Competition in High-Speed Railway Services: social and economic effects

A comparison between the «Italian Laboratory» and the raising competition in French and Spanish railways markets

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Summary

- The work aims at providing an overview of social and economic benefits brought about by High-Speed Railway services in terms of quality and variety enhancement of services provided, cheaper fares, better accessibility and an increase in overall demand.

- Following a description of the EU approach for fostering railway transport, it provides an overview of main experiences of open-access competition between high-speed rail operators occurred in Italy, France and Spain.

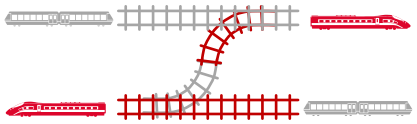
- A focus is dedicated to the role played by Italian Regulator for ensuring a level playing field on HSR segment and to changes to the Regulatory framework that will be introduced by reforms negotiated by Italian government with European Commission within the Recovery and Resilience Facility (RRF).

- Last, an overview of main challenges that, despite benefits, competition brings for both freight and passenger segments as evicted by the outcomes of the European Commission assessment on the implementation of Single European Railway Area Directive.

Source: Author's processing based on [1) EC. (1991) Council Directive 91/440/EEC of 29 July 1991 on the Development of the Community's Railways; [2] https://competition-policy.ec.europa.eu/sectors/transport/rail-transport_en
European Commission Study on passenger and freight rail transport services' prices for final customers

High-Speed Rail exploitation models

Fully mixed

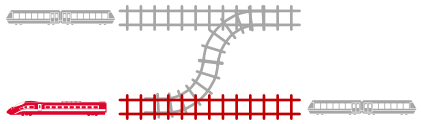


In a fully mixed model, both high-speed and conventional services can run on each type of infrastructure.

Example:

Germany

Mixed conventional

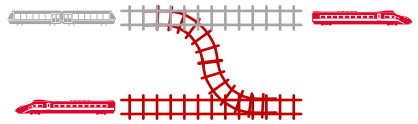


In a fully mixed conventional model, some conventional trains can run on high-speed lines.

Example:

Spain

Mixed High-Speed

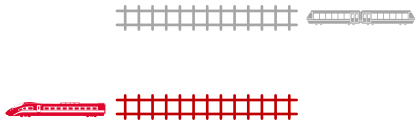


In a mixed High-Speed model, high-speed trains run either on specifically built new lines, or on upgraded segments of conventional lines.

Example:

France, Italy

Esclusive High-Speed



An exclusive High-Speed model is characterized by a complete separation between high-speed and conventional services, each one with its own infrastructure.

Example:

Japan, Shinkansen 1964

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Source: Author's processing based on [1] Javier Campos, Ginés de Rus, (2009) Some stylized facts about high-speed rail: A review of HSR experiences around the world, Transport Policy, Volume 16, Issue 1, Pages 19-28.

EU approach for fostering railway transport

- ✓ Due to the typically high fixed cost of rail transport, rail services in the EU (both passenger and freight services) have been historically provided by publicly owned monopolies.
- ✓ EU approach to enhance railways' efficiency and attractiveness is based on fostering competition, innovation and environmental sustainability.
- ✓ Adoption between 2001 and 2016 of four railway regulatory packages; implementing measures entered into force between 2003 and 2023.
- ✓ Key Features of EU Regulatory Framework:
  - Vertical Separation
  - Independent Regulators
  - Market Opening

Source: Author's processing based on [1) EC. (1991) Council Directive 91/440/EEC of 29 July 1991 on the Development of the Community's Railways; [2] https://competition-policy.ec.europa.eu/sectors/transport/rail-transport_en
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Forms of competition in the EU approach

✓ **Open-access (OA)** competition (competition-**in**-the-market)

- main benefits: lower fares; potential cost reductions; increased frequency and thereby more flexibility for the passengers; improved quality of services, such as offering amenities like free Wi-Fi, catering facilities, modern rolling stock, lounge spaces in the stations etc.

✓ **Public Service Obligation (PSO)** (competition-**for**-the-market):

- main benefits: reduced costs for the awarding entities that are free to decide whether and how to pass on these savings of public money to end-users. Some entities have chosen to pass on benefits of competition in the form of higher frequencies and/or improved quality of service, while others have prioritized cost reductions. No direct effect on prices, which are typically regulated.

