



Centre on Regulation in Europe  
Improving network industries regulation

## ***Liberalisation of passenger rail services***

### ***Case Study - France***

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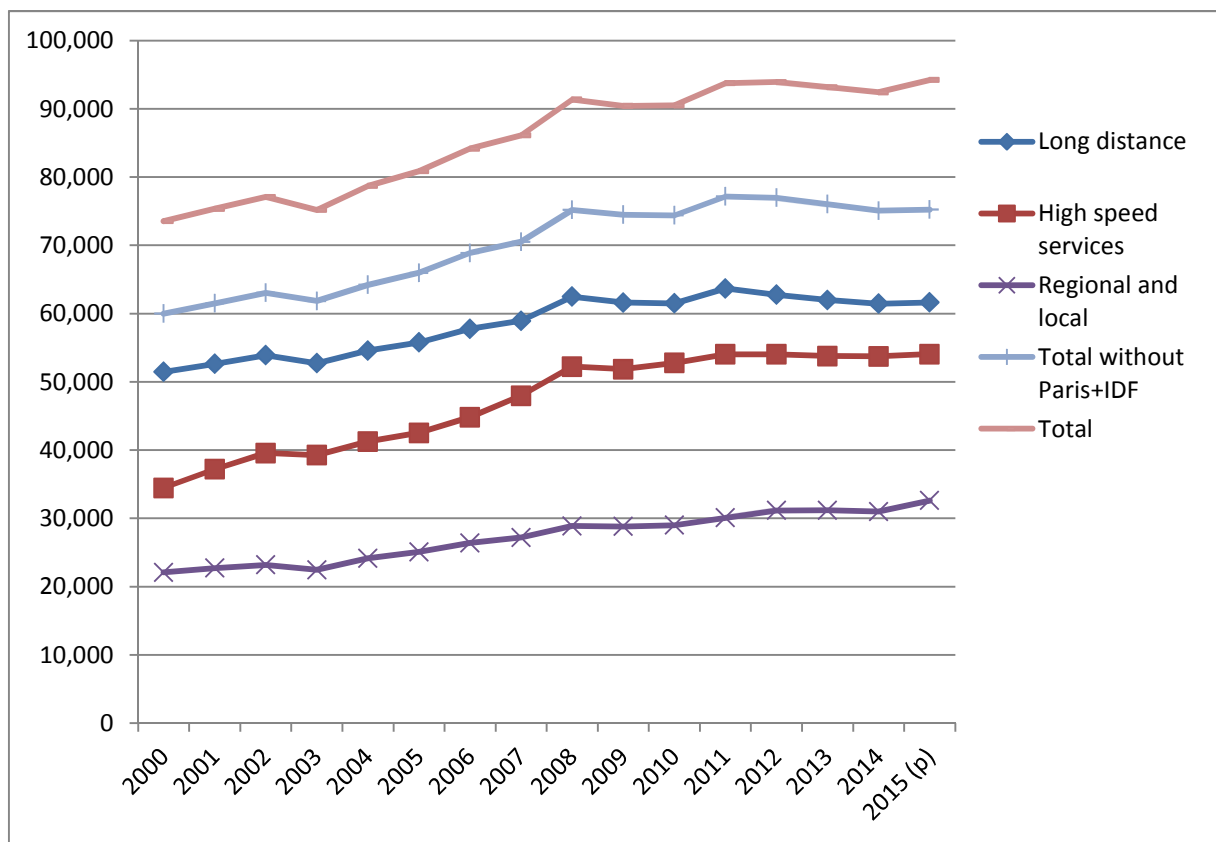
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## 1. Introduction

France is a key player in the European rail system, especially in high-speed rail travel. Because of the size of this market segment, namely 54 billion passenger-kilometres (pkm), France is the European country with the highest total number of rail pkm per year (more than 94 billion). As indicated in Figure 1, however, the boom in rail traffic has slowed since 2008.

**Figure 1: Rail passenger traffic in France (million pkm)**



Source: Ministry of Transport — <http://www.statistiques.developpement-durable.gouv.fr/publications/p/2587/112/comptes-transport-2015-1.html>

Excluding traffic in Paris and Ile-de-France, the figures from 2015 were 2.5% below the maximum reached in 2011. The same trend was observed during the first semester of 2016. It is as if French rail is facing a challenging new era. After the period of 'sleek and fat cows' (1990-2008), it is now the time of 'ugly and gaunt cows'<sup>1</sup>. Rail passenger services are facing new

<sup>1</sup> When two full years had passed, Pharaoh had a dream: He was standing by the Nile, when out of the river there came up seven cows, sleek and fat, and they grazed among the reeds.

competitors and new mobility behaviours: low-cost airlines and coach services, but also car-sharing and carpooling boosted by the digitisation of mobility and decreasing fuel costs. In an environment of such tense intermodal competition, introducing the intra-modal competition recommended by the Fourth Railway Package is a challenge, not only economically but also politically. Culturally speaking, France is a country that is very reticent about competition.

SNCF, the public monopoly, is under pressure because of what happened in the rail freight sector when competition was introduced 10 years ago. In order to reduce the financial losses of Fret-SNCF, the component of SNCF in charge of freight, traffic volumes were decreased by almost 60%<sup>2</sup>. The organisational changes required to increase the firm's efficiency were very difficult to set up because competition was considered a threat rather than an opportunity.

For passenger services, such traffic attrition is unacceptable for SNCF and very likely for the government and citizen too, for both financial and social reasons. Therefore the key question is: how to introduce competition in rail passenger services in France? In order to address this issue, the paper is divided into two parts, one for each segment of rail passenger services:

- To date, regional and intercity trains have been operated by the public monopoly SNCF. This is the law and competition is forbidden. Significant public subsidies (more than 6 billion euro per year<sup>3</sup>) are necessary to support these 'Public Service Obligations'. Proposals were put forward by the government in June 2016 to launch, very carefully, some experiments in tendering for 'off-track' competition, which should be mandatory by 2023 (Fourth Railway Package). Drawing on observations of other countries (UK, Sweden and Germany), the first part of this paper presents a number of options for overcoming the obstacles to off-track competition.
- Commercial and profitable services, mainly high-speed, are also operated by SNCF or, for international services, by subsidiaries of SNCF like Thalys (Brussels), Eurostar (London) or Lyria (Geneva), or in cooperation with DB (Germany) or RENFE (Spain). For these national and international services, no 'on-track' competition exists except for two international routes: Milan-Paris and Milan-Marseille operated by Thello, an Italian company. In 2020, however, on-track competition for national services will be launched. On-track competition does exist in Italy for high-speed services. For some routes, open access exists in seven other countries (including Austria, Czech Republic, and Sweden). The second part of this paper seeks to identify the conditions under which competition for commercial services would become feasible, specifically for high-speed services.

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After them, seven other cows, ugly and gaunt, came up out of the Nile and stood beside those on the riverbank. And the cows that were ugly and gaunt ate up the seven sleek, fat cows. Then Pharaoh woke up...Genesis 41 (Pharaoh's dream)

<sup>2</sup> The freight market was presented in a previous paper of CERRE

<sup>3</sup> Two thirds from Regional transport authorities to SNCF-Mobilités and one third from the central government to SNCF-Réseau to cover the rail access charges of regional trains.



**Box 1: The new organisation of SNCF**

SNCF was established when the railway system was nationalised in 1937, and for a long time it was a commercial company whose majority shareholder was the state. In the early 1980s, in a wave of nationalisations undertaken by President François Mitterrand, its status changed. SNCF then became an Établissement Public à caractère Industriel et Commercial, or EPIC, which is a type of state-owned industrial and commercial enterprise. An EPIC is a company that is fully controlled by the French state, which in turn guarantees that the company cannot go bankrupt. A recent parliamentary report (Pancher & Savary 2016) recommends transforming SNCF-Mobilités (and FRET-SNCF, the entity in charge of freight) into a public-owned limited company in order to improve the governance and the accountability system.

