I-1.33: Transport, competition and competition policy

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Air transportationAircraftAirportAllianceAnti-competitive behaviourAuctionAutorité de régulation des Communications électroniques et des Postes (ARCEP) (French Electronic communications and Posts Regulator)BankruptcyCompetitionCompetition AuthorityCompetition policyConcentrationContractCross-subsidiesCustumerEconomy of scalEconomy of scopeEfficiencyEfficiency gainEntry barrierEquilibriumEuropean CommissionFixed costFranceGreater LondonIncentiveIncumbent operatorInfrastructureInterconnexionInvestmentLegal monopolyLiberalisationLong-distance networkMarket structureMergerMerger controlmultiproduct firmNetworkOligopolistic marketPotential competitionPricePrice elasticityRailRail transportationRelevant marketRoad transportationSegmentServiceSlutTimeTransportTransportationUnited KingdomUrban communityVehicule

This article provides an economic perspective on the role played by competition policy in the development of competition in various transport sectors. After a brief reminder of some economic features that are shared by different transport modes, it mainly examines the principles and practical underpinnings of merger control as it is implemented in the present context of rapid consolidation in some transport sectors. Thereby, it stresses some potential shortcomings of the traditional merger regulation approach in the particular context of transportation services, pointing to an excessive attention paid to potential competition issues on overly narrow relevant markets while largely ignoring global efficiency-enhancing effects of mergers and alliances.

A few introductory remarks on the economics of transport

Approaching the economics of all modes of transport within a common, unified economic framework is a challenge, given the wide variety of sectors involved and the diversity of competition situations they each feature.

There are however some broad commonalities across transport sectors in terms of their competitive landscapes. Transport markets are generally concentrated, with oligopolistic interactions between operators rather than perfect competition. Instant equilibrium situations are not very stable and often raise competition issues, from a business standpoint as well as from a competition law standpoint. This relates to some market characteristics that are common to different transport sectors and can be tentatively categorized as follows.

First, irrespective of the specific sector considered, a demand for transport services generally amounts to a request for transportation between two points (e.g. origin and destination), within a given time frame and at a specific date or time. Customers pay attention to the prices charged for these services, but obviously take travelling time into consideration as well. Academic studies have documented the importance of time in transport choices by these consumers[1]. Many studies also stress the wide heterogeneity across consumers of preferences for transport services: Consumers have uneven willingness to pay for a shortening of the travelling time and/or for a better comfort of travelling. Transport operators therefore face a demand composed of many different segments, calling for a differentiated treatment of consumers in respect of the price and non-price dimensions of their offerings.

Second, the provision of transport services generally involves scarce assets. Illustrative examples are the rail network infrastructure (in rail transport) or the airport runways and landing slots (in air transport). Each transport operator needs to use those assets to provide its services, yet their scarcity imposes tight constraints on how their use is shared across operators. This may call for rigorous allocation rules, implemented through regulatory oversight, especially if an operator owns some of these scarce assets.

Third, transport operators generally need to undertake capital-intensive investments to operate. Those investments may relate in particular to rolling stock, road vehicles or aircrafts. Depending on the transport sector considered, these investments may either be fully borne by operators or, as is the case with urban road transportation in France, be borne in part by customers – urban communities in the case at hand. The rolling stock and road vehicles often involve long-term capital commitments (even if rental is possible), which means that in the short-term operators compete with fixed capacity and bear costs that are for most unavoidable. Their challenge is then to optimize capacity utilization under satisfactory economic conditions, which often leads to the application of sophisticated pricing schemes such as yield management. Besides, given operators will have to make capital-intensive investments and therefore face significant fixed costs, these sectors cannot be expected to operate under a perfect competition model.

Fourth, and partly as a result of the above, transport businesses are often subjects to significant economies of scale, scope, density and network. The operators' offerings are more effective and appealing to consumers when several destinations and routes are proposed (especially if there is continuity of the proposed routes) and when a large range of schedules is available to customers. Some positive effects can also arise from the complementarity of different services. For example, an operator controlling both a rail transport network and a bus service may provide a more effective range of transport services. Overall, the more choices the operator offers in terms of routes, schedules, modes of transport or tariffs, the more competitive its offerings are.

