

UCLA ECONOMIC LETTER

REAL ESTATE AND THE MACROECONOMY



A partnership between the UCLA Ziman Center for Real Estate and the UCLA Anderson Forecast sponsored by the Ziman Center's UCLA Rosalinde and Arthur Gilbert Program in Real Estate, Finance and Urban Economics

FEBRUARY 2018

Monthly condensed analyses of crucial real estate and economic issues offered by UCLA Anderson Forecast and UCLA Ziman Center for Real Estate. Here, Edward Kung, UCLA Assistant Professor of Economics; Kyle Barron, MIT Sloan School of Management Research Assistant and UCLA Economics graduate; and Davide Proserpio, USC Marshall Assistant Professor of Marketing, study how the increase in Airbnb listings leads to increases in rent and housing prices.

This Economic Letter is extracted from [The Sharing Economy and Housing Affordability: Evidence from Airbnb](#).

The Unintended Consequences of Home Sharing: Airbnb's Pressure on Affordability

By Kyle Barron, Edward Kung and Davide Proserpio

Economic theory suggests that the “sharing economy” improves economic efficiency by reducing frictions that cause capacity to go underutilized, and the explosive growth of sharing platforms (such as Uber for ride-sharing and Airbnb for home-sharing) testifies to the underlying demand for such markets. Critics argue, however, that much of the growth in the sharing economy has come from skirting regulations. For example, traditional taxi drivers face more stringent regulations than Uber drivers, and traditional providers of short-term rentals (i.e., hotels, beds & breakfasts) are required to pay occupancy tax while Airbnb hosts usually are not.

“We find that a 10% increase in Airbnb listings leads to a 0.42% increase in rents and a 0.76% increase in house prices.”

But beyond regulatory avoidance, home-sharing is subject to the criticism that platforms like Airbnb raise the cost of living for local renters, while mainly benefitting local landlords and non-resident tourists. It is easy to see the economic argument. By reducing frictions in the peer-to-peer market for short-term rentals, home-sharing platforms cause some landlords to switch from supplying the market for long-term rentals—in which residents are more likely to participate—to supplying the short-term market—in which non-residents are more likely to participate. Because the total supply of housing is fixed in the short run, this drives up the rental rate in the long-term market. Concern over home-sharing's impact on housing affordability has garnered significant attention from policymakers, and has motivated many cities to impose stricter regulations on home-sharing.

Our study assesses the impact of home-sharing on residential house prices and rents. Using a dataset of Airbnb listings from the entire United States and an instrumental variables estimation strategy, we find that a 10% increase in Airbnb listings leads to a 0.42% increase in rents and a 0.76% increase in house prices. The effect is larger in zip codes with a smaller share of owner-occupiers, a result consistent with absentee landlords reallocating their homes from the long-term rental market to the short-term rental market.

In our paper, we study the effect of home-sharing on the long-term rental market using data collected from Airbnb, the world's largest home-sharing platform. We first develop a simple model of house prices and rental rates when landlords can choose to allocate housing between long-term residents and short-term visitors. The effect of a home-sharing platform such as Airbnb is to reduce the frictions associated with renting on the short-term market. From the model we derive three testable predictions:

1. Airbnb increases both rental rates and house prices in the long-term market;
2. The increase in house prices is greater than the increase in rental rates, thus leading to an increase in the price-to-rent ratio; and
3. The effect on rental rates is smaller when a greater share of the landlords are owner-occupiers.

