

Equilibrium in the Housing Market

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Interest Rate Fluctuations and Equilibrium in the Housing Market (Job Market Paper)

In this paper, I study the general equilibrium of the housing market in an economy populated by overlapping generations of households. A contribution of the present paper is to solve for the housing market equilibrium in the presence of aggregate (interest rate) uncertainty with a realistic mortgage contract. In addition, households also face idiosyncratic uncertainty resulting from stochastic changes over the lifecycle in tastes (or need) for housing. In this environment, profit maximizing banks offer fixed-rate mortgage (FRM) contracts to home buyers. Mortgage rates are determined such that banks are indifferent between lending in the housing market and in the bond market. As seems plausible, each housing market transaction is subject to a fixed cost, which gives rise to S-s policy rules for housing transactions: existing home owners change the size of their houses only if there is a sufficiently large change in the state of the economy (i.e., in interest rates, in their taste for housing, etc.) Therefore, housing market transactions are infrequent, but typically large. Furthermore, due to the time-variation in interest rates, housing price movements are highly predictable. Therefore, individuals take future anticipated price movements into account which creates a feedback into current period housing decisions, and hence prices.

A plausibly calibrated version of the model is consistent with three empirically documented features of the housing market: (i) highly volatile housing prices and transaction volume, (ii) a strong positive correlation between transaction volume and housing prices, and (iii) a significant negative relationship between interest rates and housing prices, which can rationalize a large part of the recent boom in housing prices in the U.S. and around the world. An alternative way to express the last finding is that the interest elasticity of housing prices in our model is large---around -5, which is quite robust across different specifications and calibrations---implying that a 10 percent exogenous fall in interest rates results in roughly 50 percent rise in housing prices.

Housing Prices and Interest Rates: A Theoretical Analysis

(with Bulent Guler, Working Paper)

Although interest rates and housing prices seem to mostly have a negative relation in the data, the relation does not seem to be stable. For example, recent run up in global housing prices is generally explained by globally low interest rates. On the other hand, the annual correlation of interest rates and housing prices in the US is range from -1 to +1. Motivated by these observations, we formulate a two period OLG model to find out the form of the relationship between interest rates and house prices.

We solve the model analytically and obtain closed form solutions for both housing prices and allocations. It appears that the distribution of homeownership is also important for housing price dynamics. We show that housing prices in the equilibrium do not always have a negative correlation with interest rates.

Explaining the Gender Gap in Unemployment across Countries (Working Paper)

I model a mechanism which can generate most of the gender gap in unemployment observed in most of the OECD countries. The main components of the model are moral hazard, labor market institutions, and higher home productivity of women than men. The source of the moral hazard is the imperfect monitoring performed by the government. While labor taxes and hours of work affect the value of employment, monitoring level and home productivity affect value of unemployment. Higher home productivity of women makes them more likely to reject job offers and stay unemployed which causes higher unemployment level for women. I find that each component has quantitatively large effect on unemployment levels.