Ann Owens
Harvard University
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The Changing Geography of Subsidized Housing: Implications for Urban Poverty

Over the past several decades, subsidized housing policy has changed dramatically with a focus on geographically deconcentrating subsidized residents and achieving a greater income mix both in subsidized housing developments and in the communities in which subsidized housing is located. Legislation passed in the late 1990s allowed local housing authorities to prioritize higher-income residents for placement in projects. In 1992, the HOPE VI program began, through which more than 150,000 traditional public housing units were demolished and replaced by 247 mixed income redevelopment projects in 34 states. While less well-known than HOPE VI, Section 8 project-based (begun in 1974) and the Low Income Housing Tax Credit (1986) programs have resulted in the development of nearly 2 million units that provide smaller projects and a greater income mix than traditional public housing. Finally, the Housing Choice Voucher program (which began as the Section 8 voucher program in 1974) has increased nearly four-fold since the late 1970s, and voucher users are present in over 80% of tracts nationwide (Devine et al. 2003; Schwartz 2010). Subsidized housing residents are no longer concentrated in large projects in a small number of very poor tracts but are instead present in nearly all tracts nationwide.

Considerable research investigates how poor residents fare in these new programs, particularly the voucher program. The focus on individual residents results from the fact that research on the deleterious effects of living in neighborhoods of concentrated poverty on individuals' well-being, like Wilson's (1987) *The Truly Disadvantaged,* influenced these policy shifts, and it is critically important to understand how housing policy can operate as a broader anti-poverty policy in improving the life chances of poor residents. However, little attention has been paid to how shifts in housing policy impact *neighborhood* economic well-being and, subsequently, citywide distribution of poverty. Most research on the neighborhood context of subsidized housing has been static, for example, identifying characteristics of neighborhoods that voucher users move into or out of, but little research looks at the trajectories experienced by neighborhoods as subsidized units are geographically deconcentrated.

During these policy changes, there has also been an overall geographic deconcentration of poverty. National levels of the concentration of poverty, that is, the number of neighborhoods with poverty rates over 40% and the proportion of the poor living in those neighborhoods, rose

from 1980 to 1990 but declined to levels lower than those in 1980 from 1990 to 2000 (Jargowsky 2003). American Community Survey data suggest that national levels of poverty concentration have increased slightly since 2000 but are still lower than in 1980.The concurrent timing of these trends leads to speculation that the major changes in housing policy, particularly the (widely publicized) demolition of large-scale housing projects, might account for some of the decline in poverty concentration from 1980 to 2000 (Ellen and O'Regan 2008). Since 2000, media reports have lamented the "reconcentration" of subsidized housing residents and the social problems that accompany them as voucher users cluster in few affordable neighborhoods (Rosin 2008). In this paper, I examine these hypotheses more systematically and test the extent to which the changing location of subsidized housing units may be able to account for trends in neighborhood poverty since 1980. After describing the changing location of subsidized housing with respect to neighborhood poverty, I present results from regression analyses predicting neighborhood poverty trajectories associated with gaining or losing subsidized units. Next, I test if changes in the location of subsidized units can account for transitions into and out of various poverty categories. I then provide a simple simulation showing how many neighborhoods would have a substantially different poverty rate if subsidized residents had not moved. Finally, I compare a measure of poverty and subsidized unit dispersal to see if the overall geographic deconcentrations of each phenomenon are related.

Subsidized Housing and Neighborhood Poverty

In addition to middle class outmigration and racial segregation, the location of traditional public housing is one explanation for poverty concentration from the 1960s onward. Results suggest that the production of new public housing projects in the 1950s and 1960s was associated with increases in poverty rates both in the tracts in which public housing is located and in surrounding neighborhoods (Massey and Kanaiapuni 1993; Schill and Wachter 1995; Holloway et al. 1998; Carter, Schill and Wachter 1998). Massey and Kanaiapuni (1993) estimate that the construction of a project after 1950 raised a tract's poverty rate by 8 points by 1970. The authors show that public housing also has indirect effects on poverty rates—poverty rates don't just increase because public housing by definition results in more poor residents—due to net outmigration of the nonpoor and the failure of the deteriorating housing market to attract new nonpoor residents.

As housing policy has changed, there is some evidence that subsidized housing no longer negatively impacts the neighborhoods in which it is sited. One might expect LIHTC units to actually reduce neighborhood poverty, since these tenants may have higher incomes than other subsidized residents—the median income for LIHTC households is 45% AMI, which is generally above the poverty threshold and higher than the 22% AMI average for voucher households (Cummings and DiPasquale 1999; McClure 2006; Schwartz 2010). Evidence suggests that neighborhoods with LIHTC housing had lower poverty rates in 1990 compared to neighborhoods with other types of subsidized households and that these neighborhoods' poverty rates declined through the 1990s (Freeman 2004).

In order for voucher users to have an impact on neighborhood poverty, one would expect there must be concentrations of voucher users in certain neighborhoods. Devine and colleagues (2003) report that voucher users live in nearly all (83%) neighborhoods that have affordable housing. However, Turner, Popkin, and Cunningham (1999) note that voucher users do tend to cluster: defining a cluster as the presence of voucher users at a rate twice that expected given a neighborhood's share of the affordable housing stock, clusters exist in 20% of neighborhoods with any affordable housing and account for nearly half of all voucher users. Wang, Varady, and Wang (2008) provide recent evidence that the number of voucher "hot spots" and the proportion of voucher users within them increased from 2000 to 2005 in 6 of the 8 metro areas they studied.

Voucher users are less likely than poor renters (but 150% more likely than all renters) to live in distressed neighborhoods, measured in terms of poverty rate, male joblessness, income from public assistance, and female-headed households (Pendall 2000). However, there is little evidence that voucher users are moving into middle- and upper-class areas, instead moving into moderately poor areas. In central cities, only 14% of voucher users live in neighborhoods with poverty rates less than 10%, with ¼ of voucher users in neighborhoods with poverty rates in the 10-20% range and ¼ in neighborhoods in the 20-40% poor range (Devine et al. 2003). More recently, Wang, Varady, and Wang (2008) examine emerging and disappearing voucher "hot spots" from 2000 to 2005 (i.e., areas that either became or were no longer high-density voucher areas). They find that there is little evidence that voucher users are exiting high poverty areas and entering low poverty areas in substantial numbers, instead entering at least moderately poor areas.

When voucher users move to low or moderately poor neighborhoods, it is possible that they "tip" the neighborhood into a higher poverty status, particularly since the voucher clientele grew increasingly poor during the 1980s and 1990s (Turner, Popkin, and Cunningham 1999). Voucher users can contribute to the concentration of poverty by "reconcentrating" rather than deconcentrating—that is, while one high poverty neighborhood may have been eliminated as residents were vouchered out of public housing developments, a new one may have been created when voucher users reconcentrated elsewhere. Hartung and Henig (1997) provide some evidence that there has been a "reconcentration" of suburban voucher holders in low SES neighborhoods with high minority populations outside of Washington, DC.

Most studies examining the impact of subsidized housing on the deconcentration of poverty look at one program, rather than assessing the entire universe of subsidized renters and their historical presence in neighborhoods, and they also rarely look at changes in neighborhood poverty, instead assessing correlations at one point in time. In addition, studies rarely look at metro or citywide concentration of poverty, instead looking at individual neighborhoods' poverty rates. This paper fills these holes in exploring the relationship between changes in subsidized housing policy and changes in neighborhood poverty.