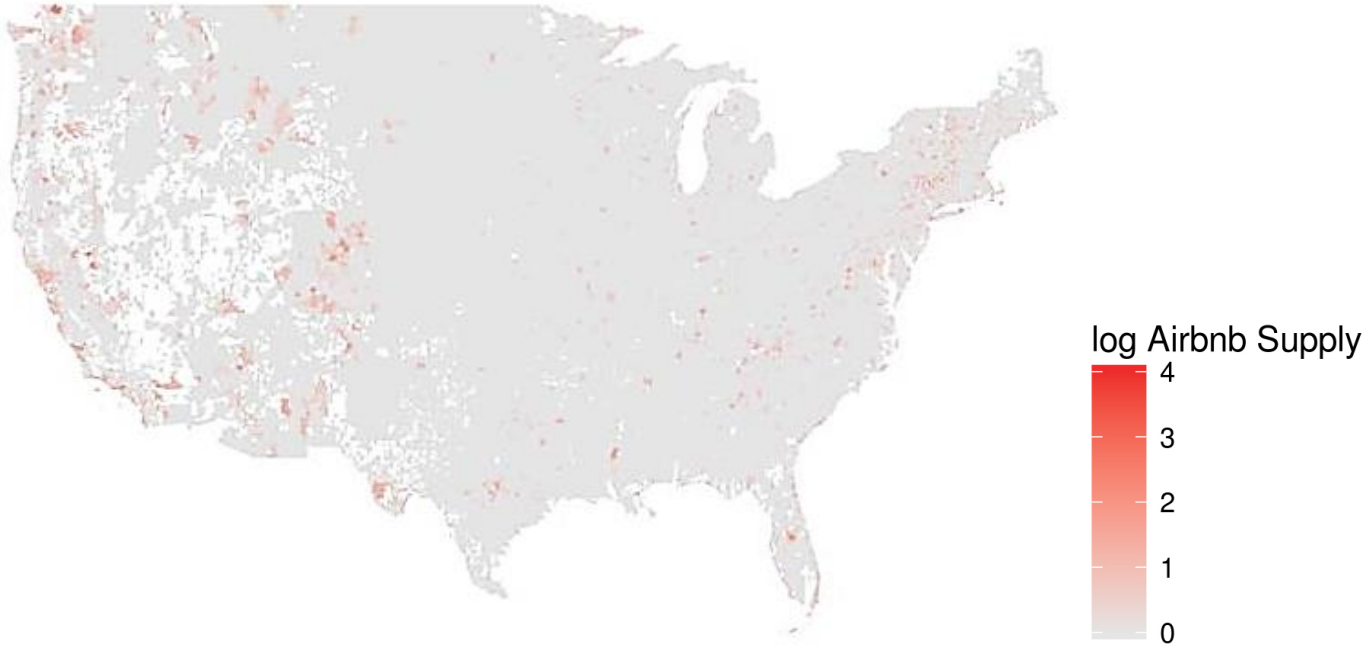
Intuitively, the owner-occupancy rate matters because only non-owner-occupiers are on the margin of substituting their housing units between the long- and short-term rental markets. Owner-occupiers interact with the short-term market only to rent out unused rooms or to rent while away on vacation, but they do not allocate their housing to long-term tenants.

To test the model, we collect primary data sources from Airbnb, Zillow, and the Census Bureau. We construct a panel dataset of Airbnb listings at the zip code-year-month level from data collected from public-facing pages on the Airbnb website between mid-2012 to the end of 2016, covering the entire United States. From Zillow, a website specializing in residential real estate transactions, we obtain a panel of house price and rental rate indices, also at the zip code-year-month level. Zillow provides a platform for matching landlords with long-term tenants, and thus their price measures reflect sale prices and rental rates in the market for long-term housing. Finally, we supplement this data with a rich set of time-varying zip code characteristics collected from the Census Bureau's American Community Survey (ACS), such as the median household income, population count, share of college graduates, and employment rate.

