

Gentrification in Black and White: The Racial Impact of Public Housing Demolition in American Cities

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Abstract

The gentrification that has transformed high-poverty neighbourhoods in US cities since the mid 1990s has been characterised by high levels of state reinvestment. Prominent among public-sector interventions has been the demolition of public housing and in some cases multimillion dollar redevelopment efforts. In this paper, the racial dimension of state-supported gentrification in large US cities is examined by looking at the direct and indirect displacement induced by public housing transformation. The data show a clear tendency towards the demolition of public housing projects with disproportionately high African American occupancy. The pattern of indirect displacement is more varied; public housing transformation has produced a number of paths of neighbourhood change. The most common, however, involve significant reductions in poverty, sometimes associated with Black to White racial turnover and sometimes not. The findings underscore the central importance of race in understanding the dynamics of gentrification in US cities.

Cities in the United States up and down the urban hierarchy have experienced significant levels of gentrification¹ since the national economy emerged from the recession of the 1990s (Wyly and Hammel, 2004). This period has differed from previous waves of gentrification in the degree of public-sector investment that has driven neighbourhood transformations (Hackworth and Smith, 2001). Prominent among these state interventions has been the demolition of public housing, in some cases

as part of multimillion dollar redevelopment projects. This form of state-supported gentrification has displaced hundreds of thousands of low-income families, most of them African American. In this analysis, I examine the racial dimension of the direct and indirect displacement induced by public housing demolition.

The more prominent role of public investment in recent gentrification efforts reflects the fact that neighbourhoods reached by this 'third wave' are more physically remote from

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traditional centres of capital and seen as too risky and challenging for speculative private investment (Hackworth, 2002). In many cases, the gentrifying neighbourhoods have been the home to older public housing communities that have suffered from disinvestment and neglect for decades. The neighbourhoods are not only forbidding to private investors because of the scale of deprivation and the accompanying problems of crime and disinvestment, they are also dominated by the super-blocks that typify public housing estates and thus lack the type of housing typically exploited by gentrifiers. The demolition of large public housing estates clears away significant concentrations of poverty from these areas and allows for the conversion to a housing stock and land use pattern more accommodating of private-sector investment.

In the US, the centrepiece of state-led efforts to deconcentrate poverty and transform inner-city neighbourhoods is the HOPE VI programme. This programme has been used in dozens of cities to demolish public housing developments and to create new mixed-income communities in their place. The programme thus redefines public housing policy and serves as the main vehicle through which the state has triggered inner-city revitalisation (Newman, 2004; Wyly and Hammel, 1999). The major transformation of public housing, in fact, reflects several dimensions of neo-liberal urban policy in the US over the past 20 years. While the elimination of the physical structures of public housing eliminates visual references to New Deal and welfare state policies no longer dominant, the removal of concentrations of very-low-income people of colour allows a reimagining of urban spaces critical to the national and international competition for private investment (Newman and Ashton, 2004). Further, the policy prescriptions imposed upon former public housing residents, both relocation to private-sector housing through the use of Housing Choice Vouchers and the increased

behavioural monitoring and screening techniques employed at the mixed-income communities, reflect newfound emphases on choice, individualism and market discipline that are central to the neo-liberal governance paradigm (Jones and Popke, 2010).

The dismantling of public housing is not limited to HOPE VI projects, however. PHAs in cities like Atlanta, Memphis and Las Vegas have plans to demolish most or all of their public housing. Chicago's Plan for Transformation calls for the demolition of more than 20 000 units and a net reduction of 13 000, while in post-Katrina New Orleans, the local housing authority has demolished thousands of units that were kept vacant after the hurricane and flood. In these ways, housing policy and, more specifically, public housing demolition and dispersal have been employed as economic development strategies by local governments intent on finding and forcing new paths of neighbourhood change and gentrification (Newman, 2004). Cities in which market pressures for gentrification have been the strongest, for example, have been the most aggressive in tearing down public housing (Goetz, forthcoming). Public housing projects such as Earle Village in Charlotte, NC, Techwood Homes in Atlanta, Allen Parkway Village in Houston, St Thomas in New Orleans, Cabrini-Green in Chicago and Ellen Wilson in Washington, DC, have all been demolished to make way for new development that has ignited significant private-sector investment in housing and commercial markets nearby (Kingsley *et al.*, 2003; Jones and Popke, 2010; Keating and Flores, 2000; McGhee, 2004; Fosburg *et al.*, 1996; Bennett and Reed, 1999).

In fact, HUD has emphasised the potential for additional investment and neighbourhood change when evaluating HOPE VI proposals, looking for projects that could catalyse significant neighbourhood transformation (Zielenbach, 2002). The emphasis on leveraging private capital is in practice an incentive

for projects located in neighbourhoods ripe for private investment. By fiscal year 2002, local housing authorities were required to demonstrate how their proposed HOPE VI redevelopment would “result in outside investment in the surrounding community” (US GAO, 2003, p. 9). Thus, HUD has targeted projects they felt had the greatest potential to spur additional public and private investment in the form of new or rehabilitated housing, commercial investment, new jobs and improved public infrastructure.

Race and Gentrification

Although gentrification has typically been seen as “class-based colonization of urban land”, it has a clear racial dimension as well (Moore, 2009, p. 138). Demographic transformations produced by gentrification are nearly as frequently racial as they are class-based. The predominant racial reality of gentrification has been one of White gentrifiers displacing low-income Black incumbents. This is certainly an element of third wave gentrification, just as it was in previous waves. However, the extended reach of current gentrification efforts, and the contemporaneous efforts to extend homeownership, have increased the prevalence of ‘Black gentrification’ (Moore, 2009). Recent ethnographic research has explored the dynamics occurring in Harlem, Chicago’s southside Bronzeville neighbourhood, and Philadelphia in which the gentrifiers are Black middle-class homeowners and the class conflicts produced are experienced entirely within the Black community (see Boyd, 2008; Patillo, 2007, Hyra, 2008, Moore, 2009).

Moore (2009) argues that the dynamics of Black gentrification are distinctive. The phenomenon itself, she argues, is conditioned by larger patterns of racial segregation and exclusion, and the constrained mobility of the Black middle class. Hence, Black gentrification depends upon the size of the Black middle class within a city, prevailing patterns

of segregation and exclusion in the local housing market, and to some extent upon the identification of ‘historically Black communities’ to which gentrifiers can lay claim. According to Hyra

the black middle class fiercely wants to ‘restore’ these communities to safe, prosperous, and tranquil places (Hyra, 2008, p. 130).

These gentrifiers find themselves investing in communities with high concentrations of public housing and poverty. They contend that their potential for wealth generation is limited by public policy decisions that concentrate subsidised housing in minority neighbourhoods. They argue for a ‘fair share’ approach to public housing that would locate fewer subsidised units in Black neighbourhoods and more in middle-class White neighbourhoods that are largely free of such housing. Thus, members of the Black middle class support the demolition of public housing as a necessary step in creating livable communities (Patillo, 2007). On the other hand, displacees see themselves as members of the same community that the Black middle class is investing in. In many cases, Black public housing residents have been in the community longer than members of the Black middle class who might be more recent residents. To public housing residents forced out of their neighbourhoods, Black gentrification is no better than White gentrification. Indeed, in many ways, Black gentrification is seen as a greater betrayal (Patillo, 2007).

