

Historic Districts and Land Values

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Abstract. We measure the net effect of historic districting on the value of federally certified historic sites. The impact could be either positive or negative depending on the tension between positive externality effects and the constraints on property rights. Since federally certified historic parcels are not severely encumbered by regulations, we expect positive externality effects to dominate any negative effects of constraining rights. We find that the net effect of historic districting on land values is significantly positive. We also find that while residential parcels within historic districts attract a huge price premium of 131%, the premium associated with nonresidential parcels within historic districts is statistically insignificant.

Introduction

Historic districting is generally considered to be a form of land use zoning.¹ The economic rationale of zoning is to create positive externalities for the higher uses in the zoning hierarchy. Historic preservation is based on the same rationale. Historic preservation is also intended to generate positive externalities within the historic district.

However, by their nature, both zoning and historic districting requirements are associated with negative restrictions on development rights. In the case of structures, historic preservation laws require that special boards of review and commissions approve applications for permits for their repair, modification or demolition. The control exercised can extend from the color of paint used to the details of window design [Lockard and Hines 1983]. The federal tax code also imposes limited constraints on the rehabilitation of "Certified Historic Structures". These restrictions imply that, among other things, an investor in a certified historic structure is accepting a substantial degree of functional and physical disutility—a major source of business risk in real estate [Asabere et al. 1989]. Nonresidential property, in particular, given the efficiency and production requirements of investors, business owners and tenants may be adversely affected by the negative restrictions associated with historic designation. Therefore, it is generally expected that negative restrictions would adversely affect the value of the development option. The value of the development option would also be affected by the types of restrictions imposed on site (vacant land).

Restrictions imposed on local historic districts vary widely in their implications for vacant land. Several cities like Baltimore, New York and San Francisco have stringent review and approval procedures. Other cities such as Cincinnati, Dallas and Philadelphia merely provide casual reviews for proposed land development. There are

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no specific legal requirements restricting the development of vacant land in local historic districts in these cities. In the case of Philadelphia, our study area, restrictions are limited to those associated with permit approvals for the city in general.²

There are also no special regulations or restrictions on the development of vacant land located within federal historic districts. It must be noted that the tax benefits associated with federally certified historic structures are not applicable to vacant land. This article examines the impact of historic districting on federally certified historic sites. As noted, these parcels are not severely encumbered by regulations at the federal or local level. Our emphasis on federally certified vacant land sets this study apart from previous empirical work on the price effects of historic districting that has concentrated on existing structures. See, for example Lockard and Hines [1983],³ Benson and Klein [1988],⁴ Schaeffer and Ahern [1988],⁵ Asabere et al. [1989],⁶ and Ford [1989].⁷ The case study area is Philadelphia. A brief discussion of the city and the data for our empirical analysis is provided in section three. We first present our hypothesis and empirical framework.

The Hypothesis and the Empirical Framework

The potential effects of historic districting on land values is examined with the use of the following standard hedonic pricing model:⁸

$$\text{Log}P = a_0 + a_1(H'DIST) + \sum a_i Z_i + \sum a_j X_j + \varepsilon \quad (1)$$

where:

$\text{Log}P$ = actual sales price of the lot, in natural logs;

$H'DIST$ = dummy variable assigning 1 for location within a historic district and 0 else;

Z_i = represents different zoning types. Four broad zoning classes are included: residential (*RES*); commercial (*COM*); industrial (*IND*); and all others (*OTHERS*);

X_j = represents conventional variables for location, neighborhood, time of sale, and lot size in log form;

a_0 = constant term;

ε = a random error term.

The impact of historic districting on property values could either be positive or negative depending on the tension between externality effects and the constraints on property rights. What can be measured is the net effect. If people generally perceive that they can reap positive externalities without suffering more from the costs associated with severe restrictions then the estimated coefficient on $H'DIST$ would be significantly positive ($a_1 > 0$). In economic terms, people would pay a premium for historic parcels if they value the opportunity cost of the legal encumbrances on their rights at a lower level than the value of the expected positive external benefits. On the other hand, they would require a discount for historic parcels if they value the opportunity cost of the legal encumbrances on their rights at a higher level than the value of the positive external benefits from historic designation. As mentioned above this study is about federally certified historic parcels not severely encumbered by regulations, thus it is expected that the coefficient a_1 will be significantly positive ($a_1 > 0$).

