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Preserving History or Hindering Progress: The Effect of Historic Districts on Local Housing Markets in New York City[1]

Vicki Been
New York University School of Law
Furman Center for Real Estate and Urban Policy

Ingrid Gould Ellen
New York University Wagner Graduate School for Public Policy
Furman Center for Real Estate and Urban Policy

Michael Gedal
Federal Reserve Bank of New York

Edward Glaeser
Harvard University Department of Economics

Brian J. McCabe
Georgetown University Department of Sociology

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Abstract

Since Brooklyn Heights was designated as New York City's first landmarked neighborhood in 1965, the Landmarks Preservation Commission has designated 120 historic neighborhoods in the city. This paper develops a theory of heterogeneous impacts across neighborhoods and exploits variation in the timing of historic district designations in New York City to identify the effects preservation policies have on residential property markets. We combine an extensive dataset of residential transactions during the 35-year period between 1974 and 2009 with data from the Landmarks Preservation Commission on the location of the city's historic districts and the timing of the designations. We find that designation raises property values within historic districts, but only outside of Manhattan. More generally, we find that in areas where the value of the option to build unrestricted is higher, designation has a less positive effect on property values within the district. Consistent with theory, we also find that properties just outside the boundaries of districts increase in value after designation. Finally, we find some evidence of a reduction in new construction in districts after designation.

Introduction

In 1965, the New York City Landmarks Preservation Commission was created to formalize the channels through which historic properties were protected and preserved in New York City (Wood 2008). That same year, the Commission designated Brooklyn Heights as the city's first landmarked neighborhood, and has since designated 120 historic neighborhoods in the city. These districts range from the Upper East Side Historic District, encompassing more than 50 blocks (or parts thereof) on the east side of Central Park, to the recently-designated Perry Avenue Historic District, an agglomeration of just nine single-family homes in the Bronx.

The preservation of historic neighborhoods has been the subject of substantial controversy in New York City and in other cities around the country. Preservation advocates argue that the value of historic characteristics will not be adequately taken into account in the market-driven process of urban development, as individual owners will not internalize the full benefit to society of historic preservation (Mourato & Mazzanti 2002). Proponents also argue that historic districts boost economic activity for the city as whole, both by increasing tourism and serving as an incubator for the city's art and culture (Rypkema 2005). To the extent that they create a common identity for neighborhood residents, the creation of unified historic neighborhoods could encourage the growth of community organizations and heighten social cohesion (Rose 1981). Despite these benefits of historic preservation, proponents worry that the political process may be stacked against historic, aesthetic, or cultural considerations, especially in cities increasingly subject to the pressure from the demands of property developers (Verrey & Henley 1991).

However, the preservation community is not without its critics. While many critics recognize the value of preserving historic structures and neighborhoods, they often contend that preservation policies unfairly restrict the rights of property owners. While restrictions vary across jurisdictions, property owners in historic districts are normally subject to extensive regulatory hurdles in making improvements to their buildings. These restrictions may discourage property owners from maximizing the value of their property. In limiting development within historic districts, critics contend that these policies limit the supply of housing, driving the cost of housing beyond the reach of many residents and contributing to a larger crisis of affordability. Taken to the extreme, historic preservation could limit a city's ability to grow and adapt to the needs of an increasingly competitive global system of cities (Glaeser 2010).

As our theoretical model stresses, the impact of historic preservation is unlikely to be uniform across neighborhoods. Preservation has at least two offsetting effects on local property values. On the one hand, the designation of a historic district restricts the changes property owners can make to their buildings and prohibits demolition and redevelopment. This loss of flexibility – the forgone option to redevelop potentially at higher density levels – should lower land and property values, especially in high demand areas that are initially low density. On the other hand, designation can preserve the historic beauty – or amenity level—of a neighborhood and minimize the risks that new investment will undermine the distinctive character of the area. This effect should be larger in areas with architectural attributes that buyers and renters value, and in areas that have high density levels before preservation. The designation of a district also may increase demand by conferring a special status on properties in the district.

In neighborhoods with higher amenities and property values, the lost option value to redevelopment will likely outweigh the benefits of increased certainty about one's neighbors. Similarly, in neighborhoods where existing buildings are built below the allowable zoning cap, the lost option value is likely to be larger. Thus, we would expect that designation would have a more negative effect on property values in higher value neighborhoods with a greater share of buildings built at heights well below the allowable limits. By contrast, we would expect historic designation to have more positive impacts on property values in neighborhoods where buildings are generally already built to the heights allowed by zoning, and values are lower. We also expect the underlying aesthetic value of the buildings to matter, too. Preservation should provide more benefit to owners if the neighboring historic homes that are preserved by the district rules are more attractive and historically meaningful. In short, as the theoretical model lays out more formally, the impacts of designation on residential property values are likely to be heterogeneous across neighborhoods. Further, because properties immediately outside districts are likely to receive many of the same benefits as properties within the district without the imposed restrictions, we expect to see surrounding properties increase in value after designation.

While expanding on current research on the price impact of historic designations, our study also explores the impact of historic designation on housing supply. In general, theory predicts that the rules accompanying designation will limit the amount of new construction activity that occurs in historic districts. We expect these effects to be felt more strongly when market demand is high and the underlying zoning is more lenient.

This paper evaluates how historic district designation affects both the prices of residential properties in New York City and reinvestment. In brief, we find that designation raises property values within historic districts, but only for the boroughs outside Manhattan. More generally, we find that designation decreases the value of properties in districts where the foregone option to redevelop is higher. Consistent with theory, we also find that properties just outside the boundaries of districts increase in value after designation. Finally, we find modest evidence of reduced construction activity in districts after designation.

Theoretical Model: Historic Districts, Building and Land Prices

What impact will a historic district designation have on welfare, construction, land prices and unit prices within a designated area? We now explore these questions with an economic model, which will guide our subsequent empirical work. We consider a city with a continuum of neighborhoods, each continuing exactly one unit of land that is subdivided into a continuum of parcels. The neighborhoods are assumed to be homogeneous, at least before any redevelopment occurs, so that all building are of height $\tilde{h}_n$, and aesthetic value $\tilde{\alpha}_n$. Ex post building heights are denoted h_n and the ex post aesthetic value in the neighborhood is α_n, the average aesthetic value in the neighborhood weighted by land area.

The total welfare associated with living in one of these neighborhoods, relative to a reservation locale elsewhere, equals non-aesthetic welfare, equal to B_n^j which is specific to person and neighborhood, plus the local aesthetic value α_n plus the city-wide aesthetic value of $\delta \int_{i=1}^{N} \alpha_i \, di$ or δA, the weighted average of the aesthetic amenity value for the entire city. Hence for person j the willingness to pay live in neighborhood n equals $B_n^j + \alpha_n + \delta \int_{i=1}^{N} \alpha_i \, di$.

We focus more on this ephemeral notion of aesthetics that is normal in housing economics, which more typically stresses the tangible sources of structural value, because aesthetics are at the heart of historic preservation. Moreover, since preservationists often care passionately about neighborhoods other than their own, it is also important to allow for a city-wide aesthetics effect. The aesthetic quality of the neighborhood, and the city, will change with redevelopment and since neighborhoods may be incompletely redeveloped, they may also end up being heterogeneous.

The non-aesthetic value is meant to include the economic returns from living in the city and the commuting costs in each neighborhood. We initially assume this value is constant across individuals and denoted B_n, but later allow for individual heterogeneity. In the case of homogeneous preferences (but not heterogeneous preferences), a Henry George theorem applies (Arnott and Stiglitz 1979) and property values across the city as a whole are the most sensible measure of welfare.

If the price of housing in neighborhood n is denoted p_n, then the spatial equilibrium requires that this must equal $B_n + \alpha_n + \delta A$. Neighborhoods are assumed to small relative to the city and buildings are assumed to be arbitrarily small relative to a neighborhood. As such, when making construction decisions, builders will not automatically internalize the impact of lowering aesthetics on others.

Since willingness to pay does not rise with building aesthetics, only with neighborhood aesthetics, firms will provide the minimum possible aesthetic level given current regulations and technology, which equals α_0. The model could be easily changed so the homebuyers did care about the aesthetics of their building, as long as these were homogeneous across individuals, and in that case α_0 could be interpreted as the optimal aesthetic value of new building given buyers' preferences.

If a share, s_n of the neighborhood's land area is re-developed then $\alpha_n = s_n\alpha_0 + (1 - s_n)\,\tilde{\alpha}_n$, where $\tilde{\alpha}_n$ represents the historic amenity value of the area. The cost of redeveloping a parcel is captured by a convex function c(h), where h is the height of the new building. We also assume that $\overline{h}_n$ is the legal maximum on new building heights in the neighborhood. We can now define a redevelopment equilibrium:

Definition: A redevelopment equilibrium exists if for all parcels that can be legally re-developed, redevelopment occurs if and only if $\left(B_n + \alpha_n + \delta \int_{i=1}^{N} \alpha_i \, di\right)\left(Min(h_n^*, \overline{h}_n) - \tilde{h}_n\right) \geq c(h_n^*)$, where $B_n + \alpha_n + \delta \int_{i=1}^{N} \alpha_i \, di = c'(h_n^*)$, where $\alpha_n = s_n\alpha_0 + (1 - s_n)\tilde{\alpha}_n$ and s_n equals the share of each neighborhood that is redeveloped. Redevelopers earn zero profits.

The definition stresses the redevelopment must be optimal on both the intensive and extensive margin. Builders will erect towers up to the point where the marginal benefit of extra space, captured by the price, equals the marginal cost of building up. They will redevelop to the point where the gain in value from new density offsets the cost of redevelopment, or up to the legally maximum height.

Treating city-wide redevelopment behavior as given, we know focus on a particularly neighborhood and let h_0^* refer to the optimal height if the entire neighborhood is redeveloped and $\alpha_n = \alpha_0$. We let $h_{max}(\tilde{\alpha}_n)$ define the maximum value of height as which marginal development covers costs.[2] This cutoff value $h_{max}(\tilde{\alpha}_n)$ is increasing with $\tilde{\alpha}_n$ because the benefits of adding more density are higher when the neighborhood is nice. The following Lemma characterizes the possible equilibrium outcomes in a neighborhood, assuming that the height restriction does not bind:

Lemma 1: If $\tilde{\alpha}_n > \alpha_0$, then there will be partial redevelopment if and only if $\tilde{h}_n < h_{max}(\tilde{\alpha}_n)$ and there will be total develop if and only if $h_{max}(\tilde{\alpha}_n) > h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A} > \tilde{h}_n$.

If $\tilde{\alpha}_n < \alpha_0$, then $h_{max}(\tilde{\alpha}_n) < h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A}$, and if $\tilde{h}_n < h_{max}(\tilde{\alpha}_n)$ then there will be total redevelopment, if $\tilde{h}_n > h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A}$ there will be no redevelopment, and if $h_{max}(\tilde{\alpha}_n) <$ *hn<h0∗−ch0∗B+a0+δA* then total redevelopment and no redevelopment are both possibilities outcomes, as well as a mixed redevelopment equilibrium, which is unstable according to standard arguments.

This lemma describes redevelopment behavior, and its implications are illustrated in Figure 1. Redevelopment behavior is shaped by the combination of initial height levels and initial amenity levels. If $h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A} < \tilde{h}_n$, so an area has taller buildings, then there is less benefit from adding more density. Partial redevelopment will be optimal, in this case, only if the initial neighborhood quality is high enough to bring prices high enough to pay for redevelopment. In this case, more redevelopment will lower neighborhood quality and eventually cause redevelopment to stop.

If $h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A} > \tilde{h}_n$, then initial heights are low, and total redevelopment is always one possible equilibrium. If initial neighborhood quality is low, then there is a second equilibrium with no redevelopment. This multiple equilibrium situation captures the possibility that some

[2] Technically, $h_{max}(\tilde{\alpha}_n)$ is defined by $(B_n + \tilde{\alpha}_n + \delta A)\left(\tilde{h}_n^*(\tilde{\alpha}_n) - h_{max}(\tilde{\alpha}_n)\right) = c\left(\tilde{h}_n^*(\tilde{\alpha}_n)\right)$ and $(B_n + \tilde{\alpha}_n + \delta A) = c'\left(\tilde{h}_n^*(\tilde{\alpha}_n)\right)$ and h_0^* satisfies $B_n + \alpha_0 + \delta A = c'(h_0^*)$.

neighborhoods may remain blighted for years and then quickly “tip” with rapid redevelopment. If initial neighborhood quality is higher, then redevelopment will always occur and it will always be complete, possibly even destroying value. Somewhat paradoxically, as we will discuss later, it can be optimal for the same government to force redevelopment in some neighborhoods while preventing it in others. Changes in these parameter spaces are illustrated in Figure 1, which shows the core areas of the model.

Changes in the overall level of demand for the city will shift the parameter spaces. As the city as a whole becomes more attractive, total redevelopment becomes an equilibrium outcome for initially taller neighborhoods. Holding height constant, redevelopment becomes more common as demand for the city as whole rises.

What would height regulations do to redevelopment behavior? A binding height limit reduces the profits from redevelopment, which means the maximum height threshold for total redevelopment of an area falls. The minimum amenity level for marginal redevelopment efforts rises as height limitations become more stringent. If absolute bans present a sure way to reduce redevelopment, height limits present an only slightly less effective means of accomplishing that aim.

