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Measuring the consequences of promoting inner city homeownership

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Abstract

This paper examines low- and moderate-income households in the City of Philadelphia who are becoming homeowners for the first time. We examine two Nehemiah developments subsidized by the City of Philadelphia that offer newly constructed homes at well-below cost. This paper uses a unique survey of these new owners to measure what Nehemiah residents gain in terms of structure and community attributes as they make the transition from renting to owning. The new owners in the Nehemiah complexes significantly improve their housing structures while raising their exposure to crime and weak local public schools. As part of the City's community development strategy, these developments were expected to increase economic activity near these sites. We document that there is no evidence of local benefit spillovers for census tracts where the Nehemiah developments were built. Our survey results suggest that the new housing developments represent an "oasis" where there are few interactions between the new homeowners and the incumbent residents of the greater community.

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1. Introduction

Homeownership has long been the centerpiece of US housing policy. As a society, we have created many policies to promote homeownership, such as the mortgage interest deduction for federal income tax, mortgage insurance, and direct subsidies to lower income households. A major rationale for these policies is the conviction by many that homeownership builds better citizens and communities by giving residents a stake in those communities.¹

This paper examines low- and moderate-income households in the city of Philadelphia who are becoming homeowners for the first time. The City of Philadelphia has made a strong commitment to promoting homeownership as part of its overall community development strategy (see OHCD, 1997b). The City provides people-based subsidies for homeownership through its Settlement Grant program, which offers qualifying households up to \$1000 to help cover closing costs to purchase a home. In addition, the City provides place-based subsidies, which we focus on in this paper. We examine two Nehemiah developments subsidized by the City that offer newly constructed homes at well-below cost – West Philadelphia Nehemiah and West Poplar Nehemiah. With these place-based programs, the hope is that the housing will not only provide quality residences for its occupants, but also stimulate new investment in the area. Both Nehemiah developments are located in very distressed neighborhoods.²

This paper focuses on the private and social gains from moving to these new housing complexes. For the minority middle class households who move into these two Nehemiah developments, what do they gain in terms of structure and community attributes? How do these attributes differ from what they consumed as renters? Most Nehemiah residents also receive a Settlement Grant to cover closing costs. For each Nehemiah participant, the alternative to moving into these developments would have been to use that grant to purchase a house elsewhere in the City of Philadelphia. We examine the community and structure consumption choices of black non-Nehemiah Settlement Grant recipients. They represent a “control group” to help us measure the net gains from participating in the place-based program.

The data assembled for this study permit a unique opportunity to examine the progress made by new homeowners in terms of structure and community

¹ There is little empirical evidence of the connection between homeownership and “good citizenship.” DiPasquale and Glaeser (1999) find some connection between homeownership and good citizenship as measured by involvement in local politics and non-profit organizations. Green and White (1997) report evidence of greater educational attainment among children of homeowners relative to children of renters.

² Encouraging middle class households to move to high poverty areas is an alternative anti-poverty strategy to HUD’s Moving to Opportunity (MTO) program that encourages public housing residents to move to better neighborhoods. For an analysis of the Boston MTO program see Katz et al. (2000).

quality when they make the transition from owner to renter. We find that by choosing the Nehemiah developments, residents move to considerably worse communities than their renter neighborhoods. While our results indicate that the gains in structure are larger than the losses in community quality, the estimated dollar increase in housing consumption by Nehemiah residents is substantially lower than the public subsidies used to build to these projects.

As part of the City's community development strategy, these developments were expected to increase economic activity near these sites. If these projects generate spillovers, we would expect to see an increase in real estate prices near these sites. We estimate hedonic price regressions to measure whether Nehemiah's construction is capitalized into home prices using data on all real estate transactions recorded in the city from 1986 to 1997. We found no evidence of benefits to the surrounding community.

Unlike previous hedonic evaluation studies, we use findings from our new survey to further explore why we observe little local spillovers. Our survey measures respondents' attitudes and perceptions of their new community. We find evidence consistent with the hypothesis that the Nehemiah developments are "oases." The middle class households who have moved to these high poverty census tracts seem to view the new complex as their community, and have little interaction with the surrounding area.

In Section 2, we provide a detailed description of the Nehemiah developments followed by an analysis of community choice in Philadelphia. In Section 4, we examine the characteristics of Nehemiah residents and their communities. In Section 5, we measure how moving to the Nehemiah developments affects a household's consumption of structure and community attributes. In Section 6, we test the hypothesis that the Nehemiah developments have improved adjacent local communities. We conclude with a discussion of the merits of placed-based housing subsidies as a tool in community development.

2. Nehemiah developments in the City of Philadelphia

The City of Philadelphia has long encouraged homeownership as part of its overall community development strategy. The first goal stated in the strategic plan developed by the Office of Housing and Community Development (OHCD) of the City of Philadelphia is "promoting homeownership and housing preservation." The plan states that, "to more effectively support economic development and reinvestment in Philadelphia, the City will continue to emphasize homeownership and preservation of the existing occupied housing stock" (OHCD, 1997b, p. 9).³

³ For an extensive discussion of the city's homeownership and community development strategies, see Kromer (1999).

Place-based programs such as the Nehemiah developments are designed to encourage reinvestment in inner city communities by making investments in specific developments. By revitalizing formerly declining central city areas, such programs may act as a magnet, attracting households and other investments that might have left the neighborhood in the absence of the incentives. In this paper, we focus on two housing developments supported, in part, by the City: West Poplar Nehemiah and West Philadelphia Nehemiah. The Nehemiah developments offer newly constructed units to qualified households at prices substantially lower than construction costs.

The Nehemiah Housing Opportunity Grants Program (NHOP) is a national program created under Title VI of the National Housing and Community Development Act of 1987. Under the program, HUD is authorized to make grants to non-profit organizations to provide loans to families purchasing homes that are constructed or substantially rehabilitated in accordance with a HUD-approved program. The non-profits sponsoring the developments are responsible for marketing and allocating the units, with federal guidelines regulating such things as eligibility and fair housing rules. By 1998, 1874 units had been completed nationwide.⁴

The West Poplar Nehemiah project received funding from the NHOP program. The West Philadelphia project borrows the Nehemiah name, but did not receive any NHOP funding. Both of these new-construction projects received subsidies from the City of Philadelphia, including direct expenditures for some land acquisition and site improvements. West Philadelphia Nehemiah is at the corner of 46th and Market Streets, built on a 10 1/4-acre site at the edge of University City. It is across the street from a medical building, formerly the Institute of Pennsylvania Hospital; a tall fence separates it from nearby public housing high-rises. The developer is the Philadelphia Interfaith Action (PIA), a private non-profit coalition of 43 religious institutions from across the metropolitan area.

The West Poplar project is in North Philadelphia, a few blocks north of the Convention Center and downtown area, at N. 12th, N. 13th, Poplar and Ogden Streets. The site is also near Yorktown, a community in North

⁴ The loans may not exceed \$15,000, must be interest free, must be secured by a second mortgage held by the HUD Secretary, and are repayable to the Secretary upon the sale, lease or transfer of the property. HUD funds must be applied to the purchase price of the home and HUD funds may not be used to provide the downpayment. The statute and regulations require that the eligible homebuyer make a downpayment equal to 10% of the purchase price, unless a local or state government holds the first mortgage under a home-loan program of that unit of government. If such a program provides the mortgage, the homebuyer must pay whatever downpayment is required under that government's program (this may be less than 10%). The grantee would need HUD approval to allow the use of the state or local government program. (Source: Authors' correspondence with staff in the Office of Policy, Development and Research at the US Department of Housing and Urban Development.)

