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New objectives of the French high-speed rail system within the framework of a highly centralized network: a substitute for the domestic air transport market?

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Summary

Since the beginning of high-speed services in France, the TGV network's main target has been business traffic using the domestic air transport network. Point-to-point services with the lowest number of intermediate stops have been the preferred solution. SNCF can be considered as an active player in the rail/air transport competition, given that it offers rapid travel times, competitive prices and considerable carrying capacities. Frequencies can be high between the largest towns: 16 round-trip services between Paris and Marseilles (840 km, 190 minutes[1]), 21 between Paris and Bordeaux (620 km, 190 minutes), etc. ID-TGV, a low-cost subsidiary, has also been created. Operating on selected routes, it provides a good level of on-board services as well as some interesting innovations.

The development of high-speed lines has created new competition opportunities between the TGV, Air France and other carriers. This partially explains the relative weakness of competition within the domestic air transport sector: even a low-cost carrier like EasyJet tries to avoid competition on routes where the average travel time of the TGV is lower than 3.5 hours. Air France is now planning to progressively downsize its services on routes where the TGV's market share is increasing: specific point-to-point services to/from Orly Airport will be closed and, by 2016, only a few feeder lines to/from the CDG-Roissy hub will remain.

Our aim is to measure the intensity of the competition in 2010 and, in particular, the shift taking place from a real domestic point-to-point air offer to a stricter hub-feed network with lower frequencies. We have compared the service level provided by the two carriers, basing the comparison on average TGV travel times (which are not related to the real distance covered). Our main hypothesis is that where Air France considers that it has lost in the competition against the TGV, it directs most of its remaining flights towards Roissy-CDG airport, being the carrier's main hub, in order to focus on connections to long-haul flights. On the other hand, where AF considers that its market share can be consolidated, it then directs most of its flights to Orly Airport which is more convenient for access to and from Paris.

Key words :

High-speed rail, air transport, domestic market, competition, network

[1] Average travel time in December 2009.

1. Introduction

High speed railways were developed in France as from the end of the 1970's, with the choice made for a network structure adapted to the configuration of the country and the distribution of inhabitants and activities. The considerable growth of Paris justified a network centred on the capital with relatively long segments providing links to the first urban concentrations justifying a rail service. Consequently, speed played a major role and the point-to-point system had a tendency to take precedence over the previous logic of serving a succession of stations along a same route.

Domestic air travel was developed as from the end of the 1950s by a specific airline (Air Inter) which, while seeking to be a commercial success, also benefited from State subsidies to assist it serve fragile and outlying parts of France. The result was a well-distributed network that associated radial routes flying out from Paris-Orly airport with a number of direct routes between large regional capitals at a great distance from one another. When deregulation took place, Air Inter was absorbed by Air France and a certain flights were redirected to the new intercontinental Roissy-CDG hub in order to feed long and medium haul services.

At the end of nearly two decades of increasingly intense competition, Air France now seems resigned to abandoning a large proportion of its domestic network. By 2016, the programmed closure of final destination points will result in the loss of around 800 jobs. Only those destinations that cannot be reached (such as Corsica) or which are badly served (such as Nice) by the HST will continue to be more than just feeders supplying the international network. Meanwhile, Air France tried to break into the railway market by associating with Veolia Transport in preparation for the opening of international flights to competition which took place on 1 January 2010. However, it had to abandon this approach due to the crisis currently hitting air transport. As we shall see later, this decision could well be the most efficient way of competing against the HST network.

This article seeks to understand why the railway appears to have taken a decisive lead over air travel in France despite the fact that, for the time being, competition conditions seem different in other countries having developed high speed railways. In particular, we examine the role played by overall travel time and prices in the competition between the two modes of transport. Air travel currently seems penalised as a result of increasing safety requirements calling for longer security inspection procedures, as well as the endemic congestion of the European skies. The price hikes in 2008 resulting from the oil crisis, while now absorbed, represented a clear sign. Finally, the rail sector has developed a commercial inventiveness that clearly shows it is targeting air transport users.

We shall therefore try to provide an empiric contribution to the works already carried out on the modelling of the rail – air competition (particularly Roman, Espino & Martin in 2010, Gonzalez-Savignat in 2004 concerning the Spanish case and Levinson & al. in 1997 concerning the Californian corridor) and on the conditions resulting in the success of high speed railway lines when faced with competition from airlines (Janic, 1993). A priori, the theoretical results are generally contrasted with, depending on the context, the total high speed train market share varying between 25 % and over 60 % (Adler, Nash & Pels, 2008). The distance above which high speed railways can no longer efficiently compete against air travel is also an important factor: Moshe Givoni (2006) evaluates this as being more than 500 km but estimates that the air travel sector only withdraws from the market on distances of under 300 km. In the French context, we prefer to reason in terms of travel time and there

exists a consensus to set the rail travel time above which the TGV is no longer relevant when compared with air travel at three hours. We propose reviewing this limit.

As access to traffic and market share data is difficult to acquire due to the competitive situation, we have chosen a methodological bias able to measure the intensity of the competition through the practices of the operators. This particularly concerns, frequencies and pricing, as well as the steering of air routes to one or the other of the two Paris airports.

We shall initially examine the methods used to develop the high speed railway network before going on to provide elements concerning the development of the domestic air travel market which has an extremely low intramodal competition level. We shall then analyse the intermodal competition level before evaluating probable developments.