Proposition 1 solves the social planner’s problem for redevelopment of a neighborhood, internalizing the social effects on the city as a whole. If the city has total power about how much to redevelop and where, what redevelopment should take place? Notably, in this case, there is no role for height restrictions on new development, so we will not discuss them. Proposition 2 tackles the more realistic question of asking in which areas should redevelopment be banned if the city cannot control the amount of redevelopment that occurs if it is allowed.

Proposition 1: If $\tilde{\alpha}_n > \alpha_0$, then total redevelopment is optimal only if heights are below a threshold that is lower than $h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A}$ and that is falling with $\tilde{\alpha}_n$ and partial redevelopment will be optimal only if heights are below a threshold that is lower than $h_{max}(\tilde{\alpha}_n)$ and that is also falling with $\tilde{\alpha}_n$. If $\tilde{\alpha}_n > \alpha_0$, then optimal levels of redevelopment will always be lower than the competitive level of redevelopment.

If $\tilde{\alpha}_n < \alpha_0$, total redevelopment is optimal as long as heights are below a threshold that is greater than $h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A}$, and that threshold is also falling with $\tilde{\alpha}_n$.

This proposition embeds the time path of post-war housing policy in many American cities. In the immediate post-war period, the policy concern was blight: the existence of many neighborhoods that had low heights and low levels of aesthetic values. Redevelopment was perceived as being socially optimal but not privately optimal, at least for small scale developers. In some cases, the problem appears to have been coordination, as evidence by the role for that very large developers, like Metropolitan Life, played in shifting entire communities. In other cases, there may have been city-wide externalities that were internalized by the action.

Yet over time, redevelopment claimed areas with higher and higher aesthetic levels, particularly in areas with high demand for density, like the old Penn Station. This led to a switch in public policy from working on market failure number one (too little redevelopment of low amenity areas) to market failure number two (too much redevelopment of high amenity areas).

If the government cannot control heights, but only has the freedom to restrict or not restrict the overall condition for restricting development is $(B_n + \alpha_0 + \delta A)\left(h_0^* - \tilde{h}\right) - c(h_0^*) < (\tilde{\alpha} - \alpha_0)\left(\tilde{h} + \delta S\right) > 0$, which can be operationalized as a criterion for allowing redevelopment. The ex post price times the change in heights minus the cost of new construction must be greater than the change in local values due to redevelopment times the old height plus the city-level externality of the change. The total externality is $(\tilde{\alpha} - \alpha_0)\left(\tilde{h} + \delta S\right)$.

Restrictions on redevelopment only make sense in areas where $\tilde{\alpha}_n > \alpha_0$. If initial height levels are moderate enough so that redevelopment is partial, then the property owners who do not redevelop are worse off (their unit prices have fallen), but since all property owners must be indifferent between redeveloping or not, then all property owners are worse off. This implies that if redevelopment is partial in these settings, then a ban is better than the unfettered market, although it could well be that a more limited redevelopment is better than either of those outcomes. In settings where unfettered development is complete, then it is unclear whether banning development is better than total redevelopment.

Banning redevelopment is also less attractive in areas with higher density levels. The shorter the initial buildings, the higher the minimum amenity cutoff for preserving a district should be. The optimal strategy also depends on the state of the city. A more attractive city means that the level of redevelopment should be greater.

Our next proposition guides our empirical work, which focuses on the price and quantity impacts of preservation district. We now ask what a ban on redevelopment will do to local land prices, housing unit prices, and quantities of new construction, as a function of initial height levels and amenity levels:

Proposition 2: If redevelopment would not have happened anyway, because initial heights are high, than preservation districts have no impact. If initial heights are lower and $\tilde{\alpha}_n < \alpha_0$, then preservation districts will reduce construction, units prices and total real estate value. The negative impact on unit prices will decrease with initial amenity levels and the impact on total real estate values will decrease with initial heights and initial amenity levels. If $\tilde{\alpha}_n > \alpha_0$ and $h_{max}(\tilde{\alpha}_n) > \tilde{h}_n$, then the preservation district will reduce construction and raise unit prices, especially if $\tilde{\alpha}_n$ is higher. If $h_{max}(\tilde{\alpha}_n) > \tilde{h}_n > h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A}$, then the negative impact on the district construction will be higher if initial heights are lower or amenities are lower, and total real estate values will always be increased by the district. If $\tilde{h}_n < h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A}$, then the district can cause total real estate values to fall.

Preservation districts will raise unit prices if the initial aesthetic level of the area is higher than the typical level for new construction, but lower unit prices otherwise. But this statement looks only at the value of units for use, and does not consider that unit prices also capture the option of rebuilding, which is better captured by our comparative statics on total real estate value. In this case, it remains the case that if initial aesthetics are sufficiently low, then preservation districts destroy value. If they are higher, they can increase value, both for the unit and total real estate. They are most likely to destroy value when initial heights are sufficiently low, at least relative to the maximum build-out that is possible in New York.

It is also true that the districts are more likely to reduce value in areas that have a non-aesthetic appeal, for those are the areas where added density is most likely to be value. Overall, there are a range of neighborhoods for which local property values would be higher than those that would solely maximize local land values. As such, for higher amenity areas, preservation increases property values, but for low amenity areas, preservation reduces property values. The overall effect becomes an empirical matter.

Heterogeneous Preferences for Neighborhoods

We now introduce individual heterogeneity, but simplify along other dimensions. We assume that there is a supply of individuals with heterogeneous tastes for living in the neighborhood. We will not address cross neighborhood tastes and assume that all the inhabitants of one neighborhood are deciding only between the reservation locale and that particular area. The term B_n (S), now refers to the preference of the marginal resident of the city, and it satisfies $S = \int_{B_n^j B_n(S)}^{\infty} q(B_n^j) dB_i$, where $q(B_n^j)$ refers to the number of individuals with preference level B_i. The overall return from residing in an area still equals $B_n(S) + \alpha_n + \delta A$. We now assume that there are only two possible heights $\underline{h}$ and $\overline{h}$. There are N_{new} new neighborhoods, with amenity levels α_0 , and height $\overline{h}$. There is a distribution of old neighborhoods which all have height $\underline{h}$ and are characterized by a density of amenity levels $f(\alpha)$. The cost of redeveloping is "c" per land unit which increases the height from $\underline{h}$ to $\overline{h}$. We assume that $(B_n(S) + \alpha_0 + \delta A)(\overline{h} - \underline{h}) > c$, so total redevelopment is always an equilibrium outcome for every neighborhood, and partial redevelopment is never an equilibrium outcome without government interference. If $\alpha > \frac{c}{\overline{h} - \underline{h}} - B_n(S) - \delta A$, then redevelopment is the only free market equilibrium outcome.

We consider two alternative welfare functions. The first maximizes solely the property values in the city; the second maximizes global welfare. The difference is whether the city internalizes the welfare of marginal residents.

Proposition 3: Whether the government internalizes the welfare of its citizens or just property values, redevelopment will only be allowed into neighborhoods with amenity levels that fall below an amenity threshold. In either case, the threshold will be rising with α_0 and $\overline{h}$ and falling with c and $\underline{h}$. If the government maximizes property values the threshold will also be falling with $q(B_n(S))$, but not if the government maximizes property values plus resident welfare. If the government maximizes resident welfare, the threshold will be higher. If the government can set the level of development, the desired level will always be lower, if the government does not internalize the welfare of its residents.

This perturbation of the model examines the gap in the interests between property owner interests and the interests of residents. Property owners benefit more from preservation than renters because property values go up for two reasons. They rise because of rising amenities, which is a benefit shared by renters, and they rise because supply is restricted, which does nothing to help renters. As such, a government that maximizes total property values will typically be more restrictive than a government that maximizes total welfare, both in mandating too much preservation and in allowing too little development, when it controls that amount of redevelopment.

Preserving Historic Neighborhoods in New York City

Nowhere in the United States have the debates about historic preservation received greater attention than in New York City. The creation of the city's Landmarks Preservation Commission (LPC) in 1965 followed several decades of activism in New York City to preserve historically valuable landmarks and neighborhoods (Wood 2008). Threats to the neighborhood of Brooklyn Heights from the construction of the Brooklyn-Queens Expressway, along with the demolition of the Beaux Arts Penn Station, galvanized the creation of the Commission. In late 1965, the Commission designated Brooklyn Heights as the city's first historic district. Within five years, the Commission designated fourteen additional historic neighborhoods across the city, including Greenwich Village in Manhattan, Cobble Hill in Brooklyn, and Mott Haven in the Bronx. Between 1965 and 2009 – the final year of data available at the time of this analysis – the LPC designated exactly one hundred historic neighborhoods in New York City, and approved thirteen extensions to the original boundaries of historic districts. By 2012, the LPC has designated another 20 districts.

As Table 1 shows, nearly sixty percent of historic districts are located in Manhattan, but the LPC has designated districts in each of the five boroughs. Slightly more than 25 percent of districts are located in Brooklyn, and slightly fewer than 10 percent of historic districts are located in the Bronx. In total, 4.8 percent of residential units in New York City are located within historic districts, and 11.8 percent of residential units in Manhattan.[3] Since 1965, the amount of land included in historic districts has grown faster in the outer boroughs than in Manhattan. Table 1 also shows the designations of historic district by decade. It confirms a relatively stable pace of designation since the establishment of the Landmarks Preservation Commission, with an uptick in landmark designations during the 2000s.

The historic districts we study range substantially in size and scope. Some of the smallest districts encompass only a handful of lots, while many of the larger districts include scores of blocks encompassing some of the city's most revered neighborhoods. The Sniffen Court Historic District, located on the east side of Manhattan, consists of ten Romanesque Revival

[3] Analysis from the Furman Center (see Been et al., 2011)

stables, making it one of the smallest districts in the city. By contrast, the Upper East Side Historic District includes portions of more than fifty blocks, encompassing much of what is colloquially known as the Upper East Side. The recent designation of the Perry Avenue Historic District as the city's one-hundredth historic district underscores the City's interest in designating a range of neighborhood types. Located in the Bedford Park neighborhood of the Bronx, the Perry Avenue Historic District includes nine historic homes dating back to the early twentieth century.

The Process of Designating a Historic District

Although the designation of historic districts in New York City is clearly not exogenous, it is not always driven by neighborhood property owners. In many cases, historic preservation advocates are heavily involved. The process of designating a historic district involves several steps, which are described in detail in Appendix B.[4] In brief, proposals from community leaders and preservation advocates usually trigger the process, which then involves review of such "requests for evaluation" by a committee that includes the Chair of the LPC and various staff members. That committee can then elect to send a particular proposal on to the full LPC, and if so, the LPC first decides, in a public meeting, whether to "calendar" the proposal. If the proposal is calendared, the LPC then holds a public hearing, at which the LPC staff present the proposal, and property owners and other interested parties are given an opportunity to testify or submit written comments. Should the LPC choose to designate a district, which it almost always does, the designation becomes effective immediately, but the LPC must file a "designation report" with the City Council, the City Planning Commission (CPC), and other city agencies for comment. The CPC is required to hold another public hearing on the proposed district, and to file a report on the proposal with the City Council. The City Council then may modify or reject the proposed district by majority vote. The mayor may veto a modification or rejection of the LPC's decision, and only a vote of two thirds of the City Council will over-ride the veto.

[4] The authority for the following description is provided in Appendix A, and includes the N.Y.C. Charter § 3020; N.Y.C. Admin. Code §§ 25-302, 25-303, and 25-313; Rules of the City of New York, Title 63, Landmarks Preservation Commission Rules 1-02, 1-01 (July 2003); NEW YORK CITY LANDMARKS PRESERVATION COMMISSION, *FAQs: The Designation Process*, http://www.nyc.gov/html/lpc/html/faqs/faq_designation.shtml (last visited October 13, 2011); and HISTORIC DISTRICTS COUNCIL, *Preserving Your Historic Neighborhood: New York City Designation Process*, http://www.hdc.org/preservingnyc.htm (last visited October 12, 2011).

The Restrictions Designation Imposes

The designation of a historic district triggers a special review process for requests for building construction and modification that may affect the level of investment and the value of properties in historic districts. In brief, if the owner of a building within a historic district wants to make any repairs or improvements to her building, the owner must first secure the same alteration permit from the Department of Buildings (DOB) that would be required for any construction work on a building anywhere in the city that goes beyond "ordinary" repairs and maintenance.[5] In addition to obtaining permits from the Department of Buildings, the owner of property within a historic district must request and receive one of three determinations from the Landmarks Preservation Commission: (1) a "permit for minor work," (2) a "certificate of no effect," or (3) a "certificate of appropriateness." At the extreme, if a certificate of appropriateness is required, the owner's request will be the subject of a public hearing, and the LPC will consider how the proposed work will affect the exterior architectural features of the building, and "the relationship between the results of such work and the exterior architectural features of other, neighboring improvements" in the historic district.[6] The approval process is described in detail in Appendix C.

In addition to requiring approval for alteration work that the property owner wants to perform, the LPC imposes an affirmative obligation that the owners of property within historic districts maintain and repair "all exterior portions" of the buildings, as well as all interior portions which, if not maintained, may "cause the exterior portions" to "deteriorate, decay or… fall into a state of disrepair."[7] There is little evidence that this requirement is strictly enforced, however.

