An Impact Study of Local Historic District Overlays on Property Values in Fayette County, KY

Submitted by Suzann Vogel
April 12, 2007

Capstone in Public Administration
Martin School of Public Policy and Administration
University of Kentucky

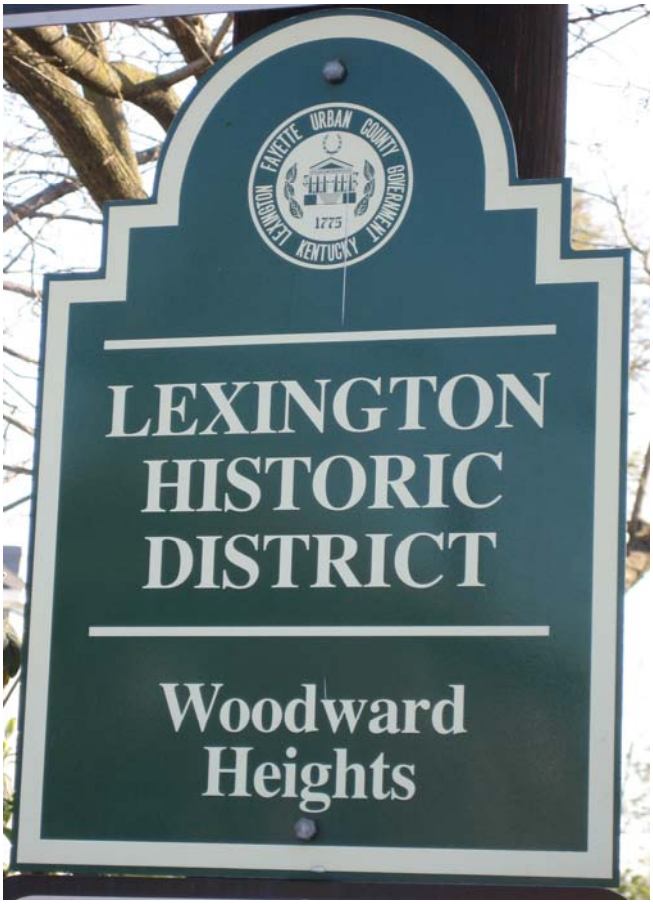


Table of Contents

Page Number

I. Executive Summary…… 1

II. Issue Statement…….. 2

III. Historic Preservation in Fayette County, KY……... 5

Neighborhood Criteria and Designation Process……. 6

IV. Literature Review……... 10

Hedonic Price Analysis……... 11
Caveats of Hedonic Models…… 14

V. Methodology and Data……. 15

Descriptive Statistics……... 18

VI. Empirical Analysis…….. 20

Independent Variables, Expected Effects and Results…… 21

VII. Implications of Historic District Price Effects…… 25

VIII. Limitations of Analysis…… 27

IX. Conclusion …….. 30

X. Works Cited……. 32

XI. Appendix A (Districts and Urban Core Map) …… 35

XII. Appendix B (Tables) ……. 37

I. Executive Summary

Beginning with Fayette County's first historic district in 1958, the process of assigning historic zoning status to qualifying neighborhoods was seen as a viable option for preserving local built cultural resources. More than a communicative symbol, H-1 districting limits dramatic exterior changes and the demolition of structures certified as contributing to the unique character of Lexington, KY. Guided by the Lexington-Fayette Urban County Government's Division of Historic Preservation and Board of Architectural Review, the program currently encompasses 1,851 buildings over 14 districts.

In order to carry out the goal of preservation, historic districting in Lexington is applied in a blanketing manner accompanied by a series of regulations. Encompassing a continuous flow of parcels in a certified region, H-1 zoning pertains to all properties, regardless of age, within a district's boundary. Applicable to specific exterior changes, the conditional requirements necessitate an official sign off by a government official before an alteration or rehabilitation may be initiated. Approval comes in the form of a "Certificate of Appropriateness." In order to receive a Certificate of Appropriateness, the proposed changes must meet specified parameters.

These defining requirements are intended to preserve a neighborhood's historic character and restrictions are applied to the type and style of material that can be used. As such, H-1 zoning can unintentionally raise maintenance costs. In 2006, the historic designation practice came under public scrutiny when citizens and local government officials clashed over a proposal to assign H-1 zoning to the adjoining neighborhoods of Hollywood Terrace and Mount Vernon. Home owners fearing a limitation to exercise their private property rights protested the zone change, while preservation proponents championed the method as a way to save unique examples of architectural style.

No argument in the debate over the recent proposed districting addressed the possible price effect H-1 could have on property values. Using a hedonic price analysis, this study reveals that for property values assessed in 2003, a historic district location added a 19% to 31% increase to the value of a residence. Age within a historic district mattered as well, with older homes benefiting from H-1 districting the most. The models considered a range of other attributes that impact a property's worth, such as age, square footage, and amenities, in addition to the specific application of historic zoning.

This type of analysis brings to surface several important considerations. As a majority of historic districts are located in Lexington's downtown area, such valuation increases can impact the availability of affordable housing within the region's urban core. If infill and redevelopment of vacant land are goals of the Lexington-Fayette Urban County Government, then historic districts demand careful approach. Additionally, from the standpoint of local government, bestowing historic zone status represents a potential revenue source to be derived from increased property taxes. This report confirms that historic zoning does have a substantial price effect on residential housing, a finding that lends itself to further reflection by public officials and citizens alike.

II. Issue Statement

With the successful effort in 1816 to save Philadelphia's Independence Hall from demolition, the practice of historic preservation became established in the United States as a powerful tool used by public entities. Governments soon followed suit, with all levels of government participating in some form of historic preservation before the end of the 19th century. Protecting historic buildings, landmarks, and properties from demolition and development, historic conservation policies and programs enacted by federal and state governments are now visible throughout the nation. For example, structures nominated by their state can be added to the National Register of Historic Places, a federally maintained list of cultural resources deemed worthy of preservation. The National Historic Preservation Act of 1966 authorized the issuance of federal grants to help establish state-level preservation offices ("SHPO"). Currently, there are SHPO's active in all 50 states. Additionally, the federal government and many states offer tax credits and abatement to investors seeking to rehabilitate historic structures.

For many concerned with cultural preservation, local policies are seen as the most direct way to protect a region's built historic character. Although programs such as tax incentives exist at the local level, the most widely used policy tool by local authorities is a historic district zoning ordinance. The National Register of Historic Places lists 13,594 designated local historic districts currently in the nation (National Register of Historic Places Website, 2006). Experts argue that older neighborhoods and buildings are located in neglected parts of urban areas that are "in greatest need of external stimuli" (Coulson and Lahr, 2005). As a majority of the country's historic building stock is contained within metropolitan areas, such overlays are implicitly an urban-oriented policy tool.

The first local historic district was established in South Carolina in 1931 by way of a zoning ordinance. The ordinance mandated the use of certain policy tools to enable the protection of buildings from extensive structural changes and demolition in Charleston's downtown sector (Lockhard and Hinds, 1983). Today local laws continue to

prevent major changes to structures located in specifically selected areas. Depending on the stringency of the ordinance, regulatory action can dictate details such as window use, gutter replacement, external paint color, and internal modifications. Historic zoning overlays most often appropriate an entire area or neighborhood as being culturally significant. The districts themselves are identified either by local planning departments or by groups of residents. The municipality, consultants, or volunteers then survey the area to create a catalogue of properties and recommend district boundaries. Although the length of time it takes to establish a new historic overlay varies widely across localities, most cities require a strong showing of support from district residents before becoming official (Schaefer Munoz, 2006).

Ideally, designations serve to maintain local culture through the continuing presence of not only culturally significant structures, but also a neighborhood's overall historic character. Regulations accompanying designations can restrict property uses, along with the type of rehabilitation and new construction that can occur. In turn, property owners often find themselves charged with the responsibility of meeting additional demands created by historic zoning. In some circumstances, researchers found the designations' circumscription can lead to the assurance of neighborhood upkeep or even improvement (Leichenko, Coulson, and Listokin, 2001; Coulson and Leichenko, 2004). Additionally, a designation's special titling can impart a neighborhood with an attractive cachet that can be translated into a source of civic pride or even claim tourist appeal. In a sense, historic overlays may be viewed as a qualifier that if a neighborhood is recognized as culturally distinctive, then it is worth lengthy and continuing investments well into the future. Investors may use a designation as a signifier that the particular region offers a certain quality that other areas can not match. If this argument is to be believed, then historic overlays can be viewed as an insurance guaranteeing the future quality of neighborhoods' structures (2001).