In 1997, following EU directive 91-440, a new EPIC was created for infrastructure management, RFF (Réseau ferré de France). RFF was obliged to work with SNCF infra, a subsidiary of SNCF, which was in charge of both maintenance of the rail network and day-to-day traffic regulation.

In 2011, due to the rising costs of the French railway system and the increase in access charges for TGV high-speed trains, which put extra pressure on SNCF's revenue, the government decided to organise rail talks (Assises du ferroviaire). At SNCF's request, these talks focussed mainly on the transaction costs related to the separation between RFF and SNCF. Various reports were published, commissioned by the new government that took office in 2012 (Auxiette Report, Bianco Report). They proposed the adoption of an institutional model inspired by Deutsche Bahn in Germany, where the infrastructure manager, DB Netz, is a component of the railway holding company.

In 2014, a new organisational structure was voted in by Parliament. SNCF is now divided into three EPICs:

- i) SNCF (10 000 people), the holding company, which controls the two other EPICs:
- ii) SNCF-Mobilités (90 000 people), in charge of train operating and rail stations management,
- iii) SNCF-Réseau (55 000 people), in charge of infrastructure management. The chair of SNCF is also the CEO of SNCF-Mobilités. As SNCF-Réseau is closely related to SNCF (holding company), the French rail regulator (see Appendix 1) has raised concerns about SNCF-Réseau's possible lack of independence<sup>\*4</sup>.

The three SNCF EPICs are only one portion of the SNCF Group. In 2012, the SNCF Group was active in 120 countries with 250 000 employees, and generated a global turnover of 33 billion euro (21 billion euro in France). The Group's international operations accounted for 25% of this total. The Group is organised into five divisions. The most important subsidiaries are KEOLIS (passenger mobility) and GEODIS (Freight).

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<sup>4</sup> "The board of SNCF-Réseau is composed of twenty-four members among which seven persons are designated by SNCF. The fact that seven SNCF representatives are present in SNCF-Réseau's Board of Directors is likely to undermine the independence of the infrastructure manager" (ARAFER, October 2016)

## 2. Regional and intercity trains: how can PSOs move from monopoly to competition?

Over the past few years, there has been talk in France about opening up regional passenger rail transport to competition. An official report was drafted in 2011<sup>5</sup> by a working committee of “France Stratégie”, a department in the Prime Minister’s office. This report recommended the careful introduction of competition through calls for tender, starting with intercity trains (Trains d’équilibre du territoire, TET), the public service delegation for which lies with the French state. This recommendation was based on the idea that the process of introducing competition would be smoother for these intercity trains than for the two other train categories operated under public service obligations (PSOs). Before discussing the potential obstacles in the process of opening up the market to competition, and the means of overcoming those obstacles, we first outline the current state of the rail services in the PSO category.

### 2.1 General overview

In France, there are three categories of rail services operated under a PSO. As shown in Figure 2, the services specific to the Île-de-France region (Transilien) represent the largest category (19 billion pkm). We will not discuss this category here, as it is not likely to be opened up to competition before 2029 at the very earliest.

The situation is different for the two other categories. First, there are the regional express trains (Trains express régionaux, TER), where traffic amounted to 13.6 billion pkm in 2015. After years of stonewalling rhetoric, national and regional policy-makers recently decided that opening up the market to competition would be feasible. Secondly, there are the Trains d’équilibre du territoire (TET), which handle most of the non-high-speed line traffic. Unlike Transilien and TER traffic, TET traffic is steadily on the decline.

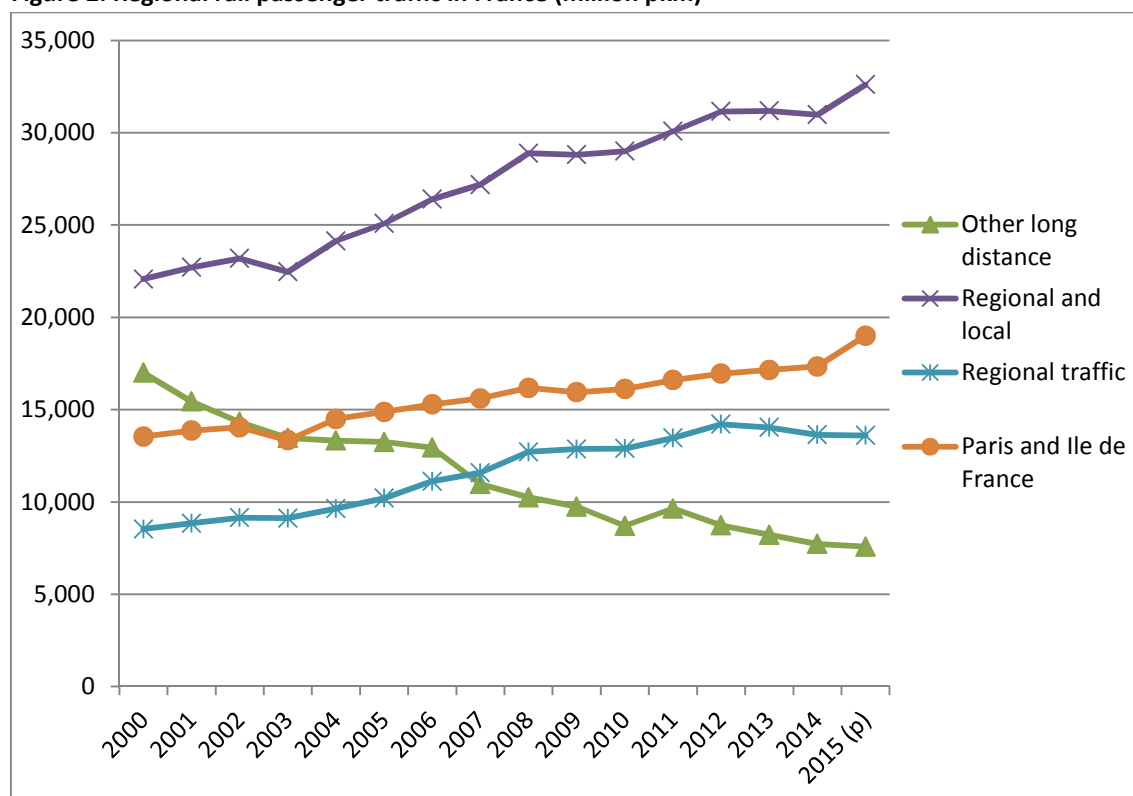
TET or ‘intercity’ trains are relative newcomers in the PSO landscape and represent the smallest share: 320 trains per day on 30 regular lines, including 8 night services. They transport some 100 000 passengers per day, connecting 335 municipalities in 11 regions. This intercity train system was set up in 2010, in response to SNCF’s finding that certain low-traffic lines were generating considerable losses. Since local representatives wanted to maintain these services, they were transformed, without any calls for tender, into public service delegations, whereby the French state was the delegator and SNCF the operator. Intercity trains (TET) connect large municipalities in France that are not connected to the high-speed rail network. The aim is to improve access to more peripheral territories, making them less isolated, through direct interprovincial links. They also help improve commuter traffic in the Paris Basin, which makes up

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<sup>5</sup> Claude ABRAHAM, L’ouverture à la concurrence du transport ferroviaire de voyageurs, France-Stratégie Rapports et Documents n°41, La Documentation française 2011, 150 pages

the majority of TET traffic. In other words, these are middle- to long-distance trains providing services of national interest (see map in the Appendix). This could be a good segment for experimenting with the introduction of competition (see below).

**Figure 2: Regional rail passenger traffic in France (million pkm)**



Source: Ministry of Transport — <http://www.statistiques.developpement-durable.gouv.fr/publications/p/2587/112/comptes-transports-2015-1.html>

Regional express trains (TER) are operated by SNCF under the responsibility of the regions. The regions became 'organising authorities' for regional transport (rail and coach) following a law passed in December 2000. Before it was generalised by this law, the regionalisation of the TER had been tested extensively over a three-year period in certain pilot regions. Due to geographic and demographic differences, TER traffic varies substantially from one region to another. Table 1 indicates the characteristics of the new French regions, as established in January 2016, and their respective levels of TER traffic.

