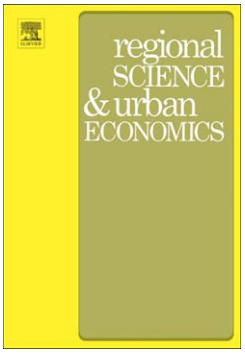

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Modal choice and optimal congestion*

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Abstract

We study the choice of transportation modes within a city where commuters have heterogeneous preferences for a car. As in standard models of externalities, the market outcome never maximizes aggregate welfare. We show that in the presence of multiple equilibria problems of coordination can worsen this result. We discuss two policy tools: taxation and traffic separation (e.g. exclusive lanes for public transportation). Setting the optimal policy is a necessary but not sufficient condition to maximize aggregate welfare. Even with a social planner maximizing aggregate welfare, a city may find itself stuck in a situation where public transportation remains inefficient and the level of congestion high.

JEL: R4, L5, H2.

Keywords: Modal choice, Coordination, Network effect, Cross-modal congestion.

1 Introduction

The cost of congestion is an increasingly important issue in urban areas. For instance, Duranton and Turner (2011) estimate that a typical American household spends 161 person-minutes in a car every day. Goodwin (2004) expected the annual cost of congestion in the UK to reach £ 30 billion in 2010. De Palma and Lindsey (2011) report congestion costs between 0.5 and 1.5% of GDP

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