The current campaign to demolish and transform public housing will primarily affect low-income Black families. Public housing in the US is disproportionately occupied by people of colour, predominantly African Americans, and it is disproportionately located in minority neighbourhoods (Newman and Schnare, 1997). In 2000, 48 per cent of the residents in public housing nation-wide were African American, despite the fact that Blacks make up less than 15 per cent of the national

population. In larger cities (having more than 5000 units of public housing), 66 per cent of public housing residents were Black. In some cities, notably Birmingham, Detroit, Memphis, New Orleans and Washington, DC, HUD data show that figure to be 99 per cent. Given these residency patterns, any action taken on public housing will have a disproportionate impact on African Americans. Furthermore, the concentration of public housing in heavily Black neighbourhoods means that indirect displacement, should it occur, will also have a disproportionate impact on African Americans.

It is possible then to conceptualise the neighbourhood change generated by public housing displacement as taking place along two continuums (see Figure 1). In neighbourhoods with little or no change in the poverty rate and in racial profile (the area near the intersection of the two axes), the neighbourhood remains largely static despite the public housing demolition. Where racial turnover (Black to White) has taken place, without a change in poverty (lower right quadrant), the neighbourhood has desegregated but remained poor. In practice, this has remained a largely hypothetical outcome. When both racial turnover occurs and a significant reduction in poverty takes place

(lower left), neighbourhoods can be said to be experiencing White gentrification. When poverty is significantly reduced without racial change (upper left), Black gentrification has occurred. Neighbourhoods that continue to segregate and concentrate poverty are located in the upper right quadrant.

The Record of Displacement in Public Housing Demolition and Redevelopment

Studies of households displaced from public housing show a distinct pattern of relocation (see the review in Goetz and Chapple, 2010). The evidence on HOPE VI and other instances of forced displacement from public housing suggests that displaced residents typically move nearby and remain in the central city (see Comey, 2007; Goetz, 2003; Gibson, 2007; Clampet-Lundquist, 2004; Varady and Walker, 2003; Trudeau, 2006). Furthermore, displaced residents typically move to other disadvantaged neighbourhoods, with poverty rates considerably above city-wide averages (Buron *et al.*, 2002; Goetz, 2003, 2010; Clampet-Lundquist, 2004; Boston, 2005; Oakley and Burchfield, 2009). Very few displaced public housing residents return to

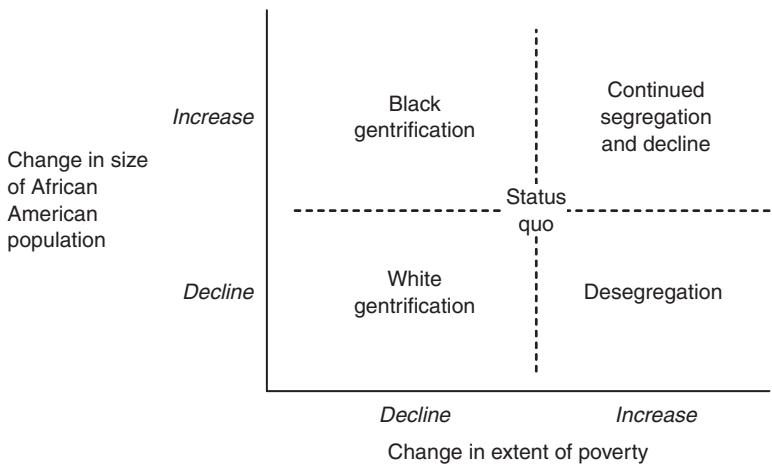


Figure 1. Neighbourhood change in predominantly Black public housing communities.

live in the mixed-income redevelopments sometimes built to replace their public housing communities. Estimates from national studies indicate that the percentage of original residents who return to the redeveloped site generally ranges from 14 per cent to 25 per cent (Marquis and Ghosh, 2008). The rate of return is low for a number of reasons: the redeveloped sites often have fewer public housing units than the projects they replace; new management standards make it difficult for previous residents to pass tenant screening criteria; and the long time-span between displacement and the completion of redevelopment means that many previous residents have resettled into new communities and do not wish the disruption of moving again (Wilén and Nayak, 2006; Jones and Popkin, 2010).

The benefits of being moved away from public housing communities subject to demolition are strongest in residents' perception of reduced crime in their new communities and in their increased satisfaction with the quality of their housing post-move (see, for example, Petit, 2004; Gibson, 2007; Goetz, 2003, 2010). Improvements in housing and neighbourhood characteristics are also consistently reported by displaced public housing families (see, for example, Popkin, 2006; Buron *et al.* 2002; Comey, 2007; Brooks *et al.*, 2005; Goetz, 2003), though exceptions are reported in some cases (Gibson, 2007; Manzo *et al.*, 2008).

Less positive results are reported in the areas of health and children's school experiences, and in residents' economic self-sufficiency. Manjarrez *et al.* (2007) report no significant or consistent improvements in health for families displaced by HOPE VI. Similarly, children of HOPE VI families showed no health improvements over a five-year period (Gallagher and Bajaj, 2007). School achievement among children relocated by HOPE VI has shown the same pattern. Children's new schools remain racially and economically segregated, in part because many HOPE VI

moves are within the same, underperforming urban school systems (Popkin, 2006). Children in households relocated due to HOPE VI or similar public housing redevelopment show no educational improvements relative to control group members on a range of academic achievement measures (Jacob, 2004; see also, Gallagher and Bajaj, 2007).

The evidence is clear and consistent in showing that displacement from distressed public housing projects has had no demonstrable positive effect on employment, earnings or income of individuals. The lack of any effect on economic self-sufficiency is repeated across all studies of public housing displacement (see Turney *et al.*, 2006; Levy and Woolley, 2007; Clampet-Lundquist, 2004; Goetz, 2003, 2010; Curley, 2009). In fact, the finding is repeated for all forms of dispersal (for example, Kling *et al.*, 2007; US HUD, 2004; Vigdor, 2007).

The impact of displacement on social capital is especially problematic. Movers report difficulty in establishing new social ties, they miss their social milieu from the old neighbourhood and worry about isolation in their new places (Curley, 2009; Greenbaum *et al.*, 2008; Trudeau, 2006; Clampet-Lundquist, 2004, 2007; Gibson, 2007; Kleit, 2001). Manzo *et al.* (2008) find that public housing residents value their communities and regard them as having had a positive impact on their own lives. Two-thirds of the displaced families in their study felt the original public housing project was a good place to live (see also Gibson, 2007, for similar findings from Portland Oregon). These ties to place and to a social network are disrupted by displacement, even when demolition removes public housing projects that are unsafe, crime-ridden and physically deteriorated—i.e. extremely dysfunctional and dangerous places that are themselves argued to undermine the social, emotional and financial well-being of their inhabitants (see for example, Popkin *et al.*, 2000; Venkatesh, 2000).

Data and Methods

The analysis proceeds in two parts. The first is an examination of direct displacement induced by public housing redevelopment and demolition between 1996 and 2007 in the 139 largest US central cities.² The second part is an analysis of indirect displacement triggered in neighbourhoods surrounding HOPE VI redevelopment projects begun during the 1990s.

Direct Displacement

To analyse direct displacement, it is necessary to know the number and characteristics of residents who lived in public housing projects prior to demolition. A list of public housing projects that have been demolished since 1990 was obtained from HUD. The agency has no data on the families directly displaced by public housing demolition and redevelopment projects. As a result, projects on the demolition list were matched with the resident data contained in HUD's *Picture of Subsidized Households* databases that provide details about the residents of public housing projects across the country. I estimate the racial impact of displacement by looking at the racial breakdown of public housing units prior to their demolition. HUD's database is available for the years 1996, 1997, 1998 and 2000. In general, I use the dataset that corresponds to the year prior to the demolition of a given project. Thus, for projects demolished in 1997, the 1996 database provides information on the resident mix. No resident information is available for projects demolished prior to 1997. For all projects demolished after 2000, I use the most recently available database, the 2000 version.