There are several factors that accompany a less favorable outlook for historic designations. For example, the burden of costly property upkeep can lead to inefficient levels of maintenance by owners (Saltzman, 1995). In one example, surveyors at the US Department of Housing and Urban Development found energy efficient enhancements such as replacement of windows and doors or drilling of holes into side walls for the injection of insulation may be blocked on the basis of strict adherence to preservation standards (Kean, 1991). As some historic designations prohibit the conversion of a property to another land use, theoretical reasoning suggests that historic designations prevent the "highest and best use of land" (Kinnard 1971, pg. 39). In other words, property owners are deprived of profits rendered from changes to a structure that are otherwise within legal, economic, and physical bounds, yet denied by historic districting.

Broader issues addressing the legality and equity of historic designations are also to be considered. Even as the courts deemed historic designations "a police power regulation that justifiably furthers the public's health, safety, and welfare while recognizing the rights of private property owners," debates about the imposition designations inflict on one's property rights continue (Leichenko, Coulson, and Listokin 2001, pg. 1974). More often than not, these arguments are framed by the hypothesis that historic districts detract from property values. As the number of historic districts continues to grow across the nation, the dispute is compounded by the fact that it is increasingly difficult to tell what is culturally significant. Although the accepted demarcation for considering a building historic is 50 years or older, a recent example in one of Los Angeles' oldest neighborhoods, Lincoln Heights, showed that preservation proponents are not always willing to advocate designations, especially when the residential structures are considered modest and less marketable to modern standards (Schaefer Munoz, 2006).

The balance local government officials must strike between preserving precious cultural resources and effectively using scant urban land is also evident in terms of

housing equity. If historic designations do increase property value and thus, raise property taxes and rental prices, the potential for a selected neighborhood to price out low- and moderate-income housing is apparent (Wojno, 1991). Given the range of both positive and negative externalities possible, it is important for local governments to recognize historic designations' far ranging impacts. The empirical consideration of effects on property values offer public administrators the opportunity analyze the issue of historic designations from a quantitative standpoint in conjunction with the more qualitative aspects discussed above.

III. Historic Preservation in Fayette County, KY

Historic zoning overlays are used with increasing frequency to protect urban areas defined as having significant cultural heritage from demolition and drastic architectural change. Following the designation of Gratz Park, in 1959 the Lexington-Fayette Urban County Government ("LFUCG") adopted Article 13 in Chapter 20 ("Zoning Code") of the Lexington-Fayette County Code of Ordinances to allow the creation of historic district overlays on approved neighborhoods. Although variation in application exists across the state, overlays are bestowed upon entire sections of the city in Lexington, KY. As such, historic overlay zoning ("H-1") encompasses neighborhoods in their entirety, with most containing a mixture of historic buildings, existing structures that are not historic, and new construction and redevelopment. This blanketing application carries with it a dual purpose of ensuring the continuing presence of historic structures and restricting exterior changes to specified parameters on both new and existing buildings within the designated neighborhood. Not a substitution for previously imposed zoning mechanisms, LFUCG's H-1 zoning stands in addition to other zoning regulation in a designated area.

Since allowing the creation of historic districts, LFUCG has designated 14 areas containing 17 neighborhoods (as defined by their respective neighborhood associations)

as historically significant. A majority (93%) of historic districts are within Fayette County's Urban Service Boundary, the line that specifies between the county's urban, compact style development and agricultural lands. Of those, a large portion (86%) is clustered within the city's Urban Core or downtown area (see Appendix A). The task of enacting a historic district is shared between LFUCG's Division of Historic Preservation staff ("Division"); Historic Preservation Commission ("Commission"), a 15-member volunteer government board which debates preservation issues of importance to the county); and Board of Architectural Review ("BOAR"), a five member historic district design review board; the LFUCG Planning Commission ("Planning Commission"); and the LFUCG Urban County Council ("Council"). Eligible neighborhoods may be brought to the attention of government officials by a neighborhood association, a group or individual Fayette County citizen, the BOAR, or the Commission.

Neighborhood Criteria and Designation Process

The official designation process begins with a request for a zone map amendment, also known as a zone change, before the Planning Commission or the Council. The Division notes that the majority of the requests are citizen driven with requests for historic status most often deriving from individual neighborhood associations (personal communication, Armstrong). In order to be granted historic zoning, the neighborhood's structures must meet one or more of the nine criteria established in the definition of "historic district and landmark" in Article 13 of the LFUCG Zoning Code:

1. Has value as a part of the cultural or archeological heritage of the county, state or nation;
2. Is a site of a significant local, state or national event;
3. Is identified with a person or persons or famous entity who significantly contributed to the development of the county, state or nation;
4. Is identified as the work of a master builder, designer or architect whose individual work has influenced the development of the county, state or nation;
5. Has value as a building that is recognized for the quality of its architecture and that retains sufficient elements showing its architectural significance;

6. Has distinguishing characteristics of architectural style valuable for the study of a period, method of construction, or use of indigenous materials;
7. Has character as a geographically definable area possessing a significant concentration of buildings or structures united by past events or by its plan or physical development;
8. Has character as an established and geographically definable residential neighborhood, agricultural area, or business district, united by culture, architectural style or physical plan and development; or
9. Is the place or setting of some unique geological or archeological location (LFUCG 366-2006, 2006).

After the initial nomination takes place, a seven-step designation process is initiated to establish whether or not historic status is bestowed. First, a pre-application conference is held by the Division to determine if the neighborhood meets one or more of Article 13's criteria, develop a potential boundary, and review the steps in the designation process. The Division strives to create well-defined, logical perimeters for the nominated areas. To meet this goal, whole properties and an uninterrupted sequence of properties set perimeter standards. More specifically, along with structures displaying obvious historic character, other neighborhood factors are considered. Elements eligible for inclusion within a historic zoning boundary include character contributing site features, non-character contributing structures, and vacant land and parking lots are eligible for inclusion within a historic zoning boundary (personal communication Armstrong).

A draft letter is forwarded by the Division to the Planning Commission outlining the reasons for a designation, including the proposed boundary and a list of property addresses affected by the request. The letter stands as a formal application for an area's nomination to receive historic status. Meeting at a public session, the Planning Commission votes to refer the application to the BOAR for study. A public hearing before the BOAR is scheduled within 90 days of the application referral. Following the initial hearing, the Division studies the proposed area's characteristics and delivers their findings to the BOAR in a written report. Meetings between property owners and the Division may be included in this step, but are not mandated. A three tier series of public

hearings is the final portion of the designation process. The BOAR considers the architectural value of the buildings in the proposed district, the logic of the proposed boundary, and the designation's impact on the neighborhood and county before making a recommendation to the Planning Commission by majority vote. The Planning Commission then holds a public hearing, confirming their recommendation to the Urban County Council by majority vote. The Urban County Council takes the final vote. Eight Council votes are needed to overturn the Planning Commission's recommendation or amend recommended boundaries. The designation of properties becomes effective immediately upon the final vote (LFUCG 366-2006, 2006). The entire process takes an approximate six to nine months to reach its conclusion (personal communication Armstrong).

After a district is established, all associated properties are subject to a "Review of Elements." Restricting proposed construction and rehabilitation, the Review of Elements is broken into two sections -- Site Elements and Building Elements. Each section provides oversight for a multitude of exterior aspects -- i.e. landscaping, signs, window wells, shutters, and architectural details -- that are subject to the approval of the Division and the BOAR before change may be initiated (LFUCG 366-2006, 2006). Of all requests received in 2005, 60% were handled by the Division staff with the remainder being forwarded to the BOAR (Meeker 2007). Staff issued COA's have an average 1 to 3 business day turnaround, while the more intensive BOAR approval process is completed within several weeks (2007). Approval comes in the form of a Certificate of Appropriateness ("COA"). Property owners seeking to modify their property must submit an application for a COA in order to initiate the approval process. Although historic designations encompass much of a property's exterior elements, repairs to some specific existing elements are exempt from review including paint color and regular maintenance. In 2005, the Division received approximately 430 requests for approval of exterior

changes. Of these requests, 90% were approved, 7% were denied, and 3% were withdrawn or not complete (2007).

