Estimating the Value of the Historical Designation Externality

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Abstract

Purpose
A long-standing argument for historic preservation of houses has been the positive externalities that it produces. This paper quantifies the externality associated with the designation of historical houses in San Diego, California under the Mills Act.

Design/Methodology/Approach
The Mills Act allows for individual houses to be designated as historically significant. This results in neighborhoods where historically designated houses are side-by-side with houses with no particular historic significance. The positive externality hypothesis predicts that the value of a house should be a function of the number of historically designated houses within the neighborhood. The proximity of historically designated houses on the sales price of other non-historic houses is valued using hedonic regression analysis.

Findings
The results suggest that a house's value is increased by 3.8% by having a historical house within 250 feet, and by 1.6% by having a historical home located between 250 and 500 feet away. Under the Mills Act, property taxes are lowered on the historically designated properties, costing local governments tax revenues. Based on the results presented in this paper, the overall taxable basis for the neighborhood increases by $1.8 million for each historical home. Estimates are provided that show that local governments might expect a net tax revenue gain of $14,000 per house per year.

Originality/Value
The Mills Act is a market-based approach to historic preservation. Homeowners are encouraged to pursue designation of their property for property tax reductions. This paper demonstrates that local governments also gain through this program through higher property tax revenues.

1. Introduction

California has adopted a fairly unique approach to ensure that historically significant structures are maintained. In most states, local governments designate historic districts, and place restrictions on the properties within those districts. California has adopted a more market-based approach. Under the Mills Act, municipalities can set up programs that convey historical designation on specific structures. In return for maintaining the historical integrity of the structure, the property owners receive a reduction in property taxes.

Rapidly increasing real estate prices in California during the 1960's led to significant pressure to develop agricultural land. The California state legislature responded by passing the California Land Conservation Act of 1965. More commonly known as the Williamson Act, this legislation allows for significant reductions in the property taxes of agricultural property in exchange for an

agreement by the property owners to restrict development. Local governments and property owners enter into a 10-year contract, renewed annually. Property taxes are based on the agricultural use of the land rather than the market value. The Open Space Subvention Act of 1972 allows for partial compensation to local governments for loss of tax revenue associated with properties covered by Williamson Act contracts. More than 2/3 of California's 29 million acres of ranch and farmland are currently covered by Williamson Act contracts.

Using the Williamson Act as a model, The Mills Act of 1972 is designed to protect historically significant structures from significant redevelopment or demolition. Local governments are authorized to enter into 10-year contracts with homeowners to maintain the historical integrity of their homes. In return, property taxes are significantly reduced. One major difference between the Williamson Act and the Mills Act is that there is not a state mechanism to compensate local governments for any loss in tax revenue arising from Mills Act contracts.

The property tax rate for houses in California is set at approximately 1% of market value upon the sale of the property. Real property may be reassessed every year, however Proposition 13 limits the increase in the taxable basis of the property to a 2% per year. If the property is either sold or significantly remodeled, the taxable basis is reset at the market value. Under the Mills Act, the taxable basis is determined by the county assessor. The assessor sets the taxable basis as the estimated capitalized value of the imputed rental stream for the property. The resulting savings in property tax liability under the Mills Act ranges from 40 to 80 percent.

The City of San Diego has led the State of California in the writing of Mills Act contracts. There are currently over 805 structures covered by Mills Act contracts within the City. The City of Los Angeles has the second most with about 220 structures covered. A recent analysis by the local paper, *The San Diego Union-Tribune*, estimates that the city is losing property tax revenues of $4.7 million annually. This estimate certainly overestimates the losses as not all property tax revenue remains in the hands of local government. For example, over 40% of property tax revenues are earmarked for public education and are sent to the state for redistribution. Nevertheless, there is a growing feeling that the costs of this program far exceed the benefits.

This paper estimates the impact that Mills Act houses have on the value of houses in the surrounding neighborhood. If a positive externality does arise from the maintenance of historic houses, then the value of the externality should be capitalized into the price of the surrounding houses. The next section reviews the literature on the relationship between historic designation and property values. The following two sections describe the data and the methodology employed. The empirical results are then examined with some concluding remarks.

