New Deal Public Housing Projects and Their Impact on Local Communities

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February 9, 2012

Abstract

Out of the programs that were created during the Great Depression, the introduction of public housing has been one of the most controversial. A myriad of recent papers including Hartley (2010) and Shester (2010) have found public housing is associated with higher crime rates and worse health outcomes in the modern era. However, it is not clear that the first public housing projects had the same effect on the surrounding community. Housing conditions for low-income families during the 19th and the first few decades of the 20th were generally poor. Wood (1919, pp. 7–9) argues that as many as a third of all families across the United States resided in housing that was overcrowded and had insufficient light and water. She argued that many dwellings were also dilapidated and were prone to fire. Several cholera epidemics occurred in 1832, 1849, and again in 1852 in lower Manhattan as a result of crowded living conditions.

I explore the effect of public housing on surrounding property values and contract rents for Chicago; Washington, DC; Philadelphia; and New York City between 1934 and 1940. I constructed a unique data set of public housing projects for each city and combine it with census tract-level data from the real property inventories and a special census of Chicago and matched them to the 1940 United States Census, the latter I had obtained from the National Historical Geographic Information System (NHGIS).

I ran a series of hedonic models incorporating "locational heterogeneity", described in Páez, Uchida, and Miyamoto (2002), to explore the influence of public housing on the distribution of contract rents in the surrounding communities. These model use a locally-linear estimator similar to Geographically Weighted Regressions, but they also allow the bandwidth to vary for each location.

My findings suggest the share of property values and contract rents under $2,000 and $20 per room per month respectively increased in neighborhoods near public housing between 1934 and 1940. However, some evidence suggests that property values and contract rents above $10,000 and $100 per room per month respectively declined in some of the same neighborhoods. Like Rossi (2010), the magnitude of the effect of public housing appears to dissipate as the distance of the neighborhood to public housing increased.

*Contact: t.kollmann@latrobe.edu.au. I am grateful for the assistance of Jason Ernst and Pavand Kumar Reddy Dhani for entering in the plethora of data from the 1934 Real Property Inventory of New York City as well as the helpful suggestions by Sandy Dall'erba, Price Fishback, Ronald Oaxaca, and Katherine Shester.

1 Introduction

Public housing is a contentious issue. When the idea of publicly funded housing was first introduced, public housing was attacked from the entire gamut of the political spectrum. On one hand, critics argued that public housing interfered with the private housing market. Community leaders argued that the dispersion of the poor through slum clearance would negatively influence housing values. Further, housing advocates argued that the selection into public housing was discriminatory and excluded minorities.

While the era of large public housing projects appears to have permanently given way to voucher programs such as Section 8 housing, the history of the influence of public housing on local communities is little understood. Supporters of public low-cost housing prior to the Great Depression argued that providing families with housing services below market rates would help improve the long-term socioeconomic status of these families. This largely contrasted with the negative image that many large, high-density public housing in urban cities now convey, areas of high crime, low educational attainment, and few job prospects.

Public housing in the Progressive and New Deal era was touted as the cure-all to improving the lives of families by placing them in a social structure that would help to improve their levels of human capital (see Wood (1940)). However, Meyerson and Banfield (1955) found that many of the public housing projects in Chicago resulted in large relocation of the slum's population.

Yet if these housing projects resulted in actual or perceived neighborhood improvements, this influence should be capitalized into higher surrounding property values. On the other hand, with its strict income requirements, public housing created dense pockets of low-income households while simultaneously tearing down exisiting neighborhood institutions that may have ultimately worsened the conditions that advocates such as Edith Elmer Wood wished to eliminate. These pockets of low-income households could also have spurred middle class families to move further from the city center.

While a myriad of papers such as Hartley (2010) and Shester (2010) have found public housing is associated with negative crime and health outcomes today, it is not clear that public housing had no positive influence in the beginning. Nourse (1963) is the earliest study to my knowledge on evaluating the effects of public housing on property values in Saint Louis, Missouri from 1937 through 1959 using hand-matched data samples. Unlike recent work, Nourse was testing the hypothesis that property values would increase. However, he finds no evidence to support this theory.

Throughout this paper, I proceed to answer whether the public housing constructed through 1940 had a positive influence on property values and contract rents in their local neighborhoods. I examine four cities across the United States using a hedonic model approach accounting for "locational heterogeneity." Páez, Uchida, and Miyamoto (2002) suggests a model along the lines of a Geographically Weighted Regression in

which a data set exhibiting spatial dependence can be modeled using local coefficient estimates by estimating location-specific kernel bandwidths. This locally estimated bandwidth can then be used to estimate the location-specific influence of public housing on the distribution of contract rents.

The four cities that I examine are Chicago, IL; Washington, DC; Philadelphia, PA; and New York, NY. While not representative of all urban areas in the United States, these cities were diverse in their economic health during the Great Depression. While the results across the cities varied, public housing appears to have largely led to a decline in the share of property values under $2,000. However, the news was not all good as the results also generally agree that the share of property values above $10,000 declined in areas near public housing projects. Contract rents in New York appear to have followed a similar pattern, a fall in the lowest and highest contract rents in the neighborhood.

2 Background on Public Housing

2.1 Growing Government Involvement

Despite regulations, living conditions for many households were considered substandard in many industrial cities in the 19$^{\text{th}}$ century and early 20$^{\text{th}}$ century. Wood (1919, pp. 7–9) argues that as many as a third of all families across the United States resided in dilapidated housing that was overcrowded and had insufficient light and water. Several cholera epidemics occurred in 1832, 1849, and again in 1852 in lower Manhattan as a result of crowded living conditions. A survey conducted in the 1860s indicated that 480,368 of the 700,000 people in Manhattan resided in only 15,309 substandard tenements (Plunz, 1990, p. 22). The cycle of epidemics resulted in the death rate exceeding the birth rate for much of the century. Cities like New York would have experienced population declines if not offset by the large flows of immigration(Burrows and Wallace, 1999, pp. 785, 790).

The fear of continued epidemics and the concern about fires the magnitude of the Great Chicago Fire in 1871 forced cities to pass housing laws to increase building standards. For example, the 1867 Tenement House Act in New York required that at least one water closet was installed per twenty tenants. It also provided fire escapes in non-fireproof buildings (Plunz, 1990, p. 22). Subsequent legislation in 1879 required windows for every room, yet this legislation quickly led to the adoption of the "dumbbell" tenement in which the air-shaft in the middle of the tenement was often used for garbage and became a firetrap (Burrows and Wallace, 1999, p. 1173). It was not until the passage of the Tenement House Act of 1901, colloquially known as the "New Law" which made some tangible improvements to the quality of the tenements. The law required additional building height restrictions, running water, wider interior courtyards, and a water closet

in every apartment (Plunz, 1990, p. 47).

Despite the poor living conditions across the United States, the Federal Government's first foray into public housing was directed towards the war effort during World War I. In 1918, Congress authorized the United States Housing Corporation and the Emergency Fleet Corporation to build housing for employees working in war-related industries. Through these programs, the federal government built housing for over 14,000 people at a cost of $132 million. This amount still fell short of their overall construction goals. The United States Housing Corporation completed only 5,998 units out of a proposed 25,000 units Radford (1996, pp. 16–17). After the war, Congress sold the housing in a fire sale at a $74 million loss in 1920 (Plunz, 1990, p. 125).

After World War I, the the city and state of New York on housing began to set both apart from the rest of the United States.[1] The state of New York began examining how to provide incentives to private corporations to build low-cost, but not low-quality housing for the poor. Housing advocates noted that profit margins on quality, yet low-cost housing were often too little to attract serious capital investments from private parties (Radford, 1996, pp. 30–36).

To spur development, the New York state legislature amended their insurance code in 1922 to allow insurance companies to directly invest up to 10% of their assets in housing, conditional on the contract rents averaging no more than $9 per room ($119 in 2011).[2] Insurance companies such as The Metropolitan Life Insurance Company, which had lobbied for the legislation, built several projects across New York City housing over 2,000 families during the 1920s (Marquis, 1976; Plunz, 1990). Further, New York also passed the Limited Dividend Housing Companies Law in 1926, which allowed, wider latitude to condemn private property and additional tax abatements for companies to build housing as long as any investor into the company did not receive more than than a 6% return on their investment and that any mortgage interest rate did not exceed five percent. A further stipulation required the corporation to choose low-income households as tenants.[3]

While limited-dividend projects and "model" tenements created housing for thousands of families, the Great Depression nonetheless created a greater demand for low-cost housing. The Emergency Relief and Construction Act of 1932 directed the Reconstruction Finance Corporation (RFC) to make loans of up to 85% of the development cost to limited dividend corporations to provide either low-income housing or slum clearance. The requirements of the RFC, such as the approval of a state or municipal housing board, often made it difficult for projects to qualify for loans. As a result, only two projects were funded by the RFC:

[1] The one major exception is the Veterans Farm and Home Purchase Act of 1921 in which California issued bonds in which the proceeds provided housing loans to 11,600 veterans Wood (1934).

[2] Typical apartments would be three or four rooms in the apartments built by The Metropolitan Life Insurance Company.

[3] Several states followed New York with their own limited dividend laws in 1933 including Arkansas, California, Delaware, Florida, Illinois, Kansas, Massachusetts, New Jersey, Ohio, North Carolina, South Carolina, Texas, and Virginia in order to qualify for the requirements of the limited dividend housing arm of the RFC and later PWA. See Public Works Administration (1936, p. 27) for details.

Knickerbocker Village in New York City for $8 million and rural homes in Ford County, KS for $155,000 (Committee on Banking and Currency, 1950).

2.2 The Federal Government Response through 1940.

While the RFC ultimately failed to provide any substantial amount of low-cost housing, President Roosevelt signed the National Industrial Recovery Act in 1933 which authorized the Public Works Administration to provide funds for low-cost and slum clearance projects (Committee on Banking and Currency, 1950). The first effort by the Housing Division within the PWA continued the limited dividend program established under the RFC. This program lent funds at 4% interest towards limited-dividend housing corporations. Like the RFC, the Housing Division did not have a great record of success, approving only seven of the more than 500 projects submitted for approval (Public Works Administration, 1939). However, the PWA argued that it was largely a failure of state and municipal governments to be fully aware of the requirements for low-cost housing. For example, applications included a 12 story hotel in Arizona, theaters, and a variety of retail stores. Other applications often included proposals to unload real estate purchased by speculators during the peak of the housing boom in the 1920s. As a result, the PWA abandoned the limited-dividend program and instituted a federal program to directly oversee the construction and management of housing projects (Public Works Administration, 1936, pp. 29–30). This program lent up to 70% of the development cost of the property at 4% interest and provided 30% of the cost as a direct grant.

The PWA went through several steps before a project was completed. It first began with an assessment of the locations that desired public housing. However, the high demand for housing and relatively limited funding forced the PWA to consider only cities which had a local agency willing and able to prepare local surveys and other data in order to gauge potential sites for the housing. As slums were identified as potential candidates for public housing, the PWA began to acquire options to purchase property once the exact location within the slum was identified. Eminent domain was also an option if adequate real estate could not be easily acquired through market transactions. The use of eminent domain was more difficult after a lawsuit was filed in 1935 by a Louisville landowner. The owner had argued that housing did not constitute a public good, a challenge which had been upheld through the United States Supreme Court until the case was withdrawn due to the passage of subsequent legislation. However, this had the effect of making land acquisition in slum areas more difficult, thus often requiring projects to be located on vacant land. Ultimately 27 of the 50 projects begun under the PWA were built in cleared slums (Public Works Administration, 1936, pp. 30–42).[4]

The PWA was also responsible for relocating tenants who resided in the neighborhoods being redeveloped.

[4]Several housing projects were transferred prior to completion to the United States Housing Authority. See (United States Housing Authority, 1939, p. 42) for details.

They were required to find accommodations of similar or improved quality at no additional monthly rent to the tenants. The tenants were typically moved at the expense of the local housing authority and in some cases became employed through a New Deal agency, such as the Works Progress Administration. The management of the public housing could be leased to the local authority or directly managed by the Federal government. However, the Federal government ultimately managed the majority of the properties due to a lack of trained officials employed in local housing authorities (Public Works Administration, 1936, pp. 43–45).

The public housing program through the PWA was only the beginning of federal spending in low-cost housing. Passed in September 1937, the United States Housing Act was created to provide additional loans and grants to local housing authorities for low-income housing (Committee on Banking and Currency, 1950). The act allowed the United States Housing Authority (USHA) to provide loans at 50 basis points above the cost of lending by the Federal Government for up to 90% of the development cost of the housing project. The USHA was also able to provide grants to local housing authorities in order to fill in the gap between the market rental rate and the amount that the lowest income families could afford (United States Housing Authority, 1939, p. 7). The new act required the demolition of "unsafe or insanitary" dwellings for a project regardless of whether the project was constructed in a slum. As an example, approximately two-thirds of the 6,700 dwellings demolished in New York City by the USHA in 1938 were off-site from three housing projects under construction (United States Housing Authority, 1939, p. 25).[5] Unlike the PWA projects, USHA housing were operated through a local authority with a further stipulation that the USHA was to move the management of the PWA projects to a local authority (United States Housing Authority, 1939, p. 41).