In order that the partial effects of historic districting may be detected, the following control variables are included in equation (1): distance from city center (i.e., City Hall); lot size; neighborhood (i.e., income, and percent of houses boarded up); time of sale; and zoning. The functional form chosen for equation 1 is multiplicative.⁹ The log transformation allows the use of ordinary least squares to estimate the parameters. The model handles nonlinear partial effects and interaction among variables. For example, sale price generally is found to be chronically nonlinear in the more important property characteristics such as lot size, living area, and bedrooms [Bryan and Colwell 1982]. Examples of studies that have found the multiplicative functional form to be effective include, Colwell and Sirmans [1978], Bryan and Colwell [1982], Chicoine [1981] and Asabere et al. [1989].

A description of the study area, the data, and the estimation results are presented in the next section. Section four presents the summary and conclusions of our study.

The Study Area, the Data and the Estimation Results

The City of Philadelphia is the fifth largest city in the nation with a population of over 1.6 million people. The City—city and county are coterminous—is the geographic center of the eight-county Philadelphia MSA. Philadelphia is a planned city with City Hall as the center of the central business district. There are more than fifty federal historic districts and over 10,000 locally designated historic buildings in the city.

The City of Philadelphia has had the authority to designate real estate as historic for over thirty years and was, in fact, the first municipality in the nation permitted to certify historical significance. However, the ability to designate was limited and as a result the city could only certify specific parcels as historic. The city could not create local districts. Therefore all historical districts in the city (with the exception of one created after 1985) are federal.

Data were collected on vacant land sales for the years 1987 to 1989 for all transactions entered into the recording system for the City of Philadelphia. Observations with missing data were deleted. One hundred sales remained and are used for this study. Sales were geographically dispersed around the central city with 27% of the land sales occurring within one mile of City Hall, 53% between one and two miles distant, and 20% (eleven) farther than two miles (six of these sales were approximately eight miles from the Center City). Land sales occurred in 40 census tracts (of 365 in the city) representing neighborhoods ranging from the very affluent (e.g., Society Hill, immediately east of City Hall) to those at or below poverty level (e.g., North Philadelphia). Four tracts had five or more sales, four tracts had four sales over the time period, seven tracts had only three sales, nine tracts had two sales and sixteen tracts had only one sale. Information gathered from the city records in addition to price included lot size and date of sale. Using information from the City of Philadelphia's Historical Commission, thirty-seven land sales were identified as being in federal historic districts with sixty-three sales occurring outside districts.

Zoning classifications were obtained from the City of Philadelphia and collapsed into basic property types: residential (53%), commercial (30%), industrial (15%), and all others (2%). Accessibility was measured in miles from City Hall. Finally, a number of socioeconomic variables for each census tract were obtained from the 1980 Census for

Exhibit 1 Summary Statistics

Variable	Mean	Standard Deviation
<i>H'DIST</i>	0.370	0.485
<i>RES</i>	0.530	0.502
<i>IND</i>	0.150	0.359
<i>COM</i>	0.300	0.461
<i>OTHERS</i>	0.020	0.141
<i>(1-RES)</i>	0.470	0.502
<i>(H'DIST)(RES)</i>	0.260	0.441
<i>(H'DIST)(1-RES)</i>	0.110	0.374
<i>CBD</i>	0.850	0.560
<i>LogLOT</i>	7.699	1.031
<i>%BOARDED</i>	0.033	0.037
<i>TIME</i>	17.997	12.433
<i>LogP</i>	10.349	1.576
<i>INCOME</i>	16.650	12,205

the City of Philadelphia and included average median household income and percent of houses boarded up. See Exhibit 1 for descriptive statistics.

