

***Development of rail freight in Europe:
What regulation can and cannot do***

France Case Study

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1. Introduction

“For the second consecutive quarter, rail freight is on the rise (+ 2.4%). This seems to indicate that the activity, after plummeting for many years and incurring hundreds of millions of euros in losses, is now past its lowest point.” This was how Lionel Steinman, journalist for Les Echos and rail expert, on 25th April 2014, summarised SNCF's presentation of its freight activity in the first quarter of 2014. The significance of this quote is that it points to a remarkable evolution. In France, from 2001 to 2010, rail freight transport (expressed in tonne-kilometres) fell by more than 40%, before starting to recover somewhat as of 2011. During this period, the market was opened to competition. Is that the reason? Is the decline of rail freight linked to this competition, which is said not to be relevant for this activity and for rail transport in general (Ries 2013)?

Below, we will distance ourselves from such a view. While the opening to competition is profoundly changing the landscape in this sector indeed, we will first see that rail freight had already been “plummeting” well before the opening to competition. This was due to organisational weaknesses on the part of both the incumbent railway undertaking (RU) and the infrastructure manager (IM), to such an extent that demand for freight transport turned to other modes than rail (see Section 2).

We need to take into account this context of mistrust of a mode of transport when analysing the development of competition. What is the structure of the market today and how has it stimulated, or failed to stimulate, an increase in the supply of rail freight services (see Section 3)?

The importance of the context must also be emphasised because, in a country where state intervention is omnipresent, regulation (whether in the strict sense or in the broader sense) plays a fairly limited role (see Section 4).

2. Evolution of rail freight traffic and demand

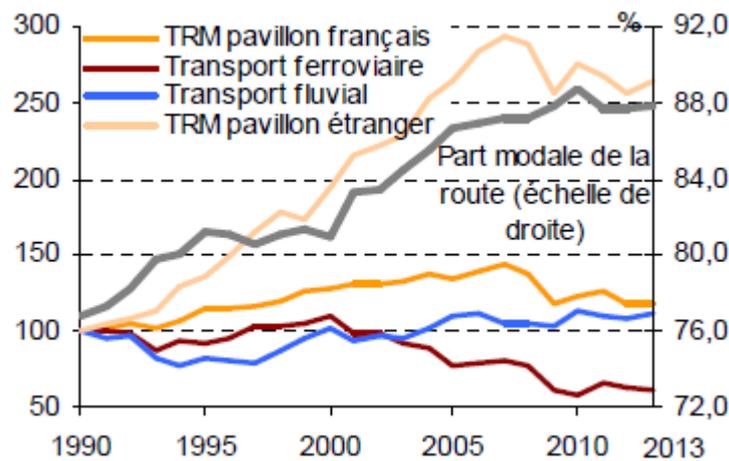
France is one of the worst performers in Western Europe in terms of rail freight; granted, between 1960 and 1990 rail freight lost market share throughout all of Western Europe, but in most countries the 2000s marked a turning point¹. Rail freight then started picking up again in Germany, Great Britain, Italy and Belgium, but in France it kept falling back even faster. Before we discuss the recent upturn in the latter part of this report, we will focus on this decline (see Section 0) and its origins (see Section 0).

¹ From 2000 to 2006, rail freight traffic (in tons-kilometers) increased by 52% in Germany, by 25% in Great Britain and by 22% in Switzerland.

2.1 A significant drop in traffic

The 2008 economic crisis struck a blow to rail freight transport, in France as well as elsewhere in Europe. Activity everywhere decreased by approximately 25%. However, in France this blow came after more than three decades of continuously dwindling volumes transported by train. Let us focus on the early 2000s. As shown in Figure 1, while road traffic continues to grow in volume and market share (especially by foreign vehicles), rail transport hits a ceiling in 2001 (55 billion tonne-kilometres), followed by a constant decline in absolute value and relative value (10% market share in 2010).

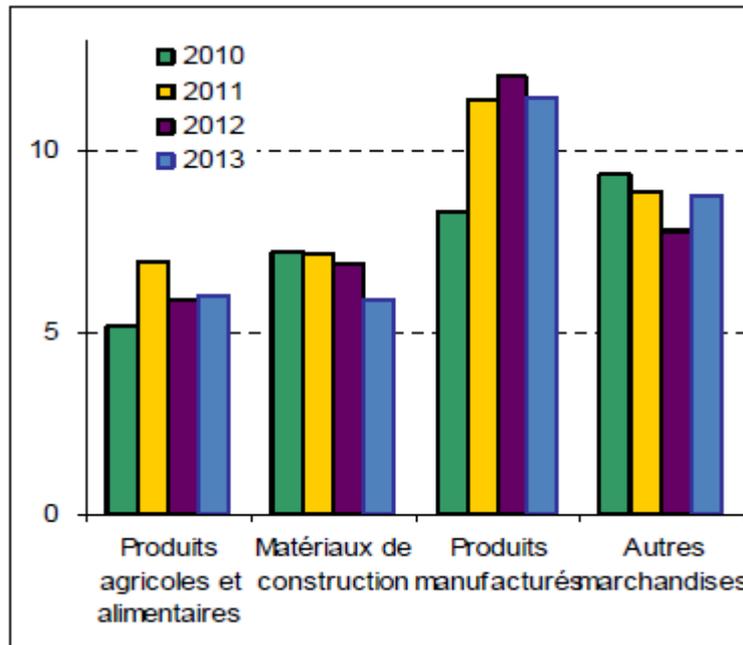
Figure 1: Freight transport in France (1990 index = 100, right scale, modal share of road transport)



Source: National Transport Accounts, 2013, p. 105

This evolution affects all segments of the rail freight market. Figure 2 shows that rail transport is diversified. Construction materials, food products (cereals) and energy products (listed here as other products) represent the bulk of all traffic, but manufactured products also represent a significant volume and they are in steep decline since the 2009 crisis.

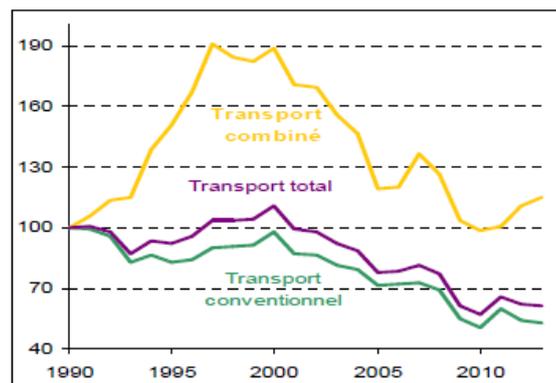
Figure 2: Goods transported by rail (in billion tons-kms)



Source: National Transport Accounts, 2013, p. 109

However, these bad numbers are not solely due to the economic climate. Figure 3 indicates that the steepest drop was in combined (intermodal) transport in the late 1990s, well before the economic crisis, even though this is the type of traffic that is the most likely to grow in the coming years with increasing use of containers. Hopefully this traffic is growing again since 2010.