3 Data

To answer how public housing influenced local property values and contract rents during the 1930s, I have collected data from several sources. These include the 1934 Real Property Inventory, a special census of Chicago from 1934, census tract maps from 1930 United States Census, and data at the census tract level from the 1940 United States Census via the National Historical Geographic Information System (NHGIS).

The location of the public housing projects came from several sources. The locations of the Limited-Dividend housing from both the RFC and the PWA were obtained from the appendices of *Urban Housing: The Story of the PWA Housing Division 1933-36.* The locations of the housing constructed under the USHA were obtained from architectural drawings found at the National Archives in Record Group 196, Entry 14,

[5]Elimination of slums could be deferred in some cases in which the available housing supply to relocate families was not available.

Records of the Public Housing Administration. To verify the accuracy of the appendices and architectural drawings, these records were compared to the locations of the developments on the website of the New York City Housing Authority[6], Philadelphia Housing Authority[7], Chicago Housing Authority[8], and District of Columbia Housing Authority[9].[10]

The location of all public housing approved projects are displayed in Figure 1. Each quandrant indicate how the census tracts were divided in each city, while the shaded areas represent the locations of all approved public housing projects through 1940. As it often took several years to complete projects already approved, it is possible that construction had not begun in several of the locations. Details of all of the housing projects are provided in Table 1. The table lists the 38 approved public housing projects located in New York, Chicago, Washington, DC, and Philadelphia through 1940. It is important to note that only half of these projects were completed before 1941. The coordinates indicate the centroid of these housing projects. The name of the projects in the table are the name of the housing projects in 1947 and in some cases differ from the name of the project during the design phase as well as their modern names.

The definitions of the variables used in the paper are provided in Table 3. Included are the variable names as they appear in the summary statistics and the tables of results. Further details on each of the following data sources are described below. While the definition of the variables are largely consistent, the definition of the share of nonwhite families differs from 1934 and 1940. The 1934 definition takes the share of nonwhite families while the 1940 definition is enumerated by population.

Housing data for New York City in 1934 was collected from the Residential Report of the *Real Property Inventory: City of New York* (New York City Housing Authority, 1934). Data for Philadelphia in 1934 was found in five volumes of the *Report of Philadelphia Real Estate Survey, 1934* (Philadelphia Local Work Division, 1934). The data for Washington, DC in 1934 obtained in the *Real Property Inventory for the District of Columbia, 1934* (Federal Housing Administration, 1934). The data for the 1934 Census of Chicago was obtained throug the National Historical Geographic Information System (NHGIS) (Minnesota Population Center, 2007). The NHGIS was also the source for the shapefiles of the census tracts in the analysis as well as the data tables of the 1940 U.S. Census which provided all of the housing data for Chicago, New York, Philadelphia, and the District of Columbia.

The Real Property Inventory for New York City was conducted between February 5 through May 31, 1934. The survey was funded by the city and state of New York as well as the Federal Emergency Relief Administration. It was conducted by over 5,000 enumerators, many of them white collar workers on public

[6]The website can can be found at http://www.nyc.gov/html/nycha/html/developments/dev_guide.shtml
[7]http://pha.phila.gov/housing/pha-sites-map.aspx
[8]http://www.thecha.org/pages/housing/19.php
[9]http://www.dchousing.org/default.aspx?prop=1
[10]These websites were last accessed in February 2012.

assistance. To offset the lack of training, the survey began in areas in which external data could be used to verify the survey. To facilitate ease of comparison, the survey was tabulated by the 3,414 census tracts defined by the U.S. Bureau of the Census in 1930 with a couple of minor exceptions in Staten Island (New York City Housing Authority, 1934, pp. XI – XIII).[11]

Similar to the survey in New York, the Real Property Inventory in the District of Columbia was conducted between January and February 1934 and employed 500 workers from the Civil Works Administration. The techniques for this survey were those approved for the Federal Real Property Survey. The tabulation of the results were completed in 1936 and compiled for the 95 census tracts as well as the entire city (Federal Housing Administration, 1934).

The residential survey for Philadelphia in 1934 was conducted began in March 1934 and was completed in December 1934. It was funded through several agencies including the Civil Works Administration, the State [Pennsylvania] Social Surveys, and William H. Connell who was the Director of the Local Works Division. Like the other surveys, the Philadelphia survey employed 1700 unemployed white-collar workers. The results were then tabulated to the 404 census tracts created for the 1930 U.S. Census.

The summary statistics can be found in Table 2. The variables which are given as a "share" of a census tract are scaled from 0 to 100. The distance to public housing is the distance, in miles, from the centroid of a census tract to the centroid of the nearest public housing project. Completed public housing projects are all of the housing projects completed through 1940, while approved public housing projects also includes all of the public housing projects approved for funding through 1940.

Each census tract has data on the type of structures, condition of the buildings, family quarters, race of families, and the distribution of property values and contract rents with a few exceptions. The exceptions include that the 1934 census of Chicago did not provide information on the number of units that were overcrowded and did not report the maintenance of structures. The real property inventory for New York also did not report the distribution of property values.

The real property inventories did not report an average or median property value for each census tract, but often several bands of property values and contract rents. To maintain consistency across cities and time as well as to avoid issues with census tracts having no dwellings within a band, I consolidated the distribution of property values and contract rents into four bands. For property values, they range from \$0 - \$1,999, \$2,000 - \$4,999, \$5,000 - \$9,999, and \$10,000 and up. Contract rents are stated as per room per month. The distribution ranges from \$0 - \$19, \$20 - \$49, \$50 - \$99, and \$100 and up.

As seen in Table 2, it is clear that property values and contract rents were lower in Chicago than the

[11] In some cases, boundaries from the 1930 U.S. Census were bounded by streets existing only in planning books and did not actually exist. The Real Property Inventory adjusted some boundaries to either real streets or other natural boundaries.

other three cities. Over a third of all contract rents in Chicago were under $19 per room per month in 1934 while only 10.1 percent of all contract rents were under the same threshold in Washington, DC. It is interesting to note that on average, the share of contract rents in the lowest band declined for all four cities in 1940. Similarly, the share of contract rents in the highest band are lowest in Chicago and highest in Washington, DC. While there is some indirect increase in contract rents in Chicago and Washington, DC across the distribution of contract rents, it appears that property values were falling in these two cities, as well as Philadelphia, between 1934 and 1940.

The average distance to the nearest public housing project was similar in all four cities, ranging between 2.7 and 3.6 miles. While New York City had significantly more housing projects both completed and approved than the other cities, the average distance to public housing was the highest among the four cities. However, this is easily explained that the geographic size of New York City significantly exceeded the other three cities and thus a large number of undeveloped tracts in Staten Island and Queens have skewed the summary statistics.

In terms of demographics, the four cities differed substantially. While New York was home to Harlem and Bedford-Stuyvesant, the average census tract, only 2.4 percent of the families were nonwhite in 1934. This compares to 22.6 percent of families being nonwhite in the average census tract in the District of Columbia. The share of nonwhites increased between 1934 and 1940 in all cities except for Chicago. The average homeownership rate also varied across the four cities. On average, a census tract in Philadelphia had 50.3 percent homeownership rate compared to 32.1 percent for Chicago. It is important to note that these figures are skewed upwards from the city-wide average due to the presence of outlying census tracts which had high homeownership rates, but low populations.

It is also interesting to note that on average, a census tract had only 7.5 percent of its dwellings in multifamily units in Philadelphia in 1934. This is substantially lower than the other cities and may indicate the reluctance of Philadelphia's mayor to accept PWA public housing funding on the grounds that "Philadelphia is a city of homes" (Bauman, 1987, p. 29). Further, while overcrowding was one of the arguments for the construction of public housing, it did not appear to appear in epidemic proportions in any of the cities, while the number of dwellings either needing major repairs or considered unfit for habitation declined in each of the cities between 1934 and 1940.

4 Public Housing and Rents: A Local Approach

4.1 Overview

One concern of publicly funded housing was the potential crowding out of private investment in the housing market. To counter these claims, the agencies involved in public housing maintained providing public housing for the lowest income bracket was rarely a profitable venture for private capital. However, the goals of public housing extended beyond providing only low-cost housing. Additional goals for these projects were to improve children's education outcomes, provide sanitary housing, and lower crime rates. If public housing was built in a slum area, it is reasonable to expect that if public housing was effective at improving education and health while lowering crime rates, the housing projects should be reflected as a positive externality within a neighborhood. These spillovers should thus be capitalized in property values and potentially in the contract rents of the surrounding area. However, if public housing had a negligible influence on these, one should see little influence on property values and contract rents. On the other hand, if public housing began to concentrate low income households and resulted in increased income segregation within the city, the resulting construction of public housing may have led to declines neighborhood-level education, health, and increases in crime throughout the surrounding neighborhoods.

Another potential concern about the construction of public housing was the destruction of local institutions such as churches, community centers, and retail centers. These were often torn down during the construction of public housing with only limited replacement. Meyerson and Banfield note that the demand for public housing in the slum neighborhoods was not always unanimous:

> The priest would be left without a parish, for of course the new project would be occupied by eligible families from all over the city, not from the old sections itself. The old neighborhood would, in fact, be scattered. People who could not live in public projects somewhere else would have a hard time finding places to live even though the Authority would try to help them by maintaining a relocation program. To the politician, the storekeeper, the minister and others who had some stake in the slum neighborhood, its destruction was especially to be feared. For such people, the passing of the old neighborhood meant the loss of power and place that had been hard won (Meyerson and Banfield, 1955, p. 99).

4.2 Hedonic Model Setup

In a typical hedonic framework, Rosen (1974) suggests a differentiated good such as housing can be modeled as a combination of the physical attributes of the housing stock, neighborhood-level public services, and local

amenities. The price of the i^{th} house can then be modeled as $P_i = P(x_{i1}, x_{i2}, ..., x_{ik})$ where x_{ij} is the j^{th} characteristic for house i. The partial derivative of P with respect to the j^{th} component is often referred to as the marginal implicit price for the j^{th} attribute. To determine the implicit prices for the characteristics, the housing market is assumed to be competitive. This implies that the marginal prices of the attributes are determined through multiple interactions with buyers and sellers. Similarly, we should expect contract rents to also be reflective of the attributes of the housing stock and neighborhood-level amenities. This equation will typically take the following form:

$$r = X\beta + \varepsilon \tag{1}$$

where r is a $n \times 1$ vector of property values or contract rents, X is a $n \times k$ matrix of housing, neighborhood, and demographic attributes, β is a $k \times 1$ vector of coefficients, and ε is an $n \times 1$ vector of i.i.d. error terms. However, as discussed in Section 3, data from the 1934 Real Property Inventory of New York as well as the 1940 U.S. Census are aggregated at the census tract level. In cases of aggregated data, it is common therefore to model the influence of neighborhood housing stock and characteristics as a function of the mean or median housing value or contract rent. Further, the data provided is a distribution of contract rents in each census tract. An alternative strategy is to understand how the neighborhood characteristics of a neighborhood influences the distribution of property values and contract rents in a neighborhood. I generalize equation 1 to the following:

$$ShrR^j = X\beta^j + \varepsilon \tag{2}$$

where $ShrR^j$ is the share of property values or contract rents in category j. The distribution of property values is aggregated into four categories: \$0 - \$1,999, \$2,000 - \$4,999, \$5,000 - \$9,999, and \$10,000 - up. The distribution of contract rents in (\$ per room per month) is aggregated into four categories: \$0 - \$19, \$20 - \$49, \$50 - \$99, and \$100 - up.[12]

In cases of hedonic models when utilizing data on land-use and property values, the data is likely to be influenced through a form of spatial dependence. In particular, Páez, Uchida, and Miyamoto (2001) note that these models can be susceptible to parametric instability over space. They suggest attempts to adjust for heterogeneity through partitioning groups by observed characteristics.[13] Alternatively, a follow up paper by Páez et al. (2002) suggests that a geographically weighted regression utilizing a location-specific

[12]The distribution of propverty values and rents were aggregated into four categories in order to minimize the case of empty cells within the distribution.