2. A TGV network heading towards self-sufficiency

High speed railways are now well established throughout France and in people's travel habits. They were subject to considerable enthusiasm during the 1980s and 1990s, especially by the public authorities, which saw high speed railways as a vector for economic development, and by the local authorities of large towns which saw the TGV as a tool for urban restructuring around the stations (Troin, 1995). Following the construction of two isolated lines (the new Paris-Lyon and Paris-Tours/Le Mans lines) and the launching of a third line (Paris-Lille-Calais / Brussels), this popularity was formalised by the highly ambitious new high speed railway lines master plan in 1991. While this master plan is no longer on the agenda (Zembri, 1997), essentially for financial reasons, what has already been built to date and what is planned in the short term covers a vast part of France. This especially concerns departures from Paris given that the rolling stock is able to use standard railway lines for the final parts of their routes.

The TGV now represents a considerable turnover[2] for SNCF as well as a large part of its national offer. The services provided by the 450 high speed trainsets (an average of 800 trains per day in 2010) largely exceeds the framework of the new railway lines. This demonstrates, should this remain necessary, the suitability of this technology that, from the outset, was fully compatible with existing infrastructures.

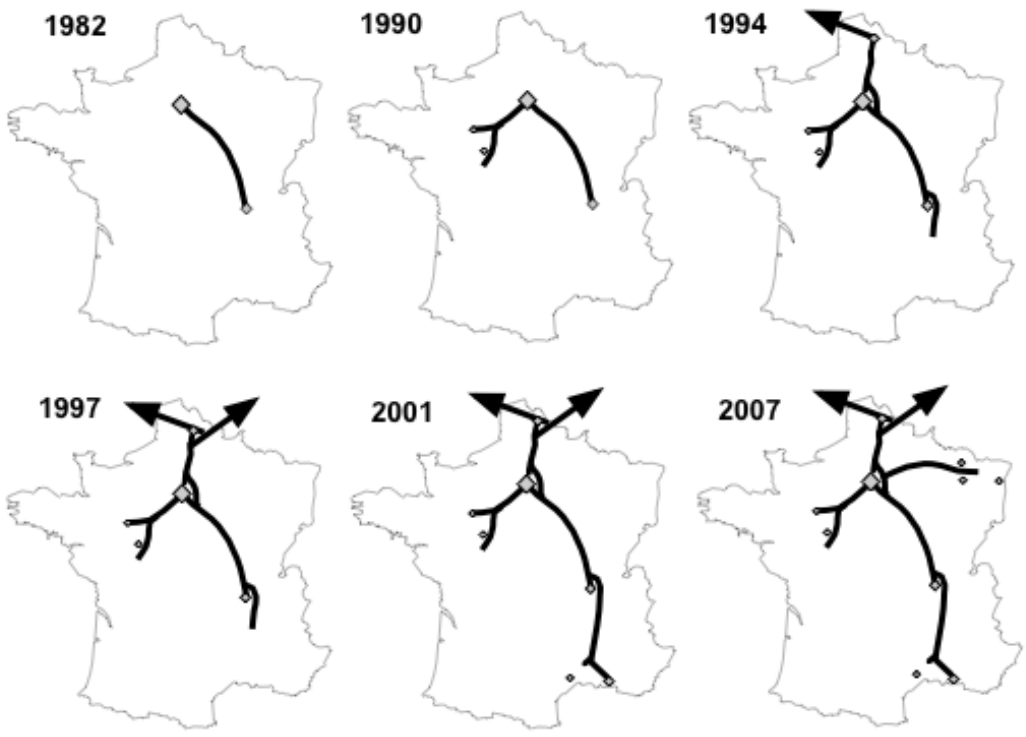
The national master plan adopted in May 1991 concerned all regions in order to ensure a balanced treatment throughout the country. Sixteen projects representing 3,172 km of new lines were to be built. The construction of high speed railway lines began in other European countries (Italy, Germany, Spain, etc.) and the European Community also published a master plan that placed emphasis on the connections being sought between neighbouring networks (the “missing links”).

However, the TGV master plan could not be based on an ongoing source of financing. SNCF financed those lines it considered to be sufficiently profitable, but to the detriment of the rest of the network. From 1990 to 1994, the conventional network (approximately 32,000 km) only received 41.3% of total investments as against 43.6% for the three new lines to be built (representing a few hundred kilometres), with the remainder (15.1%) going to the Paris

[2] In 2008, TGV’s carried 98 million passengers out of a total of 128 million customers using the SNCF Voyages branch (long distance), being 76.56% (source: SNCF, progress report)

regional network which needed enormous capacity, safety and rolling stock investments[3]. Of the total of these investments (€15.9 billion at 1990 values), the State and local authorities only provided €1.966 billion. In the end, the debt of the national operator increased to such an extent that it threatened its very existence. The 1997 reform transferred part of the high speed railway's colossal debt to RFF, the new infrastructures manager. However, RFF, like SNCF before it, was not provided with sufficient subsidies to reduce this high level of debt. The consequences in terms of developing and maintaining the railway network are self-evident: the only projects able to be successfully completed are those receiving public subsidies large enough to avoid further aggravating RFF's debt. The extension of the TGV Sud-Est from Valence to Marseille was completed (in 2001) as well as a first phase of the TGV Est Européen which was opened to passengers on 10 June 2007. At this date, the high speed rail network represented 1,802 km (figure 1). The first phase of the Rhin-Rhône line is currently being built between Dijon and Mulhouse, and will be opened to the public by end-2011.