Even without taking Île-de-France into account, several striking differences can be observed. The Auvergne-Rhône-Alpes region has almost seven times more traffic than the Normandy region. Another significant difference is the share of coach services in total traffic. The Provence-Alpes-Côte d'Azur region boasts relatively high volumes of coach traffic, due to its topography and the rather limited scope of the local rail network. In most regions, coach traffic increases when the regions replace railway services with road services, especially during peak hours, in an attempt

to cut costs. This is one of the reasons for the slight drop in regional railway traffic since 2012 (see Figure 2).

**Table 1: The new French regions and their TER traffic**

Regions	Pop.	Area	Density	Network	Train-km	Coach-km	% coach	pkm
	million	km <sup>2</sup>	inhab. /km <sup>2</sup>	km	million	million	%	million
Grand-Est	5.55	57433	97	3582	25.45	6.54	26%	1916
Nouvelle-Aquitaine	5.84	84061	70	2995	16.78	3.46	21%	919
Auvergne-Rhône-Alpes	7.75	69711	111	3060	31.26	12.04	39%	2805
Bourgogne-Franche-Comté	2.81	47784	59	1833	14.78	3.39	23%	987
Bretagne (Brittany)	4.48	34023	132	1037	7.2	2.31	32%	545
Centre-Val de Loire	2.57	39151	66	1343	10.07	2.8	28%	878
Occitanie (Occitania)	5.68	72724	78	2409	14.48	7.7	53%	1104
Hauts-de-France	5.98	31813	188	2453	22.39	3.02	13%	2262
Normandie (Normandy)	3.57	30100	119	1248	8.44	1.98	23%	431
Pays de la Loire	3.66	32082	114	1177	8.76	2.73	31%	740
Provence-Alpes-Côte d'Azur	4.94	31400	157	1158	12.03	6.82	57%	1175
Île-de-France	11.96	12011	996	1525	95.9	N/A	N/A	16000

Source: Author with data from Association des régions de France (ARF) and La vie du Rail

Today, all regions face financial difficulties as the French state allocates fewer funds to their operation. Moreover, after almost a decade of significant traffic growth, the time has come to cut costs. This is all the more necessary in light of the fact that for regional trains in France, unlike in most neighbouring countries, the cost per unit has increased considerably. This is evident in Figure 3: an 80% increase in total allocations between 2002 and 2011, during the phase of rapid traffic growth.

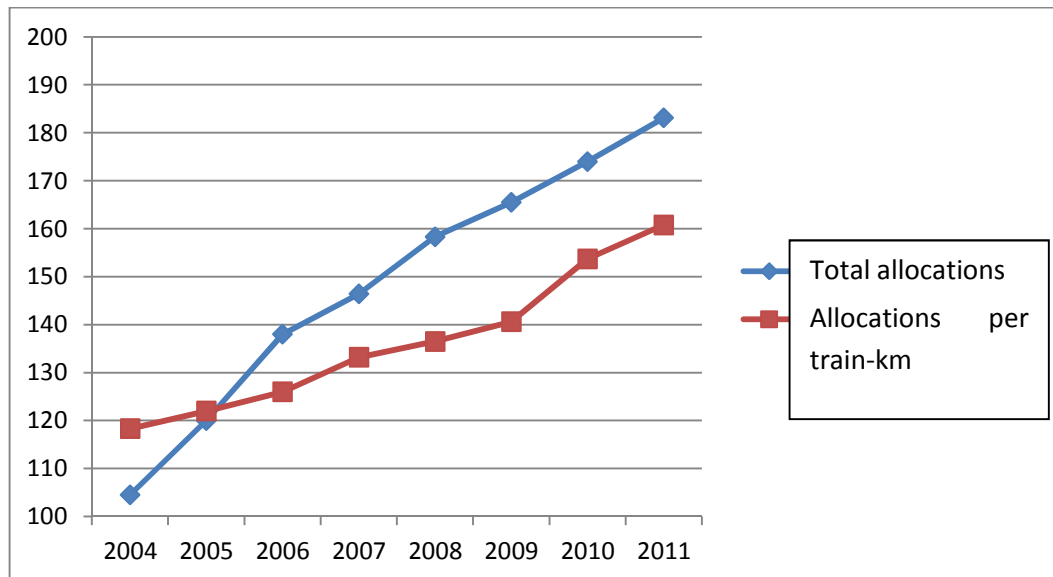
Allocations per train-km did not grow quite as fast, but they did increase by 60% in the same period, as though it were impossible to achieve economies of scale. While price increases were



actually rather limited, France went through a period of what has since been named 'rail inflation'. This is an unusual phenomenon in Europe: most of France's neighbouring countries have seen a drop in their costs per train-km<sup>6</sup>.

Figure 4 shows the example of Switzerland over the same period as in Figure 3. Total allocations increased slightly in the early 2000s, before decreasing somewhat, whereas state allocations per train-km fell by almost 15%. This is indicative of a growing divide between France and its neighbouring countries, regardless of whether they choose to play the competition game (like Germany and the UK) or not (like Switzerland).

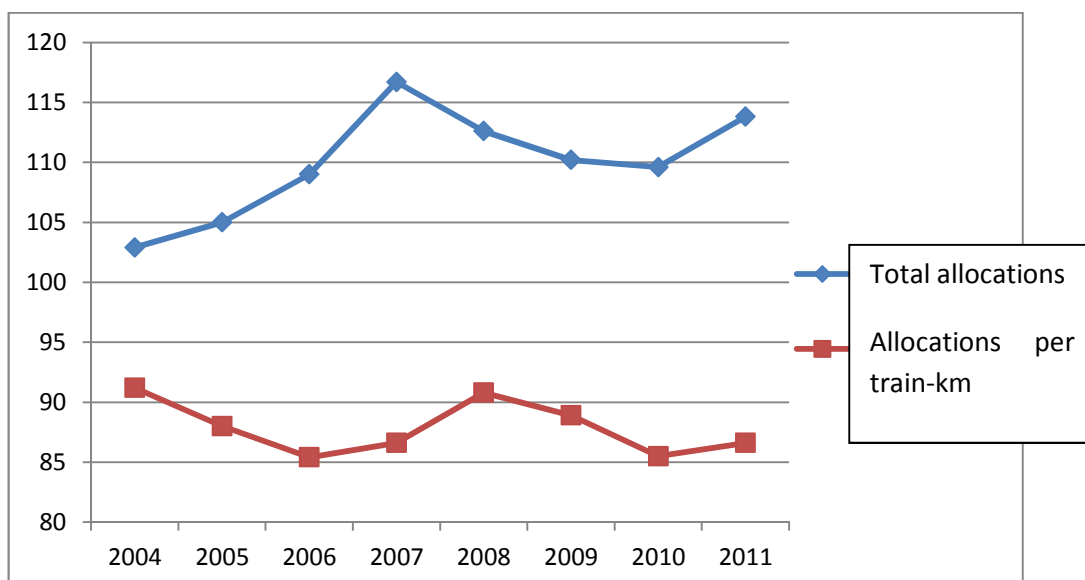
**Figure 3: Evolution of TER costs in France (2002 = 100)**



Source: Desmaris 2014

<sup>6</sup> See the data for Germany and Sweden in the case studies. In the UK, the cost per train-km increased by 15% between 1998 and 2012.

Figure 4: Evolution of railway costs in Switzerland (2002 = 100)



Source: Desmaris 2014

The high costs of intercity rail (TER) in France have meant that many representatives are now warming to the idea that competition could halt this rail inflation. While ideological barriers are slowly but surely coming down, there are still many obstacles to overcome before effective competition can be ensured.

## 2.2 The obstacles to overcome

In order to understand the difficulties of opening up railway transport to competition, it is useful to look at what happened in the freight segment. This will allow us to draw parallels and point out differences with the TER and/or TET situation.

As can be concluded from France's past experience with competition in the rail freight sector, (Crozet 2014), there are two kinds of problems: those faced by new entrants and those faced by the historical operator.