[1] https://op.europa.eu/en/publication-detail/-/ publication/ 4ea76998-7955-11ef-bbbe-01aa75ed71a1/ language-en

Competition in the Italian HSR segment

- ✓ **Italian OA railways domestic** market is the only EU national market where a **fierce competition** on the **High Speed Railway** segment **("HSR")** takes place between the **incumbent** operator **Trenitalia** and the **new entrant NTV** ("Italo") **since April 2012**
  - Italian HSR market operates on several key lines. Not all these lines are dedicated HS new lines since there are also upgraded segments of conventional lines. [1]
  - **Italo** has substituted a "low-cost" logic for its initial ambition for premium service due to financial losses. This has led to an increase of its offer, load factor and revenues. [2] [3]
  - **Trenitalia** has "increased its frequencies and improved the customer experience and fleet, outperforming Italo in all metrics and thus maintaining its market leadership (including a 10–20 % price premium)" [1]
- ✓ The so called **Italian HSR laboratory lies upon two regulatory measures**:
  - the **2013 Ministry of Transport decision** decreasing the track access charge ("TAC") up to 15% (see Decreto del Ministro dei Trasporti 10 Settembre 2013);
  - the **ART 2014 decision** (delibera 70/2014) setting criteria for TAC to be paid by 2015. The latter led to a further TAC's reduction of approximately 38% (from EUR 12.8 train/km to EUR 8.2 train/km). [4]

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[1] European Commission "Study on passenger and freight rail transport services' prices for final customers" August 2024; [2] Competition models and financial sustainability of high-speed open-access passengers rail operators in Europe Beria Crozet Guihery; "[3]Ten years of Italo" https://italospa.italotreno.it/en/company/history/five-years-of-italo.html #:~:text=Italo's%20fleet %20was %20formed %20by,class%20in%20terms%20of%20safety.; [4] Christian Desmaris High Speed Rail Competition in Italy A Major Railway Reform with a "Win-Win Game"? Discussion Paper No. 2016-11

Competition’s effects on the Italian High Speed Rail segment

- ✓ **Approximately 16%** of the total network in Italy's high-speed rail market is subject to **direct competition**.

  This corresponds to 2,642 km out of the total network of 16,829 km.

- ✓ **Main effects** of competition in Italy's high-speed rail market
  - Increase of demand
  - Reduction of prices
  - Ticket options
  - Service quality
  - Investments in new rolling stock
  - Network-wide effects



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[1] European Commission “Study on passenger and freight rail transport services’ prices for final customers” August 2024; [2] Study on passenger and freight rail transport services’ prices for final customers, Annexes https://op.europa.eu/en/publication-detail/-/publication/862ba12f-7952-11ef-bbbe-01aa75ed71a1/language-en

The role of the Italian Transport Regulator

- ✓ Autorità di Regolazione dei Trasporti ("ART") has played a key role in the development of the so called **"Italian Laboratory"** by ensuring, since 2013, full effectiveness to EU principles established by EU Recast directive 2012/34 establishing a single European railway area.

- ✓ ART has been empowered in accordance with article 56 of Recast directive. Any railway undertaking ("RU") is thus entitled to appeal to ART against decisions adopted by the infrastructure manager ("IM") or Operator of service facilities concerning network statement and criteria set out in it; allocation process; charging scheme; level or structure of infrastructure charges; arrangements for access to infrastructure and service facilities.

- ✓ Italy has opted for a **mixed model** where the **IM**, **vertically integrated** in the holding company controlling also the incumbent rail operator, acts within a **high regulated context**. Such model has so far ensured a **positive balance** between unbundling and operational efficiency.

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[1] European Commission "Study on passenger and freight rail transport services' prices for final customers" August 2024; [2] Proposal for a COUNCIL IMPLEMENTING DECISION amending Implementing Decision (EU) (ST 10160/21 INIT; ST 10160/21 ADD 1 REV 2) of 13 July 2021 on the approval of the assessment of the recovery and resilience plan for Italy https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52025PC0285; [3] Avviso di preinformazione relativo alla procedura di gara per l'affidamento dei servizi di trasporto ferroviario passeggeri, giorno e notte, a media e lunga percorrenza di interesse nazionale sottoposti a regime di obbligo di servizio pubblico https://www.mit.gov.it/comunicazione/news/trasporto-ferroviario-pubblicato-preavviso-procedura-gara-affidamento-servizi

The role of the Italian Transport Regulator

ART powers are going to be further enhanced within the framework of the Recovery and Resilience Plan reforms.