Data

I chose 11 focal Metropolitan Statistical Areas (MSAs) for this study that vary by region and their history of poverty concentration (defined as the percent of the poor living in neighborhoods with poverty rates over 40%). To include a diverse sample, I aimed to choose 1 city in each of 4 regions (Northeast, Midwest, South, and West) in which poverty concentration increased, 1 city in which poverty concentration decreased, and 1 in which poverty concentration was stable from 1980 to 2000, drawing on the Appendix in Jargowsky's (2003) account of poverty concentration. There is not an MSA in the Midwest of suitable size with increasing poverty concentration during this time, so I end up with 11 MSAs: New York, Pittsburgh, and Providence in the Northeast, Chicago and Cleveland in the Midwest, Dallas, Louisville, and Washington, DC in the South, and Los Angeles, Phoenix, and Seattle in the West. Table 1 presents the selection scheme in terms of region and poverty concentration history. I use MSA/PMSAs rather than cities or counties to capture a more complete picture of the housing options available in the area. Within these 11 MSAs, I investigate the relationship between

neighborhood poverty and subsidized housing from 1980 to 2008. I provide national analyses where possible, given the degree of missing subsidized housing data as I describe below.

[Insert Table 1 about here]

Subsidized Housing

HUD provides data on the location of subsidized housing through the "Picture of Subsidized Households" datasets. These data consolidate information provided to HUD by local housing authorities into summary statistics at the Census tract level. I use data from 1977, 2000, and 2008 in these analyses. The 1977 file provides project-level data for all housing authorities, but this data is not geocoded. Therefore, I linked these projects to HUD's "Subsidized Housing Projects' Geographic Codes, Form HUD-951" database to get projects' addresses and geocoded latitude and longitude coordinates. For projects in the 1977 data without geocoded information (either because they did not exist in 1994 or their coordinates were missing) in the 11 focal MSAs, I conducted internet searches on the project names or project codes, examined development reports and physical inspection reports (which provide addresses) produced by HUD, and contacted local housing authorities to ask about these projects' locations and was able to substantially reduce the amount of data missing for these projects. In all, I was able reduce the number of units for which there was no geocoded information from 30% at the national level to less than 15 percent for each focal MSA, though missing data vary by local housing authority. The 1977 data provides the number of units in subsidized housing projects; Section 8 vouchers are not included in this data, as the Section 8 legislation only passed in 1975. Many housing authorities were not yet administering vouchers, and the data was not reported to HUD at this date.

For the 2000 and 2008 data, HUD provides Census tract level summaries of unit counts for Section 8/Housing Choice Vouchers and for subsidized fixed unit programs including public housing, Section 8 project-based units, Section 236 project-based, other multi-family projects (including rehabilitation centers or halfway houses), and projects funded through Low Income Tax Credit subsidies. I could not reduce the number of missing information for vouchers as street addresses for individual units are not provided, but I used the project-level file to minimize the missing data on subsidized fixed units by again using internet searches, HUD documentation, and local housing authorities' information for the 11 MSAs. About 5 percent of units nation-

wide cannot be assigned to a Census tract in 2000 and 2008. Table 2 presents the total number of subsidized units, by fixed unit (project) or vouchers, nationally and in each MSA from 1977 to 2008. The total number of housing subsidies has expanded dramatically during this time period.

[Insert Table 2 about here]

In addition to the overall program expanding, the geographic distribution of subsidized units changed dramatically from 1977 to 2000 to 2008. In 1977, subsidized units were located in fewer than 7 percent of tracts nationwide and 21 percent of tracts in these 11 diverse MSAs. By 2000, subsidized units were present in more than 70% of tracts in each of these MSAs, and 83% of tracts nationwide had at least 1 subsidized housing unit. The change was driven primarily by the introduction and utilization of the voucher program. Fixed units were present in only 15 to 51% of tracts in each MSA, but voucher units were present in over 70% of tracts. From 2000 to 2008, fixed units have been dispersed more widely—by 2008, there were subsidized units present in nearly half (45%) of all tracts compared to less than 1/3 of tracts in 2000. Much of this dispersal in fixed units is due to HUD's introduction of new programs such as the LIHTC (1986) and Section 8 project based assistance (1975) and increased use of Section 236 loans (originated in 1968). These programs build fixed units that differ from traditional public housing projects in that they mix incomes (among those eligible for subsidized housing) and they generally include a smaller number of units in less poor neighborhoods. Vouchers became even more geographically prevalent, with nearly 90% of neighborhoods nationwide including at least 1 voucher by 2008.

Neighborhood Poverty

Data on poverty rates comes from the Neighborhood Change Database (NCDB) provided by Geolytics for 1980 to 2000. The NCDB provides Census data normalized to 2000 tract boundaries. I link the 1980 NCDB Data on poverty rates to the 1977 Picture of Subsidized Households data and the 2000 NCDB data on poverty rates to the 2000 Picture of Subsidized Households data. Data on poverty rates post-2000 come from the 5-Year Estimates from the American Community Survey (ACS) for 2005-2009. These are aggregate counts over the 5-year period from 2005-2009 at the Census tract level. Use of the ACS data is not without issues, since the sampling frame differs from that of the Census and there are conceptual differences in a one-year snapshot and a five-year aggregate. However, it is the only national tract-level dataset

providing information after 2000. I link the 2005-2009 average ACS estimates of tract poverty to the 2008 Picture of Subsidized Households.

Following past research on neighborhood poverty, I calculate the number of Census tracts with poverty rates in 5 categories (0-10%, 10-20%, 20-30%, 30-40% and over 40%) and the proportion of the total number of poor residents in each MSA living in tracts in each category. At the national level, there were declines overall from 1980 to 2005-2009 in the proportion of poor residents living in neighborhoods in each of the extreme categories (0-10% and over 40% poor), but increased concentration of the poor in the middle 3 categories. From 1990 to 2000, the absolute number of neighborhoods in the extreme categories declined while the number in the middle three categories increased (See Jargowsky 1997 and 2003 for a comprehensive account of trends in poverty concentration). From 2000 to 2005-2009, there was a slight increase in the number of neighborhoods with poverty rates over 40% and the proportion of the poor living in these neighborhoods. Chicago, New York, Dallas, and Phoenix follow this general trend—the proportion of the poor living in either very high or very low poverty neighborhoods declined, while the proportion of the poor living in moderately poor neighborhoods increased. In contrast, in Los Angeles, Providence, and Washington, DC, the proportion of the poor living in very poor neighborhoods increased overall from 1980 to 2005-2009 while the proportion living in low poverty neighborhoods declined. Seattle, Louisville, Cleveland, and Pittsburgh show more mixed patterns and subtle shuffling of the poor population.

What Types of Neighborhoods Have Subsidized Housing Units?

As Table 3 shows, in 1977, most subsidized housing is located in very high poverty neighborhoods. In Chicago, Cleveland, Dallas, Louisville, New York, and Phoenix, the majority of subsidized housing was located in tracts with poverty rates over 40% and less than 10% of subsidized housing was located in tracts with poverty rates under 10%. Providence and Seattle are the clear outliers, with only 1% (Providence) and 5% (Seattle) of their subsidized housing located in neighborhoods with poverty rates over 40% and over 20% of subsidized housing in tracts with poverty rates below 10%.

[Insert Table 3 about here]

By 2000, the modal location for subsidized units nationwide is in neighborhoods with poverty rates between 10 and 20 percent. Only in New York and Louisville is the modal location

for subsidized housing (around 1/3 of it) in tracts with poverty rates over 40%, while in Chicago and Washington, DC, most subsidized housing is located in tracts with poverty rates below 10%. This is driven largely by the increased use of vouchers: in Chicago, Cleveland, Louisville, and New York, the modal location for fixed units is still in tracts with poverty rates above 40%.

By 2008, it appears that the momentum of subsidized units being located in lower poverty neighborhoods has stalled. In Chicago, Cleveland, Dallas, Louisville, Pittsburgh, and Seattle, a lower proportion of subsidized units are located in neighborhoods with poverty rates under 10% than was the case in 2000. In Cleveland, Dallas, and Louisville, the proportion of subsidized units in neighborhoods with poverty rates over 40% increased substantially, by 7-15 points. The post-2000 trends show a stall or reversal of the 1977 to 2000 trends because much of that change in the location of subsidized housing units was due to a massive expansion of the voucher program, since there are no vouchers in the 1977 data. While the dispersal of subsidized residents from 1977 to 2000 to less poor neighborhoods is driven mainly by vouchers, voucher users appear to be shifting to higher poverty neighborhoods by 2008—in all MSAs but New York, Los Angeles, Seattle, and Washington, DC, a higher percentage of all voucher users live in neighborhoods with poverty rates over 40% in 2008 than in 2000.