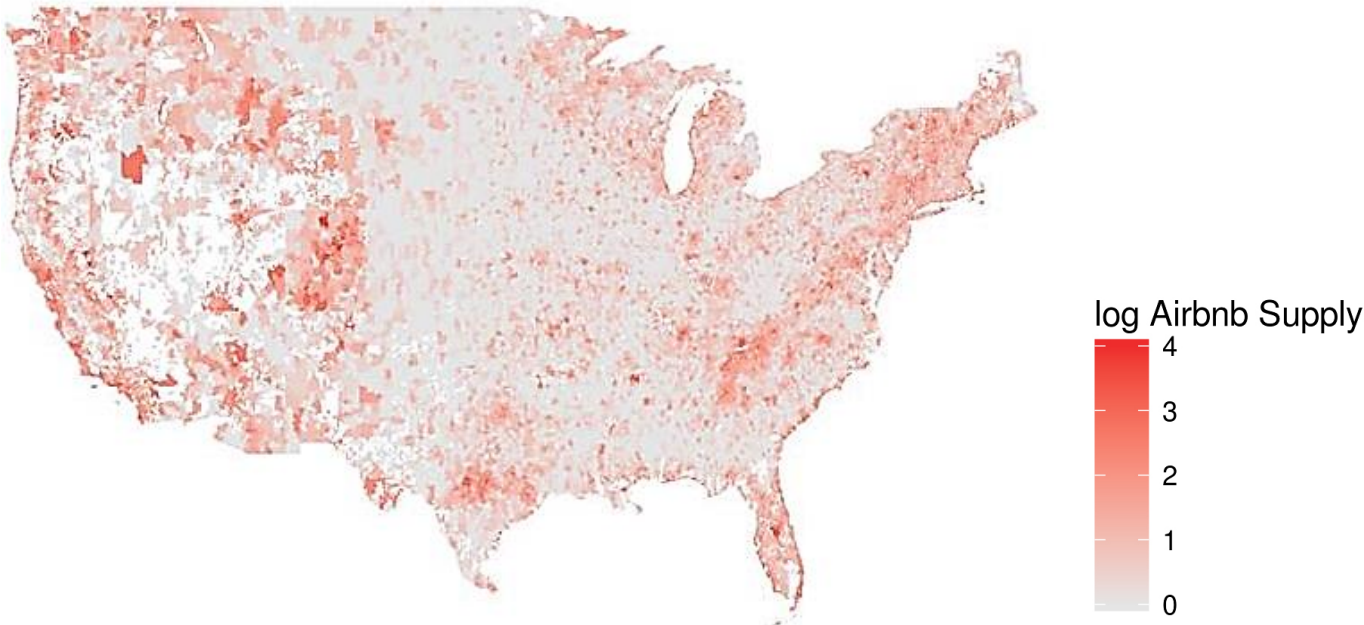
The model also predicts that the effect of Airbnb will be smaller if the market has a large share of owner-occupiers. To test this, we repeat the above regressions while allowing for the effect of Airbnb to depend on the share of owner-occupiers in the zip code. We find that the owner-occupancy rate significantly moderates the effect of Airbnb on the market for long-term housing. Going from a zip code that is in the 25th percentile of owner-occupancy rate to a zip code that is in the 75th percentile of owner-occupancy rate causes the rental rate impact of a 10% increase in Airbnb listings to go from 0.29% to 0.21%. We find similar results for house prices. These results are consistent with the model and suggest that Airbnb's impact on the long-term market depends on the number of landlords who are on the margin of switching between allocating their housing to long-term tenants versus short-term visitors.

The increases to rental rates and house prices occur through two channels. In the first channel, home-sharing increases rental rates by inducing some landlords to switch from supplying the market for long-term rentals to supplying the market for short-term rentals. The increase in rental rates through this channel is then capitalized into house prices. In the second channel, home-sharing increases house prices directly by enabling homeowners to generate income from excess housing capacity. This raises the value of owning relative to renting, and therefore increases the price-to-rent ratio directly.

Airbnb Listings by Zip Code 2011
Airbnb Zip Code Level



Airbnb Listings by Zip Code 2016
Airbnb Zip Code Level



Our paper contributes to the debate surrounding home-sharing policy. Critics of home-sharing argue that it raises housing costs for local residents, and we find evidence confirming this effect. On the other hand, we also find evidence that home-sharing increases the value of homes by allowing owners to better utilize excess capacity. In our view, regulations on home-sharing should (at most) seek to limit the reallocation of housing stock from the long-term to the short-term markets, without discouraging the use of home-sharing by owner-occupiers. One regulatory approach could be to only levy occupancy tax on home sharers who rent the entire home for an extended period of time, or to require a proof of owner-occupancy in order to avoid paying occupancy taxes.