The explanatory power of the regressions is understandable in the context of attempting to explain selling price across such diverse locations as encountered in this data set. The adjusted coefficient of determination for the five reported equations range from 0.40 to 0.42. These results as well as the regression coefficients and *t*-ratios are reported in Exhibit 2.

The dummy variable for historic district location (*H'DIST*) in equations 1 and 2 produced significant results. The estimated coefficients on *H'DIST* ranged from 0.674 to 0.695. All the estimated coefficients are significantly different from zero at the 95% level of confidence. Based on equation 1, *H'DIST* produces as much as a 96%, ($e^{0.674} - 1$), price premium. A premium of this magnitude, however, must always be interpreted with caution. It must be noticed that equation 1 does not include other zoning variables. The premium captured here may include a zoning premium. In other words, it is possible that *H'DIST* became individually significant only because it picked up more of the impact of zoning variables not included in equation 1.

Equations 2 and 3 are various attempts to control for zoning. In equation 2 dummy variables for the two extreme zoning cases, residential and industrial zoning (*RES* and *IND*) respectively are introduced. The dummy variable for historic district (*H'DIST*) remained significantly different from zero at the 95% confidence level. Neither of the zoning variables, however, are significant at conventional levels. The inclusion of zoning variables does cause the magnitude of the estimated coefficient on *H'DIST* to increase slightly from 0.674 to 0.695.

In equation 3, product variables are used to detect whether historic districting has differential impacts across different land use zones. Equation 3 is designed to capture for possible differentiation effects of historic districting on residential and nonresidential land use zoning codes. The sign of the estimated coefficient of the product variable (*H'DIST*)(*RES*) is positive as hypothesized. The estimated coefficient is significantly different from zero at the 95% confidence level. The estimated coefficient on the

Exhibit 2
Estimated Equations: Dependent Variable is Sales Price in Logs

Independent Variables	Eq. 1	Eq. 2	Eq. 3
<i>H'DIST</i>	0.674 (2.486)*	0.695 (2.446)*	—
<i>RES</i>	—	-0.174 (-0.582)	—
<i>COM</i>	—	—	—
<i>IND</i>	—	-0.042 (-0.103)	—
<i>(H'DIST)(RES)</i>	—	—	0.838 (2.616)*
<i>(H'DIST)(1-RES)</i>	—	—	0.147 (0.362)
<i>1/CBD</i>	1.080 (4.639)*	1.059 (4.436)*	1.101 (4.708)*
<i>INCOME</i>	0.00006 (4.032)*	0.00006 (4.033)*	0.00004 (3.128)*
<i>LogLOT</i>	0.605 (5.076)*	0.589 (4.586)*	0.596 (4.990)*
<i>TIME</i>	0.021 (2.142)*	0.023 (2.197)*	0.020 (1.935)*
<i>%BOARDED</i>	-10.021 (-2.874)*	-10.542 (-2.885)*	-9.039 (-2.487)*
<i>CONST</i>	4.466 (4.441)*	4.680 (4.297)*	4.500 (4.470)*
<i>R</i> ²	0.42	0.40	0.41

t-ratios are shown in parentheses

*significant at 95% level of confidence

nonresidential product variable (*H'DIST*)(1-*RES*), however, is not significant at the 95% level of confidence. Historic districting appears to have tremendous positive external impacts on residential land. But, the impacts on other-than residential land appear to be insignificant.

As shown in Exhibit 2, the conventional explanatory variables (*1/CBD*, *LogLOT*, *TIME*, *INCOME*, and *%BOARDED*) all contributed as expected. The inverse of distance to city center (*1/CBD*) variable was found to be significantly different from zero at the 95% level of confidence.¹⁰ This implies that distance to city center gives proximity impacts to land in its vicinity. The variables associated with lot size (*LogLOT*), income (*INCOME*), and percent of housing boarded up (*%BOARDED*) were significant at the 95% level of confidence. In equations 1, 2 and 3, land appears to have appreciated at a rate of about 2% per month during the study period (1987-88).