What is the Economic Trajectory of Neighborhoods that Gain Subsidized Housing Units?

The previous analyses revealed that the geographic distribution of subsidized housing units shifted from very high poverty neighborhoods to moderately poor neighborhoods. This set of analyses investigates how neighborhoods fared as the location of subsidized units shifted. I investigate the relationship between the change in subsidized housing units and the change in neighborhood poverty through regression analyses predicting the change in the number of poor households in a neighborhood from the change in the number of subsidized units, split into change in fixed units and change in voucher units, from 1980 to 2000 and from 2000 to 2009.

For the earlier time period, I regress the change in the number of poor households from 1980 to 2000 on the change in subsidized units from 1977 to 2000, controlling for the number of poor households in 1980, the number of subsidized units in 1977, the number of nonpoor households in 1980, and the change in the number of nonpoor households from 1980-2000. For the post-2000 period, I regress the change in the number of poor households from 2000 to 2005-2009 on the change in subsidized units from 2000 to 2008, controlling for the number of poor

households in 2000, the number of subsidized units in 2000 (both voucher and fixed), the number of nonpoor households in 2000, and the change in the number of nonpoor households from 2000 to 2005-2009.

Poor households are defined as family and nonfamily households (individuals living alone) with incomes below the poverty threshold for their family size. Change in the number of subsidized units is calculated in two ways: change in the number of fixed units and change in the number of voucher units. Since only fixed units are counted in 1977, the change in the number of vouchers from 1980 to 2000 is simply the number of vouchers in 2000. Fewer than 10% of tracts that had subsidized units in 1980 lost any units by 2000, in part because the tracts only could have lost fixed units since vouchers were not counted in 1977. Nearly all tracts gained at least 1 subsidy, most often a voucher unit. From 2000 to 2008, fewer than 25% of tracts that had fixed units in 2000 lost any units, and a larger number of tracts *gained* fixed units in each MSA during this time period than the 1980 to 2000 time period, demonstrating that, despite attention to demolitions, not all fixed units are being converted to vouchers and that new kinds of fixed units—particularly LIHTC units, as nearly half of the 1.6 million units in the program have been created since 2000—are becoming more widely used.

Nonpoor households are defined as the complement to poor households, that is, family and nonfamily households whose income was above the poverty threshold for their family size. I control for nonpoor households in the earlier year and the trend in nonpoor households between years to (a) control for population changes without endogeneity (the dependent variable is arithmetically part of the total population change); and (b) to estimate the countervailing forces that may offset the influx of subsidized units.

A coefficient of 1 on the change in the number of subsidized units would indicate that for every additional subsidized unit a neighborhood gained, the number of poor households increased by 1. While this would seem definitional, in fact, not all households receiving housing subsidies are considered poor by the dichotomous poverty standard. Renters with incomes up to 80% of Area Median Income (AMI) are eligible for subsidized housing. Following the Quality Work Responsibility and Housing Act in 1998, 75% of new vouchers must be allocated to those earning less than 30% of AMI and 40% of new public housing admissions must earn less than 30% of AMI. In Chicago in 2009, the AMI was $75,400 for a family of four, so families earning

up to $60,320 were considered low-income and eligible for subsidized housing. Families earning less than $22,620, or 30% of AMI, were prioritized for subsidized housing. The 2009 poverty threshold for four people was $21,954. Therefore, a coefficient under 1 could indicate either that (1) the impact of an additional subsidized unit is being tempered by an increase in nonpoor residents; or (2) not all subsidized households are below the poverty line. A coefficient over 1 would suggest spillover rates, that subsidized units increase the poverty rate by making the neighborhood less attractive to nonpoor residents and more attractive to poor (but non-subsidized) residents, perhaps by lowering housing costs.

Overall, results of these regression analyses can be interpreted in several ways:
(1) the broad shift in housing policy from concentrating poor residents in large projects towards dispersing poor residents with vouchers *causes* the increase in neighborhood poverty;
(2) the change in the number of poor households results in certain neighborhoods being more attractive for either the citing of fixed units or for voucher users;
(3) an exogenous factor, like changes in housing cost, determines both increases in poor households and in subsidized housing units (for example, a decline in housing costs in a neighborhood would attract both subsidized and unsubsidized low-income renters); or
(4) with the expansion of the voucher program and other new programs, households that were not subsidized in an earlier time are subsidized in a later time—perhaps in the same tract. (This explanation is less likely in the later period, since the growth of the subsidy program is less from 2000 to 2008 than from 1977 to 2000.) Without experimental data, it is not possible to estimate causal effects, but that is not the focus of analyses—by definition, an increase in the number of subsidized households in a neighborhood should "cause" the number of poor households to increase, even if not all of the subsidized households are below the official poverty rate. Instead, these analyses explore what neighborhoods that gained or lost subsidized units look like, with the next set of analyses exploring the odds that gaining or losing subsidized units can move neighborhoods into or out of poverty categories. The analyses reveal the possibility that this policy shift accounts for some of the trends in neighborhood poverty since 1980.

[Insert Tables 4a and 4b about here]

Table 4a shows regression results for the nation as well as for each of the 11 focal MSAs from 1980 to 2000, while Table 4b presents results for the post-2000 period. The model predicts

change in the number of poor households based on the change in fixed subsidized units and voucher units (Models were run separately for the impact of fixed and voucher units, and results are largely the same as when the variables are entered together.). From 1980 to 2000, the national results suggest that neighborhoods that gain 100 fixed subsidized units from 1980 to 2000 have about 20 more poor households than comparable neighborhoods that gain no subsidized units.[1] From 2000 to 2005-2009, the coefficient at the national level indicates a gain of 100 fixed units corresponds to only 10 more poor households. These coefficients are far below a 1:1 relationship, suggesting that fixed units may be being added to neighborhoods where there are countervailing forces that would otherwise *decrease* the poverty rate. The models show that neighborhoods that are gaining subsidized units are also gaining nonpoor households, but at a slower rate than poor households. The increased use of programs like LIHTC and mixed income housing designed to intermingle subsidized and market-rate units could explain why nonpoor households are moving to these neighborhoods as well—locating subsidized units in neighborhoods where nonpoor residents also want to live is necessary to attracting market rate residents. Another explanation for why the relationship between fixed units and poor households is not 1:1 is that up to 60% of residents moving into fixed subsidized housing may be above the poverty rate and so they themselves would not count as an additional poor household.

The association between gaining vouchers and gaining poor households is much higher than for fixed units. From 1980 to 2000, the national results show that for every 10 voucher units a neighborhood gains, the number of poor households increases by 9.9, suggesting that voucher users have a much more direct impact on the poverty rates of their neighborhoods. From 2000 to 2005-2009, the association is reduced by half; for every 10 voucher units a neighborhood gains, the number of poor households increases by about 5. Even though vouchers are dispersed widely across cities and are most common in neighborhoods with poverty rates under 20% by the late 2000s, the neighborhoods where voucher users moved experienced bigger increases in poverty rates than neighborhoods where an equal number of fixed units were sited. Voucher users can live anywhere they can find a participating landlord with a unit that meets the rent requirements (40% of Fair Market Rent), and perhaps it is the case that voucher users are not able to afford neighborhoods that are also attracting nonpoor residents. Initial neighborhood poverty level is

[1] I use 100 unit examples for fixed units because when tracts gained fixed units, the median increase was 77. In contrast, the median number of vouchers in 2000 was 8, so I use 10 unit examples.

controlled for in analyses, but perhaps some other unobserved neighborhood or housing characteristics make some poor or affordable neighborhoods more attractive to voucher users than others. Perhaps rents in poor but stable or improving neighborhoods are out of reach for voucher users. Voucher units may impact neighborhoods more than fixed units because local housing authorities can purposely site fixed units in neighborhoods with stable or decreasing poverty rates, while this planning aspect is lost in the voucher program.