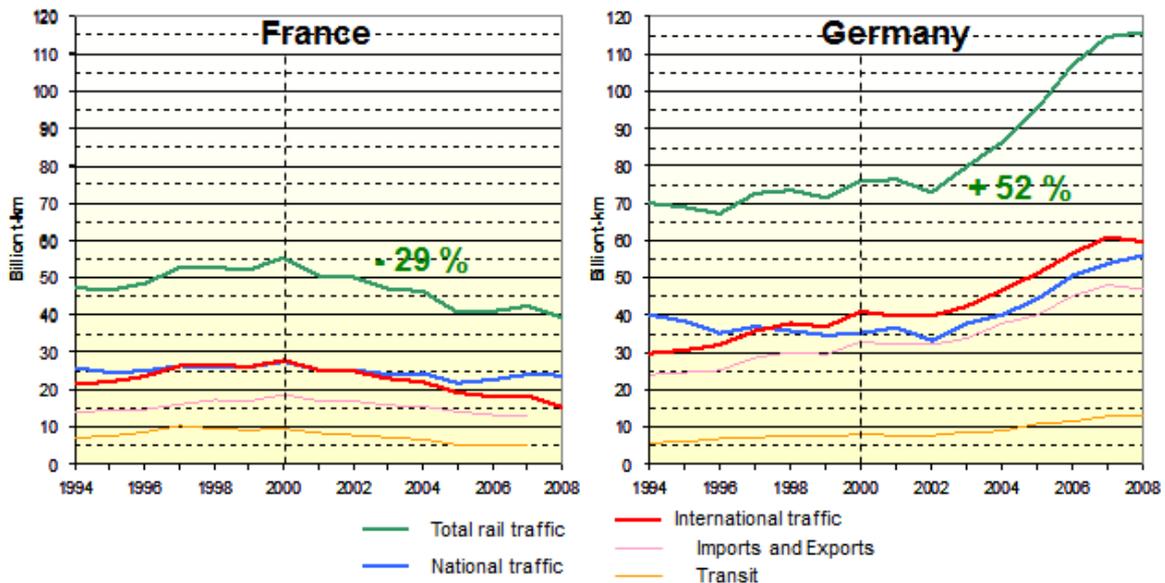
Figure 3: Combined and conventional rail transport (1990 index = 100, domestic traffic)



Source: National Transport Accounts, 2013, p. 109

Such disappointing results require thorough analysis — all the more because in the same time frame the situation evolved entirely differently in other countries such as Germany, even though the latter had been in the same situation as France in the late 1990s. Prior to the 2009 crisis, rail traffic fell by 29% in eight years in France, while it increased by 52% in Germany. How can we explain such a major difference?

Figure 4: Comparative evolution of traffic in France and Germany (in billion ton-kms)



Source: S. Séguet (2009)

2.2 Analysis of a disconnect

The sharp decline in French rail freight in the early 2000s was totally unexpected. In the early 2000s, the French Government indeed showed its willingness to develop this mode of transport, in accordance with the guidelines of the European Union. Transport Minister J.C. Gaysot, a former railwayman, set a target of 100 billion tonne-kilometres by 2015. He even asked his chief of staff to take charge of Fret SNCF, the freight component of the incumbent operator, which had been reorganised for this purpose. So what happened? Why did demand turn away so sharply from rail transport? Was it due to the movement of relative de-industrialisation in France compared to Germany?

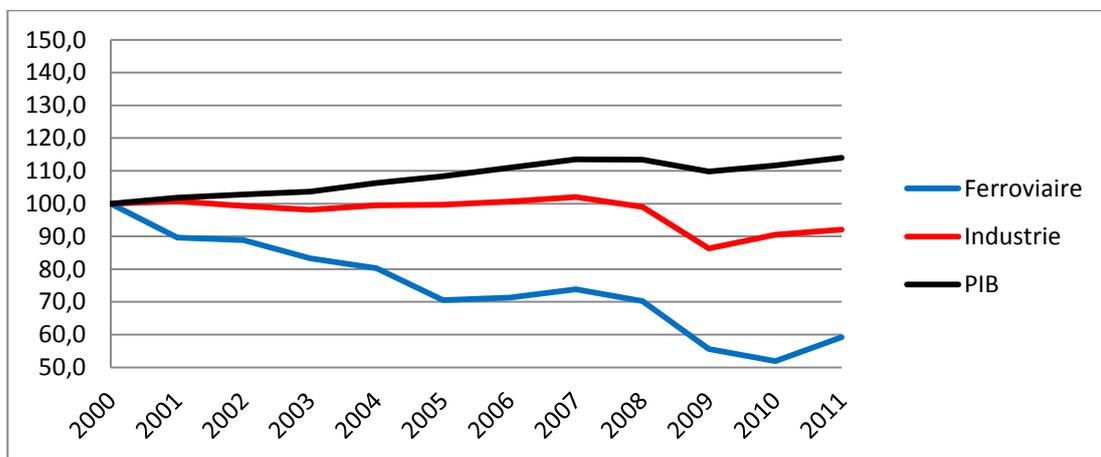
In answering this question, we can take into account an analysis recently published by the *Commissariat Général au Développement Durable* (CGDD 2013), the Sustainable Development Unit of the French Ministry of Ecology, which includes the Ministry of Transport. In this study, a comparative analysis was conducted between the developments in France and in Germany from 2004 to 2007, per commodity type and taking into consideration the differential changes in industrial activity. The conclusion was that, if industrial activity per sector had developed in France just as it had in Germany between 2004 and 2007, rail's modal share would have gone from 14% to 11.5% (instead of 11% observed in 2007); so industrial production and demand are not the right places to look.

What has been observed is quite simply a general disconnection from rail freight. Comparative analysis of rail freight traffic flows and production in four key areas reveals a total disconnect from 2000 to 2006:

- Agri-food sector: production +3%, rail freight -37%;
- Energy: production +5%, rail freight -34%;
- Manufactured products: production +3%, rail freight -35%;
- Construction: production +4%, rail freight -13%.

As is shown in Figure 5, freight traffic fell sharply even though the GDP increased and industrial production, at least until 2008, remained stable.

Figure 5: The disconnection from rail freight in France (base index 100: 2000)



Source: Eurostat

What is at stake is therefore the relative competitiveness of the rail carrier, SNCF Fret, which was virtually the only operator before 2007. However, despite the average revenue level being higher than in Germany, Fret SNCF failed to make a profit (CGDD 2013). While from 2004 to 2010, the average revenue went from 3.9 to 4.3 euro cents per tonne-kilometre (+11%), traffic fell by 50%. At the same time, Deutsche Bahn's average revenue decreased from 4.3 to 4 euro cents per tonne-kilometre (-8%), yet traffic increased by 27%².

Despite falling prices, DB was able to make a profit as of 2006, while Fret SNCF has been a structurally loss-making activity for SNCF since 1998. This is explained by the evolution of costs, amounting to 6 euro cents per tonne-kilometre for SNCF in 2010, but only 3.9 euro cents in Germany (Table 2). It is this inability to control costs that has forced the management of Fret SNCF to cut the volume of traffic drastically. With average costs outstripping the average revenue by 40%, the only way to limit losses was to reduce the volume of activity, especially that of the least profitable activities such as single-wagonload transport, which has now been virtually abandoned in favour of full-length trains. Similarly, many low-activity cargo terminals (for timber transport) have been closed down.

² Of course, these average figures conceal various situations depending on different product types and rail services, but they do reveal significant trends.

