

Levers for Change? The Welfare Effects of a Large-scale Public Transport Subsidy in Germany

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Abstract

Ever more countries consider reducing the cost of public transport to incentivize shifts to more sustainable transport modes. This paper quantifies the welfare effects of a large-scale, nationwide public transport subsidy in Germany—the so-called *Deutschlandticket*. We pair novel cellphone- and app-based mobility data from several European countries with recent advances in synthetic control methods to examine the impacts on mobility and external costs. Our findings show a persistent increase in train ridership and a substitution away from car travel (number of trips, kilometers driven, and vehicle counts). We find no evidence for latent demand as total mobility remains constant. The substitution is the largest in cities with high-quality public transport as well as for trips of longer distances. The implied CO₂ emissions reduction amounts to around 5.3 million tons per year (3.7% of total road transport sector emissions). In line with our results on less road traffic, we also find strong evidence for reduced air pollution in cities (NO₂ concentration) and lower road congestion (travel time per kilometer). A cost-benefit analysis reveals that the overall benefits of the policy outweigh its associated costs (benefit-cost ratio of 2.1). Similarly, the marginal value of public funds amounts to 1.3, implying that the program costs just €1 for every €1.3 that it provides in benefits.

Keywords: public transport, subsidy, externalities, emissions, congestion

JEL Codes: C23, H23, Q53, Q58, R41, R48

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