[13]See Deschênes and Greenstone (2007) as an example in which heterogeneity is modeled on an arbitrary definition of a variable.

bandwidth is an alternative model to estimate what they subsequently term "locational heterogeneity." In this framework, Equation 2 can be restated for each location or focal point o as:

$$ShrR^j = X\beta_o^j + \varepsilon_o^j \tag{3}$$

where $\varepsilon_o^j \sim N(0, \Omega_{o,j})$ and $\Omega_{o,j} = E\left(\varepsilon_o^j \varepsilon_o^{j'}\right) = \sigma_{o,j}^2 W_{o,j}$. The diagonal elements in $W_{o,j}$, $K_{oi}^{-1}(d_{oi}/d_{o,j})$, are the inverse of a kernel function which is dependent on the distance (d_{oi}) between the focal point o and element i and the distance or bandwidth of the kernel function, $d_{o,j}$.[14] Typically, $d_{o,j}$ is set as the maximum distance to q nearest neighbors and as a general rule, q will range between $2{\cdot}k$ and $0.3 \cdot n$.

Several properties of these kernels are required including that $K_{oi}(0) = 1$ and that for all $d_{oi} \geq d_{o,j}$, $K_{oi}(d_{oi}/d_{o,j}) = 0$. Several kernels that meet this criteria include the Bartlett kernel, the Epanechnikov kernel, and the Bisquare kernel, although several additional kernels also satisfy the requirements of this model. In this application, the coefficient estimates are robust to the specification of the kernel, thus I chose the Epanechnikov kernel which is defined as:

$$K_{oi}(d_{oi}/d_{o,j}) = \left[1 - (d_{oi}/d_{o,j})^2\right] \cdot \mathbf{1}\left(d_{oi} \leq d_{o,j}\right)$$

Conditional on knowing the correct local bandwidth for the j^{th} category, $d_{o,j}$ in each location, it becomes a relatively simple exercise to estimate the remaining parameters of the model, β_0^j and $\sigma_{0,j}^2$. The parameters can be estimated using a Weighted Least Squares estimator where:

$$\hat{\beta_o^j} = \left(X'\Omega_{o,j}^{-1}X\right)^{-1} X'\Omega_{o,j}^{-1} ShrR^j = \left(X'W_{o,j}^{-1}X\right)^{-1} X'W_{o,j}^{-1} ShrR^j$$

and

$$\sigma_{o,j}^2 = \frac{\left(ShrR^j - X\hat{\beta}_o^j\right)' W_{o,j}^{-1} \left(ShrR^j - X\hat{\beta}_o^j\right)}{n_{o,j} - k}$$

where $n_{o,j}$ is the number of non-zero elements in $W_{o,j}$.

The definition of the kernel function above suggests that the choice of bandwidth is a critical component in the dependence in the error structure of the model. In a typical Geographically Weighted Regression defined in Fotheringham et al. (1997), the bandwidth $d_0 = d^*$ for all i and the global bandwidth is calculated using a cross-validation technique. In the case in which a bandwidth is calculated for each location o, cross-validation becomes a computationally-intensive approach when the sample size becomes larger than several

[14] The distance is usually measured between the centroids of the census tracts.

hundred observations. An alternative approach to calculate d_o is where

$$d_{o,j} = \underset{d}{argmin} \frac{\left(ShrR^j - X\tilde{\beta}_o^j\right)' \left(ShrR^j - X\tilde{\beta}_o^j\right)}{n_{o,j}}$$

and $\tilde{\beta}_o^j$ is the estimated coefficient of β_o for a given d.[15]

4.3 Influence of Public Housing

During the Progressive Era, several studies such as Clifford Shaw's 1929 study, *Delinquency Areas, Series II*, Shaw finds evidence that "throughout the long period, whether a [data] series dealt with adults or juveniles, male or female, the heaviest concentration of cases was in the downtown area of bad housing around the Loop, the next greatest concentration being near the stockyards and steel mills" (Wood, 1940, pp. 54-55). Yet, Wood argues that poor housing conditions were not directly the cause of delinquency and poor health outcomes. Wood argues that the real issue of high density slums was the "smaller minority that does the damage – the underworld of vice and crime and corrupt politics." It is these individuals Wood argues that can exert a negative influence through negative social spillovers as exemplified in the quote:

> If there is no house yard, mere infants are forced into the street and out of their mother's sight... Her censorship of her child's playmates, could she exert it, would protect him from the grosser forms of moral contagion. As it is, he imitates what catches his attention, and bad behavior is more striking than good. The worst damage is done before he is old enough to go to school. (Wood, 1940, p. 58)

The suggestion of peer effects has persisted for some time and indeed papers studying recent efforts to alleviate poverty argue the need to better understand the role of neighborhoods on children's human capital accumulation (Katz, Kling, and Liebman, 2001). Katz et al. (2001) study of "Moving to Opportunity," a program that provided households with vouchers and counseling to obtain housing outside of public housing projects, found evidence of improved health outcomes of household heads as well as a decline in behavioral issues in boys. While the results did not indicate an influence on earnings among the household heads, these results reflect the suggestion by Edith Elmer Wood that peer influences may have had non-negligible influence on children. However Wood believed that public housing was the key to improving human capital for children, yet papers by Hartley (2010) and Shester (2010) suggest that public housing imparts negative externalities on neighborhoods and its residents. Shester (2010) for example finds that beginning in the 1970s, public housing began to have negative and statistically significant influences on property values and

[15] Results using simulated data exhibiting spatial dependence yielded similar estimates of the coefficient between this methodology and a localized cross-validation technique.

family income. Moreover, Hartley (2010) finds that the demolition of high density public housing in Chicago is associated with a three percent decline in the city's murder rate. Despite these findings, it is unclear that this negative relationship with public housing and crime and property values would have persisted backwards to the beginnings of the public housing era. Compared to the housing standards today, many of the high-density public housing projects fall short. However, public housing in New York during the Great Depression was competing against Old-Law and Pre-Law Tenements which in certain neighborhoods had at best shared indoor plumbing.

While it would be useful to test whether public housing influenced social outcomes such as delinquency, crime rates, school enrollment, and household income, the data are not available. An alternative in the absence of these measures is property values and contract rents. If crime rates decline in the presence of public housing, this should be capitalized in the surrounding properties. However, it is reasonable to expect that any influence of these public housing projects may exert on their surroundings may diminish over space. For example, Rossi-Hansberg, Sarte, and Owens III (2010) find that as a consequence of the urban revitalization efforts of the Neighborhoods-in-Bloom program, land prices increased anywhere from two to five percent. However, this influence on distance had a half-life of approximately 1,000 feet.

To capture the effect of the public housing on the distribution of contract rents, I model the share of contract rents in category j as a function of the inverse distance to public housing and its square:

$$ShrR^j = \frac{1}{DisPubHouse}\beta^j_{o,1} + X\beta^j_{o,2} + \varepsilon^j_o \tag{4}$$

where $DisPubHouse$ is an $n \times 1$ vector of distances to the nearest public housing site in miles and $\beta^j_{o,1}$ and $\beta^j_{o,2}$ are each scalar coefficients measuring the influence of public housing on the share of property values or contract rents in category j.

One critique of using cross-section data in a hedonic model is omitted variable bias in the coefficients due to unmeasured heterogeneity in the neighborhoods. As I am interested in calculating the influence of public housing on the share of property values or contract rents, any omitted variable that is correlated with both the placement of public housing and the distribution of property values and contract rents may bias the coefficient estimates. One method for mitigating the influence of these omitted variables is to take the difference between the distribution of property values for 1934 and 1940 to estimate the influence of public housing on the change in the distribution of contract rents. This leads to the following model:

$$\Delta ShrR^j = \frac{1}{DisPubHouse}\gamma^j_{o,1} + \Delta X\gamma^j_{o,2} + \xi^j_o \tag{5}$$

where $\Delta ShrR^j$ is the change in the share of property values or contract rents in category j between 1934 and 1940, and ΔX is the change in housing and neighborhood characteristics between 1934 and 1940. The set of covariates in ΔX include the change in population density, change in percent nonwhite population, change in home ownership rate, change in the share of crowded dwelling units, change in the share of units requiring major repairs, and change in the share of multifamily units.

First differencing results in the cancellation of time-invariant characteristics for both the housing stock and neighborhood characteristic in the model. As public housing did not exist in 1934, the distance to the nearest public housing is effectively infinite, thus the inverse distance to public housing in 1934 is zero. Therefore, the inverse distance to public housing in 1940 measures the influence that public housing had on the change in the distribution in contract rents.

5 Main Results

The first set of results analyze the local GWR estimates for only the public housing projects that were completed through 1940. As this method produces coefficient estimates for each unit of observation, the coefficient results are best analyzed by summarizing the data in tables. As I am largely interested in the results of the effect of public housing on the distribution of property values and contract rents, I have placed the summary of coefficient estimates for each city in the Appendix.

However a summary of the coefficient estimates for the relationship between the inverse distance to completed public housing projects and the distribution of property values can be found in Table 4. This table provides a summary of the coefficient estimates for each of the dependent variables for Chicago, District of Columbia, and Philadelphia. New York is excluded since property values were not recorded in the 1934 Real Property Inventory. The column labelled "Mean" signifies the average coefficient estimate of the inverse distance to public housing for that city and dependent variable. The next two columns indicate the range in which 95 percent of the statistically significant coefficient estimates lie under. The last column indicates the percentage of coefficient estimates that were statistically signficant at the 5 percent level of signficance.

As the variable of interest is the inverse distance to public housing, a positive coefficient estimate for the share of property values in category j suggests that *ceteris paribus*, a census tract closer to pubic housing will have a higher share of property values in category j as either a direct or indirect result of the construction of public housing. Therefore, we can see in Table 4 that on average, increasing the inverse distance by one unit (eg. decreasing the distance from one mile to one-half mile) will increase the share of property values in a census tract by 1.7 percentage points in Chicago, 3.1 percentage points in Washington, DC, or 1.7 percentage points in Philadelphia. On the other hand, these results suggest that on average, the share of properties

valued about $10,000 declined in Washington and Philadelphia as a result of public housing. On the face of these results, it may appear that the construction of public housing lead to a decline in property value. However the table also suggests that the range of coefficient estimates vary and in the case of Chicago and Philadelphia can be rather volatile, suggesting that these results need to be inspected in depth.

However, before the results are further dissected, it is interesting to compare the results for property values to those of contract rents found in Table 5. Comparing the average and range of coefficient estimates, it is at first suggestive that property values and contract rents may not be reacting similarly to the construction of public housing. However, it should be noted that examining the results based on these coefficient estimates are difficult as the same coefficient estimates on two census tracts, one near public housing, the other on the outskirts of a city will result in a different effect on the distribution of property values or contract rents since the inverse distance to public housing is obviously not linear in distance.

It is also important to note that if there is any bias in the estimates, I would expect it to exert a downward influence. The housing authorities and city governments would likely have chosen locations in decline and thus clearing slums to construct public housing should result in minimizing the loss in property tax revenues. Further, my results in Kollmann (2011) appear to support this hypothesis that the New York City Housing Authority consistently chose locations with significant amounts of dilapidated housing with few amenities.

Therefore it is important to examine the "true" effect by fitting the coefficient estimates to their corresponding inverse distance to public housing. Furthermore as suggested in Rossi-Hansberg, Sarte, and Owens III (2010), public improvements should have a decaying effect across space, I've sorted the census tracts into five bins by distance to public housing: 0.00 - 0.25 miles, 0.26 - 0.50 miles, 0.51 - 1.00 miles, 1.01 - 2.00 miles, and over 2.00 miles. The results for each city are presented in Tables 8 through 11. It should be noted that the number of census tracts in a particular distance band may change between categories of property values if coefficient estimates for a particular census tract were not statistically significant for a subset of the dependent variables. The number of statistically signficant census tracts are reported next to the average effect.

Looking first at the results from Chicago found in Table 8, the results suggest that as a result of the completion of public housing, the share of housing values less than $2,000 in two census tracts within a quarter mile from these projects declined 62 percentage points, while the share of housing values between $5,000 and $9,999 increased 51 percentage points. Further, housing values in each category from 0.26 - 0.50 miles through 2.01 miles and up appears to have increased as a result of the construction of public housing in Chicago. Moreover, it appears that the magnitude of the results decline with the distance from public housing which is what one should expect from a neighborhood-level amenity. Moreover, these results from the contract rents appear to largely correspond to the results for property values.

The results for Washington, DC, found in Table 9, differs from the results in Chicago. As it is fairly clear in Figure 1, the public housing projects in the District of Columbia are largely located in the eastern end of the city. As the census tracts were larger than the rest of the city and generally larger than those found in the other cities in the sample, the number of census tracts near the public housing projects is smaller than the other cities as well as the fact that only two projects, Langston and Fort Dupont were completed by 1940. Therefore there were no tract centroids within 0.25 miles of a public housing project centroid.[16] However, similar to Chicago, the share of housing under $2,000 declined in census tracts between 0.26 and 2.00 miles from the public housing projects, yet there is also evidence that the share of housing above $10,000 also declined as a result of public housing. This seems to suggest that public housing resulted in a decline in the variance of property values in Washington, DC.