Table 1: Comparison of average revenue in rail freight

FRET SNCF	2004	2005	2006	2007	2008	2009	2010	2010/2004
Revenues (Bn euros)	1.7	1.7	1.7	1.7	1.6	1.2	1.1	
Revenues (Bn 2005 euros)	1.7	1.7	1.7	1.6	1.5	1.2	1.0	
Traffic (Bn TK)	45.1	40.7	40.9	40.6	35.9	26	22.8	-50%
Average revenue (euro ct/TK)	3.9	4.2	4.1	4.0	4.1	4.5	4.3	+11%
Deutsche Bahn	2004	2005	2006	2007	2008	2009	2010	2010/2004
Revenues (Bn euros)	3.5	3.5	3.8	3.9	4.7	4.1	4.6	
Revenues (Bn 2005 euros)	3.6	3.5	3.7	3.8	4.4	3.8	4.2	
Traffic (Bn TK)	84	83.1	96.4	98.8	113.6	93.9	106.8	+27%
Average revenue (euro ct/TK)	4.3	4.3	3.9	3.8	3.8	4.0	4.0	-8%

Source: SNCF, DB

Table 2: Comparison of average revenue and average costs in rail freight

FRET SNCF	2004	2005	2006	2007	2008	2009	2010	Annual growth rate 2004-2010
Revenues (Bn euros)	1.7	1.7	1.7	1.7	1.6	1.2	1.1	
Costs (Bn euros)	2.0	1.9	1.9	1.9	1.9	1.7	1.5	
Revenues (Bn 2005 euros)	1.7	1.7	1.7	1.6	1.5	1.2	1.0	
Costs (Bn 2005 euros)	2.1	1.9	1.8	1.8	1.7	1.6	1.4	
Traffic (Bn of TK)	45.1	40.7	40.9	40.6	35.9	26	22.8	
Average revenue (euroct/TK)	3.9	4.2	4.1	4.0	4.1	4.5	4.3	+1,7 %
Average cost (euroct/TK)	4.6	4.6	4.5	4.6	5.0	6.1	6.0	+6,5 %
Deutsche Bahn	2004	2005	2006	2007	2008	2009	2010	Annual growth rate 2004-2010
Revenues (Bn euros)	3.5	3.5	3.8	3.9	4.7	4.1	4.6	
Costs (Bn euros)	3.5	3.5	3.6	3.7	4.1	3.9	4.6	
Revenues (Bn 2005 euros)	3.6	3.5	3.7	3.8	4.4	3.8	4.2	
Costs (Bn 2005 euros)	3.6	3.5	3.5	3.5	3.8	3.7	4.2	
Traffic (Bn of TK)	84	83.1	96.4	98.8	113.6	93.9	106.8	
Average revenue (euroct/TK)	4.3	4.3	3.9	3.8	3.8	4.0	4.0	- 1,4%
Average cost (euroct/TK)	4.3	4.3	3.6	3.6	3.4	3.9	3.9	- 1,3%

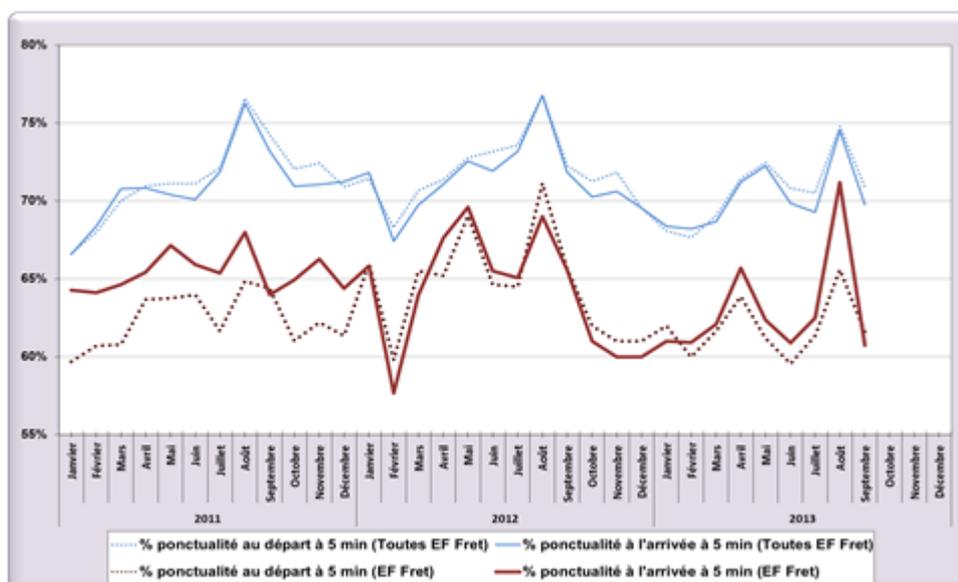
Source: SNCF, DB, rapport Grignon

Road haulage readily filled the void that was created, but the culprit here is not an unfavourable price evolution for rail freight in France. In Germany, DB faces stiffer competition from road haulage companies. Based on data from the *Conseil National Routier* (CNR), the aforementioned report published by the CGDD (2013, p. 21) notes that in 2009, the cost of one tonne-kilometre of road haulage amounted to 12,8 euro cents in France and 10,3 euro cents in Germany, despite the existence in the latter country of motorway tolls for lorries (Toll Collect). It is important to compare these numbers to those illustrated earlier (in 2009, per tonne-kilometre, 3.9 euro cents for DB and 6 euro cents for SNCF). It appears paradoxically that road haulage costs 2.5 to 3 times more per tonne-kilometre than rail transport. And yet, both in Germany and in France, road haulage is by far the dominant mode for freight, probably because neither goods nor distances are the same.

Even for the same distances, differences in the nature of goods illustrate why price competitiveness does not explain everything. We also need to take into consideration non-price competitiveness, the main components of which are speed and reliability of service:

- Paradoxically, speed is a weakness of rail transport compared to road haulage, because even though the speed of a freight train can equal that of a conventional passenger train, the numerous stops imposed on freight trains often reduce their commercial door-to-door speed to less than 20 km/h;
- Furthermore, announced journey times are not always respected, as is shown in Figure 6. The percentage of freight trains delayed for more than 5 minutes at arrival or at departure is close to 30%. It is even higher at SNCF (brown line) than in all railway undertakings operating in France.

Figure 6: Punctuality of freight trains (delay < 5 minutes) at arrival and at departure



Source: RFF

The fact that 60 to 70% of freight trains arrives less than 5 minutes late might seem commendable, but this is an unacceptably low percentage for shippers, as goods have to arrive in time to avoid disrupting supply chains further down the line, and they are becoming increasingly strained due to the value of the products.

This issue of average speed and reliability was given particular attention by RUs in early 2014, following the “Rail Freight Conference” held by the Minister of Transport in September 2013. This makes it clear that the lack of reliability of rail freight in France is not solely caused by RUs. The IM (RFF) and its delegated manager (SNCF Infra) are also behind many decisions that cause delays for freight trains. Such decisions include the planning of railway maintenance work, limiting the capacity of the lines by suppressing train paths. We should also mention the fact that in case of a disturbance, priority is always given to passenger trains. It is especially important to note that train paths allocated to freight are often not tailored to the broader trajectory of the goods and their specific requirements in terms of delays. Ultimately, this means we are in the following paradoxical situation: fewer and fewer freight trains are circulating in France (144 million train-kilometres in 2000, 73 million train-kilometres in 2013), yet their routing seems to become more and more complicated — despite the government’s commitment to an upturn in rail freight as of 2008 (*Engagement national pour le fret ferroviaire*, ENFF).