For example, the Bernal Heights Dwellings in San Francisco were demolished in 1997. HUD's 1996 *Picture of Subsidized Households* database indicates that in 1996 the 208 units in the Bernal Heights Dwellings were 93 per cent occupied (193 households). In 1996,

69 per cent of households at Bernal Heights were African American and thus 133 African American households ($193 * 0.69$) were displaced by the Bernal Heights demolition. In cases of partial demolition (for example, a project with three high-rise towers in which only one is demolished), I assume that the racial breakdown of tenants in the demolished building is identical to that of the overall development.

There are several potential standards against which to judge whether public housing demolition has had a disproportionate impact on Blacks, each one corresponding to a more restricted spatial scale. To judge the displacement of Blacks from public housing against the representation of Blacks in the national population would show tremendous disparity owing to the over-representation of Blacks in public housing. A second possible standard is the proportion of Blacks in public housing across the nation (49 per cent). This too would produce a conclusion of highly disparate impact. Yet, this is also a less than adequate standard because we know that public housing demolition is concentrated in larger cities, places where Blacks typically make up a higher percentage of public housing residents. Restricting the referent standard to large cities would produce a more targeted comparison, but in this analysis I go beyond that to use the overall racial distribution of a given city's public housing stock as the reference for demolitions that took place in that city. That is, if 69 per cent of the public housing stock in San Francisco was occupied by Blacks (i.e. the same as the Bernal Heights development described earlier), then the Bernal Heights demolition would be judged not to have had a disproportionate impact on African Americans. HUD's 1996 database indicates, however, that city-wide, public housing in San Francisco was only 49 per cent Black in 1996. Thus, I conclude that the Bernal Heights Dwellings demolition did have a disproportionate impact on African

Americans. For each demolition in the database, a disparity ratio is computed with the numerator being the proportion of the demolished project occupied by Blacks and the denominator being the city-wide percentage of public housing occupied by Blacks. This analysis is repeated and aggregated for all public housing projects for which data are available.³ This standard allows one to establish, at the level of an individual public housing authority, whether public housing demolition is disproportionately affecting African Americans.

Indirect Displacement

The analysis of indirect displacement employs a different sample of projects and a different database. The analysis is based on the author's assembled data on HOPE VI redevelopment projects.⁴ The projects were geo-coded and census data from the 1990 and 2000 censuses were collected for the areas surrounding the projects. The analysis is therefore based on changes taking place between 1990 and 2000 in these project neighbourhoods.

A HOPE VI project is defined as the full set of redevelopment-related activities that take place at public housing developments. A single HOPE VI project may receive multiple HOPE VI grants (several have). The most common pairing of grants is one grant for demolition and a second, later grant for redevelopment. In other cases, as the demolition and redevelopment of large public housing developments has proceeded in stages over a long period of time, successive stages have received separate HOPE VI grants.

Different public housing developments sharing physical space are deemed to be a single project for the purposes of this analysis. So, for example, the ABLA projects in Chicago are four separate public housing developments, the Jane Addams Homes built in 1938, the Robert Brooks Homes completed in 1943, Loomis Courts constructed in 1951 and the Grace Abbot Homes built in 1955. In all, the

four developments had 3600 apartments in a single contiguous location. For this study, ABLA, which received eight separate HOPE VI grants, is considered a single project.

Neighborhood is defined as the census block groups whose centroids are within a half-mile radius of the HOPE VI project address.⁵ These trapezoidal areas were truncated wherever significant man-made or natural boundaries occurred, such as rivers or major highways. Once the relevant block groups were identified, the Geolytics Neighborhood Census database was used to collect social, physical and economic characteristics for 1990 and 2000. The Geolytics database standardises census boundaries across the two census years, allowing for comparison of identical spatial areas.

In the analysis to follow, I examine the degree to which public housing demolition and redevelopment have triggered the displacement of low-income households and African Americans in the surrounding neighbourhoods. Displacement is given as a decline in the neighbourhood population (poverty households and the African American population) at a rate greater than occurring in the city at large. A simple measure of the relative change in the African American population, for example, is computed as follows

$$(CB2K - CB90) - (NB2K - NB90)$$

where, $CB2K$ and $CB90$ = percentage of city-wide population that is Black in 2000 and 1990 respectively; and $NB2K$ and $NB90$ = percentage of neighbourhood population that is Black in 2000 and 1990 respectively.

This produces a difference-in-difference score in which a positive value indicates greater decline in the Black population at the neighbourhood level than at the city-wide scale.

Timing the Intervention

A HOPE VI redevelopment project consists of many events, including relocation,

demolition and project completion. One challenge of this analysis is determining how much redevelopment activity is necessary to trigger neighbourhood change. Some of these projects are located in neighbourhoods poised to gentrify and thus change will occur quickly. Other neighbourhoods with different conditions may need more dramatic efforts before change occurs. Because of this, we test for three different intervention points.

A HOPE VI project is typically announced with much fanfare as local officials herald a multimillion dollar reinvestment effort. It is possible that private investors waiting for a signal to trigger neighbourhood change will take the grant announcement as the time to act. In the analysis to follow, I examine the neighbourhood change for projects funded before 2000. There are 176 revitalisation grants in that group.

The first visual evidence of change taking place, however, is the relocation of the project residents. This event may potentially serve as the critical 'intervention' point in the process, triggering changes throughout the neighbourhood. Thus, I examine HOPE VI projects in which relocation occurred before 2000, a total of 100 projects (a subset of the 176 projects in the first sample). Finally, the most dramatic visible sign of redevelopment may be the demolition of the old public housing structures and commencement of construction. Taking this as the intervention point leads to a smaller sub-sample of 64 projects.

Analysis

Direct Displacement

There were 394 public housing projects demolished in the 139 largest US central cities between 1995 and 2007. These projects accounted for 163 393 units of public housing (an average of 415 units per project). Of these units, 110 227 (67 per cent) were occupied during the year for which we have occupancy data. The HUD data contain resident demographic

information for 313 cases, or 87 251 households. The average size of the projects in the database is 397 units, although the median is 293. The mean is skewed upward by a relatively few large projects; one-quarter of the projects had more than 515 units prior to demolition. The number of people displaced in the 313 projects for which resident information is available is estimated at 239 844 people.⁶ This is an underestimate of the total number of people displaced because it excludes 83 projects for which HUD reports no resident information, despite the fact that they were at least partially occupied the year before demolition.

The majority of cases in the database are HOPE VI projects (228, or 73 per cent of the projects for which we have resident information). While HOPE VI projects are on average larger than other projects that have been demolished (a mean of 421 units compared with 327; $p < 0.05$), the data show that the HOPE VI projects and other demolitions were statistically identical in terms of resident demographics. On seven indicators (percentage of residents earning less than \$5000, percentage with wage incomes, with welfare income, percentage seniors, disabled, minority and African American) there was no statistical difference between the HOPE VI and the other demolitions (data not shown). Thus, all demolitions in these cities are analysed as a single group.