Beginning with LFUCG's first historic district designation, the very nature of H-1 zoning became a topic of public interest and concern. Whether taken as an intrusion on one's ability to exercise control of their private property or hailed as the key to maintaining local design culture, Lexington's historic overlays drew strong responses from its citizens. An article appearing in the Lexington weekly newspaper *ACE Weekly* offers coverage of the battle over assigning historic zoning to Aylesford neighborhood in 1998. Bordering the University of Kentucky's campus, Aylesford holds a significant portion of the region's off-campus student housing. Accusations of overcrowded parking conditions and absentee landlords fueled a collective group of residents to seek a historic designation, a move that ensued in a year long public struggle. Proponents argued the H-1 status offered "'assurance that [residents'] property will be in a hub of properties that will stay the same'" and aid in halting the construction of intrusive large-scale apartment complexes (Piccirilli 1998, website). Opponents cited increased maintenance costs and a proposed boundary's inclusion of many non-historic properties, including vacant parcels, as reasons to reject H-1 zoning (1998). Designation was awarded to Aylesford in 1998, but not before residents invested significant time and resources into protecting their vested interest on both sides of the dispute.

Such qualitative aspects as those demonstrated above are proven to be both highly visible in public outlets and an important consideration in LFUCG's public policy processes. However, other effects that are quantitative in nature and perhaps more difficult to quickly identify are equally significant and worthy of attention. An example of a quantifiable aspect is the connection between H-1 zoning, its associated design restrictions, and changes in the assessed property values of parcels located within a designated historic district.

This study seeks to examine the impact of local historic designations on assessed property values specifically within Lexington's historic districts. The controversy surrounding the 2006 nomination to designate the adjoining Mount Vernon and Hollywood Terrace neighborhoods in Lexington's Tates Creek area influenced my research interest (Fortune, 2006). Hinged on terms such as property rights and preservation of neighborhood character, the Mount Vernon/Hollywood Terrace public debate reveals an absence of quantitative considerations both on the part of citizens and public officials. The demand on LFUCG officials and administrators to make informed decisions adds weight to the investigation of the relationship between local historic designations and property values. Therefore, government officials may use this analysis to improve their current procedure used to assign a local designation. Additionally, local governments within the state of Kentucky may refer to the analytical framework when considering the impact of their own zoning policies.

IV. Literature Review

The cannon of empirical literature examining the impacts of historical zoning on property encompasses more than 30 years of observation, research, and study. A general estimation reveals that research relative to this report's topic yields mixed results when considering whether focal designations affect property values positively or negatively. However, such analyses resulted more often than not in findings that show historic designations have positive effects on an area's overall property values. Researchers considering this issue make use of a variety of approaches in order to better understand the net effect historic zoning wields. A thorough overview of the established research methods serves to inform this analysis and its selected research design.

Comparisons of average neighborhood property values comprised the earliest studies. These study designs were relatively simplistic in their execution, as they applied a difference-in-difference methodology in which changes in property values both within

and outside a focal district are compared. Thus, if a property's value increases more within a designated area, the designation is inferred to have a positive effect (Leichenko, Coulson, and Listokin, 2001). A negative effect is equated to when property values in a designated area increase less or decrease more than those outside. Rackham (1977) examined houses located both within and outside of Washington DC's historic Georgetown area while Scribner (1976) studied both historic and non-historic homes of Alexandria, VA. Using side-by-side neighborhood comparisons, both drew similar findings that historic districts had higher property values on average than non-designated neighborhoods. Other difference-in-difference studies found that historical districts had a null or negative effect on related property values (Samuels, 1981; Gale, 1991). In the past decade, researchers largely abandoned the difference-in-difference method when exploring the relationship between property values and historic designations. The primary argument is that this particular methodology does not consider factors other than a designation which may be relevant and better explain the property value's growth rate (Noonan, 2007).

Hedonic Price Analysis

More recent research relies on the use of the hedonic pricing method to explore the same link. Noonan explains that hedonic price models are based on "the theory that houses are goods with many attributes and that the marginal implicit prices for the attributes can be identified by assessing how sale prices vary with attributes" (2007, pg. 20). By using such a price analysis, researchers are able to assess the effect of historic designations while holding other physical and neighborhood attributes constant. In a sense, the hedonic pricing mechanism allows for the deduction of a value for a typically non-valued good. As locally imposed historic designations in Fayette County are not accompanied by tax incentives, there is not a previously assigned value to such designations. (Note: A state level tax credit was enacted by the Kentucky General

Assembly on March 15, 2005. This tax incentive offers to cover a percentage of a property's rehabilitation expense for qualified owner-occupied residential buildings listed on the National Register of Historic Places. A majority of Fayette County's H-1 properties are eligible for this incentive being both nationally and locally certified. As such, the short time period did not allow for sufficient data to be generated on Lexington residents that took advantage of this program.) This methodology, therefore, allows me to determine the impact of local designations as related to property values.

Much as with the prior difference-in-difference method, studies using the hedonic price method reveal mixed results. A number of studies using property sale prices, rather than assessment values, conclude that properties located within a historic district sell at a much higher rate than those in areas not deemed historic. Ford (1989) used a hedonic price analysis to estimate housing prices of residential properties located within historic districts in Baltimore, MD. Specifically, the researcher relied on a before-and-after approach, analyzing both 1980 and 1985 sale prices to determine if housing prices in census tracts designated historic between those dates were higher than non-designated tracts. Employing data drawn from the Greater Baltimore Board of Realtors Multiple Listing Service and the 1980 Census, Ford developed independent variables such neighborhood characteristics and housing-specific variables (i.e. numbers of bedrooms, lot size). Common to all hedonic price analysis reviewed for this study, the study's models employed a semilog model with a logged dependent variable of housing values. Holding a property's factors constant, a historic designation was shown to have a significantly positive effect on housing sale prices.

Asabere and Huffman (1994) also found a semilogarithmic model allowed for the best fit of their data when the researchers examined the impact of federal historic districts on the housing prices of 120 properties in Philadelphia, PA. Unlike locally applied historic status, federal historic districts have few restrictions and were estimated to increase residential home values by as much as 26% in the city. Clark and Herrin (1997)

assessed the impact local historic zoning had on property values of in Sacramento, CA by drawing on a sample of both designated and non-designated neighborhoods. Their model regressed the adjusted sale price against housing characteristics typical to property value assessments including number of stories, property acreage, age, number of rooms, and total livable area. Like previous models, designation status was represented by a dummy variable. Interestingly, their findings suggest that properties within historic districts receive marginal positive results, while those immediately adjacent to a district had no significant effect.

Coulson and Leichenko (2001) offer a model that both improves on earlier versions and specifically examines local designation impact. Using a sample of houses, rather than neighborhoods, the researchers analyzed 7,600 individual properties in Abilene, TX. Of the sample, 160 are designated historic at the local level. In addition to receiving historic status, property owners in designated districts are eligible for two types of local tax benefits at the local level. Owners taking advantage of the tax breaks are subject to a COA process, similar to the one imposed in Fayette County. However, home owners may chose not to accept the tax incentives and still receive historical certification. This created several property categories for the researchers, including properties designated at the local level with and without tax incentives, as well as non-designated properties. The model regressed a log of the housing prices against typical housing characteristics and a series of dummy variables to indicate the variations in historical status. The study's findings conclude that a locally designated property not receiving a tax break saw an average rise in property value of 17.6% or $7,040 on a $40,000 home. Properties receiving a tax break and subject to the COA process received less benefit with a 0.2% rise in property value or $80 on a $40,000 home.

Still, other studies relying on a hedonic price analysis found mixed or negative results, including Schaeffer and Millerick (1991), who noted the effect national historic designations has on properties was a positive one while properties in a local designation

revealed depressed values. Examining small historic apartments in Philadelphia, Asabere et al. (1994) concluded complexes receiving a historic designation experienced a 24% reduction in price compared to federally certified properties. Using a hedonic framework, federal districting produced statistically insignificant results. The researchers summarized that since historic districting at either government level does not produce a positive externatility, historic regulations are "confiscatory" and therefore, "impinge on owners' private property rights" (1994, pg. 231).

Caveats of Hedonic Models

Although recent hedonic studies represent a significant improvement over the previous difference-in-difference methodology, two specific caveats exist. First, most studies using hedonic models look at only a small number of historic districts in one city and thus, are limited in their generalizability. However, researchers have noted this limitation and a recent study offered an expanded sample size in the analysis. Leichenko et al. (2001) relied on data drawn from nine Texas cities and found that seven out of the nine cities showed the value of historic properties was higher than non-historic properties. Still, most studies remain limited to data available at the local level and no study has attempted a national survey of property value effects. As this analysis seeks to examine the impact of historic zoning within Fayette County, KY, and aims to prepare a tool for local government and citizen use, its generalizability is intended to remain within a limited realm. However, the report also serves to provide a framework for future analysis that may occur in other localities and provide a useful research outline worthy of replication.