Fifth and last, transport operators often use cross-subsidies between different types of services and different categories of customers. This derives from demand being very different from a route to another, with differences in densities, demand composition, price elasticity. Pricing with cross-subsidies is a fairly natural consequence of services being provided over routes featuring heterogeneous demand through common assets involving fixed costs.

The adoption of hub-and-spoke arrangements in the air transport sector responds to these characteristics, as they allow *inter alia* to pool and optimize assets across routes while exploiting complementarities from the demand side, from both a non-price (scheduling) and price perspectives.

Competition in transport sectors

These few characteristics that are common across different transport sectors indicate that the development and maintenance of undistorted competition is bound to face challenges. These sectors have long been operated under legal monopolies and competition has been introduced only recently. Most of the transport markets remain highly concentrated, which is partly due to this historical legacy but also results from their main economic characteristics. As an example, the scarcity of slots and the capital requirements of setting up an aircraft fleet shall result in some form of entry barriers in the air transportation sectors, at least for carriers willing to operate at a certain scale and over certain routes. In addition, profitability in transport sectors is generally thin enough to discourage massive entry. In urban road transportation networks in France, for example, margins are a few percent at most, reflecting *inter alia* the buyer power of urban road transport authorities. Air transport may offer an even more striking illustration. It is thought that between 2000 and 2009, the industry suffered a global loss of $52 billion.[2] While these huge losses uncover many different situations, they somewhat reflect systemic issues, resulting in sector profits being regularly jeopardized by exogenous shocks such as disasters, volcano, rising fuel prices, etc.

Because of these many factors it is likely that transport markets will always remain fairly concentrated. While this observation generally holds true across sectors, though, the actual market structure and competitive situation will vary from one sector to the other. Within a sector, it can even vary quite dramatically from one customer segment or one route to another. The existence of cross-subsidies across client segments coupled with customer heterogeneity indicates that some customer segments will be more profitable than others. These will be particularly attractive to new entrants. Yet, targeted entry may yield unstable industry configurations. *First*, a new entrant focusing on a particular segment or route would have to capture a sufficient share of the corresponding services to cover its fixed costs of operating. When these fixed costs are relatively high in respect of the activity under consideration, reaching this market position may prove very challenging. Many entries will fail. *Second*, in case a new operator is able to enter the market, its entry mechanically affects the market position and profits of incumbent operators and may threaten their profitability. This may be the case when incumbents have implemented a system of cross subsidies aiming at financing services of general interest or maintaining services on hardly profitable routes, out of profits achieved on segments that are more profitable. Entries that would shave incumbent's profits on the latter segments ("cream-skimming") would leave the incumbent operating on much less attractive segments only and eventually dampen its incentives to supply these.

Air transport

The air transport sector offers a good illustration of the dynamics of competition in transport sectors. When the market opened to competition, a first wave of entries has taken place. These entries targeted in priority the most profitable routes, where margins were comfortable. As shown with the US experience, these entries weighted significantly on price levels[3]. They were not all based on the same business model: low cost carriers positioned themselves differently, with a mix of price, quality of and frequency of services that differed from those of traditional carriers; they contributed to significantly foster competition on the most profitable routes.

But this wave of entries and strengthening of competition has been followed by a reverse movement of re-concentration, featuring a combination of bankruptcies, mergers and alliances. Many mergers and/or alliance formations have taken place recently, between June 2008 and late 2009[4]. This consolidation swing was probably an unavoidable consequence of the sectors' economic characteristics, preventing multiple simultaneous entries from being sustainable. It is fair to state that presently the air transport sector has not yet experienced the emergence of a stable (while concentrated) market structure.

Road transport

Road transportation is another large sector which includes the operation of local (urban) and long-distance (inter urban) networks. This sector is deemed subject to significant network-level economies of scale and scope[5].