- The main problem for the historical operator has been the process of cutting back freight activities, requiring railway yards to be closed and equipment to be scrapped. However, the biggest difficulty has been personnel redeployment, since people with 'railway worker' status (cheminots) cannot be fired. People have had to be transferred to other branches of the group, such as infrastructure maintenance. In what follows, we will see that this is a central issue in opening up passenger transport to competition.
- New entrants face systemic difficulties. In order to develop their activities, they first need to gain access to the necessary routes to be able to run their trains. Then, they also need to buy rolling stock, obtain access to essential facilities such as depots, rail sidings, train storage tracks and fuel pumps. The personnel issue is especially delicate in the

beginning, because qualified train drivers are needed, while only SNCF has training centres.

In the case of TER or TET, any new entrant requires train paths, equipment, access to essential facilities and a presence in train stations. Then there are also matters such as ticket sales and rate plans to be considered. The most challenging obstacle, however, is personnel-related, as we shall discuss below.

- As regards train routes and equipment, new entrants under a public service obligation will actually encounter fewer difficulties than freight operators. As their services replace those of SNCF, both the equipment and the train routes already exist. At the regional level, it just so happens that a great deal of equipment was recently renewed and paid for by the regions. The same goes for the TET, where new equipment is due, which is to be financed by the AFITF<sup>7</sup>. Even though this equipment is currently included in SNCF's balance sheets, it is in fact the property of the regions, so the regions could demand that the equipment be transferred to a new entrant. This is more of a legal and accounting issue than a practical one. Similarly, ground rules need to be redefined for new entrants to gain access to essential facilities, establish a presence in the train stations, organise ticket sales, and so on. These matters involve technical problems which can be resolved through negotiation, especially during the gradual process of opening up the market to competition following local experiments (see below).
- As far as personnel - and especially train drivers - are concerned, things are more complicated. It would seem fairly straightforward to transfer SNCF staff to the new operator. Yet how can this be accomplished, since the most recent collective agreement in the sector, in force since June 2016, puts employees in a situation that is quite different from the situation at SNCF? Under pressure from the Ministry of Transportation, SNCF has been forced to maintain most of the existing social regulations.

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<sup>7</sup> *Agence de Financement des Infrastructures de Transport de France*, i.e. the French national transport infrastructure financing agency. The AFITF is a state-run agency, presided over by Philippe Duron (member of Parliament), that receives state funding on a yearly basis in order to help fund waterways, roads, railways, ports, public transport and, henceforth, also billions of euro of railway equipment (100 million earmarked for TET in 2016). Its total budget for 2016 amounts to some 2 billion euros.

**Box 2: Core Decree, collective agreement and RH 077<sup>8</sup>**

For SNCF employees, one of the central issues in the railway reform is Article 1 of the Law of 4 August 2016. Railway workers no longer have different labour rights than other French employees, as had been the case since 1940. With SNCF no longer being the sole provider of railway transport in France, it was necessary to arrive at a collective agreement regulating social matters (working hours, qualifications, etc.) for the entire sector.

The issue had already come up when rail freight was opened up to competition. A collective agreement had been drafted under the auspices of the UTP, but in 2010, after several months of negotiations, SNCF refused to sign the agreement. It did so on the grounds that the agreement gave new entrants an unfair advantage, since the existing set of social regulations at SNCF (the so-called RH 077) was more favourable to railway workers, especially with regard to working hours, rest periods, and so on. The result was a major competitive disadvantage for Fret-SNCF.

The Law of 2014 was supposed to address this issue, in that the working conditions in the sector were to be governed by a Core Decree on the basis of which a collective agreement applying to all companies was to be negotiated. This was enacted in the spring of 2016. In March, the ministry published a draft Core Decree that allowed for the collective agreement talks to be concluded. The aim of SNCF's management was to seize the opportunity to make changes to RH 077, especially with regard to working hours and rest periods. Several trade unions were opposed to this, and at that time in France many demonstrations were taking place against the proposed 'Labour Law'. In order to keep the railway workers from backing these demonstrations against the Labour Law, the Minister of Transportation sat down at the negotiating table and forced SNCF's management to accept a virtual status quo with regard to RH 077.

The situation is therefore critical for SNCF, as it has to abide by more restrictive internal social regulations than those currently applicable to the competition as per the collective agreement. This is why the personnel issue is the most controversial one.

When a new entrant emerges, personnel will therefore be a crucial issue. What are the possible scenarios?

- The new entrant could decide to hire its own personnel, meaning SNCF would have to organise internal redeployments. This would be conceivable for marginal operations along short rail links, but it would get very complicated if competition arose in several regions at once, and in larger market segments.
- Should this be the case, a second possible scenario – advocated by SNCF – consists of transferring some personnel to the new entrant. However, under which social conditions? The railway workers employed by the new entrant would have to work in

<sup>8</sup> The French public transport union (Union des Transports Publics, UTP) is a member of the international public transport union (Union Internationale des Transports Publics, UITP) and represents all public transport companies in France, not just railway companies. SNCF is a member of the UTP. The current president of the UTP is Jean-Pierre Farandou, also the CEO of Kéolis.

accordance with the collective agreement. Would they accept this without financial compensation? And what would become of their social rights — particularly when it comes to pensions, but also access to the specific services offered to all employees by SNCF and its Works Council (healthcare services, vacation centres for children of employees, libraries, and so on)? If, or rather when it inevitably comes to financial compensations, who would pay the price: the organising authorities? The state? It is unlikely that the new entrant would be willing to bear this financial burden.

Thus, it appears that the main obstacles do not directly hinder the new entrant, but they do inconvenience SNCF and its supervising authority. Although the introduction of competition is rapidly gaining traction, it would virtually amount to a zero-sum game between the new entrants and SNCF. The latter will therefore need to implement drastic workforce reductions, not only in train crews, but also and more importantly in other positions, including among the 10 000 people working for the holding company. Since its activities have progressed only slightly, or even fallen back, SNCF has actually been reducing headcounts for many years already: there were 430 000 employees in 1950; only 155 000 remained by 2015. This comes down to a reduction of 4200 jobs per year over the course of 65 years. In recent years, however, the pace has slowed to 1000 - 1500 redundancies per year. With the powerful upswing of competition, SNCF would have to go back to the historical trend of organising massive voluntary departures or only very partially replacing retirees. This represents a real headache in terms of social relations in the company, but also for the state, as the sole shareholder of SNCF.

### 2.3 Tendering process: the coming experiments

Clearly, introducing competition in the field of public service obligations is going to be a challenge. In the current climate, with SNCF already weakened by lower traffic, new competitors entering the market could lead to an internal crisis for the historical operator. The state cannot turn away from this problem; especially since it played such a key role in weakening the company in the social negotiations last spring (see Box 2). So how can SNCF prepare for 2023, when tendering will become the norm?

We propose to suggest a strategy here, one which can be summed up in a few key words: **allotment, double experimentation, productivity, compensation**. It should be understood that the main objective is not to transfer the majority of the railway services under public service obligations to new entrants. Referring once again to the example of Germany, the goal is for new operators entering the market to demonstrate their expertise, thus prompting the historical operator to re-evaluate its practices. This scenario looks all the more likely as one of the main new entrants could be Kéolis, a subsidiary of SNCF.

- Allotment will be the first step, as it will not realistically be feasible to transfer a region's entire railway service to a competitor of SNCF by 2023. It is preferable, therefore, to select a typical rail link here and there, where both equipment and essential facilities are

readily accessible. As has been common practice in Sweden for many years now, new entrants are encouraged to take an interest in lines with low traffic and a high cost to society in terms of subsidies per passenger. These lines are actually the ones where there is most to gain because the new entrant could realise much lower costs than the historical operator thanks to better organisation of train crew shifts, higher staff flexibility and a higher equipment utilisation rate. The same applies to the intercity trains (TET). It would be possible to experiment with the introduction of competition on one or two typical lines.