I ran analyses separately by MSA to see how the relationship between subsidized units and poverty rates varies across these 11 diverse contexts. From 1980 to 2000, in all MSAs but New York, the relationship between a change in the number of fixed units and a change in the number of poor households is about the same as or larger than the national results, with a 100 unit addition of fixed units corresponding to between 20 (Phoenix and Dallas) and 36 (Cleveland) more poor households (In New York, the coefficient is slightly smaller, at 15.). From 2000 to 2005-2009, coefficients in each MSA are all larger than that for the national average; 100 additional fixed units correspond to between about 20 and 30 additional poor units for all MSAs but New York, Phoenix, and Pittsburgh. New York and Pittsburgh have a smaller coefficient than most other MSAs (between 11 and 16), while Phoenix has the largest coefficient: in Phoenix neighborhoods, gaining 100 fixed units from 2000 to 2008 corresponds to gaining 60 fixed subsidized units, the largest coefficient in either time period among all MSAs. In 9 of the 11 MSAs, the coefficients from the earlier to the later time period are within 0.1 of one another, suggesting that estimates for how many poor households neighborhoods gain with every 100 subsidized fixed units are stable within 10 households of each other over time. Phoenix changes drastically, as 100 additional fixed units correspond to 20 more poor households in the earlier time period and 60 in the latter.

In each MSA, vouchers had a stronger relationship with the number of poor households in a neighborhood than fixed units in both time periods, but the magnitude varied. From 1980 to 2000, Dallas and Cleveland followed the national trend of about a 1:1 relationship between the growth in voucher users and the growth in poor households. In Pittsburgh, Providence, and Washington, DC, a gain of 10 voucher users corresponded only to 5 to 7 more poor households, suggesting that voucher users were able to move to neighborhoods that were also attracting nonpoor households. In Los Angeles, Louisville, Chicago, and New York, a gain of 10 voucher

units corresponded to about 9 more poor households. In Seattle and Phoenix, there are spillover effects: neighborhoods that gain one more voucher have more than one additional poor household compared to similar neighborhoods who did not gain vouchers. In Phoenix, the relationship is nearly 2 to 1—10 more voucher users in a neighborhood corresponds to 19.4 more poor households. This suggests that voucher users are moving to neighborhoods with rapidly increasing poverty rates—either because voucher users can only find units in neighborhoods that also attract poor non-subsidized renters or because voucher users create a stigma in the neighborhood that drives out nonpoor residents, though neighborhoods with increasing poverty rates in Phoenix and Seattle were still gaining some nonpoor residents on average.

From 2000 to 2005-2009, neighborhoods that gain 10 additional voucher gain between 6 and 8 additional poor households in Los Angeles, Dallas, Chicago, Pittsburgh, Seattle, and Washington, DC. In Cleveland and Phoenix, the relationship is near 1:1, and only in Phoenix is the coefficient slightly over 1 (1.045). The relationship between changes in voucher users and changes in poor households is not significant in Louisville and Providence in the later time period. In New York, 10 additional vouchers corresponded to only 2 additional poor households. In all MSAs but Pittsburgh (increase of 0.06), the coefficient on the change in vouchers declined from the 1980 to 2000 to the post-2000 period.

Results suggest that neighborhoods that gained subsidized units gain more poor households than similar neighborhoods that did not gain subsidized units, but the relationship is not one to one. Instead, results for fixed units suggest that subsidized housing is being sited in neighborhoods that also attract nonpoor residents. With regard to vouchers, the relationship is closer to a one to one correspondence between additional vouchers and additional poor units, in fact exceeding the one to one threshold in Phoenix and Seattle from 1980 to 2000 and in Phoenix post-2000. This suggests that voucher users, who are not bound by siting plans or concerns over the concentration of poverty, may be moving to neighborhoods that have increasing poverty rates, perhaps because they can afford better units in these neighborhoods. Siting subsidized housing units, providing more mobility counseling, or limiting the number of vouchers in certain types of neighborhoods may be a strategy for avoiding a reconcentration of poverty. In addition, voucher users may track more closely with neighborhood poverty since more of these renters were likely to have incomes below 30% of AMI. Most (75%) voucher users were thus below the

poverty threshold, while up to 60% of new public housing residents would be considered nonpoor by the poverty threshold. Comparing the trends over the two time periods, the coefficients in the 1980 to 2000 time period are slightly larger than from 2000 to 2005-2009. This is not unexpected, given the more dramatic expansion of the subsidized housing program and geographic deconcentration of subsidized units during this time.

Transitions Into and Out of Poverty Categories

In this section, I examine the possibility that gaining or losing subsidized units has a strong enough relationship with neighborhood poverty to move tracts into or out of poverty categories (0-10%, 10-20%, 20-30%, 30-40%, and over 40% poor). These analyses more directly explore the role subsidized housing has in accounting for the overall declining number of very poor and nonpoor neighborhoods and the rise of moderately poor neighborhoods from 1980 to 2000. The trends in poverty concentration from 2000 to 2005-2009 are less extreme, with a continued decline of low poverty neighborhoods, rise of moderate poverty neighborhoods, but a slight increase in the number of very poor neighborhoods. Regression results (not presented due to space) show that, from 1980 to 2000, at the national level, the odds of a neighborhood entering into a higher poverty category increase by 18% with every 100 additional fixed units, compared to neighborhoods that did not gain fixed subsidized units. Neighborhoods that gained 10 voucher units were 11% more likely to move into a higher poverty category than comparable neighborhoods that did not gain voucher users. From 2000 to 2005-2009, results were lower in magnitude, likely because of the smaller changes among these poverty categories during this time. At the national level, tracts that gained 100 fixed units were 7% more likely to enter into a higher poverty category, and tracts that gained 10 voucher units were 3% more likely to enter into a higher poverty category.

Shift out of High Poverty into Moderate Poverty Status

The previous set of analyses suggests that the impact of gaining or losing subsidized housing may be large enough to move neighborhoods into higher or lower poverty categories. Subsidized units have become less concentrated in neighborhoods of concentrated poverty (poverty rates over 40%) and have become more common in moderately poor neighborhoods. Some policymakers and researchers attributed the decline in the number of neighborhoods of concentrated poverty in the 1980s and 1990s to the demolition of large-scale housing projects,

but the data suggest this phenomenon is not as common as one might think and that large-scale demolition cannot account for much of the reduction in neighborhoods of concentrated poverty. In 1980, in the 11 focal MSAs for which missing data is minimized, fewer than 75% of high poverty neighborhoods contained any public housing, and only 6% of neighborhoods that had poverty rates over 40% in 1980 but had poverty rates below that by 2000 lost any subsidized units. In the national data, 13% of tracts that exited concentrated poverty from 1980 to 2000 lost any units. In fact, 84% of tracts among the 11 focal MSAs (74% in national data) that exited concentrated poverty *gained* at least 1 unit; the majority gained only voucher units. Therefore, while some neighborhoods exited concentrated poverty because of the loss of subsidized units, the broad shift in housing policy away from projects and toward scattered site and voucher units does not account for most neighborhoods whose poverty rates declined to less than 40%.

