

COMPETITION BETWEEN AIR AND HIGH SPEED RAIL

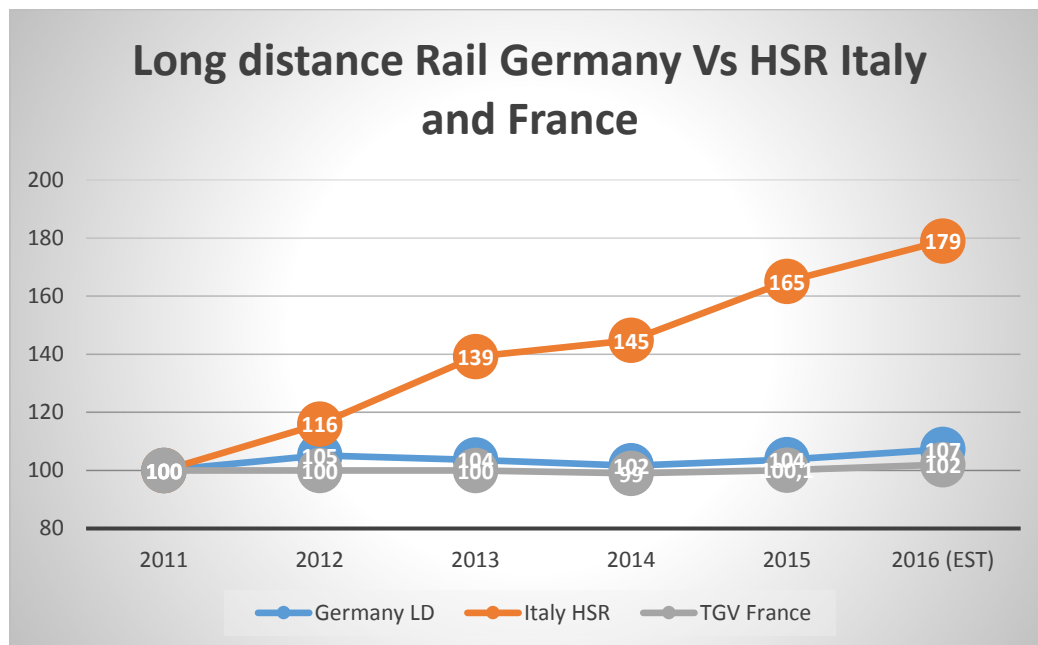
The construction of the high-speed rail has obtained a remarkable success in the countries where it has been built. The immediate effect was the beginning of a strong competition with the air transport especially for distances lower than 700 km.

In Italy, the effects of the competition air and rail appeared since the ending of the Turin-Naples link in 2009, amplified from April 2012, when Italo started to operate on the Italian HS/HC infrastructure.

Compared with other countries, the competition in the High-Speed sector has permitted a unique increased in the number of rail passengers.

Analyzing other countries, Italy has been characterized by a growth around 80 percent of the passenger-km in the HS rail, respect to a lack of progress registered in France and Germany (long-distance market).

Graphic 1: Development of the High-Speed in Italy and France and the long distance in Germany



Source: TRA Consulting

The consequence of this unique development, due to the introduction of the competition in the HS, was the decrease of the market share of the plane.

This is the reason why airlines started to have serious difficulties on some routes served by the HS train and the plane.

Alitalia saw a remarkable decline in the number of passengers, having difficulties to feed the hub & spoke of Rome Fiumicino.

Easyjet reduced the number of flights in the routes in competition with the train and it closed the Milan Linate – Rome Fiumicino, while Ryanair stopped the services in the Rome - Milan route.

Competition has permitted an improvement of the offer, many investments in technology and innovation, stimulating the companies to offer high-quality services.

The benefits for the costumers have been considerable, as the reduction of the ticket prices with the consequent increase in the demand and the offer.

