



Sorting versus screening: Search frictions and competing mechanisms[☆]

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Abstract

In a market where sellers compete by posting trading mechanisms, we allow for a general search technology and show that its features crucially affect the equilibrium mechanism. Price posting prevails when meetings are rival, i.e., when a meeting by one buyer reduces another buyer's meeting probability. Under price posting buyers reveal their type by sorting ex-ante. Only if the meeting technology is sufficiently non-rival, price posting is not an equilibrium. Multiple buyer types then visit the same sellers who screen ex-post through auctions.

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1. Introduction

Prices are much more prevalent than auctions, yet common wisdom has it that auctions can achieve more than prices can. In this paper we argue that while this wisdom is true in the partial equilibrium setting of a monopolistic principal, in competitive markets with competing mechanisms this need not be true. In particular, we show that the prevalence of prices over more general auction-like mechanisms crucially depends on the features of the meeting technology. If buyers only rarely end up simultaneously bidding for the same good, sellers choose price posting. In contrast, when buyers do tend to simultaneously compete, for example in art or antique auctions, prices are dominated. Our findings highlight the role of the search process for mechanism design. The important insight here is that it is not necessarily the fine details of the mechanism space that determine the competitive sales mechanism, but rather the properties of the meeting process. We can thus characterize the prevalence of price posting as a function of the meeting technology.¹

The role of the meeting technology can best be illustrated by considering two extreme versions that are commonly assumed. First, consider a *purely non-rival* meeting technology, as is often done in much of the directed search literature. Buyers simultaneously meet a given seller and they all contemporaneously compete for the good for sale. Each additional meeting by another buyer does not affect one's chances of meeting with the seller. Key here is the distinction between meeting and matching (or trade). Even if meeting is non-rival, the good itself is clearly rival: the more buyers meet, the lower the trading probability. As an example of a non-rival meeting technology, consider a seller of a piece of art who fixes a date and time when the good will be sold. Irrespective of how many other buyers turn up, the opportunity to enter the auction is invariant. Second, consider a *purely rival* meeting technology, as in much of the competitive search literature. At any given seller, there is always at most one buyer at the time. Another buyer's meeting clearly reduces one's own meeting probability. This is often the case in environments without recall where in any small time interval there is at most one meeting which must immediately end up in trade or separation. For example, a firm continuously hires and once a candidate turns up, a hiring decision is made.² There is of course a whole continuum in between these extreme meeting technologies. Suppose several workers simultaneously apply for a job, but the firm only considers say half of the applications (there could be many reasons: it is too costly, only those that have been referred by trusted friends and colleagues are considered, ...). This renders a meeting technology *partially rival*. We are not aware of work that considers the impact of variations in the meeting technology, and this work attempts to fill the gap.

The approach in most of the search literature is to assume a particular trading arrangement (typically price posting, but in other instances also competition in auctions) without questioning whether this particular mechanism would actually be chosen as an equilibrium outcome when a set of different mechanisms is available. In contrast, the competing mechanism design litera-

¹ Price posting is pervasive in many economic transactions. Even the internet auction house eBay derives 40% of its revenue from price posting. There could be many reasons why prices are pervasive, including low transaction costs (see for example Wang [35]). Our objective is to find out under which conditions price posting is an efficient trading mechanism in the presence of search frictions, and without assuming different transaction costs for other mechanisms.

² The purely rival meeting technology is maintained in work by Moen [18], Acemoğlu and Shimer [1], Mortensen and Wright [20], Moen and Rosen [19]. The purely non-rival meeting technology is assumed in such work as Peters [22–26], Peters and Severinov [28], Burdett, Shi and Wright [4], Shi [31,32], Shimer [33]. Even in random search, often a rival meeting function is assumed where bad types negatively affect good types (see for example Albrecht and Vroman [2]), but alternatives with non-rival meeting technologies have recently been proposed (see for example Moscarini [21] and Albrecht and Vroman [2]).

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