The second limitation stems from what researchers classify as an endogenous designation (Coulson and Leichenko, 2004; Noonan, 2007). In this instance, properties that are deemed appropriate for designation may already be in stages of revitalization or considered a "hot" real estate market. In turn, these trends and their associated price

levels may influence the choice to designate an area. Separating whether designations cause a property's value to rise or if rising property values are the ones most likely to become designated is noted as potential topic for future research, yet research has yet to tackle this empirical dilemma (2007). This report refrains from addressing endogenous designation at this time and controls for observable characteristics shown to impact property value differentials of historic designations.

V. Methodology and Data

The data for this study was drawn from a larger data set compiled by the Department of Economics at the University of Kentucky using the records of the Property Valuation Administrator ("PVA") of Fayette County, KY as collected in 2003. My data consists of observations on individual residential properties inclusive of their assessment values and characteristics. The sample size is large, comprised of 44,049 properties with full records. Of these properties, nearly all (99%) are zoned for residential usage. Among the properties in the database, 1,091 are designated historic at the local level. Although actual historic districts assigned by LFUCG account for 1,815 structures in Fayette County, KY, historic properties that are zoned exclusively for commercial use or contain incomplete records were eliminated. The PVA provides information in a spreadsheet listing Fayette County's individual parcels, as well as the parcel's property and building's structural characteristics, and the most recent assessed property value. Criteria used by the PVA to estimate property value reflects social demands and standard attributes associated with property valuation; therefore, it is acceptable to estimate the models' independent variables with the criteria characteristics.

The data set's observations were thoroughly examined for comprehensiveness in each category or variable. I attempted to render observations with missing factors complete through the use of the PVA's tax roll website. If the PVA data did not contain the information needed to complete an observation, a self-survey was initiated when

possible. After these steps were followed, observations found to still be missing information about a parcel's characteristics were eliminated from the database. Property value effects are estimated in this study using hedonic price models. The data were used to estimate the following ordinary least squares regression for Model 1:

- $\ln(\text{2003 assessed value}) = \beta_0 + \beta_1(\text{sf living area}) + \beta_2(\text{no. full bath}) + \beta_3(\text{no. half bath}) + \beta_4(\text{stories}) + \beta_5(\text{sf basement}) + \beta_6(\text{acres}) + \beta_7(\text{fireplace}) + \beta_8(\text{AC}) + \beta_9(\text{heat}) + \beta_{10}(\text{age}) + \beta_{11}(\text{brick}) + \beta_{12}(\text{frame}) + \beta_{13}(\text{masonry and frame}) + \beta_{14}(\text{block}) + \beta_{15}(\text{stucco}) + \beta_{16}(\text{siding}) + \beta_{17}(\text{stone}) + \beta_{18}(\text{asbestos}) + \beta_{19}(\text{historic designation}) + \varepsilon$

A second model was estimated using the same dependent and explanatory variables with the addition of an interaction variable of AGE_HDIST. Multiplying a structure's age by its historic district status allowed the effects of age within H-1 districts to be specifically examined. Model 2 is estimated as:

- $\ln(\text{2003 assessed value}) = \beta_0 + \beta_{1\text{-}19} + \beta_{20}(\text{historic designation*age}) + \varepsilon$

Theoretical reasoning does not lend support to one function form over another when attempting to gauge the impact of zoning on property values (Coulson and Leichenko, 2001). However, the semilog form has proven to be both popular in similar studies and to generate the best fit for models such as those used in this report.
A regression of the log of 2003 assessed residential property values shows the influence one marginal characteristic has on another. The use of the semilog form allows the variables' coefficients to represent semielacticities or "the percentage increase in property value due to a unit increase in the characteristic" (2001, pg. 118). Using this form, the effect of historic zoning can be evaluated as a function of a property's overall cost.

Explanatory variables selected conform both to the PVA criteria and models found in the literature review (Schaeffer and Millerick, 1991; Asabere and Huffman, 1994; Clark and Herrin, 1997). The continuous independent variables used for this study are inclusive of parcel acreage, age, number of times the property was sold, number of

bathrooms, stories, above grade square footage, number of fireplace stacks, and finished basement square footage. The interaction variable of HDIST_AGE is continuous for parcels located within H-1 zoning, while parcels outside historic districts take on a value of zero. Dummy variables were assigned to represent whether or not the structure is outfitted with central air conditioning and/or heat. Binary variables also represented the structure's exterior wall type, with each observation claiming one of seven exterior styles (as represented in the data set). A parcel's historic zoning mechanism is represented by a binary variable. The binary indicates whether the parcel in question is within a locally designated historic district. As the PVA provides new assessment values each year, the dependent variable is reliant on the data set's assessed rates dated at January 1, 2003. Table 1 shows each variable and its definition.

Table 1: Variable Definitions

Continuous Variables	**Definition**	**Binary Variables**	**Definition**
APRTOT	2003 PVA Appraisal Value in dollars	*HDIST*	Local H-1 district: 1=H-1 zoning, 0=non-designated
SFLA	Total square footage of living area	*AC*	Home has central air conditioning 1=Yes, 0=No
FIXBATH	Total number of full sized bathrooms	*CEN_HEAT*	Home has central heat 1=Yes, 0=No
FIXHALF	Total number of half sized bathrooms	*BRICK*	Home has brick exterior 1=Yes, 0=No
NUMSALES	Total number of sales in the data set	*FRAME*	Home has frame exterior 1=Yes, 0=No
STORIES	Total number of stories	*MAS_FRAM*	Home has masonry and frame exterior 1=Yes, 0=No
FINBSMTAREA	Total square footage of finished basement area	*STUCCO*	Home has stucco exterior 1=Yes, 0=No
ACRES	Total number of parcel acres	*BLOCK*	Home has block exterior 1=Yes, 0=No
AGE	Age of structure	*ALUM_VYN*	Home has aluminum or vinyl siding exterior 1=Yes, 0=No
WBFPL	Total number of wood burning fireplace stacks	*STONE*	Home has stone exterior 1=Yes, 0=No
HDIST_AGE	Age of structure only if located in H-1, outside H-1=0	*ASB*	Home has asbestos exterior 1=Yes, 0=No

It is noted that the reliability of assessed property values as the dependent variable (versus the use of another indicator of property values such as sale price) represents a weakness in the models. Researchers examining property value have questioned how well

assessments reflect a structure's actual market worth. Limited findings in this field yield mixed results when testing assessed property values' validity. In comparing sale prices with assessed values for residential properties in Southeast Florida, Schuler (1990) determined that the model using assessed values as the dependent variable achieved higher explanatory power (R^2=0.88) than the model using sale prices as the dependent (R^2=0.80). However, Schuler also found that neighborhood qualities were over-assessed by as much as four times their value found in the sale price model. As historic districting is a specific neighborhood quality, Schuler's study brings this report's choice of dependent variable into question. The models' dependent variable is thus noted as a caveat in the models in Section VIII.

Descriptive Statistics

There are several interesting results found in the descriptive tables seen on the next page. The historic structures tend to have fewer rooms, such as bathrooms and finished basement areas, but more overall square footage in the general living area. Since the majority of H-1 zoning is constrained to Fayette County's downtown urban area (see Appendix A), the average amount of acreage found in the sample for historic parcels is less than the non-designated properties. Unsurprisingly, the average age of the historically zoned structures (81 years) is significantly older than the rest of the sample's average age (29 years). Noting the youngest age of a structure in a historic district is 2 years highlights the H-1 zoning's ability to impact structures dichotomous from its very definition. Also, the length of time a building stood corresponds negatively with the number of times it was sold as H-1 structures changed owners on average slightly less frequently than buildings outside the designated areas. Finally there is a difference in the property values' assessment rates, with historically zoned residents assessing on average $8,000 more than non-designated structures.