Post 2000, at the national level and among the 11 focal MSAs, 30% of tracts that exited concentrated poverty lost any fixed units and about 25% lost voucher units, so it seems that more recently, deconcentrating public housing might aid in improving neighborhood SES. Alternatively, perhaps as neighborhood SES improved, voucher users could no longer afford the neighborhood or landlords were not as desperate to accept their guaranteed rent if the neighborhood was becoming more attractive after the demolitions. However, the overall post-2000 trend in poverty concentration is less clear, with the number of high poverty neighborhoods and the proportion of the poor that live in these neighborhoods slightly increasing at the national level and with the pattern varying among MSAs. Therefore, subsidized housing as an explanation for the decline in concentration of poverty seems weak in the earlier time period and to be counterbalanced by other forces, perhaps the economic recession, in the later time period.

To look at this relationship more systematically, I analyze only tracts with poverty rates over 40% in 1980 and test if a changing number of subsidized units influences the likelihood the neighborhoods remained high poverty by 2000 (about 60%) or exited concentrated poverty. I also test movement out of low poverty status by looking only at tracts with poverty rates below 10% in 1980 and examine whether subsidized units predict the likelihood these tracts entered a higher poverty category or stayed in the lowest category (about 70%). I repeat the analyses for the post-2000 time period to see if a changing number of subsidized units influenced the

likelihood of a very high or very low poverty tract in 2000 exiting that category by 2005-2009. Table 5 displays results for both sets of analyses and for both time periods.

[Insert Table 5 about here]

Table 5 shows that, at the national level in both time periods, losing 100 fixed units of subsidized housing increases the tract's odds of exiting concentrated poverty by about 14-16% (exp(100*-0.00170)=0.844). Tracts in concentrated poverty that lose 10 vouchers increase their odds of exiting concentrated poverty status by 4%. Looking at the pooled results for the 11 focal MSAs, the results are about the same for fixed units in the earlier time period and slightly smaller in the later time period. From 1980 to 2000, the results for vouchers are much larger than for fixed units in these MSAs—gaining 10 voucher units reduces the tract's odds of exiting out of concentrated poverty by about 11%. Post-2000, the results for vouchers are more similar to the national results, with a gain of 10 vouchers corresponding to a reduction in the odds of exiting concentrated poverty by about 6%.

Results for exiting low poverty status are larger than for exiting concentrated poverty status, suggesting that a change in subsidized housing might impact less on neighborhoods that are already poor. At the national level, gaining 100 units of fixed subsidized housing *doubles* a tract's odds of exiting low poverty status from 1980 to 2000 and increases the odds 30% from 2000 to 2005-2009. Gaining just 10 vouchers increases the odds of exiting low poverty status by 40% from 1980 to 2000 and 20% post 2000. For the pooled MSA sample, gaining 100 units of fixed subsidized units increases the tract's odds of exiting out of low poverty status by 70%, while adding 10 voucher units increases the tract's odds of exiting low poverty status by 52% from 1980 to 2000. From 2000 to 2005-2009, gaining 100 fixed units or 10 units both increase the odds of a tract exiting low poverty status by about 30%.

If Subsidized Units Had Not Moved, What Would Neighborhoods Look Like?

Another way to assess the impact of subsidized units on pushing tracts over a poverty threshold is to assess what poverty category the tract would be in if it had not gained subsidized units—if subsidized housing policy had not changed and subsidized units were still concentrated in the areas they were in the earlier time period. First, I categorized the tracts into 5 categories based on their *household* poverty rate: 0-10%, 10-20%, 20-30%, 30-40%, and over 40% (the correlation between household and individual poverty rates is 0.97). I next estimated household

poverty categories based on the number of poor households in 2000 minus the difference in subsidized households from 1977 to 2000—this creates a simulated 2000 poverty rate based on the number of poor nonsubsidized households and subsidized households continuously present from 1977. I categorized tracts based on these simulated poverty rates into the same 5 categories and conducted a cross-tabulation, displayed in Table 6. I then repeated the exercise for the 2000 to 2005-2009 period.

[Insert Table 6 about here]

Over 99 percent of tracts with actual household poverty rates below 10% in 2000 and 98 percent of tracts in this category in 2005-2009 would still fall into this category based on the simulated household poverty rate in which changes in subsidized units are discounted, similar to McClure's (2006) estimates that removing all vouchers from tracts would only shift 0.12% of neighborhoods below the 10% poverty threshold. However, the simulation indicates more movement among tracts in the moderate and high poverty categories. In 2000, only 65% of tracts with real household poverty rates of 10-20%, 46% of tracts in the 20-30% range, 33% of tracts in the 30-40% range, and 51% of tracts with real household poverty rates over 40% would still be in those categories if they had not gained subsidized units from 1977 to 2000. Fewer than 5% of tracts in any category would be in a higher poverty category, suggesting that nearly all of these tracts would be in a lower poverty category if they had not gained subsidized units from 1977 to 2000 (to be in a higher category, a tract would have had to lose units from 1977 to 2000 and have this difference discounted). In 2005-2009, 85% of tracts with real household poverty rates of 10-20%, 74% of tracts in the 20-30% range, 65% of tracts in the 30-40% range, and 73% of tracts with real household poverty rates over 40% would still be in those categories if they had not gained subsidized units from 2000 to 2008, suggesting that the post-2000 impact of the dispersal of subsidized housing is smaller, which is logical given that the dispersion of units from 2000 to 2008 is much smaller than that from 1977 to 2000.

Of course, this simple simulation does not account for the expansion of the total number of subsidized units, particularly from 1977 to 2000—many poor residents living in these neighborhoods may always have lived in these neighborhoods, unsubsidized in an earlier year but subsidized in a later year (often by a voucher). Therefore, subtracting out these residents would not measure a geographic deconcentration—residents who formerly were concentrated

somewhere else in a public housing project but now moved to a new tract—but rather an expansion of subsidized housing policy. The simulation also assumes that all subsidized households are below the poverty line, which increasingly is not the case with LIHTC developments and after QHWRA in 1998. While crude, the simulation does show that the magnitude of changes in housing policy is large enough to have real impacts on neighborhoods.

How do Changes in Subsidized Housing Policy Map onto Changes in Poverty Concentration?

The previous set of analyses examined the role subsidized units play in the poverty rate of neighborhoods and the transition of tracts into or out of poverty categories, explaining some of the decline in the number of very low and very high poverty neighborhoods and the increase in moderately poor neighborhoods from 1980 to 2000. Here, I investigate the role subsidized units play in the MSA-wide concentration or dispersal of poor residents.

[Insert Figure 1 about here]

For every MSA in the United States with data on poverty rates and subsidized unit rates (N~270) from 1980 to 2005-2009, I tested the correlation between the change in the standard deviation of poverty rates in the MSA and the change in the standard deviation of subsidized unit rates (subsidized units per total households) in the MSA from 1980 and 2000 and from 2000 to 2005-2009. Change in SDs measures the dispersion of poverty or subsidized unit rates—a higher SD suggests that poverty or subsidized units vary more widely among tracts (that is, they are more concentrated in some tracts than others) while a lower SD suggests poverty or subsidized units are more dispersed geographically, that is, distributed more equally, in the MSA. From 1980 to 2000, the changes in SDs for the two measures are significantly and positive correlated (Pearson's R=0.185). This suggests that in the MSAs in which the dispersion of subsidized households increased more, the dispersion of poverty also tended to increase more. Figure 1 presents the relationship between change in the SD of poverty rates and change in the SD of subsidized units, including a linear regression line from 1980 to 2000 (R^2=0.031). During the post-2000 time period, the relationship between the change in SD of poverty rates and the change in SD of subsidized unit rates in MSAs is positive and of a lower magnitude than in the earlier period, but it is not statistically significant (p=0.144). Overall, results suggest that from 1980 to 2000, MSAs that geographically dispersed their subsidized housing units more experienced a

greater reduction in the concentration of poverty. The R^2 from the regression equation suggests that the change in subsidized housing units' concentration accounts for about 3% of the change in the concentration of poor residents.

