The dynamic between airlines and high-speed trains in Europe

Results in Brief

Airlines working with high-speed rail

An EU study examined the interaction between high-speed rail (HSR) and short-haul flights. HSR can in some cases replace such flights, potentially leading to a small decrease in greenhouse pollution.

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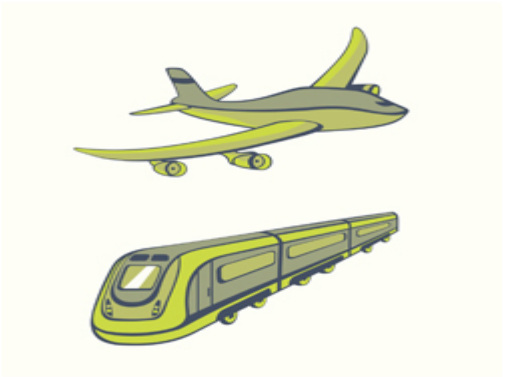

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EU policymakers hope to reduce environmental impacts of transportation, and one proposed solution is for HSR to partially replace short-haul flights. However, it remains unknown exactly how HSR and airlines interact and compete.

Funded by the EU, the project 'The dynamic between airlines and high-speed trains in Europe' (DATE) investigated greener medium-distance transportation options for Europe. The study aimed to evaluate the potential for HSR to reduce air transportation, and how that might be achieved. The research consisted of two modes, a literature review and econometric analysis, which ran from June 2011 to May 2013.

The initial literature study examined the interaction between airlines and HSR, focusing on mode substitution. Little was known about how initiation of a new HSR service affects demand. However, the project tentatively concluded that after such introduction, approximately 20 % of the demand is new.

Thus, it may be assumed that 2 to 4 years after a new service begins induced demand will range from 10 to 20 %. During that time, approximately 80 % of passengers will be those who switched from other modes of transportation, including conventional rail. New HSR services can adversely affect both conventional rail and short air services, yet the effect on car transportation is more complex.

Econometric analysis focused on the effect of HSR on current air services, considering 161 city pairs EU-wide. The study indicated that HSR and low-cost airlines compete for similar markets. Modelling revealed that reasonable HSR travel times means reduction of air services, though HSR frequency has little effect on air services. The effects of hubbing strategies by airlines suggested a benefit of increased HSR servicing of airports, though the interactions are difficult to predict. The greenhouse gas emissions saved through HSR are minor compared with the impact of long-haul flights with which the former does not compete.

Overall, it would seem that HSR can replace short-haul flights. Yet, the introduction of new services is only viable on a few routes with sufficient demand.

The DATE project helped to resolve important questions for the EU about the interaction of HSR and short-haul flights, and those impacts on greenhouse emissions.

Keywords

Airlines, high-speed rail, short-haul flights, greenhouse pollution, environmental impacts, transportation, high-speed trains, modes of transportation, conventional rail, air services, hubbing

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