Historic Preservation and Residential Property Values: An Analysis of Texas Cities

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Summary. Designation of historic districts is increasingly used as a tool to revive or halt the deterioration of central-city neighbourhoods. While historic designation is generally thought to have a positive impact on property values, evidence on this issue is mixed. One limitation of previous research is that it typically focuses on historic neighbourhoods in one city and thus bases its conclusions on a very limited sample. This study expands upon previous work by examining the effects of designation on property values across a larger set of cities. The study employs hedonic regression models to estimate housing prices in historic districts and comparable neighbourhoods in nine Texas cities. Results suggest that, in most cases, historic designation is associated with higher property values.

1. Introduction

Historic designation has become an important tool in efforts to preserve central-city neighbourhoods and to promote urban economic development (Listokin *et al.*, 1998; Slaughter, 1997; Rypkema, 1995; Wojno, 1991). Designation of historic districts has been employed on a broad basis in the US since the 1960s, following legal decisions that upheld landmarking and passage in 1966 of the National Historic Preservation Act (NHPA) (Listokin, 1986). The act gave the Secretary of the Interior the authority to maintain a National Register of Historic Places, comprising districts, sites, buildings and objects of local, state or national historic significance (Wojno, 1991, p. 297). In addition, many municipalities have established local historic registers that allow local governments to establish historic districts and to designate properties as historically significant. Although establishment of many local historic districts preceded NHPA—for example, Charleston, South Carolina, established historic district zoning in 1931 (Lockhard and Hinds, 1983)—the rate of establishment of local registers dramatically accelerated after 1966 (Listokin, 1986). In 1966, there were approximately 100 local historic district commissions in the US. Presently, there are more than 2000 such commissions (Listokin *et al.*, 1998).

One of the main justifications for designation of a historic district within a city is that it provides a means to protect a historic neighbourhood from physical deterioration. With regard to property values, however, designation of a historic district may be either value-enhancing or value-detracting.

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Historic designation is thought to have a positive impact on property values by providing a form of insurance of future neighbourhood quality. The prestige of official landmark designation in conjunction with assurance that its desirable historic amenities will be fostered into the future by public regulation, may make property-owners in historic districts more willing to invest in rehabilitation and maintenance of their properties. One study of New York City, for example, concluded that historic district designation, by fostering neighbourhood pride and other attributes, "serves to strengthen both property values and social fabric" (New York Landmarks Conservancy, 1977, p. 2).

In addition to direct effects on property values in a district, historic designation is also thought to have positive spillovers for neighbouring areas, whereby designation of a district leads to a ripple effect of rehabilitation and upgrading of properties in surrounding neighbourhoods (Listokin *et al.*, 1998; Rypkema, 1994; Coulson and Leichenko, 2001). Thus, historic designation is seen as more than just a way to preserve historic buildings; it is also increasingly regarded as both a community preservation and an economic development strategy. A recent article noted that economics and revitalisation have taken their rightful places as the pillars upon which the preservation ethic is based (Rypkema, 1995). A prime example of the growing recognition of the linkages between preservation and local development can be seen in the Community Partners Program, a new initiative of the National Trust for Historic Preservation, which aims to demonstrate the "effectiveness of preservation-based community development" (National Trust for Historic Preservation, 1998, p. 1).

There are, however, a number of potential value-detracting aspects of historic designation. Designation of a historic district may impose restrictions on alterations and demolition (or it may at least require administrative review and/or some delay of such actions) and it may require maintenance of exterior ornamentation and other historic façade treatments over and above those required in the jurisdiction's general maintenance code. For example, in the city of Abilene, owners of designated properties must apply for a 'certificate of appropriateness' (C of A) prior to performing any type of work on the property's exterior (Coulson and Leichenko, 2001). A 'C of A' is, in fact, a requirement in many of the 2000 or so communities with local landmarking. Furthermore, maintenance work on the historic property is often more expensive than it might otherwise be because it has to conform to fairly rigorous guidelines (for example, only certain types of paint may be allowed). These landmark restrictions and demands can exert a downward pressure on prices.

In addition to control over a property's appearance, designation may also detract from a property's value by prohibiting the conversion to other uses or to a more intensive use. This type of argument would suggest that, in some instances, designation of historic districts might not reflect the 'highest and best' use of land—i.e. the most profitable use incorporating those uses that are legally permissible, physically possible and financially or economically feasible (Kinnard, 1971, p. 39).