Table 2: Summary Statistics for Non-designated Parcels (n=42,958)

Variables	Mean	S. D.	Min	Max
APRTOT	130683.1	9414.49	1500	1500000
SFLA	1850.162	903.86	181	14091
FIXBATH	1.765073	0.7079066	0	12
FIXHALF	0.4894083	0.5358546	0	5
NUMSALES	1.737162	0.7072844	1	5
STORIES	1.304088	0.4616418	1	9
FINBSMTAREA	164.4757	374.7598	0	4543
ACRES	0.5075259	4.967054	0.0161	440.35
AGE	29.19449	23.24403	0	211
WBFPL	0.3125145	0.6490352	0	6
AC	0.8410308	0.3656516	0	1
CEN_HEAT	0.9663625	0.18002964	0	1
BRICK	0.4799804	0.4996049	0	1
FRAME	0.0578705	0.2335011	0	1
MAS_FRAM	0.3208715	0.466817	0	1
STUCCO	0.002002	0.0446989	0	1
BLOCK	0.0013734	0.0370349	0	1
ALUM_VYN	0.1222124	0.3275348	0	1
STONE	0.0032124	0.0565879	0	1
ASB	0.0124773	0.1110041	0	1

Table 3: Summary Statistics for H-1 Parcels (n=1,091)

Variables	Mean	S. D.	Min	Max
APRTOT	138920.3	91428.72	14000	1300000
SFLA	2109.921	992.2919	602	7478
FIXBATH	1.706691	0.6787341	0	5
FIXHALF	0.223648	0.4445696	0	3
NUMSALES	1.679193	0.6984371	1	4
STORIES	1.539872	0.5004728	1	3
FINBSMTAREA	24.35655	145.6203	0	1800
ACRES	0.1833095	0.1584528	0.0223	2
AGE	81.19707	35.53683	2	203
WBFPL	1.345555	1.267348	0	6
AC	0.4848763	0.5000004	0	1
CEN_HEAT	0.9514207	0.2150854	0	1
BRICK	0.6223648	0.485018	0	1
FRAME	0.1769019	0.3817607	0	1
MAS_FRAM	0.1109074	0.3141615	0	1
STUCCO	0.0109991	0.104346	0	1
BLOCK	0.004583	0.0675732	0	1
ALUM_VYN	0.0320807	0.1762951	0	1
STONE	0.0219982	0.1467446	0	1
ASB	0.020165	0.1406289	0	1

VI. Empirical Analysis

As previously stated, a hedonic model is used to estimate the effect of Fayette County's local historic zoning designation on property values. As such, each variable in both models represents a proxy for what comprises a property's overall worth. A discussion of each independent characteristic's expected effect on the value is followed by an examination of the associated factor's coefficient. Appendix B shows the table of the data set's summary statistics. The results of the models including regression coefficients and their relative price effects on property value are shown below in Table 4.

Table 4: Results of Ordinary Least Squares Regression using Parcel Characteristics to Determine Property Value Impact

	MODEL 1			MODEL 2		
Variables	**Coefficient**	**t**	**Relative Price Effect (%)**	**Coefficient**	**t**	**Relative Price Effect (%)**
_CON	9.995895	254.35		10.00331	254.41	
SFLA	0.0004646	143.58***	0.05%	0.0004635	142.94***	0.05%
STORIES	-0.1129919	-26.5***	-11.29%	-0.1127568	-26.45***	-11.28%
AGE	-0.0041867	-46.83***	-0.42%	-0.0042856	-46.74***	-0.43%
ACRES	0.0117356	39.3***	1.17%	0.0117567	39.38***	1.18%
NUMSALES	0.0206483	9.97***	2.06%	0.0204212	9.86***	2.04%
WBFPL	0.0357118	14.72***	3.57%	0.0353496	14.57***	3.53%
AC†	0.282683	55.21***	32.67%	0.2820791	55.09***	32.59%
CEN_HEAT †	0.2735191	30.85***	31.46%	0.2726725	30.76***	31.35%
FIXBATH	0.0872063	26.55***	8.72%	0.0869993	26.49***	8.69%
FIXHALF	0.0719581	20.92***	7.19%	0.0717963	20.88***	7.18%
FINBSMTAREA	-0.0003725	-71.18***	-0.04%	-0.0003711	-70.82***	-0.04%
BRICK †	0.3839332	10.07***	46.80%	0.3837163	10.07***	46.77%
FRAME †	0.0579822	1.51**	5.96%	0.0579991	1.51**	5.97%
MAS_FRAM †	0.329528	8.62***	39.03%	0.3277596	8.58***	38.79%
STUCCO †	0.3868266	7.92***	47.23%	0.3882178	7.95***	47.44%
ALUM_VYN †	0.2147172	5.61***	23.95%	0.2136019	5.58***	23.81%
STONE †	0.5398079	12.01***	71.57%	0.5386738	11.99***	71.37%
ASB †	0.1351884	3.37***	14.48%	0.1356133	3.38***	14.52%
HDIST †	0.2722615	26.83***	31.29%	0.1715794	7.4***	18.71%
HDIST_AGE				0.0013042	4.83***	0.13%
R2	Adjusted R^2 =.7614			Adjusted R^2 =.7615		
n=44,049; Significance at (.01)*** (.05)** (.10)*						

† Price effect for binary variables determined using Halvorsen and Palmquist (1980) correction.

Zoning Characteristics

A priori theory suggests the expected sign of each variable in the models, although some remain uncertain. For the binary variable of a parcel's historic zoning status (HISTDIST), prior research suggests that the associated coefficient will be positive. A few research examples reviewed suggested that local designation result in a decrease in property value. However, these observations were made solely of specific property types (i.e. small apartments) that are not well represented in this study's sample. Model 1 provides a baseline estimate of the impact of local historical designation with a coefficient that is positive and significant ($t = 26.83$). This suggests that a residential building or parcel located in an assigned H-1 zone has a property value increase of 31.29%.

When the age of structure is accounted for in Model 2, the coefficient for HDIST is still both positive and significant ($t = 7.40$). Although the impact of H-1 zoning alone is reduced from Model 1, as the model's HDIST coefficient reflects a price effect of approximately 19%, the increment to the assessed property value's is still always higher for parcel's located in locally designated neighborhoods. A structure's age accounts for some of the loss of H-1's impact, with a coefficient that shows for every percent increase in structural age of an H-1 parcel, its property value increases by 0.13%. This finding suggests that impact of locally applied designations tends to be strongest for the oldest homes. The implications of H-1 zoning's price effect are discussed in greater detail in the next section.

Structural Housing Characteristics

As the remaining explanatory variables remain virtually unchanged between the models in terms of their coefficients and significance, the following discussion refers to the variables' impact across both models. It is commonly known that the size of a home can often determine a large portion of its market appeal. Given the tendency for families

to buy increasingly larger sized residences nationwide, the coefficient SFLA was expected to be positive. Considering the structural makeup of a residence in the models, the unit price of a home's living area is about .05% of property's value. Holding all other variables constant, this represents a price of approximately $60 per square foot of living area. Note that this unit cost is reflective of a property's existing living space at the time of the assessment and does not account for improved living areas.

Prior studies show that although the number of stories on a home increases its living space, two or more levels slightly decrease the value of residential properties (Coulson and Lahr, 2005). This may be due to the fact that divided living space is more cumbersome to manage and can be a hindrance to aging populations. Therefore, the coefficient associated with STORIES was expected to represent a market discount. Looking at the results, the associated coefficients for the number of stories is negative, large, and significant. Each additional level of housing potentially decreases a property's value by 11%. As considered, this may indicate a preference for single or bi-level homes that are easier to heat and cool, and offer significant accessibility advantages.

In the scope of literature concerned with hedonic price analysis of home values, the coefficient associated with age often provides small and negative coefficient between the ranges of .002-.01 (Rubin 1993). For these models, age proved to fit within this scale, producing a negative price effect of about -0.4%. Although the variable of age does bring to surface some limitations in the models, the coefficients meet the criteria set forth in this analysis as being significant at the Type 1 error levels (see Section VIII).

The interaction variable HDIST_AGE found in Model 2 also allows for an interpretation of the impact of structural age, albeit being limited to parcels located within historic districts. As noted previously, an older home on average reaps more benefit from H-1 zoning than a newer residence. While it is difficult to interpret the exact meaning of this finding, the positive association age brings about in historic districts is significant and noteworthy.