2. Literature Review

There is a large body of research on the effects of historic designation on property values. However, the bulk of this work has focused on the use of historic districts as the means for historic preservation. Coffin (1989) provides one such example, using data from two cities in the western Chicago suburbs. Examining sales data from 1984 – 1987, Coffin estimates that the creation of historic districts in these two cities caused housing prices to increase in the district by approximately 6-7%. This result was statistically significant in only one of the two cities. However, it was significant in the city that had restrictions on land use incorporated into the district, suggesting that buyers were

willing to pay a premium in the historic district providing that there was some restrictions placed on possible redevelopment of the district.

In a similar approach, Ford (1989) demonstrates that historic districts have a positive and significant impact on housing prices using data from Baltimore, Maryland. Asabere et al. (1989) provide a different result when they control for very detailed house specific data. The authors measure the effect that particular architectural styles have on the premiums that house buyers are willing to pay. Newburyport, Massachusetts serves as the location for this study. With detailed information about the architectural style for each house sold, the authors were able to separate the attributes of an individual house from the historic district. For the most part, being located within a historic district was not statistically significant in determining house value when taking into account the age and architectural style of the house.

Asabere and Huffman (1991) and Asabere and Huffman (1994) both provide further evidence that location in federally certified historic districts have positive and significant impacts on the value of single-family homes. Clark and Herrin (1997) use historic preservation districts in Sacramento, California to test the degree to which these districts create an increase in housing values. They find that in four of the six historic districts they examine, location within the district has a positive and significant impact on housing values. Leichenko et al. (2001) use a sample of nine cities in Texas to further test the effects of historic preservation districts. Their results suggest that the average property value is increased from 5 to 20 percent within historic districts. Furthermore, the type of designation, whether federal, state or local, tends to have some impact on housing values.

Using classic cost-benefit analysis, Lahr et al. (2003) study the effect of historic preservation in Memphis, Tennessee. The authors find that not only are property values on average $7,500 higher in historically designated neighborhoods but also appreciation in housing values over the period 1998 to 2002 was almost 10 percent higher in the historic districts. In addition to the economic impact of heritage tourism, the authors also estimate the value of historic restoration. They find that historic preservation in Shelby County supports 1200 jobs, $26 million in taxes and $54 million in income annually.

Narwold et al. (2008) look at the value of historic designation on a house-by-house basis. Using the Mills Act as the historic designation mechanism, the authors find that houses with a Mills Act contract receive a 16% premium over similar houses in the same neighborhood. The size of this premium seems to exceed the capitalized value of the tax benefit available under the Mills Act and suggests that either there is a quality difference in these houses not captured by the structure specific characteristics, or homebuyers are willing to pay a significant premium for a historically designated house.

In a similar vein, Coulson and Leichenko (2001) examine the effect of individual house historical designation on surrounding properties. The City of Abilene, Texas offers homeowners a choice of two different types of tax breaks in exchange for historical designation. The homeowner can choose to have their property taxes reduced by either $200 or 20% (whichever is greater) or a project-based tax break based on approved improvements to the property. The authors simply count the number of historically significant houses within the census tract to capture the proximity effect of having historic homes close by. Their results suggest that the value of a house increases by 0.14%

for each additional historical house within the census tract. This result is problematic for several reasons. The count of the number of historical houses by census tract may actually be capturing some other census tract specific characteristic such as levels of household income. Furthermore, there is reason to believe that value of having a historical house in the neighborhood will be a declining function of distance even within a census tract.

A review of the literature identifies several issues that this study aims to address. For the most part, historic districts have been shown to support higher housing prices. However, property owners have continued to fight some attempts at creating districts, which suggests that even though their property values might potentially be higher in a historic district, their property values might be even higher if given the freedom to redevelop without constraint. By looking at only those cases where individual property owners choose to participate in historic preservation, this drawback can be eliminated. Furthermore, using a more accurate measure of proximity, better estimates of the positive externality may be developed.

3. Methodology

The hedonic price model developed by Rosen (1974) provides the methodology to measure the proximity effect of Mills Acts houses on non-Mills Act single-family home values. This technique has been used extensively in economic and real estate research. Boyle and Kiel (2001) provide a survey of the literature surrounding the use of hedonic pricing models to value environmental issues. Mitchell (2000) and Clark and Herrin (2000) both use hedonic pricing models to evaluate the effects of school quality on housing prices. Colwell et al. (2000), Carroll et al. (1996), and Irwin (2002) all use hedonic pricing models to value different land uses on housing values.