Table 10 displays the average effects by distance for Philadelphia. The results are interesting in the fact that the average effects differ substantially for the two census tracts within 0.25 miles and the three census tracts in the next distance band, 0.26 - 0.50 miles. The results from the closest two census tracts suggests that housing values increased, yet the average effects for the census tracts in the next band suggest 15.6 percentage point decline in the share of housing values from $2,000 - $4,999 with a similar increase in housing values under $2,000. However, it should be noted that it appears that the share of housing values over $10,000 increased nearly 5 percentage points. Similar results can be seen in the housing tracts 0.51 through 2.00 miles from the housing projects.

The results for New York City can be found in Table 11. Again property values were not tabulated for New York in 1934, therefore I have only the results for contract rents. It appears that the construction of public housing projects led to an increase in the distribution of rents within 0.25 miles of the projects, although the share of contract rents exceeding $100 a room per month declined slightly. However, the results for census tracts 0.26 through 0.50 miles appear to mirror the results found in Philadelphia, a decline in the share of contract rents along the ends of the distribution. The results are also mixed for the census tracts between 0.51 - 1.00 miles from public housing.

5.1 Alternative Specification: Approved Public Housing Projects

One possibilty is that property values and contract rents may influenced before the completion of a public housing project. One alternative is to test whether there is evidence that property values are affected after the approval of a public housing project in a neighborhood. This is plausible as newspapers would often tout the project after approval and thus could have already altered the future expectations in the neighborhood.

[16] One option I intend to explore is to define a tract within a particular distance bin from public housing is to measure the minimum distance of the census tract centroid from the boundary of a public housing project.

As before I ran a series of local geographically weighted regressions except that I replaced the earlier measure for distance to public housing by the minimum distance of a tract's centroid to a centroid of any approved, including completed, public housing project. The summary of coefficient estimates for the inverse distance to public housing projects are provided in Tables 6 and 7. As before, while it is interesting to compare the results, it is difficult without knowing the spatial location of the coefficient estimates to properly interpret the results.[17] Therefore, I will focus only on the average fitted values of the inverse distance to public housing for each city which can be found in Tables 12 through 15.

12 provides the average affect of approved public housing projects on property values and contract rents. When approved projects are taken into account, it appears that property values less than $2,000 increased while those above $10,000 declined within 0.25 miles of approved housing projects in Chicago. This is similar to the results found for completed housing projects in Washington, DC and reflects similar results to the shift in contract rents in New York City. However, the average effect of public housing on contract rents appears to be generally positive for all contract rents, unlike the case when I included only public housing projects which were completed by 1940. In all cases, I should note that the magnitudes are typically smaller than those found when only examining completed housing projects.

The results for the District of Columbia, found in Table 13 again shows evidence that the share of property values under $5,000 in the census tracts less than 1.00 mile from public housing projects. However, when I included only the two projects that were completed by 1940, the results suggested that the share of property values over $10,000 also declined. However, the results here appear to suggest that the effect of public housing on property values is largely positive. As for contract rents, it appears that the contract rents, especially those from $50 - $99 per room per month did fall in areas near public housing.

The average effects of approved public housing on property values and contract rents for Philadelphia can be found in Table 14. The results for property values appears to be mixed. On one hand, the share of property values under $2,000 declined 11 percentage points in the three tracts less than 0.25 miles from public housing and the share of property values from $2,000 - $9,999 increased. However, the share of property values exceeding $10,000 fell almost six percentage points. The impact on census tracts further out were mixed and is difficult to ascertain the overall influence. The effect on contract rents appears to also be complicated, the share of contract rents under $20 increased, but this appears to be partially offset by increases in contract rents from $50 to $99 per room per month.

Lastly, the results for the effect of public housing on contract rents in New York are in Table 15. These results appear to largely mirror those found in Table 11, although the average effect on the share of contract rents exceeding $100 per room per month is now positive.

[17] Summaries for all coefficients are also provided in the Appendix.

It should be noted that while the results are not substantially different than those found in the previous set of tables, the lower magnitudes for these results may reflect the possibilty that the market does not quickly react to the news of public housing projects. Another possibility is that the newspaper reports were sufficiently broad when describing which neighborhoods would receive public housing that either it would have no effect, or the effect would largely be captured in the constant term in the local geographically weighted regressions.

6 Discussion

Early publicly funded housing in the United States appears to have been driven by the desire to improve the living conditions of low-income families during the Great Depression. The zeal of the politicians to promote public housing during the Great Depression suggests that they saw public housing as a viable model to improve the living conditions of slums. As slums required additional police and fire protection, public housing may have been seen as a way to reduce the cost of providing public services while retaining the patronage of the families served by public housing and the surrounding communities.

The overall picture of the influence of public housing on the surrounding community is mixed. On one hand, the share of property values under $2,000 declined in the neighberhoods surrounding public housing projects between 1934 and 1940. However, the results suggest that properties values and contract rents above $10,000 and $99 per room per month respectively in these neighborhoods appear to have declined as well. However the declines in the top threshold of property values and rents were not consistent in all of the cities and in some cases were only present when I included the public housing projects that were approved but not yet completed. This suggests that further research is needed to try and pinpoint the reasons behind such a shift in the distribution of property values and contract rents. One hypothesis however, is that different homeowners had different expectations of the influence of public housing on property values.

Unfortunately, the true litmus test of the influence of public housing should measure the effect of public housing on crime, education, health, and income outcomes, factors which are not yet available. Yet property values and contract rents do provide a proxy for these measures, as improved neighborhood conditions should be reflected in increased rents. Further, the magnitudes of the effects, positive or negative appear to decline as the distance to public housing increases. This is consistent with the belief that public housing should have a localized influence on housing services and did not effect all neighborhoods equally.

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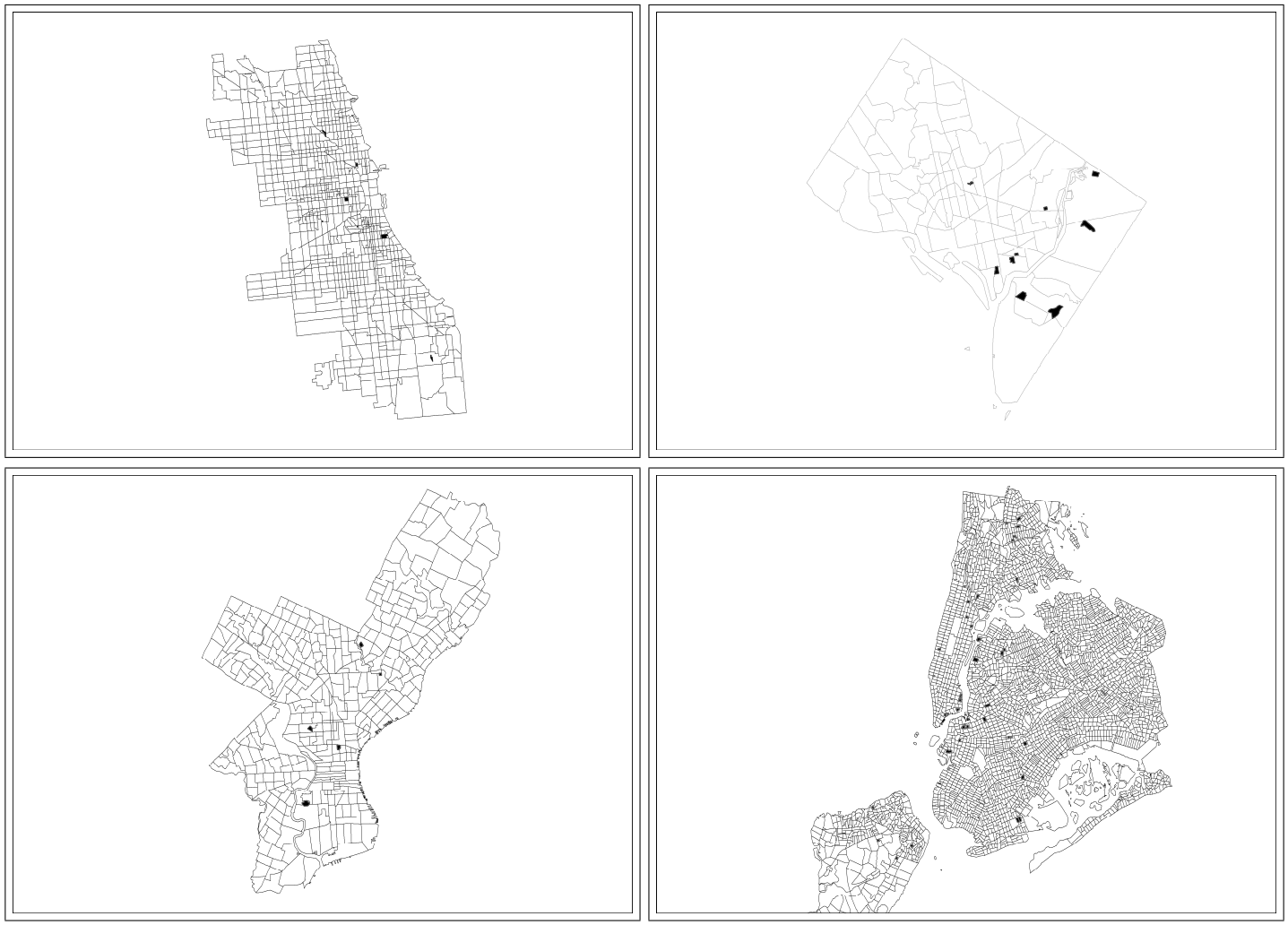

Figure 1:

Notes. Shaded areas represent locations of public housing announced and completed through 1940. Top Row: Chicago, IL and Washington, DC. Bottom Row: Philadelphia, PA and New York, NY.

Table 1: Location of Public Housing

Project Name	Lat	Long	Approved	Completed
New York City				
Hillside	40.877	-73.849	1933	1935
Boulevard Gardens	40.758	-73.906	1933	1935
First Houses	40.724	-73.986	1933	1935
Knickerbocker Village	40.711	-73.995	1933	1934
Williamsburg	40.710	-73.944	1935	1938
Harlem River	40.826	-73.937	1935	1937
Red Hook	40.676	-74.006	1938	1939
Queenbridge	40.755	-73.945	1938	1940
Vladeck	40.713	-73.982	1938	1940
Kingsborough	40.675	-73.925	1938	1941
South Jamaica	40.696	-73.795	1939	1940
East River	40.787	-73.940	1939	1941
Clason Point Gardens	40.821	-73.870	1939	1941
Edwin Markham	40.640	-74.117	1940	1943
Ingersoll	40.695	-73.980	1940	1944
Whitman	40.694	-73.975	1940	1944
Chicago				
Jane Addams	41.867	-87.659	1935	1938
Trumbull	41.701	-87.564	1935	1938
Lathrop	41.932	-87.681	1935	1938
Ida Wells	41.826	-87.613	1938	1941
Cabrini	41.899	-87.641	1939	1942
Brooks	41.865	-87.659	1939	1943
Bridgepons	41.837	-87.648	1939	1943
Lawndale	41.846	-87.694	1939	1943
Washington, DC				
Langston	38.900	-76.973	1935	1938
Fort Dupont	38.887	-76.973	1938	1940
Ellen Wilson	38.880	-76.997	1938	1941
James Creek	38.875	-77.012	1938	1941
Douglass	38.849	-76.980	1938	1941
Carrollburg	38.878	-77.001	1939	1941
Kelly Miller	38.919	-77.017	1939	1941
Barry Farm	38.860	-76.999	1939	1943
Parkside	38.911	-76.938	1940	1943
Philadelphia				
Hill Creek	40.037	-75.110	1935	1937
Carl Mackley	40.013	-75.099	1933	1935
James Welden	39.984	-75.177	1938	1940
Tasker	39.932	-75.196	1938	1940
Richard Allen	39.967	-75.153	1938	1942

Source. Public Housing Administration (1947)