Figure 1: Successive stages of the new high speed railway lines

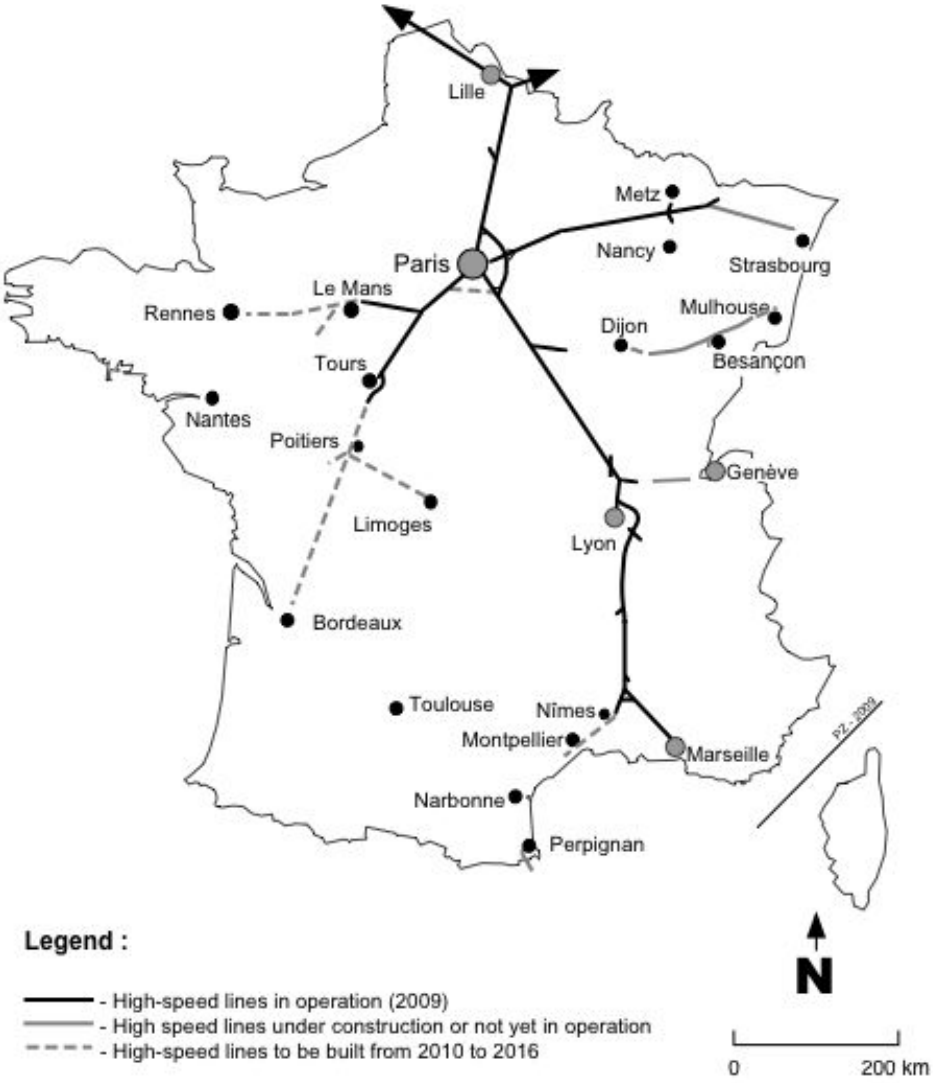


Subsequent lines will be built using the public-private partnership (PPP) system: two sections are currently in the contract attribution phase (Tours – Bordeaux and Nîmes – Montpellier). All the major public works groups (Eiffage, Bouygues, and Vinci) have submitted bids.

The current horizon is 2016, being the year that the network will be extended by 766 km (fig. 2). The Spanish connection will be operative and travel time reductions of around one hour will be achieved on the routes to Brittany, the south-west and the Roussillon region.

[3] Over the period from 1985 to 1989, the respective proportions were 61.5% (conventional network), 27% (TGV) and 11.4% (Paris suburbs). Source: *La Vie du Rail*, no. 2229, 25/01/1990, p. 16.

Figure 2: A realistic vision of the high speed train line network by 2016



The general impression in the French case is that high speed railways, characterised by a service principle that is radically different from that used for conventional trains, should be able to replace the latter without giving anything in exchange. This raises the problem of access to intermediate areas along routes where the new high speed lines run in parallel.

A comparison can be drawn between the development of the high speed railway network and that of the motorway network. While the latter has been developed in perfect complementarity with the local road network, with regular and easy connections between the two, the former seems to have only profited passengers making long distance trips. This preference has been theorised by SNCF's commercial managers: a stop on the new line means a loss of time and market shares on links where competition with airlines is more advantageous to the railway network. In addition, passengers making short trips take up seats that might otherwise be occupied by passengers travelling further and who therefore have provided a greater financial return. The result is a very poor service for intermediate areas, with few stations built and a service that remains limited. In practice, few TGVs leaving Paris stop along the first 200 kilometres of the route. The increase in direct point-to-point rail services is accompanied by stages without stops that are considerably longer: Paris – Bordeaux (617 km), Paris –

Marseille (786 km), etc. The practice of high speeds over long distances results in remarkable performances: Paris – Marseille non-stop only takes 3h03mn, being an average speed of 257 km/h.

But railway services along the new lines are not the only problem. The "tunnel effect" demonstrated by François Plassard (Bonnafous, Plassard & Vulin, 1993) progressively creates a growing number of intermediate areas as a result of the construction of new infrastructures, given that these areas are not provided within any compensation in exchange (such as new stations, the continuing provision of a high performance conventional service, etc.). This effect also occasionally extends to sections of conventional lines used by TGV to reach their terminal points, with a large number of stops being cancelled when compared with the previous services (lines serving north and south Brittany, the Poitiers to La Rochelle line). This reveals a lack of understanding of the far from negligible use of long-distance trains to link regional capitals. Given their lack of financial means, the concerned regional councils have not been able to fully replace the previous services. Nor did they necessarily have the commitment, given that they did not believe that they should have to assume the problems resulting from SNCF's change of policy concerning the stops made by its trains.

