

CONFERENCIA

Competition between Two-Sided Platforms under Demand and Supply Congestion Effects

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Resumo

This paper explores the impact of competition between platforms in the sharing economy. Examples include the cases of Uber and Lyft in the context of ride-sharing platforms. In particular, we consider competition between two platforms that offer a common service (e.g., rides) through a set of independent drivers to a market of customers. Each platform sets a price that is charged to customers for obtaining service provided by a driver. A portion of that price is paid to the driver that delivers the service. Both customers' and drivers' utilities are sensitive to the payment terms set by the platform and are also sensitive to congestion in the system (given by the relative number of customers and drivers in the market). We consider two possible scenarios. The first one, termed "single-homing," assumes that drivers work through a single platform. In the second scenario, termed "multi-homing" (or "multi-apping" as it is known in practice), drivers deliver service through both platforms. In both the single-homing and multi-homing scenarios, we study the equilibrium prices that emerge from the competitive interaction between the platforms and explore the supply and demand outcomes that can arise at equilibrium. We leverage the model to study some practical questions that have received significant press attention (and stirred some controversies) in the ride-sharing industry. The first involves the issue of surge pricing. The second involves the increasingly common practice of drivers choosing to operate on multiple platforms (multi-homing). We find that raising prices in response to a surge in demand makes platforms, drivers and customers better off than if platforms were constrained to charge the same prices that would arise under normal demand levels. We also compare the platforms', drivers', and customers' performance when all drivers either single-home or all multi-home. We find that, while individual drivers may have an incentive to multi-home, all players are worse off when all drivers multi-home.