Table 1
Nehemiah projects

	West Philadelphia (PIA)			West Poplar			Total for both projects		
	Total number of units = 135			Phases I (75 units) & II (101 units) Total number of units = 176			Total number of units = 311		
	No. of units	Per unit	Totals	No. of units	Per unit	Totals	No. of units	Per unit	Totals
Costs									
Bricks and Mortar	135			176			311		
Construction		67,053	9,052,161		104,050	18,312,743		87,990	27,364,904
Prof. & Mgt		4,692	633,395		13,823	2,432,800		9,859	3066,195
Holding costs		3,096	417,968		1,257	221,240		2,055	639,208
Financing costs		1,012	136,587		1,932	339,970		1,532	476,557
Bricks and Mortar subtotal		75,853	10,240,111		121,061	21,306,753		101,437	31,546,864
Land and site improvements									
Public improvements*		19,259	2,600,000		4,602	810,000*		10,965	3,410,000*
Land acquisition		12,624	1,704,250		37,744	6,642,860		26,840	8,347,110
Land and site subtotal		31,883	4,304,250		42,346	7,452,860		37,804	11,757,110
Total costs		107,736	14,544,361		163,407	28,759,613		139,241	43,303,974

Resources

Sales proceeds

Unit type

Three bedrooms

58	49,500	2,871,000	64	57,000	3,648,000	122	53,434	6,519,000
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39	50,500	1,969,500	11	60,000	660,000	50	52,590	2,629,500
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8	51,000	408,000	44	60,000	2,640,000	52	58,615	3,048,000
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11	52,000	572,000	57	63,000	3,591,000	68	61,221	4,163,000
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Four bedrooms

16	55,000	880,000				16	55,000	880,000
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3	56,000	168,000				3	56,000	168,000
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Total sales proceeds	135	50,878	6,868,500	176	59,881	10,539,000	311	55,973	17,407,500
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Subsidies

Federal Nehemiah funds					15,000	2,640,000		8,489	2,640,000
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Additional public subsidy		56,858	7,675,861		88,526	15,580,613		74,780	23,256,474
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Total subsidies		56,858	7,675,861		103,526	18,220,613		83,268	25,896,474
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Source. Memos from redevelopment authority of the City of Philadelphia, February–April 2000.

* Public improvements totals do not include West Poplar Phase II figures, which are not finalized.

Philadelphia of over 600 single family homes built in the 1960s with substantial federal funds. The current development covers over 10 acres. Related City improvements included adding and reconfiguring some streets. The development includes a new village green and borders an existing church.

Construction on the West Philadelphia project began in 1994 and was completed in the fall of 1997. Households began moving into the development in 1995. As shown in Table 1, the project consists of 135 units; 116 of the units have three bedrooms and 19 have four bedrooms. Homebuyers paid \$49,500–52,000 for the three-bedroom units and \$55,000–56,000 for the four-bedroom units.⁵ As shown in the Table, homebuyers paid significantly less for these homes than the cost of producing these units. The Redevelopment Authority estimates the “bricks and mortar” costs at \$75,853 per unit, with total land costs and site improvements adding another \$31,883 in costs. The total costs of these units averaged \$107,736 per unit, with sales proceeds averaging \$50,878 and public subsidies averaging \$56,858 per unit.

The West Poplar project has received funding under the NHOP program as well as additional funding from the City. The project was developed in two major phases; construction of the 75 units in the first phase began in 1996 with households beginning to move into these units that year. The second phase consists of 101 units. All the units have three bedrooms. Prices for these units range from \$57,000 in Phase I to \$63,000 for the last units in Phase II. As shown in Table 1, the costs of producing these units are also considerably higher than these purchase prices. The Redevelopment Authority estimates the “bricks and mortar” costs at \$121,061 per unit, with land and site improvement costs adding \$42,346 per unit. The total costs of these units averaged \$163,407 per unit, with sales proceeds averaging \$59,881 and public subsidies averaging \$103,526 per unit. As shown in Table 1, 14.5% of these subsidies came from NHOP, about \$2.64 million total. Total costs per unit of the West Poplar development are 50% higher than for West Philadelphia. Likewise, the public subsidies per unit are almost twice those used in the West Philadelphia project.

3. Community choice in the City of Philadelphia

Nehemiah housing units are brand new but the complexes are located in some of the highest poverty census tracts in the city. To compare community

⁵ House prices in Philadelphia are quite low when compared to other large American cities. In 1997, we estimated an average quality controlled house price of \$41,211; in the poorest census tracts in the city we estimate an average quality controlled house price of \$22,565. The poorest tracts are the 25% of the tracts with the lowest median household income. For a detailed discussion of this analysis, see Cummings et al. (2001).

quality in these tracts relative to the tracts that non-Nehemiah first time homebuyers choose, we have collected information for each of the 350 census tracts in the City of Philadelphia. Each census tract contains roughly 4000 people. We constructed data on each tract's average school quality, exposure to crime, distance to the Central Business District and characteristics of tract residents.

Table 2 reports Philadelphia residents' exposure to different measures of community attributes. Using 1990 Census data, we calculate the weighted average of tract attributes using household shares by race as the weights. The table reports average exposure for all people, people who live in the Nehemiah tracts, and blacks and whites separately. We measure school quality by the average percentage of eighth graders who scored above the state median on the state standardized math test, using the public schools serving students in each census tract.⁶ We also include the average class size, using the number of students per teacher.

The average City of Philadelphia household lives in a census tract where 12% of eighth graders, on average, scored above the state median math score. In the census tracts that house the Nehemiah projects only 2.6% of eighth graders score above the state median in math. The average white lives in a census tract where 17.3% of children scored above the median while the average black lives in a census tract where 5.5% of children scored above the median.

Crime is measured by the average murders for 1994 and 1995 that occurred within each census tract per 1000 in population. We average the 1994 and 1995 murder rates in an attempt to mitigate the effect of a fluke tragedy in a generally safe community. As shown in Table 2, the average census tract experienced 0.28 murders per 1000 of population.⁷ The data indicate that households living in Nehemiah tracts are exposed to considerably higher murder rates. The average black household lives in a tract that has a murder rate that is four times greater than the average white

⁶ These test scores are available from the Pennsylvania Department of Education website (www.pde.psu.edu/esscores.html). For this analysis, we had test scores for the 90 schools in the Philadelphia School District that included eighth grade. Scores for individual schools range from 0 to 99 (only three had scores above 33). Private and parochial schools do not provide scores for these tests. Using maps provided by the school district, we assigned each public school with an eighth grade to the census tracts they served. If more than one school served a tract we assigned that tract the average of the test scores for those schools weighted by enrollment. Regional or district-wide schools where admission is not determined by a student's home address, such as exam schools or charter schools, were excluded from these calculations.

⁷ Data are from the Philadelphia Police Department Homicide Division and are available at www.philly.com; the information provides the address for each murder that occurred in the city. We geocoded these addresses to get murder rates in each census tract per 1000 in population.

Table 2
Differentials in community characteristics

Census tract attribute	Demographic group			
	All	Nehemiah tracts	Blacks	Whites
% white	52.3%	4.1%	13.0%	83.6%
% black	39.4%	91.6%	81.8%	9.8%
% college graduates ¹	14.7%	5.5%	11.3%	17.6%
% homeowners	63.3%	23.5%	59.8%	66.8%
% in poverty	20.5%	57.9%	27.8%	13.0%
Murders per 1000 people	0.275	0.861	0.452	0.117
Public school quality ²	12.0%	2.6%	5.5%	17.3%
Average class size ³	19.1	19.8	19.9	18.4
% commercial real estate ⁴	11.1%	28.9%	11.0%	11.2%

This table is constructed by taking census tract level data and calculating weighted means using each demographic group's tract count as the weights.

Sources. Pennsylvania Department of Education; Philadelphia Police Department Homicide Division; 1990 Census; the Philadelphia Board of Revision and Taxation; and authors' calculations.

¹ Percent of adults 24 and older who have bachelor's degrees.

² Percent of eighth grade students scoring above state median in math tests.

³ Total number of students per teacher.

