Public and Private Investment in Electric Vehicle Charging Infrastructure*

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Abstract

We study how public investment in electric vehicle (EV) charging infrastructure affects private investment, charging access, and EV adoption. Public investment can crowd out private investment through business stealing or crowd it in through better charging access and EV adoption (indirect network effect). Our empirical setting is Korea's direct provision and installation subsidies over 2018–2024. Using vehicle registrations, charger ownership and subsidy records, and charging activity data, we find evidence of net crowding in alongside business stealing: For slow charging, subsidies increase private investment and EV sales while reducing utilization. Because drivers substitute across charging locations, public investment can generate spatial spillovers in charging access and private investment. Thus, we develop a static spatial model of vehicle choice, charging demand, and charging supply, incorporating heterogeneous firms' capacity and pricing decisions, direct provision, subsidy eligibility, and project approval. Counterfactuals quantify how alternative budget allocations and subsidy rules affect charging access, EV adoption, and welfare across space.

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