

# Answer to the invited reader report 3 to the paper

Urban House Prices: A Tale of 48 Cities

April 9, 2015

## 1 Major 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?  
  
Our answer: This is a very useful remark. It would be feasible had we had observations for more than one point in time. Unfortunately, we only have data for 2012. However, as a future research we could envisage an analysis using additional point(s) of time. Say, in 2015.
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?).

Our answer: This is true and we are perfectly aware of these limitations, see, for example, our answer to the first invited reader comment. In part, the latter comment could be taken into account had we known the true composition of the housing stock in each city. In that case, we could compute not only quality- but also housing stock structure-adjusted price for each city.

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.

Our answer: This is true. In fact, there are myriads of factors affecting the price for dwellings in urban areas. Our purpose here was just to identify the over- and undervaluations. However, it might be a topic for future research — the attempt to figure out the contribution of regulations into the deviations of prices from their fundamental levels.

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.

Our answer: The inclusion of 24 dummies in a regression with 48 observations would drastically reduce the number of degrees of freedom without possibly bringing too much of an improvement. Our general experience with this kind of data shows us that there are hardly any seasonal effects in the offer prices for dwellings. By contrast, the number of dwellings offered for sale might be subject to seasonal effects.

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?

Our answer: We don't find such a weighting necessary. It would be necessarily *ad hoc* and, therefore, introduce more uncertainty than tackle.