CNMC
COMISIÓN NACIONAL DE LOS MERCADOS Y LA COMPETENCIA

REPORT ON THE LIBERALISATION OF PASSENGER RAIL TRANSPORT

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CONTENTS

1. INTRODUCTION

1. Royal Decree-Law 23/2018 [1]amended Law 38/2015, of 29 September 2015, on the railway sector to transpose Directive 2016/2370[2] and introduced 14 December 2020 as the date for the liberalisation of domestic rail passenger transport services in Spain.

2. In April 2019, ADIF Alta Velocidad launched a public consultation on the amendment of the Network Statement, including the framework capacity offer on the Madrid-Barcelona, Madrid-Levante and Madrid-South corridors, the procedure for its application and the timetable for its allocation. Following the publication of the final version of the network statement on 22 July 2019[3], the deadline to apply for capacity was set for 31 October 2019.

3. On 27 November 2019, the Board of Directors of ADIF Alta Velocidad agreed to provisionally allocate framework capacity to RENFE, IRYO and OUIGO. Following approval by the CNMC[4], the framework agreements were signed on 13 May 2020.

4. OUIGO started providing train services between Madrid and Barcelona on 11 May 2021, between Madrid and Valencia on 8 October of the same year, and between Madrid and Alicante on 23 April 2023. Meanwhile, IRYO started operating between Madrid and Barcelona on 25 November 2022, between Madrid and Valencia on 16 December 2022, on the southern corridor (Madrid-Sevilla/Málaga) on 30 March 2023 and between Madrid and Alicante on 2 June 2023.

5. RENFE reacted to the entry of competitors on these corridors by launching its AVLO brand, first between Madrid and Barcelona (23 June 2021) and later

[1] Royal Decree-Law 23/2018, of 21 December 2018, on the transposition of directives on trademarks, rail transport, package travel and linked travel services.
[2] Directive (EU) 2016/2370 of the European Parliament and of the Council of 14 December 2016 amending Directive 2012/34/EU as regards the opening of the market for domestic passenger transport services by rail and the governance of the railway infrastructure.
[3] The CNMC assessed ADIF Alta Velocidad's proposal in the Agreement of 25 June 2019, issuing a report on the proposals of ADIF and ADIF Alta Velocidad on the modification of the 2019 Network Statement. https://www.cnmc.es/sites/default/files/2541816_2.pdf
[4] Decisions of 6 April and 6 May on the framework agreements for capacity allocation between the public business entity Adif-Alta Velocidad and Renfe Viajeros S.M.E. S.A., Intermodalidad del Levante S.A. and Rielsfera S.A.U. (currently, Ouigo S.A.U.).
https://www.cnmc.es/sites/default/files/2936034_8.pdf
https://www.cnmc.es/sites/default/files/2906451_0.pdf
https://www.cnmc.es/sites/default/files/2906461_2.pdf

between Madrid and Valencia (21 February 2022), Madrid and Alicante (27 March 2023) and Sevilla and Málaga (1 June 2023).

6. Outside the corridors included in the framework agreements, OUIGO has also started operating between Madrid and Valladolid, with a cross route linking Valladolid and Alicante, on 19 April 2024. AVLO started operating on the same route on 8 April 2024.

7. The CNMC monitored the market opening process. As noted above, in 2019, it analysed the framework capacity offer proposed by ADIF Alta Velocidad, consisting of packages of linked paths, and the rules for prioritising their allocation based on the use of the infrastructure in the three main high-speed corridors.

8. In 2019, the CNMC published its Study on the Liberalisation of Rail Passenger Transport[5], where it recommended: (i) maintaining the structural separation between infrastructure managers and RENFE; (ii) ensuring the independence of ADIF, ADIF Alta Velocidad and RENFE; (iii) guaranteeing adequate and sufficient access to capacity in infrastructure and service facilities; (iv) improving the system for setting railway charges; (v) ensuring access for new operators to rolling stock and its maintenance; (vi) guaranteeing effective competition in the markets for the training and recruitment of train drivers; (vii) not extending the Public Service Contract awarding directly to RENFE the provision of services subject to public service obligations (hereinafter, PSO services)[6]; and (viii) preventing the incumbent operator from gaining a competitive advantage in the liberalised markets through the provision of PSO services.

9. Since the signing of the framework agreements between ADIF Alta Velocidad and railway undertakings, different circumstances have required the intervention of the CNMC[7], including the approval of amendments to the framework

[5] https://www.cnmc.es/sites/default/files/2554930_16.pdf
[6] Contract between the General State Administration and the state-owned commercial company Renfe Viajeros S.A. for the provision of public passenger transport services by Cercanías (suburban), Media Distancia Convencional (conventional mid-distance), Alta Velocidad Media Distancia AVANT (high-speed mid-distance) and Ancho Métrico (metric gauge) railways, under the responsibility of the General State Administration, subject to public service obligations in the period 2018-2027.
[7] See Decision of 7 June 2022 on the dispute brought by Intermodalidad del Levante S.A. against ADIF Alta Velocidad regarding the modification of the framework agreement and Decision of 25 April 2023 on the complaint by Ouigo España S.A.U. regarding the modification of the terminus station of Renfe Viajeros S.M.E. S.A. in the Levante Corridor.
https://www.cnmc.es/sites/default/files/4176108.pdf
https://www.cnmc.es/sites/default/files/4671254_0.pdf

agreements[8]. In addition, the CNMC analysed the impact on the economic equilibrium of the Public Service Contract for new commercial services overlapping with PSO services[9].

10. Four years after the start of the liberalisation process, the purpose of this report is to take stock of the impact of liberalisation on rail agents and to identify future challenges.

2. CONTEXT OF THE LIBERALISATION OF PASSENGER RAIL TRANSPORT

2.1. European Comparison

11. The liberalisation process of rail transport has been driven by the European Union, starting in 2001. Since then, there has been a gradual opening up to competition, aiming to increase rail's modal share and integrate national markets to achieve the single European railway area.

12. Specifically, the Fourth Railway Package, adopted in December 2016, aims to boost domestic rail passenger transport and make it more competitive compared to other modes of transport. It consists of two pillars: the technical pillar[10] and the market pillar[11]. The market pillar completes the liberalisation of the rail sector by opening up passenger services, thus granting railway undertakings the right of access to rail infrastructure in all Member States as of 14 December 2020[12].

[8] To increase flexibility in annual capacity requests—Decisions of 26 July 2022 (modification of the IRYO framework agreement) and 10 and 28 January 2023 (modification of the OUIGO and RENFE framework agreements)—and to maintain certain services on the Levante Corridor at the Atocha-Almudena Grandes station (Decision of 10 January 2023).
https://www.cnmc.es/sites/default/files/4261955.pdf
https://www.cnmc.es/sites/default/files/4497190.pdf
https://www.cnmc.es/sites/default/files/4584115_0.pdf
https://www.cnmc.es/sites/default/files/4493474.pdf
[9] Decisions of 22 December 2022, 20 December 2023, 22 February 2024 and 14 March 2024.
https://www.cnmc.es/sites/default/files/4484582.pdf
https://www.cnmc.es/sites/default/files/5052812.pdf
https://www.cnmc.es/sites/default/files/5180276.pdf
https://www.cnmc.es/sites/default/files/5224074.pdf
[10] Directive 2016/797/EU on interoperability; Directive 2016/798/EU on security; Regulation (EU) 2016/796. The measures contained in the market pillar ultimately aim to increase choice for users and achieve higher quality of rail passenger services.
[11] Directive 2016/2370/EU; Regulation (EU) 2016/2337; Regulation (EU) 2016/2338.
[12] Directive 2016/2370/EU establishes that the effectiveness of this right will apply on 1 January 2019, in time for the service timetable of 14 December 2020. This pillar also establishes rules to improve fairness in

13. According to the European Commission's Eighth Rail Market Monitoring Report[13], some countries had liberalised their rail passenger markets before the date set out in Directive 2016/2370. However, the market share of new entrants in commercial services was only 6.6% in passenger-km in 2020 on average, although it was substantially higher in countries such as the Czech Republic (74%), Italy (34%), Austria (18%) or Sweden (13%).

14. The presence of competitors was non-existent or minimal in Spain, France or Germany. The effective implementation of Directive 2016/2370 has only substantially changed the situation in Spain, as detailed below.

15. In France, SNCF Voyageurs only faces competition on the Paris-Lyon route[14] from Trenitalia France, whose entry increased the daily service offer by 10% and managed to attract 400,000 passengers out of a total of 87.45 million passengers. The average passenger-km revenue has decreased by 10% on that route[15]. In addition, in July 2023, RENFE started its international services between Spain and France (Barcelona-Lyon and Madrid-Marseille) making cabotage stops in several intermediate locations in French territory.

16. In Germany, the market share of alternative operators was 4% in 2021, very similar to previous years[16]. Flixtrain is Deutsche Bahn's main competitor, although with a very limited presence on lines such as Berlin-Stuttgart (3 daily frequencies), Berlin-Mainz (1 frequency 3 days a week) or Cologne-Hamburg (2 frequencies 4 or 5 days a week).

2.2. Economic Situation

17. The start of liberalisation was marked by restrictions to control the effects of COVID-19, which reduced long-distance mobility of all modes of transport to virtually zero in March 2020. After a partial recovery in the third quarter of that

rail infrastructure governance, avoiding discriminatory behaviour, and introduces mandatory tendering for rail Public Service Obligation (PSO) contracts from 2023.

[13] Eighth monitoring report on the development of the rail market under Article 15(4) of Directive 2012/34/EU of the European Parliament and of the Council.
https://transport.ec.europa.eu/transport-modes/rail/market/rail-market-monitoring-rmms_en

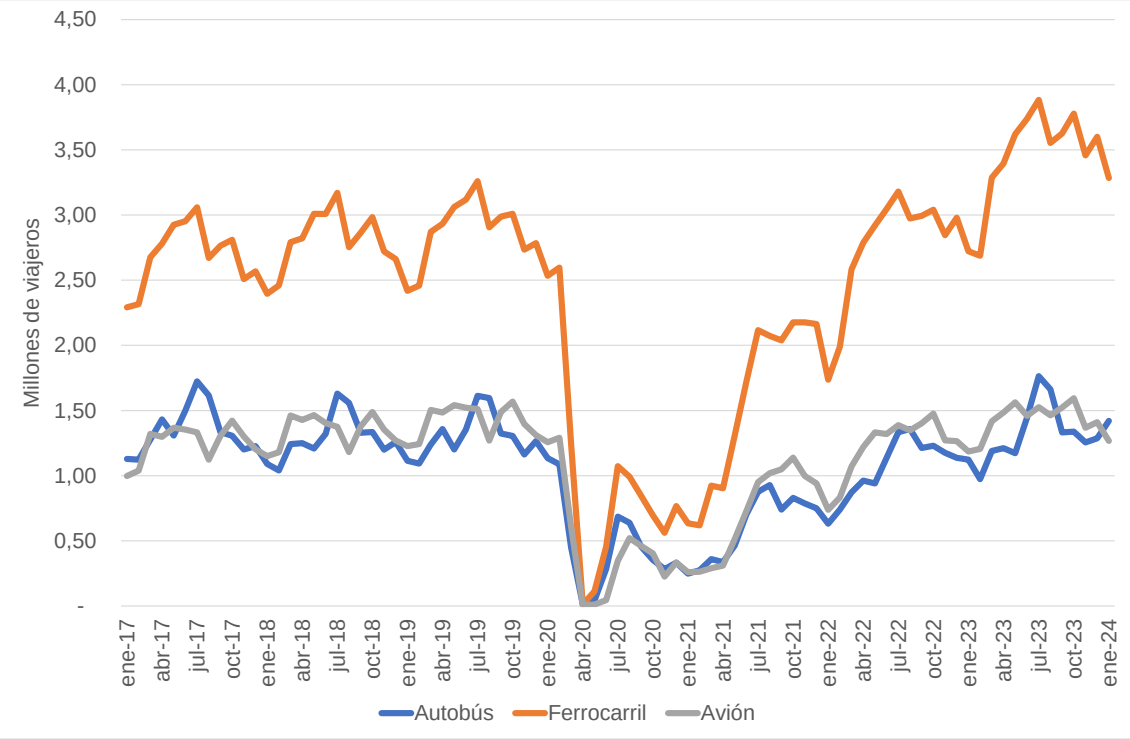
[14] Trenitalia France started operations on the Paris-Lyon-Milan route in December 2021. Since April 2022, it has been providing additional services between Paris and Lyon.