The practice of historic designation also raises a number of broader legal and equity-related issues. These issues have been addressed in literature on preservation and property rights and on urban renewal and gentrification (see, for example, Smith and Williams, 1986; Smith, 1996; Schuler *et al.*, 1992) and therefore will be only briefly described. With regard to the legal aspects of designation, debate continues to surround the issue of whether designation is a 'taking of property'. The courts have overwhelmingly decided that designation is not a 'taking' but rather a police power regulation that justifiably furthers the public's health, safety and welfare while recognising the rights of private property-owners *(*see, for example, *Penn Central Transportation Company v. New York City*, 438 vs. 104 [1978]); yet designation's property value impact continues to be discussed (as does the more general

issue of public land-use regulations) in both legal and non-legal forums (Duerksen, 1983; Rypkema, 1994; Miller, 1998).

Other issues raised include equity considerations. For example, how should the burden of a public good—in this instance, preservation—be borne and shared between the affected private property-owner and the public at large? Another equity issue is the possibility of displacement of low-income residents who can no longer afford to live in historic neighbourhoods (Smith, 1998). According to this argument, higher property values as the result of historic designation lead to increased rental prices and higher property taxes, and these, in turn, may displace low- to moderate-income residents (Wojno, 1991). Although designation of historic districts cannot be equated with urban redevelopment and gentrification, which have been associated in many cases with the attraction of higher-income residents and increased housing prices, the potential for displacement of low- to moderate-income residents continues to be an important consideration. For this reason, the potential benefits of designation in terms of higher property values and increased tax revenues must be weighed against the possibility of displacement of lower-income renters, particularly in cities with very limited low-income housing supplies.

2. Empirical Studies of Historic Designation and Property Values

The question of the effects of historic designation on property values has been explored in the empirical literature for more than 20 years (Table 1). Many studies employ a difference-in-difference methodology whereby the changes in property values of houses within a district and houses outside a district are compared.[1] If prices increase (decrease) more within the designated district, then designation is inferred to have a significant and positive (negative) effect. A number of difference-in-difference studies have found that designation has a positive effect on property

values (for example, Scribner, 1976; Rackham, 1977; US Advisory Panel on Historic Preservation, 1979). Other difference-in-difference studies found, however, that designation has a neutral or negative effect on property values (for example, Heudorfer, 1975; New York Landmarks Conservancy, 1977; Samuels, 1981; Gale, 1991).

One important limitation of the above studies of historic designation and property values is that they rely solely on comparing sample averages of the growth rate in property values in historic areas with those in non-historic areas. Typically, no other variables (for example, property characteristics) are controlled and, to the extent that there may be variables independent of designation that explain the changes in property values, the results may be biased and inconsistent. In an effort to rectify the above limitations, most of the more recent studies of the effects of historic designation employ hedonic regression models. This method of analysis provides a means to assess the implicit value of the structural characteristics of a house.[2] Use of a hedonic approach enables assessment of the effect of historic designation on housing values while holding constant property and neighbourhood characteristics.

A number of studies employing hedonic methods have concluded that designated historic properties and properties located within historic districts typically sell for a premium when compared with similar, non-designated properties (for example, Ford, 1989; Asabere and Huffman, 1994a; Clark and Herrin, 1997; Coulson and Leichenko, 2001). Other hedonic studies, however, have found mixed or negative results (for example, Schaeffer and Millerick, 1991; Asabere and Huffman, 1994b; and Asabere et al., 1994). In accounting for their mixed results, Schaeffer and Millerick (1991) note that the effect of historic designation on price may depend upon whether a property is locally or nationally designated. Their study found a positive impact on values with national designation but a negative impact with local designation. This difference, according to the authors, resulted from more stringent controls in the

Table 1. Results of previous empirical studies

Study	Location	Method	Impact of designation on property values
Heudorfer (1975)	New York City	Difference-on-difference	Neutral
Scribner (1976)	Alexander, VA	Difference-on-difference	Positive
Rackham (1977)	Washington, DC	Difference-on-difference	Positive
New York Landmarks Conservancy (1977)	New York City	Difference-on-difference	Neutral
US Advisory Panel on Historic Preservation (1979)	Alexandria, VA; Galveston, TX; Savannah, GA; Seattle, WA	Difference-on-difference	Positive
Samuels (1981)	Washington, DC	Difference-on-difference	Neutral
Ford (1989)	Baltimore, MD	Hedonic	Positive
Gale (1991)	Washington, DC	Difference-on-difference	Neutral
Schaeffer and Millerick (1991)	Chicago, IL	Hedonic	Mixed
Asabere and Huffman (1994a)	Philadephia, PA	Hedonic	Positive
Asabere and Huffman (1994b)	Philadephia, PA	Hedonic	Negative
Asabere *et al.* (1994)	Philadephia, PA	Hedonic	Negative
Clark and Herrin (1997)	Sacramento, CA	Hedonic	Positive
Coulson and Leichenko (2001)	Abilene, TX	Hedonic	Positive

local districts and from the prestige associated with location in a national district.