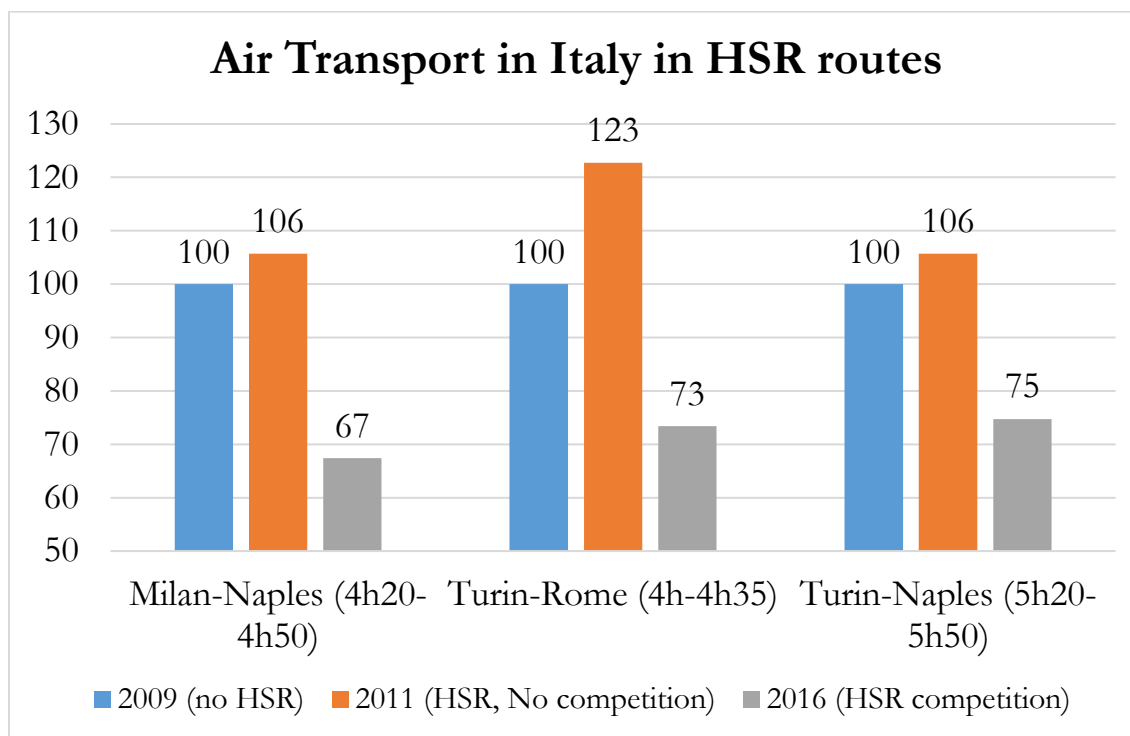
In the graph below have been shown the effects in terms of number of air passengers in some routes served by both the two means of transport.

The base year taken into consideration is 2009, year when the HS infrastructure wasn't still completed (the activation of the last segment was in December 2009). It has also been analyzed the differences respect to 2011 and 2016.

The routes analyzed are the Milan-Naples, Turin-Rome and Turin-Naples.

The years taken into consideration are significant: 2009 was ended the construction of the route Turin-Naples, 2011 was the last year without competition in the High Speed rail and full functioning of Alitalia's Fenice Plan and 2016 shows the effects of the competition inside the same rail transport. For every route is indicated the time of the journey with the HS train service.

Graphic 2: The air transport in Italy-the effects of the competition in the HS rail



Source: elaboration data Assaeroporti

Analyzing the Milan-Naples route between 2009 and 2011 (the non-stop HS train takes 4h20 minutes while with stops it takes 30 minutes more) it is possible to see a growth in the number of air passengers of 6 percent. The conclusion of the HS rail didn't have effects on air transport.

Instead, the big difference is significant from the moment when the rail market experienced the incoming of Italo. In 2016, four years after the liberalization, the air transport lost 33 percent from 2009 and around 40 percent respect to the peak in 2011.

Precisely this figure is significant because shows with evidence the effects of the competition air - train.

The Turin-Rome route shows a strong increase in the number of air passengers between 2009 and 2011 where the duration of the journey with the HS train is between 4 hours and 4 hours and 30 minutes. In this case the increase in the number of air passengers was of 23 percent.

In 2016, after the incoming of the competition, it is possible to notice the strong loss in the number of air passengers with a drop of 27 percent respect to 2009 and 50 percent in comparison to 2011.

In the Turin-Naples, despite the duration of the journey by train is more than 5 hour, a considerable number of passengers prefer to use the HS rail service instead of the plane.

The trend was similar to the Milan-Naples case, where was registered an increase of 6 percent between 2009 and 2011, with the following decrease of the air traffic after the entrance of Italo in the market.

In all the routes considered in the analysis, the air transport lost passengers and market share since 2009, the cause wasn't just the construction of the HS rail but above all the introduction of the competition in the HS rail.

