96 About trading mechanisms in a model of endogenous money

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Three commonly applied trading mechanisms or methods to determine the terms of trade in general equilibrium search or matching models are bargaining, auctions and price posting. It is known that, for instance, in search models of labour markets pairwise bargaining typically result in inefficient outcomes, while auctions result in efficient outcomes (eg. Jansen M. 1999 manuscript, Shimer R. 1999 manuscript). Similarly it is known that price posting results in efficient outcomes (eg. Acemoglu and Shimer 1999 IER, Peters M. 1984 Ecma). Further, Kultti (1999 GEB) shows that auctions and price posting are utilitywise equivalent mechanisms. In none of the above models there are basically any budget constraints, and the amount of production is fixed. To relax these assumptions I turn to the standard model of endogenous money (eg. Kiyotaki and Wright 1993 AER) where some agents are endowed with a unit of indivisible and intrinsically useless object, i.e. fiat money. The only way to trade in a monetary equilibrium is to exchange this unit of money to a consumption good. To get meaningful prices we assume that the amount of the good to be exchanged is a variable as it is assumed to be produced on the spot. To motivate anonymous monetary exchange, or the lack of credit relationships, it is assumed that the agents meet in a random manner. To make the study of different trading mechanisms meaningful it is assumed that the meetings are of many-to-one or urn-ball-type. The economy proceeds infinitely in discrete time. The agents are either in a role of buyers aka money holders, or sellers aka producers. Upon meeting the terms of trade, i.e. the amount produced is determined, and it depends on the trading mechanism. Bargaining is modelled non-strategically as a division of surplus using the Nash-bargaining solution. Price posting is a strategic game for sellers. The trade-off is that by lowering the posted price a seller attracts more buyers who choose mixed strategies determining which sellers to visit. We determine the Nash-equilibrium price. Auctions are of the second price sealed bid variety where the seller is assumed to be one of the participants. In the model the reservation values arise endogenously since the parties can always leave the current partner and wait for next period to meet new ones.

We use specific functional forms to demonstrate that the there is basically no hope for any kind of equivalence results between any of the trading mechanisms. Further, it turns out that the trading mechanisms cannot be ordered in a welfare sense. Depending on the number of money holders any of them may be the most efficient. We also produce some illustrative numerical examples.