

How Well Do Individuals Predict the Selling Prices of their Homes?

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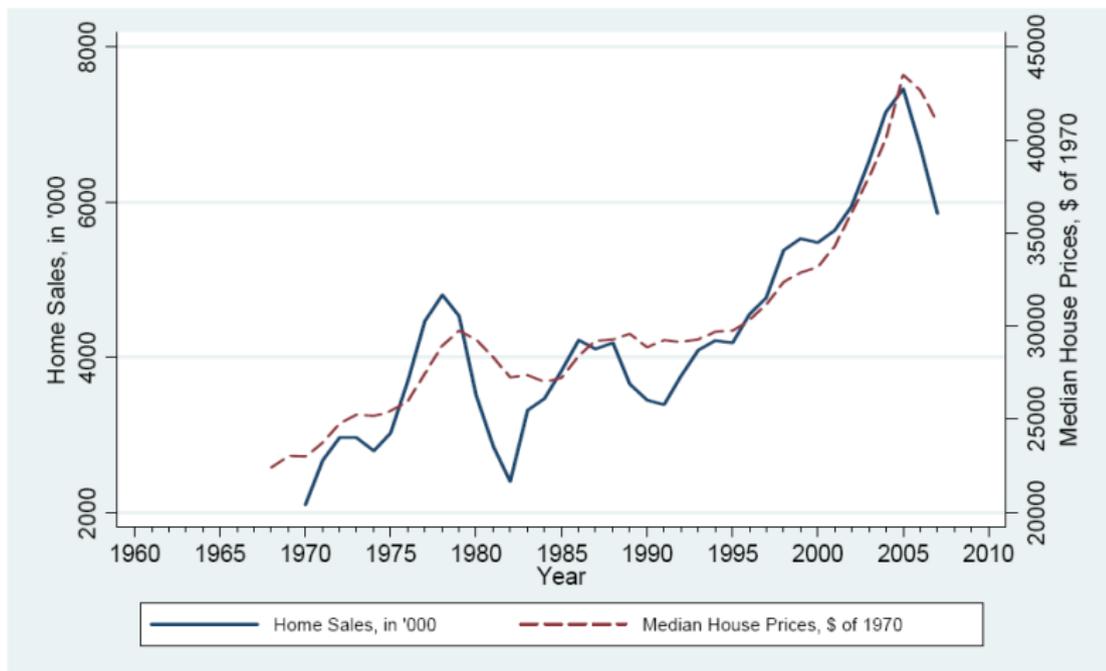
Motivation

- Self-reported home values are widely used in empirical work, either by themselves or as a component of net wealth.
- Accuracy of this measure is an open empirical question that needs a market assessment.

The Boom, the Bust, and Financial Engineering

- The most recent United States' housing market boom: low interest rates, growing sales, growing prices, and growing ownership rates.
- Development of new financial products at the micro and macro level, which needed the (very) good times to continue in order to maintain their financial viability.
- The housing market boom was fueled by optimistic expectations about the evolution of prices, which seemed to have led homeowners to accept the risky mortgage conditions offered by banks and mortgage lenders.

Home Sales and Home Prices in the U.S. 1968-2007



The Role of Household Expectations

- Households got into contracts with unbeatable initial conditions which were set to deteriorate quickly, especially if short-term interest rates were to increase.
- Given the relatively low initial investment needed to buy a house, they were hoping that in the worst case they would recuperate the transactions costs thanks to price appreciation. This included many who refinance their long-term mortgages.
- Many borrowed against the higher (perceived) value of their home through home equity lines of credit and second mortgages.

Research Questions

- Can we test the accuracy of self-reported house values using a measure based on a market assessment?
- Can we separate the effect of capital gains?
- Can we link our results with mechanisms at play during U.S. housing market cycles?