3. Evolution of supply and market structure

One of the peculiarities of rail in France is that it is considered first and foremost as a matter of politics and government. That is why, when it comes to thinking about improving rail services, it is up to ministers to take the initiative of launching “sessions”, “conferences” or “programmes”. This was the case with the ENF’s “Grenelle Environment Forum” (3.1). But despite strong ambitions, there have rarely been strong results, as key issues have often been neglected, i.e. those pertaining to the railway companies. This explains why it is in France, where competition has rather bad press (Ries 2013), that new entrants have rapidly increased their market share (3.2).

3.1 The national commitment to rail freight (ENFF)

The Grenelle Environment Forum was launched during the summer of 2007, just after Nicolas Sarkozy won the presidential election. It was a negotiation between 5 key stakeholders in economic and social life: the state, local authorities, business leaders, trade unions and non-governmental organisations (NGOs), especially those dealing with environmental issues. Taking into account the requirements of sustainable development, this process then crystallised into two laws, passed respectively in 2009 and 2010, including an important component for the development of high-speed rail. In fact, 4 new high-speed lines (750 km, costing 15 billion euros) were launched between 2009 and 2012. In the same vein, the Minister of Ecology launched the

ENFF in late 2009. The ENFF was all about finding new development paths for sustainable transport modes, in accordance with the general outlines set forth by the Grenelle Environment Forum. One of the primary objectives was to increase the modal share of freight methods other than road haulage or air transport from 14% to 25% by 2022. As an intermediary step in this process, the aim was a 25% rise in this modal share by 2012, i.e. going from 14% to 17.5% market share.

In July 2009, the French government set forth eight guiding principles:

- Creating a network of rail motorways in France by extending the Alpine rail motorway, by continued development of the Perpignan–Luxemburg rail motorway, and by commissioning the Atlantic rail motorway in order to establish a long-distance service between the south of Aquitaine, the south of Île-de-France and Nord-Pas-de-Calais;
- Massive support to the development of combined transport;
- Developing local rail operators (LROs) to serve territories and port areas with light and responsive organisations. To this end, the government changed the legislative and regulatory framework to facilitate their implementation. Furthermore, a plan was launched to invest 16 million euros every year until 2020, funded equally by RFF and by the state, to renovate promising lines dedicated to freight in the secondary network, which are the first lines involved in the activity of LROs;
- Developing high-speed rail freight between airports, using high-speed lines outside peak hours for transporting goods (see Carex Project);
- Creating a network to be used primarily for freight, the “Réseau Orienté Fret” (ROF);
- Removing bottlenecks, especially for greater Lyon, greater Dijon and the stretch between Montpellier and Nîmes, as these are the main congestion points in the French rail network;
- Improving rail service to France’s major ports, as they are major sources of high-volume freight;
- Modernising the scheduling of train paths by reducing travel time and better adherence to freight train schedules. RFF launched a customer service helpline in late 2009, and several quality agreements were signed between RFF and the rail freight companies. RFF and SNCF’s unit for managing rail traffic flows (*direction des circulations ferroviaires* – DCF) are working to resolve difficulties in order to meet this major challenge.

What this long list reveals first of all is a very strong emphasis on infrastructure, as if the problem with rail freight were basically a shortage in this area. In a way, coming from the state, which is the proprietor of the rail network through RFF, this is a logical attitude. Moreover, the “Investments” part of the ENFF will be partly implemented (start of construction of the Nîmes-

Montpellier bypass, extensive renovation plan for the conventional network following the Rivier report³, further development of rail motorways).

But most important is that which does not appear in this list and proves lacking: the choices made by railway undertakings, and especially by the incumbent operator's freight subsidiary. As it happens, in the year following the launch of the ENFF, FRET SNCF was facing the economic slowdown and obliged to accept the continued decline of traffic (see Figure 5). So, the objectives of the Grenelle Environment Forum in terms of an upturn in rail freight's modal share assumed that operators other than Fret SNCF could greatly expand their business. This is more or less what happened.

Text box 1: SNCF Group

This report mentions Fret SNCF, the railway company owned by SNCF EPIC. However, Fret SNCF only accounts for part of SNCF's total freight activity and SNCF EPIC is only a part of the SNCF Group. Let us clarify this with an overview.

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. The Infrastructure Manager, RFF, has the same status. An EPIC is a company that is fully controlled by the French state, which in turn guarantees that the company cannot go bankrupt, enabling it in particular to borrow at preferential rates on the financial markets. SNCF's main bank, for that matter, is Banque de France.

SNCF EPIC is only a part of the SNCF Group. In 2012, the SNCF Group was active in 120 countries with 250,000 employees, and generated a turnover of €33 billion. The Group's international operations accounted for 25% of this total. The Group is organised into five divisions:

- SNCF Infra: turnover of €5.5 billion;
- SNCF Proximités: turnover of €12.2 billion, 17% of which generated internationally, primarily through Keolis, a subsidiary offering urban passenger transport;
- SNCF Voyages: turnover of €7.5 billion, active in long-distance passenger transport (20% of turnover generated internationally) ;
- Gares et Connexions: turnover of €1 billion, mainly from running 3,029 train stations and halts in France;
- SNCF Geodis: turnover of €9.5 billion, dedicated to freight. Rail transport accounts for only 17% of the total. Fret SNCF is a part of SNCF Geodis — more precisely its EPIC component. But there are also subsidiaries governed by private law, such as

³ In 2005, RFF and SNCF asked a Swiss expert, Professor Robert Rivier (EPFL), to review the current state of the French rail network and provide recommendations on how to manage it properly. Following this report, and the one that followed a few years later, RFF and the government launched a major network renovation plan.

CAPTRAIN, which operates in Europe; VFLI, which operates mainly in France; as well as VIIA and a subsidiary dedicated to combined transport.

Developing private-sector subsidiaries, especially VFLI, is a way for SNCF to retain or gain access to some markets that are inaccessible to Fret SNCF, given its cost structure (see Table 2).

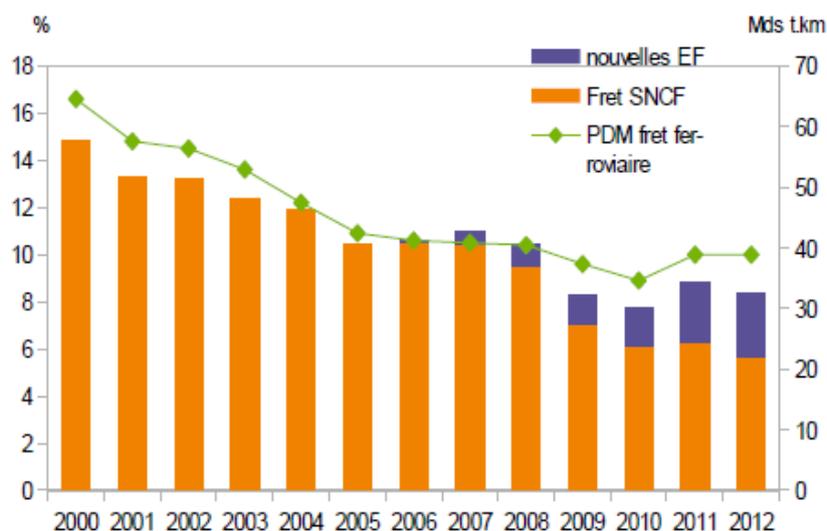
Source: <http://www.snseecom/fr/portrait-du-groupe/un-groupe-de-service>

3.2 New entrants and market structure

The opening to competition in France has enabled new railway companies to develop rapidly. Their market share has grown rapidly as shown in Figure 7. After entering the market, competing undertakings have quickly captured about a third of the market, which has only partially compensated Fret SNCF’s cutbacks in traffic volume. Since the early 2010s, rail freight’s total traffic volume and market share appear to be stabilising, just like traffic flows operated by SNCF.

