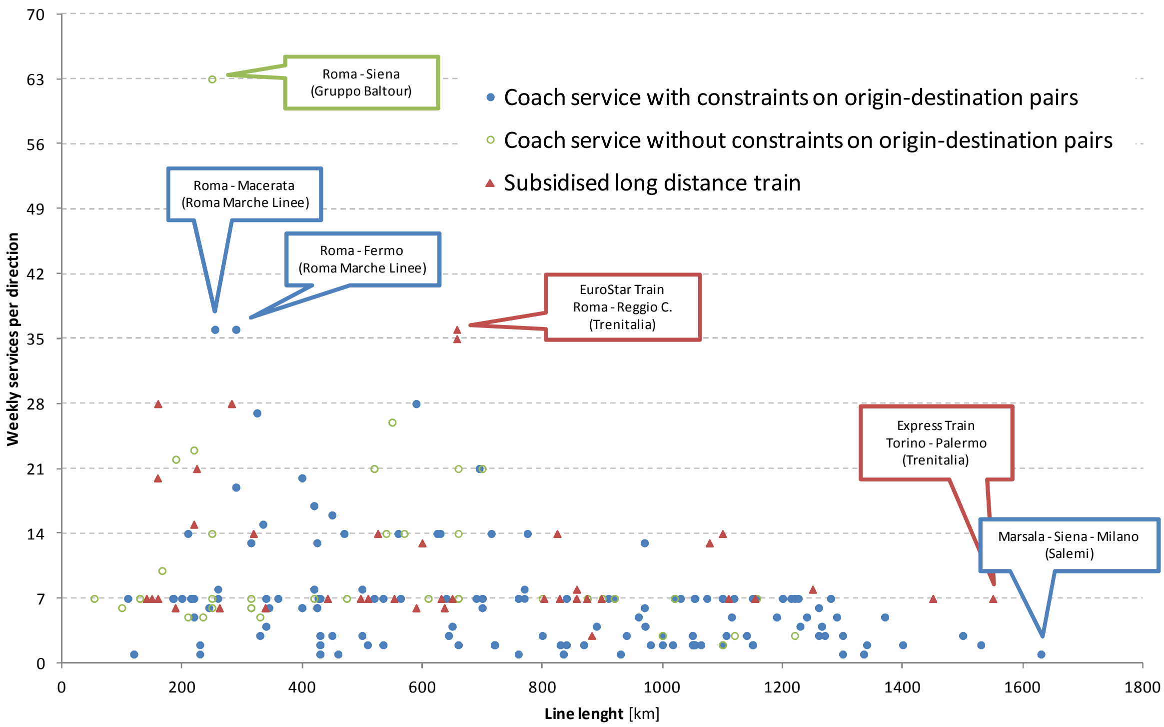
Comparison with subsidised long distance rail transport

In Italy some long distance rail services are subsidised under a Public Service Contract (named *Servizio Universale*, universal service in Italian), directly awarded to *Trenitalia* without public tendering. No public official figures exist, except the total supply, confirmed by our simulations (Beria et al., 2012) on the basis of a public list of services available on the website of Trenitalia. In 2011 about 30m train*km were operated by the rail company under such a contract, later reduced in 2012 to about 27m train*km. The amount of the contract is around €250m per year.

[7] A Milan-Rome ticket increased from 46.48 € in 2005 to 89 € in 2010 (travel time decreased from 4 to 3 hours). Nowadays it is not difficult to find tickets at 49€ even on the same day of departure, but in the past there were more InterCity trains having lower fares. Moreover, the entrance in the high speed rail market of a new open-access rail company in 2012, *NTV*, should have pushed prices down, even if not down to the former InterCity level.

Figure 6 - Geographical representation of subsidised long distance rail services in Italy, aggregated by different geographic areas. Weekly services, 2011.

As Figure 7 shows, subsidised long distance trains share common distance and frequency characteristics with long distance coaches, perfectly overlapping with the exclusion of sporadic (less than daily) services. However, the cost per seat of coach services is estimated to be generally lower (about 2.7 €cent per coach seat and about 4 €cent per train seat).[8]



[8] Our dataset on 12 ANAV coach companies indicates average unit costs of 1.34 €/coach-km while Trenitalia long distance unit costs are supposed to be about 20 €/train-km for conventional long distance trains and 25 €/train-km for premium service (*Eurostar*) trains.

Figure 7 – Comparison of line length and weekly services among non-seasonal long distance coach services and subsidised long distance trains in 2011 (our elaboration).

