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## Surge Pricing and Short-Term Wage Elasticity of Labor Supply in Real-Time Ridesharing Markets

*Shu He, Liangfei Qiu, and Xusen Cheng*

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### Abstract

The prominence of real-time ridesharing services, such as Uber and Lyft, has dramatically changed the landscape of traditional industries. This study provides a comprehensive analysis of the short-term wage elasticity of labor supply in real-time ridesharing markets using data from a major ridesharing platform in China. By exploiting an exogenous shock from uneven driving restrictions as an instrumental variable, we find a negative labor supply elasticity for ride-sharing drivers, suggesting that drivers tend to drive less during days with a higher average hourly wage. Specifically, a percent increase in hourly wage will lead to a 0.931 percent decrease in daily working hours. This surprising finding is consistent with the behavioral income-targeting model based on the theory of reference-dependent preferences: Drivers have heuristic daily targets for total earnings and are more motivated to supply labor when they are below their income target than when they are above it. Therefore, they work less on days when earnings per hour are high and quit the market once their income target is reached. In addition, we find that taxi drivers are more rational and have positive labor supply elasticity, which implies that drivers are more rational when they have repeated opportunities for learning. Estimating labor supply elasticity is critical to understanding the economic efficiency of various surge pricing algorithms and driver subsidization programs for ridesharing platforms and policymakers. Our research suggests that a uniform price surging or driver subsidization approach for all ridesharing drivers may not incentivize the labor supply of drivers effectively.

**Keywords:** Labor supply elasticity, ridesharing, income target, reference-dependent preferences