[15] 2022 study by the French regulator (Autorité de Régulation des Transports) of the rail market in France.
https://www.autorite-transports.fr/observatoire-des-transports/marche-du-transport-ferroviaire/

[16] 2022 Annual Report of the German regulator (Bundesnetz Agentur).
https://www.bundesnetzagentur.de/SharedDocs/Downloads/EN/BNetzA/PressSection/ReportsPublications/2022/RailwayMarketAnalysisGermany2022.pdf?__blob=publicationFile&v=1

year, demand fell again until the end of the state of emergency on 9 May 2021. Once more, after the recovery observed in the second half of 2021, mobility fell again at the beginning of 2022.

Graph 1. Evolution of long-distance passenger numbers[17].



Source: INE (National Institute of Statistics).

18. In 2022, demand for all modes of transport was still below that achieved in 2019, although the recovery of rail transport was stronger than other modes of transport. According to the CNMC's Annual Report for that year[18], the Madrid-Barcelona corridor carried 29% more passengers than in 2019 and the Madrid-Valencia corridor carried 10% more.

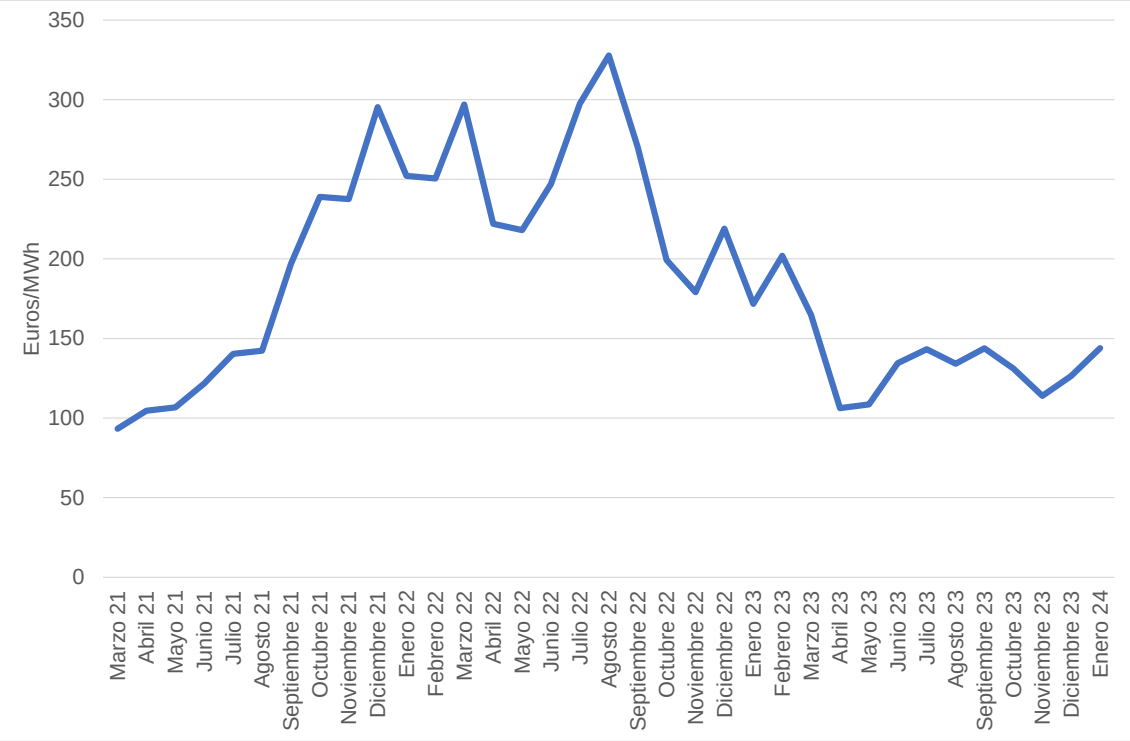
19. On the other hand, the pandemic also substantially modified the economic basis on which railway companies drew up their business plans and made their requests for capacity in 2019. Forecasts had indicated that the Spanish economy would grow in the following years, with a consequent increase in demand for

[17] More than 300 kilometres.
[18] See page 38. https://www.cnmc.es/sites/default/files/4829303.pdf

mobility on the corridors with framework agreements. However, the COVID-19 pandemic caused GDP to drop, and 2019 levels would not be regained until 2022.

20. In addition, energy costs increased substantially at the end of 2021 and did not ease until the second quarter of 2023. Even then, they remained at levels higher than those prevailing at the time when railway undertakings made their capacity requests.

Graph 2. Price of AC traction supply.



Source: ADIF Alta Velocidad Network Statement.

21. In short, any analysis of the effects of liberalisation must take into account the economic constraints faced by this process so far.

2.3. Access to Essential Assets

22. The characteristics of the Spanish high-speed rail network, compared with those of other European countries, facilitated the liberalisation process. Firstly, the infrastructure is relatively modern and adapted to the technical requirements of interoperability, which facilitates the certification of trains, except for the Southern Corridor, where the infrastructure does not include the European Rail Traffic Management System (ERTMS) and obtaining on-board equipment for the LZB signalling system is more complicated.

23. Secondly, the infrastructure was underutilised. As a result, ADIF Alta Velocidad was able to offer capacity far in excess of what RENFE had been using as a monopoly. For example, in the Madrid-Barcelona corridor, the capacity offered by the infrastructure manager was 106 daily train paths in both directions compared to the 58 paths that RENFE used in 2019.

24. Only seven months after the transposition of Directive 2016/2370, ADIF Alta Velocidad published the framework capacity offer, providing transparency on the capacity available for potential new entrants. The possibility of entering into framework agreements provided guarantees of access to the railway network for new entrants, who had to undertake significant investments to enter the rail market.

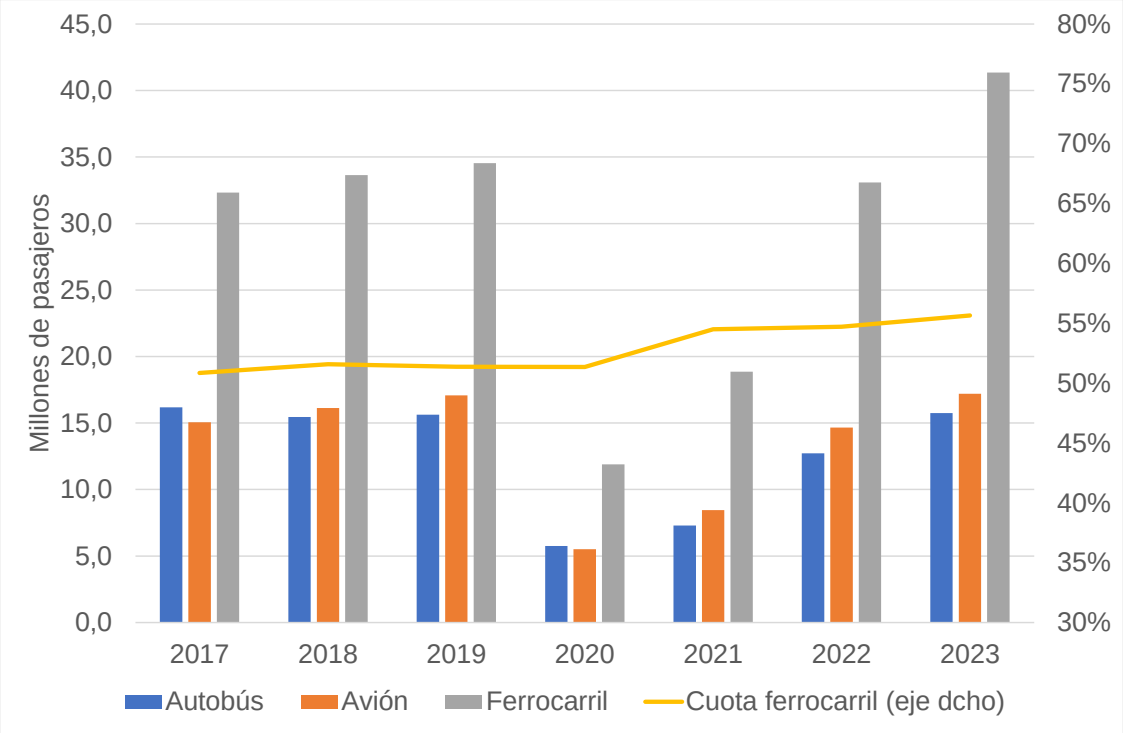
25. On the other hand, RENFE Maintenance published the Catalogue of Railway Workshop Access and Services on 13 November 2019, defining "light maintenance services" as the set of operations necessary to maintain vehicles in operation without the train or vehicle being immobilised for more than 7 days. This definition of light maintenance services ensured, in accordance with Article 43 of the Railway Sector Act, the access of potential entrants to RENFE Maintenance railway workshops under objective, transparent and non-discriminatory conditions, and at cost-oriented prices. In addition, RENFE Maintenance allowed access on a self-provision basis, which means that railway undertakings can choose their maintenance provider.

26. Thus, during 2019, some of the barriers identified in the CNMC Study on the Liberalisation of Rail Passenger Transport were solved, specifically those related to access to infrastructures and maintenance workshops, which undoubtedly facilitated the entry of competitors into the market.

3. LONG-DISTANCE MOBILITY IN SPAIN

27. In addition to private cars, consumers can travel on long-distance peninsular routes by train, bus and air. These three modes of transport carried almost 75 million passengers in 2023, an increase of 23% compared to 2022 and 10% compared to 2019. Rail transport accounts for almost all of this growth, having increased its modal share by 5 percentage points (p.p.) to 56%.

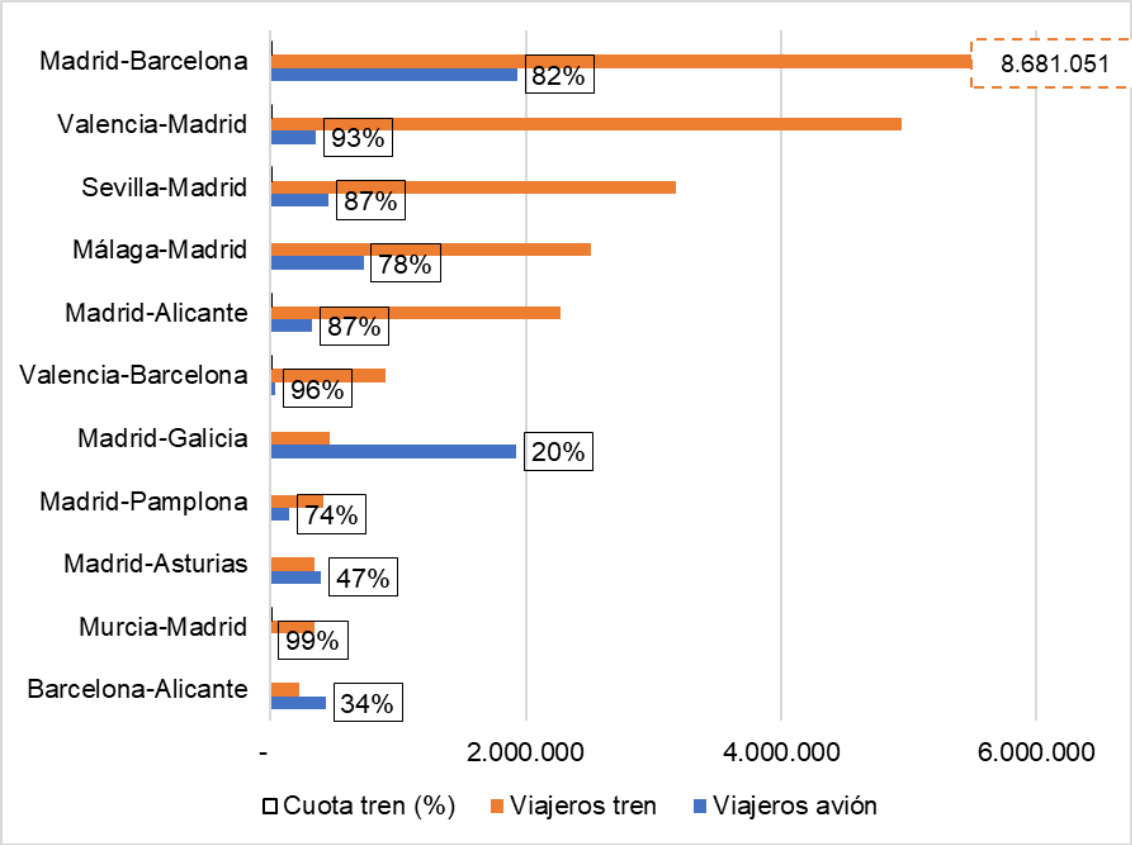
Graph 3. Comparison of the evolution of passenger numbers by mode of transport.