Previous Research

Identifying the effect historic district designations have on residential property values is methodologically challenging, as the selection of neighborhoods for historic designation is not

[5] In New York City, the Department of Buildings issues three types of alteration permits: A1 permits are issued for alterations which require a new certificate of occupancy, including converting a single-family home into a multi-family residence; A2 permits are issued for multiple types of work (e.g., plumbing and construction), but do not require a certificate of occupancy; and A3 permits are issued for a single type of work that does not involve an amendment to the certificate of occupancy.
[6] N.Y.C. Admin. Code § 25-307(b)(1).
[7] *Id.*

random. It is possible – even likely – that the characteristics of properties located in neighborhoods designated as historic districts differ from properties in other neighborhoods in unmeasured ways. For example, properties located in historic districts could include ornamentation or other architectural features not captured in our hedonic regression analyses. If so, we should be concerned that location within a historic district is actually picking up unobserved property characteristics, rather than any effect of designation itself.

Further, trends in market conditions in neighborhoods designated as historic districts may differ from those in other neighborhoods. For example, residents may put more pressure on officials to designate their neighborhoods as historic districts when their property values are rising. If so, then any association between designation and property value appreciation may simply reflect these underlying trends and not be attributable to the designation itself. Conversely, preservation officials may believe that designating areas that are in need of revitalization as historic districts will help promote investment in those neighborhoods (or will help protect the city's investment in those areas). In both these situations, any association between designation and changes in property values may reflect underlying trends in demand rather than the effects of the designation itself.

Finally, the designation of a historic district may be accompanied by a variety of other changes that may affect property values. In many jurisdictions, for example, designation entitles the property owner to tax subsidies or reductions or waivers of fees (Econsult 2010). Those changes may offset or otherwise confound the effects that the designation itself may have on property values.

Most efforts to evaluate the impact of historic district designations on property values use standard hedonic price regression, controlling for basic structural attributes of a property and neighborhood characteristics. These hedonic analyses of historic districts generally suggest that location within a historic district is associated with a premium on property values (Ford 1989; Liechenko, Coulson & Listokin 2001; Coulson and Lahr 2005; Mason 2005; Noonan 2007; Gilderbloom, Hanka and Ambrosius 2009; Carruthers, Clark and Tealdi 2010; Rypkema and Cheong 2011). One such study focuses on some Brooklyn neighborhoods between 1974 and 2002, reporting higher mean sales prices within historic districts (Treffeisen 2003).

Many hedonic analyses of the price effects of historic districts rely on cross-sectional data (or do not have access to prices of properties in districts *before* designation), and as such, cannot control for unmeasured differences between properties inside and outside of districts.

The few recent studies that use longitudinal data find that designation has a negligible or even negative effect on property values. For example, a recent longitudinal analysis of historic districts in Boston indicates that historic districts depress prices (Heintzelman and Altieri 2011), suggesting that restrictions imposed on property owners outweigh the benefits of historic districts. Similarly, in a recent study of historic conservation areas in England, Ahlfeldt, Holman and Wendland (2012) find that prices are generally higher within conservation areas, but that designation itself fails to lead to any statistically significant boost in values.[8] Finally, Noonan and Krupka (2011), after instrumenting for historic district designations, find that designation leads to a significant decline in prices.

Our paper extends previous research in several ways. First, we develop a theory of heterogeneous impacts across markets, which we can test in New York City, given the city's large number and variety of historic districts. Second, our dataset contains far more property sales transactions than earlier studies, relying on more than one million residential property sales in New York City. With access to such a large longitudinal data set, we are able to estimate a difference-in-difference regression model to weed out pre-existing differences between properties located in historic districts and those outside. Further, the 35-year time-span of our data enables us to observe property sales and permitting activity decades after designation, allowing us to make claims about the long-term implications of historic district designations. Third, we study how the designation of historic districts affects the sales prices of properties that are located just outside a district.[9] Finally, we study the impact historic district designation has on new construction activity, thus providing a fuller account of how districts shape local housing markets.

Data and Methods

Our analysis includes two components: the impact of historic designation on the sales price of residential properties across different neighborhoods and the impact of designation on

[8] Of course, the rules governing historic districts in England differ from those governing districts in the United States.

[9] Noonan and Krupka (2011) come the closest to studying such border effects. They examine whether property values rise with the proportion of properties in block-group that are in a historic district. We are able to measure such border effects more precisely, using GIS.

new housing construction within districts. We outline the data and methods for each below.

Data

To estimate the impact of historic district designations on residential sales prices in New York City, we combine several administrative datasets. First, we use data on all residential property transactions in the city between 1974 and 2009. We limit the sample to arms-length sales. Furthermore, the analysis of sales data is restricted to the 32 community districts in New York that contained at least one lot in a historic district by 2009. Second, we merge the residential property transactions data with annual cross-sections of the Real Property Assessment Database (RPAD), an administrative data set gathered for the purpose of assessing property taxes. RPAD contains such property characteristics as lot size, building age, square footage and building classification. We match each transaction to property characteristics from the closest available year in RPAD.[10]

Although RPAD includes many characteristics of individual residential properties, it does not indicate whether a property is located within a historic district. For that information, we rely on the Primary Land Use Tax Lot Output (PLUTO) data. The PLUTO dataset includes one record for each tax lot in New York City. It includes an indicator identifying whether the lot is located within a historic district, allowing us to differentiate residential property transactions that occur within and outside of historic districts. Because PLUTO includes the name of the historic district, we are able to match historic districts to their date of designation using administrative data from the Landmarks Preservation Commission. Thus, we can identify whether residential property transactions within a district occur before or after the designation of the historic district. Using GIS methods, we are also able to identify properties that lie within 250 feet of a historic district boundary (buffer properties). For the properties in our study, Table 2 compares the characteristics of properties that were located within a historic district by the end of our study period (2009) with those located outside of historic districts.

To test for heterogeneity in impacts in neighborhoods where redevelopment is more valuable, we rank all community districts in our sample based on a series of measures that capture the value of redevelopment. For each of these measures, we create an indicator variable

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[10] The earliest available year of RPAD is 1990. As a result, property characteristics for residential sales before 1990 are matched to property characteristics in the 1990 version of RPAD. But most of the characteristics are relatively fixed and should not change much over time.

to identify properties located in community districts that fall above the median district in the sample. By interacting this dummy variable with the set of historic district variables in our model, we are able to test whether impacts vary by neighborhood. For these tests, we rank community districts using five measures. The first is average floor-area ratio (FAR), calculated as maximum residential square footage permitted by zoning regulations divided by the total area of land zoned for residential use, both as of 2003. The second measure is unused FAR, which equals the aggregate maximum residential square footage permitted by zoning regulations minus the actual square footage of all residential buildings that existed as of 2003, divided by the total area of land zoned for residential use as of 2003.[11] Third, we measure the ex ante value of newly built housing in the community district: specifically, the median price per square foot in buildings that were no more than 10 years old at the time of sale, using information from sales occurring 1974-1990. Our fourth measure is the ex ante dollar value of total FAR, which is simply total FAR in the community district (measure 1) multiplied by the past value of new housing (measure 3). The fifth and final measure is the dollar value of unused FAR, which is the product of unused FAR (measure 2) and the value of new housing (measure 3).

The second part of our analysis examines the construction of new units in historic districts. For this portion of the analysis, we restrict the sample to lots in census tracts that included at least one parcel within a historic district as of 2009. (We exclude districts designated earlier than 1990.) For each historic district, we define the *area* to include all lots located within the census tract(s) in which the historic district is located. Furthermore, we divide each historic district area into two *zones*: properties that are part of the historic district itself (district zone), and those located just outside the district but still within the same census tract (bordering zone). To calculate the number of new units created in each of the zones in our sample, we rely on information reported on building age in 2009 tax assessment data from RPAD. Specifically, we create a longitudinal dataset, which records the number of new units constructed annually between 1990 and 2009, separately for each historic district itself and for the set of properties in its bordering zone.

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[11] Ideally, we would like to measure FAR as of the time directly preceding the beginning of our sample period. However, existing data sources do not permit calculation of FAR prior to 2003. We calculate FAR measures using the 2003 PLUTO database, which reports several key pieces of information at a property level: lot area, maximum FAR permitted by zoning, and building square footage.

Methods

Price Analysis

To identify the impact historic district designation has on prices, our basic approach is to compare prices of properties in historic districts to prices of comparable properties that are outside the boundaries of a district, but still located in the same neighborhood (census tract). Then we examine whether the magnitude of this difference changes after the formal designation of the historic district – and changes in ways that aren't captured by broader neighborhood trends in prices. This approach weeds out any systematic, baseline differences between the properties chosen for designation and other properties around the city. It also allows us to disentangle the specific effects of the historic designation from the many other changes occurring across neighborhoods in the city.

We estimate a hedonic regression of the price of residential property using the following model:

$$(1) \qquad \ln P_{icdt} = \alpha + \beta X_{it} + \gamma_c W_c + \delta_{dt} I_{dt} + \theta HD_{it} + \varepsilon_{it},$$

where $\ln P_{icdt}$ is the log of the sales price per unit of property i in census tract c, in community district d, and in quarter t; X_{it} is a vector of property-related characteristics, including the building age, square footage, the number of buildings on the lot, and a series of building classification dummies (described in Table 2); W_c are a series of census tract fixed effects; I_{dt} are a series of dummy variables indicating the quarter and community district of the sale, which allow us to control for trends in prices within the community district;[12] and HD_{it} is our vector of historic district variables. The coefficients to be estimated are α, β, γ, δ and θ, and ε is an error term. We report standard errors clustered at the parcel level and corrected for both spatial and temporal autocorrelation.

Within the vector HD, we include the variable *HistoricDistrictEver*, which is a dummy variable that takes a value of "1" if the sale is located within the boundary of an area that is or will be designated as a historic district. This variable captures baseline, unmeasured differences between properties located within historic districts and comparable properties outside of them.

[12] There are 59 community districts in New York City, but our sample is limited to the 32 community districts containing at least one lot in a historic district.

We also include the variable *HistoricDistrictPost*, which takes a value of "1" if the sale took place inside a historic district after the district was designated by the LPC. This coefficient captures the impact of designation. Because we have sales in our dataset that predate designation by up to 40 years, we also include a dummy variable for sales that take place more than 10 years prior to designation, as we think those sales are too distant to meaningfully capture baseline, pre-designation conditions. With this variable included, the counterfactual becomes the price level in the 10 years prior to designation, and the coefficient on the *HistoricDistrictPost* variable can be interpreted as the average difference in prices within a district after designation and prices ten years before.

In some models, the vector HD also includes a series of dummy variables to indicate whether the property is within 250 feet of the boundary of a historic district. The variable *BufferEver* takes the value of "1" if the property is within 250 feet of a historic district boundary, either before or after designation. We use 250 feet as our buffer because it is about the length of one north/south block on Manhattan's gridded streets. As with the variables for historic districts, this variable captures baseline differences in the sales prices of properties located within buffer zones and comparable properties beyond those zones. Likewise, the variable *BufferPost* takes the value of "1" if the property sale took place within the buffer zone *after* the district was designated by the LPC. In Figure 2, we include maps of two historic districts – the Greenpoint Historic District in Brooklyn and the Mount Morris Historic District in Manhattan – to illustrate the construction of buffer zones around each district.

The vector HD includes two continuous variables to allow the effect of the designation of historic districts to vary over time. The variable *TimePost* equals the number of years after the designation of a historic district that the sale took place, while the variable *TimePostSQ* is the square of the number of years after the designation that a sale took place. The *TimePost* variable is coded "0" for sales that took place before the designation of a historic district, and for properties outside the boundaries of a historic district. In the models that include buffer zone variables, the vector HD also includes continuous variables *TimePostBuffer* and *TimePostBufferSQ* that allow the spillover effects into the adjacent buffer zones to vary over time.

Finally, to test for heterogeneity across community districts, we separately interact our historic district variables with each of the five indicators identifying whether a property is located in a community district that falls above the median district in the sample for development capacity or cost. Again, these indicators are: average floor-area ratio, or FAR, in the community district; average unused FAR; median price per square foot for newly built housing; the dollar value of average FAR; and the dollar value of unused FAR.

We also run additional robustness tests. First, we estimate models with zip code fixed effects rather than census tract fixed effects. Because census tracts are relatively small in New York City, especially in Manhattan, the number of comparison properties that are outside the historic district but still within the same census tract will be relatively small for some historic districts. By using zip code fixed effects, we test if our results change if we expand the number of comparison properties. These models are run both with and without the buffer zones. Second, we estimate models that use only properties that are in areas that have not yet but will become historic districts as a comparison group. To do so, we restrict sample to properties that are in areas that will become historic districts and simply test for significance of *HistoricDistrictPost* coefficient. Finally, we run a series of models using the calendaring date, rather than the date of designation, as our indicator of historic district status. As noted in a previous section, calendaring occurs before the historic district is designated, but typically indicates that a neighborhood is receiving consideration for historic designation.

New Construction Analysis

To estimate impacts on new construction activity, we estimate a difference-in-difference model in which the dependent variable captures the number of new units built in zone z in area a in year t. As discussed above, each historic district area contains two zones: the district zone (properties within a district as of 2009) and the boundary zone (properties outside the district but within a census tract that includes a parcel in the district). Specifically, we estimate the following equation:

$$(2) \qquad NU_{zat} = \alpha + \gamma_a W_a + \delta_t I_t + \theta HD_z + \rho Post_{at} + \psi HD\_Post_{zat} + \varepsilon_{zt},$$

where NU_{zat} measures the number of new units constructed in zone z in area a in year t; W_a is a set of historic district area fixed effects; I_t is a set of year fixed effects; HD_z is a dummy variable indicating whether the zone is a historic district (the comparison group therefore consists of properties located in the same historic district area, but in the bordering zone); $Post_{at}$ is a dummy variable that captures whether the particular historic district associated with area a has been designated; and HD_Post_{zat} is an interaction between the *HD* dummy and the *Post* dummy. The key coefficient is that on the interaction term, which will capture the average difference between the change in the number of new units constructed in districts after designation and the change taking place in the bordering zone. We assume that absent designation, construction activity would have increased by the same amount as it did in the bordering tracts. In an alternative specification, we also include variables to capture the 250-foot buffer zone surrounding the district, and thus the comparison area becomes parcels in bordering zones that are both outside the district and outside the buffer zone.

