Comment on ``Reserve Price When Bidders are Asymmetric"
By Hikmet Gunay, Xin Meng, and Mark Nagelberg

Summary of the Paper

This paper considers a single object auction with asymmetric bidders. The paper considers that bidders have independent private values, but the value distributions are different between bidders. The seller knows the value distribution of each bidder. The paper investigates the optimal reserve price in a second price auction. The paper provides the condition for the effective reserve price, and shows that the optimal reserve price is uniquely derived from the first order condition when distribution functions are ordered in the sense of hazard rate and reserve hazard rate dominance.

Summary of Comments

This paper mainly shows two things; (1) the condition for an effective (``non-zero") reserve price, and (2) the uniqueness of the optimal reserve price in the case of ``ordered" distributions (strong/weak bidders). I think that the main result of the paper is basically straightforward, so that its theoretical contribution is limited. However, asymmetric bidders are realistic and the analysis would provide some implications for real situations such as the Internet auctions and procurement auctions.

Overall, I am not so impressed by the former result on the effective reserve price, but I think the latter part is more interesting. The paper provides a comparative statistics in a simple case (Example 6), which is interesting. I suggest that the authors would focus on this or a similar parametric case. A deeper analysis of the comparative statistics in the simple situation would be preferable.

Detailed comments on the results and suggestions are as follows.

(1) Effective Reserve Price

First, I think that the first theorem is essentially independent from asymmetric distributions. The condition for an effective reserve price is basically given by $J(\underline{v}) \geq x_0$. When bidders are asymmetric, the light hand side is replaced with the average virtual value function. I think that if the authors discuss Theorem 3 and the related results, they should find and argue a specific property from the bidder asymmetry.

Second, as the authors note, an effective reserve price is not set only if $x_0 < \underline{v}$; that is, the value for the seller is out of the support of v. This might happen in general, however, it is not natural for me to assume such a situation. This is because the seller has the value x_0 for the item, so the support of the values of the item should include x_0. Alternatively, if the seller does not sell the item in the end, then he might be able to resell the item to a guy, who is not a bidder in the auction,[1] at least with a price $\underline{v}$. Then, the seller would have an outside option to sell with a price $\underline{v}$, and then his value should be set $\underline{v}$.

(2) Uniqueness of the Optimum and Comparative Statistics

In section 2.1, the paper considers strong and weak bidders in the sense that hazard rate and reserve hazard rate dominance. Proposition 5 shows the uniqueness of the optimal reserve price. Example 6 provides some comparative statistics when there are two distribution types, and it is more interesting. Many studies on auctions with asymmetric bidders consider one strong bidder and one weak bidder. I suggest that the authors would focus on such a simple situation and investigate the effect of distribution functions to the optimal reserve price more deeply.

A related question is auction versus negotiation. As shown in Bulow and Klemperer (1996), it is more profitable for the seller to invite an additional bidder than to set the optimal reserve price when bidders are symmetric. In the case of ordered asymmetric distribution, is it more profitable to set the optimal reserve price than to invite an additional ``weakest” bidder? I imagine it depends on several parameters, but even an example would be interesting.

Other Minor Comments:

- The terminology of ``type” seems a little confusing because the valuation for the item is often called type in mechanism design and auction theory. Another term for different distribution functions would be preferable. (I did not have a good one so I used the term ``distribution type” in this report.)

[1] As in McAfee and Vincent (1997), if we explicitly model a resale after the seller fails to sell in the auction, the result will change.