



# Air–rail intermodal agreements: Balancing the competition and environmental effects

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## A B S T R A C T

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The use of air–rail intermodal agreements has expanded over recent decades. Significant benefits have been associated with such agreements for airlines, rail operators, intermodal airports and consumers. In addition, a number of environmental benefits are perceived to be associated with a modal shift from air to rail. However, these agreements could, in some circumstances, raise competition concerns and, unlike cooperation agreements between airlines, there has been a limited focus by competition authorities to date on examining their competitive effects. Uncertainty as to regulatory treatment maybe limiting the spread and scope of air–rail intermodal agreements. This paper considers the factors relevant to any competition assessment of these agreements and raises the question of whether environmental benefits should be considered as part of the assessment.

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## 1. Introduction

Intermodal agreements between airlines and rail operators are an increasingly prominent feature of the transportation landscape. These agreements offer a number of potential advantages for airlines, rail operators, intermodal airports and consumers of transportation services. They enjoy strong political support, particularly in Europe, in part because of the perceived contribution they can make to the achievement of environmental policy targets.

However, air–rail intermodal agreements involve a form of cooperation between airlines and rail operators that could, in principle, raise competition concerns. This is especially the case where agreements involve air and rail services that operate in parallel on a given route, and where the two services are potential substitute forms of transportation. In such cases a tension can be created between environmental policy and competition policy. Unlike cooperative agreements and alliances between airlines, which have attracted significant antitrust scrutiny, there has to date been no real interest by competition authorities in examining the competitive effects of intermodal agreements. This lack of attention by competition authorities has the potential to lead airline and rail operators to neglect the regulatory risks associated with the

agreements, or to adopt an unduly cautious approach to the implementation of agreements that can have beneficial commercial and environmental effects.

This paper considers, in a general way, some of the competition issues that might be associated with air–rail intermodal agreements. In addition, it explores the question of whether, in circumstances where adverse competition impacts might arise, competition authorities should consider the environmental benefits associated with the agreements, and how such considerations might be traded-off against any competition concerns identified.

## 2. The emergence of air–rail intermodal agreements

### 2.1. Factors leading to the emergence of air–rail intermodal agreements

Three factors can be associated with the expansion of intermodal agreements in Europe: the ‘rebirth’ of the rail industry; the difficult trading environment for airlines; and the development of airports which can accommodate intermodal forms of transportation.

The European rail industry has received strong political support in recent decades, in part, because of the perceived beneficial environmental impacts of rail in some circumstances as a form of transport (Givoni, 2007; Givoni et al., 2009). At the same time, there have been important structural changes in the industry including the emergence of high-speed rail, with the length of high-speed

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lines (HSL)<sup>1</sup> in Europe multiplying by a factor of six (European Commission, 2010). Ivaldi and Vibes (2005), Jimenez and Betancor (2011), and others argue that airlines now actively compete with high-speed trains (HST) for flight times from 30 minutes to an hour. Indeed, the introduction of a HST on a specific route often leads to a significant reduction in the market share of the more costly air transport alternative (Friederiszick et al., 2009).

Over the same period, air transport carriers in Europe have faced a number of structural and financial challenges. While the reconfiguration of airlines networks into hub-and-spoke systems has revolutionized the way airlines work (Holloway, 2005), it has had unequal effects on pricing and competition on some parts of the network, so that the profitability of some short-haul flights has been reduced (via lower prices) to feed the hub. Legacy carriers (such as Air France, British Airways, or Lufthansa) have also faced the emergence of new competitors on some short-haul routes in the form of low-cost carriers (LCC). The net effect of these changes has been to significantly increase the competitive pressure on some short-haul flights (Franke, 2004). Indeed, the combination of competition from HST and the LCCs has caused some legacy carriers to reduce their short-haul services.

Airports, especially intermodal airports, lie at the interface between the changes in these two industries. More than 130 airports around the world now have a direct link to a rail network or to a high-speed rail network. These rail links allow passengers to substitute short-haul flights for trains for some segments of their journey, and allow airports to better manage their slot capacities when facing congestion. Direct rail links also increase airport catchment areas for passengers that can allow them to be more competitive (Terpstra and Lijesen, 2011).

