

The Impact of Historic Districts on Residential Property Values

Author(s): Donald A. Coffin

Source: *Eastern Economic Journal*, Vol. 15, No. 3 (Jul. - Sep., 1989), pp. 221-228

Published by: Palgrave Macmillan Journals

Stable URL: <http://www.jstor.org/stable/40325269>

Accessed: 30-04-2017 15:49 UTC

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://about.jstor.org/terms>



Palgrave Macmillan Journals is collaborating with JSTOR to digitize, preserve and extend access to *Eastern Economic Journal*

The Impact of Historic Districts on Residential Property Values

Donald A. Coffin*

During the past fifteen years, many people and groups have become interested in historic preservation, sometimes specifically in its use as a tool for neighborhood revival. Among the policies which have been developed has been the formation of historic districts. These have been designed to generate renewed interest in inner-city residential locations among upper-middle class families (gentrification) and increased renovation and rehabilitation both of residential and of commercial property.¹ Many local communities, among them Aurora, Illinois, have passed local ordinances establishing historic residential districts and regulating the uses of and alterations to property within these districts. Elgin, among other communities, has created local historic districts without local ordinances.²

Such ordinances require some justification, since they impose restrictions on changes in the use of property or, in some cases, on the exterior appearance of buildings. The Aurora ordinance asserts, as do many ordinances establishing historic districts, “. . . that the city’s economic vitality and tax base cannot be maintained and enhanced without regard for Aurora’s heritage and older neighborhoods” (*Aurora Code*, 1984, p. 1351). The ordinance provides for mechanisms “[t]o designate, preserve, enhance, and perpetuate those properties and improvements” which reflect the heritage of the community and “[t]o preserve the existing housing stock” (*Aurora Code*, 1984, p. 1352).

Having stated a justification for the creation of historic districts, the ordinance then places limitations on alterations to property within the districts (*Aurora Code*, 1984, p. 1353):

- (b) Historical districts: No alterations, exterior construction or exterior demolition may be performed on property and improvements located within an area which has been designated under this chapter as an historical district, except as shall be approved by a certificate of appropriateness.

The ordinance then provides for conditions under which such certificates may be granted (*Aurora Code*, 1984, p. 1363–1368), including economic hardship as a justification for granting a certificate.³

While such restrictions may serve aesthetic or historical purposes, they may also interfere with neighborhood revitalization by increasing the costs of structural improvements or by making changes in property use more difficult. Restrictions on the use of property are generally thought to reduce the value of the properties to potential buyers, because attempts to alter the use or appearance of the structures on the properties have been rendered more difficult and thus more costly. Such restrictions may reduce the potential demand for properties.

But, since creation of an historic district provides people with additional information about the nature, significance, and quality of structures within the district, it may also increase the demand for the properties by identifying a set of attributes of the property which are valuable to people and which would have gone unobserved in the absence of the creation of the district. In addition, by controlling the changes which may be made in the properties of others, the land-use ordinances may create net positive neighborhood effects, thus encouraging neighborhood revitalization.

Finally, there is the issue of causation. Suppose that an area containing older homes begins to attract more (higher-income) buyers—the demand for this housing increases. As the demographic characteristics of the households in the neighborhood change, the new residents may wish to “protect” their investments.

*Division of Business and Economics, Indiana University Northwest, 3400 Broadway, Gary, Indiana 46408.

They may believe that one way to do this is to restrict other property-owners' activities, and one tool may seem to be the creation of an historic district. That is, the creation of historic districts may be the result of changes in demand for housing in a neighborhood, not the cause.

The ideal approach would be to gather data on housing sales before the district is created. This would allow us to estimate an hedonic model of housing prices before the historic district has been created, but including a dummy variable for the areas which are to be in the district. Repeating this procedure after the creation of the district then allows us to determine whether the coefficient on location in the area has changed, and thus to determine whether the creation of the district was more clearly responsible for any changes in housing values. We were unable to follow this procedure in this study, because we were unable to obtain a long enough time-series of data.

In this paper, we develop a framework within which to analyze housing values (Section II) and apply that framework to a data set which permits us to identify housing attributes, including location within an historic district, by estimating an hedonic housing price equation (Section III). We consider whether the impact of historic districts created by local ordinances differs from the impact of those organized locally but not governed by local ordinances in Section III as well.

