Accounting for the Changes 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 more than doubled while the dispersion of apartment rents increased by 40%. The difference in the growth rates of price and rent dispersion is inconsistent with the prediction of the standard user cost model which treats rent as the dividend of housing assets. I propose a housing tenure choice model with heterogeneous agents where owner-occupied units (houses) and rental units (apartments) differ in their construction technologies. Houses are more land intensive than apartments and subject to a minimum lot size restriction. When increasing land demand drives up land price in expanding cities, the cost of houses grows faster than apartments, leading to a larger increase in price than rent. I calibrate the model to house prices and rents in the largest 183 U.S. metropolitan areas in 1980 and feed in the values of economic fundamentals - population, college share, income distribution of college and non-college graduates - that affect demand for houses and apartments, and land supply in 2010. The model generates the observed increase in house price dispersion and rent dispersion simultaneously. I find that the change in total population combined with the change in total land supply can account for 88% of the observed increase in house price dispersion and 100% of the observed increase in rent dispersion.

Accounting for the Decline in Homeownership Among the Young

Homeownership rates for young households in the United States have declined significantly since 1976. An examination of the ownership-age profile of college and non-college households suggests that while college graduates are postponing home purchasing, a large fraction of non-college graduates have become 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 a higher population share of 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 for 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 empirical 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.

Population Ageing, Urbanization and the Housing Market

(with Yifan Gong)

This paper investigates the impact of demographic change on the residential real estate market. We estimate a life-cycle housing tenure choice model to quantify the contribution of population aging, immigration and urbanization, on the equilibrium house price. A higher share of old population lowers the aggregate housing demand as older people are more likely to be sellers rather than buyers. Meanwhile, long-life expectancy, and population growth due to immigration and urbanization drive up total housing demand. We find that populating aging, international immigration and urbanization can account for around 30% of the observed housing price growth from 1970 to 2010. Using population projections from the Census, we predict that the negative impact of population aging on real estate price will be dominated by the sustainable population growth and the price of housing will keep growing but at a slower rate in the next fifty years.