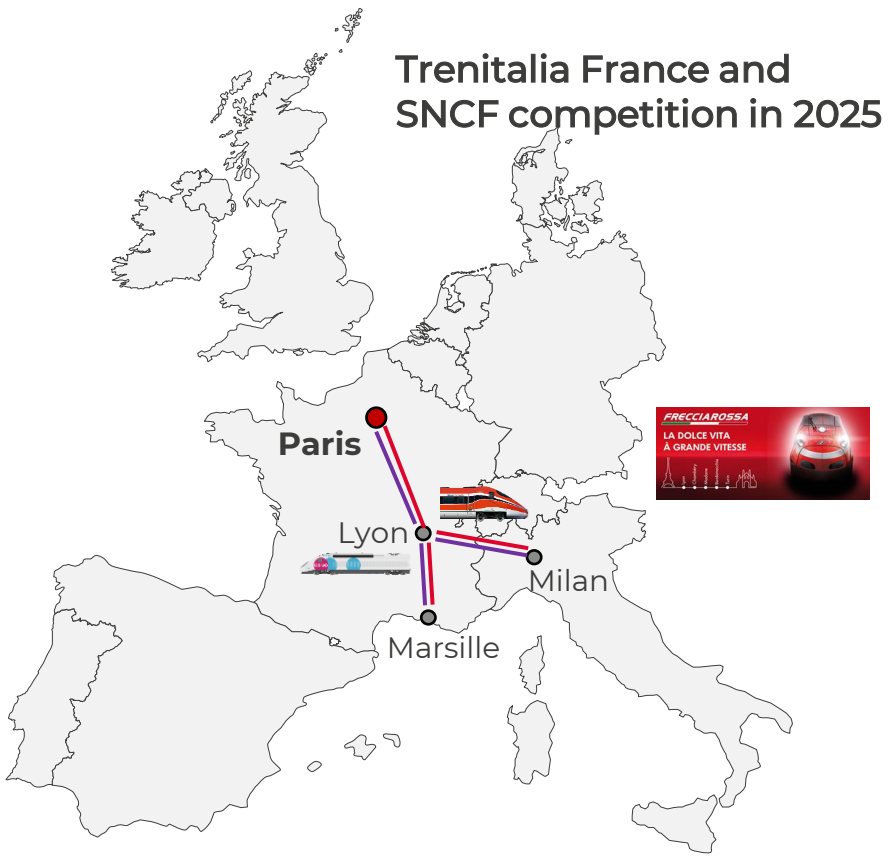
Italian Government has committed, **by the end of 2026**, to:

- ✓ introduce, as a part of the Contratto di Programma ("CdP") approval process, an opinion of ART on the Mobility Strategic Document (Documento strategico della mobilità ferroviaria di passeggeri e merci), requiring the Regulator to set **performance indicators** to be attached to the CdP;
- ✓ strengthen ART powers as regards public service contracts in the railways sector;
- ✓ extend application of ART economic regulation to all public services contracts awarded by local authorities (not only those awarded through public tendering);
- ✓ require ART to define the scope of the tender for intercity public services contract (whose prior information notice has already been published on the EU OJ S42/2025 28/02/2025) that the Minister may also decide to split in more than one lot.

[1] European Commission "Study on passenger and freight rail transport services' prices for final customers" August 2024; [2] Proposal for a COUNCIL IMPLEMENTING DECISION amending Implementing Decision (EU) (ST 10160/21 INIT; ST 10160/21 ADD 1 REV 2) of 13 July 2021 on the approval of the assessment of the recovery and resilience plan for Italy https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52025PC0285; [3] Avviso di preinformazione relativo alla procedura di gara per l'affidamento dei servizi di trasporto ferroviario passeggeri, giorno e notte, a media e lunga percorrenza di interesse nazionale sottoposti a regime di obbligo di servizio pubblico https://www.mit.gov.it/comunicazione/news/trasporto-ferroviario-pubblicato-preavviso-procedura-gara-affidamento-servizi

High-Speed Rail competition in France

- ✓ In France competition started up in open access contracts for passenger transport in **2020**.
- ✓ Until **2022 and 2023**, open-access rail activity in France remained largely dominated by the various brands and subsidiaries of high-speed services of SNCF Voyageurs (inOui et Ouigo), with nearly 85% of the market share, ahead of the subsidiaries of the SNCF group Eurostar (6%) and Lyria (4%), the SNCF partnership with Deutsche Bahn (3%), and the two new railway undertakings Trenitalia France (Italian incumbent RU – with 1%) and Renfe Viajeros (Spanish incumbent RU) each of which represents less than 1% of the market share.
- ✓ At the end of **2024**, open-access competition was limited to the Paris-Lyon High-Speed line between Trenitalia France and SNCF Voyageurs (extension to Italy of this direct rail service by the two operators remained cut off due to the Maurienne landslide from 27 August 2023 until the first quarter of **2025** when it has been recovered).
- ✓ In general, access to French railway market appears to be very much hampered by major obstacles as also recently reported by the French Transport Regulator. [2]