A MODEL OF HOUSING VALUES

We have developed a standard Lancasterian model (Lancaster, 1971, Chapters 2 and 3; Rosen, 1972) of demand in which the household's demand is stated as a demand for attributes, rather than as a demand for goods. This approach seems well suited to the analysis of housing, since housing is clearly a heterogeneous good, with different housing units representing different bundles of attributes among which households can choose. Households maximize a utility function

$$(1) U = U(Z, H), \text{ where } Z \text{ is a } (k \times 1) \text{ vector of attributes of the house and } H \text{ is a Hicksian composite of the attributes of all other goods.}$$

We assume that housing attributes are known (or can be discovered by potential purchasers at zero cost) and that for all households the attribute vector of a given house is the same. We assume that the market price of any house is known and exogenous to the household and that the prices of all the commodities making up the Hicksian composite are also known and exogenous. The household then faces a budget constraint of

$$(2) Y = P'X + H, \text{ where } P \text{ is a vector } (1 \times n) \text{ of per unit (rental) prices for houses } X \text{ is a vector } (n \times 1) \text{ of quantities of houses and where the price of the composite good } (H) \text{ is set equal to 1.}$$

There is a transformation technology, known to all consumers, relating the consumption of attributes to the stock of housing:

$$(3) Z = B'X, \text{ where } B \text{ is a } (k \times n) \text{ matrix whose elements } b_{kn} \text{ give the amount of the } k^{\text{th}} \text{ attribute per unit of the } n^{\text{th}} \text{ house.}$$

The problem for the household is to maximize a utility function defined over attribute space subject to a budget constraint and a known linear transformation technology relating attributes to the housing stock. The problem becomes more difficult because the prices of attributes are not explicit, but are embedded in the transformation technology and are thus implicit or shadow prices. If we picture the problem in two-space (z_1 and z_2) for housing attributes, and holding the consumption of all other goods constant, the household faces the problem in Figure 1.

The figure is a consumption possibilities frontier (CPF) defined by the household's budget constraint. Each point on the CPF can be thought of as a house providing a bundle of the two attributes. Because there is a linear transformation technology for attributes, the CPF is piece-wise linear, with the slope of each segment defined by the marginal rate of transformation within that segment of the technology.

This means that on each face of the CPF the relative price of an attribute is fixed—a household may alter the combinations of z_1 and z_2 along that face without experiencing a change in the relative prices of z_1

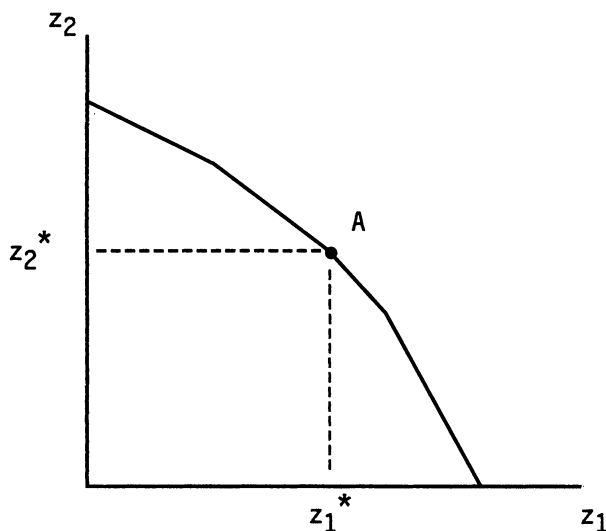


Figure 1

and z_2 and without altering its expenditures on the combination of z_1 and z_2 it selects. Different households, with different preference structures, will have tangencies at different points on a CPF; the household pictured in Figure 1 maximizes utility at Point A, consuming the Z^* (z_1^* and z_2^*) bundle of attributes. The slope of the CPF at Point A defines the shadow prices of z_1 and z_2 for this household.

For an individual household, then, with a given utility maximizing bundle Z^* , utility maximization requires solving

- (4) Minimize $X'P$ (expenditure on housing), subject to $Z^* = B'X$ (the optimal bundle of attributes).

The dual of this problem is

- (5) Maximize Z^*Q , subject to $B'Q$, where Q is the vector of attribute shadow prices.

Where the constraints in (5) are binding, for any household h ,

- (6) $p_h^* = B_h^*Q_h^*$, where P_h^* is a $(n_h \times 1)$ solution sub-vector of P ; B_h^* is a $(n_h \times k_h)$ solution sub-vector of B ; and Q_h^* is a $(k_h \times 1)$ vector of shadow attribute prices relevant to the h^{th} household.

If the CPF is completely linear rather than piecewise linear, or if all households achieve tangencies on the same face of the CPF, then the shadow prices for the attributes will be identical for all households and we will be able to estimate these shadow prices using a linear regression model of an hedonic price model.