A particularity of competition in the road transport sector is that it is generally structured around auctions of operations contracts, which are organized by local or regional authorities. While this form of competition concerns all road transportation markets, its design may varies from one public transportation authority to the other. Design issues revolve around whether the contract auctioned should be of a winner-takes-all type, with a single lot regrouping multiple transport services and modes, or whether the contracts awarded should be divided in separate lots, with operators competing for each of them. They may also pertain to the incentive dimension of these contracts.[6]

In practice, different forms of competition are observed across European markets. In France for example, both urban and interurban road transport markets are organized through auctions awarding multi-modal operating contracts, which are generally of longer duration in urban markets. By contrast, in the UK, competition in the Greater London road transport is in such that operators bid for small parts of the whole transport activity, so that several operators may be active in a same local network.

Even if that does not take the same form nor does reach the same magnitude as in the air transport sector, currently the European road transport sector is also experiencing consolidation. This takes place under the impetus of local authorities which require increasingly sophisticated services under demanding economic and financial operation conditions. Because of these requirements, road transport operators that operate at an international scale would have a natural edge, since this allows them to gain and thereafter leverage experience with providing new services or meeting complex requirements, in respect of the environment or the interaction between different modes of transport. This concentration trend may naturally raise some competition concerns that however should be alleviated by the fact that transport authorities can and do exercise strong buyer power.

Rail transport

The third main transport sector is rail. There, the opening to competition in the European Union is following the same model as the one applied to the liberalization of network industries, such as telecommunications or energy. In accordance with this model, the infrastructure business is separated from the service business and run by an entity which is separated from the incumbent service provider (RFF in France). In parallel, an independent authority (ARAF in France) is in charge of the regulation of the sector and has to ensure that effective competition develops through e.g. the determination of fair and non-discriminatory access charges.

The experience with network industries in terms of development of competition through the setting of access charges is mixed. It remains to be seen how successful it may be in the rail

sector, given especially the tension between the objective to foster entry and the need to support significant network infrastructure investments. From a competition policy perspective, disputes about non-price and price barriers to entry that materialize through exclusionary behaviour such as margin squeeze are expected to arise.

Consolidation and its impact upon competition

Consolidation seems unavoidable in different transport sectors. How it will eventually impact market structure and conduct will be affected by its handling by competition authorities.

Any merger in the transportation area is investigated as it would in any other sector, through a fairly rigid framework. It starts with the definition of relevant markets that is primarily driven by demand-side substitution considerations. In the transport sector, this most often results in fairly disaggregated markets, typically defined as origin and destination (O&D) pairs, with possibly distinctions between premium (e.g. business) and non premium passengers, or non-stop and stop transport services. The precise delimitation will be informed by market surveys and/or empirical analysis of pricing policies. This framework leads to the identification of potential competition issues at a micro level, through a route-by-route assessment of overlaps in relation to the share of traffic held by the merging parties on each route. Some of these issues may possibly be quite significant in some routes. Finally, the merging parties may seek to demonstrate that there are efficiencies that may offset these potential anticompetitive effects, within the frame of these relevant markets.

The outcome of this three-step investigation is not difficult to predict. Overlaps on narrow relevant markets point towards potential lessening of competition, usually identified on several of these routes. These effects are not necessarily of high magnitude, as has been found by competition authorities. In the context of the OneWorld alliance between BA and Iberia, the European Commission found that there were seven (7) routes that could be potentially affected by the merger, with potential effects ranging from 5% for business passengers to 2% for economic passengers[7]. A 2% price effect would not obviously qualify as convincing evidence that the merger would have anticompetitive effects.

This is consistent with academic work conducted by Jonathan Brueckner and Darin Lee on the effects of competition on price level in the U.S.[8]They investigated the issue by looking at price and market structure data on all routes. Controlling by several factors such as the degree of competition by traditional air carriers and by low cost ones, as well as the demographics of the route considered, they show that mergers between flag carriers would negatively affect a small number of routes only, and this to a very limited extent. Precisely, they found that the expected impact of there being one less carrier operating on a route was relatively small. In the worst case scenario, where one goes from 2 carriers to a single one (i.e. a merger to monopoly on that route), effects would be in the order of 4%. However, going from 3 to 2 carriers would no longer have statistically significant effects. If you remove carriers that do not operate on a fully identical route, from the same origin (airport) to the same destination (airport) but on neighbouring ones, i.e. from and/or to adjacent airports, no statistically significant effects are found either.