⁴ Percent of total building area used for commercial space.

but the average black household lives in a tract with 50% fewer murders than the Nehemiah tracts.⁸

We measure the socio-economic status of neighbors by using the tract's percent of adults who have college degrees. As shown in Table 2, for the average Philadelphia census tract, 15% of its population over age 24 has a college degree. The tracts that house the Nehemiah developments have far fewer college graduates. As would be expected, the poverty rate in the Nehemiah tracts is much higher. The average black lives in a tract with a poverty rate of 27.8% while the average Nehemiah tract resident is exposed to a poverty rate of 57.9%. The average white lives in a tract featuring a poverty rate of 13.0%.

Community quality is not just a function of service provision and neighbor quality. Shopping opportunities and access to jobs are other relevant

⁸ Murder may be viewed as a narrow measure of crime. We use murder because murder data are available by address of the crime, allowing us to geocode these data to construct murder rates by census tract. These data provide a rare opportunity to examine differences in crime rates across very small geographic areas that closely mimic neighborhood boundaries. Broader measures of crime such as violent crime or property crime, as defined by the FBI's Uniform Crime Reports, are available by police districts. However, there are only 26 police districts in the city, which would force us to aggregate 365 census tracts to the district level, losing a great deal of neighborhood detail. We used the district level data to test how well murder works compared with broader measures of crime. Those results suggest that murder is a good proxy for crime (see Cummings et al., 2001).

criteria. The Philadelphia Board of Revision of Taxes provided an inventory of all properties in the city. From these data, we calculate the percent of building area in each census tract used for commercial purposes (not including industrial uses).⁹ On average, 11% of real estate in a Philadelphia census tract is commercial; in the Nehemiah neighborhoods, 29% of real estate is commercial.

4. Who are Nehemiah homebuyers and how do the Nehemiah areas compare to the rest of the city?

We are especially interested in how a family's quality of life is affected by switching from renting to owning. This "before/after" comparison requires special data. We have data on over 8000 households that participated in the Settlement Grant program from 1993–97. These non-Nehemiah Settlement Grant recipients represent a "control group" to help us measure the net gains from participating in the place-based Nehemiah program. For each of these households we observe some demographic attributes and the census tract chosen. For roughly 4000 of these households, we also know their origin census tract.¹⁰

Table 3 presents some basic demographic information on over 8000 new Philadelphia homeowners who participated in the Settlement Grant program. This includes 86 grant recipients who bought homes in either the West Philadelphia or West Poplar Nehemiah projects. All 86 grant recipients who live in these developments are black. As shown in the Table, females head 75.6% of these households. When they purchased their homes, these households had a median household income of \$25,379 (in 1998 dollars), which is 30.5% higher than the median income of Settlement Grant recipients. They paid \$49,129 for the homes and made a downpayment of \$1280, on average. Over 90% of Nehemiah households changed census tracts when they moved to these developments; on average, they moved 2.2 miles from their previous homes, farther than the average Settlement Grant household. The 76 households that changed census tracts when they moved came from 54 census tracts.

Nehemiah residents, on average, came from significantly better neighborhoods than the Nehemiah neighborhoods as shown in Table 4. The census tracts that house the Nehemiah developments have populations with

⁹ Some other variables that would be useful in evaluating the impact of commercial space on community quality include such measures as vacant land and abandoned buildings as well as retail sales. Unfortunately, these data were not available by census tract.

¹⁰ OHCD provides an analysis of Settlement Grant participants in OHCD (1997a). Newburger (1999) worked with a subset of this data set to explore search method differences between whites and blacks and to document the income and racial attributes of the census tracts that program participants were entering and exiting.

Table 3

Household characteristics from Settlement Grant Program Data, 1993–1997 (status at time of grant application)

	Settlement Grant recipients			Nehemiah
	All ¹	White	Black	All ²
Percent of households	100.0%	19.8%	46.1%	1.1%
Mean household size	3.0	2.6	2.9	2.9
Percent female-headed household	64.2%	51.1%	72.7%	75.6%
OHCD median household income (98 dollars)*	\$19,448	\$21,643	\$21,405	\$25,379
OHCD median house price (98 dollars)*	\$42,654	\$46,750	\$44,992	\$49,129
OHCD median downpayment (98 dollars)*	\$1,239	\$1,523	\$1,263	\$1,280
Percent who changed tracts	80.8%	70.5%	85.5%	90.5%
Distance moved (miles) ³	1.88	1.42	2.30	2.19

Notes. Based on 8,059 households with address information.

Source. Settlement Grant recipient data, the Office of Housing and Community Development of the City of Philadelphia.

¹ 113 households did not identify race.

² All 86 Nehemiah households had black heads-of-house.

³ Distance from center of previous tract to center of current tract.

* Household income, house price, and downpayment are as reported by OHCD at time of grant, converted to real dollars. These values may vary from values reported by households in authors' survey.

considerably lower incomes, lower house values, less education, and lower homeownership. The Nehemiah households moved to census tracts that were much more racially segregated. Black non-Nehemiah households moved to tracts where a larger portion of the population was white and that were further from the city center.

Table 5 focuses on the local public goods consumption for Settlement Grant participants. Note that Table 2 is based on the population of the entire city in 1990. Relative to other black Settlement Grant participants, new owners in the Nehemiah developments are exposed to poorer schools, a three times greater murder rate, 50% fewer college graduates as neighbors and are significantly closer to the center city. Nehemiah tracts do feature significantly more commercial real estate than the tracts where the average non-Nehemiah black resides.

To study how the transition from renting to owning affects black versus white consumption of local public goods, in Table 6 we report mean consumption before and after the move. Through switching tenure and community, blacks significantly increase the quality of their local schools and reduce their exposure to murder. White households also move to areas with slightly better schools and lower crime. Despite the fact that settlement grant recipients have roughly equal income, new white owners live in census tracts featuring better

Table 4
Comparison of renter (origin) and owner (destination) neighborhoods by race

	Settlement Grant				Nehemiah	
	All		Black		Renter (origin)	Owner (destination)
	Renter (origin)	Owner (destination)	Renter (origin)	Owner (destination)		
Mean distance from old census tract (miles)		1.89 (2.01)		2.30 (2.24)		2.19 (2.07)
Portion of census tract population that is White	38.9% (37.5)	60.3% (36.8)	20.7% (28.0)	43.1% (37.0)	15.1% (22.8)	3.5% (2.8)
Mean distance from City Center (miles)	4.42 (2.14)	5.10 (1.97)	4.49 (2.08)	5.26 (1.82)	3.31 (1.85)	2.37 (0.94)
Median census tract household income (98 dollars)	\$25,334	\$29,143	\$25,972	\$29,553	\$21,829	\$10,894
Median census tract house value (98 dollars)	\$46,074	\$50,590	\$46,441	\$49,890	\$49,288	\$30,624
Median census tract monthly rent (98 dollars)	509	531	508	539	450	196
Mean homeownership rate	62.9% (16.6)	72.1% (11.7)	59.8% (17.8)	69.9% (13.0)	46.0% (24.1)	26.1% (12.8)
Mean percent of adults in census tract with BAs	9.0% (9.9)	8.5% (6.3)	11.2% (11.4)	10.1% (7.0)	13.8% (16.4)	5.0% (1.4)

Notes. N = 4,517 Settlement grant and Nehemiah households for whom old and current tracts are known. Standard deviations are in parentheses.

Sources. Settlement Grant recipient data; Office of Housing and Community Development of the City of Philadelphia; and 1990 Census.

Table 5
Community quality exposure for city and for Settlement Grant and Nehemiah households

		City as a whole	Settlement Grant households ¹		Nehemiah households
			All	Black	
School test scores	Percent of eighth grade students scoring above the state median on math tests	12.0%	10.4%	9.3%	2.7%
		(10.4)	(0.7)	(6.7)	(1.0)
School class size	Total student enrollment divided by number of teachers	18.9	19.8	20.5	20.6
		(2.2)	(2.5)	(2.5)	(3.6)
Crime	Number of murders per 1000 population	0.34	0.28	0.32	0.89
		(0.75)	(0.32)	(0.31)	(0.55)
Education	Percent of adults over 24 who have BAs	17.9%	8.4%	10.1%	5.0%
		(0.2)	(0.1)	(0.1)	(0.0)
Commercial space	Percent of total building area used for commercial space	13.7%	9.0%	10.1%	30.0%
		(0.2)	(0.1)	(0.1)	(0.1)
Distance from city center	Miles from center of tract to City Hall	5.2	5.1	5.2	2.4
		(3.0)	(1.9)	(1.8)	(0.9)
Observations ²		350	7,973	3,762	86

Notes: For households columns, number of observations are households of each category in OHCD grant data. Values in household columns reflect average tract values for tracts with OHCD households of each race, weighted by number of households of that race per tract.