Source: CNMC based on INE data.

28. The higher number of passengers on routes with rail competition increased the modal share of rail transport compared to air to 85%. The strong increase in passenger numbers between Madrid and Barcelona (+20 p.p. between 2019 and 2023) stands out, being the only route where air transport maintained a significant share after the high-speed line came into service. On this route, the modal share of rail was 82% in 2023, similar to that observed on other high-speed routes. At the other end of the scale, rail transport has lost 8 percentage points of modal share compared to air travel on the Madrid-Málaga route, where despite the increase in rail passengers (+25%), the increase in air passengers was twice as high.

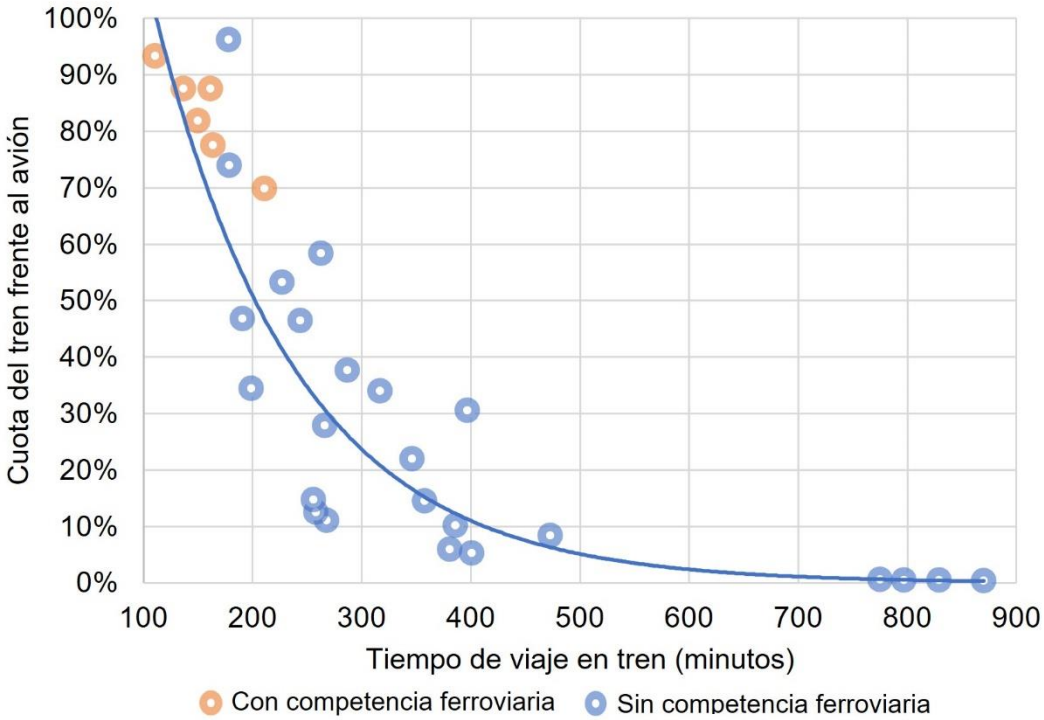
Graph 4. Main rail routes competing with air travel (2023)*



** For the Madrid-Galicia route, passengers from the three Galician airports have been included.*
Source: CNMC based on rail data provided by railway companies and data provided by AENA.

29. In spite of this positive evolution, rail has competitive limitations for journeys longer than 180 minutes, where its modal share drops below 50%, even when the route has high-speed infrastructure, as is the case of Barcelona-Sevilla or Barcelona-Málaga.

Graph 5. Modal share of rail according to journey duration (2023).



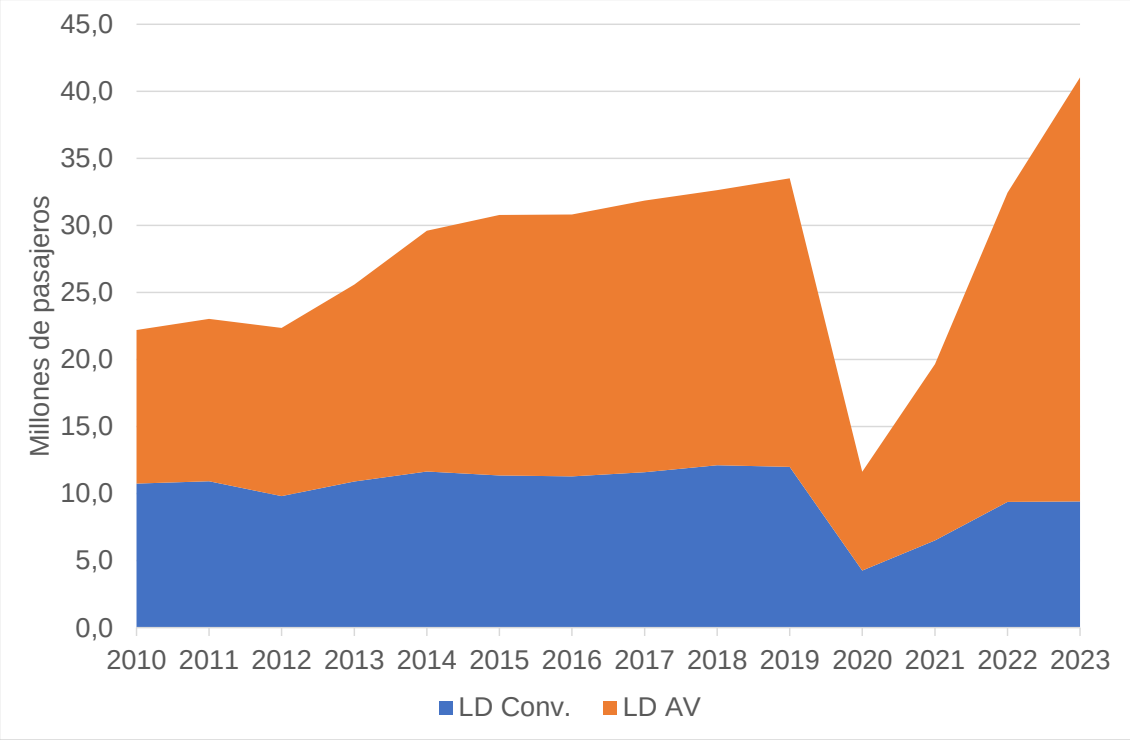
Source: CNMC based on rail data provided by railway companies and data provided by AENA.

4. EVOLUTION OF COMMERCIAL RAIL PASSENGER TRANSPORT SERVICES

30. In 2023, the total number of passengers on commercial rail services exceeded 41 million. High-speed services accounted for 31.63 million passengers, more than 75% of the total. The liberalisation of high-speed services attracted more than 10 million additional passengers to rail transport compared to 2019. During the monopoly era, it took 10 years, from 2010 to 2019, to increase demand by 10 million passengers, largely driven by the commissioning of new infrastructure such as the Madrid-Levante high-speed line, inaugurated in December 2010. Conventional long-distance services (conventional LD) [19]accounted for 9.4 million passengers, slightly higher than in 2022 and 21.5% lower than in 2019.

[19] These are services linking two population centres where a section of the route is an Iberian gauge network.

Graph 6. Passengers on commercial services.

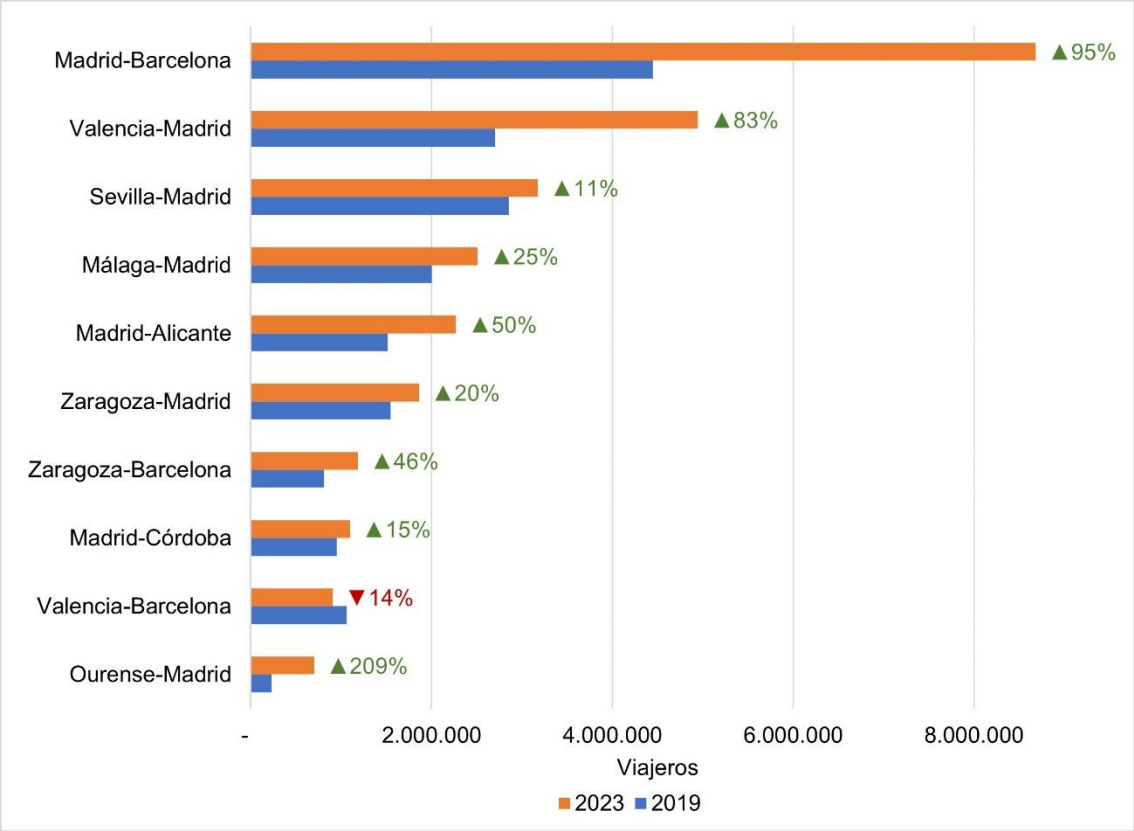


Source: CNMC.

31. Without considering the commissioning of new infrastructure[20], the entry date of new competitors and the number of competitors determine the demand for the main long-distance rail routes. On routes where competition was introduced earlier and where there are already three operators, such as Madrid-Barcelona and Madrid-Valencia, the number of passengers has nearly doubled. In the Southern Corridor, where competition arrived later and where there are only two competitors, the increases are more modest, between 11% and 25%. Madrid-Valencia passengers have surpassed those of Madrid-Sevilla, traditionally the second busiest route in terms of passengers in Spain. In line with the general trend, the main conventional LD route (Barcelona-Valencia) saw a reduction in the number of passengers of 14% between 2019 and 2023.

[20] The increase in passengers between Madrid and Ourense is explained by the entry into service of the last section of the Madrid-Galicia high-speed line on 21 December 2021.

Graph 7. Passengers on the main long-distance rail routes.



