Residential Properties Taken Under Eminent Domain: Do Government Appraisers Track Market Values?

Authors

Terrence M. Clauretie, William Kuhn and R. Keith Schwer

Abstract

Local governments often use powers of eminent domain to take residential properties for public use. In such cases, the local government will use their appraisers to calculate an offer on the property. If the government's goal is to avoid costly (use of administrative resources) litigation it may have an incentive to over-appraise the properties. Such over-valuation would transfer the cost to taxpayers. This study compares the appraised value of sixty properties taken through eminent domain in Clark County, Nevada to comparable properties sold in free market transactions. The findings indicate a 17% over-appraisal of the properties taken by eminent domain. The findings also indicate that a government may use simple rules for appraising the properties, whereas the market employs more complex rules.

Introduction

Local governments often take residential properties through eminent domain actions for a host of public purposes such as schools, parks, roads and utilities. The government uses either in-house or independent appraisers to place a value on the taken properties. When the government takes the property it offers the appraisal-determined value as payment to the homeowner. In such cases, well-designed appraisals should result in values that would otherwise occur in competitive markets, resulting in payments that neither under- nor over-compensate property owners.

Compensation for eminent domain takings using government appraisals may, however, deviate from market values in three ways. First, the appraisal may severely under-value the property. If homeowners suspect under-valuation, they may initiate litigation. Since litigation involves considerable time and use of administrative resources, the government has an incentive not to under-value properties. Second, there may be a small or moderate under-evaluation. Property owners are likely to accept the offer rather than incur significant litigation costs

The significant coefficients in Exhibit 3 indicate that government appraisers valued some characteristics differently than the market. For the most part, the variables that exhibit differences in significance follow those in Exhibit 2. While square footage (and not square footage squared) is significant in the takings equation, the reverse is true in the market equation. As a result, government appraisers may value each square foot the same, regardless of size, and do not consider increasing or diminishing (homeowner) marginal utility from additional square feet.

Exhibit 3 also shows the results of the Tiao-Goldberger test for differences in the coefficient estimates. This test is employed to examine differences between the

Exhibit 2 | Empirical Results: Full Equation

	Linear		Semi-Log	
Variable	Coeff.	*t*-Value	Coeff.	*t*-Value
Panel A: Market Properties				
CONSTANT	10,108.37	0.45	10.59	86.56***
AGE	−633.58	0.74	−0.00346	0.74
AGESQ	35.38	1.64*	0.00016	1.33
BATH	24,225.00	5.20***	0.11145	4.38***
BED	−318.16	0.08	0.00511	0.25
DISTANCE	4.64	6.28***	0.00003	7.89***
FP	12,657.61	2.52**	0.07921	2.89***
GAR0	−13,633.11	2.10*	−0.11025	3.11***
GAR1	1,070.45	0.04	0.03782	0.27
GAR2	−1,660.24	0.35	−0.01821	0.61
ICOM	36,197.13	3.80***	0.17331	3.33***
JAC	21,992.60	3.82***	0.09370	2.98***
POOL	9,075.81	2.05**	0.07624	3.16***
ROOMS	658.54	0.21	−0.00755	0.45
SEPTIC	33,615.42	3.48***	0.23201	4.39***
SF	5.23	0.30	0.00037	3.96***
SFSQ	0.01	2.56***	−3.96E-08	2.33**
UPGRADE	1,635.50	0.25	−0.01335	0.37
1993	−23,032.17	1.14	−0.22012	1.99**
1994	−9,952.78	2.28**	−0.09277	3.89***
1995	−1,151.58	0.26	−0.00979	0.40
Adj. R^2	0.741		0.760	
F-Statistic	50.53***		55.77***	

two models. The null hypothesis for each Tiao-Goldberger test is $\beta_{i(m)} = \beta_{i(e)}$, where coefficient $i = 1$ to k, and m and e refer to the market and eminent domain model, respectively. The Tiao-Goldberger test is F-distributed with $(L - 1, N_{(m)} + N_{(e)} - Lk)$ degrees of freedom. The value is calculated as:

$$F_{TG} = \frac{\sum_{j=1}^{L} \frac{(\hat{b}_{ij} - \overline{b}_{in})^2}{P_{ij}}}{\sum_{j=1}^{L} SSE_j} \times \frac{\sum_{j=1}^{L} (T_j - k_j)}{(L - 1)}, \tag{2}$$

where: $\overline{b} = \frac{\sum_{j=1}^{L} \frac{\hat{b}_{ij}}{P_{ij}}}{\sum_{j=1}^{L} \frac{1}{P_{ij}}}$, L represents the number of models being compared (two in this case), T_j is the number of observations in Model j, k_j is the number of variables in Model j (including the intercept), $\hat{b}_{ij}$ is the OLS coefficient estimator for parameter i in Model j, and P_{ij} the diagonal element for the ith parameter of the $(X'X)_j^{-1}$.

The results indicate that the two models value differently distance to the airport, the presence of a septic system, square feet, square feet squared and an upgrade. The Tiao-Goldberger statistic indicates that a significant difference exists in the value placed on the square footage characteristic. This suggests government appraisers may determine value primarily by assigning a value per square foot without regard to size. Also, the difference in the coefficients on the septic dummy variable indicates that the market placed greater weight on lot size than did the government.

Finally, a determination was made as to whether the government valuation of the total property was biased (either upward or downward). The coefficients in the ''market'' equation (Exhibit 3) were used to estimate a value for the 60 properties taken by eminent domain, estimating the value as if they were sold on the market. This estimated ''market'' value was then regressed against the appraised value used in the taking. Statistically significant conformity of market and appraised values will occur with an intercept coefficient insignificantly different from zero and a slope coefficient not significantly different from one. The resulting equation is:

$$\begin{aligned} MV = {} & 47621.97 + .5962\ AV \\ & (488)^{***} \quad (13.05)^{***} \\ & \text{Adjusted-}R^2 = .741\ F\text{-Statistic} = 170.38^{***} \end{aligned} \tag{3}$$