The overwhelming majority of households directly displaced by public housing demolitions across the country are African American. Of the 87 251 displaced households for whom demographic information is known, 71 373 (82 per cent) households (or more than 192 000 residents, given average household size in these projects) were African American. The average demolition displaced 229 African American households (or 641 African American residents). In half of the demolished projects, African Americans were 95 per cent or more of the households. Are these figures higher than one would expect to find in these cities during these years? Table 1

Table 1. Demographic characteristics of demolished public housing, 1996–2007

	Percentage Black (n = 305)	Percentage Hispanic (n = 306)	Percentage Minority (n = 306)	Percentage earning less than \$5000 (n = 296)	Percentage with wages (n = 296)	Percentage with welfare (n = 296)	Percentage of female- headed households (n = 305)	Percentage of seniors (n = 304)	Percentage disabled (n = 304)
Demolished projects	79.5	11.5	94.2	32.2	24.9	28.6	82.8	15.4	16.9
Other public housing	73.2	11.2	87.5	25.2	22.2	21.5	78.5	25.9	20.2
Projects Significance	***	—	***	***	***	***	***	***	***

Note: *** p < 0.001.

compares demolished projects with the rest of the public housing stock in the same cities.

The data suggest a disparate racial impact of public housing demolition across more than 300 demolitions in these large American cities. The average project demolished was 79.5 per cent African American, while other projects in the same cities were on average 73.2 per cent African American. For Hispanic residents, however, there was no disparate impact; the average demolished project was 11.5 per cent Hispanic compared with 11.2 per cent city-wide.

The data in Table 1 also provide evidence of other statistically significant differences between projects that have been demolished and other public housing. In the average demolished project, 32.2 per cent of residents had incomes less than \$5000, compared with only 25.2 of residents in comparison projects. Conversely, demolished projects had higher relative populations of wage-earners and residents with welfare income. This is likely to be due to the fact that demolished projects also had significantly fewer seniors and disabled households than public housing that was not demolished.

These averages mask a wide range of outcomes across projects. Disparity ratios were derived by dividing the percentage Black in a

given project by percentage Black in the rest of the city's public housing. For example, the Christopher Columbus Homes in Paterson, New Jersey, demolished in 2000, were 97 per cent Black-occupied in 1999. The rest of the public housing stock in Paterson in 1999 was 70 per cent Black. This produces a disparity ratio of 1.39 (97/70). The ratios range from 0 (in projects that displaced no African American households) to 5.08. A disparity ratio of 1.0 signals that a demolished project exactly matched the racial profile of the rest of the public housing stock in the same city for the same year. Table 2 shows projects with the highest disparity ratios.

The highest ratios occurred in cities in which African Americans made up half or fewer of all public housing households. Demolitions in those cities, nevertheless, affected some projects with very large proportions of African American residents. The unweighted average disparity ratio for the 305 projects for which all data are available is 1.096, indicating that the average public housing project demolished had 9.6 per cent more African American households as a percentage of all households than other public housing in the same cities in the same year. Twenty-two per cent of the demolished projects had ratios of less than 1.0, meaning that there were

Table 2. Ten projects with highest disparity ratios

Rank	Project, City	Disparity ratio	Percentage Black	
			Project	Other public housing
1	Springview Apts, San Antonio	5.08	61	12
2	Iris Court, Portland, OR	2.76	58	21
3	DN Leathers II, Corpus Christi	2.67	32	12
4	320 – 23rd St, Denver	2.63	71	27
5	Arapahoe Cts, Denver	2.60	65	25
6	Curtis Park Homes, Denver	2.44	61	25
7	Arrowhead Apts, Denver	2.41	65	27
8	Mulford Gardens, Yonkers	1.92	96	50
9	College Hill Homes, Knoxville	1.91	90	47
10	Lonsdale Homes, Knoxville	1.88	90	48

fewer African American households in those projects compared with other public housing in the cities studied. Thirty-seven per cent of the projects had disparity ratios between 1.0 and 1.10, one-quarter (24.6 per cent) had disparities from 1.10 to 1.25 and the rest (16.7 per cent) had disparity ratios of 1.25 or more.

The overall disparity ratio is determined by dividing the total number of Black households displaced in all 305 projects by the expected number displaced, where the expected number is simply the city-wide percentage Black applied to each project. In the Christopher Columbus Homes example, in Paterson, New Jersey, if there had been no disparate impact on Blacks, one would expect that 70 per cent of the 314 households in that project would have been Black (matching the rest of the city's public housing stock in 1999). This means that 220 African American households would have been displaced. In fact, 97 per cent of the project was African American, or 305 households. Thus, this project displaced 85 more African American households (or 39 per cent more) than would have been expected given a non-disparate outcome. Summing this calculation across all 305 projects produces a weighted disparity ratio of 1.077; in the aggregate, projects that have been demolished in these cities have displaced 7.7 per cent more African Americans than would have been the case had there been no disparate impact. The weighted ratio is less than the unweighted average because of large projects in cities such as Chicago, Detroit and Baltimore, where virtually all public housing residents are Black and therefore the individual-project disparity ratios are close to 1.0.

Disparity ratios are bounded on the upper end by the initial over-representation of Blacks in public housing in most of the large cities in this sample. In cities like Washington, DC, Memphis and Detroit, where 98 per cent or more of public housing residents are African American, there is essentially no possibility of a disparate racial outcome as defined here.

Since both the numerator and the denominator in the disparity ratio have maximum values of 100, as the denominator approaches 100, the possibility of a ratio above 1.0 diminishes. Thirteen per cent of the demolitions in the sample (or 40 projects) took place in cities in which Blacks make up 99 per cent of all public housing households. In one-third of the demolitions (more than 100 projects), Blacks make up more than 90 per cent of all public housing households city-wide.

Figure 2 shows how the disparity ratio is related to the percentage of city-wide public housing occupied by African Americans. When all cases are included in the analysis, the unweighted disparity ratio is near 1.096. When cases are eliminated at the upper end—i.e. cases are removed where the percentage of city-wide public housing is 98 per cent or above, the average disparity ratio increases. The average disparity ratio tops out at 1.18 when the analysis is restricted to cases in which the city-wide public housing population that is African American is 75 per cent or less. The other line in the figure indicates the number of cases that remain in the analysis as cases are removed. The disparity ratio becomes less stable as the number of cases declines. In fact, there is a precipitous decline in the number of cases as one moves to the right in the graph, a reflection of the fact that most of the public housing projects demolished are in cities where a large majority of public housing residents are African American.⁷

Several cities have sizeable disparities in the racial make-up of demolished public housing projects compared with their overall public housing profiles. Table 3 lists cities with a disproportionately high or low percentage of African American residents in demolished projects. In Corpus Christi, Texas, the public housing that was demolished had 2.96 times as many African American households (as a percentage of all households) than did the rest of the city's public housing stock. The tenth-ranked city on the list, Denver, has