Source: CNMC based on rail data from railway companies.

32. Approximately 42% of commercial passengers can already choose between three railway companies, and 19% can choose between two, while RENFE is the sole option for the remaining 33% (10% in high-speed services and 23% in conventional LD services).

Table 1. Number of passengers in commercial services (millions), according to the number of competitors[21].

	2016	2017	2018	2019	2020	2021	2022	2023	% 2023
HS LD	**19.53**	**20.26**	**20.51**	**21.52**	**7.37**	**13.14**	**23.05**	**31.63**	**77%**
1 company	19.53	20.26	20.51	21.52	7.37	8.16	10.87	4.12	10%
2 companies	-	-	-	-	-	4.98	0.78	7.90	19%
3 companies	-	-	-	-	-	-	11.40	19.61	48%
Conv. LD	**11.29**	**11.59**	**12.12**	**11.99**	**4.26**	**6.51**	**9.39**	**9.41**	**23%**
TOTAL	**30.81**	**31.85**	**32.63**	**33.51**	**11.62**	**19.65**	**32.43**	**41.04**	**100%**

Source: CNMC based on data provided by railway companies.

33. Of the total 41 million commercial passengers in 2023, new entrants have collectively attracted 10.6 million passengers (26%). IRYO reached a share of 14.8% and OUIGO achieved an 11.2% share.

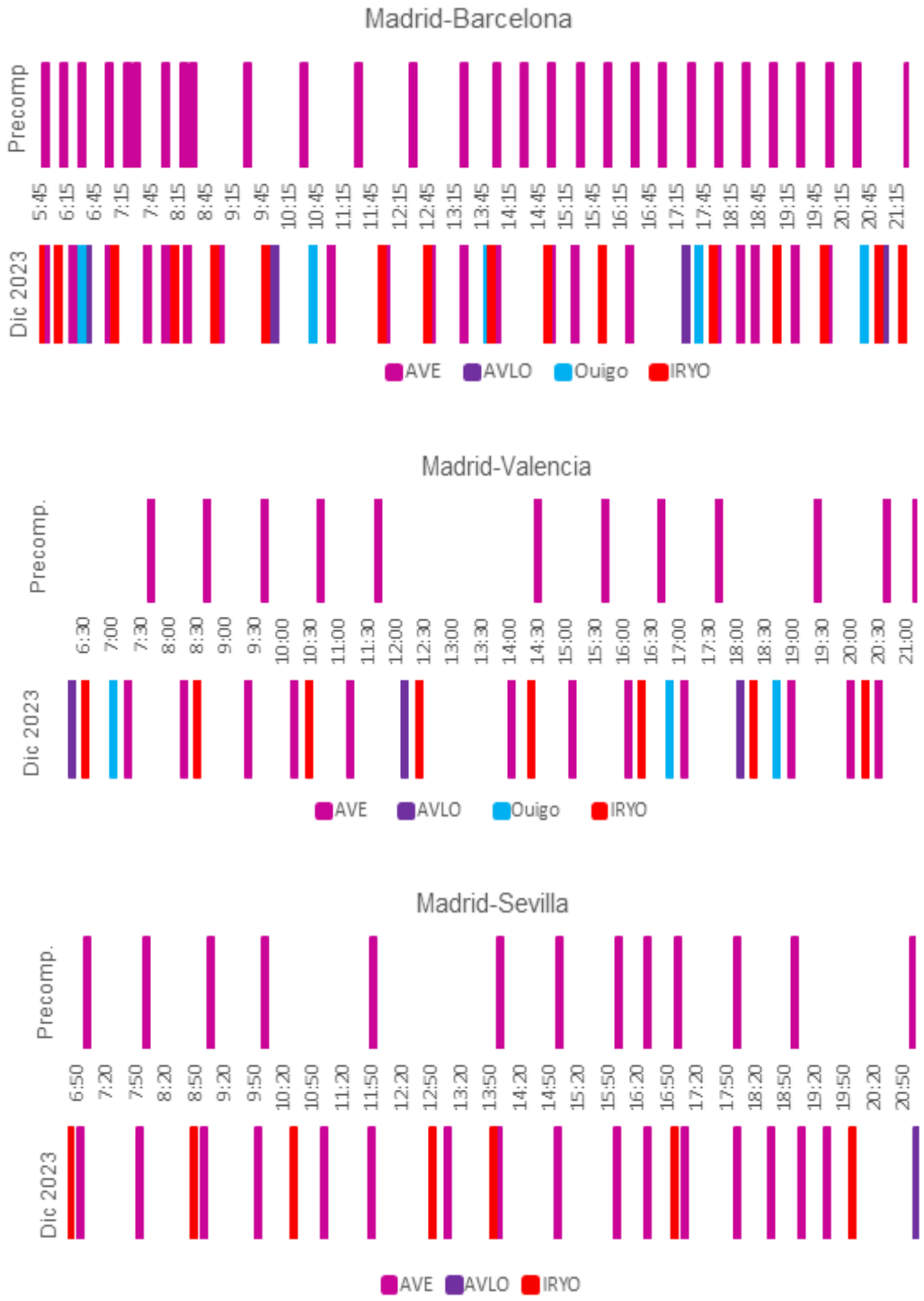
5. CORRIDORS WITH COMPETITION

5.1. Evolution of Services Offered

34. The Madrid-Barcelona, Madrid-Levante and Madrid-South corridors have experienced an increase, in terms of available seats, of more than 60%. This rise translates to more frequencies, increasing from an average of 76 daily frequencies per direction in 2019 to 118 frequencies in December 2023 across all three corridors. By way of illustration, below are the new frequencies between Madrid and Barcelona, Madrid and Valencia and Madrid and Seville.

[21] The table shows the total number of passengers during the year. In the case of high-speed services, a distinction is made between the number of passengers according to the number of competitors on 31 December of the corresponding year. The total of 1.05 million international passengers includes the 80,082 passengers who travelled to Spain in cabotage.

Graph 8. Frequencies of the main rail routes.



Source: CNMC based on data from the websites of railway companies.

35. The entry of competitors has also diversified the commercial services available to users:

- RENFE offers four different fares [22]on its AVE services, depending on the type of seat (with two classes) and other factors such as seat selection, flexibility in travel dates or cancellations, the possibility of changing the holder of the ticket, luggage allowance and meal options. For AVLO services, RENFE offers a starting price of €7 and a reduced price of €5 for children under 14. Additionally, it offers four fares[23] that vary in seat selection and ticket flexibility. AVLO trains do not have an onboard cafeteria or bar, only vending machines.
- IRYO offers four fares[24] that differ in the type of seat (with three classes), flexibility in changing travel dates, seat selection and the menu offered at the passenger's seat.
- OUIGO offers a starting price of €9 and a reduced price of €7 for children under 13. It also offers three fares [25]that differ in terms of the amount of luggage included, seat class (with two different classes), seat selection and the option to cancel or change the ticket. Food in the train's cafeteria must always be paid separately.

[22] Basic, Standard, Comfort and Premium.
[23] Basic, Standard, Comfort and Premium.
[24] Initial, Singular, Singular Only YOU and Infinite Bistró.
[25] OUIGO Essential, OUIGO plus and OUIGO full.

Table 2. Description of basic fares of railway companies.

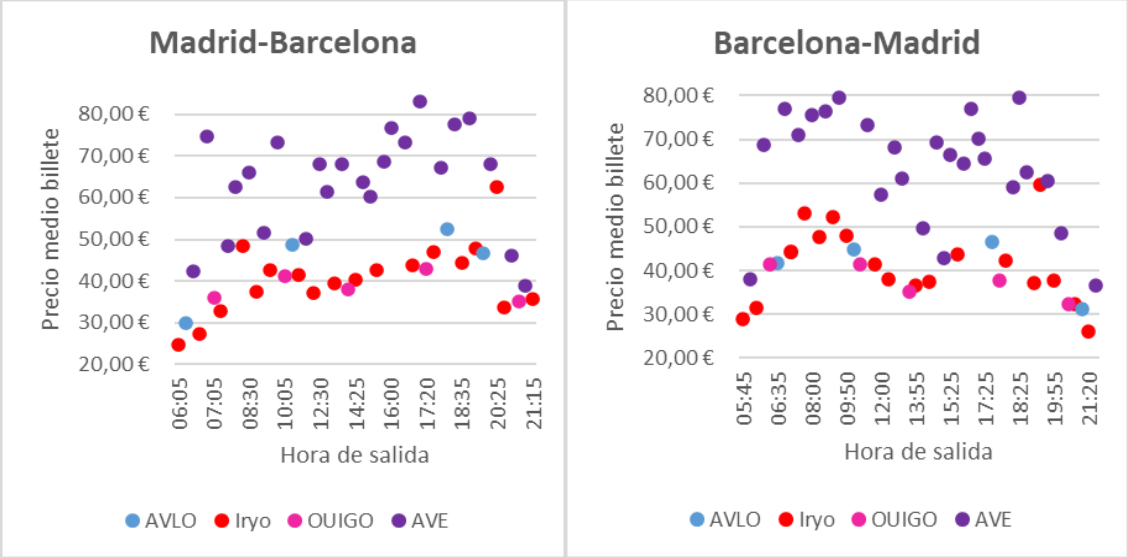
	Luggage	Delay refunds	Cost of seat selection	Meals	Wi-Fi
AVE	3 pieces of luggage	15 min - 50% 30 min - 100%	+ €5	Catalogue of available food and mobile bar service	Included in basic fare
AVLO	2 pieces of luggage	60 min - 50% 90 min - 100%	+ €8	Vending machines	Included in basic fare
IRYO	2 pieces of luggage	60 min - 50% 90 min - 100%	+ €5 extra	Catalogue of available food and mobile bar service	Included in basic fare
OUIGO	One handbag and one piece of cabin luggage	60 min - 50% 90 min - 100%	+ €4	Food catalogue at the Ouibar	+ €3

Source: CNMC based on data from the websites of railway companies.

36. The entry of competitors and the increase in frequencies and available seats have impacted prices. On routes where competition between three operators and four brands began in 2022, the average revenue of the companies (a proxy for average prices) fell by around 40%. In the Southern Corridor, where competition is more recent and there are only two companies competing (with three brands), the reduction was between 10% and 24%, depending on the routes.

37. Since demand is not evenly spread throughout the day, railway undertakings have had to reduce their prices substantially during off-peak hours in order to generate sufficient demand to fill the trains. For example, between Madrid and Barcelona, ticket prices during off-peak hours range from €25 to €40, while during peak demand they rise to as much as €85.

Graph 9. Average ticket price between Madrid and Barcelona by time slot.



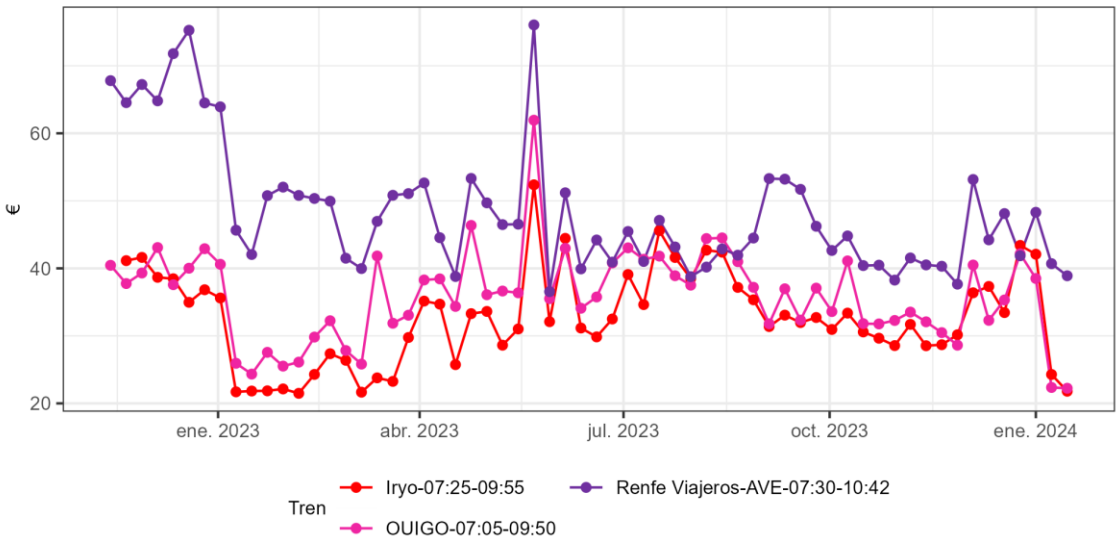
Source: CNMC[26].