Sources: Pennsylvania Department of Education; Philadelphia Police Department Homicide Division; 1990 Census; the Philadelphia Board of Revision of Taxes; and Settlement Grant recipient data, the Office of Housing and Community Development of the City of Philadelphia.

¹ Three hundred and ninety-two households did not identify race.

² Number of observations for city is 350 census tracts with data on all six measures.

schools, and much lower murder rates than blacks. Tables 4 and 5 showed that Nehemiah tracts feature low quality community attributes.

5. Survey of Nehemiah residents and Settlement Grant recipients

Unfortunately, the Settlement Grant database includes no information on the home's physical attributes. Using information from the Settlement Grant program and the Nehemiah housing developments, we surveyed 476 households (400 Settlement Grant recipients and 76 Nehemiah residents).¹¹

¹¹ Between November 1998 and January 1999, The Response Center, a Philadelphia-based market research firm, called both Settlement Grant and Nehemiah households to conduct the survey. In order to get a reasonable sample size for our analysis, we over-sampled the Nehemiah residents because the total number of project residents was small. For a thorough discussion of the survey process and a copy of the survey instrument see Cummings et al. (2001).

Table 6
Changes among community quality variables for Settlement Grant recipients in becoming owners

	All		White		Black	
	Renter	Owner	Renter	Owner	Renter	Owner
<i>Average for all households</i>						
Math scores ¹	8.1	10.5	13.6	14.2	6.4	9.3
Class size ²	19.3	19.8	18.1	18.1	19.9	20.5
Murder rate per 1000 persons	0.42	0.28	0.16	0.11	0.44	0.33
Education level ³	0.09	0.08	0.09	0.08	0.11	0.10
Commercial space ⁴	0.10	0.09	0.10	0.08	0.11	0.10
Distance from City Hall (miles) ⁵	4.4	5.0	5.0	5.3	4.4	5.2

Notes. Based on 4,425 households, for whom both previous and current census tracts are known; 819 white, 2,196 black, 1,171 hispanic, and 239 other.

Sources. Pennsylvania Department of Education; Philadelphia Police Department Homicide Division; 1990 Census; the Philadelphia Board of Revision and Taxation; Settlement Grant recipient data, The Office of Housing and Community Development of the City of Philadelphia; and authors' calculations.

¹Percent of eighth grade students scoring above state median in math tests.

²Total number of students per teacher.

³Percent of adults 24 and older who have BAs.

⁴Percent of total building area used for commercial space.

⁵Miles from center of tract to City Hall.

This survey provides more detailed information on structure and community characteristics than standard census data. Unlike census-based or American Housing Survey studies, our survey provides a detailed picture of the quality of life for new homeowners before and after the move, identifying how much households upgrade their housing structures and their communities.

In Table 7, we report basic demographic summary statistics for Nehemiah and non-Nehemiah households. In our survey, 23% of Settlement Grant households are white and 57% are black.¹² The average household has 3.4 members; 79% have children under age 18. Settlement Grant recipients in our survey have a median income of \$27,500; median income for white households is \$32,500 and \$27,500 for black. As shown in Table 7, Nehemiah households had a median household income of \$37,500, 36% higher than the incomes for the average black Settlement Grant recipient. The median house prices and downpayment amounts are also significantly higher than those for grant recipients. The average household size is 2.8, with 58% of these households having children under age 18; 45% are female-headed households. Of the 76 survey respondents living in the Nehemiahs, 75 indicated that they are black and 1 refused to provide her race.

¹² Household race is defined as the race of the person taking the survey, who by definition was a key decision-maker in buying the home.

Table 7

Survey data: survey household characteristics (status at time of survey, 1998–99)

	All ¹	White	Black	Nehemiah
Percent of households	100.0%	23.0%	57.0%	
Household size	3.4	3.3	3.4	2.8
Percent female-headed household	43.8%	31.5%	55.3%	44.7%
Age of householder	34.4	32.9	35.5	41.4
Percent with children in house (any relation)	79.3%	73.9%	82.0%	57.9%
How many children under 18 in house	2.3	1.5	2.3	1.0
Number of adults in house	1.7	1.9	1.6	1.8
Number of adults with B.A. in house	0.2	0.3	0.3	0.5
Survey median household income (98 dollars)*	\$27,500	\$32,500	\$27,500	\$37,500
Survey median house price (98 dollars)*	\$40,612	\$48,590	\$39,493	\$52,500
Survey median downpayment (98 dollars)*	\$2,500	\$2,557	\$2,500	\$3,080
Years lived in Philadelphia	26.9	26.1	29.8	33.1
Percent who changed tracts	82.9%	72.7%	83.3%	87.1%
Percent who stated that they changed neighborhoods	59.0%	42.9%	63.4%	57.3%
Distance moved (miles) ²	1.9	1.7	2.0	1.9

Notes. Based on 400 Settlement Grant recipient households. Standard deviations are in parentheses.

Source. Authors' survey.

¹ Thirty-two households did not identify race.

² Distance from center of previous tract to center of current tract.

* Household income, house price, and downpayment are as reported by survey respondents at the time of the survey, in 1998 dollars. These values may vary from values reported by households to the OHCD at time of grant.

Table 8 compares the averages for housing structure attributes that Settlement Grant and Nehemiah households consumed as renters and as owners. Nehemiah households increased the number of rooms, bedrooms, and bathrooms, and most gained off street parking, and central air conditioning by moving into the Nehemiah complexes. Settlement grant households paid a median price of \$39,493 for their homes. They also increased their rooms, bedrooms, bathrooms, and parking access, though to a somewhat lesser extent. The vast majority of these homes are older than 20 years and are single-family attached houses. Only 11% of these units have air conditioning and 42% have a garage. 21% of those surveyed complained about structural defects such as leaks. Virtually all Settlement Grant recipients and Nehemiah households surveyed are satisfied with their new homes.

While Nehemiah households enjoy structure gains, they have made community sacrifices. Evidence that they have moved to worse communities is presented in Table 9, echoing the findings in Table 4. Surveyed Nehemiah residents' impressions certainly indicate that they have problems with the location. Only 26% of residents rated the local schools as good; 66% have

Table 8

Survey data: structure characteristics for Settlement Grant recipients and Nehemiah residents (comparison of renter and owner houses)

