What *Drives* the Efficiency in Ridesharing Markets? Evidence from Austin, Texas

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Abstract

In decentralized transportation markets, search frictions give rise to static and dynamic inefficiencies. Ridesharing platforms, who act as intermediaries in these markets, improve upon traditional taxis along two key dimensions: surge pricing and centralized matching.We study how and why these two features make the market more efficient; and we explore how alternate pricing and matching rules can improve outcomes further. To this end, we develop a structural model of the ridesharing market with three components: (1) dynamically optimizing drivers who make entry, exit and search decisions; (2) stochastic demand; and (3) a matching technology. Relative to our benchmark model, surge pricing weakly reduces consumer surplus during the day, while generating large gains for all agents during late nights. This is driven by the role surge plays in inducing drivers to enter the market. In contrast, centralized matching reduces match frictions and increases surplus by 20-40% for consumers, drivers, and the ridesharing platform, irrespective of the time of the day. Our results highlight why centralized matching and surge pricing solve static inefficiencies, but are unable to mitigate dynamic inefficiencies. We show that a simple, more flexible pricing rule can address both these inefficiencies and generate large welfare gains for all agents. We conclude by drawing policy implications for improving the competitiveness between traditional taxis and ridesharing platforms.

Keywords: *ridesharing, surge pricing, centralized matching, dynamic games, search frictions*
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