Can Telework Adoption combine commuting induced GHG emissions reduction and social acceptability?

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Abstract

This paper studies how teleworking affects commuting-related greenhouse gas (GHG) emissions and the social acceptability of environmental policies. We develop a spatial job-search model with endogenous electric vehicle (EV) adoption, in which workers face heterogeneous residential locations and spatial mismatch with jobs. Calibrating the model to French data, we show that teleworking reduces GHG emissions by lowering traveled distances both through the direct reduction of commuting trips and the spatial segmentation of teleworkers farther from CBD. However, because EVs involve higher fixed costs and require sufficient mileage to be cost-effective, teleworking also weakens incentives to adopt EVs, generating a rebound effect. Finally, we show that when teleworking is combined with a carbon tax financing EV subsidies, the marginal impact of teleworking on emissions is attenuated. Yet, by improving labor market access for workers living farther from the CBD, teleworking may increase the social acceptability of this environmental policy.

Key words: Teleworking, mobility, GHG emissions, carbon tax , electric vehicle, equilibrium job search model.

JEL Codes: J2, J64, Q52.

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