	Settlement Grant recipients (322 households surveyed)				Nehemiah residents (62 households surveyed)	
	All		Black		Renter	Owner
	Renter	Owner	Renter	Owner		
Median house price (98 dollars)		\$39,493		\$39,493		\$53,102
Rooms	6.26 (2.33)	7.63 (1.60)	6.31 (2.48)	7.83 (1.55)	6.17 (2.11)	7.60 (1.19)
Beds	2.55 (1.10)	3.02 (0.65)	2.61 (1.12)	3.10 (0.62)	2.37 (0.96)	3.16 (0.41)
Baths	1.20 (0.48)	1.34 (0.55)	1.21 (0.52)	1.37 (0.56)	1.16 (0.37)	2.02 (0.38)
% built 1980 or later	7.92% (27.07)	8.15% (27.41)	8.77% (28.41)	11.18% (31.62)	7.55% (26.7)	100.00% (0.0)
Air conditioning	9.94% (29.96)	11.18% (31.56)	9.14% (28.90)	10.22% (30.37)	11.29% (31.9)	100.00% (0.0)
Garage	26.17% (44.02)	42.06% (49.44)	22.04% (41.57)	42.16% (49.52)	14.52% (35.5)	93.55% (24.8)
Single family	78.26% (41.31)	100.00% (0.00)	78.49% (41.20)	100.00% (0.00)	67.74% (47.10)	100.00% (0.00)
Detached single family	9.13% (28.86)	7.52% (26.42)	8.22% (27.56)	8.11% (27.37)	16.67% (37.7)	3.28% (18.0)
Attached single family	90.87% (28.86)	92.48% (26.42)	91.78% (27.56)	91.89% (27.37)	83.33% (37.7)	96.72% (18.0)
Soundproof walls	28.16% (45.05)	37.09% (48.38)	28.33% (45.19)	34.09% (47.54)	37.70% (48.9)	63.79% (48.5)
Problems with leaks	33.65% (47.32)	21.18% (40.92)	39.34% (48.99)	21.08% (40.90)	58.06% (49.7)	19.35% (39.8)
Electrical problems	18.81% (39.14)	13.66% (34.40)	20.65% (40.59)	14.52% (35.32)	29.51% (45.99)	8.06% (27.45)
Unsatisfied with house	NA ¹	3.74% (19.00)	NA ¹	3.23% (17.72)	NA ¹	1.61% (12.7)
New house is better than old	NA ¹	76.19% (42.66)	NA ¹	78.14% (41.44)	NA ¹	85.48% (35.5)

Notes. Standard deviations are in parentheses.

Source. Authors' survey of Settlement Grant recipients for whom previous tract is known.

These are self-reported values.

¹Not available.

taken precautions against crime and 84% indicate that litter and abandoned buildings are a problem. Even with these problems, 65% of Nehemiah households said that they were satisfied with their neighborhood, the same percentage as that for Settlement Grant recipients. This high rate of neighborhood satisfaction, given the low satisfaction with local schools, neighborhood aesthetics, and crime control, may be due to several factors.

Table 9

Survey data: community characteristics for surveyed Grant recipients and Nehemiah residents (comparison of renter and owner neighborhoods)

	Settlement Grant recipients (322 households surveyed)				Nehemiah residents (62 households surveyed)	
	All		Black		Renter	Owner
	Renter	Owner	Renter	Owner		
<i>Census tract data¹: average tract values for household tracts</i>						
Homeownership rate	63.14% (17.86)	71.12% (12.57)	60.47% (18.25)	68.43% (13.47)	48.49% (21.99)	33.52% (7.78)
All stock that is commercial	10.21% (11.01)	8.99% (8.76)	11.11% (12.65)	9.72% (10.51)	16.28% (0.20)	35.87% (0.08)
Adults who are college graduates	10.80% (10.87)	9.11% (6.17)	11.13% (10.68)	9.53% (5.89)	14.49% (17.20)	5.90% (1.69)
Median tract house value (98 dollars)	\$45,088	\$47,980	\$40,553	\$44,168	\$33,257	\$22,741
Median tract household income (98 dollars)	\$28,007	\$32,045	\$26,836	\$30,555	\$24,706	\$13,037
Poverty rate	25.06% (14.83)	19.09% (11.63)	26.41% (12.50)	21.31% (11.59)	31.93% (15.38)	53.40% (3.77)
Murder rate per 1000 persons	0.37 (0.35)	0.30 (0.32)	0.44 (0.36)	0.40 (0.36)	0.50 (0.38)	0.69 (0.24)
White population	41.34% (38.89)	56.34% (38.05)	22.14% (29.72)	38.03% (36.22)	15.42% (25.26)	2.26% (1.68)
Black population	47.92% (40.68)	33.42% (39.16)	71.97% (32.67)	52.02% (40.26)	79.37% (31.33)	95.78% (4.57)
Hispanic population	8.05% (17.01)	6.31% (12.45)	3.71% (9.84)	5.79% (11.56)	3.13% (9.77)	1.39% (2.09)
Students scoring above state median in math	8.90% (7.73)	10.42% (7.53)	6.72% (5.63)	8.41% (6.14)	5.41% (6.54)	2.19% (0.50)
School class size	19.30 (2.20)	19.56 (2.54)	20.05 (2.00)	20.28 (2.16)	20.71 (2.47)	22.64 (2.21)
Distance from City Center ²	4.57 (2.34)	5.08 (2.06)	4.51 (1.97)	5.06 (1.82)	3.41 (1.65)	2.87 (0.60)
<i>Survey data: average household values³</i>						
Satisfied with neighborhood	NA ⁴	65.11% (47.74)	NA ⁴	62.90% (48.44)	NA ⁴	64.52% (48.24)
New neighborhood better than old	–	68.28% (46.66)	–	71.43% (45.37)	–	68.57% (47.10)
Litter/abandoned buildings/etc. a problem	NA ⁴	67.92% (46.75)	NA ⁴	66.85% (47.20)	NA ⁴	83.61% (37.33)
Current neighborhood more attractive than old neighborhood	–	58.06% (49.48)	–	60.50% (49.09)	–	62.86% (49.02)
Take crime precautions	27.95% (44.95)	56.21% (49.69)	32.80% (47.07)	58.06% (49.48)	35.48% (48.24)	66.13% (47.71)
Schools are good	NA ⁴	54.20% (49.91)	NA ⁴	52.63% (50.08)	NA ⁴	25.53% (44.08)

Table 9 (continued)

	Settlement Grant recipient (322 households surveyed)				Nehemiah residents (62 households surveyed)	
	All		Black		Renter	Owner
	Renter	Owner	Renter	Owner		
Schools in current neighborhood are better than in old neighborhood	–	51.61 (50.11)	–	55.46% (49.91)	–	25.71% (44.34)
Distance from old census tract ⁵	–	1.90 (2.01)	–	1.96 (1.99)	–	1.92 (1.93)

Notes. Standard deviations are in parentheses.

Sources. Census 1990; Philadelphia Police Department Homicide Division; Pennsylvania Department of Education; and authors' survey of 322 Settlement Grant recipients for whom previous tract is known.

¹From Census 1990, except murder rates, math scores, and tract distance measures. Includes 147 tracts weighted by the number of Grant recipient households per tract. Households include only those for whom previous tract is known.

²Distance in miles from center of tract to center of tract #5, where City Hall is.

³These are self-reported values.

⁴Not available.

⁵Distance in miles from center of previous tract to center of current tract.

A smaller portion of Nehemiah households have school-aged children than Settlement Grant households, which may decrease concern over school quality. In addition, over half of Nehemiah residents indicated that it was very important to them that their new home was in a development with lots of new homes. These households may view their neighborhood primarily as the Nehemiah development and see the surrounding area included in the census tract as less important.

While Nehemiah households clearly gained more housing structure amenities from becoming homeowners than their Settlement Grant counterparts, they moved to communities with far fewer neighborhood amenities. Comparisons of Nehemiah and Settlement Grant neighborhoods, for both black and all households, indicate that Nehemiah neighborhoods have much greater poverty rates and considerably lower average house prices, income, and homeownership rates. Their new neighborhoods are more segregated; unlike the neighborhoods of Settlement Grant recipients, the Nehemiah communities are virtually all black.