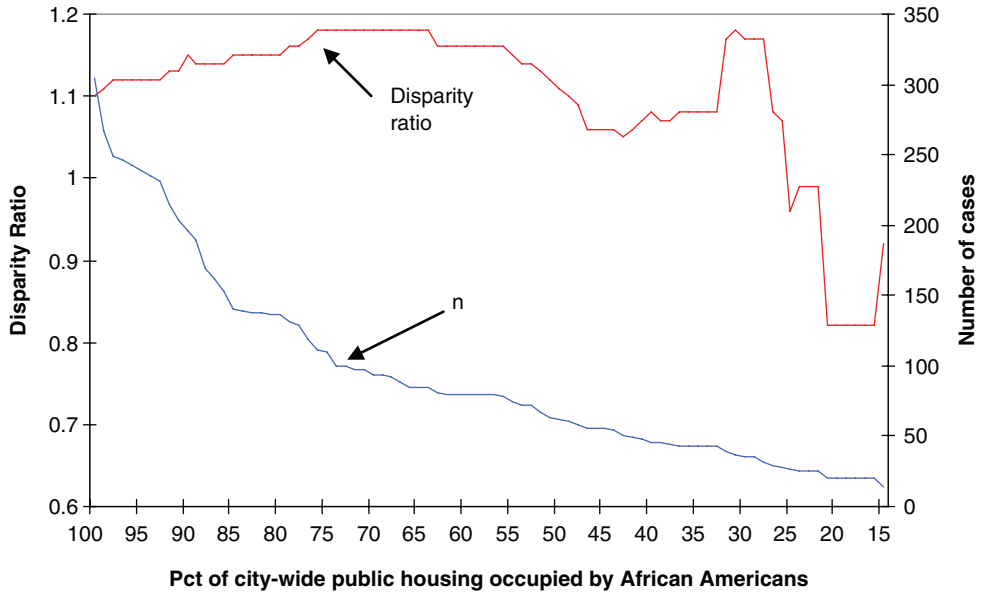


Figure 2. Disparity ratio as a function of percentage Black in city-wide public housing.

torn down public housing that had 51 per cent more African American households as a percentage of all households than the rest of its public housing stock.

Other cities had fewer African American households in demolished projects than would be expected given the overall racial make-up of public housing in the city. Two examples of this are El Paso, Texas, and Los

Angeles, CA, where public housing demolition has affected projects with higher Hispanic populations. Cities in the west and south-west account for seven of the 10 cities with the lowest disparity ratios for African Americans. This suggests that disparity ratios might be an artifact of region and perhaps dependent on whether Blacks make up a small percentage of city-wide units. However, the bivariate

Table 3. Cities with disparate displacement impact on African American households

<i>Cities with greatest disparities</i>			<i>Cities with lowest disparities</i>		
<i>Rank</i>	<i>City</i>	<i>Disparity ratio</i>	<i>Rank</i>	<i>City</i>	<i>Disparity ratio</i>
1	Corpus Christi	2.96	1	El Paso	0.17
2	Yonkers	2.52	2	Los Angeles	0.22
3	Lubbock	2.36	3	Topeka	0.61
4	Portland, OR	2.03	4	Sacramento	0.61
5	Ft Wayne	1.74	5	Hartford	0.69
6	Syracuse	1.70	6	Boston	0.70
7	Knoxville	1.65	7	San Antonio	0.76
8	Miami	1.62	8	Oakland	0.82
9	St Petersburg	1.58	9	Tucson	0.85
10	Denver	1.51	10	Tacoma	0.87

correlation between disparity ratio and percentage of the total public housing stock that is occupied by African Americans is small and statistically insignificant ($r = -0.063$).

There are two possible alternative explanations for the racial disparities found in the preceding analysis. First, the disparate racial impact of demolition may be an artifact of the fact that 'family' public housing is demolished at a greater rate than projects that house seniors, and that senior public housing is less racially segregated. The second counter-explanation for disparate racial impact is that demolition has been targeted to the most dysfunctional public housing developments and that these are disproportionately occupied by African Americans. The assumptions behind these alternative explanations are only moderately supported by the data. The proportion of a project's population that is Black is moderately correlated with the percentage that is below the age of 62 and with vacancy rate (a measure of building quality) ($r = 0.28$ and 0.23 respectively). A logistic regression analysis of *all* public housing projects in the 139 cities of this sample demonstrates that, even when controlling for building quality

and for the presence of seniors, developments that were predominantly (more than two-thirds) Black were 71 per cent more likely to be demolished than projects that were not mostly Black (see Table 4).

The analysis shows that building quality (as measured by percentage of units occupied) is an important predictor of whether or not a public housing project was demolished. Additionally, senior buildings (defined here as projects in which more than half of the residents were older than 62) were significantly less likely to be demolished than other projects. Yet, even accounting for those factors, public housing developments that were predominantly occupied by African Americans were significantly more likely to come down than projects with a more integrated profile. The data in Table 4 show that all three of these explanations are accurate in distinguishing demolished public housing from the projects left standing.

Indirect Displacement

The analysis of indirect displacement caused by HOPE VI is based on the expectation that neighbourhoods surrounding

Table 4. Importance of race, controlling for building quality and senior occupancy: binary logistic regression (dependent variable: demolition; $N = 1926$)

<i>Characteristics of public housing development</i>	β	<i>Exp</i> (β)	<i>Significance</i>
Number of units	0.000	1.000	***
Percentage units occupied	-0.036	0.964	***
Median rent	-0.017	0.983	***
Percentage incomes less than \$5000	0.000	0.999	-
Percentage with wages	-0.003	0.994	-
Percentage under 25 years old	0.001	1.001	-
Senior building ^a	-1.693	0.184	***
Predominantly Black ^b	0.539	1.714	**
Percentage units with 3 + bedrooms	0.002	1.002	-
Log likelihood 1102.15			
Percentage predicted correctly 88.6.			

^a 50 per cent or more of the occupants are 62 years of age or more.

^b 66 per cent or more of the occupants are African American.

Notes: *** $p < 0.001$; ** $p < 0.01$.

Table 5. HOPE VI project characteristics

<i>Neighbourhood characteristics</i>	<i>First grant in 1990s (n = 176)</i>	<i>Relocation in 1990s (n = 100)</i>	<i>Demolition in 1990s (n = 64)</i>
Mean population, 1990	5701	6246	6857
Mean percentage Black, 1990	59.7	61.1	60.3
Mean percentage Hispanic, 1990	11.9	12.3	14.1
Mean percentage Poverty, 1990	45.0	45.0	45.6
Mean percentage owner-occupied housing	28.4	25.6	24.3
Mean percentage vacant housing	14.9	14.9	14.7

HOPE VI projects will change due to the redevelopment that occurs on the public housing site. The focus here is on the degree of racial change and poverty reduction in HOPE VI neighbourhoods. In order to control for racial and poverty changes taking place more broadly in the local housing market, neighbourhood change is calculated relative to city-wide change.

The average population in these HOPE VI neighbourhoods was 5701 for the 176 that received their funding prior to 2000, 6246 for neighbourhoods that began relocation during the 1990s and 6857 for the neighbourhoods of projects that had been demolished (see Table 5). These neighbourhoods were 60 per cent African American on average and 12–14 per cent Hispanic. The HOPE VI neighbourhoods were characterised by a high poverty rate (45 per cent), low levels of owner-occupancy (24–28 per cent) and vacancy rates of close to 15 per cent. Because the basic patterns of neighbourhood change are the same across these three nested sub-samples, the focus is on projects that relocated residents prior to the 2000 census ($n = 100$).

Poverty Reduction in HOPE VI Neighbourhoods

The commonly accepted threshold for ‘concentrated poverty’ is an area in which more than 40 per cent of the population is below the poverty line (Jargowsky, 1996). Thus, on average, HOPE VI neighbourhoods were

above that threshold when the 1990s began. By 2000, the 100 neighbourhoods that had already experienced HOPE VI relocation averaged 36.1 per cent poverty, a reduction of more than eight percentage points. The average decline in poverty relative to changes taking place at the city level was 7.6 percentage points. That is, the average HOPE VI neighbourhood saw a decline in poverty that was 7.6 percentage points greater than their respective city-wide changes during the 1990s.

