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Paper title: Commuting in a City with Central and Suburban Bottlenecks: Theory and Evidence

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Abstract

This paper presents a new framework to study commuting and dynamic congestion with an explicit consideration of urban space. The monocentric city is discrete and composed of two (central and suburban) residential zones, which are connected via two congestible bridges. On each of the bridges, the Vickrey (1969)-type bottleneck congestion arises. The city residents in each zone choose timing of commutes jointly with housing consumption and residential location. By considering multiple bottlenecks in the city, we overcome the limitations of the previous studies that also looked at the interaction between dynamic congestion and urban spatial equilibrium. The analysis implies a particular relationship between residential location and commute schedule pattern, which is empirically tested and confirmed. The model also shows that the endogenous distribution of population is not affected by optimal time-varying tolling, which challenges the traditional urban economic analysis based on static congestion.

Key references


