

The Calculation of Equilibrium Mixed Strategies in Posted-Offer Auctions

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Research in Experimental Economics, Volume 5,
M. Isaac, (ed.), Greenwich, Conn.: JAI Press, 1992, 189-229.

Summary: A commonly used theoretical oligopoly model is one with a homogeneous product and price-setting firms. The analogous trading institution in laboratory market experiments is the "posted-offer auction," in which sellers choose prices simultaneously and randomly selected buyers make purchases at the posted prices. Although sellers are in a position to behave strategically, posted offers are typically discussed in experimental studies as deviations from (or as convergent to) the perfectly competitive price. The Nash equilibrium for the laboratory pricing game often involves randomization and is almost never calculated. This paper shows how randomized equilibria can be computed for the complicated step-function structures that are common in laboratory experiments with trading in discrete "units." In the process, we derive new theoretical results for models of price competition with cost asymmetries, cost and demand discontinuities, risk aversion, price discrimination, and multiple markets.