This type of service policy inevitably creates a confrontation with domestic air travel. Since the development of the TGV, SNCF has sought to acquire a share of the air travel market and win over the highly profitable business passenger clientele. We have seen that with a line providing a high speed from one end to the other, almost 800 km can be covered in three hours, a situation that in the long term threatens most domestic airlines, with the Paris – Nice route providing the exception with a rail travel distance of 1,010 km. Such being the case, most existing lines will be extended, resulting in a one hour reduction in travel time to Bordeaux, Biarritz, Pau and Toulouse by around 2016. There will also be a time reduction of one hour to the south of Bordeaux by around 2020 and this, in particular, will place Toulouse at 3h10 mn from Paris. Currently, this is one of the most sought-after domestic air routes. Within the same time frame, Rennes will be positioned at two hours from Paris and all towns in Brittany will be at less than 3h45mn from Paris.

3. A domestic airline market disrupted by the upsurge of high speed railways

As we have already seen, the airline market had for many years been held by a specialised company, Air Inter, whose services along less well used routes were completed by "third level" companies such as TAT and Brit Air. In 1994, it was judged preferable that Air Inter be absorbed by Air France[4] in view of the future opening of the domestic market to competition.

This opening began in 1995 with the six routes carrying the most passengers, all flying out from Paris: Paris – Marseille, Paris – Toulouse, Paris - Nice, Paris - Bordeaux, Paris – Strasbourg and Paris - Montpellier. These six lines represented 60% of domestic air traffic, and were carrying each one more than a million passengers/year ("millionaire routes").

The initial particularly lively competition phase that took place in the first year was brief and translated by the withdrawal of a competitor (*Euralair*) and the virtual bankruptcy of three others (*Air Liberté*, TAT and AOM). Of these three, the first two had to very rapidly join with *British Airways* and the last one with the Crédit Lyonnais bank and then *SAir Group*. While the new entrants (with the exception of AOM) had built their market winning strategy on a

[4] The merger process was completed in 1997.

price war that they did not have the means to continue for very long, *Air Inter* and then *Air France* reacted by offering greater flight frequencies, a move permitted due to their role of being the existing airline that had already been allocated the majority of slots available in Paris' airports[5]. The saturation level of these airports did the rest. In addition to these factors, there was also the creation of the Roissy airport international hub by *Air France* which allowed the latter to easily impose itself on the pre-routing market for domestic flights and direct an increasing number of connection flights to Roissy, being an airport that its competitors could not access.

On the eve of the 21st century, it was thought that the French market would be dominated by an Air France – SAir Group (AOM + Air Liberté + Air Littoral) duopoly. SAir held 30 % of the domestic market and had a €1.5 billion annual turnover in 2000. But SAir was also the parent company of Swissair and Sabena, two companies that collapsed in 2002. This had a chain reaction effect that resulted in the liquidation of the entire group. The precious slots asset that the group had at Orly airport (a third of the total) was distributed among a large number of applicants and only Air Lib(erté) was able to survive in an independent manner up to february 2003.

As a result, the competition found itself based on inter-regional and short and medium haul international routes that did not transit via Paris (Zembri, 2007). However, Air France then bought out its main challenger on this market, Regional Air Lines. The arrival of low-cost companies on the French domestic market did not last long, with the exception of EasyJet which was able to develop on the Paris – Toulouse, Paris - Biarritz and Paris – Nice routes having first attempted to serve Bordeaux and Marseille. Table 1 shows the changes in the market since 1996 on the six radial routes.

Table 1: Successive competition situations on the most important French domestic lines between 1996 and 2010.

Routes	Competitors in 1996	Competitors in 2000	Competitors in 2003	Competitors in 2010
Paris - Nice	Air Inter, AOM, Air Liberté	Air France, AOM, Air Liberté	Air France, EasyJet	Air France, EasyJet
Paris - Marseille	Air Inter, AOM, TAT	Air France, AOM	Air France, EasyJet	Air France
Paris - Toulouse	Air Inter, Air Liberté, Euralair, TAT	Air France, Air Liberté	Air France	Air France, EasyJet
Paris - Bordeaux	Air Inter, Air Liberté	Air France, Air Liberté	Air France	Air France
Paris - Montpellier	Air Inter, AOM, Air Liberté	Air France, Air Liberté	Air France	Air France
Paris - Strasbourg	Air Inter, Air Liberté	Air France	Air France	Air France

[5] Deregulation was not accompanied by a reappraisal of the rights acquired as a result of the so-called "grandfather" rule which states that an airline cannot be divested of its take-off slots. The new entrants had to be satisfied with the remaining slots within a context of the virtual saturation of Paris airports. Consequently, they were unable to use the frequency argument, whereas Air France was able to reallocate slots freed by their being abandoned by a small number of airlines (Orly – Perpignan, Orly – Toulon and Orly – Nantes) in 1996.

It can therefore now be considered that the French domestic air travel market is largely dominated by Air France and its partners (Airlinair, Brit Air, Regional, etc.). Their only competitor, EasyJet, serves Toulouse, Biarritz, Nice and Corsica (Bastia, Ajaccio) from one of the two Paris airports. A Paris – Brest route will be started up by end-2010. To these should be added four inter-regional lines departing from Lyon and serving Toulouse, Biarritz, Bordeaux and Nantes. There are no other independent companies providing domestic flights.