Table 2: Summary Statistics - Sideways

	Chicago				Washington, DC				Philadelphia				New York			
	1934		1940		1934		1940		1934		1940		1934		1940	
Variable	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Share of Contract Rent $0 - $19	36.7	31.0	31.7	29.7	10.1	15.0	8.3	12.1	25.3	25.4	21.5	23.4	10.6	18.4	9.0	15.7
Share of Contract Rent $20 - $49	56.0	27.3	58.0	25.6	58.3	23.0	56.4	22.5	63.1	25.7	66.2	24.7	66.7	25.7	69.5	24.3
Share of Contract Rent $50 - $99	6.5	11.6	9.4	15.0	27.7	22.8	30.7	21.7	9.4	16.0	10.4	17.5	20.0	22.4	19.5	22.3
Share of Contract Rent $100 - up	0.8	4.1	0.9	4.1	3.9	10.8	4.6	10.4	2.3	10.1	1.9	7.9	2.8	9.6	2.1	8.1
Share of Property Value $0 - $1999	20.9	22.3	25.8	24.3	1.6	3.5	2.2	4.0	8.1	13.6	14.1	19.4	—	—	—	—
Share of Property Value $2000 - $4999	45.6	22.1	48.6	21.4	17.1	19.1	19.2	16.7	47.7	25.7	54.5	25.9	—	—	—	—
Share of Property Value $5000 - $9999	26.3	22.2	20.3	20.4	50.6	25.2	51.0	21.7	31.9	23.1	22.4	21.8	—	—	—	—
Share of Property Value $10000 up	7.2	15.5	5.3	13.7	30.7	31.8	27.6	28.9	12.3	21.8	9.0	18.7	—	—	—	—
Dist to Complete Pub Housing (mi)	—	—	3.5	1.9	—	—	3.4	1.7	—	—	2.7	1.7	—	—	3.6	2.7
Dist to Approved Pub Housing (mi)	—	—	2.6	1.7	—	—	1.6	1.1	—	—	2.6	1.8	—	—	2.7	1.9
Pop Density ('000s/sq mi)	24.8	16.4	26.0	17.7	19.2	15.1	24.5	18.5	22.2	21.7	23.3	22.2	35.3	40.9	38.1	42.9
Share of Nonwhite People	9.0	25.0	8.9	25.5	22.6	29.6	26.7	30.3	8.3	17.8	9.3	18.3	2.4	9.7	3.4	12.2
Share of Homeownership	32.1	18.1	28.0	19.0	41.4	23.6	32.6	21.5	50.3	18.2	44.7	18.4	38.3	26.9	33.1	24.0
Share of Multifamily Units	25.8	19.9	36.4	26.8	25.2	25.2	33.3	24.5	7.5	14.9	8.8	15.6	33.8	35.4	20.9	24.5
Share of Overcrowded Units	—	—	—	—	1.0	0.9	2.1	2.5	1.4	5.4	0.5	1.1	1.0	4.0	0.5	1.0
Share of Units Major Repairs	—	—	—	—	8.9	9.3	2.7	4.1	6.9	11.3	6.7	9.7	8.6	13.7	5.8	5.0
Observations:	896				95				350				2810			

Source. See Section 3 for details.

Table 3: Variable Definitions

Variable	*Definition*
Share of Contract Rent $a - $b	*Share of contract rents for rental-occupied dwellings within a specific category. The range is given per room per month. Categories include $0 - $19, $20 - $49, $50 - $99, and $100 and up.*
Share of Property Value $a - $b	*Share of property values for owner-occupied dwellings within a specific category. Categories include $0 - $1,999, $2,000 - $4,999, $5,000 - $9,999, and $10,000 and up.*
Distance to Public Housing	*Distance of centroid of census tract to the centroid of the nearest public housing project in miles. Completed Projects are all projects completed through 1940. Approved Projects are all projects approved, including those completed, through 1940.*
Pop Density	*Total population per thousand residing in a census tract per square mile.*
Share of Nonwhite People	*In 1934, Share of families that are non-white in a census tract. Family generally follows the 1930 U.S. Census definition: "a group of persons, related by either blood or by marriage or adoption, who live together as one household." The 1940 definition is the share of non-white people residing in a census tract.*
Share of Homeownership	*Share of occupied dwellings that are owner-occupied in a census tract.*
Share of Multifamily Units	*Share of occupied dwellings in structures exceedings three dwellings per structure (two in New York City).*
Share of Overcrowded Units	*Share of occupied dwellings exceeding more than two occupants per room, not including bathrooms.*
Share of Units Major Repairs	*Share of occupied dwellings either needing major structural repairs or are "practically unfit for human habitation."*

Table 4: Local GWR Estimates of the Influence of Completed Public Housing on Property Values between 1934-40

Independent Variable: Inverse Distance to Public Housing				
		Percentile		
Chicago	Mean	5^{th}	95^{th}	% Sig
Share of Property Values: $0 - $1,999	1.745	-322.107	319.938	93.5
Share of Property Values: $2,000 - $4,999	-21.680	-412.530	361.103	93.1
Share of Property Values: $5,000 - $9,999	-0.746	-295.250	301.707	94.2
Share of Property Values: $10,000 - up	9.116	-45.470	98.092	93.6
		Percentile		
Washington, DC	Mean	5^{th}	95^{th}	% Sig
Share of Property Values: $0 - $1,999	3.111	-7.279	35.224	93.7
Share of Property Values: $2,000 - $4,999	19.408	-125.726	137.004	89.5
Share of Property Values: $5,000 - $9,999	11.796	-98.154	126.089	93.7
Share of Property Values: $10,000 - up	-31.025	-201.485	129.725	88.4
		Percentile		
Philadelphia	Mean	5^{th}	95^{th}	% Sig
Share of Property Values: $0 - $1,999	1.654	-70.590	52.542	88.6
Share of Property Values: $2,000 - $4,999	24.048	-109.222	220.351	91.1
Share of Property Values: $5,000 - $9,999	-33.388	-229.521	41.203	86.6
Share of Property Values: $10,000 - up	-2.369	-68.676	87.495	89.4

Notes.

Table 5: Local GWR Estimates of the Influence of Completed Public Housing on Contract Rents between 1934-40

Independent Variable: Inverse Distance to Public Housing				
		Percentile		
Chicago	Mean	5^{th}	95^{th}	% Sig
Share of Contract Rents: $0 - $19	-6.862	-163.641	130.048	98.4
Share of Contract Rents: $20 - $49	6.661	-210.481	223.261	98.8
Share of Contract Rents: $50 - $99	-0.814	-96.930	112.894	95.1
Share of Contract Rents: $100 - up	0.162	-4.874	4.534	86.6
		Percentile		
Washington, DC	Mean	5^{th}	95^{th}	% Sig
Share of Contract Rents: $0 - $19	1.842	-66.486	75.971	91.6
Share of Contract Rents: $20 - $49	16.119	-107.957	137.194	77.9
Share of Contract Rents: $50 - $99	7.521	-203.648	238.828	76.8
Share of Contract Rents: $100 - up	-5.293	-71.730	49.432	81.1
		Percentile		
Philadelphia	Mean	5^{th}	95^{th}	% Sig
Share of Contract Rents: $0 - $19	3.614	-73.363	62.319	77.4
Share of Contract Rents: $20 - $49	-1.865	-110.506	99.395	85.4
Share of Contract Rents: $50 - $99	-4.688	-67.186	67.228	81.7
Share of Contract Rents: $100 - up	-2.992	-22.835	11.200	76.9
		Percentile		
New York	Mean	5^{th}	95^{th}	% Sig
Share of Contract Rents: $0 - $19	-5.215	-217.427	229.468	97.9
Share of Contract Rents: $20 - $49	20.069	-732.945	660.957	98.1
Share of Contract Rents: $50 - $99	-5.215	-217.427	229.468	97.9
Share of Contract Rents: $100 - up	-0.079	-69.047	76.852	94.1

Notes.

Table 6: Local GWR Estimates of the Influence of Approved Public Housing on Property Values between 1934-40

Independent Variable: Inverse Distance to Public Housing				
		Percentile		
Chicago	Mean	5^{th}	95^{th}	% Sig
Share of Property Values: $0 - $1,999	8.245	-104.571	135.863	91.4
Share of Property Values: $2,000 - $4,999	-10.820	-240.351	187.138	91.4
Share of Property Values: $5,000 - $9,999	-13.984	-201.254	167.701	93.1
Share of Property Values: $10,000 - up	6.462	-31.286	59.463	92.2
		Percentile		
Washington, DC	Mean	5^{th}	95^{th}	% Sig
Share of Property Values: $0 - $1,999	0.233	-2.705	5.878	73.7
Share of Property Values: $2,000 - $4,999	2.822	-12.672	32.400	89.5
Share of Property Values: $5,000 - $9,999	5.025	-16.155	26.201	74.7
Share of Property Values: $10,000 - up	-7.208	-43.661	13.457	72.6
		Percentile		
Philadelphia	Mean	5^{th}	95^{th}	% Sig
Share of Property Values: $0 - $1,999	1.750	-55.688	49.564	89.4
Share of Property Values: $2,000 - $4,999	21.504	-109.149	213.402	92.3
Share of Property Values: $5,000 - $9,999	-30.851	-228.589	41.197	87.4
Share of Property Values: $10,000 - up	-3.516	-67.072	85.877	90.9

Notes.

Table 7: Local GWR Estimates of the Influence of Approved Public Housing on Contract Rents between 1934-40

Independent Variable: Inverse Distance to Public Housing				
		Percentile		
Chicago	Mean	5^{th}	95^{th}	% Sig
Share of Contract Rents: $0 - $19	-8.158	-92.990	45.776	96.7
Share of Contract Rents: $20 - $49	11.558	-101.618	181.430	95.8
Share of Contract Rents: $50 - $99	-7.724	-96.560	53.207	92.9
Share of Contract Rents: $100 - up	-0.342	-3.742	1.451	86.7
		Percentile		
Washington, DC	Mean	5^{th}	95^{th}	% Sig
Share of Contract Rents: $0 - $19	0.761	-9.537	13.792	69.5
Share of Contract Rents: $20 - $49	3.155	-18.556	29.232	65.3
Share of Contract Rents: $50 - $99	3.440	-39.507	66.552	63.2
Share of Contract Rents: $100 - up	-2.173	-33.642	9.296	56.8
		Percentile		
Philadelphia	Mean	5^{th}	95^{th}	% Sig
Share of Contract Rents: $0 - $19	5.722	-73.110	65.552	79.1
Share of Contract Rents: $20 - $49	-4.333	-119.730	99.082	86.9
Share of Contract Rents: $50 - $99	-4.897	-67.538	67.809	80.9
Share of Contract Rents: $100 - up	-3.184	-24.060	13.695	72.3
		Percentile		
New York	Mean	5^{th}	95^{th}	% Sig
Share of Contract Rents: $0 - $19	-9.676	-125.190	95.309	97.2
Share of Contract Rents: $20 - $49	6.491	-443.027	375.173	97.2
Share of Contract Rents: $50 - $99	6.471	-301.447	345.731	95.1
Share of Contract Rents: $100 - up	0.536	-38.350	49.507	92.9

Notes.

Table 8: Average Relationship of Completed Public Housing and Change in Distribution of Property Values and Contract Rents in Chicago

Dependent Variable: Average Effect by Distance to Public Housing								
				Share of Property Values Between				
	n	$0 - $1999	n	$2000 - $4999	n	$5000 - $9999	n	$10000 - up
0.00 - 0.25 Miles	2	-62.852	2	-11.601	2	50.673	2	0.895
0.26 - 0.50 Miles	10	-10.925	9	-6.652	14	10.993	9	2.333
0.51 - 1.00 Miles	39	-0.190	25	-3.971	42	4.416	38	0.472
1.01 - 2.00 Miles	138	-3.071	139	-1.916	145	4.435	144	1.334
2.01 Miles - Up	649	-1.082	659	-6.633	641	0.441	646	2.388
Average Effect	838	-1.633	834	-5.779	844	1.619	839	2.116
				Share of Contract Rents Between				
	n	$0 - $19	n	$20 - $49	n	$50 - $99	n	$100 - up
0.00 - 0.25 Miles	2	-45.666	2	44.811	1	-3.319	2	0.107
0.26 - 0.50 Miles	13	-12.102	14	12.300	7	0.516	12	-0.011
0.51 - 1.00 Miles	46	-3.388	45	4.659	39	-0.597	31	0.025
1.01 - 2.00 Miles	154	-0.387	157	2.154	146	-1.203	134	-0.155
2.01 Miles - Up	667	-1.953	667	2.953	659	-0.89	597	0.000
Average Effect	882	-2.003	885	3.140	852	-0.921	776	-0.025

Notes.

Table 9: Average Relationship of Completed Public Housing and Change in Distribution of Property Values and Contract Rents in Washington, DC

Dependent Variable: Average Effect by Distance to Public Housing								
				Share of Property Values Between				
	n	$0 - $1999	n	$2000 - $4999	n	$5000 - $9999	n	$10000 - up
0.00 - 0.25 Miles	0	—	0	—	0	—	0	—
0.26 - 0.50 Miles	1	-6.521	1	-17.333	1	33.286	1	-9.433
0.51 - 1.00 Miles	5	-3.091	2	-7.263	5	9.400	3	-7.550
1.01 - 2.00 Miles	17	-0.526	13	7.760	13	-0.122	14	-4.998
2.01 Miles - Up	66	0.999	69	4.983	70	2.563	66	-7.026
Average Effect	89	0.394	85	4.857	89	2.900	84	-6.735
				Share of Contract Rents Between				
	n	$0 - $19	n	$20 - $49	n	$50 - $99	n	$100 - up
0.00 - 0.25 Miles	0	—	0	—	0	—	0	—
0.26 - 0.50 Miles	1	-5.196	0	—	1	6.250	0	—
0.51 - 1.00 Miles	4	-3.490	3	14.830	3	-2.409	3	-0.180
1.01 - 2.00 Miles	14	-1.909	12	2.530	7	0.042	11	-0.033
2.01 Miles - Up	68	0.585	59	6.784	62	-1.369	63	-0.731
Average Effect	87	-0.070	74	6.420	73	-1.172	77	-0.610

Notes.