Nehemiah offers a mixed opportunity: excellent structure in a low quality of life community. The price paid by Nehemiah residents to purchase these units is substantially lower than construction costs as shown in Table 1. Clearly, these homes would not be built without the substantial public subsidy, which suggests that the market value of these homes is substantially lower than total development costs. We can estimate the market value using

a standard hedonic approach. One advantage of our survey sample is that we collected considerably more information on structure characteristics than available from standard census sources. Table 10 presents this survey-based hedonic, which we use to estimate the predicted market price for Nehemiah homes given their observed characteristics. Our price estimates indicate that, all else being equal, the average estimated market value for the Nehemiah homes is 23% less than the average purchase price (residents' out of pocket costs) of these homes. At first blush, our model's prediction that if Nehemiah residents tried to sell their units they could not

Table 10

Survey data: house price as a function of structure characteristics and community quality (regression model based on survey data on Settlement Grant recipients)

Dependent variable: log of price	
<i>Structure characteristics from survey data</i>	
Rooms	0.044* (0.016)
Baths	0.047 (0.034)
Air conditioning ¹	0.157* (0.071)
Garage ¹	0.143* (0.046)
Soundproof walls ¹	0.076* (0.036)
Problems with leaks ¹	-0.104* (0.050)
<i>Community characteristics from census data</i>	
% of students scoring above state median in math tests	1.044* (0.295)
Classroom size	-0.002 (0.007)
Murder rate per 1000 persons	-0.092 (0.074)
% of adults with BAs	1.425* (0.258)
% of total building area that is commercial	0.223 (0.207)
Miles from City Hall	0.019 (0.207)
Constant	9.829* (0.179)
Adjusted R-squared	0.376
Observations	313

Notes. Three hundred and thirteen non-Nehemiah Settlement Grant households in authors' survey with data on all variables. Standard errors are in parentheses.

Sources: Author' calculations using authors' Survey results and 1990 Census data.

* Asterisks are significant at 10% level.

¹ Dummy variables.

recoup their investment seems counterintuitive. But, it can be explained by the unusual circumstances of these two developments. First, such a unique housing product (brand new structure in two of the city’s worst neighborhoods) would attract atypical buyers. A household that places a very high value on structure attributes (structure lover) may view the opportunity to have a new home with a garage and central air conditioning at a price considerably lower than construction costs as worth the sacrifice in community. It may be that these residents do not plan to sell and instead value the consumption stream from the structure amenities. Second, our model may also undervalue these communities. Nehemiah residents may expect that the community is on the rise and thus current local human capital levels, crime levels and school quality levels are not reflective of where the community will be in a few years.

It is also possible that Nehemiah households have not engaged in an intensive search regarding the relative costs and benefits of different neighborhoods. Our survey asked households how many homes were considered, in how many neighborhoods, and whether they looked in the suburbs and what information sources they used in their search. As shown in Table 11, 15% of Settlement Grant households looked at homes in the suburbs. About 14% of blacks and whites searched in the suburbs. Twenty-six percent of Nehemiah households, though, looked in suburbs. The average Settlement Grant household looked at 7.1 homes, with white and black households looking at 8.0 and 7.1, respectively. Nehemiah residents looked at only

Table 11
Survey results: neighborhood search

	All	White	Black	Nehemiah
<i>Number of houses looked at</i>				
Range	1–80	1–80	1–60	1–15
Average	7.1	8.0	7.1	4.3
(Standard deviation)	(6.8)	(9.4)	(6.1)	(4.2)
<i>Number of Philadelphia neighborhoods looked at</i>				
Range	1–8	1–4	1–8	1–5
Average	1.4	1.2	1.4	1.4
(Standard deviation)	(0.88)	(0.66)	(0.98)	(0.99)
<i>Looked in suburbs</i>				
Average	14.8%	14.1%	14.5%	26.3%
(Standard deviation)	(35.50)	(35.02)	(35.26)	(44.33)
<i>Number of suburbs looked at</i>				
Range	0–4	0–2	0–4	0–4
Average	0.2	0.2	0.2	0.5
(Standard deviation)	(0.64)	(0.57)	(0.62)	(0.99)
Observations	400	92	228	76

Source. Author’s survey.

4.3 homes. On average, Settlement Grant households looked at homes in only one or two neighborhoods.

In our survey, Nehemiah households were considerably less likely to use realtors and much more likely to use friends/relatives, newspapers, neighborhoods organizations, and churches in their search. This is not surprising given that both Nehemiah projects were developed by non-profit community organizations that relied heavily on church networks to market the developments.

The differences in search may, at least in part, explain why Nehemiah households chose to buy their homes despite the obvious problems with their locations. The presence of discrimination in the housing market could also explain their locational choice. If minority households feel constrained in terms of their housing options, the Nehemiah developments would be more attractive. Our data provide no direct test of housing market discrimination. In our data, we found no evidence of the presence of price discrimination. Since housing discrimination can take many forms, we cannot determine the extent to which discrimination influenced the housing choices of Nehemiah residents.

6. Measuring the social benefits of Nehemiah

As shown in Tables 8 and 9, Nehemiah households sharply changed their housing consumption upon making the transition from renter owner. Based on the hedonic price regression reported in Table 10, we calculate that through subsidizing the Nehemiah development, the city has increased housing consumption of Nehemiah residents by \$10,496.¹³ This increase is quite small relative to the per-unit subsidies reported in Table 1. This implies that the city could have achieved the same increase in Nehemiah participant housing consumption at a much lower cost if it had simply given the program participants a cash rebate of \$10,496 to spend in the Philadelphia housing market. The city chose to subsidize the Nehemiah, at least in part, because it views these developments as playing an important role in revitalizing low quality of life communities. Thus, an important policy question is whether these Nehemiah projects have had a positive impact on the areas surrounding these developments.

A possible benefit for local residents near these developments is the impact of having new residents with incomes significantly higher than the average incomes in the neighborhood. Nehemiah residents have incomes that are on average close to three times that of the census tract median household

¹³ This calculation is based on calculating the market price of each housing attribute and multiplying this by the change in each housing attribute upon moving to the Nehemiah complexes. Defining p as the marginal price and Δq as the change in housing consumption, we calculate $p^* \Delta q$ and sum over the housing attributes.

income. Potentially, the presence of these residents could attract better commercial and shopping opportunities. There has been little evidence of this.

To document this, we have used City of Philadelphia deeds data on the price and quantity of real estate transactions by census tract by year. Our data cover every real estate transaction that took place in the City of Philadelphia between 1986 and 1997 provided by the Philadelphia Board of Revision of Taxation. We have full information on 146,053 arm's length home sales.¹⁴ These data are quite limited on structural attributes. Unfortunately, they do not include information on important standard measures such as the number of rooms, bedrooms, and baths. We know the total area of the lot, the height of the structure measured by number of stories, and whether or not the unit has a garage. In this data, the median price of homes purchased between 1986 and 1997 was \$54,604 (in 1998 dollars).

Through our analysis of the real estate transaction data, we have found no evidence that as the Nehemiah projects were built and sold that there was a growth in commercial real estate transactions or values in or adjacent to the Nehemiah census tracts. Specifically, there have been virtually no private market commercial transactions in the Nehemiah census tracts or in adjoining and nearby tracts.¹⁵ In fact, we find that the level of real estate activity and the trends in real estate prices in the Nehemiah tracts resemble those in other poor tracts in the city.

To more carefully document the impact of the Nehemiah developments on the surrounding real estate market, we estimate hedonic home price regressions to compare price appreciation in Nehemiah census tracts versus two sets of control tracts. The first control group is the set of census tracts that have poverty rates greater than 50% and are located more than 1.2 miles away from the nearest Nehemiah census tract. We chose this group in order to compare trends in the Nehemiah area to other poor tracts in the city. These tracts are similar to the Nehemiah tracts in terms of poverty rates but far enough away that they are unlikely to be influenced by the Nehemiah developments. The second control group is the set of census tracts that share a border with at least one Nehemiah tract. By definition, these tracts are very close to the Nehemiah tracts and may represent the best control group. We estimate two hedonic regressions using the sales transaction micro data that have the following form:

¹⁴ Arm's length excludes any transactions identified as those that are priced outside of the market – for example, sales between family members, or government sales of properties seized for non-payment of taxes.

