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AUCTIONS AND PUBLIC POLICY

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Auctions and Public Policy

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We will discuss two broad topics: (1) the main issues in auction design; and (2) how auction-theoretic tools can be used to address public-policy questions insettings that do not look like auctions.

1. The most important issues in auction design are those with which competition policy has traditionally been concerned---preventing collusive, predatory, and entry deterring behaviour.

Ascending and uniform-price auctions seem particularly vulnerable to these problems, as illustrated by notable fiascoes in auctioning mobile-phone licenses, TV franchises, companies, electricity, etc., and especially the European "third-generation" (UMTS) spectrum auctions.

Ascending auctions facilitate "tacit" collusion by offering a mechanism for punishing rivals, and, when multiple units are on sale, by allowing bidders to use the early stages when prices are still low to signal who should win which objects, and then tacitly agree to stop pushing prices up.

Ascending auctions are also poor at attracting entry because there is a strong presumption that the bidder which values winning the most will be the eventual winner---even if it is outbid at an early stage it can, and will, eventually top any opposition. So other firms have very little incentive to enter the bidding, and may not do so if they have any costs of bidding. Thus, for example, Glaxo's 1995 bid for Wellcome was uncontested because even though Zeneca and Roche were apparently willing to pay considerably more than the £9 billion Wellcome offered, Glaxo had let it be known that it "would almost certainly top a rival bid".

"Predatory" behaviour also seems easier in ascending than in other kinds of auction, as illustrated by the 1995 auction of the Los Angeles mobile-phone license, by bidders' behaviour in European UMTS spectrum auctions and by auctions of football TV rights. There is no justification for the current feebleness of antitrust policy in auction markets: regulators should treat them much more like "ordinary" economic markets.

A sealed-bid auction can often perform better because it makes collusion more difficult and encourages entry by giving some chance of victory to weaker bidders. On the other hand, an ascending auction is more likely to allocate the prizes to the bidders who value them the most.

So what should an auction designer do? One solution to the dilemma of choosing between the ascending and sealed-bid forms is to combine the two in a hybrid, the "Anglo-Dutch", which often captures the best features of both by following a multiple-round ascending ("Anglo") auction by a sealed "best and final" bid (a "Dutch" bid in auction-theorists' parlance). The initial ascending stage reduces the likelihood of an inefficient outcome and the final bidding round both encourages entry and discourages collusion.

The U.K. UMTS spectrum auction of March-April 2000 illustrates how good auction design is sensitive to the context. The U.K. originally planned to auction just four licenses in the presence of exactly four incumbent operators. In this context it was planned to run an Anglo-Dutch auction. (The design performed extremely well in laboratory experiments commissioned by the

Radiocommunications Agency.) However, when it became possible to auction five licenses, a straightforward ascending auction was no longer counterindicated: since licenses could not be divided, bidders could not collude to divide the market without resort to sidepayments. Furthermore, at least one license had to be sold to a new entrant and this would be a sufficient carrot to attract several competitors. So the problems of collusion and entry deterrence were minimal, and an ascending design was therefore used for efficiency reasons. The auction was widely judged a success.

However, the Netherlands plan to follow the actual British design seemed ill-conceived since there were five incumbent operators and five licenses in the Netherlands. The first draft of this paper was circulated prior to this auction, and correctly predicted the auction's unattractiveness to new entrants---the auction raised barely one quarter of the per-capita revenue raised in the U.K.

Finally when, for example, auctioning radiospectrum, auction designers must also control the structure of the market that will be created. Simply "letting the market decide"; will bias the result towards too few winners each of whom will win too much spectrum, since outcomes are driven by bidders' profits, not by final-consumers' surplus, and bidders' joint profits are maximized by a monopoly over radiospectrum. The fiasco of the Turkish 2000 spectrum auction offers a spectacular example of how an auction can be biased towards generating monopoly.

These examples show that auction design is very sensitive to the details of the environment. Auction design is a matter of "horses for courses", not "one size fits all", and the devil is in the details.

2. Auction-theoretic tools and intuitions can provide useful arguments and insights into a broad range of mainstream economic settings that do not, at first sight, look like auctions.

The Revenue Equivalence Theorem can be exploited to analyse a wide range of applications including litigation systems, financial crashes, queues, and wars of attrition. Intuitions from the comparison of ascending and sealed-bid auctions can be applied to other economic topics such as rationing and e-commerce; and help investigate, for example, whether consumers benefit from the greater "transparency" provided by internet markets.

The close parallel between the optimal auction and that of the discriminating monopolist (both are about maximizing marginal revenue) can also develop new results in traditional economics as well as auction theory.