Findings

- Homeowners overestimate the value of their properties by between 5% and 10%.
- Capital gains are overestimated, and the original prices paid are reflected one to one in the selling prices.
- Strong correlation between accuracy and the economic conditions at the time of the purchase of the property.
Cyclicality of the overestimation of house prices.

Housing Wealth and Housing Prices

- Key component of net worth in just about any country, over 60% of average net wealth in the U.S., and over 80% in many other economies.
- Previous studies that assess the accuracy of self-reported home values: Kish and Lansing (1954), and Kain and Quigley (1972) rely on the comparison between self-reports and appraisals by experts.
- More recent studies do not overcome the lack of direct market assessment of those reports, and find overestimations of between 3% and 6%.

Health and Retirement Study

- Panel data set of Older Americans who were originally 51 to 61 in 1992-93, followed every two years, with some new cohorts introduced in the last waves.
- We use data from the housing wealth section, and a rarely used capital gains section where all the housing transactions in the period between interviews are reported.
- Some challenges in terms of matching properties bought and sold leads to some missing observations. Timing issues regarding the time of the sale require keeping track of the date of the sale.

Summary Statistics

Variable Names	Sellers				Non-Sellers	
	<i>Full Sample</i>		<i>Estimation Sample</i>			
	Mean	St. Dev.	Mean	St. Dev.	Mean	St. Dev.
Selling Price	140,022	114,673	148,549	126,029		
Self-Reported House Value	143,199	108,510	149,531	115,741	122,947	111,984
Original Purchase Price	79,929	85,219	83,300	91,382	56,838	74,982
Capital Gains	63,269	75,570	66,230	77,664	66,109	84,833
House Tenure	17.41	11.30	18.47	11.45	21.28	11.41
Home Equity	103,911	98,623	104,607	101,091	96,101	95,982
Bachelor's Degree	0.3779	0.485	0.404	0.491	0.28	0.448
Professional Degree	0.1411	0.348	0.155	0.362	0.109	0.311
Married	0.726	0.446	0.73	0.44	0.747	0.434
White	0.886	0.317	0.885	0.319	0.782	0.412
Age	61.52	5.84	62.57	5.33	61.53	5.65
Male	0.559	0.496	0.564	0.496	0.543	0.498
Earnings	87,820	113,314	85,507	111,116	75,525	119,157
Number of Observations	836		574		18,144	

Testing Accuracy: The empirical application

We start with a simple OLS specification

$$y_i^t = \beta X_i^{t-1} + \alpha T + \epsilon_i \quad (1)$$

- y_i^t is the market value at time t (self reported sales price)
- X_i^{t-1} is the self-reported house value at a point in time before the sale
- T represents the number of months between the time the market price refers to and the self-reported home value

If $\beta = 1$ then we would conclude that **homeowners are accurate** in predicting the market value of their properties.

Empirical Challenges

Measurement Error and Endogeneity

We adopt an IV strategy to instrument the self-reported house value. We do it by using the lagged self-reported house value as the main exclusion restriction.

Selection

Selling price is observed only if the house is sold. Likely selection on unobservables: those who sell may be different from those who do not.