Table 10: Average Relationship of Completed Public Housing and Change in Distribution of Property Values and Contract Rents in Philadelphia

Dependent Variable: Average Effect by Distance to Public Housing								
				Share of Property Values Between				
	n	$0 - $1999	n	$2000 - $4999	n	$5000 - $9999	n	$10000 - up
0.00 - 0.25 Miles	2	-6.509	1	11.767	2	5.617	2	3.482
0.26 - 0.50 Miles	3	14.582	4	-15.861	5	1.256	4	4.996
0.51 - 1.00 Miles	19	6.296	21	-7.554	20	6.061	22	0.582
1.01 - 2.00 Miles	88	2.904	89	-3.171	84	-0.558	100	2.659
2.01 Miles - Up	198	-0.216	204	10.250	192	-11.365	185	-1.215
Average Effect	310	1.171	319	5.011	303	-6.898	313	0.259
				Share of Contract Rents Between				
	n	$0 - $19	n	$20 - $49	n	$50 - $99	n	$100 - up
0.00 - 0.25 Miles	0	—	1	-4.899	3	2.239	2	-0.400
0.26 - 0.50 Miles	4	5.816	4	-11.326	5	2.939	5	0.797
0.51 - 1.00 Miles	16	-0.172	20	-1.157	25	0.452	16	0.135
1.01 - 2.00 Miles	83	-2.585	85	1.489	74	-0.266	80	0.041
2.01 Miles - Up	168	1.401	189	-0.219	179	-2.700	166	-0.746
Average Effect	271	0.152	299	0.040	286	-1.644	269	-0.428

Notes.

Table 11: Average Relationship of Completed Public Housing and Change in Distribution of Contract Rents in New York

Dependent Variable: Average Effect by Distance to Public Housing								
				Share of Contract Rents Between				
	n	$0 - $19	n	$20 - $49	n	$50 - $99	n	$100 - up
0.00 - 0.25 Miles	23	-8.916	22	6.669	23	2.477	17	-0.119
0.26 - 0.50 Miles	61	-2.612	63	3.675	62	-1.524	56	-0.104
0.51 - 1.00 Miles	221	-1.235	223	1.740	207	-0.779	215	0.302
1.01 - 2.00 Miles	579	-0.580	567	-0.779	550	0.418	532	-0.068
2.01 Miles - Up	1867	-1.277	1882	-1.191	1861	3.791	1824	0.432
Average Effect	2751	-1.220	2757	-0.696	2703	2.622	2644	0.306

Notes.

Table 12: Average Relationship of Approved Public Housing and Change in Distribution of Property Values and Contract Rents in Chicago

Dependent Variable: Average Effect by Distance to Public Housing								
				Share of Property Values Between				
	n	$0 - $1999	n	$2000 - $4999	n	$5000 - $9999	n	$10000 - up
0.00 - 0.25 Miles	6	-10.114	8	6.357	8	0.138	8	-2.344
0.26 - 0.50 Miles	28	5.074	25	-1.645	30	-2.617	31	0.410
0.51 - 1.00 Miles	94	0.251	98	0.373	113	-0.517	95	-0.430
1.01 - 2.00 Miles	204	2.619	204	-7.132	214	3.971	209	0.702
2.01 Miles - Up	487	3.736	484	-4.593	469	-5.527	483	2.446
Average Effect	819	3.002	819	-4.434	834	-2.252	826	1.551
				Share of Contract Rents Between				
	n	$0 - $19	n	$20 - $49	n	$50 - $99	n	$100 - up
0.00 - 0.25 Miles	11	-4.101	10	2.813	8	0.109	10	-0.113
0.26 - 0.50 Miles	33	-3.809	32	3.382	26	0.482	29	0.013
0.51 - 1.00 Miles	121	-2.307	119	2.352	101	0.106	96	0.016
1.01 - 2.00 Miles	221	-0.996	222	2.808	213	-1.346	196	-0.102
2.01 Miles - Up	480	-3.297	475	5.188	484	-2.975	446	-0.158
Average Effect	866	-2.601	858	4.084	832	-2.046	777	-0.115

Notes.

Table 13: Average Relationship of Approved Public Housing and Change in Distribution of Property Values and Contract Rents in Washington, DC

Dependent Variable: Average Effect by Distance to Public Housing								
				Share of Property Values Between				
	n	$0 - $1999	n	$2000 - $4999	n	$5000 - $9999	n	$10000 - up
0.00 - 0.25 Miles	1	-1.368	2	-11.591	1	8.499	1	15.421
0.26 - 0.50 Miles	1	-0.602	6	-8.667	4	8.897	4	3.643
0.51 - 1.00 Miles	16	-0.536	22	-4.670	21	3.225	18	2.311
1.01 - 2.00 Miles	25	0.116	28	0.557	19	1.841	22	-0.181
2.01 Miles - Up	27	0.316	27	4.479	26	2.728	24	-7.365
Average Effect	70	0.013	85	-0.487	71	3.066	69	-1.582
				Share of Contract Rents Between				
	n	$0 - $19	n	$20 - $49	n	$50 - $99	n	$100 - up
0.00 - 0.25 Miles	1	-3.191	1	11.375	1	-10.474	1	-0.409
0.26 - 0.50 Miles	3	-2.921	4	1.753	4	-1.451	5	-0.028
0.51 - 1.00 Miles	18	-1.257	14	7.447	12	-4.012	12	-0.209
1.01 - 2.00 Miles	21	1.762	20	3.855	19	-6.312	20	0.641
2.01 Miles - Up	23	0.354	23	0.297	24	4.443	16	-2.181
Average Effect	66	0.160	62	3.332	60	-1.295	54	-0.465

Notes.

Table 14: Average Relationship of Approved Public Housing and Change in Distribution of Property Values and Contract Rents in Philadelphia

Dependent Variable: Average Effect by Distance to Public Housing								
				Share of Property Values Between				
	n	$0 - $1999	n	$2000 - $4999	n	$5000 - $9999	n	$10000 - up
0.00 - 0.25 Miles	3	-11.092	3	18.699	4	28.114	4	-5.685
0.26 - 0.50 Miles	5	5.158	6	-1.874	6	5.372	6	1.458
0.51 - 1.00 Miles	29	2.866	30	-2.518	28	5.304	36	0.128
1.01 - 2.00 Miles	91	3.021	93	-5.575	86	1.057	101	2.574
2.01 Miles - Up	185	-0.415	191	10.283	182	-11.146	171	-2.177
Average Effect	313	0.875	323	4.381	306	-5.374	318	-0.383
				Share of Contract Rents Between				
	n	$0 - $19	n	$20 - $49	n	$50 - $99	n	$100 - up
0.00 - 0.25 Miles	3	12.969	3	-14.656	4	2.477	4	-0.073
0.26 - 0.50 Miles	5	5.231	5	-9.688	6	2.513	5	0.797
0.51 - 1.00 Miles	26	1.810	30	-2.315	32	0.112	21	-0.021
1.01 - 2.00 Miles	85	0.749	87	-0.181	73	-0.837	72	-0.004
2.01 Miles - Up	158	1.947	179	-0.631	168	-2.832	151	-0.803
Average Effect	277	1.745	304	-0.956	283	-1.796	253	-0.468

Notes.

Table 15: Average Relationship of Approved Public Housing and Change in Distribution of Contract Rents in New York

Dependent Variable: Average Effect by Distance to Public Housing								
				Share of Contract Rents Between				
	n	$0 - $19	n	$20 - $49	n	$50 - $99	n	$100 - up
0.00 - 0.25 Miles	37	-7.826	35	6.311	34	1.501	30	0.234
0.26 - 0.50 Miles	100	-1.484	97	1.779	95	-0.911	94	-0.043
0.51 - 1.00 Miles	336	-0.791	332	0.884	320	-0.258	317	0.284
1.01 - 2.00 Miles	769	-0.040	755	-1.466	728	0.451	717	0.193
2.01 Miles - Up	1488	-2.380	1512	-0.356	1496	1.342	1452	0.513
Average Effect	2730	-1.566	2731	-0.351	2673	0.830	2610	0.374

Notes.

Appendix

A Summary of Regression Results

The tables in the data appendix are a summary of the hedonic regressions using local geographically weighted regressions.

Table 16: Local GWR Estimates for the Change in Property Values in Chicago using Completed Public Housing

Dependent Variable:	Δ in Share of Property Values Between							
	$0 - $1,999				$2,000 - $4,999			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	8.581	-73.940	96.428	97.2	7.117	-84.417	104.931	98.2
Inv Dist to Pub Housing	1.745	-322.107	319.938	93.5	-21.680	-412.530	361.103	93.1
Δ in Pop Density	0.940	-4.686	7.893	91.4	-0.053	-7.336	7.637	92.9
Δ Shr of Nonwhite People	0.228	-32.829	29.080	94.2	2.210	-33.145	50.552	94.6
Δ Shr of Homeownership	0.439	-2.624	4.041	93.9	-0.481	-4.281	2.995	92.4
Δ Shr of Multifam Units	-0.027	-1.541	1.611	92.9	0.291	-1.944	2.793	92.7
Bandwidth	29.862	12	124		31.667	12	154	

Dependent Variable:	Δ in Share of Property Values Between							
	$5,000 - $9,999				$10,000 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-7.569	-78.072	60.665	97.0	-3.381	-25.549	11.013	96.3
Inv Dist to Pub Housing	-0.746	-295.250	301.707	94.2	9.116	-45.470	98.092	93.6
Δ in Pop Density	-1.206	-10.385	5.144	89.8	-0.184	-1.971	1.401	91.1
Δ Shr of Nonwhite People	-0.976	-43.357	35.706	89.6	0.192	-8.072	11.593	86.7
Δ Shr of Homeownership	0.082	-2.802	3.436	87.5	-0.108	-1.246	.714	84.0
Δ Shr of Multifam Units	-0.202	-2.455	1.332	90.5	-0.075	-0.627	0.363	93.1
Bandwidth	42.319	12	254		47.996	12	290	

Notes.

Table 17: Local GWR Estimates for the Change in Property Values in Washington, DC using Completed Public Housing

Dependent Variable:	Δ in Share of Property Values Between							
	$0 - $1,999				$2,000 - $4,999			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-0.464	-13.073	7.167	93.7	-7.604	-55.616	38.633	91.6
Inv Dist to Pub Housing	3.111	-7.279	35.224	93.7	19.408	-125.726	137.004	89.5
Δ in Pop Density	0.104	-0.320	0.799	71.6	0.382	-1.650	2.923	74.7
Δ Shr of Nonwhite People	-0.038	-0.723	0.193	66.3	-0.446	-3.867	0.751	73.7
Δ Shr of Homeownership	-0.037	-0.485	0.276	85.3	-0.566	-2.096	1.035	83.2
Δ Shr of Multifamily Units	-0.044	-0.287	0.112	81.1	-0.429	-1.939	0.808	86.3
Δ Shr Overcrowded Units	-0.057	-1.293	1.076	71.6	0.421	-6.946	6.520	86.3
Δ Shr Units Maj Repair	0.068	-0.172	0.429	69.5	-0.166	-1.190	1.104	85.3
Bandwidth	21.663	12	86		13.979	12	22	

Dependent Variable:	Δ in Share of Property Values Between							
	$5,000 - $9,999				$10,000 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	1.963	-44.758	41.899	91.6	3.095	-53.093	54.343	93.7
Inv Dist to Pub Housing	11.796	-98.154	126.089	93.7	-31.025	-201.485	129.725	88.4
Δ in Pop Density	-0.027	-3.627	2.240	83.2	-0.249	-2.040	2.419	87.4
Δ Shr of Nonwhite People	-0.764	-4.312	2.989	87.4	1.115	-0.561	4.729	94.7
Δ Shr of Homeownership	0.513	-2.003	2.590	90.5	0.087	-3.214	1.642	89.5
Δ Shr of Multifamily Units	-0.073	-1.973	1.279	83.2	0.497	-0.996	2.319	95.8
Δ Shr Overcrowded Units	0.525	-7.313	22.201	84.2	-1.028	-26.710	5.846	80.0
Δ Shr Units Maj Repair	-0.222	-4.184	1.082	80.0	0.250	-2.441	4.265	84.2
Bandwidth	15.600	12	26		14.316	12	22	

Notes.

