

## **Referee report on the paper “Urban House Prices: A Tale of 48 Cities” (No. 2015-13)**

### Summary

Average offer prices from 48 major cities from 24 countries in Europe are explained by four factors: income per capita, population density, unemployment rate and income inequality, as a cross-sectional regression. The authors find good in-sample fit, and they suggest that the deviation from the fitted price is a useful indicator of house price bubbles.

### Suggestions/comments

1. The authors suggest that the residuals from the regression can tell us something about housing bubbles. The paper uses data from 2012, a period during which house prices are relatively low (comparing to, say, in 2006). Does the same positive residual mean the same thing in two different periods? If the distribution of the residuals is depending on the sample period, it is not clear how should one make use of the regression to draw conclusions on housing bubbles. Out-of-sample test may be informative: if a city is “overpriced” this month, is there a tendency for its price to revert back to the mean?
2. The authors use offer prices from different cities. First, offer prices are different from transaction prices, and the amount of difference, among other things, depends on the bargaining power and other institutional factors in the housing market. The difference is likely to differ across cities. Second, the regression is assuming that the offer prices are comparable across cities. Since offer prices depend on the quality of the housing units (age, neighborhood, amenities...), it is not clear what the regression measures (for example, what if during a business cycle boom better housing units are offered more often in the market?).
3. Regulations differ among cities. Part of the price difference can be attributed to the different level of flexibility in the housing market. For example, a city that has rent control may lead to a “discount” in house price, comparing to a housing unit of otherwise equal quality under no such control. The authors may also want to look at how the importance of public housing (say, as a % of total housing stock) is related to the prices.
4. Since there are 48 cities from only 24 countries, the authors may be able to control for country fixed effects (which are related to regulations, among other factors). There are also seasonal effects in the housing market. The observations probably distribute differently from January to May for different cities, and the average price may include such seasonal fluctuations.
5. Since the number of observations (offer prices) for each city is different, do we want to weight each city equally? For example, if one city has much fewer observations, can one argue that the average price less reliable and hence should be weighted less?