Summary and Conclusions

This study has supported the view that in the absence of severe legal restrictions historic districting can produce positive external benefits. Our results show conclusively

that, other influential factors held constant, the effect of historic districting on the value of federally certified parcels, not encumbered by rules, is positive. The hypothesis that historic districting may have differential impacts across different land use zones was also supported by this study. Residential parcels located within historic districts appear to attract a substantial price premium of 131%. The price premium associated with nonresidential parcels within historic districts are, however, insignificant.

Notes

¹A historic district is defined by the National Trust for Historic Preservation as a "geographic area of historic, cultural or aesthetic importance in a community that is protected by a preservation ordinance" [NTHP 1983].

²The 1985 ordinance, however, allows the city to specify special zoning districts including one that regulates land uses in the Independent Mall area, a district of major historical significance. General zoning ordinances also restrict uses and signage in historic districts and for historic property. The law, however, does not give the city the power to determine specific design criteria for development or rehabilitation. As such the law is less restrictive than local ordinances in Charleston, New Orleans and New York.

³Lockard and Hines [1983] examined 'restoration rates' inside and outside the Old and Historic District of Charleston, South Carolina using permit data for a period of sixteen years. They performed both longitudinal and cross-sectional analysis. While their longitudinal analysis produced inconclusive results, their cross-sectional analysis produced significant results in several equations. Restoration rates for residential properties were found to be significantly higher inside the districts. The results for nonresidential properties, however, were rather opposite. Non-residential rates were found to be significantly lower within the districts.

⁴Benson and Klein [1988] examined two historical districts in Cleveland using market value ratios (actual sales prices/assessed values or MVRs) for the period 1980 to 1984. MVRs greater than 1 indicate increasing values and vice versa. In one district (Ohio City) the average MVR rose from 1.57 in 1980 to 3.99 in 1982. The MVR subsequently fell from 3.99 in 1982 to 1.46 in 1983, rising back to 2.13 in 1984. The surrounding neighborhood had a much more stable (1.09 to 1.21, 1980 to 1984) average MVR. In the second historic district (Shaker Square) the average MVR fell significantly more (1.14 to 0.77) than in the surrounding neighborhood (1.27 to 1.09). In both districts sales were few relative to the volume of sales outside each district. Thus, they concluded that historic districting did not increase values as measured and may have contributed to falling price ratios and low sales volume.

⁵Schaeffer and Ahern [1988] measured the net benefits to residential property located in two historic districts in Chicago using sales data for the period 1960 to 1986. Using a standard hedonic analysis the authors found that the estimated coefficient on the national district was positive and significant although the variable for local district location was insignificant and negative in all equations. The authors concluded that tighter restrictions in the local district contributed to price declines not found in the outlying national district.

⁶Asabere et al. [1989] examined the effects of architectural style and historic zoning on single-family homes in Newburyport, New Hampshire, using sales prices from 1983 to 1985. Their results based on standard hedonic analysis showed that premium prices were associated with some architectural styles. However, location in a historical district was not found to attract premium values versus those outside the district.

⁷Ford [1989] also examined the effects of historic districting on the value of single-family homes in Baltimore. Her results, based on standard hedonic analysis, showed that historical designations led

to significant increases in home value. Separating historical designations into recent designation (between 1980–85) and older designation (prior to 1980), also yielded statistically significant results with the older designations having slightly higher coefficients.

⁸As mentioned by an anonymous reviewer it would be interesting to examine an empirical model that unbundles the benefits and the restrictions. While our model can easily be expanded to handle specific benefits and restrictions, our data set is not rich in the specifics.

⁹Using the data described in the third section, several functional forms were also tested using the Box-Cox and Box-Tidwell transformation techniques [Box and Cox 1964; Box and Tidwell 1962; Kowalski and Colwell 1986; Asabere et al. 1989]. The multiplicative functional form proved to be the most effective specification.

¹⁰Other regressions, not reported in Exhibit 2, that utilized the *CBD* variable instead of the reciprocal ($1/CBD$) version produced estimated coefficients that were barely significant at the 90% level of confidence. As can be seen in Exhibit 2, the $1/CBD$ version is significantly different from zero at the 99% level of confidence. This means that most of the effects attributable to distance are realized within the immediate vicinities of the city center.

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