Amenities

Since amenities such as fireplaces and bathrooms are considered attractive luxury features of a home, the coefficients associated with the explanatory variables FIXBATH, FIXHALF, and WDFPL are expected also to be positive. The marginal price of a full bathroom is nearly 9% of a residential property's value, a substantial sum when considering the median cost of a Fayette County parcel. Half bathrooms also add some value at 7% of a property's worth. As expected, wood burning fireplaces create a positive price effect, although at 3.5%, not nearly as large as a bathroom's contribution. All of the above coefficients are shown to be significantly greater than zero at the usual levels of Type 1 error, making them statistically significant. The associated coefficients appear to be indicative of amenities considered essential assets to a residence's structure.

The coefficients on central air conditioning (AC) and heat (CEN_HEAT) were expected a positive sign, as they do. Adjusting for the binary variable in a log function, both central air conditioning system and central heating unit add significant value to a home at an increase 33% and 31% respectively. This finding is in line with similar research in the arena of historic property value characteristics (Coulson and Leichencko 2001).

Less predictable was the outcome of the coefficients associated with a finished basement's total square footage (FINBSMTAREA). On one hand, a finished basement can add living space to a building. Yet it can also serve to devalue a residence if it is poorly finished or underutilized, so the outcome of the coefficients was deemed uncertain. The models show that a finished basement detracts from a property's assessed value at a rate of .03% for each additional square foot. Coulson and Lahr (2005) hypothesized that this may be because after accounting for a home's bedrooms and bathrooms, each additional room can remove common space from the overall living area. Although the strength of such a corollary is difficult to surmise in the case of rooms

occupying separate levels such as basements, the negative coefficients do suggest that finished basements do reduce a home's overall value.

Exterior Characteristics

For the binary variables indicating which types of exterior wall a property displays, the coefficients associated with brick (BRICK), stone (STONE), stucco (STUCCO), masonry and frame combination (MAS_FRAME), and frame (FRAME) were thought to be positive. This is due to the fact that these materials best capture elements both popular in higher priced new construction and reflective of a "historic" look. Other coefficients, such as block wall (BLOCK), asbestos (ASB), and aluminum or vinyl siding (ALUM_VYN) were estimated to reduce a building's market value. Surprisingly, nearly all exterior types produced positive coefficients with statistical significance. Block wall was dropped due to collinearity in the equation, while frame is shown as being statistically insignificant. As to be expected, the models reveal that higher priced construction material such as brick and stucco add more value to a property than lesser priced exterior elements, such as vinyl siding.

Parcel Characteristics

The effect of a property's overall lot size, as represented by in acres (ACERAGE), was uncertain. Some homeowners have shown to prefer facilities such as increased greenspace, while others find the upkeep of a home's outdoor areas to be burdensome or costly. The price analysis suggests that more acreage adds a small amount of value to a property. The sign for the coefficient of the number of time a parcel was sold (NUMSALES) was also unknown. Although several sales in the data set could be indicative of a "hot" property or a greatly appreciating value, homes with fewer owners for longer periods of time may have substantial improvements that add worth. The

coefficient for NUMSALES shows that more sales do positively increase a property's value to a small degree.

VII. Implications of H-1 Zoning's Price Effect

This finding of this analysis with regard to the price effect of historic districting brings several important considerations to surface. Seen in Appendix A, a majority of historic districts are located in Lexington's downtown area. As with any type of residential property, valuation increases can impact the availability of affordable housing within the region's urban core. Furthermore, the increase of property value is not limited to built structures within the certified districts. As LFUCG historic zoning policy is applicable to a district's vacant lands, the cost of those parcels are affected as well. Coupled with potential increased costs associated with the premium materials meeting H-1 standards, vacant parcels located in historic districts exhibit some capability to intensify development costs. As the infill of vacant land and downtown redevelopment are goals supported by LFUCG officials in the 2006 Comprehensive Plan, the positive price effect on historic district's vacant or abandoned properties demands careful regard (LFUCG 2006).

Additionally from the standpoint of a local government, bestowing historic zone status represents a potential revenue source to be derived from increased property taxes. The findings of this study should serve to notify local property appraisers that guidelines are necessary to properly account for structures located within historic districts. Taking the aggregate value of the 1,091 historic properties represented in the study's sample and assuming a majority (97%) are subject to Lexington's District 1 tax rate, a baseline increase of 32.29% in property value represents a possible $490,454 in property tax in 2003. Although this formula only supplies a rough estimate of the total possible revenue for local government, the positive coefficient associated with H-1 zoning implies a bigger picture. Assessed values of residential properties in Lexington are intended to reflect

"arms length" transactions, or the sale price established between a willing seller and willing buyer. However, assessments for each property are not conducted every year, meaning the assessed value of a property may not reflect the parcel's true or current market value. If property owners selling their H-1 located residence wish to capture the positive externality associated with historic districts, it is necessary to create a property appraisal process that accounts for special zoning applications.

The enhancement in property value also partially supports the policy of tax abatements or easements for historic properties. As stated, the Kentucky General Assembly recently passed an initiative granting tax incentives to historic owner-occupied properties for rehabilitative actions. Policies similar to this state-level program are also found at the local level (Beaumont 1996). As demonstrated above, a rise in property values equates to a rise in property taxes. Given the possibility of tax increases, property owners not motivated by preservation alone may refrain from participating in improvements without incentives. Viewing abatements as a source of motivation, incentives could serve to compliment LFUCG's goals of infill and downtown redevelopment.

Counter to this argument, researchers contend that unless such incentive programs are means-tested, the potential for property displacement of less-affluent populations becomes evident (Leichenko, Coulson, and Listokin, 2001). For example, the state-level tax credit program in Kentucky requires a minimum $20,000 in rehabilitation expenses to be accrued over a consecutive 24-month period before the historic rehabilitation incentive can be claimed. For a $60,000 home, this represents an investment of one-third the home's value, a substantial sum for lower income residents. If minimum investment levels are able only to be met by high income residents, than the ability of H-1 designations to significantly increase assessed property values and thus, increase in property owners' overall wealth, must be weighted against the program's implementation.

Additionally found in this scenario is the possibility that tax incentives do not effect behavior, but only contribute to residents whose capital was already bettered from receiving the benefit of H-1 zoning. If endogenous factors are considered, such that Lexington's H-1 districts attract residents already motivated to rehabilitate historic properties regardless of the property's zoning, than rehabilitation subsidies are adding to the owner's resources and not actually changing their actions. Since the models do not account for such elements, the specific motivating factors can not be separated out from the study's findings. In consideration of H-1's potential to appreciate property value, the intersection of historic districts and incentive-based tax policies has significant resonance on both sides of the argument.

Finally, it should be noted the price effect derived from historic zoning should not be taken as a net effect of economic benefit of H-1 status. To date, there has been no estimation of the cost of historic designation for a property owner either in Fayette County or across the nation. As the restrictions imposed by LFUCG's H-1 zone policy imply, designation is not a free market good. It requires substantial investment by the property owner when rehabilitation or improvements are undertaken. Or, if housing is abandoned due to the cost of improvements, the cost burden falls on both the local authority overseeing blighted structures and abutting properties suffering from deceased neighborhood values. Until accurate estimates can be made accounting for the net cost of designation in Fayette County, the models' price effect of H-1 zoning should be approached with caution.

VIII. Limitations of Analysis

The consideration of certain limitations due to discrepancies in data collection and a lack of analytical tools can aid in strengthening future research studies. The models' explanatory variables were rendered as complete as possible given the data set's composition. However, there may be specific effects of a structure's age that are not

accounted for in this study. As one team of researchers noted, age as a variable of property value can present a confounding effect. On one hand, older buildings may appreciate in value as historical property is considered more valuable. Yet age can also depreciate a structure's overall worth, as higher maintenance costs account for a pure aging effect. Coulson and Lahr (2005) attempted to articulate the effect of age through a series of polynomial variables in their study of historic designation price effects on appreciation rates in Memphis, TN. Mapping their study's findings, the researchers were able to uncover specific age ranges in which residential properties received the most positive benefit from historic districting (less than a few years old, and between 28 and 80 years old). The team concluded that the "main impact of designation that comes about with local designation remains unchanged; [i]indeed, it is even strengthened" (2005, pg.502). Positive results aside, it suggested that prospective researchers attempt to correct for the deficiencies found in this study's models with respect to the variable of structural age.

Although it is often cited in previous research as an important structural attribute, a total number of rooms for each individual parcel was not available for a majority of the properties in the database. The PVA does not track the total number of rooms for a structure; therefore, it was not possible to render the data set complete for observations missing this characteristic. As the number of rooms represents the total of living and common areas within a residence, this particular characteristic stands to pose an interesting dynamic when measured against specific room types, such as bathrooms. Further research into this area is recommended for future studies.