For the hedonic price model to fully approximate the consumption possibilities frontier, it would be necessary to take samples from houses containing all the attributes that are a part of households' utility functions. Such a data set does not exist, so it is necessary to assume that the utility functions are weakly separable in utility space. Then we may focus on housing attributes only and an hedonic price model yields coefficient estimates which may be interpreted as the shadow prices, in dollars, of the attributes.

ESTIMATING THE IMPACT OF HISTORIC DISTRICTS ON THE VALUE OF RESIDENTIAL PROPERTY

The empirical question to be resolved is whether location in an historic district is an attribute of the housing stock to which potential purchasers of housing impute a positive price. As noted above, there may

be reasons for believing that the shadow price of location in an historic district is positive (creation of the district provides people with additional information about the housing stock), negative (the restrictions on use and structural change reduce housing demand), or zero.

Only in the case in which the shadow price of location in an historic district is positive can creation of historic districts serve as a tool for neighborhood revitalization. In this case, creation of the historic district stimulates housing demand within the district and probably also increases spending by property owners on maintenance and improvements.

Our data sets have been drawn from two cities in Illinois, both in the western Chicago suburbs. These cities are of interest because one city (Aurora) has an ordinance governing land use within its historic district, while the other (Elgin) does not. This will permit us to determine whether there are differences, at least in this case, between the two situations. The historic district in Aurora was established in 1984, while the historic district in Elgin was established in 1985.

We have obtained data on the sales price and on the characteristics of the housing from records of the Elgin Board of Realtors for sales in the 1985–1986 period and from the records of the Aurora Board of Realtors for the 1984–1987 period; the sample periods differ largely because of data availability. The sample for Elgin includes 120 units, of which 47 were located in the historic district. The sample for Aurora includes 243 units, of which 62 are in the historic district in Aurora. The variables on which we obtained data are identified (variable names and definitions) in Table I; the means and standard deviations of these variables are available on request.

TABLE 1
Variable Names and Definitions

Variable Name	Definition (Expected Sign), Source
SP	Sales Price, from Board of Realtors Sales Reports
AGE	Age of the House, in Years (–), from Board of Realtors Sales Reports
AGESQ	$AGE * AGE * (0.01)$
AIR	Presence of Central Air Conditioning = 1 (+), from Board of Realtors Sales Reports
BATH	Number of Bathrooms (+), from Board of Realtors Sales Reports
BED	Number of Bedrooms (+), from Board of Realtors Sales Reports
BRICK	Brick Facade of Construction = 1 (+), from Board of Realtors Sales Reports
FENCE	Fenced-in Yard = 1 (+), from Board of Realtors Sales Reports (E)
FIRE	Wood-Burning Fireplace = 1 (+), from Board of Realtors Sales Reports
GARAGE	Number of Garage Spaces (+), from Board of Realtors Sales Reports
PORCH	Presence of Screened-in Porch (+), from Board of Realtors Sales Reports (E)
LOTSIZE	Lot Size, in Square Feet (net +), computed from Board of Realtors Sales Reports
LSSQ	$LOTSIZE * LOTSIZE * (0.0001)$
ROOMSQ	Total Rooms Squared (+), computed from Board of Realtors Sales Reports (A)
SF	Interior Square Feet (net +), computed from Board of Realtors Sales Reports (E)
SFSQ	$SF * SF * (0.0001)$ (E)
DIST	Distance to the CBD in Miles (net +), calculated from maps by the author
DISTSQ	$DIST * DIST$
HISTORIC	Location in Historic District = 1 (?), identified from maps by the author
LOWHIST	Location in the Low-Income Census Tracts of Historic District = 1 (?), identified from maps by the author
LOWINC	Location in Low-Income Census Tracts, identified from maps by the author
TIME	Time Trend (Quarter of Sale; Values from 1 to 15) (?), from Board of Realtors Sales Reports (A)

E = Elgin only; A = Aurora only.

The structure of the empirical model is similar to that which has been used in studies by Palmquist (1893), O'Byrne, Nelson, and Seneca (1985), Bender and Hwang (1985), and in studies cited in Freeman (1979), among others. One slight difference in our approach is that we restricted our sample to older housing.⁴ Some experimentation suggested that the strong collinearity between the age of a housing unit and its location in an historic district made use of a wide range of ages of housing impractical. In addition, we believe that the housing market may be segmented, with some people being more interested in older and others in newer housing (see Schnare and Struyk, 1974).