In Figure 8 we suggest, on the same length-frequency graph formerly used to analyse existing coach services in this paper, possible reference markets for long distance coach, rail and air transport: an area of potential competition seems to exist, which represents an opportunity for coach services.

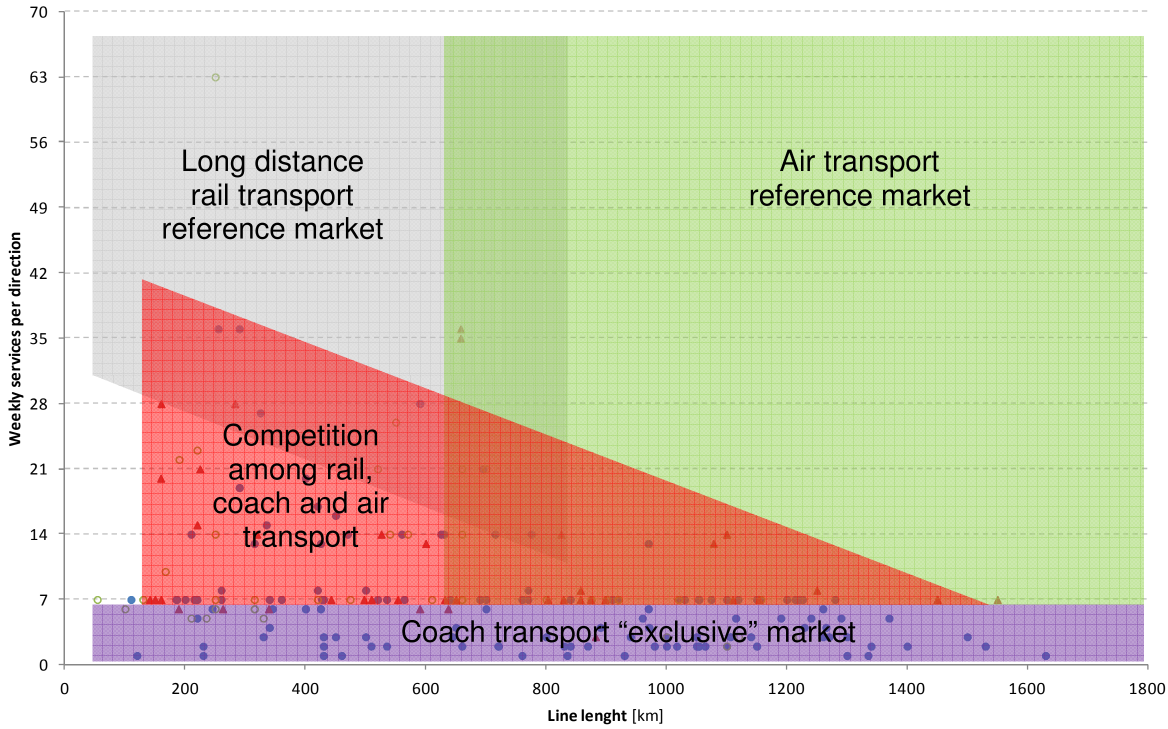


Figure 8 – Reference markets of long distance rail, coach and air transport and possible competition.

Moreover, a reduction in services operated under the PSC in 2012 was justified by *Trenitalia* on the basis of a claimed reduction in their profitability in time.[9] In this context, and considering the characteristics of some subsidised rail services (more than 1,000 km long, see Figure 7), we believe that a new approach to those social services by the policy maker should be needed: in some cases, the reorganisation of existing subsidised train services might allow significant cost savings and, in some cases, also reduce travel times by taking advantage of the best of each transport mode. Although no disaggregated public data on patronage of those services are available, possible multi-modal reorganisations with combined rail, air and coach transport might require less subsides and should be considered and evaluated on a cost-benefit basis by the Government

FINAL CONSIDERATIONS

The paper presented the current situation of long distance coach transport in Italy, a mode of transport almost unknown to the general public and often ignored even by policy makers. The industry has been liberalised since 2007, and service regulation will gradually change from exclusive concessions to non-exclusive authorisations.

We developed a geographical database of the long distance coaches supply and a database of the operating firms. Moreover, we interviewed managers and directors of some operating firms. To compare the industry with the long distance rail sector, which is partially subsidised

[9] See the declaration of the FS Group CEO Mauro Moretti in the article “Treni notturni, Moretti batte cassa a Passera”, *CorrierEconomia,* 28 november 2011.

in Italy, we referred to and analysed the also official Ferrovie dello Stato (the national railway company) economic figures, to make comparisons on supply and estimated passengers.