As well, the omitted variable of distance from downtown has the potential to impact the models as well. The real estate maxim about the three most important qualities of a property – location, location, location – is well reflected in economic literature that states the closer a property is to an amenity, the more it is worth (Dunphy 1998). As shown, the majority of the historic districts are located well within the downtown

boundary of Lexington. Thus, the omitted variable of distance from downtown potentially explains some of the properties increased value in historic zones. Property location in proximity to downtown amenities or the Lexington Urban Service Area is unfortunately not recorded in the PVA data. Given the large sample size and the study's limited time frame, it was not possible to estimate even a rough estimation of each parcel's distance from downtown. Again, it is recommended that this variable be considered in any future study and its absence is considered a weakness of this report's models.

It was also not possible for me to verify which parcels were certified as historic at the federal level on the National Register of Historic Places. Due to time and accessibility limitations, this data was omitted as a potential binary variable. Research conducted in a similar vein that did account for federal designations on the whole reveals that national designation often had limited price impact for communities that also enact preservation programs at the local level. However, even given a limited impact, the potential for a national designation to wield an effect on a property's market value is evident.

As stated previously, the use of assessed property values for the models' dependant variables represents a weakness in the overall models, as well as potentially reducing the significance of the models' results. Previous studies in this field relied on dependent variables of sale price or market value (Ford, 1989; Asabere and Huffman, 1994; Clark and Herrin, 1997). A sale price is often thought to best represent the market value as determined by a buyer or seller and thus, capture a structure or property's true value. Adding to the strength of the use of sale prices in a hedonic price model is the possibility of "assessment lag." Whereas sale prices reflect the associated year's market demand, assessments are not conducted every year and thus, their values may be divergent from a property's current, true market value (Heavey 1978). Still, property assessment rates in these models are used under the theoretical assumption that they do reflect some market value. Since the data set presented significant difficulties in adjusting

the parcels' sale prices for factors such as inflation, depreciation, and appreciation, assessed values were selected as the best fit for the dependant variable. However, this does not imply that these values were approached with abandoned caution as the acknowledgment of the models' limitations reveal. In order to demonstrate an absolute price effect, it is recommended that studies embarking in a similar research vein use sale prices or market values when possible.

Finally, limitations presented by the data set and general availability of accurate parcel characteristics could greatly influence the outcome of the models. The sample used represents both the most complete set of residential properties with known characteristics available and about a 60-70% match of all residential addresses in Fayette County. A solution to this dilemma is difficult, as even the office of the PVA does not retain complete records of every parcel and structure in the region. One possibility is the piecemeal collection of data through records of private real estate agencies. Also, matched sample methods may render this problem obsolete, although this approach produced less robust R^2 outcomes in previous research than the ones found in this report (Adjusted $R^2 = .761$ for both models). Going on the assumption that more complete data serves to strengthen the analysis, it is recommended that consideration be given to the data set's limitations in future studies.

IX. Conclusion

Historic designation at the local level is powerful policy tool capable of inspiring citizen calls to action on both sides of the table. The analysis presented in this study supports the assertion that historic designations can wield significant and positive impacts on property values in Fayette County. However, given the limitations of both the available data and the measures used to obtain the report's findings, the models' results should be approached with caution. Among standard property characteristics typically used to determine property worth, the price effect of historic zoning appears to justify

reconsidering property assessment program parameters at the local level. While a price effect does give reason to celebrate historic preservation, it also brings to mind concerns of displacement and cost incurred by less-affluent populations. Possible improvements to the models are foreseen as having the potential to improve estimations of designation's effect, and, therefore, predict with greater accuracy the potential benefits and losses incurred by its application.

XI. Works Cited

Asabere, Paul K. and Huffman, Forrest E. "Historic Designation and Residential Market Values." *The Appraisal Journal* 62 (1994): 396-401.

Asabere, Paul K., Huffman, Forrest E., and Mehdian, Seyed. "The Adverse Impacts of Local Historic Designation: The Case of Small Apartment Buildings in Philadelphia." *The Journal of Real Estate Finance and Economics* 8, no. 3 (1994): 225-234.

Beaumont, Constance. Smart States, Better Communities. Washington DC: Preservation Press, National Trust for Historic Preservation, 1996.

Clark, David E. and Herrin, William E. "Historic Preservation and Home Sale Prices: Evidence from the Sacramento Housing Market." *The Review of Regional Studies*, 27 (1997): 29-48.

Coulson, N. Edward and Lahr, Michael. "Gracing the Land of Elvis and Beale Street: Historic Designation and Property Values in Memphis." *Real Estate Economics* 33, no. 3 (2005): 487-507.

Coulson, N. Edward and Leichenko, Robin. "The Internal and External Impact of Historic Designation on Property Values." *Journal of Real Estate Finance and Economics* 21, no. 1 (2001): 113-124.

Coulson, N. Edward and Leichenko, Robin. "Historic Designation and Neighborhood Turnover." *Urban Studies* 41, no. 8 (2004): 1587-1600.

Dunphy, Robert T. "The Cost of Being Close: Land Values and Housing Prices in Portland's High Tech Corridor." *Urban Land Institute Working Paper Series Number 660.* October 1998:http://www.uli.org/AM/Template.cfm?Section=Home& CONTENTID=43687&TEMPLATE=/CM/ContentDisplay.cfm. (accessed on 4 April 2007).

Ford, Deborah Ann. "The Effect of Historic District Designation on Single-Family Home Price." *The Journal of the American Real Estate and Urban Economics Association*, 17 (1989): 353-362.

Fortune, Beverly. "Historic Label Recommended for 2 Areas." *The Lexington Herald Leader*. 19 September 2006: http://nl.newsbank.com/nl-search/we/Archives?p_action =list&p_topdoc=61 (accessed on 28 January 2007).

Gale, Dennis E. "The Impacts of Historic District Designation: Planning and Policy Implications." *Journal of the American Planning Association* 57 (1991): 325-340.

Heavey, Jerome F. "Assessment Lags and Property Tax Impacts." *American Journal of Economics and Sociology* 37, no. 4 (1978): 431–436.

Halvorsen, Robert and Palmquist, Raymond. "The Interpretation of Dummy Variables in Semilogarithmic Equations." *The American Economic Review* 70, No. 3 (1980): 474-475.

LFUCG Division of Long Range Planning. Goals and Objectives, 2006 Comprehensive Plan, Lexington-Fayette Urban County Government (adopted March 9, 2006).

Kean, Thomas. Advisory Commission on Regulatory Barriers to Affordable Housing Report, *Not in My Back Yard: Removing Barriers to Affordable Housing*. Washington DC: The US Department of Housing and Urban Development (HUD), 1991.

Kinnard, William. Income Property Valuation. Lexington, MA: Heath-Lexington Books, 1976.

Leichenko, Robin, Coulson, N. Edward, and Listokin, David. "Historic Preservation and Residential Property Values: An Analysis of Texas Cities." *Urban Studies* 38, no. 11 (2001): 1973-1987.

Lexington-Fayette Urban County Government, Charter and Code of Ordinances, Chapter 20, Article 13 "Historic Preservation" Codified through Ord. No. 366-2006 (adopted October 22, 1959, codified October 22, 2006).

Lockhard, William E. and Hinds, Dudley S. "Historic Zoning Considerations in Neighborhood and District Analysis." *The Appraisal Journal* 51, no. 4 (1983): 485-497.

Meeker, Whim. "Letter to the Urban County Council Planning Committee." Agenda, Planning Committee. 20 February 2007: 1-16.

National Register of Historic Places website. "Historic Districts." US Department of the Interior: National Park Service. 11 Feb. 2007: http://www.nationalregisterofhistoricplaces.com/districts.html.

Noonan, Douglas S. "Finding an Impact of Preservation Policies: Price Effects of Historic Landmarks on Attached Homes in Chicago, 1990-1999." *Economic Development Quarterly* 21, no. 1 (2007): 17-33.

Personal Communication with Amelia Armstrong, Preservation Inspector for the Urban County Division of (March 3, 2007).

Piccirilli, Todd. "Hysteric Preservation? Will H-1 Solve Aylesford's 'Student' Problem." *ACE Weekly Magazine*. 10 June 1998: http://www.aceweekly.com/acemag/backissues/980610/coverstory1_980610.html (accessed on 10 March 2007).