Conclusion and Discussion

In this paper, I set out to assess how changes in housing policy could account for changes in neighborhood poverty. First, I show how subsidized housing units have been increasingly geographically dispersed in each of the 11 focal MSAs and how subsidized units are no longer concentrated in high poverty neighborhoods. Second, I found that neighborhoods that gained more subsidized units than neighborhoods with similar initial poverty and subsidized unit conditions did become poorer during this time, but not at a 1:1 rate. From 1980 to 2000 and from 2000 to 2005-2009, neighborhoods that gained 100 fixed subsidized units gained about 15-30 more poor households than similarly poor neighborhoods that gained no subsidized units. These neighborhoods gained fewer than 100 more poor households because not everyone in subsidized housing is poor (up to 60% of residents in fixed units could have incomes above the poverty line) and because some smaller projects can more easily be sited in neighborhoods that attract nonpoor residents than traditional public housing.

Gaining voucher users more directly predicted an increase in the number of poor households in a neighborhood, with most MSAs near a 1:1 relationship from 1980 to 2000. That changes in voucher users better predicts changes in neighborhood poverty than fixed units is due to the fact that more voucher users (75%) fall below the poverty line than fixed unit residents. In addition, voucher users can only move to neighborhoods with rents at 40% of Fair Market Rent, limiting them to lower cost, lower-income, and potentially declining neighborhoods. While fixed units can be sited to avoid concentrating poor subsidized residents in declining neighborhoods, the voucher program does not have this planning aspect. The results for the post-2000 period show that the relationship between a gain in vouchers and a gain in poor households is slightly smaller than in the earlier period, suggesting that perhaps housing agencies have begun providing better placement assistance for voucher users.

Third, results suggest that the relationship between changes in subsidized units and changes in neighborhood poverty are large enough to account for some of the shifts among poverty categories, particularly from 1980 to 2000. Losing subsidized units increased the odds

that a neighborhood would exit concentrated poverty status and gaining subsidized units increased the odds that a neighborhood would exit low poverty status during this time. However, only a very small number of neighborhoods that exited concentrated poverty status actually lost any subsidized housing units during this time, suggesting other forces such as the economic boom of the 1990s played a more important role in neighborhood's changing poverty status during this time. Examining poverty concentration in a different way, the positive relationship between the standard deviations of poverty and subsidized unit rates suggests that in MSAs where subsidized units were more geographically deconcentrated, poor residents were also more dispersed from 1980 to 2000. While subsidized housing only accounts for a small proportion of the total change in the SD of poverty rates, the analyses still demonstrate that policy changes do have impacts on neighborhood well-being.

The analyses in this paper provide an overview of the relationship between changing subsidized housing policy and changing neighborhood poverty rates and suggest that housing policy may have real impacts on neighborhoods. These models are not causal, as reverse causality or omitted variable bias is a concern, but rather an account of what the implications could be. However, even if the trends are taken as merely descriptive, results show that neighborhoods where subsidized residents are moving are becoming poorer over time, and this is an important finding. Past work generally provides a snapshot of where subsidized residents live, but these results suggest that even if subsidized residents move to neighborhoods with lower poverty rates than those associated with traditional public housing, these neighborhoods are not stable or improving. Policymakers should provide more mobility counseling for voucher users, and they should also consider neighborhood *trajectories* when siting new fixed units or counseling voucher users, for the benefit of both neighborhood SES and individual well-being.

While providing a picture of this relationship between neighborhood poverty and subsidized housing in broad strokes, the analyses also raise many more questions to be addressed. Most prominently, the analyses of neighborhood poverty and the changing location of subsidized units demonstrate the variation among MSAs in the strength of the relationship between the two phenomena. Further investigations must be made into the housing market conditions, barriers caused by racial segregation, subsidized housing strategies, and general

economic conditions by MSA that might explain why subsidized housing impacts neighborhood poverty more strongly in some MSAs than in others.

Table 1. MSA Selection Scheme

Concentration of Poverty, 1980-2000	Midwest	Northeast	South	West
Decline	Chicago (> 5m)	New York (> 5m)	Dallas (3-5m)	Phoenix (> 5m)
Increase	---	Providence (1-3m)	DC (3-5m)	Los Angeles (> 5 m)
Stability	Cleveland (1-3m)	Pittsburgh (1-3m)	Louisville (1-3m)	Seattle (1-3m)

Notes: I define stability as an increase of less than 1.5%. Therefore, Cleveland (1.29 decline), Louisville (0.43 decline), Pittsburgh (1.45 increase), and Seattle (0.66 increase) are the cities with "stable" concentration of poverty. Phoenix had a very small decline (3.1) in concentration of poverty from 1980 to 2000, but few Western cities experienced any decline, so it represents "decline" in the West region. MSA population is categorized in parenthesis in each cell.

Table 2. Number of Subsidized Units by MSA, 1977 -2008

	Total Subs Units, 1977	% missing tract, 1977	Total Fixed Units, 2000	Total Vouchers, 2000	% missing tract, 2000	Total Fixed Units, 2008	Total Vouchers, 2008	% missing tract, 2008
National	1,115,259	30.06%	2,246,371	1,390,466	5.40%	2,269,062	1,939,621	4.51%
Chicago	41,121	8.62%	65,423	43,758	5.62%	62,349	57,172	1.72%
Cleveland	13,771	0.85%	26,870	14,238	1.95%	26,619	20,192	1.53%
Dallas	7,992	3.14%	13,484	17,808	1.12%	9,656	29,203	3.41%
Los Angeles	16,853	2.24%	47,436	62,487	1.74%	50,674	82,797	0.62%
Louisville	7,540	1.32%	12,196	8,240	2.33%	12,640	11,235	1.13%
New York	92,883	0.67%	227,852	96,489	4.30%	253,621	131,524	4.26%
Phoenix	2,891	2.36%	11,089	9,869	0.99%	10,192	12,145	1.37%
Pittsburgh	20,995	9.35%	34,197	11,768	2.28%	29,612	14,927	5.77%
Providence	10,084	4.44%	24,350	8,063	0.96%	26,343	9,687	2.49%
Seattle	9,678	14.35%	18,002	12,382	1.15%	15,318	19,834	1.61%
Washington, DC	13,877	6.16%	36,537	20,190	4.34%	31,234	26,694	2.10%

Ann Owens
Harvard University
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Table 3. Distribution of Subsidized Housing Units by Tract Poverty, 1977-2008

	0-10%			10-20%			20-30%			30-40%			40%+		
	1977	2000	2008	1977	2000	2008	1977	2000	2008	1977	2000	2008	1977	2000	2008
National	17.86%	19.05%	16.91%	14.90%	30.85%	28.65%	15.37%	22.25%	23.72%	16.11%	14.29%	15.12%	35.76%	13.55%	15.61%
Chicago	5.64	24.73	20.20	5.36	18.64	23.50	8.17	20.85	20.17	6.85	14.86	15.31	73.98	20.93	20.81
Cleveland	3.65	19.02	13.10	15.79	20.08	19.54	13.43	16.92	15.03	7.72	22.29	16.93	59.41	21.69	35.41
Dallas	3.49	19.08	14.83	9.15	30.84	26.28	12.99	26.73	24.96	3.82	14.44	17.98	70.56	8.92	15.96
Los Angeles	11.65	8.88	14.06	11.04	26.36	29.03	31.69	27.45	28.01	13.27	21.49	17.65	32.36	15.83	11.25
Louisville	2.28	15.17	11.71	6.78	23.82	23.73	12.15	17.93	20.62	8.08	17.47	10.16	70.72	25.62	33.79
New York	2.20	4.88	6.16	7.31	12.75	14.36	11.77	24.18	24.51	26.66	23.08	25.07	52.07	35.11	29.90
Phoenix	0.00	13.86	14.51	4.53	33.87	31.42	19.27	25.36	26.95	12.52	14.29	13.87	63.68	12.62	13.25
Pittsburgh	23.86	21.33	18.15	19.65	30.46	26.73	11.45	24.84	30.82	9.61	13.09	12.50	35.43	10.28	11.79
Providence	23.52	24.49	28.81	36.93	27.14	21.58	28.35	21.01	21.16	9.72	19.52	20.91	1.48	7.84	7.54
Seattle	20.75	33.20	30.21	27.35	43.70	37.94	15.50	6.67	18.02	30.86	11.07	11.53	5.54	5.36	2.30
Washington, DC	7.56	33.84	45.09	12.34	29.09	32.22	28.61	12.76	11.40	28.08	10.04	6.41	23.41	14.28	4.88

Notes: 1977 refers to subsidized housing data from 1977 and poverty data from 1980. 2000 refers to subsidized housing and poverty data from 2000. 2008 refers to subsidized housing data from 1977 and poverty data from 2005-2009.