¹⁵ There were a handful of non-market commercial transactions in the adjacent area (e.g., a \$1 transaction), but the level of these kinds of transactions remained constant. During a tour of the Nehemiah projects and their surrounding areas we observed two recent commercial developments near the West Philadelphia project that included a grocery store and a drug store. In the area surrounding the West Poplar development there was a new drug store. Still, these commercial activities were too limited to have a noticeable impact on census tract real estate markets.

$$\text{Price}_{ijt} = \beta_1 X_{ijt} + \beta_2 Z_j + \beta_3 \text{Year}_t + \beta_4 \text{Nehemiah}_j + \beta_5 \text{Nehemiah}_j * \text{Post} \\ + \beta_6 \text{Control}_j + \beta_7 \text{Control}_j * \text{Post} + \varepsilon_{ijt}. \quad (1)$$

In Eq. (1), the dependent variable is the log of home i 's price in census tract j at time t . In this equation, X represents structure attributes, Z represents community attributes, and Year represents a set of year dummy variables. The key variables of interest are the dummy variables comparing the Nehemiah tracts to the control tracts. The Nehemiah dummy variable equals 1 if the property lies in a Nehemiah tract and 0 otherwise. The Control dummy variable is an indicator of whether the property lies in a control tract. Both the Nehemiah and the control variables are interacted with a time dummy "post" that indicates whether the Nehemiah developments have been built. We test the hypothesis that the Nehemiah tracts experienced greater appreciation than other high poverty tracts during the same time period.

As shown in Table 12, a quality-adjusted home in the Nehemiah tracts has increased in price by 12% after the Nehemiah complexes were constructed. The coefficients for Control Group 1 (the distant high poverty tracts) shows that after the Nehemiah complexes were built, the average home in the control tracts appreciated by 22.3%. This model indicates that home prices in the Nehemiah tracts appreciated less than in other poor census tracts. In the Control Group 2 regression, Nehemiah tracts homes increased by 11.7% post-Nehemiah while bordering census tract houses increased in price by 9%. We cannot reject the hypothesis that these two estimates are the same. These two hedonic regressions reported in Table 12 provide no evidence of a residential price effect. As a robustness test, we have estimated these same regressions using census tract fixed effects rather than our community measures and we find the same results.

Why have we found such a small impact of Nehemiah on adjacent property prices? Some have argued that it may be too soon to see the impacts of these projects on commercial real estate prices. However, since these developments are occupied, we believe that the forces influencing neighborhood property values are greatest when the developments are new. In our survey, a major attraction to buyers of these units was that they were new and part of a new development. As they age, these properties may well be less likely to generate new activity.¹⁶

¹⁶ To explore this point further, we examined real estate prices in and surrounding the Yorktown community, which is often cited as a successful inner city development. Yorktown was developed in the 1960s and early 1970s (OHCD, 1996). Using our sales transaction data for 1986–1997, we examine the impact of Yorktown on the surrounding area 20 years after the development was opened. We find that house prices in Yorktown have been flat over the period. Looking at the census tracts surrounding Yorktown we find no impact of proximity to Yorktown on real estate prices in neighboring areas. This evidence suggests that there are no benefits associated with proximity to Yorktown to the surrounding communities as Yorktown has aged. We do not, however, have comparable data to analyze trends during earlier years.

Table 12

House price as a function of structure characteristics and community quality (regression model based on Philadelphia sales transaction data)

	Control group 1 (distant high poverty tracts)	Control group 2 (bordering tracts)
<i>Dependent variable: log of price</i>		
Dummy for Nehemiah tracts	-0.401 (0.108)	-0.390 (0.109)
Dummy for Nehemiah tracts post-Nehemiah	0.120 (0.045)	0.117 (0.046)
Dummy for control group #1	-0.274 (0.107)	
Dummy for control group #1 post-Nehemiah	0.223 (0.064)	
Dummy for control group #2		-0.179 (0.075)
Dummy for control group #2 post-Nehemiah		0.090 (0.051)
Log of total area	0.228 (0.017)	0.228 (0.017)
Number of stories 2	-0.003 (0.027)	0.001 (0.027)
Number of stories 3	0.092 (0.038)	0.103 (0.038)
Number of stories 4 or more	0.470 (0.085)	0.484 (0.087)
Garage	0.287 (0.027)	0.286 (0.026)
<i>Community attributes</i>		
% students scoring above state median in math tests	1.259 (0.202)	1.251 (0.201)
Classroom size	-0.024 (0.006)	-0.023 (0.006)
Murder rate per 1000 persons	-0.580 (0.123)	-0.597 (0.125)
% of adults with BAs	2.113 (0.152)	2.130 (0.150)
% of total buildings that is commercial	0.326 (0.167)	0.318 (0.159)
Miles from City Hall	0.013 (0.009)	0.013 (0.009)
Constant	7.934 (0.235)	7.922 (0.234)
R-squared	0.596	0.595
Observations	146,053	146,053

Notes. This table reports two hedonic home price regressions based on Eq. (1) in the text. Control group #1 is defined as the set of census tracts with poverty rates greater than or equal to 50% that are greater than 1.2 miles away from the closest Nehemiah tracts. Control group #2 is defined as the set of census tracts that share a border with at least one Nehemiah tract. The data set covers the years 1986–1997; year dummies are included in each regression. Post-Nehemiah is a dummy variable that equals one if in that year the Nehemiah housing complex already had been built. Standard errors are in parentheses.

Source. Author' calculations using Sales Journal and 1990 Census data.

Our results stand in contrast to two recent hedonic studies documenting positive effects on nearby home prices in small concentric circles caused by new place based housing policies. Lee et al. (1999) find modest positive impacts of FHA housing and Section 8 new construction on nearby areas in the City of Philadelphia. Many of the units developed under these programs are in considerably better neighborhoods than the Nehemiahs examined in this paper. It is possible that the Nehemiah developments are too small to have a significant impact on such devastated neighborhoods. Ellen et al. (2001) find that Nehemiah developments in New York City have a positive impact on house prices in small concentric circles (i.e., 1/4 mile radii) around the developments. It is difficult to compare the impact of Nehemiahs across cities, especially when the local real estate markets vary so much; during this period the New York City's housing market was booming while Philadelphia's market was declining.

Unlike these studies, our goal is to measure the magnitude of the total external benefits of the Nehemiah place based subsidy. We recognize that the Philadelphia Nehemiahs could have very localized beneficial effects on home prices but are too small to be seen at an analysis conducted at the census tract level. But even if this were the case, these localized effects would need to be extremely large to justify the subsidies detailed in Table 1. In future work, we will use the 1990 and 2000 Census data to create two panel data sets for the City of Philadelphia. One data set's unit of analysis will be the census block and the other will be the census tract. We will test whether Nehemiah's construction raised home prices within Nehemiah's census block but not at the census tract level.

The negligible impact of the Nehemiah developments on the surrounding community could reflect the lack of interaction between residents of those developments and the surrounding community. They may have little impact on the commercial activities in the community if they do not shop there or pursue local amenities such as restaurants. In terms of social interactions, neighborhood children could benefit from interacting with children from the Nehemiah complex. Playing, studying, or socializing with children from higher income, more educated families could result in role models that these children would not have access to if the Nehemiah development had not brought these families to the community. While we do not have time diary data on how households allocate their time, we have collected data on the propensity for survey respondent children to attend local public schools. An important fact is that Nehemiah residents are less likely to have school-age children than the average black Settlement Grant survey participant and those Nehemiah residents with children are less likely to have their children attend the local schools. Only 58% of Nehemiah households have school-age children while 79% of Settlement Grant residents have school-age children. Nearly 60% of Nehemiah households with children send them to the local public schools while 79% of Settlement Grant households send

their children to local public schools. This is suggestive evidence that there will not be a large child-to-peer-group effect for local children who live in the Nehemiah vicinity but not in the complex.

Nehemiah households may define their communities in terms of the other residents of these developments rather than the larger surrounding community. To study this “oasis effect,” in Table 13 we report results from 12 separate probit models. The reported coefficients represent marginal probabilities using Stata’s *dprobit* option. The first six probit models focus on how Nehemiah residents perceive the quality of their community as compared to non-Nehemiah residents’ impressions. The omitted category in these regressions is white non-Nehemiah resident. Nehemiah residents recognize that the schools and the shopping in their area are quite poor. Relative to a Settlement Grant black respondent, the average Nehemiah respondent is 27 percentage points less likely to claim that the local schools are good and is 45 percentage points less likely to claim that local shopping is good. Perhaps more interestingly, relative to the observationally identical black Settlement Grant respondent, the Nehemiah resident is 6.6 percentage points more likely to say that neighbors are helpful and is 12 percentage points less likely to announce that there is undesirable street activity in the community. This is suggestive evidence of the “oasis” effect. Despite the fact that tracts with higher murder rates have statistically significantly higher levels of undesirable street activity (see column 6) and that Nehemiah tracts have high crime, the average Nehemiah resident views the complex, not the area, as the “community.”