The domestic air travel market has been considerably upset by the development of high speed railways. This is made particularly evident through the closure of routes and final destinations each time a high speed line is opened: Orly – Nantes and Orly – La Roche-sur-Yon in 1990 (opening of TGV Atlantique), Orly – Nîmes and Orly – Béziers in 2001 (opening of TGV Méditerranée). And there are also the delayed closures that have taken place once the TGV has proven itself: Paris – Grenoble, Paris – Saint-Étienne and Paris – Chambéry were abandoned a considerable time after the starting up of TGV Sud-Est. Similarly, Air France waited until 2008 before abandoning Paris – Avignon, seven years after the considerable acceleration of the TGV which resulted in the two cities being just 2h40 mn from one another. The continued existence of certain services such as, in particular, the Orly – Strasbourg and Orly – Mulhouse routes since the opening of the TGV Est Européen in June 2007, has become uncertain.

Without going so far as a complete elimination, flight frequencies have reduced on routes where there is competition with the HST. The Paris – Marseilles air shuttle now only offers 20 return trips as against 33 prior to 2001 and 24 between 2001 and 2008.

4. Current TGV – air travel competition conditions

We have seen that the development of high speed railway services seems to unavoidably reduce the field of relevance of domestic air travel. However, this trend needs to be quantified in order to imagine the extent of modal transfer in the years to come.

Consequently, we have sought to measure the intensity of the rail-air competition on a selection of departure-destination routes by comparing the frequencies offered by each mode of transport, the fares for various types of use and, in the particular case of Air France, the breakdown between flights into Orly and into Roissy-CDG. This breakdown provides information concerning the purpose of the concerned flights. If they are mostly flying into Orly, then they have a point-to-point function rather than one of supplying a hub, and are therefore in direct competition with SNCF. However, if they are mostly flying into Roissy and therefore feeding the international network, they translate as a recognition by Air France that it has failed against the competition represented by the TGV offer.

All these changes have been placed in perspective and placed alongside the average travel time by train expressed in minutes. Thus, we also seek to find a correlation between the intensity of the competition and these travel times.

4.1. Frequencies

We have chosen 14 routes departing from Paris that correspond to the main domestic air links. While the air travel times are homogenous (around an hour), rail travel times vary between 1h50 mn (Paris – Lyon) and 5h45mn (Paris – Nice). Figure 3 reveals that while the rail offer changes in an inversely proportional manner to the travel time, the air travel offer seems to comply with other criteria.

Figure 3: Comparison of rail and air travel frequencies in relation to rail travel times (source: carriers, logarithmic scale). Non-holiday Thursday schedules, 2009-2010 winter service.

The air travel offer is fairly poor and, in any case, considerably lower than the rail travel offer up to 2h30mn of rail travel time. Air France seems to have accepted the inevitable domination of HSR. The few market share figures concerning the latter that we were able to collect from a range of sources reveal that this domination is crushing: 97 % for Paris - Lyon (2008), 95 % for Paris – Avignon prior to the cancellation of the Air France route and 70 % for Paris – Strasbourg (2008).

We then enter a theoretically more energetic field of competition in the 3h to 3h30mn TGV travel time that encompasses three destinations: Bordeaux, Marseille and Montpellier. TGV market shares remain high on these lines: 83 % for Paris – Marseille (2007), 68 % for Paris – Bordeaux (2008) and 65 % for Paris – Montpellier (2006).

Beyond these times, it would be logical to assume that flight frequencies would be greater than rail frequencies with planes being more advantageous (1h15 m, flight + time required for checking-in, inspections, luggage registration and recuperation + pre- and post-routing time + time for additional security inspection procedures, being an all-inclusive time of around three

hours). However, this is not at all the case: only three of six destinations have a greater flight offer. We were particularly surprised by the comparison between Pau and Perpignan (316 minutes of TGV travel in both cases), which demonstrates that the proportions are inversed. Toulon is equally surprising due to the lack of flight offer. In this particular case, it worth remembering that the Toulon and Perpignan destinations had both been discontinued by Air France in 1996 to free slots favouring the creation of the Navette[6]. These destinations were then taken over by Air Liberté, and Air France had to subsequently serve these towns again as from 2002, despite not particularly wanting to develop the market, as a result of pressure applied by local and national politicians. The railways found themselves with a market share greater than might have been imagined had only travel time been taken into consideration: 65 % for Paris – Toulon in 2004.

4.2. Proportion of flights landing at Roissy – CDG

This criteria is complementary to the information provided above. The intention is to determine whether Air France considers the route to be wholly domestic (in which case the services flying out from or landing at Orly would be predominant) or simply a feeder supplying its international network (in which case it would be Roissy-CDG that would predominate). Using the same routes as above, we have compared railway travel times with the proportion of air services landing at Roissy (figure 4).

Figure 4: Railway travel times and proportion of flights landing at Roissy-CDG during the 2009-2010 winter service (Thursday service excluding school holidays and public holidays). Source: carriers.

[6] Commercial name for frequent services (every half an hour) established in 1997 between Paris, Nice, Marseille, Bordeaux and Toulouse. Navette = Shuttle.

It can be seen that there is a general tendency that complies with our initial hypothesis: air routes in strong competition with the TGV (less than three hours travel time) are, with the temporary exception[7] of Lyon and Strasbourg, limited to the role of hub-feeders. The other routes (balanced competition and competition favouring planes) have seen the proportion of flights in and out from Roissy CDG reduced to less than 40 %. It should be noted that Toulon, Biarritz and Perpignan do not supply Air France's international network given that these towns do not have any flight services in or out of Roissy.

4.3. Fares

It is difficult to analyse fares given the complexity of the price-setting process (several price levels) and the considerable prices changes from one day to the next. Consequently, we cannot claim a complete coverage. We have chosen to make a comparison on the basis of three profiles, with all bookings on the carriers' reservation systems being made on the same day:

-profile no. 1: business passenger making a return trip from Paris, with the flight or train out of Paris leaving before 9h00 and the returns made in the 17h00 to 24h00 slot. We chose three dates: the day following the booking, a week following the booking and a month following the booking.

