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Transferring ownership of public housing to existing tenants: A market design approach ☆

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Abstract

This paper explores a housing market with an existing tenant in each house and where the existing tenants initially rent their houses. The idea is to identify equilibrium prices for the housing market given the prerequisite that a tenant can buy any house on the housing market, including the one that he is currently possessing, or continue renting the house he is currently occupying. The main contribution is the identification of an individually rational, equilibrium selecting, and group non-manipulable price mechanism in a restricted preference domain that contains almost all preference profiles. In this restricted domain, the identified mechanism is the minimum price equilibrium selecting mechanism that transfers the maximum number of ownerships to the existing tenants. We also relate the theoretical model and the main findings to the U.K. Housing Act 1980 whose main objective is to transfer ownerships of houses to existing tenants.

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1. Introduction

Matching theory has provided fundamental tools for solving a variety of house allocation problems. Examples include procedures for allocating unoccupied houses among a set of potential tenants (Svensson, 1994), methods for reallocating houses among a group of existing tenants (Shapley and Scarf, 1974), mechanisms for determining rents on competitive housing markets (Shapley and Shubik, 1971), and rules for setting rents on housing markets with legislated rent control (Andersson and Svensson, 2014). This literature is appealing from a theoretical perspective since the investigated allocation mechanisms typically satisfy a number of desirable axioms, including, e.g., individual rationality, non-manipulability, and various efficiency notions.

The housing market considered in this paper contains a finite number of houses with an existing tenant in each house. The idea is to identify equilibrium prices for this market, given the prerequisite that a tenant can buy any house on the market, including the one that he is currently occupying, or continue renting his house. In the model, a fixed lower bound for the equilibrium prices is defined (i.e., reservation prices for the owner), and in case an existing tenant buys the particular house he is currently occupying, the tenant pays only the reservation price. The reservation price can be interpreted as a personalized or discounted price for the existing tenant as the price of that specific house for all other tenants is given by the equilibrium price which is endogenously determined by the preferences of all agents. This also means that if an existing tenant decides to "Keep the House", the tenant can either buy it at the reservation price *or* continue renting it. An assignment of agents to houses and a price vector constitute an equilibrium if each agent weakly prefers his assigned consumption bundle to keeping the house and to all other houses at the given prices, and if the assignment guarantees that the maximum number of agents buy a house in case there are several assignments that are compatible with the specific equilibrium price vector. Note that the first part of the equilibrium concept can be seen as a market equilibrium condition as all agents are assigned their most preferred bundle from their consumption set at the given prices.

To solve the above described house allocation problem, it is natural to search for a price mechanism that is individually rational, equilibrium selecting, and non-manipulable. This type of mechanism guarantees that no tenant can lose from participating, that no further rationing of the houses is needed, and that the reported information is reliable. Given the interest in these three specific properties, the perhaps most natural allocation mechanism is based on a "minimum equilibrium price vector" as this type of mechanism previously has been demonstrated to satisfy these specific properties in a variety of different contexts, including, e.g., single-item auction environments (Vickrey, 1961), assignment markets (Demange and Gale, 1985; Leonard, 1983), and housing markets with rent control (Andersson and Svensson, 2014).[1]

[1] In some cases, this is also the only mechanism that is Pareto efficient and strategy-proof. See, e.g., Svensson (2009) or Morimoto and Serizawa (2015).