Commitment paper – Experimental Economics:

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

By *Jonas K. Sekamane*, 26. September 2014.

Auction theory tells us which auction formats are preferable[1]. Many experiments have been run that investigate these results (Kagel and Levin 2011, Kagel 1996). But, will an auction create higher revenue than when selling at a fixed price? The literature has no clear cut answer to this question. Some theoretical work claim that auctions always give respectively the same revenue or higher. While other theoretical studies say it depends on the distribution of the buyers' values. Or whether these value are interdependent. (See review in Boyer, Brorsen and Zhang 2014). Boyer, Brorsen and Zhang (2014) further investigate using an agent-based model approach. Surprisingly few experimental studies have tackled this question. An exception is Zhang (2009), but she specifically considers IPOs.

An alternative price mechanism is Name-Your-Own-Price (NYOP). In NYOP the buyer proposes a price. If the price is above some threshold level set by the seller, then the buyer purchases the object at the proposed price. Shapiro and Zillante (2009) have run an experiment comparing fixed-prices, NYOP, and a combination of both. They find that the combined NYOP mechanism gives the highest consumer-surplus and highest revenues. A closely related mechanism is Select-Your-Price (SYP). Here buyers select the price from a list. Previous lab experiments have shown that SYP generates higher revenue than NYOP (summarized in Shapiro and Zillante 2009 p.728).

Which mechanism should the seller choose? What are the differences and what are the similarities? My interest concerns the selling of unique objects. The traditional realm of single-item auctions (art, antiques, etc). But perhaps, and contrary to popular believe, an auction format is not the optimal mechanism.[2]

With my experiment I would like to bridge the gab between fixed-price, auctions and NYOP. First of, I will design an experiment in which buyers have private information. With this I will compare the revenue of a second-price auction, to the NYOP, and to the fixed-price mechanism. I would furthermore like to expand on the findings of Shapiro and Zillante (2009). By respectively introducing competition (single-item sale) and introducing repeated bidding. Repeated bidding would make the NYOP process more alike the process of haggling. If the seller rejects a bid, buyers 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.

Shapiro and Zillante (2009, p.737) hypothesis that[3]:

> *… 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*** *… [emphasis added]*

Allowing repeated bidding in NYOP may lead to buyers learning the threshold level. Thus they will decrease their bids and ultimately decrease profits. However the competition among buyers for a single object, might have counter-acting effects. Buyers may not dare to shade their bids below their valuation, out of fear that other buyers will managed to buy the object before them.

From this short walkthrough I hope you see resemblances between the NYOP mechanism and auctions. To my knowledge no study has compared the two mechanisms. Evaluating NYOP against commonly known and widely studied auction formats thus 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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1. 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). ↩
2. The german auction site auctionata.com uses a combined NYOP fixed-price mechanism. But only when selling its low-valued objects. Lauritz.com uses an auction mechanism 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 just 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). ↩
3. Much of the literature on the NYOP mechanism considers priceline.com and hotwire.com. They sell last-minute flights and hotels. On these two sites the buyer is unaware of the precise product sold. The actual hotel or flight is first revealed to the buyer who successfully bids above the threshold level. Shapiro and Zillante (2009) have treatments that consider this opaque feature. My experiment will not consider this. ↩