Difference in Land Intensities and the Rise in Dispersion of House Prices and Rents across U.S. Cities (Job Market Paper)

Since 1980, the dispersion of house prices across U.S. cities has almost doubled while the dispersion of rents has increased by 50%. As both prices and rents represent the cost of housing services, understanding the interaction between them is important in evaluating the change in living expenses, understanding housing demand, and predicting how housing markets respond to demand shocks and/or supply changes. Exploiting the fact that the majority of owners live in detached houses while most renters live in multi-family buildings, this paper examines the implication of land use difference between houses and apartments on the divergence of changes in the dispersion between prices and rents. I set up and solve a housing tenure choice model where owner-occupied houses take more land to build compared to rental apartments for each of the largest 181 cities. The model endogenously generates an increasing ratio between price and rent in land value. I calibrate the model to house prices, rents, and the fraction of households living in houses for the largest 181 cities in the U.S. in 1980. Feeding in the model population, income, and downpayment requirement in 2010, I show that the model can account for 82% of the large increase in house price dispersion, and 56% of the moderate increase in rent dispersion from 1980 to 2010.

Accounting for the Decline in Homeownership Among the Young

This paper shows that the documented drop in the young homeownership rates in the U.S. during recent years has different implications for households with various educational backgrounds. While college graduates are postponing home purchasing, a large fraction of non-college graduates have become long-term renters. This paper shows that the diverging homeownership dynamics between college and non-college graduates can be accounted for by an inelastic supply of houses combined with a change in the income distribution due to increasing population share of high permanent income college graduates and a widening gap in household income between college and non-college graduates. The change in the income distribution drives up aggregate housing demand and house prices. As a result, non-college graduates find owning less affordable, pushing down their homeownership rate at all ages. College graduates with steeper earning profiles postpone home purchasing. Using data for the 105 largest metropolitan areas in the U.S. over 1980 to 2010, I find evidence consistent with the equilibrium relationships implied by the model. The changing income distribution can account for the majority of the observed changes in young and middle-aged homeownership rates for both college and non-college graduates.

Demographic Change, Urbanization and the Housing Market

(with Yifan Gong)

This paper studies why housing prices have gone up despite the decline in the share of prime-age buyers of houses (i.e., population aging) in the U.S. from 1970 to 2010. We propose several factors that may counteract the negative impact of population aging on house prices and develop a general equilibrium model to quantitatively evaluate these explanations. We find that population aging, combined with international immigration and urbanization can account for around 30% of the observed housing price growth. Using population projections from the Census, we predict that the negative impact of population aging on housing prices will be dominated by the sustainable population growth: housing prices will keep growing but at a slower rate in the next fifty years.