- This experimentation could take on two distinct forms, and performed simultaneously:
  1. The first consists in granting the new entrant complete freedom to organise their service. This means there would be no transfer of SNCF staff. In this scenario, the UTP's collective agreement applies instead of RH 077, so there is no need for compensation. This would only be feasible on short lines, especially those where SNCF or the organising authority is considering suspending service. The goal is to show that railway services can be delivered at significantly lower costs. In some cases, infrastructure maintenance and small train station upkeep could be transferred to the new entrant. This type of experimentation is meant to demonstrate that other management techniques are possible, involving lower costs and higher-quality service, as has been the case in Germany. The new entrant will need to reinvent the service and recruit personnel with the necessary qualifications.
  2. The second form of experimentation consists in testing the official transfer of personnel, particularly train crews. This should also be done within the rationale of allotment and experimentation. One or two TET lines could serve as pilot projects, but there are also opportunities within the regions. The goal of this experimentation would be to demonstrate the feasibility of transferring personnel from SNCF to the new entrant. Obviously, this would be easier if the new entrant happened to be Kéolis. As illustrated by the 2008 'freight volunteers' exercise, many SNCF employees are willing to accept new ground rules, including longer working hours, in exchange for wage compensations. It must be demonstrated that the productivity gains obtained as a result of new social regulations can benefit the operators. This experimentation is in no way intended to reduce the subsidies the operator receives from the organising authority, but instead to show that with the same subsidies, other work organisations are possible, and could benefit both employees and passengers.
- These two forms of experimentation do not, however, tackle one of SNCF's major problems: that of structural costs. After all, at SNCF it is not so much the train crews that are overstaffed. While train crews' productivity could certainly be increased through new forms of work organisation, the reality of the matter is that there are actually too few train drivers, rather than too many. However, the regional organising authorities'

biggest concern is the lack of transparency in SNCF's accounts, which conceal overstaffing problems in other personnel categories. As SNCF's management has been emphasising for some time now, productivity gains must be the focal point of the company's business strategy for the coming years. It should be admitted openly that this will require workforce cuts at an elevated pace, two to three times faster than has been the case for the last 20 years<sup>9</sup>.

- This approach obviously requires action from the French state, which will need to help 'sweeten the pill' somehow. This new situation will inevitably be perceived as going against the various promises of rail development that left-wing and right-wing governments alike have been making for over 20 years (re-launching rail freight, transferring the TER to the regions, expanding the network of high-speed rail lines, etc.). Replacing the historical operator with privately-owned new entrants — and quite possibly the subsidiaries of foreign companies at that — is unlikely to go down well with a vast number of constituents. Hence the need to offer compensation both to employees (maintaining the pension system) and to the regional organising authorities.

When the Fourth European Railway Package is implemented, there will be a need for a French railway package that requires the state to tackle matters such as the debt of SNCF-Réseau (42 billion euro in 2016), the evolution of railway access charges, the amount of subsidies paid to the regions, and so on. All of these issues pertain not only to TER and TET, but also to the jewel of the French railway industry: high-speed rail.

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<sup>9</sup> 180 500 employees in 1996 and 155 000 remaining in 2016, i.e. a reduction of 1275 per year. Between 1950 (430 000 employees) and 1995, the reduction was more than 5500 per year!

**Box 3: Competition and labour cost**

As shown in Figure 3, the cost of TER has increased in France, due to the so called "railway inflation." Labour costs then became an issue for SNCF: they stand for 40% of SNCF's turnover, against 30% for the Deutsche Bahn. Note for example that the number of employees in SNCF decreased by 4% between 2009 and 2013 but the payroll rose by 5.5%. This paradox is explained by an average increase in individual wages of 3.87% a year while inflation was only 1.56% \*. How could competition change this?

Usually, competition increases the pressure on companies and thus on employees. In sectors such as air or road freight transport, competition has led to a kind of "social downsizing". However, it was not the case for rail. In Germany like in Britain, drivers found themselves in a strong position because their skills were in highly demanded. Sometimes as a result of strikes, they have obtained significant wage increases in exchange for more flexible work organisation.

This atypical development may serve as a reference in France. In the competitive bidding scenario with transfer of staff assigned to the line, a win-win game could exist: higher wages for drivers but declining public subsidies for the same service. The labour cost of drivers and controllers represents less than 10% of the total cost of a rail service. New entrants argue that with their own staff they could offer services from 25 to 30% cheaper due to a better organisation and low structure costs. Consequently, they could be 15-20% cheaper if they accepted an additional wage cost for drivers.

Therefore, there is possible room for manoeuvre, especially since the introduction of competition will be gradual. In Germany, the market share of new competitors rose from 10% to 27% of regional traffic from 2003 to 2014. If the same pace applies in France, it is possible to organise the voluntary transfer of only part of the SNCF staff assigned to the TER. This transfer will not be the hardest thing to achieve. What is trickier is that the SNCF, with or without the opening to competition, will significantly reduce its structure costs because its overall business will hardly progress if not regress. The main challenge of the French railway is not competition, but the financial sustainability of an activity that requires significant productivity gains even if its business is not growing or declining.

\* *Lionel Steinmann, Les Echos, 22 octobre 2014, p. 21*



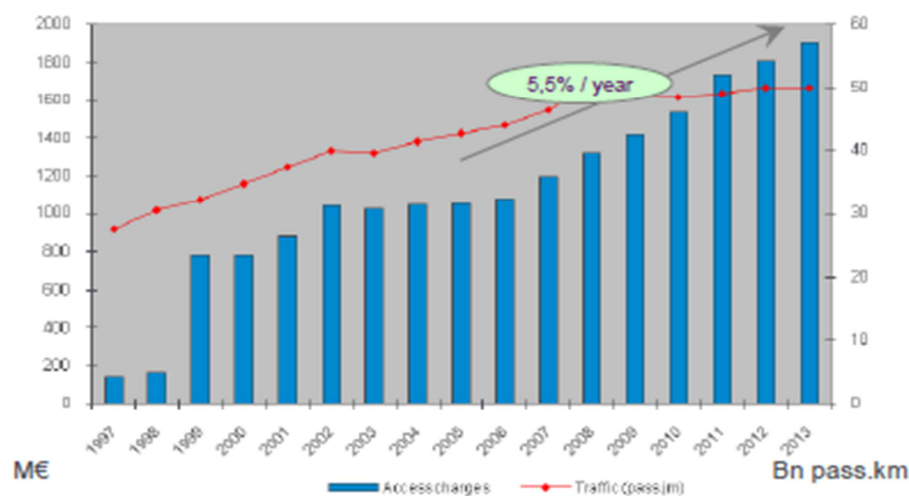
### 3. High-speed services and ‘on-track’ competition: numerous barriers to entry

On-track competition within the rail sector is clearly encouraged by the EU. According to the Fourth Railway Package, competition should be introduced for commercial national services in 2020. France reacted to the principle of competition on high-speed lines (HSLs) with concern and even hostility (see Abraham report 2011). The outcome is that, to date, all high-speed trains in France are still operated by SNCF, which is a public company. Even SNCF’s competitors seem to prefer cooperation to competition when it comes to HSR, with joint ventures like Thalys and Eurostar, and alliances including DB-SNCF for traffic between Germany and France and RENFE-SNCF between Spain and France.

It appears as though former national companies attempt to avoid competition and prefer to share the benefits of a profitable activity. In France, due to the profitability of HSR, the infrastructure manager is even able to apply very high rail access charges to the busiest lines during peak periods. At the same time, SNCF can maximise revenue during peak periods by applying a pricing policy that is based on yield management.

Since 2008, however, high-speed services have gradually been losing their status as the ‘cash cow’ of SNCF. HSR services are facing a scissors effect: a stable number of passengers on the demand side and a rise in costs, namely rail access charges, on the supply side, as we can see below (Figure 5).

**Figure 5: HSR in France: traffic and rail access charges**



Source: SNCF

High-speed services are therefore facing an uncertain future in France and, as a consequence, competition looks likely to threaten SNCF, even if the HSR market is characterised by numerous barriers to entry.