Results

The results of the first hedonic regression model are reported in Table 3, first for the citywide sample (columns 1-3) and then for Manhattan properties only (column 4). The models reported in columns 1 and 2 omit any *TimePost* variables. In these simple specifications, the coefficient on *HistoricDistrictPost* can be interpreted as the average effect of designation over the post-designation period. In model 1, this coefficient captures the average effect over the 10-year period following designation, while in model 2 this coefficient provides an estimate of the average effect over the entire post-designation period. The model in the third column includes *TimePost* and *TimePostSQ* variables, allowing the impact to vary over time. In model 3, the coefficient on *HistoricDistrictPost* can be interpreted as the change in property values that occurs immediately after designation.

The coefficients on the structural variables have expected signs. Sales price per unit is significantly higher for single-family, detached homes (omitted category) than for two-family homes, condominiums, and larger apartment buildings. In addition, sales prices are higher when building and lot space is larger and when buildings include garages. The one counter-intuitive result is the coefficient on the pre-war building dummy variable, which is negative, counter to what many assume is a premium placed on pre-war buildings in New York City. This result only holds when the historic district variables are included however, suggesting the historic district variables may be capturing the premium usually associated with pre-war buildings.

After controlling for other structural characteristics, properties located in areas that are or will become historic districts sell for approximately 20 percent more than comparable properties outside those districts. This is consistent with the presence of property and community characteristics, including historic ornamentation or architectural styles, which make properties in historic neighborhoods more desirable, even absent designation.

The coefficient on *HistoricDistrictPost* in columns 1 and 2 suggests that designation itself also has an added, positive effect on prices of properties within a district. When examining the average effect over the ten-year period following designation (column 1), the designation of a historic district generates a 9.5 percent boost in sales prices relative to comparable properties outside the district but still in the same neighborhood. Over the entire post-designation period, the impact of designation is somewhat higher, at 14.8 percent (column 2).

When *TimePost* variables are added, the coefficient on *HistoricDistrictPost* falls in magnitude and loses significance, but the coefficient on the *TimePost* variable in column 3 indicates that designation leads to increases in value over time. To better understand how any designation effect evolves over time, we also estimate a more flexible model that includes a categorical indicator for each year since the district was designated. These coefficients are plotted in Figure 2, together with the trends generated from the regression coefficients in Table 3 (column 3). Panel A of Figure 2 shows that following the designation of a historic district, property values within the district rise steadily, relative to similar properties. Significantly, the pre-designation coefficients reveal no apparent trend in values prior to designation, providing no evidence that residents living in areas experiencing rapid appreciation (or depreciation) are more likely to request and obtain designation.

Column 4 of Table 3 shows the same model for Manhattan, and panel B of Figure 2 plots the coefficients for this Manhattan-only model. The baseline differences in price between properties in historic districts and those outside the district but in the same neighborhood are larger in Manhattan compared to the other boroughs. In Manhattan, properties located in areas that are or will become historic districts sell for 33 percent more than comparable properties outside those districts. However, the actual designation of districts appears, if anything, to have a negative effect on property values, though the coefficient on the *HistoricDistrictPost* coefficient is not statistically significant. We further probe this Manhattan effect in models exploring heterogeneous effects below.

Table 4 shows the coefficients of a model that includes variables to identify spillover effects into a 250-foot buffer of historic districts. The coefficients on the historic district variables change only slightly, suggesting that results are not particularly sensitive to the inclusion (or exclusion) of buffer properties in the comparison group. However, the results also show that prior to designation, properties bordering historic districts sell for 3.7 or 5.5 percent less than comparable properties further from the district. This negative finding could reflect unobserved differences in structural features of property located just outside of historic districts, or lower levels of investment in those properties. In the models without *TimePost* controls, the actual designation of a historic district leads to an 11.9 percent increase in the average value of these bordering properties – a substantial bump for properties located just beyond the districts. When we allow impacts in the buffer area to vary over time, we see little in the way of immediate impacts, but we see rising prices over time.

In Appendix D, we report several robustness tests for the models in Tables 3 and 4, as described in the previous section of the paper. In brief, Tables D1 and D2 show that we find very similar results when we include zip code fixed effects rather than census tract fixed effects. Again, we find positive results citywide and negative impacts in Manhattan. Once again, we find that designation increases the value of properties in the buffer zones, though it takes 3-4 years to see those positive impacts in Manhattan. Table D3 shows results when we use future historic districts in the borough as the comparison group, and we again find that designation increases values citywide, at least after two years. Finally, when we use the date of calendaring rather than designation as our date of the start of treatment, we obtain similar results, though effects are more muted and here we find an initial negative hit to property values upon calendaring, which grows more positive over time after designation (see Table D4).

Exploring heterogeneity across community districts, the results in Table 5 shed further light on the differential results in Manhattan. The pattern of coefficients displayed in Table 5 suggests that designation has a more negative effect in neighborhoods where redevelopment would be more valuable, as hypothesized. We find that the impact of designation on property values is more negative in community districts where the average floor-area ratio is higher and where the value of the unused development capacity is higher. In columns 1 and 2, the impact of historic designation is more negative in places with higher average FAR and higher unused FAR, signaling that the lost option of redevelopment is larger. Because property owners could build taller and more valuable buildings in these areas, the value of the foregone option to develop is greater. Likewise, in community districts where the median price per square foot is higher or the value of the FAR – either the total FAR or the unused FAR – is higher, the impact of historic designation is more negative. These findings are reported in columns 3-5. These results are again consistent with our theoretical model suggesting that effects of designation will be more negative in areas, like Manhattan, where the lost option value of redevelopment is higher. Alternatively, in areas like Manhattan, it appears that the hit to land values outweighs the boost to structure values, because land values comprise such a large share of total property values (Ellen and Gedal 2012).

For the second phase of analysis, we estimate how designation affects new construction activity in the district. To understand the causal mechanisms that might drive the effects historic designation has on property values, and to understand the implications of those effects, we also need to consider the effects that designation has on the supply of housing. By definition, historic districts will see little new construction except on land that was vacant or held extremely dilapidated buildings at the time of designation. In Table 6, the pattern of coefficients suggests that designation has a significant negative impact on the amount of new housing construction. Of course, this simple model does not answer whether the designation of districts reduced supply overall in New York City, as we do not know if the impacts we find result from construction decreasing in the district after designation or from construction actually increasing in the buffer area. At the very least, the results suggest that district designation affects decisions to build.

Conclusion

This paper sheds new light on the effects of the designation of historic districts on local housing markets, revealing that impacts vary with market conditions. Consistent with the predictions of our theory, we find that designation results in a larger increase to property values in community districts where the value of foregone development potential is lower. Also consistent with theory, the act of designating historic districts appears to offer a boost to the value of properties immediately outside the historic district. Properties located in the immediate vicinity of a district sell at a discount relative to nearby properties, but the designation of a district leads to an increase in their prices.

As for supply effects, our analysis suggests that new construction activity within districts falls after designation. Admittedly, our results do not answer whether the designation of districts reduced supply overall in New York City, as we do not know if the impacts we find result from construction decreasing in the district after designation or from construction actually increasing in the surrounding area. At the very least, the results suggest that district designation affects decisions to build.

The designation of historic districts has stirred controversy in cities across the country. Our results suggest that the designation of districts can shape the course of local housing markets, but that the effects vary across neighborhoods, consistent with our theoretical predictions. We also find some evidence of a decline in investments in the construction of buildings within historic districts over the long run. Significantly, however, our results do not capture the external benefits that historic properties provide for society as a whole. Still, as policymakers consider whether and how to preserve historic neighborhoods, our analysis underscores the need to take the particular neighborhood environment into account and to consider the long-term impact historic designations have on both property values and investment in housing within and just outside of the districts.

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Table 1: Descriptive Statistics of Historic Districts, by Borough and Decade

	Total Number of Districts	Percentage of Total Districts	By time period of designation				
			1965 - 1969	1970s	1980s	1990s	2000-2009
Manhattan	65	58%	10	11	13	16	15
Brooklyn	29	26%	3	11	4	1	10
Bronx	10	9%	1	0	4	4	1
Queens	6	5%	1	0	0	2	3
Staten Island	3	3%	0	0	1	1	1
Total	113	100%	15	22	22	24	30
% of total			13%	19%	19%	21%	27%

Table 2: Descriptive Statistics of Residential Property Transactions, 1974-2009

	Properties in a Historic District (2009)	Properties *not* in a Historic District (2009)
Number of sales		
Total	32,264	416,290
Sale occurred after designation	23,862	-
Sale occurred in 0-250 ft. buffer	-	17,071
Lot area (sq. ft.)	7,758	13,758
Building area (sq. ft.)	4,043	2,962
Corner	0.054	0.080
Irregular	0.109	0.113
Garage	0.045	0.267
Altered	0.117	0.042
Building age	75.034	56.431
Pre-War	0.668	0.473
Building class		
Single-family detached	0.127	0.192
Single-family attached	0.045	0.118
Two-family home	0.140	0.211
Three-family home	0.066	0.060
Four-family home	0.041	0.020
Five/six-family home	0.026	0.017
More than six families, no elevator	0.040	0.029
Walk-up, units not specified	0.082	0.017
Elevator apt bldg, coop	0.010	0.003
Elevator apt bldg, not coop	0.020	0.011
Loft building	0.006	0.001
Condominium, SF attached	0.038	0.008
Condominium, walk-up apartments	0.020	0.044
Condominium, elevator building	0.309	0.242
Condominium, miscellaneous	0.004	0.001
Multi-use, single family with store	0.005	0.004
Multi-use, two-family with store	0.008	0.012
Multi-use, three-family with store	0.004	0.003
Multi-use, 4+ family with store	0.008	0.007

Notes: The sample is limited to arms-length sales in the thirty-two community districts in New York City that contained at least one lot in a historic district by 2009.

Table 3: Regression of sales price (log) on property characteristics, including historic designation

	Citywide			Manhattan
	(1)	(2)	(3)	(4)
	Avg. effect over 10 years following designation	Average effect (no cap)	Impact can vary with time (no cap)	Impact can vary with time (no cap)
Historic District Ever	0.20649***	0.21033***	0.19721***	0.32863***
	(0.03426)	(0.03425)	(0.03433)	(0.04684)
Historic District Post	0.09543***	0.14832***	0.03465	-0.07471
	(0.03530)	(0.03412)	(0.04024)	(0.05585)
Time Post			0.00832**	0.00404
			(0.00341)	(0.00513)
Time Post Squared			-0.00001	-0.00015
			(0.00009)	(0.00013)
Log(Lot area)	0.12847***	0.12845***	0.12845***	0.03376***
	(0.00417)	(0.00412)	(0.00417)	(0.01174)
Log(Square footage)	0.03681***	0.03694***	0.03668***	0.06896***
	(0.00276)	(0.00276)	(0.00276)	(0.00557)
Corner	0.04767***	0.04768***	0.04809***	0.06852***
	(0.00381)	(0.00376)	(0.00379)	(0.02398)
Irregular	0.00030	0.00045	0.00008	0.00282
	(0.00444)	(0.00442)	(0.00443)	(0.01459)
Garage	0.05096***	0.05087***	0.05094***	0.04939
	(0.00227)	(0.00225)	(0.00226)	(0.0929)
Altered	0.1891***	0.18855***	0.18829***	0.07602***
	(0.01059)	(0.01054)	(0.01059)	(0.01685)
Number of buildings	-0.01214***	0.01213***	-0.01215***	-0.24793***
	(0.00173)	(0.00172)	(0.00174)	(0.03520)
Building age	-0.00177***	0.00175***	-0.00181***	-0.00599***
	(0.00016)	(0.00016)	(0.00016)	(0.00061)
Building age squared	0.00001	0.00001	0,00001*	0.00002***
	(0.00001)	(0.00001)	(0.00001)	(0.00000)
Pre-War	-0.04557***	0.04567***	-0.04547***	0.28632***
	(0.00493)	(0.00490)	(0.00492)	(0.04152)
Lot area is missing	1.32469***	1.32502***	1.32343***	0.39007***
	(0.04280)	(0.04231)	(0.04277)	(0.10986)
Single-family attached	-0.11309***	0.11311***	-0.11312***	-0.51138***
	(0.00362)	(0.00357)	(0.00362)	(0.03559)
Two-family home	-0.60271***	0.60268***	-0.60288***	-0.9118***
	(0.00283)	(0.00278)	(0.00283)	(0.02462)

