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How well do individuals predict the selling prices of their homes? ☆

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ABSTRACT

The accuracy of property values estimated by homeowners is an open empirical question that requires an evaluation of the reported values using a market assessment. Using information on selling prices from the Health and Retirement Study and the American Housing Survey, and after accounting for possible measurement error in reporting and selection regarding those who we observe selling, we find evidence that homeowners overestimate the value of their properties by around 8% with an estimated range between 3.4% and 12.7% (95% CI).

1. Introduction and motivation

Housing wealth is one of the pillars of the well-being of Americans families. According to the Federal Reserve's Survey of Consumer Finances (SCF), the value of the primary residence alone represented around 50% of the average value of non-financial assets of U.S. households between 2001 and 2010, and non-financial assets represented between 58% and 66% of the value of total assets during that period.[1] Researchers who are studying the effect of household resources on important behaviors such as consumption, savings, and retirement, or who analyze policy interventions affecting the level of household wealth and its distribution, frequently rely on self-reported measures of home values available in many representative household surveys. Given its importance, more should be known about the ability of homeowners to accurately estimate the market value of their homes.

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[1] See Bricker et al. (2012) and Bucks et al. (2006). From Bricker et al. (2014) we can conclude that the share of housing out of non-financial assets has remained virtually unchanged up to 2013, while the share of non-financial assets as a share of total assets has declined a bit since 2010.

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The housing price bubble that developed and burst during the last decade is certainly suggestive of difficulties in predicting future home values among a non-trivial proportion of homeowners. More importantly, a number of researchers have provided evidence consistent with overestimation of housing values by owners (in the 3–6% range in recent studies). The first study was published by Kish and Lansing (1954) using the 1950 Survey of Consumer Finance (SCF) and it was not until Kain and Quigley (1972) that this research question was revisited.

The evidence to date mainly comes from two sources, the American Housing Survey (AHS) and the SCF, and is subject to a number of possibly serious limitations as a result. By design the AHS follows houses rather than homeowners. The SCF includes retrospective data on the value of a property and therefore allows researchers to compare self-reported home values to the original purchase price. However, the SCF is not a panel data set and hence does not include selling prices that could be used to evaluate self-reported home values using a measure that accounts for whether a house was recently sold/purchase in a reliable way (see Henriques, 2013; Agarwal, 2007; Kiel and Zabel, 1999, Goodman and Ittner, 1992).[2] Acknowledging as much, Kain and Quigley (1972, p. 803) state that "*the only accurate estimate of the market value of an owner-occupied house is its sale price at the time of purchase.*" However, due to data limitations, and what they perceive as possibly serious selection problems, their analysis, as well as the earlier study, focuses on comparisons of households' self-reports with appraisals by experts. The latter can be considered indirect market assessments, since information on similar properties is used, together with attempts to control for the observable characteristics of the property.

More recently, Bucks and Pence (2006), Henriques (2013) use a related approach to get at a similar question, comparing the self-reported home values (and also their changes in the case of Henriques, 2013) in the SCF with the appropriately indexed (using different types of Housing Price Indexes) original purchase prices. The findings, in spite of the different methodologies and time periods, are that the differences are not very large and that therefore homeowners seem to understand what drives the evolution of the prices of their properties.

In the latter approach, any test of the relationship between the indexed original self-reported purchase prices and the current self-reported values of the homes can be understood as a joint test of the accuracy of the self-reported home values and the reliability and representativeness of the Housing Price Index for the particular houses in the sample. This can be problematic, since it assumes there are no systematic unobservable differences between houses that get sold and those that do not. However, it is not obvious how the necessary selectivity correction would take place when using such data. Additionally, these studies do not investigate endogeneity concerns related to measurement error and unobservables correlated with both measures of interest.

Van der Cruijsen et al. (2014) use a similar approach to analyze the Dutch housing market during the recent crisis. They find that overestimation is quite pervasive and argue that the presence of loss aversion (in line with the findings in Genesove and Mayer, 2001) and endowment (tenure) effects can in part explain the fact that individuals remained optimistic about the value of their homes and the evolution of prices into the future, even in the midst of a housing crisis.

In a recent paper analyzing the Australian housing market, Windsor et al. (2014) compare self-reported home values with imputed sale prices using transactions in the same postal code. They then use hedonic regressions to try to control for the likely selection bias. The process is likely to lead to considerable measurement error and therefore endogeneity problems in the estimates. They find that on average the deviations are small and not significant, but in certain cities they are sizable and statistically significant. Also, most recently, Wang (2014) uses the PSID to compare self-reported home values with the values implied by the evolution of the Federal Housing Finance Agency (FHFA) Housing Price Index, while addressing endogeneity concerns using geographical and individual characteristics of the respondents. She finds evidence supporting overestimation of the price evolution during booms and underestimation of the price decline during busts. However, she does not control for the likely selection bias of comparing individuals' houses with a price process that only reflects houses that have been sold (and, as before, it is unclear how that could be accomplished given the data used).[3]

In this study, we overcome most of the potential caveats in the literature using a data set that has information on selling prices of the homes and using statistical techniques to address measurement error and selectivity issues. Specifically, we present an empirical methodology to estimate the accuracy of self-reported wealth measures using direct market assessments. The approach is applied to housing wealth, using supporting evidence on price dynamics from the American Housing Survey (AHS), and panel data from the Health and Retirement Study (HRS). These longitudinal data, and our methodology, allow us to compare the self-reported housing values with self-reported sales prices, without having to resort to a particular Housing Price Index and avoiding the implied joint test discussed above. We estimate a sales price equation as a function of self-reported housing wealth in the previous interview using OLS regressions, sample selection corrected specifications to control for the possible bias in

[2] The SCF has a much less used panel component in which respondents to the 1983 survey were re-interviewed in 1986 and 1989, and 2007 respondents were re-interviewed in 2009. For these particular years, respondents who had moved since the previous survey were asked about whether they sold their homes and at what price, but as far as we know that information has not been used by researchers.

[3] Kuzmenko and Timmins (2011) study the bias in reporting housing values among homeowners that do not sell their properties, and find that they tend to underestimate the value of their properties during booms and overestimate during the decline, since their information sets lag behind the market.