-profile no. 2: a leisure trip at the end of the week, with the flight or train out of Paris on Friday evening and the return on Sunday evening. In both cases, the trains or flights leave after 17h00. Bookings were made for the following weekend, the second weekend and the fourth weekend.

-profile no. 3: passenger wishing to travel at low cost rather than at a convenient time, and prepared to take the cheapest one-way flight or train on a given day. Bookings were made for the following Thursday, the second Thursday and the fourth Thursday.

We compared the offers made by Air France, EasyJet, SNCF and its IdTGV subsidiary. The latter is a real low-cost railway company that succeeds in having very low prices due to very limited production costs given that it does not own any trains and simply rents them from SNCF. Its train sets always travel attached to SNCF train sets, meaning that there is no train path or driver to pay. Finally, tickets are only available through the Internet[8] and are printed by the passenger from his or her home. To date, there are nine IdTGV routes[9] and certain TGV travel at night under the name IdNight. Prices are generally lower than those of the standard TGV but we noted exceptions to this when the booking was made at least a month prior to the departure date. The travel timetables exclude IdTGV from being used by profile no. 1.

Generally speaking, Air France prices are not at all competitive with the TGV, even on routes where the two operators offer high and equivalent frequencies. The national airline deliberately prices itself out of the market for one-way trips. At the same time, its competitor,

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[7] Air France envisaged discontinuing the Orly-Lyon and Orly-Strasbourg routes as from 2008. These routes have been given a reprieve for the time being. The services are provided by low capacity aircraft: Fokker 100 and ATR 72.

[8] http://www.idtgv.com/en/

[9] Paris - Lyon, Paris - Grenoble, Paris - Marseille, Paris - Montpellier - Perpignan, (Lille -) Paris - Toulon - Nice, Paris - Strasbourg - Mulhouse, Paris - Bordeaux - Toulouse or Hendaye.

EasyJet, has prices similar to and sometimes even lower than those proposed by SNCF. An analysis of the divergences for each profile reveals that the prices proposed by Air France do not vary according to the assumed intensity of the competition (fig. 5 and 6).

Figure 5: Price divergences between Air France and SNCF for profile no. 1 (business traveller) (source: carrier Internet sites). The SNCF price is equal to 1.

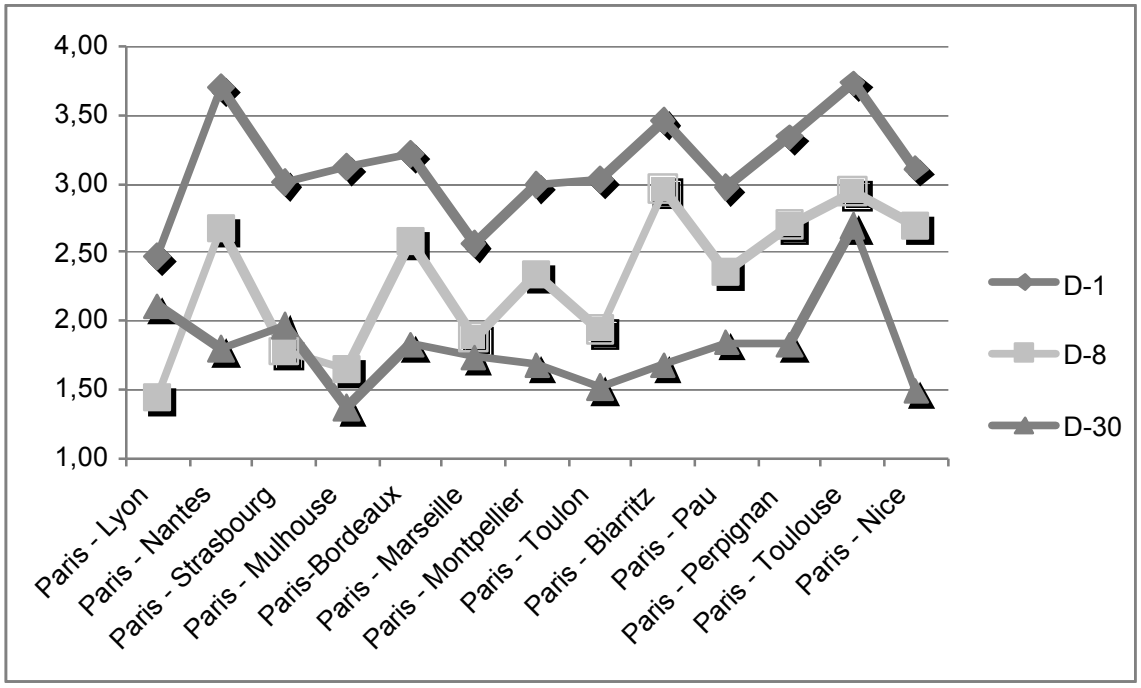
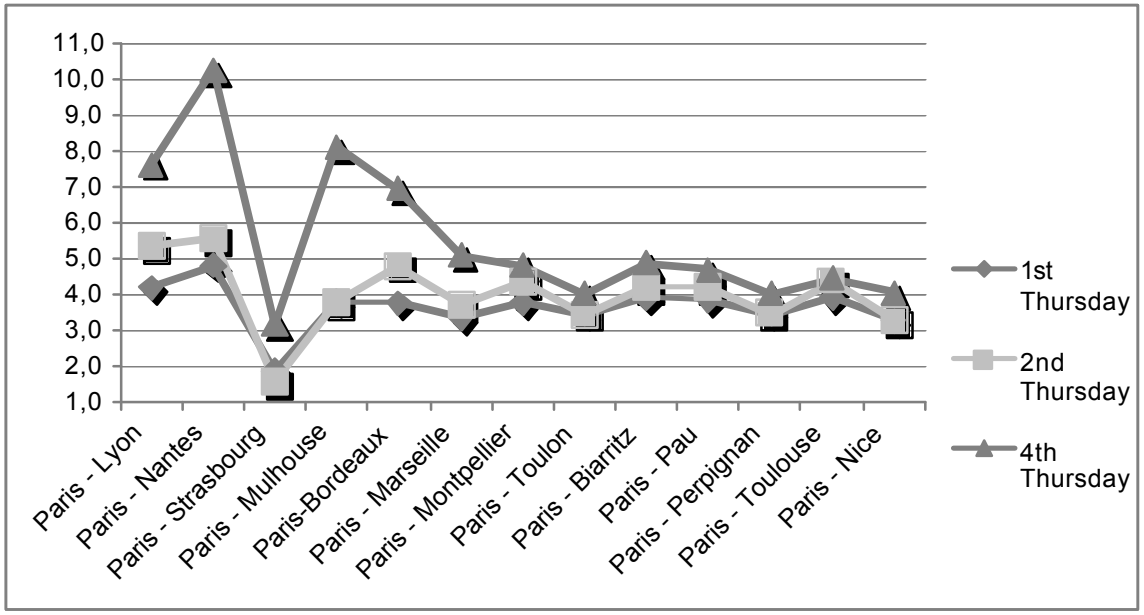