Overall, the more recent, hedonic studies represent an important improvement over the earlier difference-in-difference studies. However, one limitation of the multivariate studies—and one possible reason for their mixed findings—is that they typically look at a small number of historic neighbourhoods in one city and thus base their conclusions on a relatively limited sample within a single housing market. This study expands upon previous hedonic studies by examining the effects of historic designation on residential property values across a larger sample of cities. The advantage of our approach is that we employ a roughly common econometric framework across the different models (although there are some differences in the various city-models) and this facilitates comparison across a large pool of cities—a comparison which is not otherwise available given the disparate models that previous research has provided. Nine Texas cities—Abilene, Dallas, Fort Worth, Grapevine, Laredo, Lubbock, Nacogdoches, San Antonio and San Marcos are included in the hedonic analysis.

3. Data

3.1 Selection of Historic and Comparable Properties

Prior to the estimation of the hedonic models, it was necessary to select historic and comparable properties for inclusion in the analysis of each city. A complete list of designated historic properties was obtained from city-planning and/or historic preservation officials in each city.[3] In six of the cities (Dallas, Grapevine, Lubbock, Laredo, San Antonio and San Marcos), all of the historic properties included in the analysis are located within designated historic districts. In these cases, residential properties within the historic neighbourhoods were compared with properties located in comparable neighbourhoods in the city. Criteria for the selection of comparable neighbourhoods

included similarity in general characteristics of the housing (for example, age of the buildings, size and architectural style), similarity in income levels and similarity of demographic characteristics. City planners and/or historic preservation officers selected the comparable neighbourhoods in each city.

In the cities of Abilene and Nacogdoches, historic properties are designated individually; the cities do not have designated historic districts. Comparable properties in each city were selected based on location in the same neighbourhood or in neighbourhoods similar to those where the designated houses were located. In Fort Worth, historic properties included properties located within historic districts as well as a large number of properties (93) with individual historic designation that were not located in a historic district. In order to take into account both types of historic properties, the Fort Worth analysis used property value data for the entire city. Designated properties were compared with all other residential properties in the city.

3.2 Type of Historic Designation

In several of the cities, we were able to distinguish between different types of historical designation. In the cities of Abilene and San Marcos, we were able to differentiate between nationally and locally designated historic properties or historic districts, while in the city of Lubbock, we were able to differentiate between national, State of Texas and local historic designation. National designation means that a property or district is included on the National Register of Historic Places. State of Texas designation is a historic designation category that has been granted at the state level. Local historic designation may include designation of a local historic district, designation of individual properties as historically significant, or inclusion on special listings of historic local properties.

Because national or state designation seems likely to convey more prestige to an individual property or historic district and

Table 2. Data sources

City	Data Source	Sample size	Average property value	Number of historic properties in the sample
Abilene	Appraisal	7 620	$39 160	222
Dallas	Appraisal	4 920	$64 838	2 200
Fort Worth	Appraisal	102 948	$54 519	1 338
Grapevine	Appraisal	59	$44 673	27
Laredo	Appraisal	338	$45 396	177
Lubbock	Appraisal	1 922	$30 471	440
Nacogdoches	MLS	30	$93 130	15
San Antonio	Appraisal	3 806	$47 970	1 912
San Marcos	MLS	80	$94 920	34

may therefore make the property or district more desirable, we expect that, all other things being equal, nationally or state-designated properties will have higher values than will properties that carry only local designation. In addition to conveying greater prestige than that conveyed by local designation, national and state designations are typically less restrictive (Schaeffer and Millerick, 1991). If there is no federal or state funding or other involvement (for example, federal or state rehabilitation grants or licenses), then the owner of a federal or state landmark can, by and large, make alterations without historic 'C of A' approval. In the same vein, the owner can demolish the federal/state landmark and replace it with a 'highest and best use' structure. It is only with local landmarking that significant restrictions on alterations and demolishing are sometimes triggered. These differences should further contribute to the more pronounced value-enhancing effect of national or state designation. We were able to test this hypothesis in Abilene, Lubbock and San Marcos.

