Post-COVID Air Connectivity and CO2 Emissions: Evidence from a Structural Model

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The recovery of air transport connectivity after the COVID-19 pandemic has been highly heterogeneous. The number of direct flights operated between US and China in August 2023 was only 6% of the pre-Covid period. The recovery rates in the routes between China (and the US) and other regions of the world were substantially higher. Moreover, the US-China connections in the post-COVID period were also characterized by a large increase in prices and in the share of passengers using connecting flights. Starting from this motivating evidence, we outline and estimate a structural model to simultaneously estimate demand (nested logit) and supply (following BLP 1995) of air transport connectivity to evaluate the implications for welfare and CO2 emissions of these supply restrictions. Very preliminary estimates indicate that re-establishing the direct connectivity between US and China to the pre-pandemic levels could increase total passenger traffic between the two countries by 620%, reduce prices by 62%, increase both consumer surplus and airline profits, and reduce CO2 emission per passenger by about 18%.