Three-family home	-0.91665*** (0.00479)	-0.9165*** (0.00475)	-0.91687*** (0.00479)	-1.40316*** (0.02976)
Four-family home	-1.26281*** (0.00727)	1.26289*** (0.00723)	-1.26225*** (0.00726)	-1.70841*** (0.03166)
Five/six-family home	-1.62608*** (0.00849)	1.62617*** (0.00839)	-1.62596*** (0.00849)	-1.90967*** (0.03790)
More than six families, no elevator	-2.09907*** (0.00944)	2.09966*** (0.00935)	-2.09755*** (0.00944)	-2.70963*** (0.02840)
Walk-up, units not specified	-2.08368*** (0.01179)	2.08573*** (0.01166)	-2.0794*** (0.01178)	-2.6816*** (0.02614)
Elevator apt building, coop	-2.14942*** (0.03776)	2.15069*** (0.03784)	-2.14597*** (0.03775)	-2.68549*** (0.04590)
Elevator apt building, not coop	-2.24112*** (0.01643)	2.24204*** (0.01620)	-2.23949*** (0.01642)	-2.71191*** (0.03512)
Loft building	-1.22456*** (0.05625)	1.22923*** (0.05295)	-1.21773*** (0.05621)	-1.72361*** (0.06080)
Condominium, single-family attached	-0.69855*** (0.02261)	0.69802*** (0.02250)	-0.70048*** (0.02261)	-1.26238*** (0.04654)
Condominium, walk-up apartments	-0.89944*** (0.01767)	0.89964*** (0.01752)	-0.90022*** (0.01766)	-1.66939*** (0.05104)
Condominium, elevator building	-0.97651*** (0.01731)	0.97737*** (0.01713)	-0.9751*** (0.01728)	-1.4089*** (0.03830)
Condominium, miscellaneous	-0.59131*** (0.06046)	0.58709*** (0.06034)	-0.60008*** (0.06054)	-0.89991*** (0.08285)
Multi-use, single family with store	-0.02676* (0.01495)	0.02663*** (0.01484)	-0.0268* (0.01494)	-0.37516*** (0.08821)
Multi-use, two-family with store	-0.65997*** (0.00934)	0.66006*** (0.00919)	-0.65993*** (0.00935)	-0.95968*** (0.04309)
Multi-use, three-family with store	-1.01029*** (0.01651)	1.01077*** (0.01650)	-1.00957*** (0.01651)	-1.57319*** (0.04836)
Multi-use, four or more family w/ store	-1.23899*** (0.01333)	1.23949*** (0.01314)	-1.23943*** (0.01332)	-1.89382*** (0.03883)
Preceded designation by 10+ years	-0.13511*** (0.02995)	0.13212*** (0.03004)	-0.13701*** (0.02997)	-0.11773** (0.04713)
Post designation by 10+ years	0.08637*** (0.02025)			
Post designation by 40+ years	0.16545*** (0.05564)	0.17387*** (0.05598)	0.04853 (0.06534)	0.00181 (0.08854)
Constant	0.00000 (0.00074)	0.00000 (0.00195)	0.00000 (0.00197)	0.00000 (0.00546)
Observations	448,554	448,554	448,554	122,091
Adjusted R^2	0.78184	0.78178	0.78214	0.73638

Notes: *** p<0.01, ** p<0.05, * p<0.10. Standard errors correct for spatial and temporal autocorrelation. All models include Census tract and CD Quarter fixed effects. The sample is limited to arms-length sales in the thirty-two community districts in New York City that contained at least one lot in a historic district by 2009.

Table 4: Regression of sales price (log) on property characteristics, including historic designation and buffer zones

	Citywide		Manhattan	
	(1)	(2)	(3)	(4)
	Average effect (no cap)	Impact can vary with time (no cap)	Average effect (no cap)	Impact can vary with time (no cap)
Historic District Ever	0.22194***	0.19833***	0.35151***	0.35667***
	(0.01147)	(0.01152)	(0.02581)	(0.02615)
Historic District Post	0.16678***	0.04810***	-0.05531**	-0.07078**
	(0.01201)	(0.01703)	(0.02494)	(0.03074)
Time Post		0.00894		0.00448
		(0.00168)		(0.00284)
Time Post Squared		-0.0001		-0.00017**
		(0.01670)		(0.03811)
Buffer variables (250 feet)				
Buffer Ever	-0.03694***	-0.05496***	0.04896**	0.05247***
	(0.00978)	(0.00989)	(0.01921)	(0.01954)
Buffer Post	0.11923***	-0.0078	0.01614	0.01872
	(0.01029)	(0.01637)	(0.01895)	(0.02454)
Buffer Time Post		0.01364***		0.00115
		(0.00165)		(0.00233)
Buffer Time Post Squared		-0.00022***		-0.00006
		(0.00004)		(0.00006)
Observations	448,554	448,554	122,091	122,091
Adjusted R^2	0.78196	0.78233	0.73652	0.73655

Notes: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by parcel). Includes full set of property level control variables (coefficients not displayed): Lot area (logged), square footage (logged), corner lot, irregular lot, garage, altered, number of buildings, building age, building age squared, pre-war building, missing lot area, and building class. All models include Census tract and CD Quarter fixed effects. The sample is limited to arms-length sales in the thirty-two community districts in New York City that contained at least one lot in a historic district by 2009.

Table 5: Regression of sales price (log) on property characteristics testing for heterogenetiy across community districts, including historic designation

	Total FAR in the CD		Unused FAR in the CD		Median price per square foot for newly built housing in the CD		Dollar value of Total FAR in the CD		Dollar value of Unused FAR in the CD	
	(1a)	(1b)	(2a)	(2b)	(3a)	(3b)	(4a)	(4b)	(5a)	(5b)
	Average effect (no cap)	Impact can vary with time (no cap)	Average effect (no cap)	Impact can vary with time (no cap)	Average effect (no cap)	Impact can vary with time (no cap)	Average effect (no cap)	Impact can vary with time (no cap)	Average effect (no cap)	Impact can vary with time (no cap)
Hist. Dist. Ever	0.21567***	0.22385***	0.24489***	0.25867***	0.15791***	0.16618***	0.23594***	0.24518***	0.23802***	0.24818***
	(0.01345)	(0.01353)	(0.01391)	(0.01402)	(0.01631)	(0.01639)	(0.01441)	(0.01450)	(0.01522)	(0.01532)
Hist. Dist. Post	0.03995***	0.12421***	0.05019***	0.11497***	0.09080***	0.19012***	0.03271**	0.15343***	0.03170*	0.12818***
	(0.01527)	(0.02309)	(0.01618)	(0.02414)	(0.01773)	(0.02599)	(0.01589)	(0.02311)	(0.01689)	(0.02442)
Time Post		-0.00127		0.0029139		-0.00497*		-0.00789***		-0.00471*
		(0.00265)		(0.00265)		(0.00268)		(0.00260)		(0.00280)
Time Post Sq.		-0.00022***		-0.00028***		-0.00006		-0.00001		-0.00009
		(0.00007)		(0.00007)		(0.00007)		(0.00007)		(0.00007)
Interactions capturing value of redevelopment in CD										
High*HD Ever	0.18256***	0.17495***	0.14276***	0.12232***	0.24277***	0.23508***	0.13824***	0.12883***	0.12999***	0.12043***
	(0.02357)	(0.02384)	(0.02438)	(0.02461)	(0.02337)	(0.02357)	(0.02331)	(0.02356)	(0.02335)	(0.02358)
High * HD Post	-0.06815***	-0.20563***	-0.07233***	-0.17235***	-0.11914***	-0.27318***	-0.04259*	-0.22911***	-0.03916	-0.18593***
	(0.02475)	(0.03401)	(0.02585)	(0.03531)	(0.02493)	(0.03474)	(0.02458)	(0.03363)	(0.02481)	(0.03416)
High * TPost		0.00977***		-0.0009471		0.01421***		0.01821***		0.01289***
		(0.00359)		(0.00373)		(0.00361)		(0.00357)		(0.00368)
High * TPost Sq		-0.00001		0.00033***		-0.00020**		-0.00027***		-0.00014
		(0.00009)		(0.00010)		(0.00009)		(0.00009)		(0.00010)
Observations	448,554	448,554	448,554	448,554	448,554	448,554	448,554	448,554	448,554	448,554
Adjusted R^2	0.80331	0.80342	0.80327	0.80341	0.80334	0.80342	0.80077	0.80087	0.80076	0.80085

Notes: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by parcel). Includes full set of property level control variables (coefficients not displayed): Lot area (logged), square footage (logged), corner lot, irregular lot, garage, altered, number of buildings, building age, building age squared, pre-war building, missing lot area, and building class. All models include Census tract and CD Quarter fixed effects. The sample is limited to arms-length sales in the thirty-two community districts in New York City that contained at least one lot in a historic district by 2009.

Table 6: Regression of new units constructed

	Citywide		Manhattan	
	(1)	(2)	(3)	(4)
Historic District	-10.72812***	-17.38417***	-14.72305***	-24.10308***
	(2.36517)	(4.04731)	(4.76314)	(8.14536)
Post Designation	-1.72205	3.86603	-5.87514	1.96504
	(6.13506)	(8.66425)	(10.90147)	(15.40414)
Historic District*Post Designation	-14.37208***	-19.96016***	-22.29322***	-30.13311**
	(4.35041)	(7.17523)	(7.65746)	(12.52748)
Near Buffer		-13.31208***		-18.75914**
		(4.23928)		(8.50308)
Near Buffer * Post Designation		-11.17737		-15.68106
		(8.03417)		(13.86027)
Observations	2,520	2,520	1,320	1,320
Adjusted R^2	0.12208	0.13467	0.14560	0.16063

Notes: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors. All models include area and year fixed effects.

Figure 1: Maps of Buffer Zones, Brooklyn and Manhattan

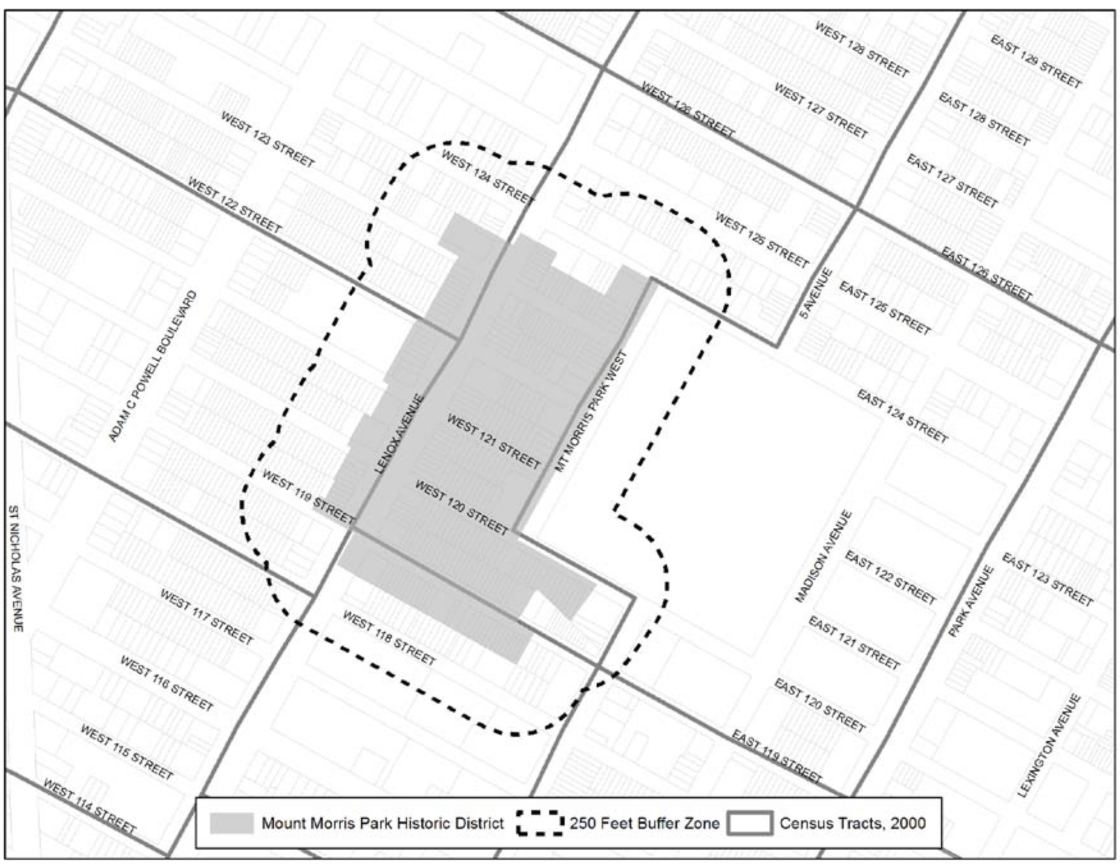
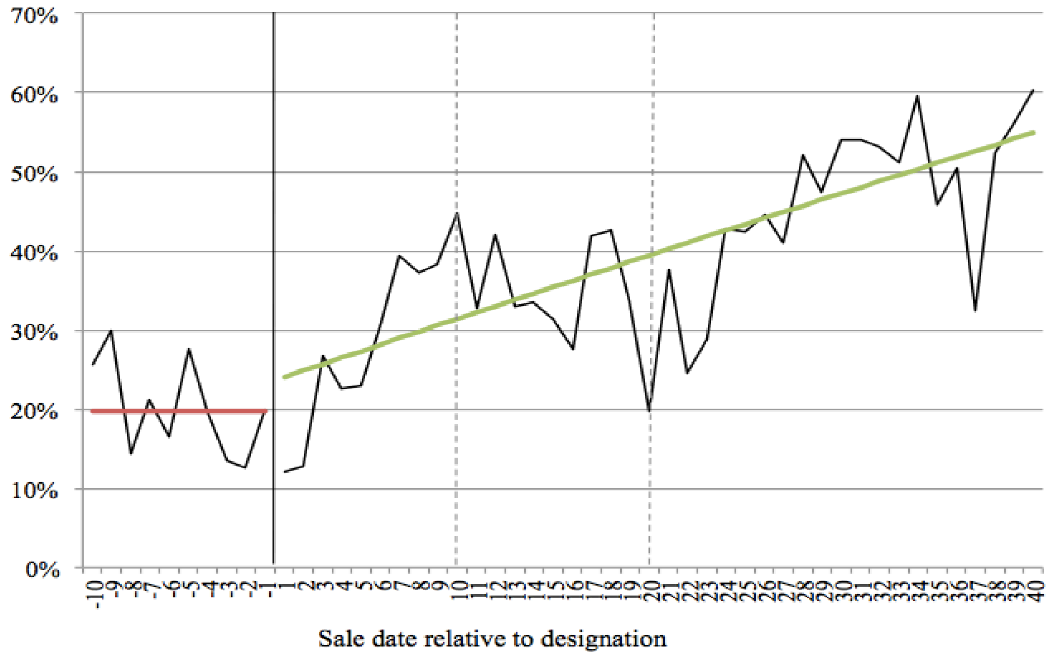
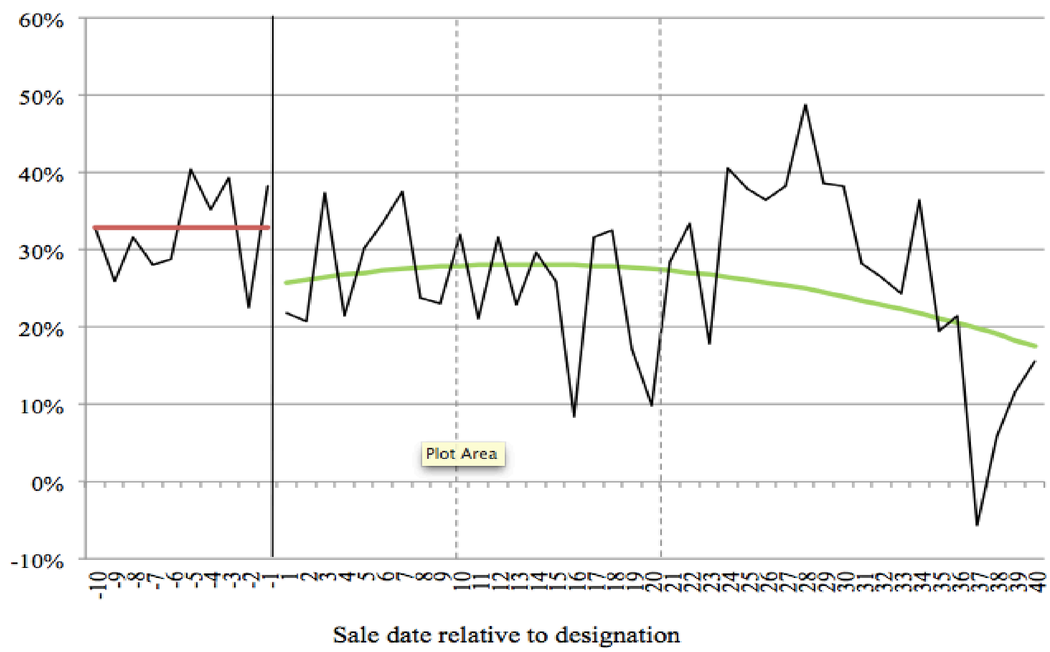