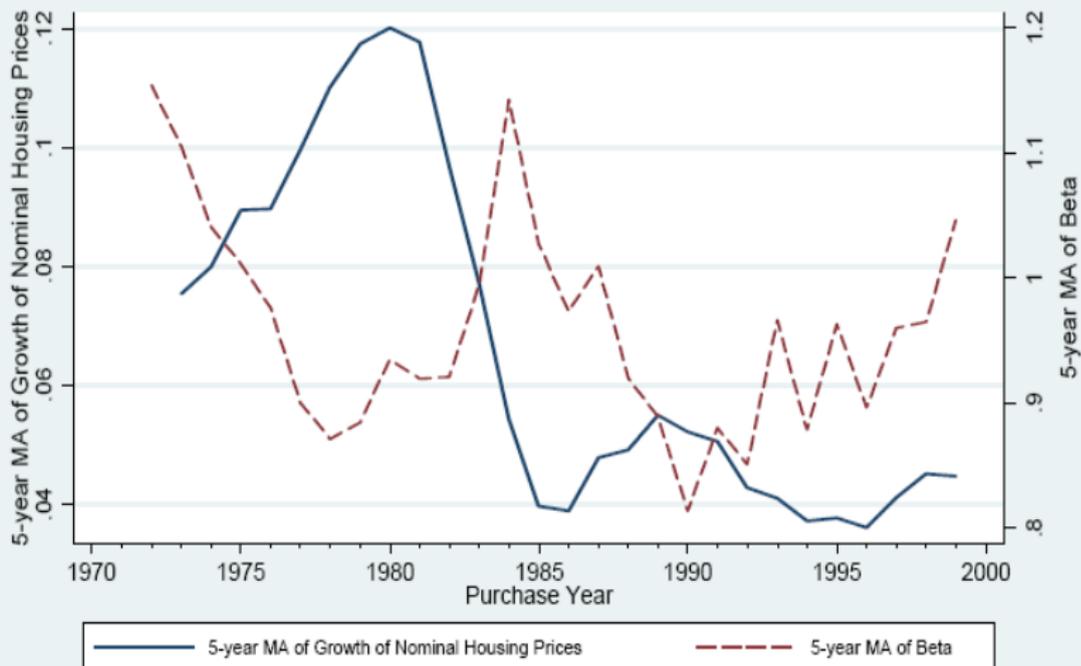
Accuracy of Self Reported House Values

Dependent Variable: Sale Prices	OLS		OLS, no constant		IV-GMM		Corrected IV-GMM	
	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Error	Coeff.	St. Error
Self-Reported House Value	0.9066	0.109	0.9129	0.0783	0.9382	0.0519	0.9603	0.0919
Months between the report and the sale	795.46	481.22	915.04	564.93	655.9	419.93	711.624	453.099
Constant	3,029	17,090	-	-	-	-	-	-
Inverse Mills ratio	-	-	-	-	-	-	-1,767.3	6,685.68
Adj. R-squared	0.6998		0.8744		-		-	
Test of over-identifying restrictions	-		-		Cannot Rej., P-val.=0.78		Cannot Rej., P-val.=0.92	
Test of weak instruments	-		-		Reject, F(2,571)=288.54		Reject, F(2,570)=56.26	
Number of Observations	574		574		574		574	

The Role of Capital Gains and Original Purchase Price

Dependent Variable: Sale Prices	OLS		OLS, no constant		IV-GMM		Corrected IV-GMM	
	Coeff.	St. Err.	Coeff.	St. Err.	Coeff.	St. Error	Coeff.	St. Error
Expected Capital Gains	0.8051	0.121	0.8122	0.096	0.91801	0.0576	0.876	0.0918
Original Purchase Price	0.978	0.117	0.9848	0.089	0.999	0.0878	0.9051	0.0754
Months between the report and the sale	833.85	485.59	965.23	562.74	550.74	443.10	608.90	440.39
Constant	3,330.68	16,742	-	-	-	-	-	-
Inverse Mills ratio	-	-	-	-	-	-	3,198.78	5,384.6
Adj. R-squared	0.7068		0.8774		-		-	
Test of over-identifying restrictions	-		-		Cannot Rej., P-val.=0.42		Cannot Rej., P-val.=0.32	
Test of weak instruments	-		-		Reject, F(2,570)=289.17		Reject, F(2,569)=96.57	
Number of Observations	574		574		574		574	

Accuracy of Self Reports vs. Median Housing Prices in the U.S.



Conclusions

- Homeowners overestimate the value of their properties between 5% and 10%.
- Most of the effect is through capital gains.
- Cyclical nature of the overestimation suggests an important role for price expectations in the current housing crisis.
- Future research into how the expected capital gains affect other behaviors, such as consumption, savings, and retirement is needed.