Table 18: Local GWR Estimates for the Change in Property Values in Philadelphia using Completed Public Housing

Dependent Variable:	Δ in Share of Property Values Between							
	$0 - $1,999				$2,000 - $4,999			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	3.468	-21.775	38.421	92.9	6.600	-63.997	62.593	94.9
Inv Dist to Pub Housing	1.654	-70.590	52.542	88.6	24.048	-109.222	220.351	91.1
Δ in Pop Density	-0.086	-5.602	3.504	83.4	1.535	-10.281	10.196	89.1
Δ Shr of Nonwhite People	-0.386	-3.699	4.283	85.7	-0.575	-20.237	21.604	89.4
Δ Shr of Homeownership	-0.002	-1.430	1.665	79.7	0.205	-2.004	2.619	91.7
Δ Shr of Multifamily Units	0.550	-3.005	5.706	86.6	-3.213	-6.970	9.262	92.3
Δ Shr Overcrowded Units	-0.067	-4.282	5.490	90.9	-2.093	-28.691	10.901	88.9
Δ Shr Units Maj Repair	-0.041	-1.386	0.970	88.6	-0.014	-2.221	2.497	92.3
Bandwidth	25.023	12	105		17.480	12	40	

Dependent Variable:	Δ in Share of Property Values Between							
	$5,000 - $9,999				$10,000 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-4.868	-40.429	41.217	96.0	-3.862	-34.383	15.521	97.4
Inv Dist to Pub Housing	-33.388	-229.521	41.203	86.6	-2.369	-68.676	87.495	89.4
Δ in Pop Density	-0.108	-9.729	8.953	82.0	-0.816	-5.123	1.865	90.0
Δ Shr of Nonwhite People	1.361	-7.441	15.941	87.7	-0.368	-5.634	4.076	87.1
Δ Shr of Homeownership	0.023	-1.612	1.942	93.7	-0.122	-1.203	.923	90.0
Δ Shr of Multifamily Units	4.197	-8.173	4.944	90.3	-0.933	-3.068	2.255	88.9
Δ Shr Overcrowded Units	0.346	-18.333	20.698	88.9	1.800	-3.978	9.722	88.9
Δ Shr Units Maj Repair	-0.248	-2.362	1.573	88.0	0.265	-0.561	1.397	90.6
Bandwidth	23.560	12	90		25.766	12	157	

Notes.

Table 19: Local GWR Estimates for the Change in Contract Rents in Chicago using Completed Public Housing

Dependent Variable:	Δ in Share of Contract Rent Between							
	$0 - $19				$20 - $49			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-4.037	-41.854	33.983	95.4	-1.021	-58.177	56.741	96.8
Inv Dist to Pub Housing	-6.862	-163.641	130.048	98.4	6.661	-210.481	223.261	98.8
Δ in Pop Density	0.315	-2.450	2.885	91.1	-0.109	-4.975	4.362	93.0
Δ Shr of Nonwhite People	0.999	-10.552	17.911	87.2	-1.652	-28.249	17.522	87.7
Δ Shr of Homeownership	0.007	-1.365	1.485	91.3	-0.218	-2.449	1.544	91.2
Δ Shr of Multifam Units	0.112	-0.455	0.787	94.5	-0.034	-0.996	1.255	90.0
Bandwidth	48.893	12	276		40.915	12	270	

Dependent Variable:	Δ in Share of Contract Rent Between							
	$50 - $99				$100 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	4.356	-15.829	33.384	98.1	0.075	-1.052	1.173	90.8
Inv Dist to Pub Housing	-0.814	-96.930	112.894	95.1	0.162	-4.874	4.534	86.6
Δ in Pop Density	-0.501	-4.288	1.932	81.8	0.001	-0.134	0.109	81.1
Δ Shr of Nonwhite People	1.327	-7.094	13.068	85.4	0.313	-0.337	2.191	75.4
Δ Shr of Homeownership	0.158	-0.546	1.383	89.5	0.009	-0.036	0.103	82.1
Δ Shr of Multifam Units	-0.038	-0.489	0.344	92.6	0.004	-0.019	0.039	88.1
Bandwidth	44.219	12	263		53.964	12	294	

Notes.

Table 20: Local GWR Estimates for the Change in Contract Rents in Washington, DC using Completed Public Housing

Dependent Variable:	Δ in Share of Contract Rents Between							
	$0 - $19				$20 - $49			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-4.870	-31.055	14.527	88.4	-4.349	-39.675	22.413	94.7
Inv Dist to Pub Housing	1.842	-66.486	75.971	91.6	16.119	-107.957	137.194	77.9
Δ in Pop Density	-0.007	-1.154	0.660	78.9	-0.250	-2.567	1.451	72.6
Δ Shr of Nonwhite People	0.222	-0.773	1.125	84.2	-0.482	-2.552	1.056	71.6
Δ Shr of Homeownership	-0.312	-1.500	0.473	86.3	0.033	-1.444	2.041	77.9
Δ Shr of Multifamily Units	-0.097	-0.810	0.458	78.9	0.172	-0.980	1.694	75.8
Δ Shr Overcrowded Units	0.382	-6.750	3.713	81.1	1.801	-4.990	17.225	71.6
Δ Shr Units Maj Repair	0.457	-0.497	1.534	88.4	0.202	-1.378	1.981	71.6
Bandwidth	15.389	12	28		23.453	12	84	

Dependent Variable:	Δ in Share of Contract Rents Between							
	$50 - $99				$100 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	2.757	-70.960	62.453	88.4	1.372	-11.966	9.998	89.5
Inv Dist to Pub Housing	7.521	-203.648	238.828	76.8	-5.293	-71.730	49.432	81.1
Δ in Pop Density	0.235	-1.079	4.848	70.5	0.135	-0.156	1.019	82.1
Δ Shr of Nonwhite People	0.789	-0.755	3.830	58.9	-0.163	-0.830	0.024	78.9
Δ Shr of Homeownership	0.087	-1.648	1.550	78.9	0.105	-0.295	0.688	76.8
Δ Shr of Multifamily Units	-0.182	-1.416	1.059	82.1	0.001	-0.507	0.802	69.5
Δ Shr Overcrowded Units	-1.165	-18.543	9.717	78.9	-0.639	-10.349	1.252	60.0
Δ Shr Units Maj Repair	-0.998	-5.442	0.412	71.6	0.115	-0.235	2.230	67.4
Bandwidth	22.316	12	83		23.432	12	90	

Notes.

Table 21: Local GWR Estimates for the Change in Contract Rents in Philadelphia using Completed Public Housing

Dependent Variable:	Δ in Share of Contract Rents Between							
	$0 - $19				$20 - $49			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-3.861	-26.656	18.834	96.3	3.562	-25.823	40.010	94.3
Inv Dist to Pub Housing	3.614	-73.363	62.319	77.4	-1.865	-110.506	99.395	85.4
Δ in Pop Density	-0.669	-3.841	2.893	74.3	0.196	-3.278	4.306	83.1
Δ Shr of Nonwhite People	0.719	-2.739	7.361	80.6	-0.703	-9.036	5.950	86.3
Δ Shr of Homeownership	-0.140	-1.419	0.865	90.3	-0.003	-1.179	1.355	89.7
Δ Shr of Multifamily Units	-6.414	-4.304	2.386	78.6	0.091	-3.387	4.403	91.4
Δ Shr Overcrowded Units	-0.056	-4.891	6.727	84.0	0.870	-6.388	8.307	89.4
Δ Shr Units Maj Repair	0.109	-0.531	1.148	90.0	-0.078	-1.235	0.856	89.4
Bandwidth	38.171	12	189		30.234	12	167	

Dependent Variable:	Δ in Share of Contract Rents Between							
	$50 - $99				$100 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	2.582	-16.035	21.241	95.7	0.029	-2.869	4.845	88.6
Inv Dist to Pub Housing	-4.688	-67.186	67.228	81.7	-2.992	-22.835	11.200	76.9
Δ in Pop Density	-0.312	-4.538	4.762	79.1	-0.044	-0.429	1.151	76.9
Δ Shr of Nonwhite People	-0.381	-4.185	2.212	80.3	.087	-1.078	1.440	75.7
Δ Shr of Homeownership	0.131	-0.423	0.866	93.1	-0.007	-0.255	0.122	82.0
Δ Shr of Multifamily Units	3.193	-1.692	1.909	80.6	.038	-0.372	0.517	84.3
Δ Shr Overcrowded Units	-0.609	-4.977	2.638	83.4	0.075	-1.046	1.615	78.0
Δ Shr Units Maj Repair	0.047	-0.508	0.563	75.4	0.031	-0.088	0.218	83.1
Bandwidth	38.549	12	194		40.891	12	185	

Notes.

Table 22: Local GWR Estimates for the Change in Contract Rents in New York using Completed Public Housing

Dependent Variable:	Δ in Share of Contract Rents Between							
	$0 - $19				$20 - $49			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-0.173	-46.628	44.725	98.6	4.178	-125.133	140.985	98.3
Inv Dist to Pub Housing	-5.215	-217.427	229.468	97.9	20.069	-732.945	660.957	98.1
Δ in Pop Density	-0.003	-1.499	1.498	93.3	0.054	-3.845	3.217	96.4
Δ Shr of Nonwhite People	0.057	-6.410	6.965	95.1	-0.816	-17.274	14.629	96.4
Δ Shr of Homeownership	-0.052	-0.986	0.997	94.2	0.077	-1.752	1.864	97.0
Δ Shr of Multifamily Units	-0.062	-0.809	0.639	93.3	0.493	-1.078	2.602	95.7
Δ Shr Overcrowded Units	0.458	-3.992	6.064	95.0	-1.227	-16.165	10.945	96.2
Δ Shr Units Maj Repair	-0.010	-0.793	0.634	95.7	-0.053	-2.100	2.292	96.6
Bandwidth	53.221	12	368		43.912	12	251	

Dependent Variable:	Δ in Share of Contract Rents Between							
	$50 - $99				$100 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-0.173	-46.628	44.725	98.6	-0.848	-19.144	13.972	95.3
Inv Dist to Pub Housing	-5.215	-217.427	229.468	97.9	-0.079	-69.047	76.852	94.1
Δ in Pop Density	-0.003	-1.499	1.498	93.3	0.013	-0.403	0.504	91.2
Δ Shr of Nonwhite People	0.057	-6.410	6.965	95.1	-0.033	-2.785	2.297	91.7
Δ Shr of Homeownership	-0.052	-0.986	0.997	94.2	0.066	-0.256	0.568	92.5
Δ Shr of Multifamily Units	-0.062	-0.809	0.639	93.3	0.019	-0.225	0.164	93.6
Δ Shr Overcrowded Units	0.458	-3.992	6.064	95.0	0.014	-2.145	1.916	89.5
Δ Shr Units Maj Repair	-0.010	-0.793	0.634	95.7	-0.022	-0.334	0.280	90.4
Bandwidth	43.638	12	223		56.529	12	393	

Notes.

Table 23: Local GWR Estimates for the Change in Property Values in Chicago using Approved Public Housing

Dependent Variable:	Δ in Share of Property Values Between							
	$0 - $1,999				$2,000 - $4,999			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	4.121	-50.417	61.541	96.5	5.997	-54.225	77.021	98.5
Inv Dist to Pub Housing	8.245	-104.571	135.863	91.4	-10.820	-240.351	187.138	91.4
Δ in Pop Density	0.905	-4.677	8.071	90.2	0.055	-7.119	8.325	92.9
Δ Shr of Nonwhite People	0.416	-32.491	32.884	94.2	2.805	-33.727	51.710	95.0
Δ Shr of Homeownership	0.464	-2.479	3.930	93.8	-0.457	-4.290	3.042	93.2
Δ Shr of Multifam Units	-0.003	-1.464	1.590	91.2	0.296	-1.909	2.737	92.3
Bandwidth	31.045	12	131		32.134	12	153	

Dependent Variable:	Δ in Share of Property Values Between							
	$5,000 - $9,999				$10,000 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-4.238	-60.536	51.970	95.8	-2.867	-19.936	8.050	96.4
Inv Dist to Pub Housing	-13.984	-201.254	167.701	93.1	6.462	-31.286	59.463	92.2
Δ in Pop Density	-1.243	-10.231	5.200	92.3	-0.207	-2.008	1.454	91.2
Δ Shr of Nonwhite People	-1.356	-39.702	34.829	91.2	0.139	-8.131	12.487	86.4
Δ Shr of Homeownership	0.003	-2.805	3.474	88.7	-0.126	-1.322	0.655	86.0
Δ Shr of Multifam Units	-0.185	-2.398	1.326	92.1	-0.078	-0.626	0.342	93.2
Bandwidth	42.891	12	256		47.580	12	290	

Notes.