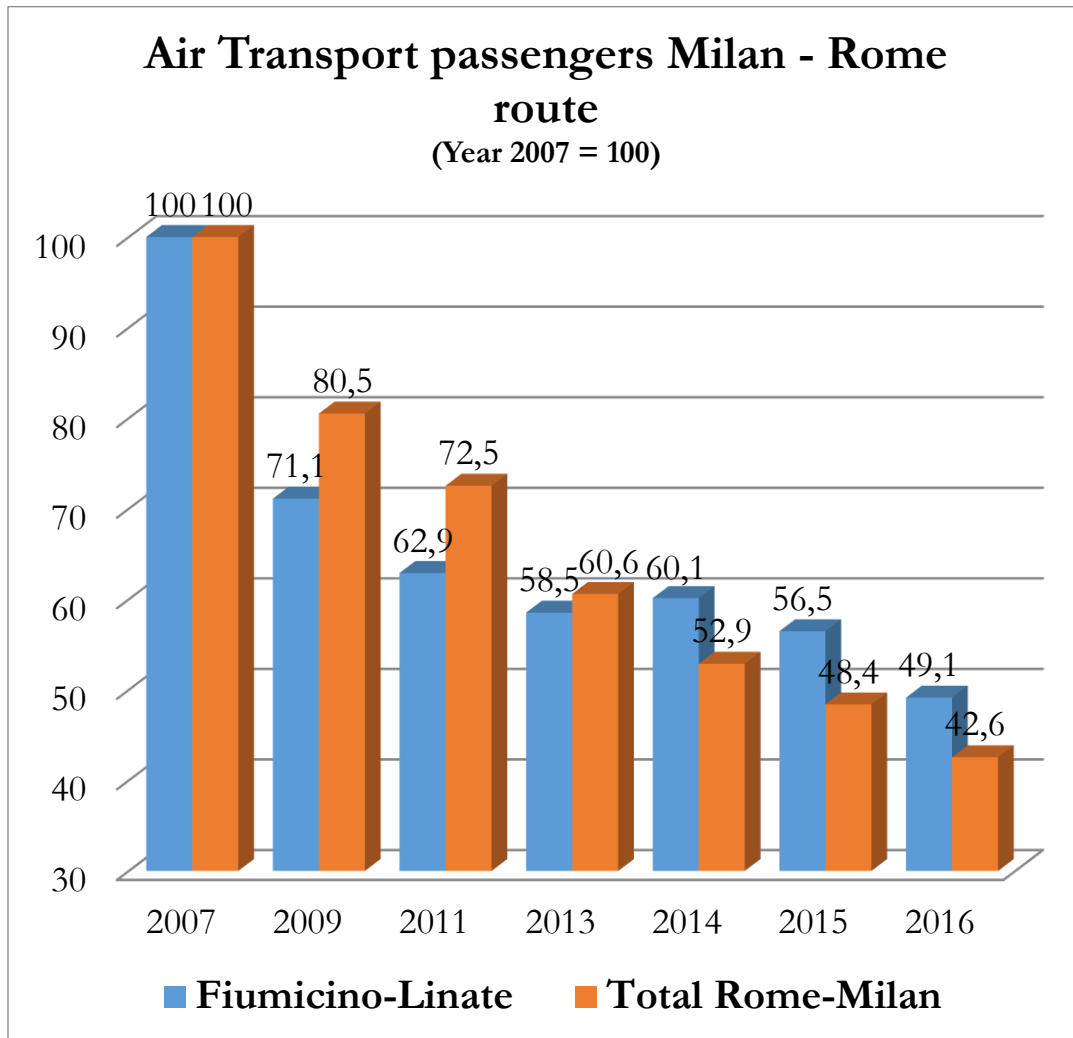
The best quality of the HS rail service, more competitive prices and the possibility to start and end the trips from the city centers, has produced a change in the choices of the travellers.

The most interesting data is represented by the Turin-Naples route, despite the time of the journey is longer than the plane, a considerable number of passengers prefer to use the train.

In the graph below has been analyzed the Rome-Milan route, which was considered for years the most important route in the Italian air market for number of passengers.

A fact that shows with evidence the success of the HS train, which was able to create a new demand and catch passengers before users of the plane.

Graph 3: the air transport in number of passengers in the Rome-Milan route.



Source: elaboration data ENAC

The graph above shows how the competition seriously affected the Rome-Milan route analyzing the difference respect to 2007. The annual base takes into consideration the evolution of the number of passengers in the Rome-Milan and in the Rome Fiumicino-Milan Linate.

The Rome Fiumicino includes also the Fiumicino-Linate, Fiumicino-Malpensa and Rome Ciampino-Bergamo Orio al Serio.

The period taken into consideration is very interesting, in 2009 was concluded the HS line between Rome and Milan while in 2012 Italo entered in the market.