### 3.1 General overview

France was the first European country to embark on the HSR odyssey. Approved in 1975, the first HSL, between Paris and Lyon (271 km), was opened to traffic in September 1981 and extended in 1983 to 389 km<sup>10</sup>. It now carries more than 150 trains a day at a cruising speed of 270 km/h. The success of that line provided the basis for extending the network. The HSL network (see Map, Appendix 2) developed in star fashion,<sup>11</sup> radiating out from Paris. It aims to link the capital to the main cities in order to enable HSR users to travel out and return within the day, as the Paris-Lyon model allows. This Paris-Lyon model is a useful basis for understanding the choices made during the extension of the network. On neither the local French network nor its connections with neighbouring countries (Belgium, the United Kingdom, Germany, Luxembourg and the Netherlands) does HSR aim to reduce journey times for short- and middle-distance travellers; rather, it aims to attract long-distance interurban mobility; in other words business and leisure travellers.

Because HSRs can run on conventional lines (provided the lines are electrified), over 200 stations in France are now served by HSRs (as shown on the map in Appendix 2). HSRs run on an HSL for part of their journey and on conventional lines for the remaining, often long, sections. Thus, it is possible to travel from Marseille to Rennes or from Marseille to Strasbourg, and even to Frankfurt in Germany, without changing trains. Speed is only moderate on these links compared to the HSL route, but this system nevertheless helps to expand HSR availability and make it more accessible to customers.

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<sup>10</sup> The total distance of the railway line between Paris and Lyon is 427 km including access to Paris and Lyon

<sup>11</sup> The same logic was applied in the 19th century at the beginning of the railway age. In France, the 'Legrand star' is a concept named after the engineer who devised the layout of the first French rail network.

**Box 4. Timeline of HSL network extensions in France<sup>12</sup>**

**1981:** opening of the Paris-Lyon line (serving the south-east).

**1989-1990:** opening of the Paris-Le Mans line (serving the south-west and Brittany).

**1993:** opening of the Paris-Lille line (serving northern France, Brussels and London).

**2001:** opening of the Mediterranean line up to Marseille.

**2007:** opening of the first section of Paris-Est line (serving Lorraine, Alsace, Luxembourg and Germany). The second section has been opened mid-2016.

**2011:** opening of the first section of the Rhine-Rhône line (first section not linked directly to Paris).

**2011-2012:** Launch of works on four new lines: Tours-Bordeaux (south-west), Bretagne-Pays de Loire (west), extension of HSL East as far as Strasbourg, Nîmes-Montpellier bypass. HSL East was opened in June 2016. Tours-Bordeaux and BPL will open mid-2017. Nîmes-Montpellier is expected mid-2018.

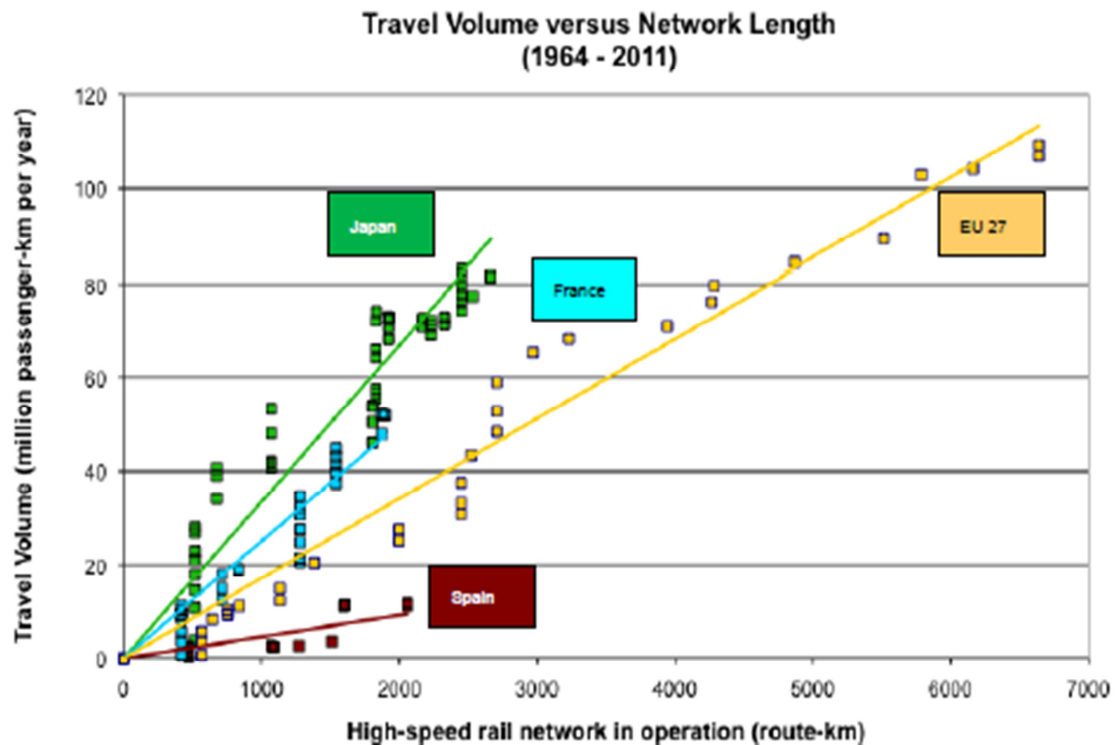
**2013:** A ten-member ministerial commission comprising members of parliament and experts recommends delaying or abandoning several HSL projects. Only the Bordeaux-Toulouse-Dax line may open before 2030 if there is sufficient budget (8 billion euro).

*Source: Crozet 2014a*

Regarded as something of a niche activity initially, high-speed rail has become a national priority in France as evidenced by its 2130-km network of high-speed lines. The lines currently under construction will bring this total to 2700 km by 2017. HSR is a profitable commercial service aimed at users who can afford to pay. Only about 10%-15% of the French population uses HSR on a regular basis. That often-overlooked statistic explains why an HSR service cannot run profitably to all destinations. SNCF, the state-owned company which operates HSR in France, often reports that only the routes serving Paris are financially viable. Figure 6 shows that, because the HSL network is polarised by Paris, traffic intensity is comparable to that of Japan. While its HSL network is a little smaller than the Spanish HSL network, France's HSR traffic was in fact four times higher than the traffic recorded in Spain in 2011.

<sup>12</sup> The author of this paper was one of the four experts.

Figure 6: HSR traffic volume and HSL network



Source: Jack Doornik (University of Antwerp)

It is therefore important to emphasise that there is little potential traffic between second-rank cities such as Lille and Lyon or Lyon and Nantes. There are direct HSR services between those cities, but SNCF finances them through cross-subsidies from profitable routes, namely those which serve Paris. Cross-subsidies between lines go a long way towards explaining the development of the HSR system in France. Thanks to those subsidies, it has been possible to develop an HSR service even in towns that are located far from HSL lines. The outcome is that the financial viability of HSR is becoming increasingly fragile. It is not surprising therefore that, in 2013, the French Government declared a slowdown – if not a halt – to all new HSL works.

Finally, there are limits to cross-subsidies from former lines to the new HSL. The more the network is extended, the more the profitability of HSR as a whole decreases. Table 2 provides a comparison, for the various HSLs, ordered by date of construction, between the predictive economic<sup>13</sup> internal rate of return (IRR) and the ex post result. It appears that ex post economic viability is lower than predicted. However, with the exception of the HSR Nord line, the differences are not great, and the economic viability achieved made it possible to cover financial costs because the interest rate applied was lower than the economic IRR. Yet, it should be noted that the return diminishes for the Lyon bypass and Mediterranean HSLs to the point where financial costs are only just covered.

<sup>13</sup> The economic internal rate of return does not take into account the financial costs.