Figure 2: Regression-Adjusted Price Patterns, Before and After Designation

A. Citywide



B. Manhattan



Appendix A: Proofs of Propositions

Proof of Lemma 1:

Let h_0^* satisfy $B + a_0 + \delta A = c'(h_0^*)$, while $\tilde{h}_n^*(\tilde{\alpha}_n)$ satisfies $B + \tilde{\alpha}_n + \delta A = c'\left(\tilde{h}_n^*(\tilde{\alpha}_n)\right)$. The value of $h_{max}(\tilde{\alpha}_n)$ satisfies $(B + \tilde{\alpha}_n + \delta A)\left(\tilde{h}_n^*(\tilde{\alpha}_n) - h_{max}(\tilde{\alpha}_n)\right) = c\left(\tilde{h}_n^*(\tilde{\alpha}_n)\right)$, so $h_{max}(\tilde{\alpha}_n)$ is rising with $\tilde{\alpha}_n$ and always less than $\tilde{h}_n^*(\tilde{\alpha}_n)$.

A mixed redevelopment equilibrium is defined by $(B + s_n\alpha_0 + (1 - s_n)\tilde{\alpha}_n +$ *δAh∗snα0+(1−sn)αn−hn=ch∗snα0+(1−sn)αn*, and $B + s_n\alpha_0 + (1 - s_n)\tilde{\alpha}_n + \delta A = c'\left(h^*(s_n\alpha_0 + (1 - s_n)\tilde{\alpha}_n)\right)$. If this exists, then profits from redevelopment are increasing with s_n if and only if $\alpha_0 > \tilde{\alpha}_n$, which suggests that a mixed strategy equilibrium is only likely to be stable if $\alpha_0 < \tilde{\alpha}_n$.

Total redevelopment will be an equilibrium if and only if $(B + a_0 + \delta A)\left(h_0^* - \tilde{h}_n\right) - c(h_0^*)$ or $h_0^* - \frac{c(h_0^*)}{B + a_0 + \delta A} \geq \tilde{h}_n$. The value of marginal redevelopment is $(B + \tilde{\alpha}_n +$ *δAhn∗(αn) −hn−chn∗(αn)*, where *B+αn+δA=c′hn∗(αn)*, so marginal redevelopment will occur if and only if $h_{max}(\tilde{\alpha}_n) > \tilde{h}_n$.

If $h_0^* - \frac{c(h_0^*)}{B + a_0 + \delta A} > \tilde{h}_n$, then total redevelopment is always an equilibrium. If $h_{max}(\tilde{\alpha}_n) < \tilde{h}_n$, then no development is also an equilibrium. The value of $h_{max}(\tilde{\alpha}_n)$ is greater than $h_0^* - \frac{c(h_0^*)}{B + a_0 + \delta A}$ if and only if $\tilde{\alpha}_n > a_0$.

Hence if $\tilde{\alpha}_n > a_0$, $h_{max}(\tilde{\alpha}_n) > h_0^* - \frac{c(h_0^*)}{B + a_0 + \delta A}$, and some redevelopment will occur if initial heights are less than $h_{max}(\tilde{\alpha}_n)$ and complete redevelopment will occur if heights are less than $h_0^* - \frac{c(h_0^*)}{B + a_0 + \delta A}$. As the benefits from redevelopment are declining with the level of development, then there is a unique equilibrium in this range.

If $\tilde{\alpha}_n < a_0$, then $h_{max}(\tilde{\alpha}_n) < h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A}$. If initial heights are greater than $h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A}$ then neither partial nor total redevelopment is possible, as $\tilde{h}_n^*(\tilde{\alpha}_n) - \frac{c(\tilde{h}_n^*(\tilde{\alpha}_n))}{B+\tilde{\alpha}_n+\delta A} < h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A}$. If heights are less than $h_{max}(\tilde{\alpha}_n)$ then there can only be complete redevelopment, as the returns to development increase with the amount of development and initial development is remunerative. If heights are between $h_{max}(\tilde{\alpha}_n)$ and $h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A}$, then there is an equilibrium in which no parcels are redeveloped, an equilibrium in which all parcels are redeveloped, and a mixed strategy equilibrium in which some parcels are redevelopment, but that equilibrium is unstable.

Proof of Proposition 1: We consider development from the perspective of a social planner attempt to maximize property values less construction costs in the across the city as a whole. We assume that there is a distribution of amenities, denoted $f(\tilde{\alpha})$, and a distribution of heights that are dependent upon amenities $g(\tilde{h}|\tilde{\alpha})$. Total amenities are therefore $\int_\alpha \int_h \left(\alpha_0 s(\tilde{\alpha},\tilde{h}) + \tilde{\alpha}(1 - s(\tilde{\alpha},\tilde{h}))\right) g(\tilde{h}|\tilde{\alpha}) d\tilde{h} f(\tilde{\alpha}) d\,\tilde{\alpha}$, which we denote A. Total property values are therefore

$\int_\alpha \int_h \Big(\big(B + \alpha_0 s(\tilde{\alpha},\tilde{h}) + \tilde{\alpha}(1 - s(\tilde{\alpha},\tilde{h})) + \delta A\big)\big(s(\tilde{\alpha},\tilde{h})h^*(\tilde{\alpha}) + (1 - s(\tilde{\alpha},\tilde{h})\tilde{h}\big) -$
s(α,h)ch∗(α)ghαdhf(α)dα.

The optimal height, conditional upon development, satisfies: $B + \alpha_0 s(\tilde{\alpha},\tilde{h}) + \tilde{\alpha}\left(1 - s(\tilde{\alpha},\tilde{h})\right) + \delta A = c'(h^*(\tilde{\alpha}))$, which is the first order condition for developers as well, meaning that there is no need to regulate heights in this model.

The derivative with respect to $s(\tilde{\alpha},\tilde{h})$ is $g(\tilde{h}|\tilde{\alpha})f(\tilde{\alpha})$ times

$$\Big(\Big(B + \alpha_0 s(\tilde{\alpha},\tilde{h}) + \tilde{\alpha}\left(1 - s(\tilde{\alpha},\tilde{h})\right) + \delta A\Big)\left(h^*(\tilde{\alpha}) - \tilde{h}\right) - c\left(h^*(\tilde{\alpha})\right) + (\alpha_0 - \tilde{\alpha})\left(s(\tilde{\alpha},\tilde{h})h^*(\tilde{\alpha}) + (1 - s(\tilde{\alpha},\tilde{h})\tilde{h}\right)\Big) + \delta(\alpha_0 - \tilde{\alpha})S,$$

where S is the total population of the city.

The second derivative is weakly positive if and only if $\alpha_0 \geq \tilde{\alpha}$. As such, for neighborhoods which begin with a low level of amenities, it will be desirable either to completely redevelop or to not redevelop at all. For neighborhoods with a higher level of amenities, an interior solution is possible (although far from automatic).

When $\alpha_0 > \tilde{\alpha}$, the condition for complete redevelopment is $\big((B + \alpha_0 + \delta A)(h_0^* - \tilde{h}) -$ $ch0*+\alpha0-\alpha h+\delta\alpha0-\alpha S>0$, or $B+\alpha0+\delta Ah0*-ch0*+\delta\alpha0-\alpha SB+\alpha+\delta A>h$ implies that for any given initial amenity level there is a maximum height at which the neighborhood should be completely redeveloped, which is decrease in the initial amenity level. This height limit is unambiguously higher than $h_0^* - \frac{c(h_0^*)}{B+\tilde{\alpha}+\delta A}$, so anytime the full development equilibrium exists when $\alpha_0 > \tilde{\alpha}$, that equilibrium is optimal. Moreover, since even if the full redevelopment equilibrium exists, it will not necessarily occur, and because there are values of $\tilde{h}$ between $h_0^* - \frac{c(h_0^*)}{B+\tilde{\alpha}+\delta A}$ and $\frac{(B+\alpha_0+\delta A)h_0^* - c(h_0^*) + \delta(\alpha_0-\tilde{\alpha})S}{B+\tilde{\alpha}+\delta A}$, there will exist intermediate values of $\tilde{h}$ in this range at which it is optimal to subsidize the complete redevelop old neighborhoods.

When $\alpha_0 < \tilde{\alpha}$, the relevant first derivative $\Big(\big(B + \alpha_0 s(\tilde{\alpha},\tilde{h}) + \tilde{\alpha}\big(1 - s(\tilde{\alpha},\tilde{h})\big) + \delta A\big)\big(h^*(\tilde{\alpha}) - \tilde{h}\big) - c\big(h^*(\tilde{\alpha})\big) + (\alpha_0 -$ $\alpha s\alpha,hh*(\alpha)+(1-s(\alpha,h)h+\delta\alpha0-\alpha S$, and the second derivative implies concavity. If $\frac{(B+\alpha_0+\delta A)h^*(\tilde{\alpha}) - c(h^*(\tilde{\alpha})) + \delta(\alpha_0-\tilde{\alpha})S}{B+\tilde{\alpha}+\delta A} > \tilde{h}$, then the first derivative is positive when $s(\tilde{\alpha},\tilde{h})$ equals zero, and some redevelopment is optimal, and that as $\tilde{\alpha}$ goes to α_0 the height threshold for some redevelopment goes to $h_0^* - \frac{c(h_0^*)}{B+\alpha_0+\delta A}$. The first derivative when $s(\tilde{\alpha},\tilde{h})$ equals one is $(B + \alpha_0 + \delta A)\big(h_0^* - \tilde{h}\big) - c(h_0^*) + (\alpha_0 - \tilde{\alpha})h_0^* + \delta(\alpha_0 - \tilde{\alpha})S$. If $\frac{(B+2\alpha_0-\tilde{\alpha}+\delta A)h_0^* - c(h_0^*) + \delta(\alpha_0-\tilde{\alpha})S}{B+\alpha_0+\delta A} > \tilde{h}$, then it is optimal to redevelop completely. This threshold is lower than the threshold for partial development, so that for very low levels of initial height it is optimal to redevelop completely and for intermediate levels it is optimal to redevelop partially. Only when $\alpha_0 = \tilde{\alpha}$, the threshold for partial and total redevelopment are the same.