For this reason, the fall of the air passengers could be divided into two periods: the first between 2007 and 2011, last year without competition and the following between 2011 and 2016.

On the whole, the passengers in the Rome-Milan declined more than the passengers in the Linate-Fiumicino route, with a drop of 57,4 percent in 2016.

In the Fiumicino-Linate was registered a reduction of 50,9 percent in the period taken into consideration.

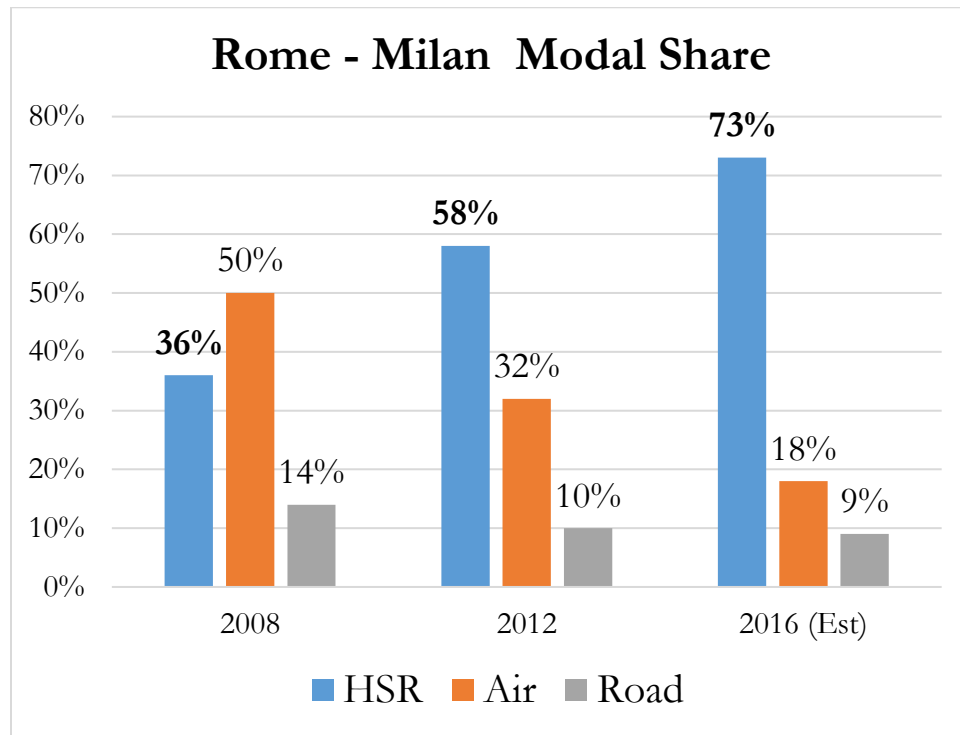
If we analyze the two periods, we will observe:

- Between 2007 and 2011 the Fiumicino-Linate route saw a strong decline in the number of passengers as effect of the conclusion of the HS rail infrastructure at the end of 2009. During the same period the total traffic between Rome and Milan registered a lower reduction. This could be due to different reasons, such as the reduction of the journey time which carried to a truly competition in the air transport. Another reason could be found in the change of the competitive environment: in the Fiumicino-Linate during the period considered there was a monopoly, in fact in 2008 Alitalia and Airone were merged.
- Between 2013 and 2016 took place an opposite attitude. The Rome-Milan experienced a strong decline in the number of air passengers, in fact entered the competition of Italo, at the same time Easyjet started to operate also in the route Fiumicino-Linate. The competition was so strong that the British low cost carrier decided to give up the route at the end of 2015.

This analysis shows how the effects of the competition have been taken place in the air and rail transport. The Italian case it is a clear example of intermodal competition between HS train and air transport.

The graph below analyzes the modal share in the Rome-Milan route, it is evident the strong position of the rail transport.

Graphic 4: Rome-Milan, modal share



Source: elaboration data Prof. Andrea Giuricin

The train took three-quarters of the market, underlining all the benefits not only of the construction of HS line, but also the advantages from the incoming of the competition in this segment.

This new modal **allocation** has brought also advantages for the environment due to the better energetic efficiency of the rail transport.

On the whole, the incoming of Italo has permitted to have a modal shift from air to rail that is also what the European Commission would like to achieve in Europe.

It is important to spread the benefits of the competition also in the rail segments not yet liberalized in order to bring the advantages to all the travelers not only to the HS ones.

Rail and air transport have opportunities to collaborate, but until now in the domestic market the two modes are in competition.