

Commitment paper – Experimental Economics:

Fixed-price, auction or haggling – which price mechanism should the seller choose?

By Jonas K. Sekamane, 25. september 2014.

Auction theory tells us which auction formats are preferable. When buyers have private information – the revenue equivalence theorem holds – and all standard auction formats will give sellers the same ex-ante revenue (Krishna 2009, proposition 3.1). When buyers have interdependent values, the revenue ranking principle tells us that, the english auction has higher ex-ante revenue than the second-price auction, which in turn has a higher revenue than the first-price auction (Krishna 2009, proposition 6.6). Many experiments have been conducted that investigate these two theorems (Kagel and Levin 2011).

An alternative mechanism is Name-Your-Own-Price (NYOP). In NYOP the buyer proposes a price (or makes a bid), if the bid is above some threshold level set by the seller, then the buyer gets the object at the proposed price. Shapiro and Zillante (2009) have conducted an experiment in which they evaluate the revenue of a fixed-price mechanism, a NYOP mechanism, and a combination of both mechanisms. They find that the combined NYOP mechanism gives the highest consumer-surplus and highest profits to the seller.

The german auction site auctionata.com uses a combined NYOP and fixed-price mechanism when selling its low-valued objects. Lauritz.com uses an auction mechanism very closely related to an english auction (proxy bidding auction). DBA.dk officially uses a fixed-price mechanism, but looking through the comment-sections, one quickly realises that unofficially haggling takes place. Potential buyers simply propose a price (normally lower than the posted price). The seller then accepts or rejects (sometimes proposing a new price, at other times awaiting new bids from the buyer). Which mechanism should the seller choose? What are the differences and what are the similarities?

With my experiment I would like to bridge the gap. First of, I will design an experiment in which buyers have private information, and compare the revenue of the second-price sealed-bid auction, to the NYOP and to the fixed-price mechanisms. I would furthermore like to expand on the findings of Shapiro and Zillante (2009), by considering a scenario where buyers have interdependent values and where competition among buyers come into play. I.e. comparing the english auction, to a fixed-price mechanism and to the NYOP mechanism, but where buyers in the NYOP can submit repeated bids (haggling). If their bid is rejected by the seller, they will have the option to submit a new and higher bid. Theoretically Fay (2004) has shown that repeated bidding in NYOP auctions may increase profits.

The literature on auctions and fixed-prices is not as concise. Early theoretical work by Wang (1993) show that auctions are optimal. While Kultti (1999) and Campbell and Levin (2006) show that auctions are not always preferable to fixed prices. Boyer, Brorsen and Zhang (2014) investigate using an agent-based model approach. Zhang (2008) does an experiment, but considers IPOs.

Much of the literature on the NYOP mechanism considers the two sites priceline.com and hotwire.com. They sell last-minute flights and hotels. On these two sites the buyer does not know the precise product which he or she is buying. This is first revealed if the buyer “wins the auction”. Shapiro and Zillante (2009) have treatments that consider this opaque feature. My experiment will not consider this. My interest is more concerned with the selling of unique objects – i.e. the traditional realm of single-item auctions. Shapiro and Zillante (2009, p.737) hypothesis that [my emphasis]:

*... Priceline customers are more likely to purchase the same product many times (e.g. a ticket between New York City and Los Angeles) and consequently there is a substantial **risk that customers might quickly learn the threshold range and decrease their bids**. When this is not the case, as at <http://www.prisminister.dk> which sells consumer electronics, the NYOP website does not have the opaque feature. Indeed, it is simply **less likely that one person would be buying a washer repeatedly and consequently the customer's information about the threshold is less precise** ...*

Allowing repeated bidding in NYOP might lead to buyers learning the threshold level, and decreasing

their bids – ultimately decreasing profits. However competition among buyers for a unique object might have counter-acting effects. That is buyers will not dare to shade their bids too much, out of fear that other buyers will managed to buy the object before them. From this short walkthrough I hope it is clear that the NYOP mechanism resembles an auction in many ways. To my knowledge no study has thoroughly compared the mechanisms. Evaluating the NYOP against commonly known and studied auctions formats therefore seems like a worthwhile endeavour.

Plan

- Oct. 18.: Finished literature review and the preliminary introduction-section of the paper.
- Oct. 25.: Supervision, probably with a focus on my treatments.
- Nov. 9.: Finished figuring out the basics of how to set up my treatments.
- Nov. 16.: Finished design of experiment.
- Nov. 23.: Finished writing paper.

References

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