3.3 Data Sources

For the majority of the cities, data on residential property values were obtained from county appraisal district databases (Table 2). These cities include Abilene, Dallas, Fort Worth, Grapevine, Laredo, Lubbock and San Antonio. Appraisal district data were selected as our primary data source because these data are comprehensive, covering all of the historic properties in an entire neighbourhood and all properties in comparable neighbourhoods. While appraisal data have been used in other recent studies of the property value impacts of historic preservation (see, for example, Gale, 1991; Coulson and Leichenko, 2001), potential limitations of appraisal data include possible inflation or reduction of housing values by appraisers due to historic status. In each city where appraisal data were used, we enlisted the aid of city planners in compilation of the datasets in order to ensure that the historic and comparison properties (neighbourhoods) included in the sample had been recently appraised based on a consistent method.

In two cases, San Marcos and Nacogdoches, where appraisal data were not available or were not consistent, property values were obtained from Real Estate Multiple Listing services. Data from Real Estate Multiple Listings, which include the actual price at which a property sold, provide an accurate reflection of the market value of a home. The key problem with these data, however, is that the sample sizes tend to be smaller because the data are based on actual sales. In the city of Nacogdoches, for example, there were only 15 sales of designated historic properties during the study period. Smaller sample sizes limit the accuracy and reliability of the

hedonic analysis of the impact of historic designation.[4]

4. Modelling Approach

The property value analysis involved the application of multivariate regression models to assess the impact of historic designation on residential property values. The model form used in the study involves estimation of house price as a function of property characteristics, neighbourhood location and historic status. Since we are primarily interested in determining whether historic status exerts a statistically significant effect on housing price, and whether this effect is positive or negative, the key variable of interest is historic status.

The basic form of the hedonic model is as follows

$$\ln Price = \mathrm{f}(structural\ characteristics,\ neighbourhood, historic) \quad (1)$$

where, $\ln Price$ is the natural logarithm of the assessed total value (or sale price) of the house; *structural characteristics* of the house include variables such as square footage, year built, number of bathrooms, number of bedrooms; *neighbourhood* indicates the neighbourhood in which the house is located; and *historic* indicates whether or not the house is individually designated as historic or is located in a historic district.

Definitions of all of the variables used in the analyses are presented in Table 3. To ensure as much comparability as possible across the cities, each model started with a similar set of basic explanatory variables, such as square footage, year built and historic status. For most of the cities, we were also able to add additional explanatory variables such as number of garage spaces or presence of central air-conditioning.[5] Several models (Abilene, Lubbock and San Marcos) include variables designating type of historic district,[6] and the larger city models include variables designating neighbourhood type.[7]

The hedonic models are specified in semi-logarithmic form, meaning that the house price is specified as the natural log and the explanatory variables are specified in linear units (for example, *bath* is simply the number of bathrooms in the house). With the semi-logarithmic form, the coefficient on each explanatory variable (square footage, number of baths, etc.) is interpreted as the percentage change in the house's price that is associated with a one-unit increase in the explanatory variable. For example, a coefficient of 0.07 on the variable *bath* implies that the addition of one bathroom is associated with an increase in house price of approximately 7 per cent.

As is typical in hedonic studies of this type, it is important to control for covariates of historical designation in our specifications, as this variable can be correlated to some degree with other attributes. To address this issue, we examined bivariate correlations between designation and the other housing attributes in each sample. Designation is obviously correlated with the year built in each case, but in a number of our samples it is also (positively) correlated with land or interior area at least as strongly as it is with year built. Hence inclusion of these and other attributes is appropriate, as omission of them would bias upwards our measurement of the price difference between designated and non-designated properties.

5. Empirical Results

Detailed results of the hedonic models for each city are presented in Table 4. Interpretation of the individual estimated values in each city model may be illustrated through the example of Abilene. For houses in the Abilene area, other things being equal, an increase in size of 1 square foot is associated with an increase in property value of 0.059 per cent; based on the average house value ($39 160), each additional square foot increases house value by $23. Similarly, an increase of 1 square foot in land area is associated with an increase in property value of 0.0091 per cent, implying that each additional square foot of land area increases property value by $0.36. An additional bathroom adds 16 per cent to the value of the