These author have also found in their academic work that a merger such as the Delta-Northwest deal, where each carrier operated on more than 350 routes in the pre-merger situation, there would be competition issues on only 4 (out of 700 or more) routes where the transaction would indeed amount to a "2 to 1" concentration. There are several possible explanations to this, amongst which the competitive pressure exerted by low cost carriers and secondly the active comparisons of tariffs undertaken by customers which would prevent carriers from profitably indulging in unilateral fare increases.

Insofar as they would be minor, price effects would most likely be globally offset by significant efficiency benefits stemming from the availability of extra travelling options available or lower latencies in interconnections that are made possible through the merger. As it navigates through a micro-level competitive assessment, though, the traditional competition policy approach to the potential effects of a merger or an alliance may lose sight of some macro-economic aspects of the contemplated transactions that are most relevant in the analysis of their competitive effects. This is especially true of efficiency gains, particularly those that stem from concentrations or alliance, and intermodal competition, as is discussed in greater details hereafter.

Efficiencies

Efficiencies in alliances would generally be treated under the individual exemption regime Article 101.3 TFEU. The demonstration, which is incumbent upon the parties, is demanding. It requires that alliance-specific gains be sufficiently important so as to offset any adverse effect on competition in the relevant market(s) considered. Efficiencies have to be quantifiable and specific to the alliance considered.

In many cases, these efficiencies do not correspond to cost savings but rather to improvements in services, such as the ability to provide more destination points/routes, improved interconnections with reduced connecting times or an enhanced frequency of services. It is better for both the air carrier and for passengers if there is a greater choice of destinations, a higher frequency of flights, so that when a passenger arrives at a first destination but needs to travel elsewhere, she/he has a swift interconnection. These aspects of service offering shall be facilitated by alliances or concentration between carriers.

If demand-side efficiencies such as service improvement may be technically more difficult to quantify than efficiencies arising from cost savings, there is however no doubt they directly benefit to consumers, *via* enhanced service offering but also indirectly through the effect of cost optimization upon prices and/or the expansion of frequent flyer programs. In the case at hand, though, improvement in travelling durations can be captured through estimates of the value of time for different categories of travellers[9].

Thus, at an aggregate level, while unilateral effects should not be expected to be very significant on average and would be for most confined to certain routes, they should be balanced with significant efficiencies.

These efficiencies may not materialize in a particular way in markets or over routes where the alleged harm to competition is deemed to be the most important: the balancing may not be achieved at the level of these specific routes. Yet, they shall affect many different routes, may more than those that could be affected negatively by the potential lessening of competition between alliance members and/or merging parties. In these circumstances, the traditional merger control framework used by competition authorities, to the extent it maintains an exclusive focus on certain routes, may prove unduly restrictive in respect of the efficiency generation value of consolidation within these sectors.

Intermodal competition

In addition, progresses in the treatment of intermodal competition would be warranted, on top of the traditional analysis of intra-mode competition. Most of the competition authority reasoning stills deals with intra-mode competition, namely competition between firms operating the same type of transport services. Fairly stringent criteria used to delineate relevant markets may prevent intermodal competition from being fully taken into consideration at the market definition stage[10]. Nonetheless, competitive interactions between firms operating different transport modes are increasingly important aspects of competition in transport markets. They are not necessarily easy to capture in competition authorities' decision-making, because they present some complexities.

First, while intermodal competition is an operational reality, as evidenced by a growing body of academic studies[11], it does not apply identically to all routes and situations. Depending on the distance considered, some modes may be substitutes or could to the contrary be complement. Then, even if several modes are present ont he supply side over a given route, the question remains whether they compete for the same demand or whether each addresses a specific segments with limited overlaps between themselves, i.e. whether a wide array of consumers really choose between them or whether to the contrary each mode appeals to specific consumers who do not really consider the alternative mode. Yet, several academic studies

document that intermodal competition is a reality for a large proportion of passengers, inasmuch as they show that cross-elasticity levels observed between different modes of transport are not negligible[12].

