Gender Discrimination in the Gig Economy:
Evidence from Online Auctions for Freelancing
(Job Market Paper)

I study gender discrimination in an online auction-based platform for freelance jobs. To this end, I build an equilibrium model of demand and supply for freelance jobs, in which workers bid prices for each job they are interested in and the employer (who posted the job ad) makes a discrete choice from the offers tendered. On the demand side, an employer does not necessarily choose the worker with the lowest bid, because he may also care about non-price attributes such as gender and quality. To capture this feature, I augment the standard discrete choice random utility specification to include taste or animus toward a particular gender and expected quality of the worker by following the specification of the canonical Phelps model. On the supply side, I model oligopolistic competition with incomplete information about rivals' costs. To the best of my knowledge, this paper is the first to nest both taste-based and statistical discrimination within a random utility framework and incorporate an oligopolistic supply side with asymmetric information about costs.

To estimate the model, I use rich and novel data from an online platform for five different kinds of freelance jobs: cleaning, moving, gardening, repairs, and deliveries. I observe information about the posted job and worker characteristics that include gender, bids, and performance measures. I track workers' performance, such as reviews, ratings, and completion rates, during their tenure in my sample and combine them to construct a measure of workers' true qualities. The novelty of my approach is that I observe the past, present, and future performance of a worker so that I can construct the quality measure. In contrast, employers only observe, at best, the worker's past performance. I show that this gap between the employer's expectation about the worker's qualities and their true qualities is sufficient to separate taste-based discrimination from statistical discrimination. To estimate the cost distributions of workers, I follow the methodology commonly used in empirical auctions, but rely on a parametric assumption.

I find evidence of discrimination against female workers in three out of the five job categories: moving, gardening, and repairs. The magnitude of discrimination is large and economically significant. For instance, to win a moving job, a woman has to bid $2.40 less than an (observationally) equivalent male. This "gender tax" amounts to approximately 9% of the median hourly wage. I also find that taste-based discrimination is the primary form of discrimination in most jobs, except for moving. My cost estimates suggest that female workers have lower costs than male workers for most jobs except repairs. Considering opportunity costs, the results are plausible since male workers usually have better other options than female workers. Using these estimates, I consider a counterfactual exercise in which the platform blinds the gender information of workers. This policy rules out both taste-based and statistical discrimination. My estimates suggest that welfare for these workers increases by 2% to 18% depending on the level of discrimination for each job category. These estimates are expected to be even larger if I account for a response in participation behavior.