The value of a house is just assumed to be equal to the summation of the value of its attributes. These attributes include both characteristics of the structure as well as characteristics of the neighborhood. In addition, there may be market specific attributes that affect the house value. Suppose that there are i structural characteristics denoted S_i, j neighborhood characteristics denoted L_j, and k market characteristics denoted M_k. The log-linear regression model may then be written as:

$$\ln(P) = \alpha + \sum_1^i \beta_i S_i + \sum_1^j \lambda_j L_j + \sum_1^k \mu_k M_k + \varepsilon, \qquad (1)$$

where P is the sales price of a house, α, β, λ and μ are parameters, and ε is an error term. The coefficient of any particular attribute can be interpreted as the expected percentage change in property value given a one-unit increase in the attribute. In this study, two variables are constructed to count the number of Mills Act houses within set distances of the sold house. The coefficients on these two variables measure the effect of the proximity of historically designated houses on the sale value of a house.

4. The Data

Not surprisingly, Mills Act contracts in the city of San Diego are concentrated in older neighborhoods. Two zip codes in particular, 92103 and 92104, contain over half of all Mills Act contracts within the City. These two zip codes are contiguous and share many similar attributes including schools, parks and proximity to downtown and the beaches. Using DataQuick Information Services, 384 single-family residences are identified as having been sold during the period January 1, 2005

through December 31, 2007. Due to incomplete information on some of the property attributes, this sample is reduced to 370 houses. Table 1 presents the descriptive statistics of the data set.

[Table 1]

These two zip codes represent a relatively higher tier of housing with the City of San Diego. The proximity to downtown and the beaches, and the general size and condition of the housing stock result in the median housing price of $799,500 for houses sold over this period. For San Diego, these houses are quite old with an average age of 65 years. Using GIS techniques, two buffers are developed around each house that was sold. The first buffer counts the number of Mills Act houses within 250 feet of the house that sold. On average, each sold house had 0.42 Mills Act houses with 250 feet. The second buffer counts the number of Mills Act houses that are with 250 to 500 feet of the sold house. On average, each house that sold had 1.2 Mills Act houses over this distance.

5. Model and Results

Using Equation 1, the hedonic pricing model is estimated using the data set. The structural characteristics for the houses includes the number of bedrooms, the number of bathrooms, the total square footage of the house, the total square footage of the lot, the number of garage spaces, age and age squared (to allow for non-linearities with respect to age), and a dummy variable for whether the house had a pool or not. To capture some of the neighborhood effects, the regression includes a series of 10 dummy variables for the different census tracts within these zip codes. In addition there are the two proximity variables for Mills Act houses. The housing market entered a correction over this time period so a series of 11 dummy variables is also added to account for the quarter in which the house was sold.

[Table 2]

Table 2 presents the results from two estimations. The first estimation uses sales price as the dependent variable, while the second estimation uses the natural log of sales price. Both models exhibit fairly strong explanatory power as evidenced by adjusted R^2 values of 0.72 and 0.724. Most of the house specific characteristics are statistically significant with the expected signs. By way of example, the results suggest that for each additional 100 square feet in structure size, the expected increase in house value would be $33,000 from the linear estimation, or 2.65% from the log-linear estimation. Age is not significant in the linear estimation, but becomes quite significant in the log-linear estimation. The results suggest that housing prices increase with age in this neighborhood, reaching a maximum valuation at about 80 years, which is at the upper range of houses within this sample. Homebuyers seem to be placing a premium on the age of a house in these neighborhoods.

The two proximity variables are significant in both regressions. The results from the log-linear regression suggest that the value of a house increases 3.76% for each additional Mills Act house within 250 feet. For Mills Act houses within 250 to 500 feet, this impact is reduced to 1.63%. Evaluated at the median housing price of approximately $800,000, this means that a Mills Act house within 250 feet increases a house's value by $30,000. A Mills Act house within 250 to 500 feet translates into an increase in house value of $13,000. These results are similar to, though slightly smaller than, the results from the linear estimation.