In this case, the threshold for optimal partial development is lower than $h_{max}(\tilde{\alpha}_n)$, and the threshold for total development is less than $h_0^* - \frac{c(h_0^*)}{B+\alpha_0+\delta A}$ so developers will want to redevelop more than they should. If partial development is the private outcome, then the level of private redevelopment is always too high relative to the social optimum.

Proof of Proposition 2:

If $\tilde{\alpha}_n < \alpha_0$, then banning redevelopment will only impact the community if development would have happened otherwise, which means that $\tilde{h}_n < h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A}$. If heights are low enough so that redevelopment does occur then it will be complete, and raise unit values by $\alpha_0 - \tilde{\alpha}_n$. If redevelopment is banned, the value of total real estate will fall and land values will decrease by $h_0^*(B + a_0 + \delta A) - \tilde{h}_n(B + \tilde{\alpha}_n + \delta A) - c(h_0^*)$, which is decreasing in initial height and initial amenity levels.

If $\tilde{\alpha}_n > \alpha_0$, then banning redevelopment will only impact the community if $\tilde{h}_n < h_{max}(\tilde{\alpha}_n)$. If $\tilde{h}_n < h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A}$, then the alternative would have been total renovation. If $h_0^* - \frac{c(h_0^*)}{B+a_0+\delta A} < \tilde{h}_n < h_{max}(\tilde{\alpha}_n)$, then the alternative is a mixed redevelopment equilibrium is defined by $(B + s_n\alpha_0 + (1 - s_n)\tilde{\alpha}_n + \delta A)\big(h^*(s_n\alpha_0 +$ *(1−sn)αn−hn=ch∗snα0+(1−sn)αn*, and $B + s_n\alpha_0 + (1 - s_n)\tilde{\alpha}_n + \delta A = c'\big(h^*(s_n\alpha_0 + (1 - s_n)\tilde{\alpha}_n)\big)$. In this case, the value of s_n is rising with $\tilde{\alpha}_n$ and falling with $\tilde{h}_n$, so places with higher values of $\tilde{\alpha}_n$ and lower values of $\tilde{h}_n$, will have larger reductions in the level of redevelopment after the ban.

A ban on redevelopment will cause ex post unit prices to be increase by $s_n(\tilde{\alpha}_n -$ *α0*, which is decreasing with *hn*, and increasing with *αn*. If there is partial redevelopment, then the increase in land values from banning redevelopment equals $s_n(\tilde{\alpha}_n - \alpha_0)\tilde{h}_n$, which is again increasing with $\tilde{\alpha}_n$. The impact of height is initial ambiguous. If there is total redevelopment, then the change in land or total property values equals $h_0^*(B + a_0 + \delta A) - \tilde{h}_n(B + \tilde{\alpha}_n + \delta A) - c(h_0^*)$, which is decreasing in initial height and initial amenity levels, and may be positive or negative.

Proof of Proposition 3:

In the case where the social planner can completely control the share of redevelopment, the first welfare criterion is $N_{new}(B(S) + \alpha_0 + \delta A)\,\overline{h} + \int_\alpha \Big((B(S) + \alpha_0 s(\tilde{\alpha}) + \tilde{\alpha}(1 - s(\tilde{\alpha})) + \delta A)\big(s(\tilde{\alpha})\overline{h} + (1 - s(\tilde{\alpha})\underline{h}\big) - s(\tilde{\alpha})c\Big) f(\tilde{\alpha})\, d\tilde{\alpha}$, where $A = N_{new}\alpha_0 +$

$\int_\alpha (\alpha_0 s(\tilde\alpha) + \tilde\alpha(1-s(\tilde\alpha))f(\tilde\alpha)\,d\tilde\alpha$ and

$S = N_{new}\,\overline{h} + \int_\alpha \left(s(\tilde\alpha)\overline{h} + (1-s(\tilde\alpha)\underline{h}\right)f(\tilde\alpha)\,d\tilde\alpha$. The second welfare criterion is

$N_{new}(B(S)+\alpha_0+\delta A)\,\overline{h} + \int_\alpha \Big((B(S)+\alpha_0 s(\tilde\alpha)+\tilde\alpha(1-s(\tilde\alpha))+\delta A)\big(s(\tilde\alpha)\overline{h} + (1-s(\tilde\alpha)\underline{h}\big) - s(\tilde\alpha)c\Big)f(\tilde\alpha)\,d\tilde\alpha + \int_{B_i=B(S)}^{\infty}(B_i - B(S))q(B_i)dB_i$.

In the first case, the net benefit of allowing redevelopment in a district is

$S\Big(-q\big(B(S)\big)\big(\overline{h}-\underline{h}\big) - \delta(\tilde\alpha-\alpha_0)\Big) + (B(S)+\delta A)\big(\overline{h}-\underline{h}\big) + \alpha_0\overline{h} - \tilde\alpha\underline{h} - cN_{new}$,

which is monotonically decreasing in $\tilde\alpha$. Hence there exists a unique value of $\tilde\alpha$, equal to $\frac{(B(S)+\delta A)(\overline{h}-\underline{h})-cN_{new}+(\overline{h}+\delta)\alpha_0-Sq(B(S))(\overline{h}-\underline{h})}{\underline{h}+\delta S}$, below which redevelopment is allowed and above which redevelopment is not allowed. Assuming that the threshold is positive implies that the cutoff is rising with $\overline{h}$ and falling with $\underline{h}$. This cutoff point is rising with α_0 and falling with $q\big(B(S)\big)$ and c. In the case where the planner internalizes global welfare, there is a higher threshold equal to $\frac{(B(S)+\delta A)(\overline{h}-\underline{h})-cN_{new}+(\overline{h}+\delta)\alpha_0}{\underline{h}+\delta S}$, which is independent of $q\big(B(S)\big)$ and also rising with $\overline{h}$, and α_0 and falling with $\underline{h}$. In the range where $\tilde\alpha$ is less than $\frac{(B(S)+\delta A)(\overline{h}-\underline{h})-cN_{new}+(\overline{h})\alpha_0}{\underline{h}+\delta S}$, total property values would be higher if the area wasn't in a historic district.

If the planner can dictate the amount of redevelopment in each area, the government maximizes $N_{new}(B(S)+\alpha_0+\delta A)\,\overline{h} + \int_\alpha \Big((B(S)+\alpha_0 s(\tilde\alpha)+\tilde\alpha(1-s(\tilde\alpha))+$ $\delta As\alpha h+(1-s(\alpha)h-s(\alpha)cf(\alpha)d\alpha$. The first order condition for redevelopment is in the case

$S\Big(-q\big(B(S)\big)\big(\overline{h}-\underline{h}\big) - \delta(\tilde\alpha-\alpha_0)\Big) + (B(S)+\alpha_0 s(\tilde\alpha)+\tilde\alpha(1-s(\tilde\alpha))+\delta A)\big(\overline{h}-\underline{h}\big) -$ $cNnew-\alpha-\alpha 0s\alpha h+(1-s(\alpha)h=0$ and the share of redevelopment equals

$\frac{(B(S)+\tilde\alpha+\delta A)(\overline{h}-\underline{h})-cN_{new}-(\tilde\alpha-\alpha_0)\underline{h}-S\left(q(B(S))(\overline{h}-\underline{h})+\delta(\tilde\alpha-\alpha_0)\right)}{2(\tilde\alpha-\alpha_0)(\overline{h}-\underline{h})} = s(\tilde\alpha)$. When the government internalizes the welfare of residents, the first order condition is

$\frac{(B(S)+\tilde\alpha+\delta A)(\overline{h}-\underline{h})-cN_{new}(\underline{h}+\delta S)(\tilde\alpha-\alpha_0)}{2(\tilde\alpha-\alpha_0)(\overline{h}-\underline{h})} = s(\tilde\alpha)$, which is also weakly lower.

Appendix B: Description of the Designation Process for Historic Districts

The responsibility for the creation of a historic district in New York City falls on the LPC, which is made up of 11 members, including at least three architects, one qualified historian, one city planner or landscape architect, one realtor, and one resident of each of the five boroughs, all of whom are appointed by the mayor for three-year terms.[13]

The LPC may propose historic designation on its own accord, but often relies on the efforts of community leaders and activists to bring neighborhoods up for consideration. [14] Suggestions from outside the LPC most often begin with a Request for Evaluation (RFE) filed with the LPC.[15] Typically, civic organizations and community groups provide extensive supporting material along with each RFE.

When a designation proposal is submitted, the RFE Committee, which includes the Chair of the LPC along with various LPC staff members, evaluates the submission to determine whether the full LPC should consider it.[16] The LPC staff documents the characteristics of the proposed district, a process that includes on-site survey, meetings with local community members, and discussions of the boundaries of the potential historic district. Because districts are required to contain only contiguous lots, the staff of the LPC must evaluate the architectural and historic quality of all the buildings within a proposed district before settling on the boundaries.

Following the evaluation by the RFE Committee, the Chair decides whether to forward the proposed designation to the full LPC.[17] If so, the LPC reviews the RFE Committee's statement of the significance of the proposed district and the Committee's recommendation, along with photographs and other documentation, at a public meeting. To move the proposal forward, a majority of the Commissioners present must vote to "calendar" a proposed designation.[18] Owners of the property in question are not

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[13] N.Y.C. Charter § 3020(1), (2) (2009).
[14] NEW YORK CITY LANDMARKS PRESERVATION COMMISSION, *FAQs: The Designation Process*, http://www.nyc.gov/html/lpc/html/faqs/faq_designation.shtml (last visited October 13, 2011).
[15] An RFE is not required by law, but it is the LPC's preferred form for receiving a new request.
[16] *Id.*
[17] There is no set timeline for determining whether a proposal should be submitted to the full LPC, so proposals can remain in an indeterminate status for long periods of time (e.g., see Pogrebin 2008).
[18] Rules of the City of New York, Title 63, Landmarks Preservation Commission Rules 1-02, 1-01 (July 2003). Note that the meeting is not required by statute or rules to be public, but the LPC indicates that such meetings and votes are to be public. NEW YORK CITY LANDMARKS PRESERVATION COMMISSION *supra* note [2]. The LPC is not required to vote on calendaring every proposed designation, and each proposal is not required to go through the RFE Committee in order to be reviewed by the full LPC. Although the

necessarily given notice of the meeting at which a proposed designation is calendared, however, nor is a public hearing required prior to the calendaring decision.[19]

While district boundaries can be modified with the same land area or reduced to a smaller land area between the dates of calendaring and designation, they cannot be enlarged.[20] In principle, when the LPC calendars a proposed historic district, the Department of Buildings stops issuing permits for development and renovations while the LPC has the proposed district under consideration. In practice, it is not clear that the calendaring of proposed districts actually does prevent or dissuade the Department of Buildings from issuing work permits.

Once a proposal is calendared, the LPC is required to hold a public hearing, during which New York City residents, including property owners and other interested parties, are invited to offer their opinions on the proposed historic district.[21] The LPC must provide notice of a planned hearing regarding a proposed designation to the City Planning Commission (CPC), the office of the borough president for the borough in which the district is located, and any affected community boards.[22] Further, the LPC must publish notice of any public hearing in the City Record for the ten days preceding the hearing, and must provide notice by mail to the owner of any property in the proposed district.[23]

At the public hearing, LPC staff makes a presentation about the proposed designation, and property owners and other interested parties are given an opportunity to speak.[24] These parties also may submit written comments.[25] No environmental review is

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practice of the LPC is to consider proposals in the manner described here, the only requirement in LPC rules and the city administrative code is for a vote to calendar by a majority of the commissioners present (with a minimum of six Commissioners required for a quorum).

[19] Mitch Korbey, Landmarks Commission Does 30!, Herrick Zone, July 11, 2012, available at http://herrickzone.com/?p=1094&utm_source=feedburner&utm_medium=email&utm_campaign=Feed%3A+herrickzone%2FXUTe+%28HERRICK+ZONE%29

[20] HISTORIC DISTRICTS COUNCIL, *Preserving Your Historic Neighborhood: New York City Designation Process*, http://www.hdc.org/preservingnyc.htm (last visited October 12, 2011).

[21] N.Y.C. Charter § 3020(7). See also N.Y. Admin. Code § 25-313.

[22] Id.

[23] N.Y.C. Admin. Code § 25-313(a) (2010). Such notice must be provided by registered mail to any owner of any property at the owner's last known address as recorded by the commissioner of finance, or alternatively if no such record, by ordinary mail to the street address of the property in question. *Id.* In practice, this notice to property owners includes a copy of the designation report prepared by LPC staff. NEW YORK CITY LANDMARKS PRESERVATION COMMISSION *supra* note [2].

[24] NEW YORK CITY LANDMARKS PRESERVATION COMMISSION *supra* note [2].

[25] *Id.*

required prior to the hearing, unlike the case for zoning changes.[26] After a hearing, the LPC may officially designate a proposed district by a vote of at least six commissioners.[27] While a proposed historic district is under consideration, the staff of the LPC completes a "designation report" outlining the boundaries of the district, and describing the historic and architectural significance of buildings within the proposed district. If the LPC ultimately designates a historic district, that designation report forms the basis of the justification for the designation.[28] The designation is effective immediately upon the LPC's vote.