Most neighbourhoods saw a decline in poverty rate that was significantly greater than the secular trends taking place city-wide (see Table 6). Looking at the projects that moved to relocation during the 1990s (the middle column in the data table), one sees that poverty declined faster city-wide than in the HOPE VI neighbourhood in 25 projects (25 per cent). In 15 cases, the neighbourhood reduction in poverty was slightly greater (less than five percentage points) than what was experienced city-wide. In close to one-half of the cases (46 per cent), however, the neighbourhoods saw a reduction in poverty that was at least 10 percentage points greater than what was happening city-wide. Table 6 indicates that projects that were farther along (i.e. had moved to demolition by 2000) were even more likely to show significant poverty reduction (52 per cent declined in poverty at a rate at least 10 percentage points more than the city).

Table 6. Changes in poverty and in African American population in HOPE VI neighbourhoods relative to changes taking place city-wide, 1990–2000

	<i>Projects that received grant in 1990s</i> (<i>n</i> = 175)		<i>Projects that relocated families in 1990s</i> (<i>n</i> = 100)		<i>Projects that were demolished in 1990s</i> (<i>n</i> = 64)	
	<i>Poverty</i>	<i>African American</i>	<i>Poverty</i>	<i>African American</i>	<i>Poverty</i>	<i>African American</i>
Neighbourhood reduction that trailed the city-wide rate of reduction	44 (25)	51 (29)	25 (25)	25 (25)	12 (19)	15 (23)
Decline that exceeded the city-wide rate by less than 5 percentage points	29 (17)	49 (28)	15 (15)	25 (25)	12 (19)	19 (30)
Decline from 5–10 percentage points greater than city-wide decline	28 (16)	43 (25)	13 (13)	27 (27)	7 (10)	15 (23)
Decline of more than 10 percentage points greater than city-wide	74 (42)	32 (18)	46 (46)	23 (23)	33 (52)	15 (23)

Note: percentages are shown in parentheses.

Racial Turnover

Only one-quarter of the HOPE VI neighbourhoods saw a reduction in Black population more than 10 percentage points greater than the city-wide rate of change. In comparison with poverty reduction, the impact of HOPE VI on the Black population is more moderate (i.e. relatively more cases in which the reduction in Black population outpaced the city-wide trend by 5–10 percentage points).

Table 7 summarises the displacement effect for African Americans across all of the HOPE VI projects begun in the 1990s. The data show that HOPE VI redevelopment projects that received funding in the 1990s were, on average, located in cities that were experiencing a relative decline in their African American populations and the projects were located in neighbourhoods that lost population over the decade. Thus, although the neighbourhoods saw sizeable reductions in their Black populations, one would have expected some reduction given overall city trends during this decade. For projects that received their

first grant before 2000, their neighbourhoods were 59.7 per cent Black in 1990 and 55.9 per cent Black in 2000, a decline in the Black population that is an average of 3.17 percentage points greater than what occurred at the city scale. The per project displacement effect is 159; the average project displaced 159 more African Americans from the neighbourhood than would have been expected given city-wide trends. The displacement effects increase in projects that went to the relocation or demolition stages during the 1990s. For projects that saw relocation, the average neighbourhood went from 61.1 per cent Black to 56.1 per cent; for projects in which demolition took place in the 1990s, the neighbourhoods fell from 60.3 per cent Black to 55 per cent Black. Among both groups of projects, the reduction in Black population in these neighbourhoods was greater, on average, than what took place in the rest of the city.

Some portion of the neighbourhood-wide reduction in Black population is due to the relocation/demolition of the public housing

Table 7. Indirect displacement of African Americans in HOPE VI neighbourhoods

<i>Neighbourhood characteristics</i>	<i>First grant in 1990s (n = 176)</i>	<i>Relocation in 1990s (n = 100)</i>	<i>Demolition in 1990s (n = 64)</i>
Mean Black population, 1990	3422	3671	3953
Mean percentage Black, 1990	59.7	61.1	60.3
Mean Black population, 2000	2594	2643	2763
Mean percentage Black, 2000	55.9	56.1	55.0
Mean expected reduction in Black population ^a	670	810	942
Mean reduction in Black population	828	1028	1190
Per-project displacement effect ^b	159	217	248
Excessive reduction in Black population ^c	27 902	21 767	15 889

^a The reduction in the neighbourhood Black population if the neighbourhood change had matched the overall city change.

^b Actual reduction in neighbourhood Black population minus the expected reduction.

^c Sum of per-project displacement effects.

site, while the rest is the spillover, or indirect displacement effect. The relative size of the direct and indirect is impossible to determine because some of those displaced from the demolished public housing project may have moved elsewhere within the neighbourhood. The previous analysis indicated that the average public housing demolition removed over 200 African American families. Using this as a guide, it appears that on average, HOPE VI redevelopment projects have *overall* generated little indirect displacement of African Americans at the neighbourhood level.

These national averages, however, obscure significant variation across cities and across projects. Table 8 shows the 10 most extreme cases of indirect displacement of African Americans in HOPE VI projects begun in the 1990s. The table lists the change in Black population in the neighbourhood as well as the estimate of displacement, which is the difference between the rate of racial change in the neighbourhood and what took place in the city as a whole during the decade. The most extreme case is the McGuire Gardens project in Camden, NJ, a city that saw a 5 percentage point decline in the Black population between 1990 and 2000. The neighbourhood of the McGuire

Gardens project saw a 50 percentage point decrease in the proportion of its population that is African American. Thus, the city-wide trend and the neighbourhood trend diverged by 44.86 percentage points. In the cases of the Schuylkill Falls project in Philadelphia and the Commodore Perry project in Buffalo, the cities actually gained Black population while the HOPE VI neighbourhoods lost Blacks; thus the displacement estimate is greater than the actual level of decline in the neighbourhoods. This pattern applies to seven of the 10 cases shown in Table 8.

At the same time, there are a number of HOPE VI projects that produced opposite effects or no racial effects at all. For example, the three HOPE VI projects in Albany, NY, a city that experienced a decline in the African American population of 6.25 percentage points between 1990 and 2000, all saw increases in the Black population in the neighbourhoods surrounding the project site. The Fairfield Homes project area in Baltimore saw an increase in the Black population of 4.12 percentage points, while the Black population declined in the city as a whole by 4.88 percentage points. Similar patterns were seen in Hartford, CT, and in single projects in Pittsburgh and Milwaukee.

Table 8. Indirect displacement of African Americans for projects begun before 2000: ten highest levels of indirect displacement

<i>City</i>	<i>Project</i>	<i>Neighbourhood change in percentage Black, 1990–2000</i>	<i>Indirect displacement, 1990–2000^a</i>
Camden	McGuire Gardens	–49.84	44.86
Philadelphia	Schuylkill Falls	–27.95	30.88
Buffalo	Commodore Perry	–23.37	29.67
Tulsa	Osage Hills / Country Club Gardens	–26.06	27.98
Stamford	Southfield Village	–24.56	21.98
New Haven	Elm Haven	–21.10	21.30
Chicago	Cabrini Green	–22.84	20.41
Charlotte	Earle Village / First Ward	–18.89	19.54
Birmingham	Metropolitan Gardens	–8.86	18.74
Portsmouth	Ida Barbour Homes	–14.25	17.32

^a Calculated as the difference between the reduction in percentage Black in the neighbourhood and the city-wide reduction in percentage Black.

Taken together, the data presented in this section suggest that, while significant secondary displacement of African Americans occurs in some cases, there are offsetting examples where no such indirect displacement has occurred or where African American populations have actually increased in the neighbourhood. HOPE VI projects seem to generate a range of racial outcomes not easily summarised.

