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Homeownership and the scarcity of rentals

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ABSTRACT

The provision of owner-occupied versus rental houses is modeled as a competitive search economy where households have private information over their expected duration. With public information, households with low vacancy hazard rates pay lower rents and search in thicker rental markets. With private information, rentals are under-provided to long-duration households to discourage short-duration households from searching there. Ownership is attractive in part because it cures the private information problem. Using a novel data set of rental listings, we show that homeownership rates are high where rent-to-price ratios are low but rentals are scarce and that long-duration households sort into scarce rental markets. These patterns are consistent with the model only under private information.

1. Introduction

Why do some households buy their home while others rent? There is a long list of plausible frictions that may create meaningful differences in the value of owning versus renting a home to a household. Many of the frictions that favor renting, such as the higher transactions costs of buying and selling a house and the downpayment constraints in the mortgage market, appear in one form or another in nearly all life cycle models with a homeownership choice.[1] There is no such consensus on the frictions that favor owning, in part because they are under-modeled and under-measured.

One oft mooted friction is that rentals are scarce in some parts of the market. Some studies that have inserted this friction in a reduced-form manner into their models (e.g. by imposing that large houses are only supplied on the owner-occupied market) have been otherwise successful at explaining changes in homeownership rates over the life cycle (Chambers et al., 2009a), over time (Chambers et al., 2009b; Fisher and Gervais, 2011), and across locations (Amior and Halket, 2014), among others.[2] *In these models*, absent the friction, homeownership rates would be much too low; the data

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[1] E.g. Amior and Halket (2014), Campbell and Cocco (2007), Chambers et al. (2009a,b), Cocco (2005), Diaz and Luengo-Prado (2008), Fisher and Gervais (2011), Gervais (2002), Halket and Vasudev (2014), Iacoviello and Pavan (2013), Kiyotaki et al. (2011), Li and Yao (2007), Rios-Rull and Sanchez-Marcos (2008).

[2] Some other models simply assume a "warm glow" to owning (Iacoviello and Pavan, 2013; Kiyotaki et al., 2011). One class of frictions that may work both ways is risk in the housing market, as in Sinai and Souleles (2005). Tax wedges may encourage ownership (Diaz and Luengo-Prado, 2008; Gervais, 2002) but would be welfare distorting absent some other reason to own. Some theories have a user cost premium of renting over owning, perhaps due to excessive utilization of housing services on the part of renters (as in Henderson and Ioannides, 1983).

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would reject the models. In addition to being empirically necessary for many models, rental scarcity in some segments of the market is also casually intuitive: in parts of the market where homeownership rates are high, rentals are indeed few in number. This of course is tautological.

In this paper we build and examine the evidence for the first theory of homeownership in which rental scarcity is an equilibrium outcome rather than an input. Since owning and renting are just labels for different (perhaps many different) contracts to provide housing services, we model the homeownership decision and the availability of rental housing as outcomes of a contracting problem and a search problem. Houses are ex ante identical and households differ only according to their cost of owning and their expected duration of stay in a house, which may be private information.[3] Homeowners (which may be households or landlords) post contracts for housing services which specify a (potentially type-dependent) price for housing services as well as whether, after eventual separation, the current owner or the eventual occupant is responsible for finding the next tenant (a "rental" or "owning" contract, respectively).

Within the housing market in this economy, households can direct their search to a specific type of contract (so that each type of contract is its own "submarket") and are bilaterally matched to houses within that submarket subject to the frictions from competitive search theory (Moen, 1997; Shimer, 1996). In equilibrium, the vacancy rate associated with a particular contract adjusts so that the expected return of posting any contract is the same.

Our main results are twofold. First, when households' expected durations in a house are unobservable, an incentive problem in rental markets distorts market tightnesses[4] compared to the public information benchmark. In the economy where households' expected durations are public information, households with low vacancy hazard rates (long-duration households) pay lower rental rates and search in less tight submarkets than households with high hazard rates. However, when expected durations are private information, long-duration households search in tighter submarkets than short-duration households, and thus spend more time on average searching for a house (per separation spell), but pay even lower rental rates once matched. (The unique equilibrium is separating.) The intuition for the result is that in equilibrium housing is under-provided to long-duration households so as to discourage short-duration households from searching there. In this sense, private information causes housing scarcity in some rental submarkets.

In our economy, owning a house solves the private information problem as households internalize their separation hazards in their optimal search problems. However, owning comes at some heterogeneous exogenous cost (a reduced-form way to model the various more well-understood frictions in the owner-occupied market). Our second result is that households that expect to stay in their house long enough are more likely to choose to own rather than rent. The distortions from the incentive problem in the rental market pile-up: the deviations from the public information benchmark due to private information are larger in markets where the long-duration households search. Meanwhile an owning contract is always incentive compatible. If a household has a high enough expected duration, the distortions in the rental market due to the information problem are more likely to dominate her idiosyncratic cost of owning so that she prefers to own.

In addition to providing an equilibrium theory of homeownership, our theory also explains some perhaps puzzling stylized facts we obtain from a unique data set. We use a large, novel data set of for-rent and for-sale listings on Craigslist to show that, within a market (such as a city), the parts of the market (i.e. "submarket") where homeownership rates are high are also the parts where rentals are relatively cheap. This correlation, which is consistent with findings from Verbrugge (2008), Verbrugge and Poole (2010) and Bracke (2013) using alternative data sets and markets, is at first counter-intuitive. If the rent-to-price ratio is exogenous to household demand for homeownership, then one might expect homeownership rates to be higher in submarkets where the ratio is higher, not lower.

The solution is the correct notion of scarcity. Our data show that vacant rentals in submarkets with low rent-to-price ratios disappear from the market quickly, the submarkets where homeownership is high. In other words, households are more likely to search for owner-occupied housing not when the relative price of an equivalent rental is high, but rather when an equivalent rental is hard to find. Crucially, the data allow us to measure scarcity by measuring how quickly vacant homes are filled and not just by the equilibrium supply of rental housing in a submarket. To our knowledge, this is the first data on rental vacancies where a within-market analysis of the variation in submarket rental vacancy duration is possible.

The data also show that households that have relatively long expected durations in their homes tend to live in the submarkets where rentals are scarce. Given the costs of vacancy for landlords, long-duration households should be appealing tenants and yet the data indicates that rental housing for them is harder to find. Our model shows that this is consistent with a private information problem: only then does our equilibrium yield that rentals are relatively cheap where they are scarce. Moreover this same private information friction endogenously provides that long-duration households search in the scarce markets and also that more of these same households prefer to own. Furthermore, in equilibrium, free entry implies that submarkets with scarce rentals must have low rents. So rent-to-price ratios are low where homeownership rates are high, as in the data.[5]

[3] There is a long literature looking at mobility and homeownership choices. Deng et al. (2003) and Gabriel and Nothaft (2001) find considerable variation across households and Metropolitan Statistical Areas in rental vacancy rates and durations. Boehm et al. (1991), Cameron and Tracy (1997), Haurin and Gill (2002) and Kan (2000) all find relationships between mobility hazards and homeownership.

[4] Markets are less tight if households on average take less time to find a house, or equivalently if landlords take longer on average to fill a vacancy.

[5] Variations in households' marginal rates of substitution across submarkets could also potentially explain the correlation between expected duration and ownership rates (as in Sinai and Souleles, 2005) but only if the marginal rates of transformation between rental and owner-occupied housing varied similarly across submarkets. In our paper, rent-to-price ratios vary even though the marginal rates of transformation are constant.