## 2.2. The nature of air–rail intermodal agreements

Several air–rail intermodal agreements have been signed in Europe over the last 15 years. Although all intermodal agreements involve an agreement between an airline and a rail operator to cooperate in the provision of transportation services, in practice the agreements can take different forms and can be distinguished along a number of dimensions.

The agreements can be distinguished, first, by their level of integration (Table 1). Less integrated forms of agreement are similar to traditional interlining agreements, in which an airline is authorized to sell rail tickets, without any further integration of the products. In contrast, more integrated intermodal agreements can involve a form of code-share arrangement. Here the airline and the rail operator decide to 'share' the same train trip, and each operator allocates its own flight/train number to the train trip. There may also be some integration of IT systems. Passengers can benefit from this level of integration through guarantees that are offered in the case of delays on one segment of the journey. As in traditional code-share agreements, there are various subcategories of agreement between the airline and the rail operator like "block space arrangements" and "freesale" ones. Deeper forms of integration can take the form of coordination of through-baggage handling and other dedicated services such as separate first and business class dining facilities on trains, although these agreements are quite rare, largely because of the logistics involved in implementation. While intermodal agreements involve different levels of integration, we are not aware of any agreement that involves direct coordination on the prices or tariffs charged between airlines and rail operators.

Instead, the rail operator typically charges the airline for the transport services, and the airline then determines whether, and how, to reflect this cost in the price of the entire trip.

A second way to distinguish intermodal agreements is to analyze them from a network perspective, using the concepts and terminology used in airline code-share agreements. The European Commission distinguishes between several types of code-share agreement: (i) parallel operation on a trunk route; (ii) unilateral operation on a trunk route; and (iii) 'behind and beyond' routes (European Commission DG Competition, 2007). Categories (i) and (iii) appear to be relevant to air–rail intermodal agreements, and as discussed below, the distinction between agreements that involve parallel routes, and those that involve 'behind and beyond' routes, is critical when it comes to considering the competitive effects of intermodal agreements.

The majority of intermodal agreements are of the 'behind and beyond' route category, in which an airline sells (or puts its code on) a non-offered route, operated by the rail operator to provide connections with its own scheduled services. However, some intermodal agreements cover parallel operations, such as where an airline and a rail operator compete on a given route, but also enter into a code-share agreement which allows the airline to sell rail tickets (with its own flight number).

## 2.3. The perceived advantages of air–rail intermodal agreements

The commercial rationales for intermodal agreements from the perspective of the airlines differ as between 'behind and beyond' and parallel intermodal agreements. 'Behind and beyond' agreements are designed to provide wider access to scheduled airline services, usually originating from a hub airport to international destinations, from a greater number of cities within a country. For airlines that compete with a national carrier at the hub, such agreements potentially allow them to increase their market share on international routes, by giving access to their services to passengers from a wider range of regional cities. For instance, Qatar Airways or Etihad Airways have increased their market presence in France with the "tgvair" product that allows them to sell rail trips to 19 cities in France from Paris-CDG airport.

In contrast, the commercial rationale for airlines entering parallel intermodal agreements would be to allow airlines to access the rail operators schedule and to optimize their offer on particular routes. In some cases, they substitute some short-haul flights that are not profitable with train trip to focus on long-distance flights (Givoni and Banister, 2006, 2007). For example, under an agreement between Lufthansa and Deutsche Bahn on the Stuttgart–Frankfurt route, Lufthansa offers both flights and HST services. However, on the Cologne–Frankfurt route, Lufthansa has cut all its flights, allowing its scarce slots to be used for more profitable long haul services.

For rail operators, intermodal agreements are seen as providing an opportunity to enhance the 'modal shift' that is usually created by the introduction of an HST service (European Commission DG Tren, 2006). Parallel intermodal agreements will typically increase the rail operator's share of transport on a given route, as the airline may voluntarily reduce some of its services on these routes and offer the combined air–rail product instead. 'Behind and beyond' agreements are also seen to potentially attract greater numbers of passengers onto rail services, which can allow rail operators to increase their load factors on routes that may not always be profitable.

Finally, the potential environmental gains associated with a modal shift toward rail may be significant, although limited by the internalization of part of the aviation's CO<sub>2</sub> footprint inherent in bringing airlines into the EU Emissions Trading System. The

<sup>1</sup> A high-speed line is a line on which trains can go faster than 250 km/h at some point during the journey (European Commission, 2010).

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