But the incumbent operator’s freight subsidiary remains in deficit, which weighs on the results of SNCF Group. Especially with the slowdown in economic growth, the various activities of SNCF EPIC are less profitable. High-speed rail line traffic and regular train traffic are levelling off or decreasing slightly. 2013 saw the loss of profits from previous years. So, SNCF is facing a basic need to strive for productivity gains.

Figure 7: Rail freight traffic and market shares



Source: Ministry of Transportation

When the activity is no longer increasing, the only way to improve profitability is by cutting costs — all the more because at the same time competitors are continuing to grow their businesses, while being profitable or at least almost breaking even for some of them. So the future of rail

freight in France in the coming years depends on four key factors: the organisational changes within Fret SNCF in order to turn the losses into benefits (or at least equilibrium); the respective strategies followed by Fret SNCF and its established competitors; the possible market entry of new operators, including local rail operators (LROs); and the development of intermodality, especially through rail motorways.

Text box 2: The rising power of new entrants

The Infrastructure Manager, RFF, mentions on its website (www.rff.fr) that there are 19 railway undertakings operating trains in France: CFL CARGO, CFR, COLAS-RAIL, CROSSRAIL BENELUX NV, ETF, EURO CARGO RAIL, EUROPORTE CHANNEL, EUROPORTE France, EUROSTAR Int. Ltd, OSR France, RDT 13, RENFE, SNCB, SNCF, THELLO, TPCF, Trenitalia, TSO and VFLI. Passenger trains are almost exclusively operated by SNCF and its subsidiaries (Thalys, Eurostar, etc.). For freight, the playing field is more open. In a matter of years, several new entrants have captured nearly a third of the market (see Figure 7). These new entrants include Euro Cargo Rail, a subsidiary of DB Schenker; Colas Rail, a subsidiary of the Bouygues Group, also active in the UK; and Europorte, a subsidiary of Eurotunnel, which acquired Veolia Cargo in November 2009 and GB Railfreight in May 2010. At the end of 2013, 18 rail freight companies were operating in France. The market share of the new entrant was 36% (Transport national account 2013, p.108)

The new entrants, in other word almost all railway undertakings other than SNCF and its subsidiaries, are united in the French rail association AFRA (*Association française du rail*). On its website (www.assorail.fr) AFRA mentions that “out of a total of 32.1 billion tonne-kilometres generated by rail freight in 2013 (-1.3% compared to 2012), its members accounted for 8.6 billion of them (+16.2%)”.

Activity of new entrants (base: AFRA members)

	2010	2012	2013	2013 compared to 2012
turnover (in M €)	176	281	479	+ 70.4%
Number of employees	1154	1478	2230	+ 50.9%
Number of locomotives	220	308	325	+ 5.5%
Billion tons-km transported	4.8	7.4	8.6	+ 16.2%

Source: Colas Rail, ECR, ETF, Europorte, OSR France, Trenitalia

As regards Fret SNCF, this organisation still faces major challenges, because, despite having abandoned the least profitable traffic, it keeps incurring deficits year after year (another 200 million euros in 2013). How likely is this situation to persist, which would imply continue balancing-out with profitable activities? Will even more activity cuts be required in order to

reduce deficits? Or is it conceivable to arrive at organisational changes that manage to reduce costs and increase productivity? The proposed railway reform (see Section 4.2) aims to harmonise labour regulations between SNCF and the other operators. But in what way will this harmonisation be carried out? Following the “freight volunteers” debacle⁴, it is clear that neither the government, nor senior management at SNCF wish to question the rules currently in force at SNCF.

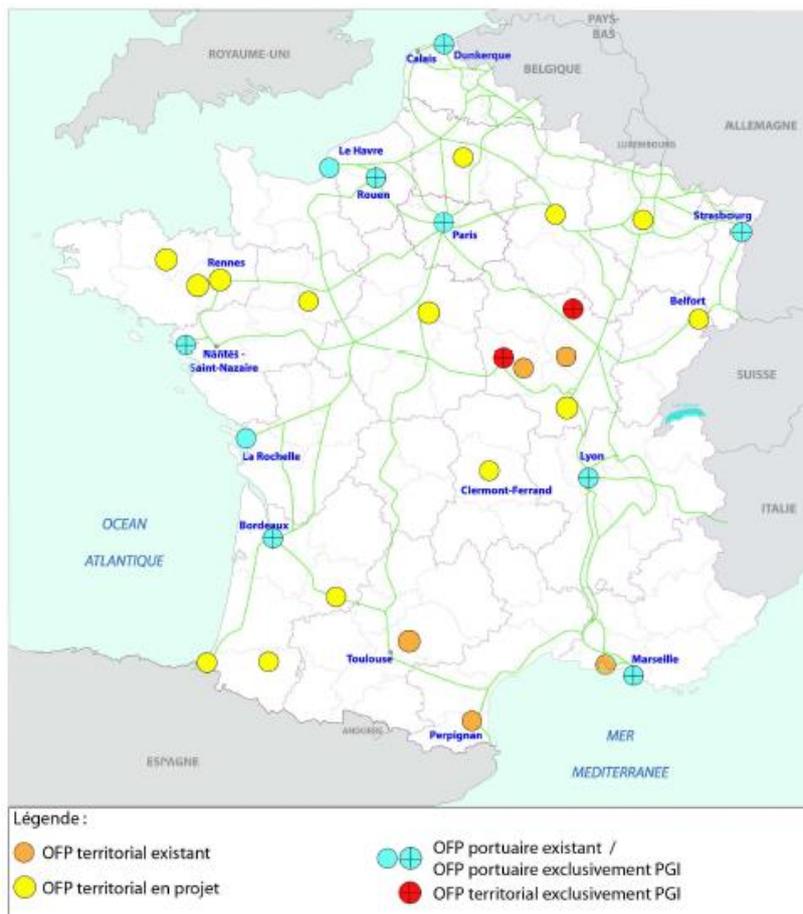
The strategy of new entrants therefore depends strongly on choices made by Fret SNCF on the one hand and their own projects for development on the other: an increased focus on niche markets and “creaming off” versus an integrated and diversified offer. Different scenarios might occur:

- A bleak scenario for the competitors could take the form of them having to align their labour regulations with those of Fret SNCF, and the latter continuing to do what can basically be equated with selling at a loss. This would be a great test case for the French rail regulator (ARAF) and the Competition Authority (see Section 4);
- However, another scenario is possible, where the current trend of competitors gaining market share persists. The question is then what the optimal market structure is. What with rail freight being an activity with increasing returns, it is only logical that there continues to be a high level of concentration. Smaller companies can survive in certain niches (haulage in ports or between industrial sites, local operators), but the increasing high-volume flows over long distances will lead to the emergence of major companies, as in air transport. The big question for France is therefore whether Fret SNCF will continue to fulfil this role alone, with competitors being limited to creaming off the most profitable markets for them; or if it is possible to have more than one major company capable of providing shippers with diverse and integrated services. Such companies are few and far between, because they also have to be present in modes of transport complementary to rail, especially in road haulage. Deutsche Bahn’s subsidiary, DB Schenker, which is being developed in France through its subsidiary ECR (Euro Cargo Rail), could play this role. So the question about the optimal market structure in France ultimately comes down to two alternatives: one major company, or two? If there are two, then we must not forget that between the two contenders, confrontation is not the only option. Some forms of cooperation, or “coopetition”, could emerge: a big issue for the rail regulator (see discussion paper).