Several alternative specifications of the model were tested to determine the overall robustness of these estimations. Alternative functional forms of the site and structure variables contributed little to the explanatory power of the estimations, and did not alter the primary results regarding the significance and magnitude of the coefficients on the proximity variables. Variance inflation factors for each of the independent variables indicate that multicolinearity is not an issue in these estimations.

The results presented above allow for a simple cost-benefit analysis of the Mills Act contracts in these neighborhoods. Assume that the average reduction in property taxes resulting from a Mills Act contract is 50%. On a median house price of $800,000, this represents a loss in tax revenue of approximately $4,000 per year. As noted earlier, this loss in property tax revenue does not accrue solely to the local government. Nevertheless, it can be shown that this loss in property tax revenues should be more than offset by an increase in the value of the surrounding properties. Table 3 presents an analysis of the increase in the taxable value of surrounding properties.

[Table 3]

An analysis of the distribution of the Mills Act houses shows that on average there are 24 houses within 250 feet of a Mills Act house, and an additional 85 within 250 to 500 feet. If the value of each of these houses were to increase as indicated by the coefficients from the log-linear regression, the total increase in the taxable value of the surrounding neighborhood would increase by $1.8 million. This suggests that the local government could expect an additional $18,000 in property taxes per Mill Act house, or a net benefit of $14,000 per house per year.

6. Conclusion

Historical preservationists have long argued that programs that protect historically significant houses create a positive externality for the houses in the surrounding neighborhood. California's Mills Act presents a unique opportunity for the measurement of this externality. The Mills Act allows local governments to protect houses individually, rather than through districts, by giving property tax relief to the homeowners. Previous research has shown that the value of this tax benefit to the homeowner is very significant, increasing property values by 16%. However this program costs the local government in terms of lost property tax revenue.

The results presented in this paper suggest that the loss in property tax revenue is more than compensated for by a general increase in the property value of other houses in the neighborhood. The value associated with the proximity of a historically significant house in the neighborhood varies with distance. For distances up to 250 feet, a historical house adds 3.7% to a house's value with this amount decreasing to 1.6% for distances of 250 to 500 feet.

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Table 1

BACK

Descriptive Statistics of the Data Set

Variable	Mean	St. Deviation	Minimum	Maximum
Sale Value	$916,903	$265,000	$265,000	$4,000,000
Bathrooms	2.09	0.91	1	5.5
Bedrooms	2.91	1.09	1	10
Garages	1.21	0.84	0	4
Pool	0.09	0.28	0	1
Structure ft²	1,786	878	480	5,533
Lot ft²	9,369	8,210	1,400	48,351
Age	61.2	22.8	7	99
Buffer 250	0.43	0.78	0	3
Buffer 250 - 500	1.18	1.59	0	9

n =370

Table 2

BACK

Results for the Linear and Log-linear Models

Variable	Linear Model		Log-linear Model	
	Coefficient	Std. Error	Coefficient	Std. Error
Constant	-98,296	155,716	12.51***	0.15
Bathrooms	67,877***	27,615	0.061***	0.026
Bedrooms	-33,833**	18,909	0.007	0.017
Garages	98,219***	19,477	0.097***	0.018
Pool	262,931***	51,502	0.111***	0.049
Structure ft²	330***	32.4	2.65E-04***	3.08E-05
Lot ft²	17.27**	7.49	1.10E-05*	7.11E-06
(Lot ft²)²	-0.0004**	0.0002	-3.54E-10**	1.82E-10
Age	2,825	3,532	0.0094***	0.0033
Age²	-6.87	30.0	-5.88E-05**	2.85E-05
Buffer 250	32,005*	21,358	0.037**	0.020
Buffer 250 - 500	20,400**	10,530	0.016**	0.010
n = 370	Adj. R^2 = 0.720		Adj. R^2 = 0.724	

*** - Significant at $\alpha = 0.01$, ** - Significant at $\alpha = 0.05$, * - Significant at $\alpha = 0.10$

Table 3

BACK

Estimating the Value of Historical Designation on Surrounding Houses

Proximity to a Mills Act House	Number of Houses within Buffer	Increase in Taxable Value per House	Increase in Taxable Value by Buffer
Within 250 ft	24	$30,000	$720,000
250 to 500 ft	85	$13,000	$1,105,000
		Total Increase in Taxable Value	$1,825,000

Evaluated at a median house value of $800,000,
using the log-linear estimation results.