Figure 6: Price divergences between Air France and SNCF for profile no. 3 (one-way) (source: carrier Internet sites). The SNCF price is equal to 1.



Certain anomalies reveal themselves, such as Paris – Lyon prices for a one-day return ticket (abnormally low, no matter what the date) or Paris – Strasbourg for a one-way ticket. The prices are not set according to the rail travel time nor flight frequencies (and thus capacities). Nor does the intensity of the competition with EasyJet on three lines (Paris – Biarritz, Paris –

Toulouse and Paris – Nice) appear to constitute a determining criteria. For instance, on the Paris – Toulouse route, there are even abnormally high divergences when compared with the price of the TGV.

Table 2 shows the positioning of the players on the market when EasyJet is present. The latter has a tendency to base its prices on the lowest competing railway prices, especially those of IdTGV when these types of services are proposed, except when there is a restricted capacity margin. This makes itself particularly clear for bookings made for nearby dates.

Table 2: Price comparisons for the various routes where EasyJet is present (source: carrier Internet sites, bookings made on 14 June 2010)

Route	AF	EZY	TGV	Id TGV	AF	EZY	TGV	Id TGV	AF	EZY	TGV	Id TGV
Profile 2: weekend	Following weekend				2nd weekend				4th weekend			
Paris – Biarritz	358	354	**192**		358	280	**187**		379	246	**178.5**	
Paris – Toulouse	373	**185**	194	185.8	373	**168**	181	168.6	187	138	172.4	**164.4**
Paris – Nice	317	280	212	**211**	287	263	212	**199**	238	**207**	208	**207**
Profile 3: one-way	Following Thursday				2nd Thursday				4th Thursday			
Paris – Biarritz	334	95	**86**		334	**60**	80		334	84	69	**47**
Paris – Toulouse	291	102	75	**53**	291	49	67	**47**	291	53	66	**47**
Paris - Nice	313	120	96	**85**	313	**77**	96	85	313	**65**	78	66

In all cases, Air France makes absolutely no effort to reduce its prices, whereas, in a third of cases, EasyJet proposes the best price on the market. This raises the question of understanding the strategy operated by the national company which no longer appears to be particularly on the offensive in terms of prices, despite its considerable capacities.

5. Conclusions: Towards a complete withdrawal of air transport from the domestic market?

Confronted with the programmed growth of high speed railway infrastructures, air carriers might well ask themselves whether they will remain on the domestic market beyond the medium term. In this area, Air France, a company working on a worldwide scale within an alliance, cannot afford to sacrifice its short-haul network which contributes to picking up its customers and transferring them onto its international network. It is therefore obliged to maintain a minimum level of services flying onto its Roissy hub.

But Roissy is also equally well served by the TGV and all destinations are easily accessible thanks to the centralisation of the network on the Ile-de-France region. Consequently, a substitution could therefore profit the railway network. An experiment carried out some time ago (2005) using Thalys for the Paris – Brussels route, replacing the abandoned air route, proves that it is possible. Having said that, the TGV segments do not fully integrate the air travel offer, even though they have flight numbers and that the stations served now have IATA codes[10]. It is the security aspect that is now a problem: it is currently impossible to transfer registered luggage onto the trains.

[10] XDB: Lille Europe; XHK: Valence TGV; XPJ: Montpellier Saint-Roch, etc.

The alternative facing the airline is to either simply abandon those routes that have become insufficiently profitable and leave them in the hands of the national railway operator or transfer its short-haul services onto the railways while continuing to fly its own flag on these terrestrial routes. In 2008, Air France attempted to move into the railway market by creating an alliance with Veolia Transport. The two partners were to have jointly bought high speed train sets (at a unit price well below that of a B 737 or A320 type aircraft), and submit a request for a railway operator's licence in view of the opening of the international railways market in mid-December 2009. As cabotage within the States was authorised, it was tempting to set up routes between Amsterdam – Brussels – Roissy – Lyon – Marseille or Frankfurt – Roissy – Bordeaux. However, the air transport crisis crushed this innovative project and, at the end of the day, Veolia allied itself with the Italian national railway operator, Trenitalia.