38. A detailed analysis shows that competition between railway companies occurs based on time slots, as illustrated below with several examples[27]. Thus, on the Madrid-Barcelona early morning service, the AVE service could maintain a substantial price differential with its competitors in the first half of 2023. By the second half of 2023, however, competition had led to a reduction of these differentials.

[26] The CNMC compiles the basic prices of the main high-speed routes with daily frequency for journeys from the day after the date of the search, every day, until 40 days later (see the CNMC's quarterly reports https://www.cnmc.es/expedientes/infdtsp11123). The price included in the graph is the average price for each timetable between November 2022 and January 2024.

[27] The CNMC (see, for example, Decision of 20 December 2023 approving the economic equilibrium test on the new rail services notified by Ouigo España S.A. https://www.cnmc.es/sites/default/files/5052812.pdf) has pointed out that users consider services within the same time slot (the length of which depends on several factors such as the value of time, the purpose of the journey, etc.) to be substitutes.

Graph 10. Evolution of the average weekly price between Madrid and Barcelona for trains departing between 07.00 a.m. and 07.30 a.m.

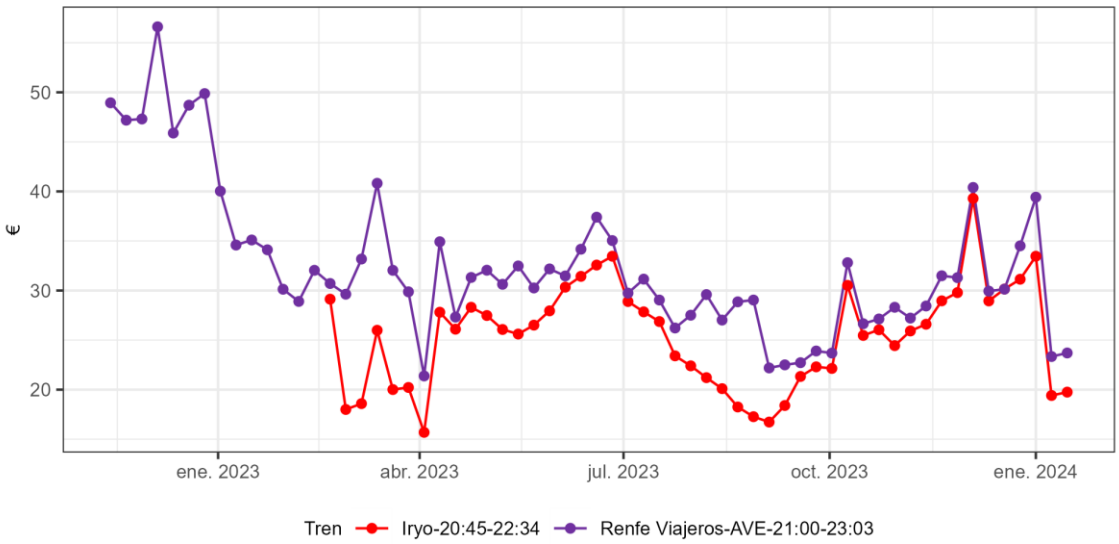


Source: CNMC.[28]

39. On the Madrid-Valencia route, having two trains running on a similar timetable (an IRYO service starting at a similar time to an AVE service) has considerably reduced the average price of train tickets, although there is still a difference in prices.

[28] See footnote 26.

Graph 11. Evolution of the average weekly price between Madrid and Valencia for trains departing from 8.45 p.m. to 9.00 p.m.

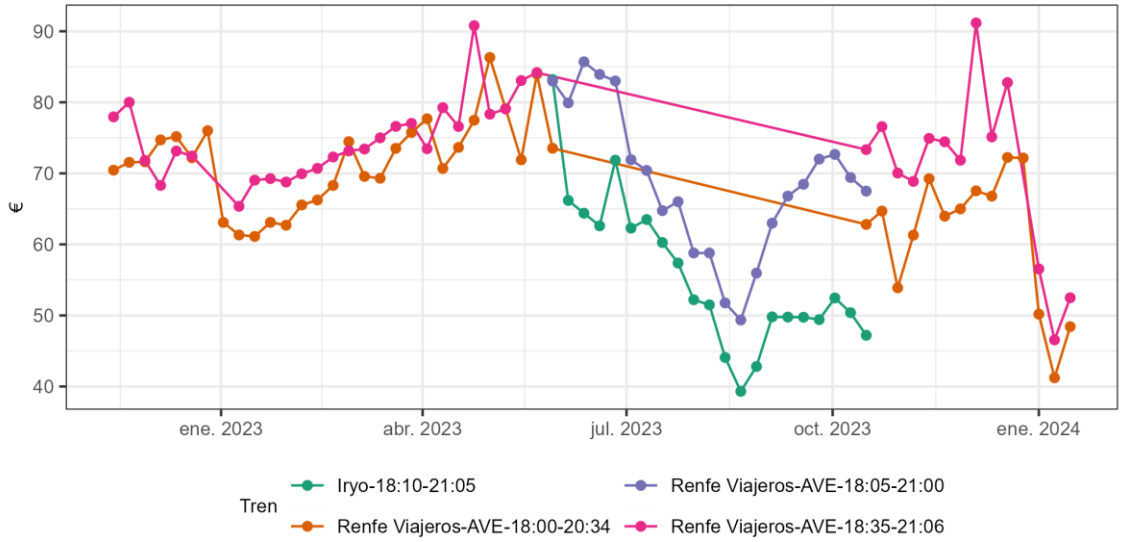


Source: CNMC.[29]

40. Another competitive reaction observed is the modification of the timetables of the routes to place them closer to those of competitors. Between Madrid and Sevilla, until June 2023, RENFE operated two trains between 6.00 p.m. and 6.30 pm. Between June and November 2023, IRYO introduced a service at 6.10 p.m., and RENFE reacted by adjusting its services: it kept only one service and positioned it at 6.05 p.m., very close to IRYO's service. In addition, competition between the two operators led to a reduction in prices. When IRYO stopped operating in that time slot, RENFE returned to the initial situation, operating two trains, albeit at lower prices.

[29] See footnote 26.

Graph 12. Evolution of the average weekly price between Madrid and Sevilla for trains departing from 6.00 p.m. to 6.30 p.m.



Source: CNMC.[30]

5.2. Evolution of Demand

41. The new services offered and the reduction in prices have attracted 10 million additional passengers to the high-speed rail network compared to 2019. The increase in passengers has been particularly intense on the Madrid-Barcelona and Madrid-Levante corridors, with the latter becoming the second busiest corridor in Spain in terms of the number of passengers, displacing the Southern Corridor, which has experienced a slower growth.

[30] See footnote 26.

Graph 13. Evolution of passenger numbers by corridor.

Source: CNMC based on data provided by railway companies.

42. The commercial strategies of railway undertakings and capacity constraints [31]mean that competitors are not active on all routes within the corridors. Nevertheless, almost two-thirds of high-speed passengers have a choice between three operators and four brands, and a quarter can choose between two operators and three brands. Only 10% of high-speed passengers are limited to services provided by a single operator, albeit with two commercial brands.

43. The greatest impact on demand is seen on routes with more competitors, such as Madrid-Barcelona or Madrid-Valencia, where the number of passengers has increased by approximately 75% compared to 2019. On these routes, RENFE's market share is 54%.

44. On routes with two competitors (mainly the Southern Corridor), IRYO's operations started on 31 March 2023, so the impact in 2023 is more limited. Passengers increased by 13% compared to 2019, and in nine months of competition, IRYO reached a market share of nearly 22%.

[31] Only the framework capacity package A, awarded to RENFE, guaranteed train paths with stops at all stations along the corridors. For the other packages, intermediate stops had to be requested depending on the available capacity.

45. Finally, the increase in demand on routes where RENFE operates alone is mainly explained by the entry into service of new high-speed lines, such as Madrid-Murcia.

Table 3. Penetration of competitors in corridors with competition.

	No. of competitors		
	1	2	3
Passengers 2019	2,864,382	6,997,555	11,136,775
Passengers 2023	3,340,260	7,903,609	19,612,393
% Passengers 2023	10.56%	25.61%	63.56%
Growth 2019-2023	16.61%	12.95%	76.10%
RENFE's share	100.00%	78.70%	54.20%
AVE's share	*93.74%*	*74.80%*	*42.62%*
AVLO's share	*6.26%*	*3.90%*	*11.67%*
OUIGO's share			23.45%
IRYO's share		21.30%	22.26%

Source: CNMC based on data provided by railway companies.

46. The above table also shows that RENFE's reaction through its AVLO brand is more intense in corridors with two other competing companies, reaching a share of 11.67%. Meanwhile, on routes where RENFE only competes with IRYO, AVLO offers fewer services, and its share is only 3.9%.

6. CORREDORS WITHOUT COMPETITION

47. Corridors without competition include high-speed and conventional long-distance (LD) routes, reaching a total of 10.185 million passengers in 2023.

Table 4. Passengers on corridors without competition (in millions).

	2019	2020	2021	2022	2023	Var. 19/23
Conventional LD	11.99	4.26	6.51	9.39	9.41	-22%
HS LD	0.52	0.19	0.29	0.73	0.78	48%
Total	12.51	4.44	6.80	10.12	10.19	-19%

Source: CNMC based on RENFE data.

48. Services on these corridors are influenced by the evolution of high-speed infrastructure, which since 2019 has added 622.5 new kilometres after an investment of €12.49 billion.

Table 5. Evolution of the high-speed network (2019-2023).

	Km of network	Commissioning	Investment (millions of euros)
Antequera-Granada	122	26/06/2019	1,675
Camp de Tarragona-Vandellós	64	13/01/2020	700
Zamora-Pedralba de la Pradería	110	26/10/2020	898
Monforte de Cid-Orihuela	54	01/02/2021	1,083
Pedralba de la Pradería-Ourense	120	20/12/2021	2,965
Venta de Baños-Burgos	86.5	22/07/2022	759
Orihuela-Murcia	16	20/12/2022	410
Pajares bypass	50	29/11/2023	4,000
Total	**622.5**		**12,490**

Source: CNMC.

49. The services currently provided by RENFE without competition are very diverse:

- The lines linking Madrid with the North of the Iberian Peninsula have the highest demand, with almost 5 million passengers in 202. These lines combine high-speed services, such as Madrid-Orense, Madrid-León and Madrid-Burgos, with conventional LD services that include sections in Iberian gauge, particularly in the last parts of the routes. The opening of the Atocha-Chamartín high-speed tunnel[32] has enabled cross-connecting services between the North of the peninsula and, mainly, the Levante region. Although the performance of these services has improved due to new infrastructure, distances and journey times limit the competitiveness of the railway.
- The Mediterranean Corridor, which links Barcelona with the Valencian Community through conventional LD services, added 1.85 million passengers in 2023. The infrastructure of this corridor is being improved to implement the international gauge and the ERTMS safety system.
- The lines linking Madrid with the different Andalusian provinces through conventional LD services (Cadiz, Huelva, etc.) and with Extremadura amount to 1.2 million passengers. These routes use the high-speed line for most of their length, gaining competitiveness and achieving significant

[32] On 1 July 2022, the international gauge tunnel between Chamartín and Atocha stations (7.3 km) was opened, as well as its extension to Torrejón de Velasco (27.2 km). This has allowed the transfer of the Madrid terminus of services to Levante from Atocha to Chamartín, as well as the circulation of cross-connecting trains stopping at Chamartín.

