Title

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1. Redistribution through Markets

Price regulations, such as rent control and minimum wage laws, typically face tradeoffs between reducing inequality and maintaining efficient outcomes. Dworczak, Kominers and Akbarpour (2020) characterize the Pareto frontier of this tradeoff by framing price regulation as a market design problem, with buyers and sellers seeking to buy an indivisible good. They frame the Pareto frontier as determining the welfare-maximizing solution when agents have different valuations for money and for the good (with, roughly speaking, the valuation for money falling with an agent's wealth). They find that when there is significant inequality between buyers and sellers, optimal price controls take the form of a "tax" which charges buyers a lower price than that of sellers, then transfers the surplus to the poorer side of the market. When there is significant inequality between agents on one side of the market, price controls take a more complex form but may still be optimal.

One interesting novelty of the Dworczak, Kominers and Akbarpour (2020) model is their use of agents' differing marginal values for money, instead of the more standard approach of differentially weighting different agents' utilities. The authors show that these two formulations are actually equivalent. Intuitively, an agent having a higher marginal utility for money is akin to a market designer placing greater weight on the money they are given in the final allocation. They show that agents' actions are fully characterized by their rate of substitution between the good and money.

The bulk of the paper describes the optimal mechanisms to address cross-side inequality (between sellers and buyers) and same-side inequality (between agents on the same side of the market). The paper discusses applications in markets for kidney exchange (rather, the one market which runs in Iran), which is generally an example of same-side inequality among sellers. It also discusses applications in the housing rental market, which is generally an example of cross-side inequality.

The paper raises several interesting extensions. Most immediately, the model only studies an indivisible good without wealth effects. Both of these modeling assumptions could be extended. The model also neglects possible aftermarkets of trade between agents, which could be explicitly modeled. Finally, the rationing mechanism used to address same-side inequality is randomized; work on designing non-random mechanisms could be fruitful.

2. Open Questions

1) The optimal mechanism in cases of significant inequality proposed by Dworczak, Kominers and Akbarpour (2020) is a randomized mechanism, in which some agents can

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only trade with a given probability. As the authors point out, randomized rationing in practice can be particularly harmful to poorer individuals, who may have less tolerance for uncertainty. There is a long tradition in computer science of trying to "de-randomize" randomized algorithms. **Can we model the harm to poorer agents in this model that results from randomization? Can we lessen this impact with a different randomized mechanism, or de-randomize the mechanism entirely? How might these answers change if the good is divisible?**

2) **?** addresses the combinatorial assignment problem, in which agents are allocated bundles of indivisible objects, monetary transfers are prohibited, and the market designer cares about efficiency and equity. Budish proposes the Approximate CEEI algorithm to resolve the problem, and empirically tests its results on student course assignments. Yet Budish focuses almost exclusively on the course assignment application, only briefly alluding to other applications, such as shift scheduling for workers in a firm. **Are there other applications of combinatorial assignment problems? Could we incorporate the differing marginal utilities of goods as in Dworczak, Kominers and Akbarpour (2020) or Pareto weights to assign bundles when we do not weight the utilities of all agents equally (i.e. when we care about redistribution)?**

References here (manual or bibTeX). If you are using bibTeX, add your bib file name in place of BibFile in the bibliography command.

REFERENCES

Dworczak, Piotr, Scott Duke Kominers, and Mohammad Akbarpour. 2020. "Redistribution through Markets." *Working Paper*.