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[1] Le marché francais du transport ferroviaire en 2022, ART; [2] ART France Study "On-board safety equipment, at a time when rail transport services on high-speed lines are being opened up to competition» https://www.autorite-transports.fr/communiques/the-french-transport-regulatory-authority-art-publishes-a-study-on-the-safety-systems-that-trains-must-be-equipped-with-to-operate-on-high-speed-lines-and-makes-recommendations-to-remove-a-major-obs/

The effects of competition on the High-Speed Paris-Lyon axis

- ✓ In 2023, an average of 160 daily trains were operated by the **TGV InOui** (more than three-quarters of the train services, **Ouigo** (**18%**) and **Trenitalia** (**6%**)).
- ✓ The traffic was **13% higher in 2023 than in 2019**, and stable compared to 2022, despite the 2023 social movements and the landslide in the Maurienne.
- ✓ **Passenger numbers** in 2023 were also almost 10% higher than in 2019.
- ✓ **The average price level is almost 10% below** the level observed before the opening to competition. Such modest impact on prices, if compared to effect of competition in the Italian HSR market, is due to Trenitalia decision not to wage a price war, but to provide a "more favorable price-quality balance".
- ✓ **On the France-Spain international route, the arrival of the operator** Renfe Viajeros in the second half of 2023 generated growth in overall supply (about +15% compared to the second half of 2022).
- ✓ Competition from the operators SNCF Voyageurs, Trenitalia and Renfe has led to **increases in the rail offer above 10%**.
- ✓ **New players** are planning to enter the French market, as announced by the new private company Kevin Speed, in order to introduce, in 2025-26, low-cost commuter services on high-speed lines radiating from Paris and other major cities and poorly-served destinations less than two hours away. Competition among several players is likely to have an effect not only on prices but also on business models and variety of commercial offers. [2]

[1] Le marché francais du transport ferroviaire en 2022, ART.
[2] European Commission study on passenger and freight rail transport services' prices for final customers, Annexes

The setup of the Spanish High-Speed Rail competition

- ✓ The setup of competition was managed in Spain by the Infrastructure Manager ADIF, in a situation of wide HS network and low traffic levels.
- ✓ ADIF designed an optimized schedule for the three busiest high-speed corridors (Madrid-Barcelona, Madrid-Valencia/Alicante, and Madrid-Seville/Malaga), producing a service model with optimized capacity and including 60% more slots compared to the existing supply.
- ✓ The 70% of the designed slots has been divided into three lots of different sizes, to be awarded competitively. The remaining 30% capacity can be transferred on request to any applicant, including a fourth company not participating in the tender.
- ✓ The tender resulted in:

  Lot A (86% guaranteed on 60% of available slots) assigned to the incumbent operator RENFE, which reduced its market share but at the same time increased its services by 10 % compared to the past.

  Lot B (70% of 30%, i.e., 40 slots) assigned to Iryo, a joint venture between the Italian incumbent Trenitalia and the airline AirNostrum.

  Lot C (100% of 10% of capacity, or 13 trains/day) assigned to OUIGO, the low-cost brand of SNCF.

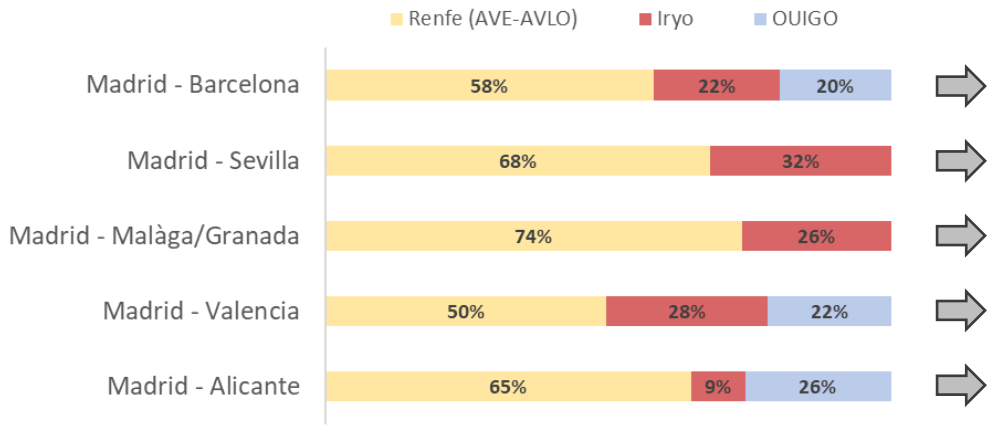
[1] Montero and Ramos Melero (2022); [2] Beria et al (2025) Competition models and financial sustainability of high-speed open-access in Europe; [3] Crozet and Chassagne (2013).

