Impact of High-Speed Rail Entry on Air Transport: Price Competition, Travel Time Difference and Catchment Expansion

by

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*The captioned presentation will be conducted via online facilities. If you are interested to attend, please email to anne-ly.wong@polyu.edu.hk for registration by 15 June 2020 (Monday).

(Conducted in English)

Abstract:

With the rapid development of high-speed rail (HSR) in the recent years, its impact on overlapping air routes has become a popular research topic. While most research found HSR’s downward pressure on air traffic, flight frequencies and airfares, esp. in short/medium-haul markets, some “counter-intuitive” empirical findings suggest possible positive impacts on air traffic. However, the literature fails to provide any reconciliation on the seemingly conflicted empirical results, neither theoretically nor empirically.

The thesis provides a possible theoretical and empirical explanation on the mixed findings. With a model of differentiated price competition, we show that air-rail competition can induce more air traffic after the entry of HSR as long as the air travel time is sufficiently shorter than the HSR travel time. The mixed empirical results could be caused by the failure to incorporate both modes’ travel times.

In the empirical part of this thesis, we use the difference of HSR and air flight travel times to capture the relative competitiveness of these two competing modes of transport after controlling for the potential catchment expansion effect of HSR. Other route characteristics such as GDP per capita and population of the two endpoint cities, time-invariant route fixed effect and year fixed effect are controlled for in the model as well. Based on a sample of Chinese air routes, our regression analysis confirms the theoretical prediction. In particular, air traffic tends to increase after the entry of HSR if the HSR travel time is over 5 hours longer than air travel time. Otherwise, the air traffic tends to reduce. This implies that a large share of sampled Chinese routes, including both medium-haul and long-haul routes, may experience an increase in air traffic.

Bio:

Hongyi received her Master Degree (2017) from Vrije Universiteit Amsterdam and Bachelor Degree (2016) from Southwestern University of Finance and Economics. She is currently pursuing her Master of Philosophy in transport economics under the supervision of Dr Sarah WAN and Dr Achim I. CZERNY.

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All PolyU staff and students are welcome!