Figure 3 arrays HOPE VI projects along two dimensions; change in poverty and change in African American population, relative to changes taking place in the city as a whole.⁸ The most populated quadrant is the lower left which contains neighbourhoods experiencing White gentrification. These are neighbourhoods that saw a relative and sizeable reduction in poverty and a relative and sizeable reduction in African American population. A smaller number of neighbourhoods saw a reduction in poverty with little to no change in race, or even an increase in the Black population. These neighbourhoods could be said to be undergoing Black gentrification.

The full national sample of HOPE VI projects includes a number of projects located in neighbourhoods that are not predominantly

Black, many of which are south-western cities with large Hispanic populations. In these neighbourhoods, HOPE VI projects may have little to no impact on the Black population, which in any case, is not a large portion of the neighbourhood.

HOPE VI Displacement Patterns in Predominantly Black Neighbourhoods

By limiting the analysis to HOPE VI redevelopments taking place in predominantly (50 per cent+) Black neighbourhoods, it is possible to focus more directly on the issue of Black displacement. Sixty-two per cent of the neighbourhoods in our overall sample can be classified as predominantly Black in 1990. Table 9 summarises the displacement information for projects in these neighbourhoods.

The data indicate that, in HOPE VI neighbourhoods in which Blacks were the largest racial group, they constituted on average 84 per cent of the population in 1990. For all projects that began in the 1990s, the Black population declined four percentage points (84.0 to 79.9). For projects that went as far as demolition, the decline was six percentage points (84.7 to 78.8). In absolute numbers, the average reduction in Black population over the

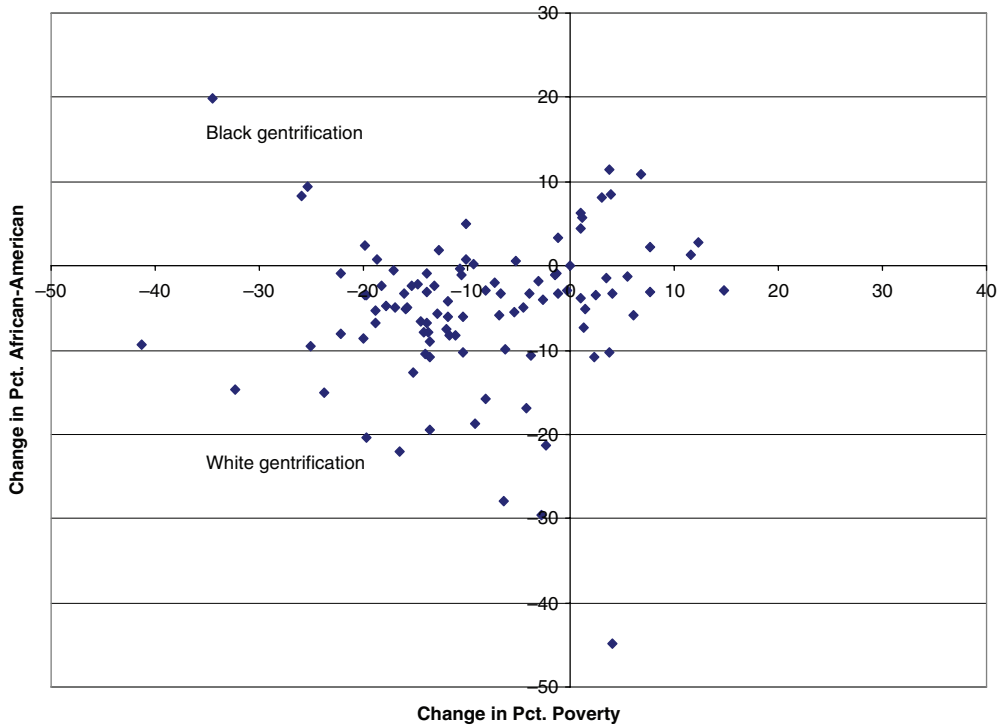


Figure 3. Relative changes in race and poverty in HOPE VI neighbourhoods, for projects that relocated residents prior to 2000 ($n = 100$).

Table 9. Indirect displacement of African Americans in predominantly Black HOPE VI neighbourhoods

<i>Neighbourhood characteristics</i>	<i>First grant in 1990s (n = 108)</i>	<i>Relocation in 1990s (n = 62)</i>	<i>Demolition in 1990s (n = 39)</i>
Mean Black population, 1990	4824	4927	5232
Mean percentage Black, 1990	84.0	84.2	84.7
Mean Black population, 2000	3643	3486	3539
Mean percentage Black, 2000	79.9	78.7	78.8
Mean expected reduction in Black population ^a	1005	1175	1372
Mean reduction in Black population	1180	1441	1694
Per-project displacement effect ^b	175	256	322
Excessive reduction in Black population ^c	19974	11 155	12 524

^a The reduction in the neighbourhood Black population if the neighbourhood change had matched the overall city change.

^b Actual reduction in neighbourhood Black population minus the expected reduction.

^c Sum of per-project displacement effects.

decade was 1005 persons for projects begun in the 1990s. For projects that completed relocation, the reduction was 1175 and, for projects that moved to demolition, the average reduction in Black population was 1372. The per-project displacement impact isolates the reduction in Black population above (or below) what is expected given city-wide trends. Predominantly Black neighbourhoods with HOPE VI projects initiated in the 1990s saw a reduction in the Black population of 175 more than expected given city-wide trends. For projects that went to relocation, the displacement effect was 256 and it was 322 for projects that saw demolition during the 1990s.

Once again, the national averages hide a great deal of variation. Figure 4 provides a look at projects that took place in African American

neighbourhoods. The predominance of White gentrification is more pronounced in this sample of projects. Twenty-seven HOPE VI neighbourhoods (44 per cent of this sample) saw a significant decline in both poverty and African American population.

Black gentrification characterises 18 per cent of the HOPE VI neighbourhoods that began the 1990s with a predominantly Black population. These neighbourhoods are highlighted in the rectangle within Figure 4. While Chicago's Bronzeville neighbourhood surrounding the Robert Taylor Homes is included in this group, the data reveal that Black gentrification is also occurring in HOPE VI neighbourhoods in Pittsburgh, Charlotte, Columbus (Ohio), Louisville and Wilmington (North Carolina), among other places.

