Self-Driving Cars Will Change Cities

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Self-Driving Cars Will Change Cities

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Abstract

The effects of autonomous vehicles (AVs) on urban forms are modeled, calibrated, and analyzed. Vehicles are used for commute between peripheral home and central work, and require land for parking. An advantage of AVs is that they can optimize the location of day parking, relieving downtown land for other uses. They also reduce the per-kilometer cost of commute. Increased AV availability increases worker welfare, traffic, travel distances, and the city size. Land rents increase in the center but decrease in the periphery. Possible locations of AV daytime parking are analyzed. The effects of AV introduction on traffic and on mass transit coverage are discussed.

Keywords: Self-driving cars, autonomous vehicles, commute, parking, urban forms

JEL codes: D61, O18, R41, R49

1. Introduction

The advent of self-driving cars, or autonomous vehicles (AVs henceforth) seems to be a matter of very near future. The rapidly growing literature, academic and non-academic, has discussed many virtues of AVs. They will reduce the cost of travel, especially for the disabled. They will allow minors to travel without adults present. They will relieve occupants from the

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