

The Hong Kong Polytechnic University
Department of Logistics and Maritime Studies
Research Seminar

Identifying substitution and complementary effects in air-rail competition

by

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Date: 25 July 2019 (Thursday)
Time: 10:00am - 11:00am
Venue: R506, Shirley Chan Building
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(Conducted in English)

Abstract:

This paper theoretically and empirically quantifies the substitution and complementary effects of the introduction of high-speed rail (HSR) on air transport. In the theoretical part, we consider two models: a single origin-destination route and a three-city transportation network and compare outcomes between pre- and pro-HSR-entry cases. In the single O-D route model, we derive results from price competition and quantity competition, aiming to fully understand HSR's substitution effect. In the three-city network model, we quantify HSR's complementary effect in the context of air-HSR competition. We find that price competition and complementary effect are the two sources of mixed changes (either increases or decreases) on air traffic on the parallel routes. In the empirical part, we investigate the impact of the introduction of HSR on airlines' domestic available seats on affected routes in China by considering both substitution effect and complementary effect. We include travel time and frequency of HSR on the parallel routes to represent the substitution effect and include the total population of all the cities in the catchment area of two endpoints of a focal route to identify the complementary effect.

Bio:

Hongyi GU 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 CZERNY.

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All are welcome!