The final regression results are presented in Table II. In Elgin, and in Aurora, the coefficients have the expected signs and plausible values.⁵ Because the process by which buyers value housing may differ between cities, we saw no reason to restrict the regressions in the two cities to the same variables; as a

TABLE 2
Regression Results (Dependent Variable = SP)

Independent Variable	Elgin	Aurora
Constant	8709 (0.73)	-1855 (-0.29)
AGE	-180 (-2.49)	
AGESQ		-64 (-1.87)
AIR	9950 (3.57)	4072 (2.31)
BATH	4859 (2.01)	4828 (2.98)
BRICK		7094 (3.25)
FIRE	7535 (3.06)	6757 (4.03)
GARAGE		2910 (2.71)
LOTSIZE	-1.36 (-1.19)	1.41 (4.81)
LSSQ	1.70 (2.94)	
SF	32.62 (3.95)	
SFSQ	-47.47 (-2.08)	
ROOMSQ		206 (5.25)
DIST	39600 (3.02)	45610 (4.64)
DISTSQ	-11098 (-2.77)	-20054 (-4.54)
TIME		466 (2.53)
HISTORIC	3879 (1.26)	
LOWHIST		4536 (1.66)
R ²	0.74	0.62

t-statistics in parentheses.

TABLE 3
Comparing Location in an Historic
District in Elgin and Aurora

City	HISTORIC	LOWHIST
Aurora	2479 (1.00)	4356 (1.66)
Elgin	3879 (1.26)	1241 (0.41)

result, only those housing characteristics which exerted a statistically significant effect on housing prices were retained.

Our principal concern, however, is with the value of the coefficient on location in an historic district, and with its statistical significance. We examined several specifications of the potential effect of location in an historic district before concluding that the regressions presented in Table II provided the best representation. In both cities, we examined simply the effects of location in the historic district (controlling for other housing characteristics); these coefficients are compared in Table III. Neither coefficient reaches standard levels of statistical significance.

In addition, we examined an interaction between location in an historic district and in a low-income neighborhood. In Aurora, 82% of the houses which sold in the historic district were also in low-income Census Tracts, while in Elgin, 74% of the sales in the historic district were in low-income Census Tracts. The historic district designation might induce buyers to look for housing in low-income neighborhoods which they might otherwise have ignored. Again, these coefficients are compared in Table III. The coefficient on LOWHIST is statistically significant in Aurora (at the 10% level) and insignificant in Elgin. Further, the coefficient in Aurora is significantly larger ($t = 10.11$) than in Elgin.

Changing the variable used to identify the neighborhood from HISTORIC to LOWHIST left the coefficients on the other variables essentially unchanged, both in Aurora and in Elgin.

The results from Aurora suggest that the creation of the historic district may have provided some information to potential buyers about the quality of a portion of the housing stock they might otherwise have overlooked—housing in relatively low-income neighborhoods. This further suggests that, in Aurora, creation of an historic district may have had some effect as a neighborhood revitalization policy.

The relative magnitudes of the coefficients on our historic district location variable are similar for Aurora (LOWHIST) and for Elgin (HISTORIC) (\$4500 and \$3600, 7% and 6% of the average sales price), although the statistical significance of these coefficients does differ. In Aurora, a local ordinance governs the district, while in Elgin there is no ordinance. For policy purposes, it is tempting to assume that this difference is a result of the existence of an ordinance, that the restrictions on what one's neighbors can do in an historic district has a positive spill-over value. Such a conclusion may be too strong.

Recent controversy over the restrictions on exterior maintenance in the historic district in Bloomington, Illinois,⁶ suggests that some property-owners are extremely aware of the potential costs of regulatory ordinances. A more plausible explanation of the difference in the regression results is that the creation of the historic district conveyed more (or higher quality) information to people in Aurora than it did to people in Elgin.

CONCLUSIONS

The creation of historic districts in Aurora and Elgin seems to have had a modest effect on the housing prices in these cities, on the order of 6–7%. The effect is statistically significant in Aurora, for housing which is both in the historic district and in a low income Census Tract, and not quite statistically significant in Elgin. These results are encouraging for the proponents of the creation of historic districts as a neighborhood revitalization tool, but require some qualification.

First, to the extent that creation of an historic district does work to raise housing values, it does so by increasing the demand for housing in the district. This means that a larger fraction of current residents of the area to be designated an historic district will move, either as rental property is converted to owner-occupied housing or as higher sales prices for housing make sale of currently owner-occupied housing a desirable option. The conversion of rental housing to owner-occupied housing may be considered an undesirable result by current residents of the district, and thus may make such a policy politically undesirable.

Second, unless the creation of historic districts adds to the overall demand for housing in the city (e.g., by attracting new residents), higher prices for housing in historic areas are likely to be accompanied by lower prices for other housing. If the creation of the district increases housing demand in the district without also increasing overall housing demand in the city, it would seem to lower housing demand outside the district. There is no way to test statistically for this effect, given the limited time series of data available.