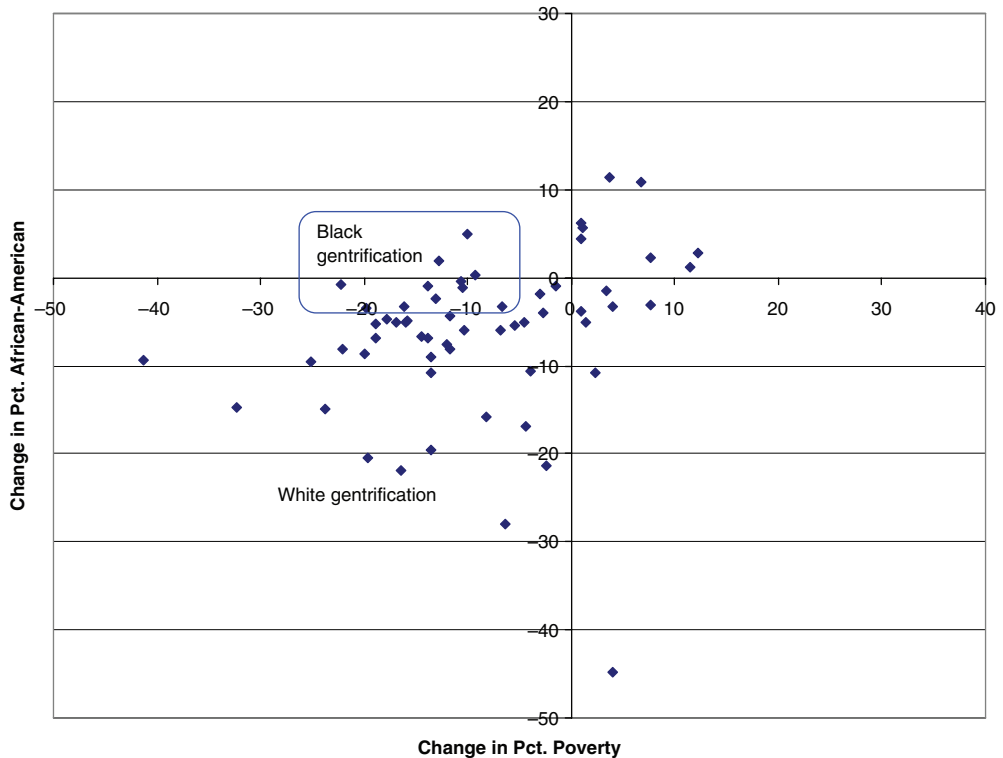


Figure 4. Relative changes in race and poverty in predominantly Black HOPE VI neighbourhoods, for projects that were demolished prior to 2000 ($n = 62$).

Neighborhoods that are near the intersection of the two axes have not experienced significant change in either poverty or racial profile. In these neighbourhoods, the HOPE VI project has seemingly not triggered any larger neighbourhood change. Finally, the smallest number of neighbourhoods see a sizeable decline in African American residents but no change in poverty (desegregating neighbourhoods) or see an increase in poverty with little racial change.

Discussion

Public housing demolition is playing a significant role in current patterns of gentrification in the US. Local officials have energetically pursued demolition of older public housing projects in many cities to clear away the physical and social impediments to renewed private-sector investment in inner-city neighbourhoods. These efforts have displaced hundreds of thousands of very-low-income families since the 1980s and have had a disproportionate impact on African Americans. The disparate impact, furthermore, is not merely the result of the fact that Blacks are over-represented in public housing. Faced with a range of public housing projects to sweep away, local housing authorities have systematically chosen projects that, even by the standards of their own city, are disproportionately inhabited by Black families.

The racial dimension of gentrification has been, according to Moore (2009), undertheorised. Recent evidence of Black gentrification has led to closer scrutiny of race in gentrifying neighbourhoods. The data presented here indicate that, in third wave gentrification—in which the state often takes the lead with high-profile redevelopment investments—race-based displacement is a prominent characteristic. The current practice of tearing down public housing and the massive displacement of low-income, African Americans that has ensued is, in many ways,

an update of the urban renewal experience of the 1950s and 1960s.

The current surge in demolition, however, can be distinguished from the urban renewal story in one important way—the degree of neighbourhood change that it has induced. The data presented here indicate that public housing demolition and redevelopment are generating a wide range of neighbourhood outcomes, the most common of which are patterns of Black or White gentrification. While urban renewal often cleared land that remained fallow for years because of the lax land investment markets that characterised central cities in the 1950s and 1960s, public housing demolition from the mid 1990s through 2007 took place in the context of highly active real estate markets in many cities. Furthermore, agencies often targeted public housing in neighbourhoods where the potential for spillover effects were greatest (Wily and Hammell, 1999) and, in fact, were asked to do so by HUD. In the aggregate, redevelopment projects that began in the 1990s were not associated with a significant amount of neighbourhood racial turnover. Public housing transformation has in some cities led to gentrification that entails significant racial turnover as well as changes in the income profile of the neighbourhood. This pattern was found in close to half of the HOPE VI projects in predominantly Black neighbourhoods. The data also show that one in five predominantly African American communities with a HOPE VI project experience Black gentrification—i.e. a significant reduction in poverty without racial change. HOPE VI triggered significant poverty reduction in most neighbourhoods, but was associated with racial turnover in a smaller number of places.

The neighbourhood change analysis presented in these pages must be regarded as preliminary given three important considerations. First, although the data reveal examples of Black gentrification as well as other paths of neighbourhood change triggered by

public housing transformation, the analysis cannot shed light on why neighbourhoods move down one of these paths or another. Additional research is needed to identify the circumstances that produce, for example, Black gentrification as opposed to White gentrification, or the conditions under which public housing transformation is not able to generate any larger neighbourhood changes.

Secondly, the amount of indirect displacement is probably underestimated because very few of the HOPE VI projects that form the basis of this analysis had completed the redevelopment process. As a result, the analysis more closely reflects the initial population changes associated with demolition and displacement. It is possible, indeed probable, that some if not most neighbourhood change dynamics would begin or accelerate after redevelopment is complete, producing subsequent settlement patterns that could reflect changes greater than those discovered by this analysis.

Finally, the neighbourhood data measure change over a 10-year period. The public housing redevelopment is only one event, albeit a major event, in that 10-year period. Although the analysis controls for broader market changes within the local economy, it is difficult to say, for any given neighbourhood, whether public housing redevelopment produced the neighbourhood change seen, or was simply a part of a trend that began before demolition. Whether public housing demolition was the cause of neighbourhood change or followed neighbourhood change requires more fine-grained data and analysis. The analysis confirms, however, the observations of previous studies that identify the central importance of public housing transformation to patterns of gentrification in US cities.

Notes

1. The definition of gentrification used here is the conventional one that highlights physical upgrading of the housing stock and built

environment combined with the displacement of low-income residents in favour of higher socioeconomic groups (see for example, Marcuse, 1985; and Smith and LeFavre, 1984).

2. The sample was created by combining the lists of the 150 largest US cities in 1990 and in 2000. This produced a list of 169 places, of which 30 were suburban communities. Given the lack of public housing in these suburban communities, they were removed from the analysis.
3. It should be noted at this juncture that the HUD database is dependent on the reporting by local housing authorities. For some cities in some years, no racial occupancy data are reported for any units.
4. Information on project characteristics was obtained from various sources, including HUD and local housing authorities. Address information was obtained from HUD and verified through direct observation, on-line sources and from local housing authorities.
5. The definition of neighbourhood is a difficult issue in large-*n* research. Jargowsky (1996) used census tracts, arguing that they are 'the only realistic choice' for national studies. Zielenbach (2002) defined neighbourhood to include the tracts that contained HOPE VI projects and all other tracts that abutted but did not include the site. Tracts were weighted by the percentage of the projects' units within each tract, with abutting tracts counted as 5 per cent of the weighted average. The US GAO (2003) defined HOPE VI neighbourhoods as the set of census block groups adjacent to the block group containing the HOPE VI site. Fosburg *et al.* (1996) allow local research associates to define neighbourhood according to local usage.
6. The number of residents displaced is estimated by multiplying the average household size in each project by the number of occupied units.
7. This suggests another standard against which to judge whether a disparate impact has occurred—the proportion of public housing residents who are African American in the average large US city. In the average large city in the US in 1996, 59.7 per cent of public housing residents were African American. By this standard, there is very large disparate impact, since the average demolished project was 79.7 per cent African American. Thus, demolished projects contained 33 per cent

more ($79.7/59.7 = 1.33$) African Americans as a proportion of all residents than would have been expected had demolitions occurred in projects that were representative of public housing in all cities in the sample.

8. The data are shown only for those projects that moved to relocation during the 1990s. The distribution of projects along these two dimensions is similar for projects that only received their funding in the 1990s and for those projects that moved to demolition in 1990s.

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