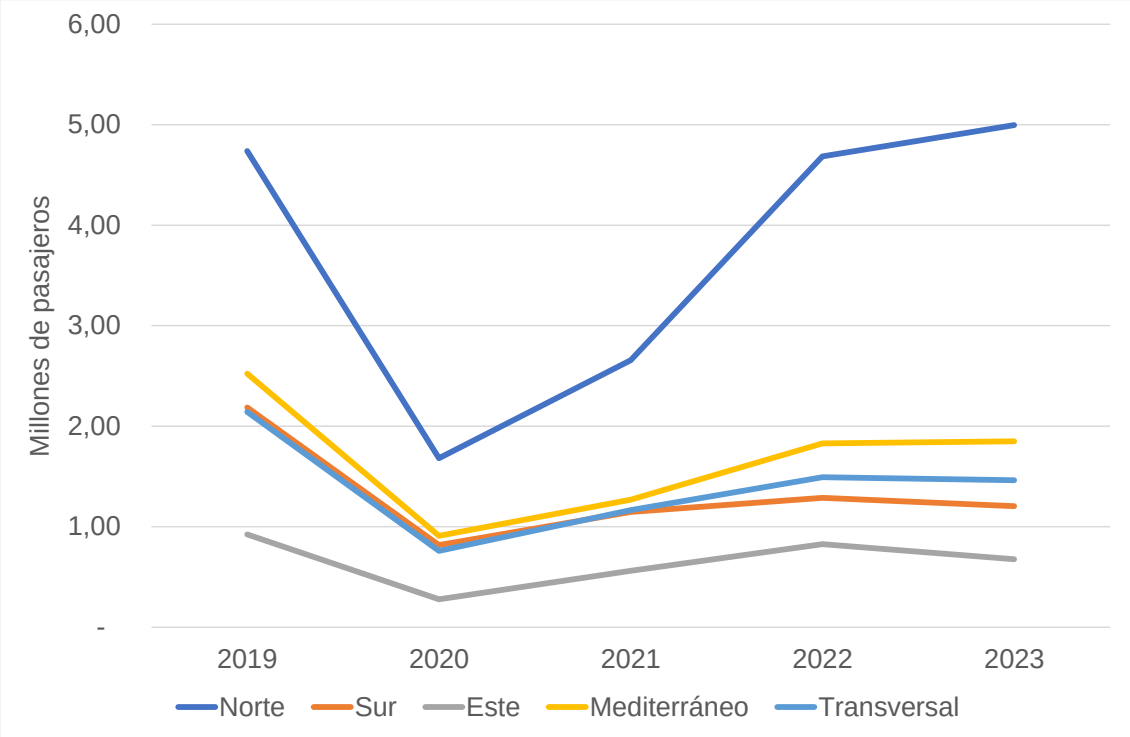
traffic, such as the Madrid-Cádiz route, with more than 0.6 million passengers.

- Cross-connecting services, primarily connecting Barcelona with the South[33] or the North-West of the Iberian Peninsula, account for almost 1.5 million passengers.
- The lines linking Madrid with the Levante region using conventional LD services amount to 0.675 million passengers, including routes such as Madrid-Valencia/Castellón and Madrid-Alicante, which use the high-speed network (ALVIA services).

50. On corridors without competition, despite the commissioning of new lines, passenger numbers are still 22% lower than pre-pandemic levels (-2.6 million passengers). Passengers on the northern lines have increased slightly (+5%) while those on the southern and cross-connecting lines have fallen by 45% and 32%, respectively, due to RENFE reducing the number of available seats by 50% and 39%, respectively, during this period.

[33] IRYO offers tickets between Barcelona and Sevilla, but it is not strictly a cross-connecting service as it stops in Madrid.

Graph 14. Evolution of passengers on corridors without competition.

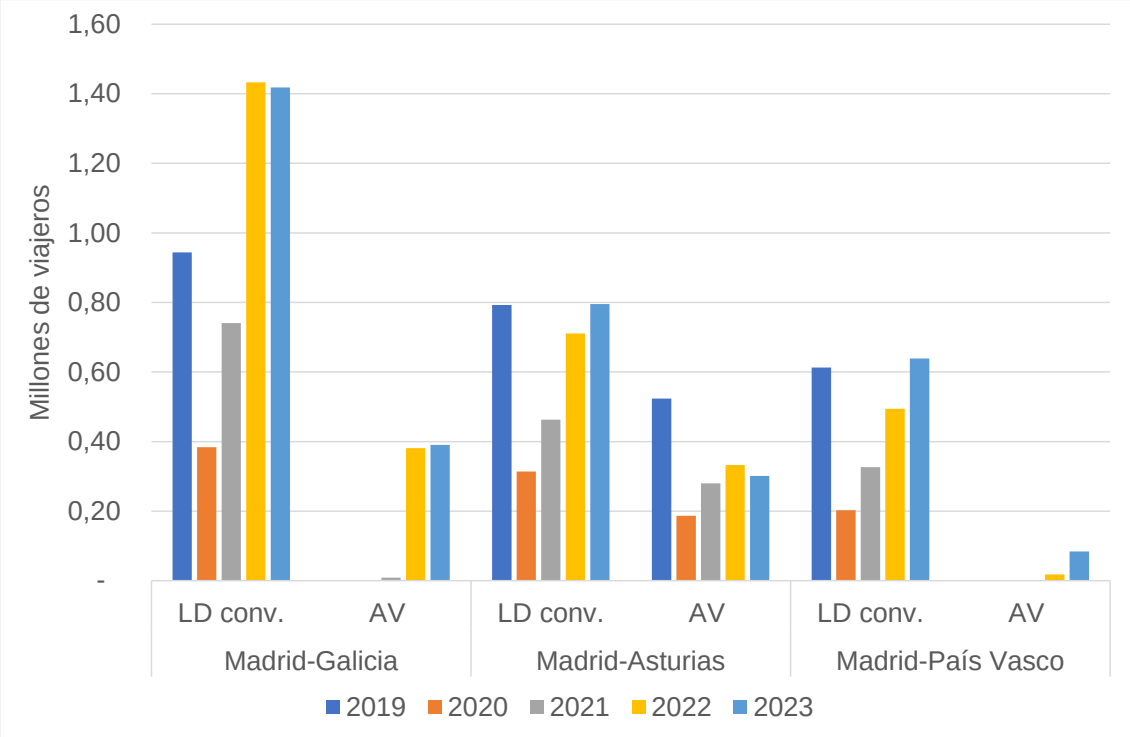


Source: CNMC based on RENFE data.

51. Most of the commissioning of high-speed trains in recent years has taken place on the northern corridors (see Table 5), improving journey times and the competitiveness of rail services. In the Madrid-Galicia corridor, the commissioning of the section from Pedralba to Orense at the end of 2021 completed the Madrid-Galicia high-speed line, resulting in a 50% increase in conventional LD passengers between 2019 and 2023 and a 92% increase in high-speed passengers[34]. The new high-speed section between Venta de Baños and Burgos connected Burgos with Madrid, carrying around 85,000 passengers.

[34] The entry into service of this section, together with that of the Zamora-Pedralba de la Pradería section on 26 October 2020, reduced the time of the high-speed service between Madrid and Ourense from almost four and a half hours to two hours and a quarter. In the case of conventional LD services to Coruña, Santiago and Vigo, the journey time was reduced by approximately one hour.

Graph 15. Evolution of passengers on routes in the Northern Corridor.



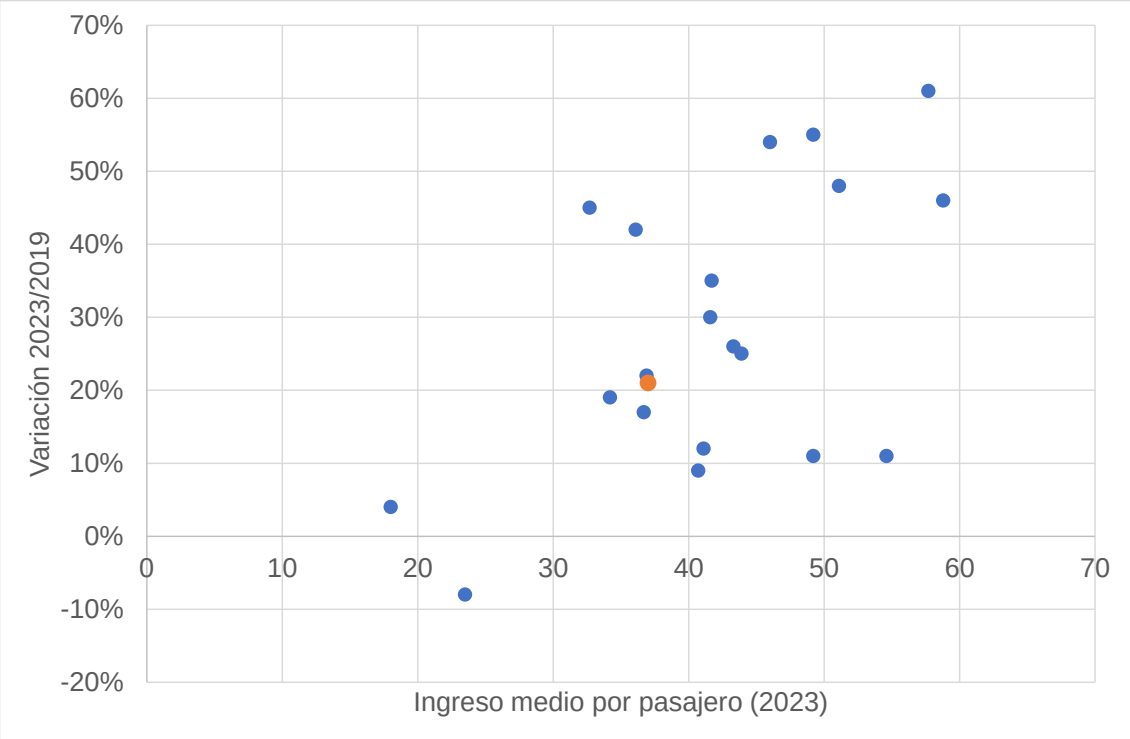
Source: CNMC based on RENFE data.

52. Moreover, as a consequence of the extension of the high-speed network, RENFE has increased the number of destinations with a fleet of trains that has remained stable since the acquisition of 30 trains of the 112 series in 2008. This has led to adjustments in the provision of some services. For example, high-speed passenger traffic between Madrid and León fell in 2023 compared to 2019, while passengers on conventional LD services between Madrid and Gijón recovered to pre-pandemic levels in 2023[35].

53. The average revenue of services on corridors without competition has increased by 21% since 2019. This evolution is explained by the improvement in the performance of services on some routes due to the entry into service of high-speed infrastructure, as seen on the Madrid-Galicia route, and the increase in prices on several routes.

[35] These figures do not include the effect of the entry into service of the Pajares bypass.

Graph 16. Average revenue and variation compared to 2019 on routes without competition*.



(*) The average of all routes is highlighted in orange.

Source: CNMC based on RENFE data.