The LPC must then file the designation report with the City Council, the CPC and other city agencies.[29] While the designation need not go through the CPC's Uniform Land Use Review Process,[30] the CPC must hold a public hearing on the designation of a district and provide its own report on the designation to the City Council within 60 days.[31] The CPC report must address how the designation relates to existing zoning requirements, plans for "the development, growth, improvement or renewal" of the area, and "projected public improvements."[32] The CPC report also may recommend the action it believes the City Council should take regarding the LPC designation.[33]

Within 120 days of receiving the LPC's designation report, the City Council is empowered to modify or reject a proposed district.[34] While the Council has rejected individual landmark designations in recent years, it has not rejected or changed any

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[26] Korbey, supra note [].
[27] Landmarks Preservation Commission Rules 1-04. Note that whereas a simple majority of the commissioners present is sufficient to calendar a proposal, an absolute majority of the LPC must support a designation, regardless of the number present for the vote.
[28] N.Y.C. Admin. Code § 25-302(f)(1).
[29] N.Y.C. Charter § 3020(8). The designation must be filed with the CPC within 10 days of the designation action, and must also be filed with the city council, the department of buildings, the Board of Standards and Appeals, the Fire Department and the Department of Health and Mental Hygiene. N.Y.C. Admin. Code § 25-303(f). In practice the LPC provides the CPC and other city agencies with a copy of the final designation report, although this is not expressly required by statute. NEW YORK CITY LANDMARKS PRESERVATION COMMISSION *supra* note [2].
[30]Korbey, supra note []. For information about ULURP, see [].

[31] N.Y.C. Admin. Code § 25-303(g)(1).
[32] *Id.*
[33] *Id.*
[34] N.Y.C. Charter § 3020(9), N.Y.C. Admin. Code § 25-303(g)(2). A majority of the city council may either modify or "disapprove" a designation by the LPC. *Id.* Following a vote on such an action, the Mayor may disapprove the action of the city council within five days, in which case the city council may overrule the Mayor with the votes of two-thirds of its 51 members to reinstate the city councils disapproval (thus defeating the designation by the LPC) or modification. *Id.*

district designations.[35] The mayor may veto a modification or rejection within five days of the City Council's vote. The City Council then has ten days to over-ride the veto by a two-thirds vote.

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[35] Pearson, Marjorie. Ibid.

Appendix C: Description of the Restrictions on Building Modifications Imposed by Historic District Designations

The designation of a historic district triggers a series of restrictions on building construction and modification that are likely to affect property values and sales prices in historic districts. The restrictions are described in detail in Appendix B. In brief, Any property owner in New York who wants to undertake construction work that goes beyond "ordinary repairs and maintenance" must apply for appropriate permits from the Department of Buildings (DOB) (and in some cases, other city agencies).[36] If the property in question is in a historic district, the owner also must request and receive one of three determinations from the LPC: (1) a "permit for minor work," (2) a "certificate of no effect," or (3) a "certificate of appropriateness."[37] Until the LPC issues one of these notices, the Department of Buildings may not approve a building permit for construction, modification or demolition of property in a historic district,[38] and the owner may not proceed with the construction or modification.

The LPC has issued guidelines delineating types of work that constitute ordinary maintenance and thus do not require LPC approval (for example, installing window air-conditioning units) and work that does require LPC approval (for example, painting wood or metal cornices a different color).[39] But for anything other than ordinary maintenance, even "minor work,"[40] the LPC requires an owner to submit an "Application Form for Work on Designated Properties."[41]

The LPC forwards the Application to the DOB, which determines whether the proposed work requires a DOB building permit.[42] If the project requires a building permit, the LPC will not grant a minor work permit, and instead will consider whether the work qualifies for a certificate of no effect or a certificate of appropriateness.[43] If the

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[36] *See* N.Y.C. Admin. Code § 25-302(r) (defining ordinary repairs and maintenance as work to "correct any deterioration or decay of or damage to such improvement or any part thereof and to restore same, as nearly as may be practicable, to its condition prior to the occurrence of such deterioration, decay or damage.")
[37] N.Y.C. Admin. Code § 25-315(c)
[38] N.Y.C. Admin. Code § 25-305(b).
[39] New York City Landmarks Preservation Commission, Guidelines and Materials Checklist for Performing Work on Landmarked Buildings *available at* http://www.nyc.gov/html/lpc/downloads/pdf/pubs/workguide.pdf.
[40] N.Y.C. Admin. Code § 25-310(a)(1).
[41] New York City Landmarks Preservation Commission, Application Form for Work on Designated Properties *available at* http://www.nyc.gov/html/lpc/downloads/pdf/forms/application_form_full.pdf.
[42] N.Y.C. Admin. Code § 25-310(b).
[43] *Id.*

project does not require a building permit, the LPC will determine whether the proposal would "change, destroy or affect any exterior architectural feature" of property located in a historic district.[44] If the proposal does not have such an effect, the LPC will grant the minor work permit.[45] If the proposal would have such an effect, however, the application will be considered for a certificate of appropriateness,[46]

A property owner undertaking to "construct, reconstruct, alter or demolish" a building in a historic district who has applied for a permit from the DOB may use the Application Form to apply for "certificate of no effect" from the LPC in order to proceed with the project.[47] In the case of an existing building, the LPC considers whether "the proposed work would change, destroy or affect any exterior architectural feature" in a historic district.[48] In the case of new construction, the LPC considers whether the proposed building will "affect or not be in harmony" with the historic district.[49] If there is no problematic effect, the LPC will grant the certificate of no effect.[50] The LPC is required to respond to each request within 30 days after it is initially filed.[51] If the certificate request is denied, there is an appeals process within the LPC,[52] and if the denial is sustained the applicant may request a certificate of appropriateness.[53]

An owner may request a certificate of appropriateness from the LPC either when a certificate of no effect has been denied, or initially (that is, without first seeking a certificate of no effect) at the time the owner seeks a building permit.[54] In evaluating a request for a certificate of appropriateness, the LPC will consider "aesthetic, historical and architectural values and significance, architectural style, design, arrangement, texture, material and color."[55] In particular, the LPC is required to take into account how the

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[44] N.Y.C. Admin. Code § 25-310(c)(1)(a). Note also that there are particular rules regarding installation of new awnings on both residences and commercial buildings. *See* Rules of the City of New York, Title 63, Landmarks Preservation Commission Rules 2-12 (July 2003).
[45] N.Y.C. Admin. Code § 25-310(c)(2).
[46] N.Y.C. Admin. Code § 25-310(c)(1)(b).
[47] N.Y.C. Admin. Code § 25-306(a)(1).
[48] *Id.*
[49] *Id.*
[50] *Id.*
[51] N.Y.C. Admin. Code § 25-306(a)(2).
[52] *Id.* If the LPC does not grant the certificate of no effect, it issues a "proposed denial" of the request to the applicant, who then may file a written demand. *Id.* The LPC is then required to "confer with the applicant" and then is permitted 30 days to make a final determinate as to the request for certificate of no effect.
[53] N.Y.C. Admin. Code § 25-306(a)(3).
[54] N.Y.C. Admin. Code § 25-307(a).
[55] N.Y.C. Admin. Code § 25-307(b)(2).

proposed work will affect the exterior architectural features of the building, and "the relationship between the results of such work and the exterior architectural features of other, neighboring improvements" in the historic district.[56] Each request for a certificate of appropriateness must be considered at a public hearing, and the LPC must make a determination regarding the request within 90 days after the request is filed.[57]

Beyond the LPC's certificate and permit requirements, the LPC requires that property in historic districts be kept "in good repair."[58] In particular, the LPC requires that property owners maintain and repair "all exterior portions" of buildings in historic districts, as well as all interior portions which, if not maintained, may "cause the exterior portions" to "deteriorate, decay or… fall into a state of disrepair."[59] This provision has been used by the LPC to obtain a court order requiring the property owner to undertake repairs.[60]

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[56] N.Y.C. Admin. Code § 25-307(b)(1).
[57] N.Y.C. Admin. Code § 25-308.
[58] N.Y.C. Admin. Code § 25-311(a).
[59] *Id.*
[60] City of New York v. 10-12 Cooper Square, Inc., 793 N.Y.S.2d 688, 693 (Sup. Ct. N.Y. Co. 2004) (ordering the property owner to "permanently repair and restore the exterior of the Skidmore house to a state of "good repair" in an expeditious manner" and "to maintain the Skidmore House and to keep in "good repair" all exterior portions and all interior portions which if not so maintained may cause or tend to cause the exterior portions of such improvement to deteriorate or otherwise fall into a state of disrepair.")

Appendix D: Robustness Results for Price Regression Models

In Appendix D, we report the regression results from the four robustness checks for the price models. In the first, we include zip code fixed effects, rather than census tract fixed effects. This increases the number of comparison properties, as zip codes are substantially larger than census tracts in New York City. We find a positive impact of historic district designation citywide, but a negative impact when we look only at Manhattan. We then run the buffer regressions using zip code fixed effects, again reporting similar results to those with census tract fixed effects. Third, we restrict our analysis to properties located in neighborhoods that will, at some point, become part of a historic district. This restricts the comparison group to properties that have not yet been designated, but will become historic districts. Finally, we replicate the price analysis swapping out the date of designation for the calendaring date. Typically, the calendaring date signals the impending designation of a historic district, and we would expect the positive impact of historic districts to occur following the public announcement that the district has been placed on the calendar of the Landmarks Preservation Commission.

Appendix Table D1: Regression of sales price (log) on property characteristics with zip code fixed effects, including historic designation

	Citywide		Manhattan
	(1)	(2)	(3)
	Average effect (no cap)	Impact can vary with time (no cap)	Impact can vary with time (no cap)
Historic District Ever	0.270569***	0.26983***	0.32223***
	(0.01213)	0.01	(0.02426)
Historic District Post	0.16644***	0.02797	-0.12683***
	(0.01296)	(0.01894)	(0.03186)
Time Post		0.01168***	0.01580***
		(0.00192)	(0.00293)
Time Post Squared		-0.00015***	-0.00046***
		(0.00005)	(0.00007)
Observations	445,096	445,096	121,909
Adjusted R^2	0.75567	0.75584	0.70538

Notes: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by parcel). Includes full set of property level control variables (coefficients not displayed): Lot area (logged), square footage (logged), corner lot, irregular lot, garage, altered, number of buildings, building age, building age squared, pre-war building, missing lot area, and building class. All models include ZIP area and CD Quarter fixed effects. The sample is limited to arms-length sales in the thirty-two community districts in New York City that contained at least one lot in a historic district by 2009.

Appendix Table D2: Regression of sales price (log) on property characteristics with zip code fixed effects, including historic designation and buffer zones

	Citywide	
	(1)	(2)
	Average effect (no cap)	Impact can vary with time (no cap)
Historic District Ever	0.28427***	0.27968***
	(0.01203)	(0.01206)
Historic District Post	0.18754***	0.03983**
	(0.01281)	(0.01882)
Time Post		0.01209***
		(0.00192)
Time Post Squared		-0.00014***
		(0.00005)
Buffer variables (250 feet)		
Buffer Ever	0.03780***	0.03428***
	(0.01007)	(0.01012)
Buffer Post	0.12902***	-0.04247**
	(0.01131)	(0.01757)
Buffer Time Post		0.01825***
		(0.00187)
Buffer Time Post Squared		-0.00034***
		(0.00005)
Observations	445,096	445,096
Adjusted R^2	0.75654	0.75690

Notes: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by parcel). Includes full set of property level control variables (coefficients not displayed): Lot area (logged), square footage (logged), corner lot, irregular lot, garage, altered, number of buildings, building age, building age squared, pre-war building, missing lot area, and building class. All models include ZIP area and CD Quarter fixed effects. The sample is limited to arms-length sales in the thirty-two community districts in New York City that contained at least one lot in a historic district by 2009.

Appendix Table D3: Regression of sales price (log) on property characteristics, limited to properties located in a historic district

	Citywide	
	(1)	(2)
	Impact can vary with time (no cap)	Impact can vary with time (no cap)
Historic District Post	-0.04131*	-0.00370
	(0.02112)	(0.02332)
Time Post	0.02064***	0.01737***
	(0.00215)	(0.00235)
Time Post Squared	-0.00036***	-0.00031***
	(0.00005)	(0.00006)
Observations	32,264	32,264
Adjusted R^2	0.65391	0.66358

Notes: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by parcel). Includes full set of property level control variables (coefficients not displayed): Lot area (logged), square footage (logged), corner lot, irregular lot, garage, altered, number of buildings, building age, building age squared, pre-war building, missing lot area, and building class. Model 1 includes borough fixed effects and quarter dummies. Model 2 includes borough-quarter fixed effects.

Appendix Table D4: Regression of sales price (log) on property characteristics with the calendaring date, including historic designation

	Citywide		Manhattan
	(1)	(2)	(3)
	Average effect (no cap)	Impact can vary with time (no cap)	Impact can vary with time (no cap)
Historic District Ever	0.27461***	0.27493**	0.39549***
	(0.01282)	(0.01313)	(0.02761)
Cal Historic District Post	0.06409***	-0.04064**	-0.15513***
	(0.01359)	(0.01689)	(0.03487)
Time Post		0.00452***	0.00628***
		(0.00079)	(0.00192)
Cal Time Post Squared		0.00006***	-0.00020***
		(0.00002)	(0.00005)
Observations	448,554	448,554	122,091
Adjusted R^2	0.78167	0.78187	0.73645

Notes: *** p<0.01, ** p<0.05, * p<0.10. Robust standard errors (clustered by parcel). Includes full set of property level control variables (coefficients not displayed): Lot area (logged), square footage (logged), corner lot, irregular lot, garage, altered, number of buildings, building age, building age squared, pre-war building, missing lot area, and building class. All models include Census tract and CD Quarter fixed effects. The sample is limited to arms-length sales in the thirty-two community districts in New York City that contained at least one lot in a historic district by 2009.