Cells present the percent of all subsidized units in tracts in each poverty category.

Ann Owens
Harvard University
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Table 4a. Regression Analyses Predicting the Change in the Number of Poor Households, 1980-2000

	National		Chicago		Cleveland		Dallas		Los Angeles		Louisville	
Change in Fixed Units 1977-2000	0.195	***	0.340	***	0.361	***	0.204	***	0.208	***	0.228	***
	0.004		0.021		0.024		0.048		0.029		0.039	
Vouchers 2000	0.989	***	0.852	***	0.971	***	0.995	***	0.788	***	0.818	***
	0.011		0.055		0.080		0.076		0.054		0.119	
N HHs in Poverty 1980	-0.241	***	-0.496	***	-0.453	***	-0.360	***	-0.009		-0.421	***
	0.003		0.015		0.027		0.033		0.022		0.054	
Fixed Units 1977	0.117	***	0.272	***	0.277	***	0.109	*	0.195	***	0.228	***
	0.005		0.023		0.032		0.056		0.033		0.057	
Total Non Poor HHs, 1980	0.026	***	0.049	***	0.038	***	0.066	***	0.000		0.032	**
	0.001		0.003		0.004		0.007		0.003		0.009	
Change in NonPoor HHs, 1980-2000	0.038	***	0.003	***	-0.010		0.032	***	0.035	***	0.025	**
	0.001		0.003		0.007		0.004		0.006		0.010	
Constant	2.933		-9.259		-2.125		-7.772		41.548		2.757	
N	65443		1877		718		701		2054		241	
Adjusted R2	0.224		0.512		0.479		0.431		0.167		0.384	
	New York		**Phoenix**		**Pittsburgh**		**Providence**		**Seattle**		**Washington, DC**	
Change in Fixed Units 1977-2000	0.153	***	0.196	*	0.228	***	0.314	***	0.280	**	0.301	***
	0.008		0.090		0.030		0.037		0.039		0.026	
Vouchers 2000	0.929	***	1.936	***	0.530	***	0.647	***	1.144	***	0.744	***
	0.040		0.151		0.122		0.142		0.086		0.072	
N HHs in Poverty 1980	-0.321	***	-0.016		-0.321	***	-0.171	**	-0.386	***	-0.346	***
	0.012		0.044		0.030		0.054		0.038		0.024	
Fixed Units 1977	0.215	***	-0.087		0.149	***	0.338	***	0.296	***	0.253	***
	0.011		0.109		0.034		0.054		0.047		0.034	
Total Non Poor HHs, 1980	0.024	***	0.041	***	0.031	***	0.013		0.018	**	0.032	***
	0.002		0.007		0.005		0.010		0.006		0.003	
Change in NonPoor HHs, 1980-2000	-0.043	***	0.042	***	0.015		-0.046	**	0.043	***	0.014	***
	0.008		0.005		0.010		0.014		0.007		0.002	
Constant	32.343		-11.042		6.677		18.948		-6.960		-9.125	
N	2515		696		702		259		527		1037	
Adjusted R2	0.296		0.347		0.245		0.329		0.403		0.304	

Notes: Cells present coefficients with standard deviations beneath. Significance tests are two-tailed: ***p>0.001, **p>0.01, * p>0.05, ^p>0.10

Ann Owens
Harvard University
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Table 4b. Regression Analyses Predicting the Change in the Number of Poor Households, 2000 to 2005-2009

	National		Chicago		Cleveland		Dallas		Los Angeles		Louisville	
Change in Fixed Units, 2000-2008	0.099	***	0.271	***	0.284	***	0.366	***	0.193	***	0.237	**
	0.006		0.034		0.041		0.089		0.032		0.076	
Change in Vouchers, 2000-2008	0.492	***	0.745	***	0.970	***	0.710	***	0.672	***	0.178	
	0.139		0.076		0.118		0.078		0.064		0.225	
N HHs in Poverty 2000	-0.077	***	-0.195	***	-0.167	***	-0.026		-0.247	***	-0.407	***
	0.003		0.017		0.033		0.030		0.013		0.072	
Vouchers, 2000	0.144	***	0.463	***	0.339	***	0.465	***	0.182	***	0.704	***
	0.012		0.053		0.098		0.089		0.048		0.151	
Fixed Units, 2000	0.044	***	0.097	***	0.288	***	0.201	*	0.176	***	0.150	*
	0.004		0.025		0.033		0.086		0.027		0.070	
Total Non Poor HHs, 2000	0.041	***	0.034	***	0.030	***	0.031	***	0.012	***	0.045	***
	0.000		0.002		0.004		0.004		0.003		0.008	
Change in NonPoor HHs, 2000-2009	0.021	***	-0.017	***	-0.065	***	0.016	***	-0.110	***	-0.046	*
	0.001		0.005		0.014		0.004		0.010		0.018	
Constant	-8.201		-10.360		-6.072		-6.921		11.525		24.827	
N	65369		1875		714		701		2054		241	
Adjusted R2	0.104		0.225		0.265		0.259		0.220		0.239	
	New York		**Phoenix**		**Pittsburgh**		**Providence**		**Seattle**		**Washington, DC**	
Change in Fixed Units 2000-2008	0.114	***	0.601	***	0.156	***	0.197	***	0.278	***	0.218	***
	0.009		0.163		0.049		0.061		0.087		0.039	
Change in Vouchers 2000-2008	0.197	***	1.045	***	0.592	***	0.265		0.753	***	0.574	***
	0.034		0.159		0.169		0.211		0.108		0.090	
N HHs in Poverty 2000	-0.259	***	-0.170	***	-0.248	***	-0.280	***	-0.144	***	-0.320	***
	0.013		0.028		0.026		0.046		0.043		0.025	
Vouchers, 2000	0.393	***	1.375	***	0.525	***	0.394	*	0.492	***	0.502	***
	0.039		0.181		0.108		0.155		0.112		0.085	
Fixed Units 2000	0.111	***	0.320	***	0.090	*	0.100	*	0.027		0.251	***
	0.008		0.077		0.038		0.043		0.063		0.034	
Total Non Poor HHs, 2000	0.013	***	0.026	***	0.032	***	0.011		0.020	***	0.013	***
	0.002		0.004		0.004		0.007		0.006		0.003	
Change in NonPoor HHs, 2000-2009	-0.148	***	0.041	***	-0.092	***	-0.196	***	-0.032	**	0.013	***
	0.011		0.003		0.016		0.034		0.010		0.004	
Constant	5.046		10.515		-4.700		14.901		7.910		2.888	
N	2515		696		702		259		527		1037	
Adjusted R2	0.225		0.389		0.202		0.235		0.156		0.206	

Notes: Cells present coefficients with standard deviations beneath. Significance tests are two-tailed: ***p>0.001, **p>0.01, * p>0.05, ^p>0.10

Table 5. Logistic regressions predicting the odds of tracts' exit out of concentrated poverty (poverty rates over 40%) status or low poverty status (poverty rates under 10%)