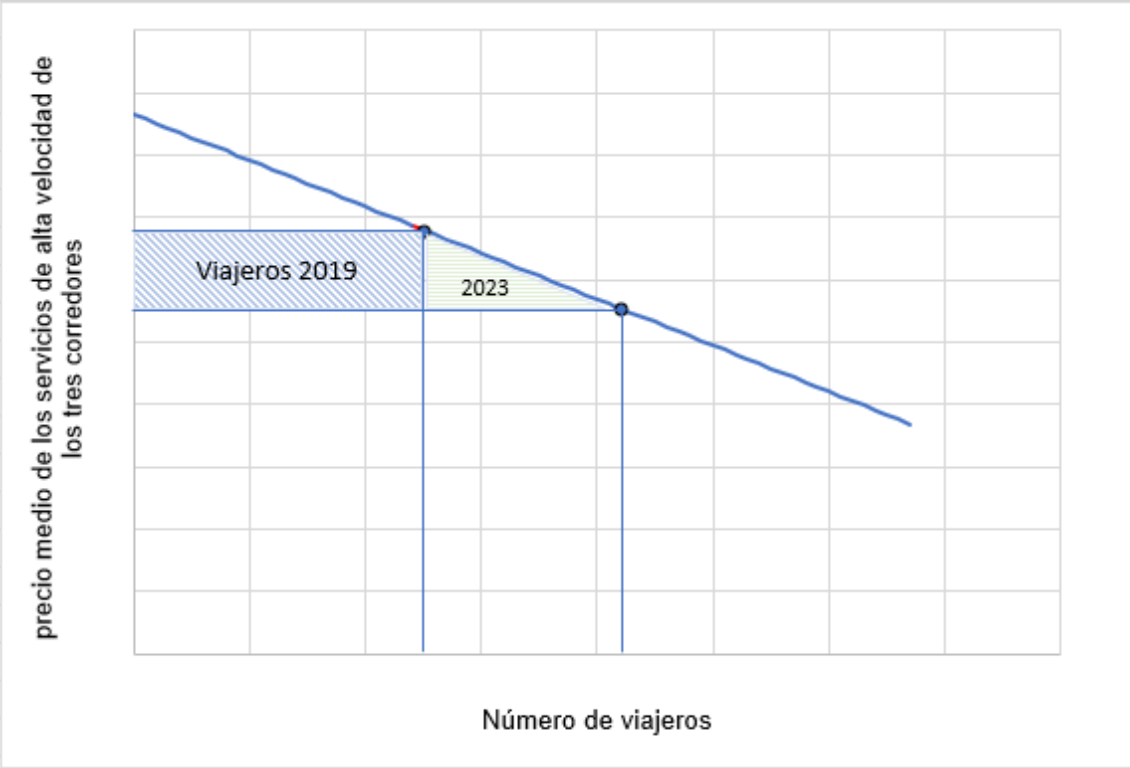
7. EFFECTS OF LIBERALISATION

7.1. Impact on Market Players

54. The effects of liberalisation on passengers can be estimated based on the change in consumer surplus, i.e. the difference between the total utility obtained by consumers for the purchase of a good or service and the price finally paid by them. Firstly, passengers using rail services before the entry of new competitors have increased their surplus as a result of lower service prices. Secondly, lower prices and the increased number and range of services offered, including special fares for children, have made high-speed rail services an option for users who previously did not travel or used other modes of transport. The 10 million new high-speed passengers generate a surplus that must be considered. Moreover, liberalisation has considerably increased traffic on the three corridors, leading to an increase in ADIF Alta Velocidad's income from railway charges. This is

another effect of liberalisation that must be considered[36]. Finally, the effect of the entry of competitors can be estimated from the variation in revenue from ticket sales.

Graph 17. Variation in consumer surplus (2019-2023).



Source: CNMC.

55. According to this analysis, consumers have been the main beneficiaries of the liberalisation process, with an increase in consumer surplus estimated at €343 million. Price reductions account for most of this increase, although in the Madrid-Barcelona and Madrid-Levante corridors, between 25% and 30% of the increase is due to new demand. The biggest increase in consumer surplus is on the Madrid-Barcelona corridor, which carries the most passengers and where service prices have fallen the most. ADIF Alta Velocidad is the other major beneficiary of liberalisation, with an increase in revenue from railway charges on the liberalised

[36] See press release dated 5 April 2024*: "Adif AV increases its Ebitda by 86% and its turnover by 29.1%, boosted by the historic traffic record in 2023"*.
https://www.adifaltavelocidad.es/-/adif-av-incrementa-un-86-su-ebitda-y-un-29-1-su-volumen-de-negocio-impulsados-por-el-r%C3%A9cord-hist%C3%B3rico-de-tr%C3%A1fico-en-2023

corridors of 148 million euros (52% more than in 2019)[37]. Railway companies have benefited less, with revenues not reaching 110% of those obtained by RENFE in 2019, despite an increase in supply of more than 60%.

56. This modest increase in revenues, together with higher costs, among other reasons due to the increase in energy costs, explain the negative results of most companies and commercial brands.

57. The results of the companies are primarily explained by the Madrid-Barcelona corridor, where supply has grown the most and prices have fallen the most. Additionally, this corridor has the highest charges, exceeding 40% of railway undertakings' costs on average.

58. The **sustainability** of transport is another element to be taken into account when assessing the impact of liberalisation. Air travel and private cars generate external costs that are nine and thirty-two times higher, respectively, than those generated by rail transport[38]. Thus, the transfer of users from air travel to high-speed rail between 2019 and 2023 on the Madrid-Barcelona route has led to savings of more than €8.9 million in externalities.

59. However, this amount does not include the savings in external costs resulting from the net growth of high-speed rail users. If mobility between Madrid and Barcelona in 2023 had followed the modal split observed in 2019 (i.e. applying the modal shares that rail and air travel had in 2019), the savings in externalities by switching to the current modal share would be €27.4 million. Furthermore, given the considerable increase in rail traffic, it is reasonable to assume that some travellers who previously used their cars have also switched to rail, thanks, for example, to the introduction of special fares for children, which make it easier for families to travel by train. Therefore, the savings in external costs should be considerably higher[39].

[37] The CNMC Agreement of 18 January 2024 issuing a report on the draft regulation on the determination of railway charges for 2024 stated that the costs attributable to railway charges (direct and non-eligible) for all high-speed railways increased by 9.4% between 2020 and 2022.

[38] According to the "Handbook on the external costs of transport: version 2019 (European Commission, Directorate-General for Mobility and Transport", Essen, H., Fiorello, D., El Beyrouty, K. (2020), high-speed rail in Spain generates an external impact of €0.38 per passenger-km compared to €3.35 for air travel and €11.91 for road transport, considering only the external costs that vary with traffic, i.e. excluding the costs generated to the natural habitat by the impact of the infrastructure.
https://data.europa.eu/doi/10.2832/51388

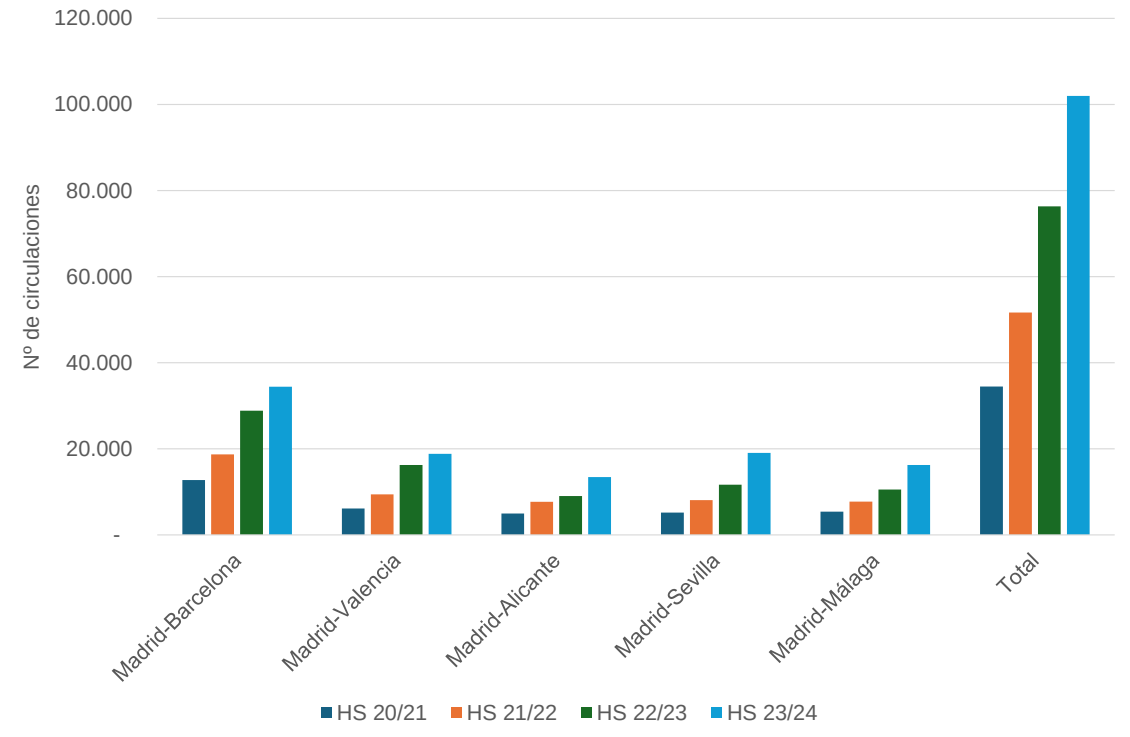
[39] It has not been possible to quantify the total external cost savings due to the lack of road passenger data.

7.2. Impact on the Railway System

7.2.1. Use of the Network

60. The entry of new competitors in the three main high-speed corridors is leading to a significant increase in the intensity of use of the network, exceeding 100,000 journeys per year.

Graph 18. Number of journeys per corridor.



Source: CNMC based on ADIF AV data.

61. Regarding the service timetable for 2023/24, for the first time, the railway undertakings jointly requested all the train paths committed to in the framework agreements[40].

[40] In response to the COVID-19 pandemic, the framework agreements introduced greater flexibility in terms of the actual request for committed train paths.

Table 6. Train paths operated compared to the train paths reserved in the framework agreements.

Service timetable	Madrid-Barcelona	Madrid-Valencia	Madrid-Alicante	Madrid-Sevilla	Madrid-Málaga
2020/21	57%	63%	60%	42%	55%
2021/22	78%	74%	80%	56%	78%
2022/23	90%	98%	81%	74%	87%
2023/24	99%	98%	104%	96%	104%

(*) Allocated train paths.

Source: CNMC based on ADIF AV data.

7.2.2. Rolling Stock Availability

62. Rolling stock, due to its cost and manufacturing times, is one of the factors that most affects railway operations. RENFE has kept its fleet of high-speed trains stable since 2010, when the 112-series trains came into service, which has limited its capacity to adapt its supply to the increase in demand and the extension of the high-speed network. Some of these limitations are due to the delay in the delivery of the thirty 106-series trains that RENFE acquired from Talgo in 2016.

63. When the market was opened up, RENFE modified some 112-series trains to operate them under the AVLO trademark, increasing their number of seats by 73.

64. IRYO and OUIGO have increased the fleet of trains operating in the Spanish market by 31 units (+30%) by 31 December 2023. This new rolling stock, which also has, on average, more capacity than RENFE's trains—at least until the aforementioned 106-series trains are delivered[41]—has allowed for a notable increase in the services offered.

[41] 106-series trains have 521 seats in their AVE configuration and 581 seats in their AVLO configuration.

Table 7. High-speed rolling stock fleet as of 31 December 2023

Product	Model	Seats	Branches[42] at 31/12/2023
AVE	S-100	347	24
	S-102	318	16
	S-103	404	26
	S-112	365	20
	Total		**86**
AVLO	S-112	365	5
	S-112 M	438	5
	Total		**10**
IRYO	S-109	457	20
OUIGO	S-108	509	11

Source: CNMC.

65. The greater capacity of the trains, together with a greater availability of rolling stock, which allows for more double trains, has increased the average number of seats per service by 11% to 18%.

Table 8. Average number of seats per train.

Corridor	2019	2023					Δ 2023-2019
	AVE	AVE	AVLO	IRYO	OUIGO	Total	Total
Madrid-Barcelona	430	423	444	441	803	476	11%
Madrid-Levante	348	337	395	442	690	409	18%
Madrid-South	360	391	447	446	0	405	12%

Source: CNMC based on data from railway undertakings.

66. The effective availability of trains, which depends on maintenance services, also determines the capacity of railway undertakings to offer transport services. RENFE Maintenance allowed self-provision in its workshops for a substantial part of maintenance operations[43].

67. The utilisation of high-speed rolling stock by RENFE stood at 376.9 thousand km per train per year in 2016, below that of other historical operators such as Deutsche Bahn (between 492 thousand and 521 thousand), SNCF (between 351

[42] A "branch" is the indivisible composition of a passenger train.
[43] In contrast, some operations must be contracted to RENFE Maintenance, such as wheel turning, due to the value of the asset

thousand and 632 thousand; the Duplex train, the most numerous in the fleet, achieved 471.9 thousand km/train) or Trenitalia (467.5 thousand)[44]. Between 2016 and 2023, the average utilisation of rolling stock improved by 15% to 434.7 thousand km per train per year.