Table 3. Variable definitions

Variable name	Variable definition
Housing characteristics	
Bath	Number of bathrooms (full and half)
Fullbath	Number of full bathrooms
Halfbath	Number of half bathrooms
Yearbuilt	Year the house was built
Squarefoot	Square footage of the house
Lotsize	Square footage of the house's lot
Bedroom	Number of bedrooms
Heatac	Presence of central heating and central air-conditioning
Numstory	Number of storeys
Numporch	Number of porches
Garagesp	Number of garage spaces
Structure	Number of buildings on the property
Condition	Condition of the house
Depreciation	Depreciation of the house (alternative indicator of housing condition)
Yearsold	Year in which the house was sold
Historic designation	
Historic	Located in a historic district and/or designated as a historic home
National	Located in a nationally designated district or on the National Register
Texas	Designated as a Texas historic property
Noncontrib	Located in a historic district but not contributing to the district (Lubbock)
Neighborhood controls[a]	
Abilene	
Census track	Census track in which the property is located (13 tracks in total)
Dallas	
Rosemont Crest–Sunset Hills	Historic District location–comparison area
Winnetka Heights–South Winnetka	Historic District location–comparison area
Tenth Street–Bottoms	Historic District location–comparison area
Munger Place–Junius Heights	Historic District location–comparison area
Queen City–Charles Rice	Historic District location–comparison area
South Blvd/Park Rw–comparison area	Historic District location–comparison area
Colonial Hill–Saint Phillips	Historic District location–comparison area
Kessler Park–East Kessler	Historic District location–comparison area
Miller-Stemmons–Kidd Springs	Historic District location–comparison area
Kings Highway–Dallas Land and Loan	Historic District location–comparison area
Lake Cliff–South Lake Cliff	Historic District location–comparison area
Peak's Suburban–Mill Creek	Historic District location–comparison area
Fort Worth	
Elizabeth	Located in Elizabeth Ave. Historic District
Grand	Located in the Grand Ave. Historic District
Fairmont	Located in the Fairmont Historic District
Isolated	Historically designated property, but is not a district
School District	School district in which the property is located (12 districts in total)
San Antonio	
Dignowity Hill–comparison	Historic District location–comparison area
King William–comparison	Historic District location–comparison area
Monticello Park–comparison	Historic District location–comparison area

Note: A selection of these variables were included in the individual models for each city.
[a] Not all cities required neighbourhood variables.

house, an increase of $6268. On average, houses with central heating and air-conditioning have values that are 45 per cent greater ($17 628) than similar houses without this amenity. (While it seems unlikely that central heating and air-conditioning alone would have such a large effect on housing values, the presence of central heating and air-conditioning is likely to be associated with other amenities that raise the value of a house—for example, higher-quality roofing, carpeting and so forth.) With regard to year built, more recently constructed houses have higher values; each additional year of age decreases the house's value by 1.4 per cent. All of the above estimates are statistically significant at standard levels of confidence and all of the coefficients are of magnitudes similar to those found in other studies of this type.

The housing characteristic coefficients in the other city models may be interpreted in a similar fashion. In general, the housing characteristic variables tend to have the expected signs and are generally statistically significant. Basic characteristics, including numbers of bathrooms, square footage and lot size generally have the expected, positive signs[8] and are statistically significant in almost all cases. A positive coefficient on *yearbuilt* indicates that older houses generally have lower values than do newer houses. Although the sign pattern on the *yearbuilt* variables is generally as expected, the coefficients are not statistically significant in all cases.[9]

Most of the additional structural variables, including presence of central heating and air conditioning (Abilene, Fort Worth, Grapevine), number of garage spaces (Fort Worth, Grapevine), number of porches (Laredo) and number of structures on the property (Fort Worth, San Antonio), have the expected (positive) sign and most are statistically significant. While the negative effects of number of storeys (Abilene) and number of bedrooms (Nacogdoches and San Antonio) seem to be counterintuitive, the reason for these negative results becomes clear if one keeps in mind that we are controlling for square footage. Given the control for square footage, the negative sign on number of storeys in Abilene simply implies that a 2500-square-foot ranch-style house would have a higher value than a 2500-square-foot 2-storey house. Similarly, in the Nacogdoches and San Antonio models, the negative sign on bedroom tells us that a 2500-square-foot house with 2 (large) bedrooms is worth more than a 2500-square-foot house with 3 (small) bedrooms. The individual coefficients for the neighbourhood controls (not reported) were generally found to be statistically significant.[10]

Concerning the interpretation of the coefficients on historic designation, we again use an illustration from Abilene. The *historic* coefficient of 0.19 (Table 4) suggests that values for designated historic houses are approximately 19 per cent higher than for similar, non-designated properties. The coefficient on *national* indicates that nationally designated historic properties sell for approximately 5 per cent more than locally designated historic properties. However, the effect of national designation is not statistically significant; we therefore cannot state that national designation has a positive impact above and beyond that of local designation within the city.