⁴ In 2009, a collective agreement was signed between railway undertakings and trade unions, allowing new entrants to apply social rules more flexible than SNCF’s social rules. Faced with this situation, SNCF’s managing director offered locomotive drivers in the Fret SNCF division the possibility of volunteering to accept these new rules, in return for an increase in pay. Over 1000 drivers volunteered, which immediately triggered a preventive strike in protest by drivers at Transilien. As there were also student demonstrations going on in France at the time, opposing a proposed reform of secondary education (the *baccalauréat* system), the question came from the highest levels of government to cease this “freight volunteers” business.

Local rail operators (LROs) have recently appeared in France. They seek to address two key issues: Fret SNCF’s inability to maintain loss-making local traffic, and the financial impossibility of RFF maintaining certain parts of the “capillary” network, i.e. end-of-line stretches with little traffic, useful though they may be for shippers. Since the 2009 law governing the operation of LROs, it is possible to establish agreements between RFF and an LRO operating freight trains on certain parts of the national network, while carrying out regular track maintenance, at a lower cost than SNCF-Infrastructure because the standards applied are not the same. As shown on the map below, there are still only few active LROs, yet there are many projects underway. Some infrastructure-managing LROs (French acronym: OFP-PGI) have been given sole responsibility for maintenance of the infrastructure. These potential new entrants are crucial for the sustainability of rail freight. Not only do they contribute to the survival and development of local activities, including port activities in some cases (port LROs), they also provide extra traffic to companies operating over long distances.

Figure 8: The local rail operators



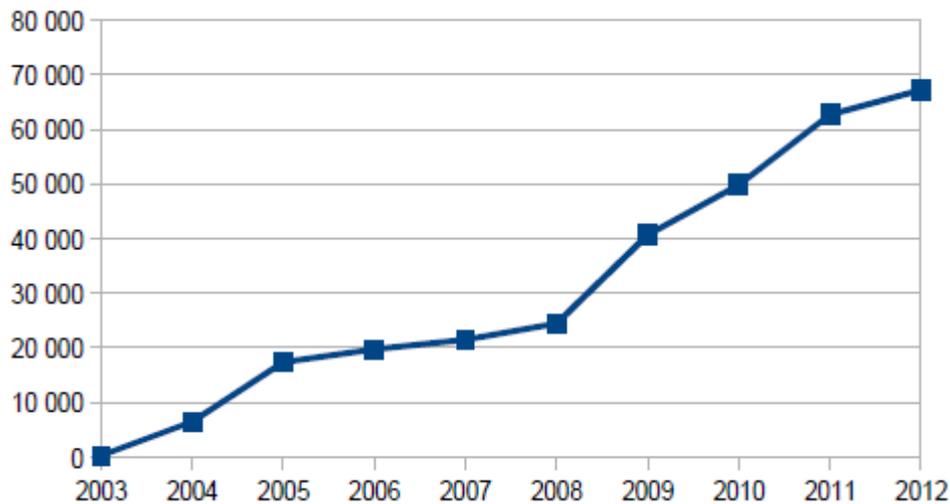
Source: Ministry of Transportation, France

In long-distance traffic, one domain is especially strategic for rail freight: intermodality. Container transport in particular is an intermodal activity allowing rail freight to tap into a market that is growing all over Europe. In this domain, the results observed in France are mixed, as shown in Figures 9 and 10.

Traffic declined quite significantly for combined transport. This is one factor underpinning the disconnection that was discussed in the first part. Despite subsidies, combined transport facilities have been performing poorly (see fig. 3), and shippers have turned away from them. Combined transport operators such as Novatrans have overcome major financial difficulties and are currently being restructured. It is hoped that traffic flows will pick up, but that will only happen if the quality of the offer is sufficient, both in terms of handling at the yards and in terms of speed of delivery.

By contrast, traffic along rail motorways is steadily on the rise. This is a service being offered to road hauliers, enabling freight transport across the Alps (from Aiton to Orbassano) since 2003, and from Luxemburg to the Spanish border (Bettembourg-Perpignan). Thanks to equipment designed by a company called Lohr Industrie, articulated lorries and occasionally also traction units are loaded onto wagons specifically tailored to this type of transport. Between Bettembourg and Perpignan, a company called Lorry Rail (now incorporated into the SNCF Group) offers four round trips per day at a high average speed of 80 km/h, with train paths specially allocated by RFF. The wagons, which can also transport swap bodies, are filled up to 80% capacity, almost allowing Lorry Rail to break even. Given this success, the government wants to develop the concept of rail motorways in other areas as well, especially for transport out of the ports of northern France, and also along an Atlantic axis. These projects aim to reduce the number of lorries on roads and motorways, especially for long-distance haulage. However, as Figure 10 points out, even though the number of articulated lorries being loaded onto wagons is on the rise, we are still at low levels in absolute terms: 200 to 300 lorries per day, which has only a very marginal impact on all road or motorway haulage. It is therefore a niche offer, which alone cannot hope to fulfil the hopes for an upturn in rail freight.

Figure 9: Number of articulated lorries loaded onto rail motorway wagons



Source: DGITM, 2013

4. What regulation can and cannot do when the state is omnipresent

In France, the development of rail transport is still considered a matter of public policy, if not a state affair. This is evidenced, as we have seen, by the specific attention paid to infrastructure and network issues. Just as the state has supported the launch of many high-speed lines, it also incites RFF, a public institution, to develop new rail motorways. As part of the ENFF, the state laid 900 million euros in subsidies on the table, and these subsidies have since helped reduce the amount of railway access charges paid by freight trains.

Generally speaking, all the stakeholders in the railway business are always asking for more public funding — transport users as well as local and national politicians; labour unions as well as business leaders in the industry; railway undertakings, asking for lower access charges, as well as RFF, at the end of the line, facing an inexorable rise in debt⁵. It is in this context of an omnipresent state that we need to assess what regulation can and cannot control, whether this concept is taken in the strict sense or in a broader sense (see Section 4.1). However, given that in the railway sector in France everything always ends up being done through requests for public subsidies, one has to wonder just how much room for manoeuvre the state really has. What can the state do when the risk of capture lurks (Laffont and Tirole 1991) and when there is less and

⁵During the 2011 railway conference *Les Assises du ferroviaire*, it was admitted that the rail system, annual public subsidies amounting to some 12 billion euros notwithstanding, requires an additional 1.5 billion euros in financing each year, which is reflected in the ever-growing debt of RFF. In 2013, RFF announced that in light of the costs incurred for new high-speed rail lines and for the modernization of the conventional network, its debt would be increasing by 3 billion euros per year.

less budgetary leeway? This is the main challenge for the railway reform that is to be discussed and adopted by the French parliament in the spring of 2014 (see Section 0).