**Table 2: Economic IRR, ex ante and ex post values**

	Ex ante	Ex post
LN 1 (Paris-Lyon)	16.50%	15.20%
LN 2 (Paris-Le Mans)	12.00%	8.50%
LN 3 (Paris-Lille)	13.00%	3.00%
Paris Bypass	10.80%	6.90%
LN4 (Lyon Bypass)	10.40%	6.10%
LN5 (Mediterranean)	8.00%	4.10%

*Source: J. P. Taroux (op. cit.).*

The discrepancies between ex ante and ex post rates of return are often linked to a lower-than-predicted level of traffic. Certain lines have experienced significantly lower-than-predicted traffic: as much as -50% in full operational mode for the LN 3 and -35% for the Paris bypass situated to the east of Paris. As a consequence, it will be very risky for a new competitor to operate on a new HSL. The former lines are most promising in terms of traffic and profitability, but raise the possibility of something like a zero-sum game between SNCF and the new entrant. Two main difficulties must be kept in mind: rail access charges and network capacities.

### 3.2 The rail access charges issue

On-track competition for high-speed services is facing the same issues as off-track competition for public service obligations: availability of rolling stocks, essential facilities, access to train stations and platforms, and so on. The rail access charge issue is specific to HSR services, however.

The issue of whether infrastructure charges act as a barrier to entry is not something that only concerns researchers (Sanchez-Borras et al 2010, Crozet & Chassagne 2013). At the beginning of 2011, the new French rail regulator (ARAF) prohibited the rail infrastructure manager from introducing pricing based on the length of the trainset, a system which would have enabled it to double rail access charges during peak periods when SNCF uses double HST trainsets, i.e. 16 cars as opposed to 8. The regulator expressed concern about the potential adverse impacts of the excessive modulation of rail access charges. It asked the infrastructure manager to clarify the cost basis for these infrastructure charges. Once again, in 2015, the rail regulator refused to allow an increase in rail access charges because there were no obvious productivity gains in the maintenance of the network. If we look at the Italian case study, it is obvious that lowering rail access charges was crucial to fostering on-track competition for HSR services (see Box 5).

**Box 5: HSR services and on-track competition in Italy**

Since the beginning of the 2000s, rail transport in Italy has shown real vitality, the first demonstration of which was the development of high-speed trains. Covering an area between Naples and Turin, these trains now connect the largest Italian cities, with numerous services offering day return trips between them, to such an extent that we can now talk about an inter-urban metro system. High-speed train traffic is increasing, and this trend should continue in years to come because of the extensions that are underway or scheduled towards Venice, Bari, etc.

Competition has played a key role in encouraging traffic development, taking the form of on-track competition rather than a system of franchises or competitive tendering. This is very rare, if not unique in Europe: since 2012 alongside the historical operator Trenitalia, there has been a new player on the market, NTV (Nuovo Trasporto Viaggiatori), operating under the trade name of Italo and offering services on the same routes. NTV is a private company owned by Italian investors (MDP Holding, IMI investimenti, Generali, etc.). Its entry on the market received strong support from the Transport Ministry, who saw it as a stimulus for reforming the historical operator. Everything has been done to ensure NTV has attractive track access, as well as access to the main stations, which recently included Termini, the main station in Rome.

For NTV, the first years of operation were difficult. The load factor barely exceeded 50% and losses were accumulating. High-yield passengers were the hardest to attract. The results for 2015 are much more encouraging. The load factor now exceeds 70% and the annual number of passengers has grown from a little over 6 million to more than 9 million. What is more, in 2015 NTV generated a gross operating surplus for the first time, and the company is planning to develop its activities, including in coach transport. However, it should not be forgotten that to achieve these results, the Italian infrastructure manager had to reduce track access charges substantially, from an average of 12.8 euros to 8.2 euros per train-km (-35%). The improved profitability of NTV and Trenitalia has gone hand in hand with an increase in public funding, because the reduction in rail access charges has been only partially compensated for by a higher volume of traffic.

Currently, SNCF-Réseau, the French rail infrastructure manager, does not apply the rule of marginal cost pricing. More precisely, the short-run marginal cost is replaced by a long-run marginal cost that takes account of the investment cost, including financial charges. The hidden objective for rail access charges in France, especially for HSR, was to cover the full cost in order to lighten the burden on public finances of extending the HSR network. The consequence of this seems to be a conflict between the EU's objective of competition, and the French objective of financing. The main objective of the French government, namely the extension of the HSR

network largely financed by high rail access charges, seems to lead to a secondary objective, in line with French traditions, of reducing the likelihood of competition<sup>14</sup>.

Hence, it is legitimate to wonder about the potential negative effects of this situation. Even SNCF complains that rail access charges make up 40% of the ticket price. What would happen, then, if the infrastructure manager – like Italy – decided to reduce the rail access charges?

### **3.3 Capacity shortages and sharing out the proceeds of profitable HSR services?**

When a railway company has to pay access charges that amount to 30%-40% of its turnover, potential competitors know that this reduces their probability of deriving a profit margin. When rail access charges are reduced, a new operator can make profit with new services. However, in order to attract more customers, the new entrant must do more than simply reduce the ticket price (demand side). It is also necessary to have access to the train stations and to obtain strategic train routes when the number of customers is high, that is to say during peak periods (supply side).

In an analytical model applied to the most profitable French HSL, the Paris-Lyon line, Crozet and Chassagne (2013) showed that the potential profitability of a new entrant depends on its ability to meet peak period demand, while off-peak services tend to generate losses. The successful entry conditions for a competitor therefore depend on the type of service they can offer; in other words their ability to obtain not only peak period slots from the infrastructure manager, but also station facilities from the train station manager – in France this is SNCF-Mobilités, the competitor.

On-track competition is once again a zero-sum game because between Paris and Lyon, network and train stations capacities are reached during peak periods. Increasing the number of slots given to a new entrant decreases the slots available for SNCF, and therefore the profitability of HSR, and ultimately the ability to cross-subsidise other HSR services. On-track competition for HSR services looks like a headache, not only for SNCF but also for the state and for the rail regulator.

Moreover, there appear to be a great many other barriers to entry. Can the new operator purchase, or even better, hire HST trainsets easily? How will maintenance be performed, and by whom, and at what price? Should access to maintenance workshops be defined by the regulator as an essential facility? These questions relate to the fact that the HSR market is not contestable (Baumol, Panzar & Willig 1982). The sector involves a large number of sunk costs, such as the purchase of rolling stock. There is no market for hiring HST trainsets. Moreover, as railway

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<sup>14</sup> Until now, rail access charges for high-speed trains were established on the basis of a two-part tariff: marginal cost + mark-up taking into account both the intensity of traffic and the willingness to pay. In 2018, a three-part tariff will be introduced: marginal cost + congestion cost + mark-up.



standards vary from one European country to another, HST trainsets that run on one line cannot easily be used on others. This increases both the costs of entering the market and the costs of leaving it.

It is also important to mention that the historical operator has developed a strategy to prevent any potential price war from being initiated by a new entrant, which involves not only a very smart yield-management pricing system but also special 'low-cost' HSR services (OUIGO in France, IZY between Paris and Brussels). The impacts of this new commercial strategy are not clear. Due to low price elasticity, low-cost services are increasing passenger numbers but not turnover. However, it is a good means of testing a new organisation and limiting the risk of facing a new competitor. As with many activities, we can observe a learning curve process in the supply of HSR services. SNCF is acting to retain its comparative advantage in a domain that is crucial to its future.



## 4. Conclusion

Opening up the railway sector to competition is a very sensitive matter in France. In rail freight — still the only sector that has really been opened up — the activity of Fret-SNCF dwindled considerably both prior<sup>15</sup> to and as a result of the introduction of competition, leading to a steep decline in rail freight traffic. An analysis of this negative-sum game (Crozet 2014b) reveals two key factors that explain why the situation is so grim.

- Organisational powerlessness: Despite several attempts, the historical operator has failed to reform its organisation so as to keep up with the market. In order to limit its losses, the only solution has been to cut back activity by almost 60% (from 55 billion train-km in 2001 to only 21 billion in 2015).
- A continuously shrinking market: New entrants have regained some of the ground lost by the historical operator, but not all of it. In spite of all the political efforts made in the last 15 years, the share of rail freight in total freight traffic in France remains in steep decline (down from 21.3% in 2000 to 15.2% in 2015).

It is worth mentioning this unfortunate episode here, because history may very well repeat itself when passenger rail transport is opened up to competition. This is not to say that things will necessarily develop in the same way. However, there is the same risk of a zero-sum game or even a negative-sum game, due to the inability to reform and to increase traffic.