In general, the results indicate that historic designation has a positive effect on property values in all of the cities. The positive effect of historic preservation is statistically significant in Abilene, Dallas, Fort Worth, Grapevine, Lubbock, Nacogdoches and San Antonio. The effect of historic preservation is negative in San Marcos, but it is not statistically significant. The (positive) effect of historic preservation is also not significant in Laredo. Among those cities where historic designation has a statistically significant effect on property values, historic designation is associated with average property value increases ranging between approximately 5 per cent and 20 per cent of the total property value. In percentage terms, the smallest average increases in property values occur in Dallas, where the value of historic properties is 4.9 per cent higher than the value of

Table 4. Results for all cities

Variable	Abilene	Dallas	Fort Worth	Grapevine	Laredo	Lubbock	Nacogdoches	San Antonio	San Marcos
Bath	0.160 (13.1)**	—	0.14 (37.2)**	0.0628 (0.75)	—	—	0.174 (1.85)*	—	8.43E-4 (0.013)
Fullbath	—	−0.0253 (−4.23)**	—	—	—	—	—	0.0714 (5.64)**	—
Halfbath	—	0.0673 (4.75)**	—	—	—	—	—	0.109 (4.85)**	—
Yearbuilt	0.0144 (33.7)**	−0.00347 (−12.1)**	0.00671 (88.7)**	0.00156 (1.0)	−7.5E-07 (−0.64)	0.0175 (13.3)**	0.00397 (1.4)	—	0.00251 (1.47)
Squarefoot	5.86E-4 (46.9)**	4.17E-4 (60.7)**	6.07E-4 (257)**	3.27E-4 (5.84)**	1.84E-4 (9.84)**	−5.1E-05 (−2.98)**	4.83E-4 (4.92)**	3.79E-4 (30.4)**	5.95E-4 (8.92)**
Lotsize	9.1E-5 (9.0)**	—	2.35E-06 (21.5)**	9.85E-06 (7.6)**	7.43E-5 (11.27)**	—	—	3.31E-5 (18.1)**	—
Bedroom	—	—	—	—	—	—	−0.174 (−3.51)**	−0.00237 (−0.76)	—
Heatac	0.452 (41.6)**	—	0.409 (110)**	0.157 (1.8)*	—	—	—	—	—
Numstory	−0.144 (−4.67)**	—	—	—	—	—	—	—	—
Numporch	—	—	—	—	8.51-5 (3.05)**	—	—	—	—
Garagespace	—	—	0.103 (67.2)**	0.0436 (1.62)	—	—	—	—	—
Structure	—	—	0.185 (24.5)**	—	—	—	—	0.0737 (12.8)**	0.156 (3.24)**
Condition	—	—	—	—	—	—	—	—	—
Depreciation	—	−0.0215 (−63.7)**	—	—	—	—	—	—	—
Yearsold	—	—	—	—	—	—	0.00156 (0.05)	—	0.0639 (4.14)**
Historic Status									
Historic	0.191 (4.79)**	0.0495 (6.08)**	0.0882 (8.24)*	0.191 (3.03)**	0.044 (1.19)	0.064 (2.01)**	0.201 (2.06)*	0.186 (16.9)**	−0.124 (−1.11)
National	0.0516 (0.834)	—	—	—	—	1.17 (6.71)**	—	—	0.222 (1.80)*
Texas	—	—	—	—	—	0.782 (2.26)**	—	—	—
Noncontrib	—	—	—	—	—	−0.0503 (−1.01)	—	—	—
Neighbourhood controls	Included	Included	Included	—	—	—	—	Included	—
R^2	0.77	0.91	0.805	0.819	0.603	0.114	0.839	0.722	0.700
n	7 620	4 920	102 948	59	338	1 922	30	3 806	80

** indicates statistically significant at the 5 per cent level. * indicates statistically significant at the 10 per cent level.

Table 5. Summary of the property value impacts of historic designation

City	Number of historic properties	Is historic designation significant?	Percentage change in value from historic designation	Change in value from historic designation for an individual property ($)
Abilene	222	Yes	+ 19.1	+ 7 500
Dallas	2 200	Yes	+ 4.9	+ 3 200
Fort Worth	1 338	Yes	+ 8.8	+ 4 800
Grapevine	27	Yes	+ 19.1	+ 8 500
Laredo	177	No	—	—
Lubbock	440	Yes	+ 6.4	+ 1 950
Nacogdoches	15	Yes	+ 20.1	+ 18 700
San Antonio	1 912	Yes	+ 18.6	+ 8 900
San Marcos	34	No	—	—

comparable, non-historic properties. The largest average percentage increases occur in Nacogdoches, where the value of historic properties is 20.1 per cent higher than the value of comparable, non-historic properties.