	1980 to 2000		2000 to 2005-2009	
Predicting Exit from CP	National	Pooled MSAs	National	Pooled MSAs
Change in Fixed Units	-0.00170***	-0.00157 ***	-0.00155 ***	-0.00225 ***
	0.00027	0.00037	0.00029	0.00038
Change in Vouchers	-0.00357**	-0.01187 ***	-0.00418 ***	-0.00587 ***
	0.00118	0.00208	0.00111	0.00176
Fixed Units, T1	-0.00246***	-0.00304 ***	-0.00136 ^	-0.00181 **
	0.00029	0.00046	0.00022	0.00032
Vouchers, T1			0.00162 ***	-0.00390 ***
			-0.00136	0.00146
Total Non Poor HHs, T1	0.00072***	0.00195 ***	-0.00028 *	0.00092 **
	0.00019	0.00040	0.00014	0.00033
Change in NonPoor HHs	0.00313***	0.00459 ***	0.00058 ***	0.00837 ***
	0.00028	0.00058	0.00037	0.00089
N	1709	596	2510	677
Pseudo R2	0.123	0.196	0.126	0.182
Predicting Exit from LP	National	Pooled MSAs	National	Pooled MSAs
Change in Fixed Units	0.00681***	0.00527 ***	0.00265 ***	0.00299 *
	0.00025	0.00064	0.00054	0.00122
Change in Vouchers	0.03326 ***	0.04204 ***	0.01900 ***	0.02351 ***
	0.00062	0.00180	0.00077	0.00206
Fixed Units, T1	0.01373***	0.00661 ***	0.00402 ***	0.00304 ***
	0.00069	0.00126	0.00035	0.00091
Vouchers, T1			0.02112 ***	0.02427 ***
			0.00080	0.00202
Total Non Poor HHs, T1	-0.00072***	-0.00058 ***	-0.00025 ***	-0.00046 ***
	0.00002	0.00005	0.00002	0.00005
Change in NonPoor HHs	-0.00138***	-0.00182 ***	-0.00163 ***	-0.00266 ***
	0.00003	0.00010	0.00006	0.00021
N	44811	6716	32969	5743
Pseudo R2	0.156	0.192	.084	0.110

Notes: Cells present coefficients with standard deviations beneath. Significance tests are two-tailed: ***p>0.001, **p>0.01, * p>0.05, ^p>0.10

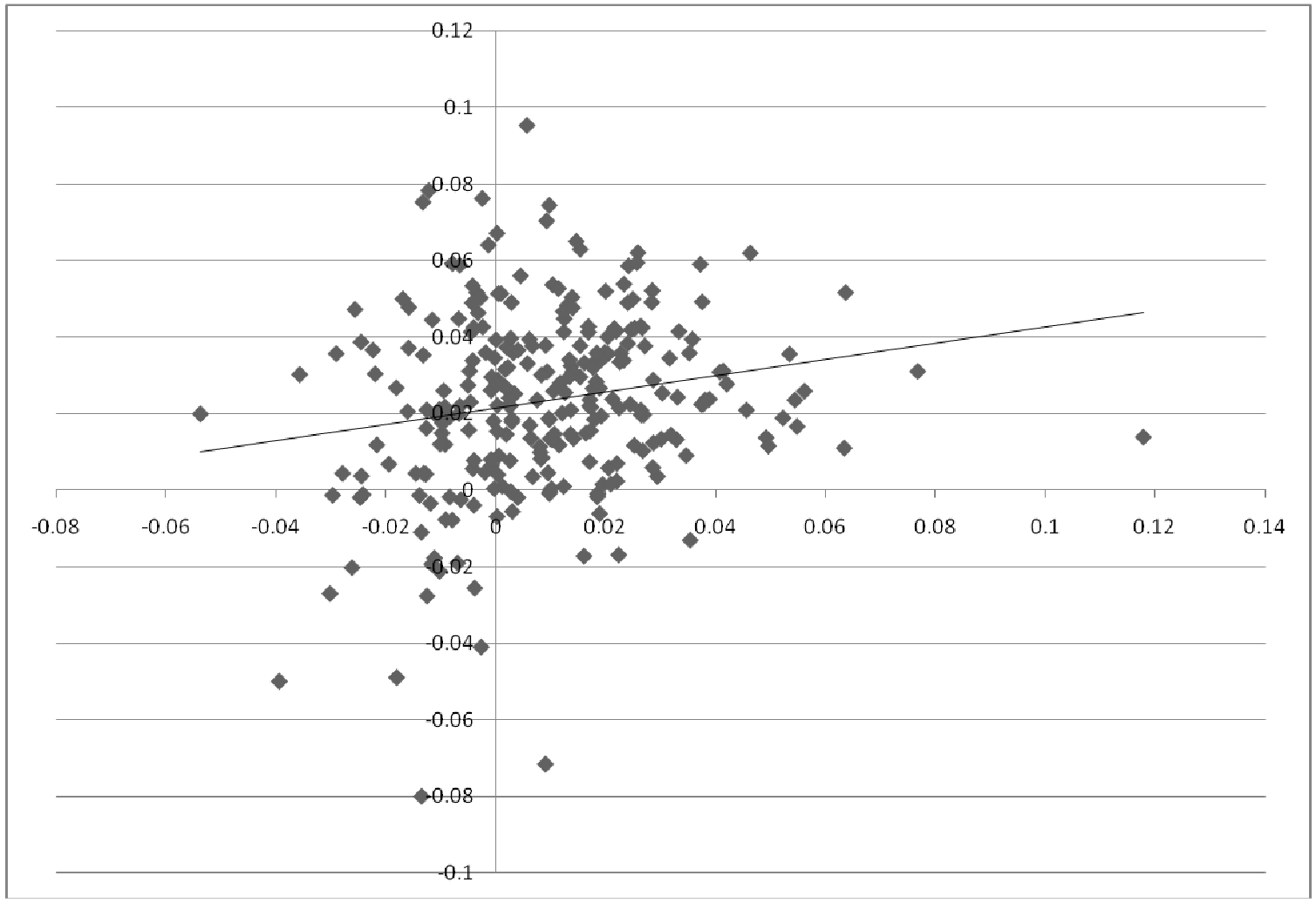
Table 6. Cross-Tabulation of Actual and Simulated Poverty Category, 2000

Actual Poverty Category, 2000	Simulated Poverty Category, 2000					
	0-10%	10-20%	20-30%	30-40%	40%+	Total
0-10%	33,166	78	25	6	7	33,282
	99.65	0.23	0.08	0.02	0.02	
10-20%	6,470	12,383	121	18	26	19,018
	34.02	65.11	0.64	0.09	0.14	
20-30%	934	2,904	3,367	94	91	7,390
	12.64	39.30	45.56	1.27	1.23	
30-40%	346	457	1,213	1,085	159	3,260
	10.61	14.02	37.21	33.28	4.88	
40%+	236	129	226	391	1,024	2,006
	11.76	6.43	11.27	19.49	51.05	
Total	41,152	15,951	4,952	1,594	1,307	64,956

Actual Poverty Category, 05-09	Simulated Poverty Category, 05-09					
	0-10%	10-20%	20-30%	30-40%	40%+	Total
0-10%	28,386	646	35	10	18	29,095
	97.56	2.22	0.12	0.03	0.06	
10-20%	2,273	17.621	733	61	54	20.742
	10.96	84.95	3.53	0.29	0.26	
20-30%	146	1,532	6,311	450	136	8,575
	1.70	17.87	73.60	5.25	1.59	
30-40%	67	94	765	2,536	427	3,888
	1.72	2.42	19.65	65.23	10.98	
40%+	87	51	109	436	1,843	2,526
	3.44	2.02	4.32	17.26	72.96	
Total	30,959	19,944	7,952	3,493	2,478	64,956

Cells contain N of neighborhoods and row %s (% of neighborhoods with actual poverty in each category) beneath.

Figure 1. Change in Poverty Rate SD versus Change in Subsidized Unit SD, 1980-2000



Notes: Each dot represents 1 MSA, and the trend line is based on 270 MSA data points (weighted equally)

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