As a result, Air France now finds itself in a difficult situation with a domestic market suffering considerable competition, including on distances of around 800 km (Paris – Marseille), and without the possibility of confronting the railway challenger on its own battleground. This has resulted in a return to the logic of closing down routes: Rennes was closed at the end of 2009 and almost 900 job losses are programmed by 2006 on the domestic network. In the long term, the point-to-point network (to and from Orly) risks being reduced to serving Nice (which will always be more than a four hour train journey from Paris, even after the construction of the high speed railway line along the Mediterranean coastline) and Corsica. This makes it easier to understand why EasyJet is also making considerable efforts to create a niche for itself in Corsica, a location that, until now, had been the private preserve of Air France and its local ally, CCM.

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Appendix

Database on prices. All prices in Euro. AF = Air France ; EZY = Easyjet.

Profile 1 : day trip	D - 1			D - 8			D - 30			AF/SNCF			EZY/SNCF		
	AF	EZY	SNCF	AF	EZY	SNCF	AF	EZY	SNCF	D-1	D-8	D-30	D-1	D-8	D-30
Paris - Lyon	416		168	243		168	190		90	2,4762	1,4464	2,1111			
Paris - Nantes	429		116	310		116	194		108	3,6983	2,6724	1,7963			
Paris - Strasbourg	405		134,4	239		134,4	187		95	3,0134	1,7783	1,9684			
Paris - Mulhouse	459		147	242		147	188		137,4	3,1224	1,6463	1,3683			
Paris - Bordeaux	449		139,6	360		139,6	183		100	3,2163	2,5788	1,83			
Paris - Marseille	423		165	310		165	189		109	2,5636	1,8788	1,7339			
Paris - Montpellier	542		181	380		162,6	215		128	2,9945	2,337	1,6797			
Paris - Toulon	536		177	337		174	222		146	3,0282	1,9368	1,5205			
Paris - Biarritz	603	322	174,3	437	134	147,7	219	134	130,3	3,4596	2,9587	1,6807	1,8474	0,9072	1,0284
Paris - Pau	500		168	396		168	235		127,7	2,9762	2,3571	1,8403			
Paris - Perpignan	539		161,4	403		149,4	236		129	3,3395	2,6975	1,8295			
Paris - Toulouse	521	366	139,7	297	160	100,9	272	102	100,9	3,7294	2,9435	2,6957	2,6199	1,5857	1,0109
Paris - Nice	524	428	168,5	419	185	155,5	231	120	155	3,1098	2,6945	1,4903	2,5401	1,1897	0,7742

Profile 2 : week-end	Next week-end				2nd week-end				4th week-end				AF/SNCF		
	AF	EZY	SNCF	IdTGV	AF	EZY	SNCF	IdTGV	AF	EZY	SNCF	IdTGV	1st WE	2nd WE	4th WE
Paris - Lyon	161		204		161		168		156		168		0,7892	0,9583	0,9286
Paris - Nantes	429		148		429		148		197		143		2,8986	2,8986	1,3776
Paris - Strasbourg	198		149		151		141		127		132		1,3289	1,0709	0,9621
Paris - Mulhouse	complet		165		295		154,7		138		136		NC	1,9069	1,0147
Paris - Bordeaux	174		164,6	162	210		152	146,7	134		154,3	154	1,0571	1,3816	0,8684
Paris - Marseille	182		202	198	194		202	188,8	143		176	179	0,901	0,9604	0,8125
Paris - Montpellier	175		199,4	188	175		199,4	177,8	206		191,7	170	0,8776	0,8776	1,0746
Paris - Toulon	500		191,5	189,7	464		191,5	182,6	169		172	170,4	2,611	2,423	0,9826
Paris - Biarritz	358	354	192		358	280	186,6		379	246	178,5		1,8646	1,9185	2,1232
Paris - Pau	complet		193,8		398		193,8		190		188		NC	2,0537	1,0106
Paris - Perpignan	364		212,4		333		217	215,4	231		207,5	193,4	1,7137	1,5346	1,1133
Paris - Toulouse	373	185	194	185,8	373	168	180,6	168,6	187	138	172,4	164,4	1,9227	2,0653	1,0847
Paris - Nice	317	280	212,5	211	287	263	212,5	199	238	207	208	207	1,4918	1,3506	1,1442

Profile 3 : one way

	next Thursday				2nd Thursday				4th Thursday				AF/SNCF		
	AF	EZY	SNCF	IdTGV	AF	EZY	SNCF	IdTGV	AF	EZY	SNCF	IdTGV	1st Th	2nd Th	4th Th
Paris - Lyon	266		64	45	266		50	40	266		35	40	4,1563	5,32	7,6
Paris - Nantes	276		58		276		50		276		27		4,7586	5,52	10,222
Paris - Strasbourg	123		67	49	97		63	45	97		31	40	1,8358	1,5397	3,129
Paris - Mulhouse	267		71	50	267		71	46	267		33	35	3,7606	3,7606	8,0909
Paris - Bordeaux	262		70	49	262		55	45	262		38	40	3,7429	4,7636	6,8947
Paris - Marseille	274		82,4	75	274		75	70	274		54	58	3,3252	3,6533	5,0741
Paris - Montpellier	301		81	74	301		70	57	301		63	40	3,716	4,3	4,7778
Paris - Toulon	298		87	79	298		87	79	298		75	66	3,4253	3,4253	3,9733
Paris - Biarritz	334	95	86		334	60	80		334	84	69	47	3,8837	4,175	4,8406
Paris - Pau	321		84		321		77		321		69		3,8214	4,1688	4,6522
Paris - Perpignan	322		93,5	80	322		93,5	68	322		81	74	3,4439	3,4439	3,9753
Paris - Toulouse	291	102	75	53	291	49	67	47	291	53	66	47	3,88	4,3433	4,4091
Paris - Nice	313	120	96	85	313	77	96	85	313	65	78	66	3,2604	3,2604	4,0128