Among the cities in which we were able to distinguish between nationally and locally designated historic properties, our results were somewhat mixed. In Lubbock, nationally and state-designated historic properties had statistically significantly higher values than did locally designated historic properties. Furthermore, national designation in Lubbock had a larger impact on property values than state designation did. In San Marcos, nationally designated properties also had significantly higher values than did locally designated properties. Because local historic designation, itself, is not statistically significant in San Marcos, this result implies that properties with national designation have values that are significantly higher than all other properties (both locally designated and non-designated) in the city. In Abilene, as noted above, properties with national designation had higher values than did those with local designation, but this difference was not statistically significant. Overall, these mixed results suggest that local housing market conditions and variations in local historic zoning rules determine whether or not national or state designation has a statistically significant effect above and beyond the effect of local designation.

In terms of the overall explanatory power of the models, the R^2 values indicate that in all cities except Lubbock, the attributes included account for a large share—between 60 and 91 per cent—of the variation in house prices. The model for Lubbock explains only 11 per cent of the variation in housing values for the city, which implies that other factors not currently controlled account for the vast majority of the variation in housing values in that city.[11]

Based on the above modelling results, Table 5 estimates an average dollar value impact of historic designation in each city. To calculate a dollar value impact in each, we multiplied the coefficient on historic preservation (*historic*) by the average property value in the city. In Dallas, for example, where the average housing value in the sample is approximately $64 000, the 4.9 per cent increase in value associated with historic designation translates to an average increase in housing values of $3200. Similarly, in the city of San Antonio, historic designation is associated with an 18.6 per cent increase in housing values which translates to an increase of $8900 for designated homes, based on an average housing value of $47 970.

5. Summary and Implications

Historic designation is increasingly used as a means to achieve both preservation and com-

munity economic development. This study considered the effects of historic designation on residential property values in nine Texas cities. Results suggest that historic preservation generally has a positive impact on property values and that historic designation is associated with average property value increases ranging between 5 per cent and 20 per cent of the total property value.[12] Results also suggest that type of historic designation—whether national, state or local—tends to have a mixed effect on housing values. In Lubbock and San Marcos, nationally designated historic properties had significantly higher values than did locally designated historic properties. By contrast, in Abilene, this effect was not statistically significant. These results suggest that local housing market conditions and variations in local historic zoning rules within each city determine whether national or state designation has a significant effect above and beyond the effect of local designation.

There are a number of important implications to our findings. Critics of historic preservation often charge that designation negatively impacts property values. While that surely could be the case on an individual basis; overall, it was not true for the Texas cities. The evidence from Texas suggests just the opposite: designation enhances value. Yet, appreciation may displace less-affluent residents of historic areas. Smith (1998), in particular, has warned that the neighbourhood revitalisation fostered by historic preservation also has a downside in that it can lead to the displacement of area residents. While this study has not examined the issue of displacement, rising prices in landmark neighbourhoods surely add to gentrification pressures, which may in turn result in displacement of lower-income residents. Historic preservationists should guard against this. In Savannah, Georgia (Victorian district) and Pittsburgh, Pennsylvania (Manchester district), designation was proactively accompanied by efforts to retain affordable housing (Leopold, 1993). More action of this type is needed when effecting preservation.

Our findings also have implications for the granting of special property tax incentives for the rehabilitation of designated properties. The policy of granting exemptions or abatements is quite common (Beaumont, 1996; Listokin *et al.*, 1982). Our finding that designation enhances property values (in part due to the encouragement of rehabilitation) partially supports such a policy. The rise in property values ultimately means higher property taxes and, given that, landmark-owners might hesitate to engage in rehabilitation in the absence of exemptions/abatements. Yet, there is a counter-interpretation. Given property appreciation, must the public sector give tax-breaks to landmark-owners? Or, if this incentive is extended, perhaps it should be means-tested—that is, limited to the less affluent. Such a policy would dampen displacement pressures and it would also target assistance to where it is needed.

Acknowledgements

Notes

1. Sewin Chan of Rutgers University contributed to the literature review contained in this section. We acknowledge and appreciate her contribution.

