

Statement of Research - Chiara Farronato

My primary research focus is e-commerce and online peer-to-peer platforms. I draw from the fields of industrial organization and technology to study economic problems faced by online platforms in creating large and well-functioning marketplaces to match buyers and sellers. I try to answer broad questions with theoretical modeling and empirical support: What factors influence the choice of online sales mechanisms? How have online sales evolved over time? What is the value of the sharing economy? How do peer-to-peer markets balance demand and supply when both are highly variable? Why do platforms succeed in certain locations more than in others, and how do platforms perform as more users join?

To answer the first two questions above, I have studied early peer-to-peer platforms for the exchange of goods. In *Sales Mechanisms in Online Markets: What Happened to Internet Auctions?* (joint with Liran Einav, Jonathan Levin, and Neel Sundaresan), we explore why e-commerce has transitioned away from auctions towards posted prices. After ruling out compositional shifts in products and sellers as drivers of this transition, we develop a simple model of a seller choosing to sell at auction or posted price as a function of two forces: buyers' preferences and seller competition. Our estimates suggest that, over time, the shift in buyers' preferences away from auctions is more important than the increase in seller competition in explaining the transition to posted prices.

The other questions are motivated by the growth of peer-to-peer platforms for the exchange of more local and time sensitive services, such as a ride home from the airport or cleaning one's apartment after a party. The geographically and temporally defined markets can be thin and experience large fluctuations in demand relative to supply, so peer-to-peer platforms face the basic problem of balancing demand and supply. I tackle this problem in *Outsourcing Tasks Online: Matching Supply and Demand on Taskrabbit* (joint with Zoë Cullen), where we use data from a peer-to-peer marketplace for domestic tasks to document that the market equilibrates to short-term fluctuations in demand and supply primarily through changes in the intensity of workers' effort. We incorporate the evidence in a simple model of buyer and seller participation on the platform to estimate the gains from trade that the platform facilitates, and to quantify the efficiency of the matching process and how it changes over time and across different cities.

Peer-to-peer platforms, such as Airbnb for short-term accommodation, often enter an existing industry where more traditional service providers like hotels make up the set of existing incumbents. On one hand, the entry of Internet competitors allows the industry to expand and access underserved demand, providing services to price sensitive or niche consumers (market expansion). On the other hand, it can attract consumers away from conventional suppliers (business stealing). In *Market Structure with Peer-to-Peer Entry: the Hotel Industry and Airbnb* (joint with Andrey Fradkin) we combine supply and transaction data from a peer-to-peer platform and hotels to study the effect of peer-to-peer entry on the industry market structure. In doing so, we explore how the efficient combination of hotels (with high fixed costs but low marginal costs) and peer-to-peer supply (with low fixed costs but high marginal costs) depends on the level and variability of demand.

Peer-to-peer platforms have also revolutionized the organization of production. Platforms like Airbnb and Uber have allowed everyone to become an occasional hotelier or cab driver. In this context, I plan to explore the benefits, such as a more efficient use of underutilized assets, of organizing production in a decentralized way. I also plan to focus the ability of these platforms to maintain quality standards and predictable service, and explore whether the marketplace will trend towards a concentration and professionalization of the provision of services within a small number of experienced sellers.

Supporters of peer-to-peer platforms have argued that they transform access to personal

services and convenience. Regular consumers can now easily access and afford cleaning, ride, and accommodation services from their peers. With survey evidence on the use of peer-to-peer platforms, I plan to study the extent to which this democratization of personal services is taking place, thus hoping to inform the current regulatory debate over the benefits and costs of the sharing economy.

My research on peer-to-peer platforms falls within a broader interest in technology and innovation. I have explored this general theme by studying academic patents and their economic value. The distribution of the economic value of patents, and more in general of innovation, is highly skewed, with typically a large number of low-value patents, and a few big successes. Economists have often relied on citations to proxy for the value of patents, and my research exploits detailed data on licensing revenue generated within a major university patent pool to confirm a strong relationship between value and citations. This validates the large innovation literature that uses patents as core measure of research output, and that is facilitated by patents' standard classification and electronic availability.

I hope that my deep interest for internet markets and innovation, combined with access to detailed users' activity from a set of peer-to-peer platforms will allow me to contribute to the growing economic literature on the micro-structure of internet marketplaces, and gain a deep understanding of user participation to address optimal platform design, market structure, and regulation in the broader perspective of online - offline competition.