Table 24: Local GWR Estimates for the Change in Property Values in Washington, DC using Approved Public Housing

Dependent Variable:	Δ in Share of Property Values Between							
	$0 - $1,999				$2,000 - $4,999			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-0.590	-9.683	4.223	83.2	1.570	-18.952	29.763	86.3
Inv Dist to Pub Housing	0.233	-2.705	5.878	73.7	2.822	-12.672	32.400	89.5
Δ in Pop Density	-0.006	-0.627	0.613	75.8	0.197	-1.792	2.034	73.7
Δ Shr of Nonwhite People	-0.020	-0.517	0.337	74.7	-0.250	-1.622	0.654	83.2
Δ Shr of Homeownership	-0.083	-0.526	0.217	82.1	-0.455	-2.233	1.207	85.3
Δ Shr of Multifamily Units	-0.039	-0.321	0.126	81.1	-0.439	-2.258	0.577	84.2
Δ Shr Overcrowded Units	0.063	-1.371	1.551	80.0	0.427	-6.415	5.962	84.2
Δ Shr Units Maj Repair	0.058	-0.224	0.421	69.5	-0.111	-1.102	1.123	88.4
Bandwidth	20.126	12	86		14.358	12	24	

Dependent Variable:	Δ in Share of Property Values Between							
	$5,000 - $9,999				$10,000 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	1.966	-40.997	31.571	86.3	-3.138	-35.444	28.088	94.7
Inv Dist to Pub Housing	5.025	-16.155	26.201	74.7	-7.208	-43.661	13.457	72.6
Δ in Pop Density	0.181	-2.246	2.488	80.0	-0.355	-2.100	1.693	75.8
Δ Shr of Nonwhite People	-0.939	-3.938	2.373	84.2	1.135	-0.557	4.525	93.7
Δ Shr of Homeownership	0.522	-1.860	2.589	94.7	-0.028	-3.185	1.564	89.5
Δ Shr of Multifamily Units	-0.078	-2.030	1.551	85.3	0.466	-0.918	2.236	89.5
Δ Shr Overcrowded Units	0.360	-9.092	21.993	84.2	-1.206	-27.674	5.491	75.8
Δ Shr Units Maj Repair	-0.256	-4.546	1.115	84.2	0.228	-1.637	4.527	87.4
Bandwidth	15.474	12	24		14.421	12	22	

Notes.

Table 25: Local GWR Estimates for the Change in Property Values in Philadelphia using Approved Public Housing

Dependent Variable:	Δ in Share of Property Values Between							
	$0 - $1,999				$2,000 - $4,999			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	3.900	-21.059	35.661	94.6	7.074	-56.210	57.833	94.6
Inv Dist to Pub Housing	1.750	-55.688	49.564	89.4	21.504	-109.149	213.402	92.3
Δ in Pop Density	-0.087	-5.288	3.743	82.3	1.580	-10.281	10.653	89.1
Δ Shr of Nonwhite People	-0.327	-3.530	4.642	85.4	-0.601	-20.294	21.847	89.1
Δ Shr of Homeownership	0.011	-1.438	1.914	79.4	0.180	-2.820	2.828	91.4
Δ Shr of Multifamily Units	0.529	-3.173	5.492	86.3	-3.245	-6.959	9.264	92.0
Δ Shr Overcrowded Units	-0.092	-4.181	4.700	90.6	-2.056	-30.003	11.266	87.1
Δ Shr Units Maj Repair	-0.048	-1.516	0.987	88.3	-0.014	-2.217	2.484	93.1
Bandwidth	25.286	12	111		17.149	12	34	

Dependent Variable:	Δ in Share of Property Values Between							
	$5,000 - $9,999				$10,000 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-6.099	-42.609	40.219	97.4	-3.366	-29.122	12.644	96.3
Inv Dist to Pub Housing	-30.851	-228.589	41.197	87.4	-3.516	-67.072	85.877	90.9
Δ in Pop Density	-0.066	-9.686	8.900	82.9	-0.817	-5.147	1.869	89.4
Δ Shr of Nonwhite People	1.377	-7.483	15.953	87.4	-0.364	-5.531	4.076	87.1
Δ Shr of Homeownership	0.053	-1.522	1.899	94.6	-0.150	-1.222	0.764	90.3
Δ Shr of Multifamily Units	4.212	-8.231	4.986	89.7	-0.929	-3.074	2.263	88.6
Δ Shr Overcrowded Units	0.348	-18.495	20.967	88.0	1.798	-3.995	9.922	87.1
Δ Shr Units Maj Repair	-0.260	-2.385	1.590	87.4	0.271	-0.548	1.423	90.6
Bandwidth	23.846	12	88		27.389	12	166	

Notes.

Table 26: Local GWR Estimates for the Change in Contract Rents in Chicago using Approved Public Housing

Dependent Variable:	Δ in Share of Contract Rent Between							
	$0 - $19				$20 - $49			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-3.365	-28.899	20.204	94.5	-1.758	-48.503	38.609	94.9
Inv Dist to Pub Housing	-8.158	-92.990	45.776	96.7	11.558	-101.618	181.430	95.8
Δ in Pop Density	0.288	-2.514	3.124	91.2	-0.117	-4.986	5.139	93.9
Δ Shr of Nonwhite People	0.984	-10.349	17.858	88.6	-1.565	-27.889	16.688	90.0
Δ Shr of Homeownership	-0.003	-1.451	1.484	91.9	-0.166	-2.264	1.671	90.1
Δ Shr of Multifam Units	0.125	-0.448	0.857	94.1	-0.054	-1.063	1.264	90.8
Bandwidth	46.471	12	272		39.837	12	266	

Dependent Variable:	Δ in Share of Contract Rent Between							
	$50 - $99				$100 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	5.390	-10.543	33.942	97.2	0.157	-0.660	1.168	91.0
Inv Dist to Pub Housing	-7.724	-96.560	53.207	92.9	-0.342	-3.742	1.451	86.7
Δ in Pop Density	-0.523	-4.410	1.830	81.7	0.001	-0.143	0.108	79.9
Δ Shr of Nonwhite People	1.271	-7.564	13.122	84.3	0.302	-0.358	2.116	76.8
Δ Shr of Homeownership	0.129	-0.600	1.165	91.4	0.011	-0.034	0.110	83.0
Δ Shr of Multifam Units	-0.031	-0.505	0.376	91.4	0.004	-0.020	0.039	86.8
Bandwidth	44.328	12	270		53.107	12	294	

Notes.

Table 27: Local GWR Estimates for the Change in Contract Rents in Washington, DC using Approved Public Housing

Dependent Variable:	Δ in Share of Contract Rents Between							
	$0 - $19				$20 - $49			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-4.628	-23.404	5.892	91.6	-1.734	-21.753	21.086	94.7
Inv Dist to Pub Housing	0.761	-9.537	13.792	69.5	3.155	-18.556	29.232	65.3
Δ in Pop Density	0.022	-0.959	0.745	80.0	-0.270	-2.051	1.172	72.6
Δ Shr of Nonwhite People	0.196	-0.466	0.982	78.9	-0.382	-2.105	0.686	68.4
Δ Shr of Homeownership	-0.266	-1.446	0.463	76.8	0.003	-1.448	1.959	73.7
Δ Shr of Multifamily Units	-0.102	-0.756	0.425	76.8	0.138	-0.929	1.203	78.9
Δ Shr Overcrowded Units	0.581	-4.832	3.410	84.2	1.939	-5.382	16.948	65.3
Δ Shr Units Maj Repair	0.476	-0.468	1.586	83.2	0.206	-1.258	1.948	69.5
Bandwidth	16.989	12	52		24.611	12	85	

Dependent Variable:	Δ in Share of Contract Rents Between							
	$50 - $99				$100 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	4.043	-31.442	25.240	82.1	1.278	-3.548	14.492	82.1
Inv Dist to Pub Housing	3.440	-39.507	66.552	63.2	-2.173	-33.642	9.296	56.8
Δ in Pop Density	0.190	-1.252	4.339	68.4	0.121	-0.133	1.178	81.1
Δ Shr of Nonwhite People	0.726	-0.596	3.181	56.8	-0.148	-0.757	.016	82.1
Δ Shr of Homeownership	0.138	-1.397	1.470	73.7	0.093	-0.235	0.455	83.2
Δ Shr of Multifamily Units	-0.108	-1.088	1.063	85.3	-0.001	-0.509	0.918	68.4
Δ Shr Overcrowded Units	-1.440	-18.654	13.948	68.4	-0.755	-9.499	1.261	55.8
Δ Shr Units Maj Repair	-0.977	-5.353	0.512	70.5	0.158	-0.242	2.758	58.9
Bandwidth	23.326	12	83		23.937	12	90	

Notes.

Table 28: Local GWR Estimates for the Change in Contract Rents in Philadelphia using Approved Public Housing

Dependent Variable:	Δ in Share of Contract Rents Between							
	$0 - $19				$20 - $49			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-5.288	-28.651	14.115	96.3	4.621	-25.812	44.430	94.6
Inv Dist to Pub Housing	5.722	-73.110	65.552	79.1	-4.333	-119.730	99.082	86.9
Δ in Pop Density	-0.648	-3.738	2.884	75.1	0.197	-3.263	4.414	86.3
Δ Shr of Nonwhite People	0.689	-2.869	7.292	82.6	-0.681	-9.036	5.939	86.6
Δ Shr of Homeownership	-0.115	-1.307	0.939	90.0	-0.012	-1.176	1.353	90.0
Δ Shr of Multifamily Units	-6.310	-4.299	2.328	79.7	0.123	-3.416	4.454	90.6
Δ Shr Overcrowded Units	-0.040	-5.285	6.887	84.3	0.873	-6.508	8.244	90.3
Δ Shr Units Maj Repair	0.099	-0.566	1.149	89.1	-0.071	-1.235	0.893	89.4
Bandwidth	37.977	12	189		29.206	12	157	

Dependent Variable:	Δ in Share of Contract Rents Between							
	$50 - $99				$100 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	2.802	-12.545	21.377	94.9	0.046	-2.637	4.817	89.1
Inv Dist to Pub Housing	-4.897	-67.538	67.809	80.9	-3.184	-24.060	13.695	72.3
Δ in Pop Density	-0.306	-4.506	4.722	80.0	-0.044	-0.426	1.141	77.1
Δ Shr of Nonwhite People	-0.393	-4.225	2.224	79.4	0.087	-1.105	1.440	74.6
Δ Shr of Homeownership	0.139	-0.336	0.871	92.6	-0.008	-0.255	0.118	82.3
Δ Shr of Multifamily Units	3.232	-1.693	1.932	79.7	.038	-0.374	0.528	83.4
Δ Shr Overcrowded Units	-0.600	-4.402	2.530	82.3	0.071	-1.022	1.609	78.6
Δ Shr Units Maj Repair	0.048	-0.510	0.567	74.3	0.032	-0.084	0.225	82.0
Bandwidth	39.514	12	194		41.229	12	185	

Notes.

Table 29: Local GWR Estimates for the Change in Contract Rents in New York using Approved Public Housing

Dependent Variable:	Δ in Share of Contract Rents Between							
	$0 - $19				$20 - $49			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	0.099	-33.529	37.180	98.4	4.039	-94.727	106.711	98.3
Inv Dist to Pub Housing	-9.676	-125.190	95.309	97.2	6.491	-443.027	375.173	97.2
Δ in Pop Density	-0.015	-1.288	1.412	94.3	.071	-3.874	3.145	96.7
Δ Shr of Nonwhite People	0.246	-5.716	7.603	95.1	-0.945	-17.850	14.500	96.5
Δ Shr of Homeownership	-0.061	-1.010	0.964	93.7	0.051	-1.813	1.816	97.1
Δ Shr of Multifamily Units	-0.072	-0.803	0.604	93.0	0.488	-1.056	2.460	95.9
Δ Shr Overcrowded Units	0.418	-4.200	5.988	94.3	-1.237	-16.288	11.260	96.3
Δ Shr Units Maj Repair	-0.008	-0.809	0.606	95.7	-0.082	-1.973	2.180	96.6
Bandwidth	53.266	12	367		42.625	12	244	

Dependent Variable:	Δ in Share of Contract Rents Between							
	$50 - $99				$100 and up			
		Percentile				Percentile		
	Mean	5^{th}	95^{th}	% Sig	Mean	5^{th}	95^{th}	% Sig
Constant	-2.556	-82.283	77.279	97.9	-0.897	-17.586	11.668	95.0
Inv Dist to Pub Housing	6.471	-301.447	345.731	95.1	0.536	-38.350	49.507	92.9
Δ in Pop Density	0.221	-2.597	3.212	95.8	0.031	-0.399	0.495	90.9
Δ Shr of Nonwhite People	0.497	-13.034	14.316	95.0	-0.020	-3.070	2.291	91.7
Δ Shr of Homeownership	-0.086	-1.440	1.198	95.7	0.071	-0.230	0.596	92.3
Δ Shr of Multifamily Units	-0.221	-1.438	0.934	96.0	0.020	-0.196	0.145	93.2
Δ Shr Overcrowded Units	0.684	-10.829	14.731	95.4	0.009	-2.209	1.980	89.4
Δ Shr Units Maj Repair	0.023	-2.007	1.921	95.5	-0.020	-0.324	0.270	90.1
Bandwidth	44.511	12	226		56.453	12	389	

Notes.