2. Anderson and Crocker (1971) conducted a pioneering effort in the use of hedonic analysis to assess the value of locational amenities.

3. Within the city of Dallas, we were not able to obtain property value data for all of the historically designated historic districts in the city. The 12 historic districts (and 12 comparable neighbourhoods) included in our analysis—containing a total of more than 4900 properties—were judged to provide a representative sample for the city as a whole.

4. The issue of sample size is important for interpretation of the results of the regression analyses. We have less confidence in the magnitude of the estimated coefficients that are based on very small sample sizes. In Nacogdoches, for example, we had complete data for only 30 properties. Although we are confident that historic designation is statistically significant (see Table 4) among the properties sampled in Nacogdoches, we are less confident about the magnitude of the estimates of the impact of historic preservation on average property values. By contrast, in Abilene, where we had data for more than 7000 properties, we are confident that our estimates present a true reflection of the value of historic designation within the city overall.

5. It should be noted that, while each model included all available 'core' structural variables for each city (for example, square footage, number of bathrooms), we did not include in the final models all of the additional categorical, structural variables that were available. For example, in the city of Laredo, the appraisal data-set included information on type of building exterior (i.e. brick, stone, etc.); however, these categorical variables were not found to add to the explanatory power of the model and therefore are not included the final analysis.

6. In cities where we were not able to distinguish between different types of historic designation, the designated properties are simply defined as 'historic'. In both Dallas and Fort Worth, for example, all of the historic properties included in the analysis are in nationally designated districts and, therefore, we were not able to distinguish the effects of locally and nationally designated districts in the city.

7. The neighbourhood controls help to account for unobserved differences across neighbourhoods in the larger city samples including Dallas, Fort Worth, San Antonio and Abilene.

8. There is an anomaly in the Dallas sample, where the coefficient on the *fullbath* variable is negative. This is apparently due to its high collinearity with the *squarefoot* variable. The correlation coefficient between these 2 variables is around 0.67; in our exploration of alternative specifications, whenever *squarefoot* was included in the regression the *fullbath* coefficient was negative, and whenever *squarefoot* was excluded the coefficient was positive, as expected. This pair of results is invariant with respect to the set of remaining regressors. We wish to stress that these high bivariate correlations have no impact on our conclusions about historical designation.

9. Again, the exception is in Dallas where there is a negative value of *yearbuilt*. A similar situation to that detailed in note 8 is observed here. The *depreciation* variable is correlated with *yearbuilt* and, whenever it is excluded from the regression, the *yearbuilt* coefficient becomes positive as expected. Including it causes the coefficient to have the opposite sign; again, this occurs regardless of the rest of the model specification and has no impact on our conclusions about historic designation.

10. For interested readers, the full modelling results for each city are available from the authors.

11. The low value of the R^2 in the Lubbock model does not indicate that the model is 'wrong', but instead suggests that we are not accounting for a large share of the variation in housing value in city. Several 'core' housing characteristic variables, including number of bathrooms and lot size, were not available on a consistent basis in the Lubbock sample.

12. In addition to direct benefits for property-owners, higher property values also imply benefits for a city as a whole in the form of higher property tax payments. Based on the results of the regression analysis, we may estimate the overall impact of historic preservation of residential properties on property tax payments within the State of Texas. Using a conservative assumption that historic designation is associated with a 5 per cent increase in residential property values, the property tax estimate proceeds as follows:

(1) According to the 1990 Census of Population, there are approximately 500 000 housing units in Texas that were built in 1939 or earlier. Among these older properties, we assume that approximately 5 per cent are candidates for historic designation. For the state as a whole, we therefore assume that there are 25 000 (500 000 × 0.05) candidates for historic designation. To estimate the

total market value of the historic land-mark stock, we assume that these historic houses are priced at the median housing value of $58 900. The total market value of the landmark stock is therefore estimated to be $1.47 billion (25 000 × $58 900).

(2) Assuming that designation has a conservation value-enhancing effect of 5 per cent, designation increases the value of the state's landmark stock by $73.5 million ($1.47 billion × 0.05).

(3) Holding aside the effect of designation, the extant total property taxes paid by the Texas historic landmark stock should be identified separately. Using an average equalised property tax rate of 2.07 per cent, the total Texas historic stock, valued at $1.47 billion, pays a total of approximately $30.4 million yearly ($1.47 billion × 0.0207) in total local property taxes.

(4) Assuming the 5 per cent value-enhancing effect of designation, historic designation results in $1.52 million ($73.5 million × 0.0207) in added property taxes per year.

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