According to our estimations, that are not present in Italian transport statistics, the industry supplied more than 90 million bus*kilometres in 2010, with an estimated patronage of about 3,000 million passenger*kilometres. Our database shows the areas where coach services are more present (i.e., the North – South and the Rome – South markets, and the relations inside the Centre and inside the South). The industry is fragmented among more than 50 firms, mainly private; however only 4 firms are producing more than 6 million kilometres per year, with the majority supplying less than 2 million kilometres per year.

Italian services are characterised by the typical strengths (e.g. low prices, no public subsides, high perceived security, commercial viability for direct services and high geographical coverage even with low demand etc.) and weaknesses (e.g. low commercial speed, low reliability of timetables, etc.) of the long distance coach industry.

The current situation, both in terms of operating companies and supply, is the result of the previous legislation that assured exclusive concessions (a geographical monopoly of 30 kilometres on origin-destination pairs). The new authorisation regime will radically change the market, allowing competition on the same routes and easing the entrance of new operators in the market. Firms are showing different reactions and attitudes towards the liberalisation of the industry: while a few of them have already turned their concessions into authorisations (loosing exclusivity on the served relations, but gaining more freedom) and launched new services, others are trying to keep exclusivity as long as possible.

Starting from the analysis of the timetables of the ANAV dataset, we determined the overall supply of long distance coach services in terms of frequency and geographical distribution: coach services are nowadays more significant where rail services are weaker. Many routes connect the main cities (Milan, Rome, Turin, etc.) with dispersed destinations, in particular towards Rome and the South. In general, the coach industry is not negligible at all, even if smaller compared to long distance rail transport.

Today long distance coach and rail transport are basically complementary, and coach services often fill the qualitative and quantitative gaps of the rail. However, this is expected to evolve as a consequence of liberalisation. Policy scenarios appear to be three: the consolidation of the existing market in the new liberalised context; an expansion of the market towards new users (in the hope that, as happened in air transport, the unique competitive market will be bigger the sum of the existing small ones); a different attitude of the national planner and policy maker towards a broader use of coach for the subsidised long distance “universal service”, now supplied only by rail transport.

REFERENCES

Alexandersson G., Hultén S., Fearnley N., Longva F. (2010), Impact of regulation on the performances of long-distance transport services: A comparison of the different approaches in Sweden and Norway, Research in Transportation Economics, Vol. 29, pp. 212 – 218.

Beria P., Grimaldi R., Laurino A. (2012), “Il trasporto passeggeri su autobus per le lunghe distanze. Confronto modale, benefici e prospettive future”, report, prepared by Politecnico di Milano on behalf of ANAV.

Button K. (1996), “Liberalising European Aviation: Is There An Empty Core Problem?”, *Journal of Transport Economics and Policy*, 30 (3), 275-291.

Button K. (2002), *Empty Cores in Airlines Markets*, 5th Hamburg Aviation Conference, 14th – 15th February 2002, Hamburg (Germany)

Eurostat (2012), *Air transport of passengers*, available at sections Statistics >> Transport >> Data >> Main Tables, website: http://epp.eurostat.ec.europa.eu

Fu X., Oum T. H., Zhang A. (2010) “Air Transport Liberalization and Its Impacts on Airline Competition and Air Passenger Traffic”, *Transportation Journal*, 49 (4), 24-41.

Iglesias F. (2012), Regulatory framework for interurban coach transport activities in spain. Presentation at IRU workshop “Long Distance Bus and Coach Transport in Europe: (re)Discovering the wheel”, 29 February 2012.

Leiren M.D., Fearnley N. (2010), *Public funding to long distance buses: an entry barrier or a necessity* ?, presentation at the 10th International Conference on Competition and Ownership in Land Passenger Transport, Hamilton Island, August 2007.

PassengerFocus (2011), Coach Passenger Needs and Experiences: What Passengers want. Report. London (UK).

SDG (2009), *Study of passenger transport by coach*, Final Report, prepared by Steer Davies Gleave for the European Commission, June 2009

Van De Velde D. (2009), *Long-Distance Bus Services in Europe: Concessions or Free Market?*, Discussion Paper No. 2009-21, Joint Transport Research Centre, OECD – International Transport Forum.

White P., Robbins D. (2012), “Long-term development of express coach services in Britain”, *Research in Transportation Economics*, 36, 30-38.