7.2.3. Punctuality of Services

68. When assessing the liberalisation process, it is also necessary to analyse its impact on the quality of services. Punctuality is an essential element of service quality from the passenger's point of view, to the extent that RENFE has committed to refunding the price of tickets in the event of delays. This commercial policy has been imitated, with less demanding commitments, by new entrants.

69. Competition has increased traffic on the high-speed corridors, which poses a greater challenge in terms of network management and punctuality of services. According to the information provided by the incentive scheme[45], the number of trains delayed by more than 15 minutes on commercial high-speed services increased by 5 percentage points (p.p.) and the average delay time increased by 21% in 2023 compared to 2019 (19% compared to 2022). Regarding conventional long-distance (LD) trains, although the number of delayed trains increased (+2 p.p.), the average delay time decreased by 3%.

Table 9. Trains delayed more than 15 minutes and length of delay of commercial services.

	Type of service	2019	2020	2021	2022	2023	Var.19/23
Delayed trains (%)	High speed	1%	1%	2%	5%	6%	5 p.p.
	Conventional LD	5%	3%	3%	5%	7%	2 p.p.
Average delay (min)	High speed	19	18	21	20	23	21%
	Conventional LD	29	33	28	25	28	-3%

Source: CNMC based on ADIF and ADIF AV data.

70. In terms of high-speed services, punctuality, measured in the number of trains delayed, has worsened in all corridors, especially in the Southern Corridor.

[44] See the 2017 Report on Supervision of Commercial Passenger Services. https://www.cnmc.es/expedientes/infdtsp17318

[45] The incentive system is regulated in Article 96.8 of Law 38/2015 on the railway sector and in Order FOM/189/2015.

Table 10. Trains delayed more than 15 minutes by high-speed corridor (% of total).

	2019	2020	2021	2022	2023
Madrid-Barcelona	1.3%	1.4%	2.4%	7.3%	5.6%
Madrid-Levante	1.3%	1.3%	1.5%	3.1%	4.8%
Madrid-Sevilla	1.1%	0.7%	1.0%	3.1%	7.1%
Madrid-Málaga	1.6%	0.9%	1.4%	3.9%	8.6%
Madrid-Granada	5.7%	3.0%	4.9%	5.8%	8.5%
Madrid-León	-	1.4%	3.7%	10.2%	7.0%

Source: CNMC based on ADIF and ADIF Alta Velocidad data.

71. Approximately 7% of RENFE trains and 5% of IRYO and OUIGO trains were delayed by more than 15 minutes in 2023. The average duration of delays was 39 minutes for OUIGO, 28 minutes for IRYO and 21 minutes for RENFE. In total, 6.3% of trains were delayed by more than 15 minutes, with an average delay of 24 minutes.

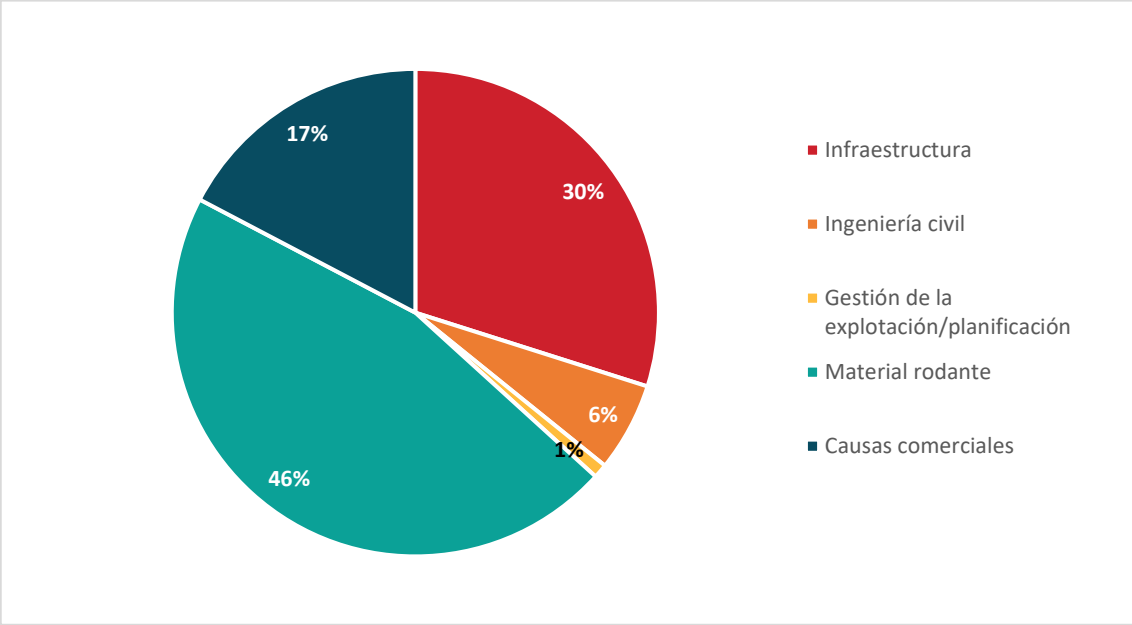
Table 12. Trains delayed by more than 15 minutes and length of delay on corridors with competition (2023).

	Trains delayed	Trains running	Trains delayed (%)	Total delay (min)	Average delay (min)
IRYO	984	19,877	4.95%	27,746	28
OUIGO	355	7,265	4.89%	13,839	39
RENFE	3,967	57,088	6.95%	83,255	21
Total	**5,306**	**84,230**	**6.30%**	**126,761**	**24**

Source: CNMC based on ADIF and ADIF Alta Velocidad data.

72. 63% of delays were caused by railway undertakings, due to problems with rolling stock or commercial decisions. The average delay in these cases was 22 minutes. The rest of the delays were caused by the infrastructure manager, most of them due to infrastructure problems (30%) and signalling equipment issues (23%). The average duration of these delays was 28 minutes.

Graph 19. Causes of delays in high-speed services (2023).



Source: CNMC based on ADIF and ADIF Alta Velocidad data.

8. CONCLUSIONS

First.- The entry of competitors has proven to be an effective lever to increase the demand for high-speed rail services and to favour a modal shift.

73. In approximately two and a half years, the entry of competition on the three main high-speed corridors has led to an increase of 10 million passengers, reaching a total of 31 million passengers. Under RENFE's monopoly, this increase in passengers took 10 years.

74. The higher number of passengers on routes with competition has increased the modal share of rail transport compared to air travel to 85%. It is worth noting the strong increase in the Madrid-Barcelona route (+ 20 p.p.), the only route where air transport maintained a significant share after the high-speed line was brought into service. The share of rail compared to air travel on this route has reached 82% in 2023, similar to that observed on other high-speed routes.

75. Passenger numbers have increased on all corridors with competition, even on those such as Madrid-Levante, where demand was stagnating because rail was not particularly competitive. In the absence of sufficient data on the number of

car journeys, given the significant increase in demand, it is reasonable to infer that there has been a modal shift due to the increased competitiveness of rail and the introduction of commercial offers, such as special fares for children, which make it more convenient for families to travel by train.

76. This development contrasts with conventional LD services, where, despite infrastructure improvements, more than 2 million passengers were lost in 2023 compared to 2019.

Second.- The results of the entry of competition in Spain are similar to those observed in other European countries, despite economic difficulties such as mobility restrictions due to the pandemic and increased energy prices.

77. The entry of new companies in the provision of rail services has increased supply by more than 60% in terms of seats. Daily frequencies increased from 76 in each direction in 2019 to 118 in December 2023 on all three corridors.

78. The entry of IRYO and OUIGO and RENFE's response with the creation of AVLO have diversified commercial high-speed services with new fare structures (where, as in air travel, passengers pay only for what they use), prices for basic services at certain off-peak hours that were unparalleled during the monopoly period (€7 to €9/ticket), more classes and types of seats, on-board meals, etc.

79. Furthermore, on routes where competition between three operators and four commercial brands started as early as 2022, average revenue reductions are around 40%. In the Southern Corridor, where the entry of competition is more recent with only two companies competing (with three commercial brands), the price reduction ranges between 10% and 24% depending on the routes.

80. Despite cyclical factors and the limited experience of competition among three operators in the same market, the results in Spain are in line with those observed in other European liberalisation processes. Indeed, the CNMC study on rail liberalisation noted that *"[I]n countries with competition in the market, the entry of new operators has led to a substantial reduction in ticket prices for end users which, depending on the country and the starting point of the market, has exceeded 40%. In addition, these operators have introduced innovations in the fare structure, such as greater segmentation of train classes and loyalty programmes, and have reacted to the entry of competitors in slots which consumers consider to be substitutes*."

Third.- Passengers and the infrastructure manager are the main beneficiaries of the entry of competition in high-speed services.

81. Consumers are the main beneficiaries of the liberalisation process, with an increase in consumer surplus estimated at €343 million. Price reductions are the main cause of this surplus, although in the Madrid-Barcelona and Madrid-Levante corridors, between 25% and 30% of the increase is due to new demand.

82. ADIF Alta Velocidad has increased its railway charge income on liberalised corridors by €148 million (+52%).

83. However, the total revenues of the three companies with framework capacity in the corridors with competition are not significantly different from those obtained by RENFE pre-liberalisation, and almost all show negative results. Entry into a market such as the rail market is costly, and profits cannot be expected in the early stages of activity. However, the situation has been worsened by mobility restrictions during the pandemic and the increase in energy costs.

84. Since the Madrid-Barcelona corridor accounts for most of the results of competing railway companies, the implementation of measures such as the one suggested by the CNMC in the Agreement of 18 January 2024[46] could favour the consolidation and extension of the liberalisation process. The implementation of the CNMC Communication on the supervision of railway charges[47], which requires charges to be adjusted to direct costs and to distinguish between segments, according to their ability to pay for the establishment of surcharges, should also help.

Fourth.- The entry of competition in high-speed services has improved the efficiency of the system.

85. The surplus capacity of the high-speed network in Spain has facilitated the entry of new competitors in the main corridors. The new operators have increased the use of the network, bringing new rolling stock with a more intensive use.

[46] Agreement of 18 January 2024 issuing a report on the draft regulation to determine ADIF and ADIF Alta Velocidad railway charges for 2024.
https://www.cnmc.es/sites/default/files/5081598.pdf
[47] Communication 1/2024, of 12 March 2024, of the National Markets and Competition Commission, on the supervision of charges for the use of railway lines belonging to the General Interest Railway Network.
https://www.cnmc.es/sites/default/files/5241287.pdf

86. The numerous actions being undertaken on the network make it difficult to determine the impact of the increased use of the network resulting from liberalisation on the punctuality of services, one of the elements that most affects the service quality perceived by passengers. In the three corridors as a whole, 6.3% of trains were delayed by more than 15 minutes, with an average delay of 24 minutes.

Fifth.- Transparency in access to capacity throughout the network.

87. On 14 December 2020, the entire rail network was opened to competition. To ensure effective access, in accordance with the CNMC Decision of 15 February 2024[48], infrastructure managers must improve the transparency of the capacity available to operators, set clear rules to coordinate capacity requests and establish priority criteria in the event of incompatible requests, given that increased traffic raises the likelihood of conflicts between requests from different railway undertakings.

88. The corridors without competition accounted for approximately 10 million passengers in 2023 and have received significant investment in infrastructure improvements. The incorporation of competition has proven to be an efficient lever to increase demand and improve the financial sustainability of the infrastructure manager. ADIF Alta Velocidad has announced a capacity allocation process on corridors where there is still no competition[49]. The provision of services on these lines requires rolling stock, which will delay market entry, so infrastructure managers should advance the available capacity and details of the process as soon as possible.

To be published on the website of the Spanish National Markets and Competition Commission (www.cnmc.es).

[48] Decision of 15 February 2024 on the procedure for the allocation of railway infrastructure capacity.
https://www.cnmc.es/expedientes/stpdtsp06023
[49] https://www.adif.es/-/adif-ampl%C3%ADa-el-plazo-del-cuestionario-que-pulsa-la-opini%C3%B3n-de-operadores-sobre-la-segunda-fase-de-la-liberalizaci%C3%B3n