Rackham, John B. Values of Residential Properties in Urban historic Districts: Georgetown, Washington DC and Other Selected Districts. Washington DC: Preservation Press, National Trust for Historic Preservation, 1977.

Rubin, Geoffrey M. “Is Housing Age a Commodity? Hedonic Price Estimates of Age.” *Journal of Housing Research* 4, no.1 (1993): 165-184

Saltzman, James D. “Don’t Believe the Hysterical Preservationists.” *The Freeman: Ideas on Liberty* 45, no. 7 (1995): http://www.fee.org/publications/the-freeman/article.asp?aid=4230.

Samuels, Marjorie R. “The Effect of Historic District Designation to the National Register of Historic Places on Residential Property Values in the District of Columbia.” MA Thesis. George Washington University, Washington DC (1981).

Schuler, Frederick Gerard “Econometric Analysis of House Price.” *The Real Estate Appraiser and Analyst*. 56 (1990): 20-32.

Scribner, David. “Historic Districts as an Economic Asset to the City.” *The Real Estate Appraiser* (1976): 7-12.

Schaefer Munoz, Sara. “More US Homeowners Seek Historic Designation.” *The Wall Street Journal*. 16 March 2006: http://www.post-gazette.com/pg/06075/671507.stm (accessed on 10 February 2007).

Wojno, Christopher T. “Historic Preservation and Economic Development.” *Journal of Planning Literature* 5 (1991): 296–306.

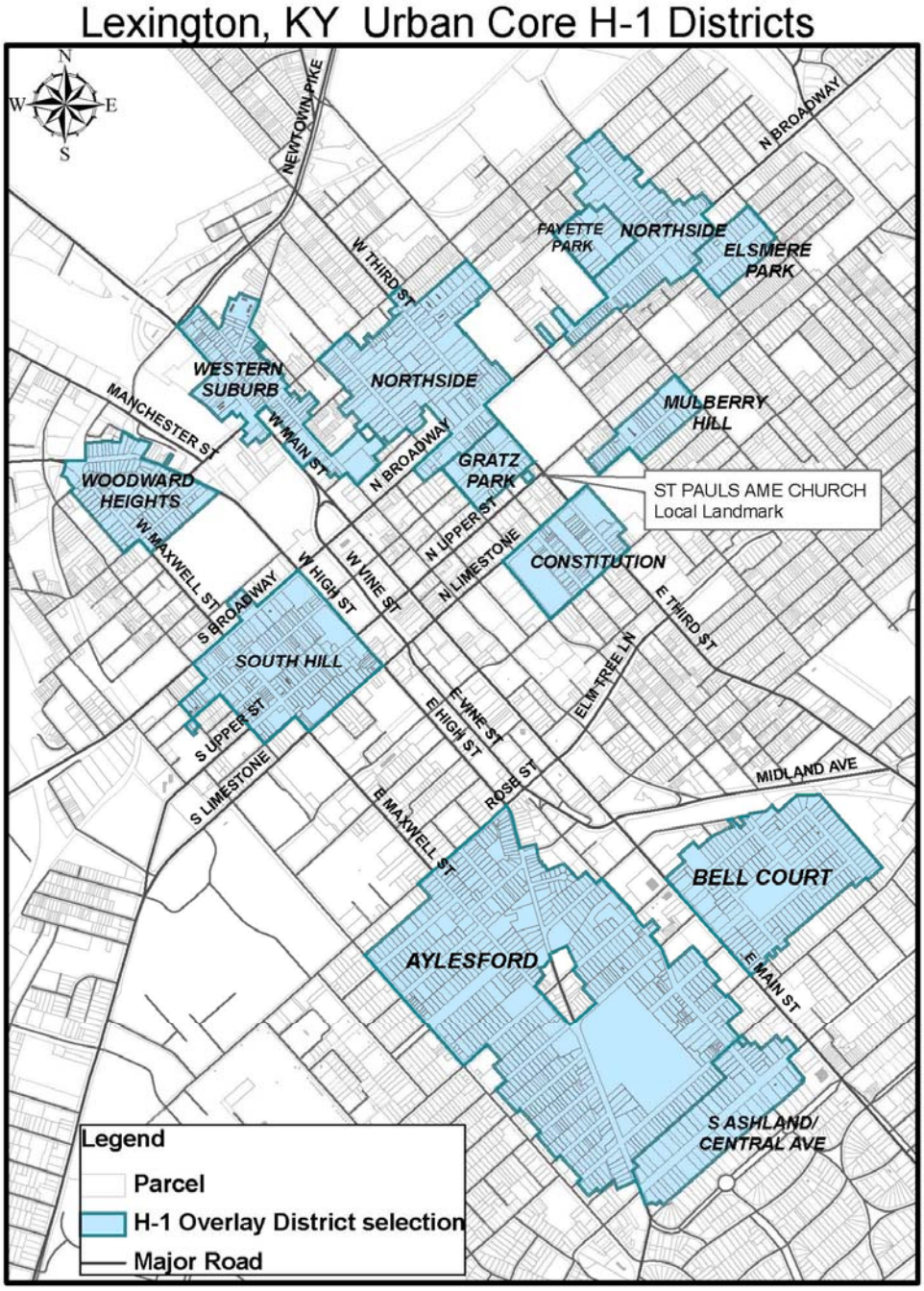
Appendix A

DESIGNATED LOCAL HISTORIC DISTRICTS
Lexington-Fayette County, Kentucky

HISTORIC DISTRICT NAME	NUMBER OF STRUCTURES	DATE ENTERED
South Ashland/Central Avenue	63	1989
Aylesford	586	1998
Bell Court	155	1990
Cadentown*	33	2001
Constitution	54	1976
Elsmere Park	30	1976
Fayette Park	16	1985
Gratz Park	18	1958,1965
Mulberry Hill	35	1985
Northside	216	1986
Seven Parks**	216	1997
South Hill	203	1972, 1976
Western Suburb	126	1975
Woodward Heights Neighborhood	100	1987
TOTAL PROPERTIES	1,851	

*Located outside the Urban Service Boundary
**Located within Urban Service Boundary, but outside downtown, Urban Core

Appendix A


Lexington, KY Urban Core H-1 Districts
N
W
E
S
NEWTOWN PIKE
W THIRD ST
FAYETTE PARK
NORTHSIDE
ELSMERE PARK
N BROADWAY
WESTERN SUBURB
NORTHSIDE
MULBERRY HILL
MANCHESTER ST
W MAIN ST
N BROADWAY
GRATZ PARK
WOODWARD HEIGHTS
ST PAULS AME CHURCH
Local Landmark
W MAXWELL ST
N UPPER ST
N LIMESTONE
CONSTITUTION
S BROADWAY
W HIGH ST
W VINE ST
E THIRD ST
SOUTH HILL
ELM TREE LN
E VINE ST
E HIGH ST
S UPPER ST
S LIMESTONE
ROSE ST
MIDLAND AVE
E MAXWELL ST
BELL COURT
AYLESFORD
E MAIN ST
S ASHLAND/
CENTRAL AVE
Legend
Parcel
H-1 Overlay District selection
Major Road

Appendix B

Table 1: Summary Statistics for All Parcels in Data Set (n=44,049)

Variables	Mean	S. D.	Min	Max
APRTOT	130887.1	94082.49	1500	1500000
SFLA	1856.596	907.0411	181	14091
FIXBATH	1.763627	0.7072494	0	12
FIXHALF	0.4828259	0.5353787	0	5
NUMSALES	1.737162	0.7072844	1	5
STORIES	1.304088	0.4616418	1	9
FINBSMTAREA	161.0052	371.4368	0	4543
ACRES	0.4994957	4.905477	0.0161	440.35
AGE	30.48249	24.96948	0	211
WBFPL	0.3381008	0.6901713	0	6
AC	0.8322096	0.3736843	0	1
CEN_HEAT	0.9659924	0.1812507	0	1
BRICK	0.483507	0.4997336	0	1
FRAME	0.0608186	0.2390001	0	1
MAS_FRAM	0.3156712	0.4647879	0	1
STUCCO	0.0022248	0.0471158	0	1
BLOCK	0.0014529	0.03809	0	1
ALUM_VYN	0.11998	0.3249419	0	1
STONE	0.0036777	0.0605333	0	1
ASB	0.0126677	0.111837	0	1
HDIST	0.024779	0.1554187	0	1
HDIST_AGE	2.011079	13.8023	0	203