The last six columns of Table 13 report crime self-precaution strategies. Note that in these models, we control for the census tract’s murder rate. All else equal, people who live in high crime areas avoid public transit, are less likely to go out alone, and are more likely to own an alarm and not go out at night. Again, we find some evidence of a Nehemiah complex “oasis” effect. Despite the fact that they live in a high crime area, Nehemiah households are less likely to avoid public transport and more willing to go out at night than other black households in equally high crime areas who do not live in the complex.

7. Conclusions

The City of Philadelphia has made a substantial commitment to promoting homeownership. In this paper, we take a detailed look at the transition from renter to owner for low- and moderate-income households who have participated in two major Philadelphia homeownership programs. Our ability to examine the housing structures and neighborhoods of the same households as both renters and owners allows us to observe the progress these households made by becoming homeowners.

Table 13
 Survey data: relationship between community quality objective measures and impressions of community quality

Regression #							Crime precaution					
	1	2	3	4	5	6	7	8	9	10	11	12
Dependent variables (survey respondents' opinion of their neighborhood)							Taken following crime precaution					
	Good schools	Good schools	Good social connections	Helpful neighbors	Good shopping	Undesirable street activity	Avoid public transit	Do not go out alone	Install protection devices	Avoid going out at night	Keep a weapon	Taken any crime precaution
% of eighth grade students scoring above the state median on math tests	0.047 (0.376)	0.044 (0.375)										
Classroom size	-0.007 (0.010)	-0.007 (0.010)										
Household inquired about school quality before moving		0.150* (0.053)										
Years in current community			0.008* (0.003)	0.004* (0.002)								
Household moved less than 1.25 miles			0.144 (0.091)									
Percent of neighborhood's total building areas that is commercial					0.462 (0.292)							
Murder rate (average of 1994 and 1995)						0.244* (0.054)	0.064* (0.028)	0.083* (0.037)	0.111 (0.083)	0.067 (0.049)	-0.022 (0.049)	0.104 (0.088)

Nehemiah resident	−0.270*	−0.250*	−0.025*	0.066*	−0.445*	−0.118*	−0.035*	−0.057	0.143*	−0.077*	0.046	0.098*
	(0.069)	(0.070)	(0.058)	(0.052)	(0.091)	(0.031)	(0.018)	(0.039)	(0.050)	(0.022)	(0.052)	(0.042)
Age of household head	0.006*	0.007*	0.006*	0.005*	−0.003	0.004*	0.001	0.000	−0.007*	−0.003*	−0.002	−0.007*
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)	(0.001)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)
<i>Race of household head</i>												
Black	0.062	0.064	−0.213*	−0.109	−0.189*	−0.027	0.011	−0.014	0.012	0.071*	−0.034	0.069
	(0.071)	(0.070)	(0.069)	(0.066)	(0.065)	(0.059)	(0.028)	(0.039)	(0.071)	(0.033)	(0.045)	(0.070)
Hispanic	0.264*	0.277*	−0.193*	−0.212*	−0.157*	−0.019	0.062	0.011	−0.075	0.036	−0.048	0.014
	(0.081)	(0.082)	(0.087)	(0.093)	(0.093)	(0.070)	(0.065)	(0.053)	(0.101)	(0.064)	(0.037)	(0.104)
Pseudo R-squared	0.051	0.065	0.081	0.028	0.090	0.044	0.031	0.024	0.024	0.042	0.010	0.022
Observations	384	384	362	428	437	436	432	437	434	436	435	441

Notes. We use probit models in this appendix because our dependent variables take on the value 0 or 1. Standard errors are in parentheses.

Sources. Pennsylvania Department of Education; Authors' survey; Philadelphia Board of Revision and Taxation.

* Asterisk is statistically significant at 10% level.

For Nehemiah households, their gains in housing structure come at a substantial cost to them through a marked decline in community quality of the surrounding area from their previous neighborhood. Our survey results indicate that Nehemiah households recognize the problems with their location but seem to view the gains in structure as worth the cost. In part, their view of this trade-off may be due to the fact that these households define their community as the Nehemiah development itself, rather than as the larger area around their homes. We find no evidence that these developments have spurred private investment or raised home prices in nearby areas. It is possible that the Nehemiah development's scale is too small to have an impact on its surrounding community. It is also possible that it is too early to measure the impact, but the initial years of a new development seem more likely to spur local benefits than later years.

While the Philadelphia Nehemiahs have not had an impact on their local community, there is evidence that similar developments have had positive impacts on the surrounding community in New York City. Future research should investigate the conditions in the local economy that might explain these differences in outcomes. We hypothesize that a local area would experience the largest increase if the local economy is booming and/or an area with potentially valuable land has not been developed because of some reversible blight such as a Brownfield or abandoned buildings. In addition, future research should explore the extent to which project scale or the initial condition of the neighborhood influence the size of the impact of place based subsidies on surrounding communities.

To revitalize high poverty communities, alternative types of place-based subsidies should be considered. The Nehemiah projects have provided deep subsidies to a small set of households. It is possible that other place-based programs, such as land clearance and site improvement (mirroring the Environmental Protection Agency's Brownfields program), could achieve the goal of urban renewal at a lower cost to the city and provide more widely distributed benefits. Consideration should also be given to the trade-off between using scarce subsidy dollars for homeownership programs versus using those dollars to improve community quality through programs that reduce crime, improve schools, or increase retail activity. Improvements in community quality should increase demand for housing in these communities and have a direct immediate benefit for the families already living there.

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References

- Cummings, J.L., DiPasquale, D., Kahn, M.E., 2001. Affordable Homeownership: Measuring the Net Benefits to Homeownership for Low- and Moderate-Income Households in the City of Philadelphia, City Research, 2001 www.cityresearch.com.
- DiPasquale, D., Glaeser, E.L., 1999. Incentives and Social Capital: Are Homeowners Better Citizens? *Journal of Urban Economics* 45, 354–384.
- Ellen, I.G., Schill, M., Susin, S., Swartz, A., 2001. Building homes, reviving neighborhoods: Spillovers from subsidized construction of owner occupied housing in New York City. *Journal of Housing Research* 12 (2), 185–216.
- Green, R., White, M., 1997. Measuring the benefits of homeowning: effects on children. *Journal of Urban Economics* 41 (3), 441–461.
- Katz, L., Kling, J., Liebman, J., 2000. Moving to opportunity in Boston: early results of a randomized mobility experiment. NBER Working paper 7973.
- Kromer, J., 1999. *Neighborhood Recovery: Reinvestment Policy for the New Hometown*. Rutgers University Press, New Brunswick, NJ.
- Lee, Chang-Moo, Culhane, D.P., Wachter, S.M., 1999. The differential impacts of federally assisted housing programs on nearby property values a Philadelphia case study. *Housing Policy Debate* 10 (1), 75–97.
- Newburger, H., 1999. Mobility patterns of lower income first-time homebuyers in Philadelphia. *Cityscape: A Journal of Policy Development and Research* 4 (3), 201–220.
- Office of housing and community development (OHCD). 1996. *Learning from Yorktown*. City of Philadelphia Report.
- Office of housing and community development (OHCD). 1997a. *Settlement Grant Program: Philadelphia Neighborhood Homebuyers*. City of Philadelphia Report.
- Office of housing and community development (OHCD). 1997b. *Year 23 Consolidated Plan (Fiscal Year 1998)*. City of Philadelphia Report: 9.