4.1 From regulation in the strict sense to regulation in the broader sense: the case of France

It is particularly relevant in France to make a distinction between regulation in the strict meaning of the word and regulation in a broader sense:

- The former essentially aims to avoid any discriminatory behaviour on the part of the natural monopoly, curtailed in principle (Crozet 2012), of the infrastructure manager (IM). First and foremost, all operators need to have equal network access, including when it comes to the allocation of train paths in the planning phase (drafting of graphic timetables); equal treatment of trains in the operating phase; non-discrimination in charges and tolls for infrastructure; access to essential facilities such as fuel delivery points, depots or train storage tracks; and so on;
- Regulation in the broad sense also considers the mechanisms that will allow not only the survival, but also an acceptable level of profitability for a sufficient number of operators, ensuring the overall efficiency of the sector. This refers to technical issues such as the harmonisation of operating standards, which ultimately have to converge at the European level, but also economic and social issues pertaining to the management of companies in the sector. The issue of state intervention is crucial here, especially in France. Having been for a long time and still being the sole shareholder of the incumbent operator, the state is under pressure.

In order to ensure that this pressure does not lead the state to interfere in favour of certain players over others, it is recommended in economic theory to establish independent regulatory authorities. The European Commission holds the same view and encourages all countries to implement this type of organisation, guaranteeing them the greatest possible independence. France has responded to these requests with two types of organisations:

- On the one hand, an independent competition authority was created (*Autorité de la Concurrence*), which is involved in all aspects of economic life. It has the power to look into any case and, if necessary, to impose penalties for breach of competition. For instance, in 2012, it sentenced SNCF to pay a fine of 60 million euros for abusing its dominant position (SNCF went to court to contest the decision). SNCF was accused of using strategic confidential information about its competitors for its own commercial benefit. It had obtained this information thanks to its status as infrastructure manager delegated by Réseau Ferré de France (RFF). Indirectly, this allowed SNCF to influence the allocation of train paths and to prevent its competitors from accessing rail capacity necessary for their operation (access to freight stations, overbooking paths and wagons to drain the market, etc.);

- On the other hand, in December 2009, France introduced an independent rail regulator, but its scope of action is limited. For instance, each year the ARAF (*Autorité de Régulation des Activités Ferroviaires*) has to approve the list of track access charges proposed by the IM. According to EU rules, ARAF does not draw up this list. In terms of freight, it intervenes mainly to verify that there is no discrimination between operators and to make a decision in case of appeal by one of them.

However, when it comes to railway access charges, the regulator only has a very limited role to play. The charges are set by RFF, based on financial constraints imposed on the infrastructure manager by the state. For freight, a new aspect came into play in late 2013: the state's wish to reduce and subsequently cut public subsidies, which until now have led to rail access charges for freight that are lower than the marginal cost calculated by RFF.

Table 3: Rail freight traffic flows and sources of revenue for RFF

Freight indicators (million)	2009	2010	2011	2012	2013	2014*
Paths-km	112.2	106.2	101.7	91.1	82.3	78.3
Train-km	82.9	75.4	72.7	75.7	73.1	69.7
Rail access charges	153	103	147	142	130	133
Complementary revenues	35	37	34	19	17	18
Public Subsidies from state	826	538	373	55	22	2
Public compensation		170	169	209	214	211
Total revenues	1014	848	723	425	383	365
% of subsidies in turnover	81%	83%	75%	62%	62%	58%
% of change in revenue/year		-16%	-15%	-41%	-10%	-5%

* forecasts 2014

Source: RFF

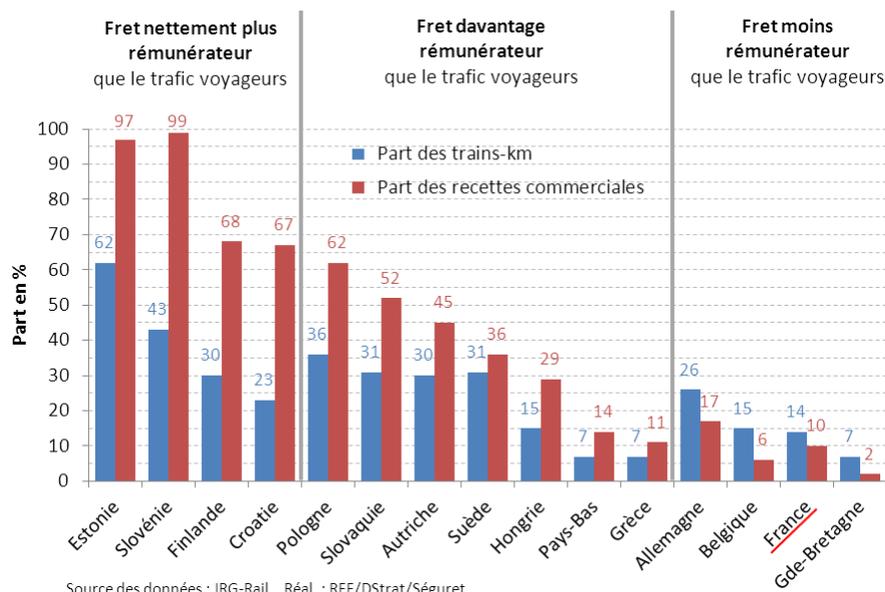
As shown in Table 3 above, these subsidies peaked when the ENFF was launched. They then decreased, but some degree of public funding remained. The amounts actually paid by rail freight undertakings were even below the marginal cost borne by RFF. What will happen in the coming years? Should railway access charges for freight trains be increased gradually, at the risk of weakening companies whose profitability is low as it is? Or should RFF cover the difference, thereby increasing its debt? Both options are risky and also point to one of the reasons for the falling trend in the circulation of freight trains, both in terms of train-km and path-km. In some ways, the more we reduce freight traffic, the more we reduce the need for funding by the state or by RFF.

The issue of subsidies indirectly attributed to rail freight is not limited to France⁶. This leads us to question the regulation of the sector in the broad sense. As shown in Figure 11 below, in a

⁶RFF summarizes the problem as follows: for each train-km of freight, railway companies pay €1.6 and the state pays €3 in freight funding. This means that RFF receives an income of €4.6. However, RFF bears a directly attributable cost ranging from €8 to €21, depending on the type of train. So RFF suffers an average loss between €3.4 and €16.4 per train-km of freight.

few key countries for our study (France, Germany, Great Britain, and Belgium) freight is less profitable than passenger traffic.

Figure 10: Relative share of freight in all railway operations



In France, freight represents 14% of all train-km, but only 10% of the IM's commercial revenue (respectively 7% and 2% in Great Britain, 15% and 6% in Belgium, 26% and 17% in Germany). Unlike many other European countries, especially those on the left-hand side in Figure 11, the four rightmost countries have to subsidise rail freight in one way or another. Is such funding acceptable on the long term?

- If the answer is yes, the question is how best to organise this funding: through direct aid to railway undertakings, through aid to the IM, or through equalisation between passenger and freight activities? Or through a combination of all the above?
- If the answer is no, we must prepare for a further decline in rail freight, particularly in France, as we have just pointed out that freight is a financial burden for the IM in this country. Furthermore, we saw that it was a source of recurring losses for SNCF. So there are significant threats to rail freight in France. Despite being subsidised, the activity generates losses for both RFF and SNCF, so how realistic is it, in these times of scarce public funds, that an implicit choice will be made that would lead to the continued decline of this activity? How will this affect the freight component of the proposed railway reform currently being debated in France?