- In the case of on-track competition, which mainly affects high-speed rail, it will be very difficult to establish head-on competition between SNCF and a new entrant on the most profitable lines, given that capacity is limited, especially in the main train stations in both Paris and the rest of mainland France. If new entrants are only able to develop their activities by taking train routes and platforms away from SNCF, there will be little to gain for society, including passengers. Just as in PSO services, as suggested by C. Nash (2009) or J. Preston (2009), competition in the high-speed segment in France can probably only emerge through tendering and franchising. This would eliminate capacity-related conflicts, but would not solve the problem of the drastic reductions in SNCF's activities, workforce and margins.
- As regards subsidised services, these can be opened up to competition gradually, through allotment, starting with peripheral railway services. This would alleviate certain insurmountable problems faced by SNCF and its shareholder, the French state, in terms of human resources management. However, if tenders involve major lines or even a significant proportion of all railway services in a given region, the issue of personnel

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<sup>15</sup>In order to prepare the opening to competition, SNCF decided, at the beginning of the 2000, to give up many structurally non-profitable segments of freight market. Would it be the same for passenger services? Probably yes if competition reduces the possibilities of cross-subsidisation between profitable and non-profitable services.



transfers will still have to be addressed. This is the obstacle that the various experiments should aim to overcome, so that new entrants can demonstrate their ability to do better at a lower cost, as has been the case in several neighbouring countries – and, more importantly, so that these good practices can be adopted at SNCF.

Ultimately, the goal of introducing competition is not competition itself, but improved productivity, especially at SNCF, in order to reduce the cost of subsidised rail services for public authorities. If this does not happen, the future of TER will be marked by a gradual loss of traffic, just as in rail freight, with painful social consequences. Since the organising authorities are already rediscovering coach services, which are more flexible and less expensive, this is by no means an unthinkable scenario.



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## Appendix 1: The French rail regulator (ARAFER) after the Railway reform (2014)

The railway reform of August 2014 adapted the powers of the regulator (called Arafer since October 15, 2015) to the new context (i.e. the reunification of SNCF).

The regulator's powers were extended:

- The Authority maintains its assent to fixing infrastructure charges related to the use of the national rail network but also gives assent to the fixing of access charges to passenger stations and other service facilities (freight terminals, diesel stations etc.), as well as regulated services provided therein.
- Arafer also gives assent to the pricing of security services and the transfer to SNCF-Réseau of all service facilities listed in the SNCF reference offer for hourly service 2013. This excludes station's travellers and maintenance centres, which are state-owned and managed by SNCF Mobility.

Arafer may also object to the proposed appointment or renewal of the President of SNCF-Réseau if it considers that his/her compliance with the conditions laid down in Article L. 2111-16-1 of the transport code is not sufficiently guaranteed. It may also oppose the removal of SNCF-Réseau's president if the decision is only motivated by his/her independence against the interests of a company carrying on the business of a railway undertaking.

The railway reform also expanded the advisory capacity of the regulator. It can advise on:

- the network's charter and amendments;
- the draft framework agreement between SNCF and the State, and its updates;
- the draft framework agreement between SNCF-Réseau and the state and its discount projects, as well as the annual report on the implementation of this contract;
- the overall amount of financial assistance to be provided to the railway network and the contribution by SNCF-Réseau for investment projects exceeding a threshold set by a decree of the State Council;
- internal measures of SNCF-Réseau's organisation which aim to prevent discrimination;
- the draft budget of SNCF-Réseau.

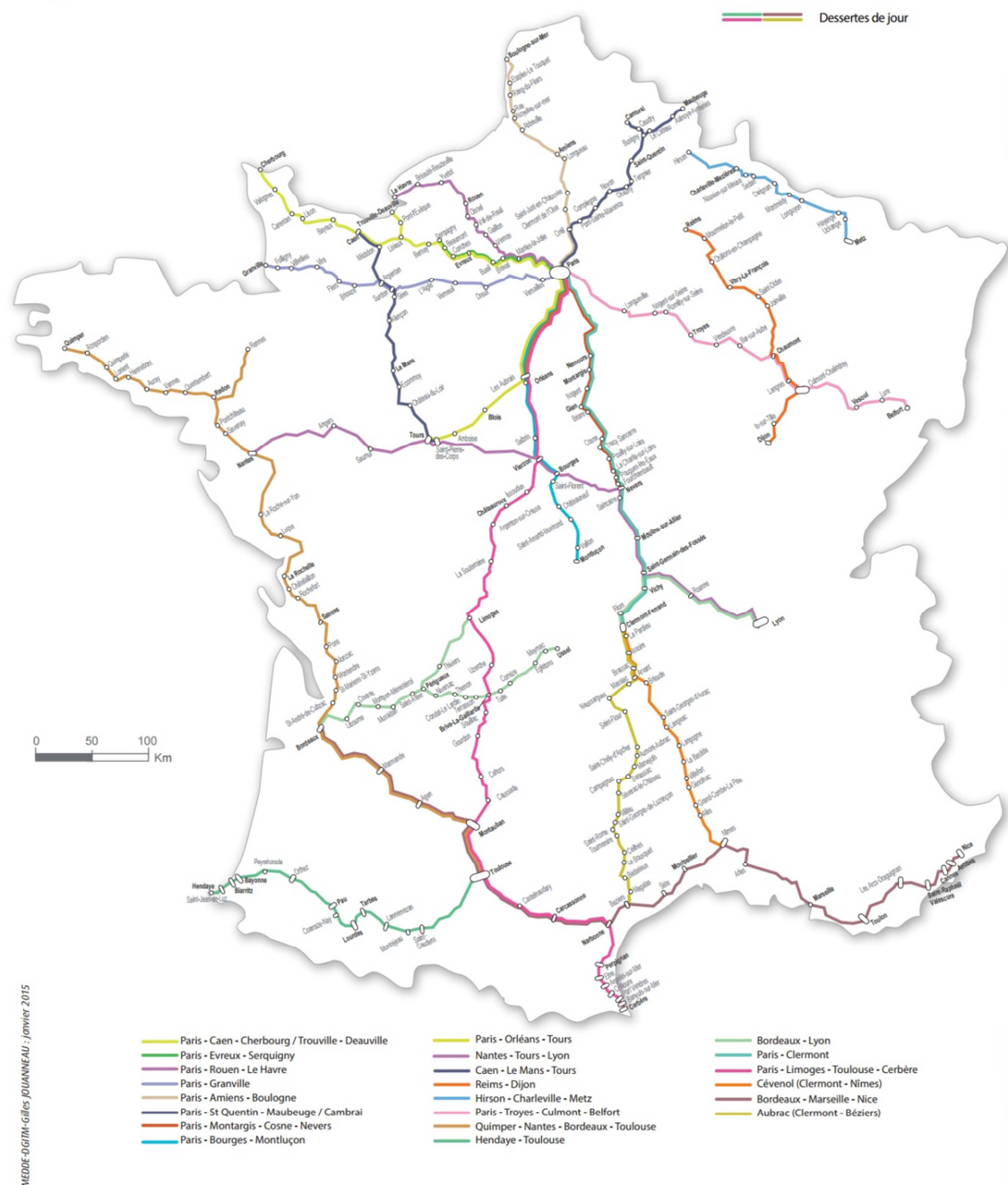
The following information must be communicated to Arafer:

- the activity report of SNCF holding company;
- the activity report of SNCF-Réseau
- the activity report of SNCF-Mobilités
- a list of the senior management of SNCF-Réseau
- any decommissioning project of property located near railways operated by SNCF

## Appendix 2: TET



### Les trains d'équilibre du territoire 2015



Source: [http://www.developpement-durable.gouv.fr/IMG/pdf/INTERCITES\\_01-2015\\_jour.pdf](http://www.developpement-durable.gouv.fr/IMG/pdf/INTERCITES_01-2015_jour.pdf)

## Appendix 3: HSR services



High-speed lines

Conventional lines used by HSRs

Source: SNCF