These academic findings find some echo in the analysis of competition authorities[13]. For sake of illustration, European Commission investigated and cleared the international road transport leg of the proposed merger between Veolia Transport and Transdev[14]. In this context, it showed that the international road transport of passengers by coach was subject to strong competitive pressure from, most notably, air carriers (both flagship and low cost carriers) but also, in certain circumstances at least, by car.

This shall not mask that alternative modes may be complements rather than substitutes. Catching a plane may require taking a train or bus beforehand to reach the airport. Coach services are organized from airport and/or train stations to reach local destinations. This type of combination meets a growing demand from users, all the more so that interconnection is effective and avoids lengthy waiting times, which vindicates some form of 'conglomeral' integration between the supply of different modes of transport. Such integration can also deliver price benefits, by alleviating double marginalization concerns. These benefits trigger consolidation moves, such as the one between Keolis and SNCF, recently authorized by the French NCA[15].

These types of concentrations certainly call for careful investigation, given they combine activities performed in already concentrated markets and shall contribute to reinforce the merging entity's market clout. In addition, they sometimes will result in (further) combining activities that are performed within "reserved domains", shelved from direct competitive constraints and fully competitive activities. Since the markets considered are generally imperfectly competitive, we are in a typical situation where exclusionary anti-competitive effects cannot be excluded *prima facie*. There is however an important distinction to be drawn between situations where there is only one company able to offer multimodal services and where exclusion could be a concern and other instances where a merger would result in more companies being able to offer multimodal services. In the latter case, economic theory[16] suggests pro-competitive effects of mergers that lead to competition between multi-product firms instead on competition between mono-product firms along each product line. Finally, inter-modal services naturally result in efficiency gains vis-à-vis consumers that are integral part of the overall competitive analysis of any such merger.

Concluding comments

As transport sectors are already concentrated and will inevitably experience further consolidation in response to disequilibrium situations arising from the development of competition, the latter will be guided by the application of competition policy principles, most particularly merger control principles. The assessment of these mergers should on the one hand recognize that existing market structure may not be perennial and should assess the potential competitive effects of a merger against a credible counterfactual – namely, a stable equilibrium situation absent the merger and/or alliance considered. On the other hand, it should acknowledge the existence of a potential for significant efficiency improvements in relation to industry consolidation and take full account of it in its balancing test.

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[3] S.Morrison and C. Winston, "The State of Airline Competition and Prospective Mergers", Statement in Hearing before the Judiciary Committee Antitrust Task Force, US House of representatives, April 2008.

[4] Delta/North West ;Iberia/Vueling/Clickair ; Lufthansa/bmi ; Lufthansa/Brussels Airlines ; Lufthansa/Austrian Airlines ; Star Alliance: Air Canda/ Lufthansa/United-Continental (JV NA); One World: American Airlines/British Airways/Iberia (JV NA); Skyteam: Air France-KLM/Delta, Alitalia (JV NA)

[5] P. Gagnepain, M. Ivaldi and C. Vibes, "The Industrial Organisation of Local Bus Services: A Survey of Economic Evidence", A study commissioned by the Competition Commission, September 14, 2010

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[8] Brueckner, J., D. Lee et E. Singer « Airline Competition and Domestic U.S. Airfaires: A Comprehensive Reappraisal», June 2010.

[9] See for instance Crozet, Y. « Le temps et les transports de voyageurs », Laboratoire d'Economie des transports, Université Lumière Lyon 2.

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[12] See for an illustration Ivaldi, M. et C. Vibes, *Ibid*

[13] OFT : « Completed acquisition by Arriva Plc of the Wales and Borders Rail Franchise» (2004);

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[14] Commission Européenne, COMP M.5741, Veolia Transport / Transdev.

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