Third, it is important to know whether the creation of the historic district was accompanied by any additional efforts to provide public services (police protection, more frequent or better trash pickup, street repairs, new street lighting, etc.) within the historic district. If it was, then some (or all) of the increased value of housing may be a result of the services, not, directly, of the creation of the district. We have been assured that this did not happen either in Aurora or in Elgin.⁷

Subject to these qualifications, however, the creation of an historic district does appear to provide people with information about the housing stock they might otherwise not have had. This information also appears to have a positive value to potential buyers.⁸ Creation of an historic district would, then appear to be a potentially valuable tool for helping potential buyers identify an additional portion of the housing stock in which they might be interested. By making the housing stock more desirable, creation of an historic district could then serve the purpose of stimulating revitalization of the housing stock in a neighborhood.

NOTES

1. Not infrequently, older commercial properties have been transformed into residential properties.
2. One issue, therefore, is whether the existence of a local ordinance regulating the types of alterations which can be performed on a property has an effect. Because of data limitations, this issue is not addressed here.
3. *Aurora Code*, 1984, pp. 1367–68: “If the commission finds that, without approval of the proposed work, the property and improvements cannot be put to a reasonably beneficial use or the owner cannot obtain a reasonable economic return therefrom, then the application shall be delayed for a period not to exceed six (6) months. During this period of delay, the commission shall investigate plans to allow a reasonably beneficial use or a reasonable economic return, or to otherwise preserve the subject property and improvements. Such plans may include, but are not limited to, a relaxation of the provisions of this chapter.
 “If by the end of this six-month period, the commission has found that, without approval of the proposed work, the property and improvements cannot be put to a reasonably beneficial use or the owner cannot obtain a reasonable economic return therefrom, then the commission shall issue a certificate of economic hardship approving the proposed work. If the commission finds otherwise, it shall issue, deny or modify the requested certificate of appropriateness. . . .”
4. We defined “older housing” as all units 50 years old or older at the time of sale.
5. For example, in Elgin, adding 150 square feet to the “average” house would be expected to increase the sales price by \$3600; the marginal value of additional square feet is diminishing, as a result of the negative coefficient on SFSQ.
6. Bloomington (IL) *Daily Pantagraph*, April 15, 1987. A property-owner who wanted to install vinyl siding on rental property was denied a permit to do so by the commission with oversight responsibility for the historic district. He estimated that repairing the wood siding would cost twice as much as installing vinyl siding, but his attempt to get a waiver for economic hardship—the Bloomington ordinance is virtually identical to the Aurora ordinance—was denied. He then argued that he would have to sell the property or fail to maintain it properly.
7. Discussions with Bruce Dahlquist, past president of the Illinois Association of Historic Preservation Commissions and an Elgin architect, and with Shauna Francissen, Director of the Aurora Historic Preservation Commission.
8. A non-scientific test of whether sellers of houses think the information has value is whether they tell potential buyers that a house in the historic district. We examined the multiple listing service books in Elgin and Aurora and discovered that houses in the districts were generally identified as being in the historic districts; in some cases, houses not in the districts were identified as “near” the historic districts.

BIBLIOGRAPHY

- Aurora Code*, Chapter 37, 1984, pp. 1351–1368.
- Bruce Bender and Hae-Shin Hwang, "Hedonic Price Indices and Secondary Employment Centers," *Journal of Urban Economics*, Vol. 17, 1977, pp. 90–107.
- Daily Pantagraph*, Bloomington, Illinois, April 15, 1987.
- A. Myrick Freeman III, *The Benefits of Environmental Improvement: Theory and Practice*, Baltimore, MD: The Johns Hopkins University Press, 1979.
- Kelvin Lancaster, *Consumer Demand: A New Approach*, New York: Columbia University Press, 1971.
- Patricia O'Byrne, Jon P. Nelson, and Joseph J. Seneca, "Housing Values, Census Estimates, Disequilibrium, and the Environmental Cost of Airport Noise: A Case Study of Atlanta," *Journal of Environmental Economics and Management*, Vol. 12, 1985, pp. 169–178.
- Raymond Palmquist, "Estimating the Demand for Characteristics of Housing," *Review of Economics and Statistics*, Vol. 65, 1983, pp. 394–404.
- Sherwin Rosen, "Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition," *Journal of Political Economy*, Vol. 91, 1973, pp. 34–55.
- Ann B. Schnare and Raymond J. Struyk, "Segmentation in Urban Housing Markets," Paper presented to the Committee on Urban Economics of the Conference on Housing Research, Washington University, 1974.