The High-Speed Rail market in Spain

The new entrants in the Spanish High-Speed rail influenced significant changes in terms of offer, ridership, market share and prices:

- In less than a year since its entry into the Spanish market in November 2022, Iryo has achieved a 32% share on the Madrid-Seville route, 28% on Madrid-Valencia and 26% on the Madrid-Malaga/Granada route.
- Iryo's entry into Madrid-Seville and Madrid-Malaga has led to a decrease in prices of 24% and 19% respectively, or at least €10 on all products, compared to the previous quarter.
- Renfe-AVE remains a major player; however, competition is impacting service quality and frequency with important rolling stocks investments by all players.

High-Speed competition: Market Share, III Q 2023



III Q 2023	Renfe (AVE-AVLO)	Iryo	OUIGO	Total
pax m	1,89	0,73	0,64	3,27
% year on year	*-1,2%*	-	*-19,3%*	*20,4%*
pax m	0,66	0,31		0,96
% year on year	*-8,3%*	-		*34,9%*
pax m	0,81	0,29		1,10
% year on year	*-5,7%*	-		*28,1%*
pax m	0,70	0,40	0,31	1,40
% year on year	*-2,7%*	-	-	*96,2%*
pax m	0,62	0,09	0,25	0,96
% year on year	*7,4%*	-	-	*66,1%*

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[1] CNMC Informe Trimestral: Transporte de Viajeros por Ferrocarril Tercer Trimestre 2023; [2] Press releases

How to increase positive social and economic effects of HSR

- ✓ Competition experiences in the HSR national markets have had major social and economic impacts such as:
  - improvements in the quality and variety of the services
  - fares reduction
  - improved accessibility
  - increase of the demand and decrease of less environmentally friendly travel modes covering long-distances trips. [1]

- ✓ A large majority of European citizens would like to travel faster and more easily between European countries, preferring high-speed rail to flying. Accordingly, the European Commission is going to launch a plan for a European High-Speed Rail Network connecting all EU capitals and major cities. [2]

- ✓ The growth of railway HSR services requires the elimination of obstacles that still hold back the development of a true single European railway area, such as discriminatory practices.[3][4]

[1] Ennio Cascetta , Pierluigi Coppola & Vito Velardi (2013) High-Speed Rail Demand: Before-and-After Evidence from the Italian Market, disP - The Planning Review, 49:2, 51-59; [2] EU Survey: Perception of High-Speed Rail in Europe https://www.cer.be/cer-facts-figures/eu-survey-perception-of-high-speed-rail-in-europe#:~:text=The%20EU%20survey%20Perception%20of,speed%20rail%20instead__%20of%20flying; [3] Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of Directive 2012/34/EU https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025DC0368; [4] Input study on vertically integrated rail undertakings in the European Union https://op.europa.eu/en/ publication-detail/-/ publication/6e4937b8-5bac-11f0-a9d0-01aa75ed71a1/language-en

Conclusions: How to increase positive social and economic effects of HSR

- ✓ Despite its benefits, competition brings some challenges for both freight and passenger segment:
  - Capacity of the infrastructure to absorb the increased traffic on the network.
  - New entrants are faced with barriers to entry (for instance, in the passenger segment, the dominance of incumbent operators on ticket platforms limits the visibility of the non-incumbents to the customers).
  - Bidders for PSO contracts do not always have access to the necessary data (e.g. passenger data or rolling stock maintenance data).
  - Access to rolling stock and access to services facilities, such as maintenance centers and track sidings, remains a major obstacle for new entrants given the high costs associated with the investment.

[1] Ennio Cascetta , Pierluigi Coppola & Vito Velardi (2013) High-Speed Rail Demand: Before-and-After Evidence from the Italian Market, disP - The Planning Review, 49:2, 51-59; [2] EU Survey: Perception of High-Speed Rail in Europe https://www.cer.be/cer-facts-figures/eu-survey-perception-of-high-speed-rail-in-europe#:~:text=The%20EU%20survey%20Perception%20of,speed%20rail%20instead %20of%20flying; [3] Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the implementation of Directive 2012/34/EU https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025DC0368; [4] Input study on vertically integrated rail undertakings in the European Union https://op.europa.eu/en/ publication-detail/-/ publication/6e4937b8-5bac-11f0-a9d0-01aa75ed71a1/language-en

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