4.2 Challenges of the proposed railway reform

In 2011, due to the rising costs of the French railway system and the increase in access charges for TGV high-speed trains, putting extra pressure on SNCF's revenue, the government decided to organise rail talks (*Assises du ferroviaire*). At SNCF's request, these talks mainly focussed on the transaction costs related to the separation between IM and RU. The draft law on railway reform submitted to Parliament in 2014 is the result of these efforts and various reports commissioned by the new government that took office in 2012 (Auxiette Report, Bianco Report). At its core, this reform centres on the adoption of an institutional model inspired by Deutsche Bahn in Germany, where the IM, DB Netz, is a component of the railway holding company.

So, in the future, we might have an IM called SNCF-Réseau and an RO called SNCF-Mobilité, comprised of several entities for main lines, regional trains, stations, and freight. However, the comparison with Germany ends there, because the new entity will not be a *société anonyme* (i.e. a corporation, roughly equivalent to a public limited company) but an *Établissement Public à caractère Industriel et Commercial* or EPIC (i.e. a state-owned industrial and commercial enterprise). More specifically, there will be not one, but three EPICs. The two EPICs already mentioned (SNCF-Réseau and SNCF-Mobilité) will be incorporated into an "overarching EPIC" in charge of strategic functions. Why create 3 EPICs instead of one, and why not a limited company?

Having one single EPIC is impossible for financial reasons. Tying RFF's balance and liabilities, including over €33 billion in debt, to SNCF's income statement would lead to an impossible consolidation. SNCF's surpluses, if any, cannot cover the financial burden of RFF's debt and chronic deficits, related in particular to regenerative expenses. However, SNCF is not eligible to receive balancing subsidies, as it is in competition with others. In order to avoid this, the state would have had to take over the debt before lumping RFF and SNCF together, as was done in Germany some twenty years ago. At least for now, this is not an option that is being considered by the government. One single EPIC would also be problematic in light of EU rules and in light of the proposed fourth Railway Package, which requires a strict separation between the IM and the RU — so-called "Chinese walls".

So having three EPICs ensures financial separation between SNCF and RFF (no consolidation of accounts, SNCF does not have to cover RFF's deficit), and also goes in the direction of an independent IM, as demanded by the EU. The problem then boils down to what role the overarching EPIC will play exactly. Is it going to be a simple structure of coordination between two independent entities, allowing the state to keep a watchful eye on the entire public arm and to settle disputes, for instance by putting a political figure in charge of this overarching EPIC? It seems that we are moving more towards an entity with several thousand employees, not only in charge of financial matters, but also in charge of human resources management — while maintaining the employee status of "railwayman" (*le statut de cheminot*). Personnel-related issues are of utmost importance. That is why a future collective agreement for the rail industry is

in the process, which will define the social rules to be applied in the sector. Unions demand that SNCF's competitors be forced to comply with the same regulatory practices as those imposed on the incumbent operator.

In its own way, by what it mentions and what it omits, the proposed railway reform reveals the limits to what regulation in the strict sense can do in France. After all, by focussing mostly on institutional matters (the number of EPICs and their scope), the proposed reform has some difficulty dealing with social issues.

Text box 3: The puzzling problem of a “harmonised social framework”

The competitiveness differential between the incumbent operator and private rail freight operators mainly stems from the social framework governing the organisation of work.

For the incumbent operator, the main reference is called RH 077, which is the practical enactment of the Law of October 1940 and subsequent decrees. SNCF employees do not come under the Labour Code, but under a specific regime, both for retirement and for social protection. Dismissals for economic reasons are impossible. For train drivers, it is stipulated that they are entitled to 126 days off per year. Rest periods away from home are exceptional and cannot be longer than one day.

For private operators (including VFLI), branch agreements were signed following a decree in 2007. They determine the scope of these agreements (all railway undertakings), the organisation of work (104 days off per year, 48 hours of compensatory rest), the employment contract and the assessment of qualifications, and vocational training.

Another agreement about health benefits and sickness insurance was on the table, but in June 2012, SNCF withdrew from these discussions, requesting that the future railway reform address the issue by creating a “harmonised social framework”. Hence, the draft law now provides for the abolition of the rules stemming from the Law of 1940 and for a single collective agreement for all employees in the sector. This is where the difficulties begin. SNCF unions fear that this agreement generalises the prevailing conditions in the private sector. Conversely, private-sector companies fear alignment with SNCF's social framework, which would affect their already meagre profitability. The big winner in all this is obviously road haulage, whose competitiveness keeps increasing, especially with the development of cabotage. It is therefore understandable why the issue of a “harmonised social framework” is so important in the proposed reform. For freight, this is even more crucial than whether or not a railway holding company “à la française” is formed.

However, as we have come to see — particularly when it comes to freight — it is simply not possible for Fret SNCF to just turn things around in the long term. Senior management at SNCF fully understands this, because not only has it organised the strategic retreat of this entity, it has also expanded the role of its private-sector subsidiaries, such as VFLI. Must we conclude that the potential upturn of rail freight traffic in France depends on the dynamism of new entrants and on the private subsidiaries of SNCF? But doesn't this kind of approach simply reveal that fundamental reform is impossible? When we compare the steps taken in Germany twenty years ago to what is currently going on in France, it becomes clear that there is a big difference

between a reform focussed on organisational efficiency (DB) and a reform centred on institutional issues, as the latter perpetuates the current trend of increasing indebtedness of the system and increasing demand for public funding.

5. Conclusion

When it comes to rail freight, France finds itself in atypical circumstances compared to the rest of Europe. In no other Western European country have traffic flows fallen back so much in just a few years' time. And yet this is the country where the most ambitious goals have been put forth in the political discourse for rail freight to recapture market share from road haulage. It is also a country that, culturally speaking, is very reticent about competition, even though new entrants in this country (excluding subsidiaries of SNCF) have managed to capture 30% market share in just a few short years. From our perspective, this development is precisely the result of an inability to realistically address competition and the organisational changes it implies in order to increase the system's efficiency. The mistake here is to consider competition only as a threat, while it can also be a source of opportunities (Crozet & alii 2012).

Among these threats and opportunities is the evolution of demand for rail freight. As shown in Figure 4 and as summarised in Table 4 below, rail freight's potential for development is to be found mainly in international traffic, the most promising market segment.

Table 4: Transport of goods by rail in France

	million ton-kms	2013 compared to 2012
Total	32,101	- 1.3%
National	20,350	- 7.7%
International	11,751	+ 12.2%
of which incoming traffic	3,623	+ 19.6%
of which outgoing traffic	4,821	+ 11.3%
of which transit traffic	3,307	+ 6.1%

Based on data obtained from SOeS

This is why new entrants have quickly managed to capture market share. If this trend continues, SNCF Group will only be able to cope with it by developing the activities of its private subsidiaries. However, if a harmonised social framework in line with current collective agreements is actually established, then the upturn in rail freight, which started after the recent economic crisis, could continue. For new entrants and the incumbent operator alike, this is the precondition for healthier intramodal *and* intermodal competition.

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