

NEIGHBORHOOD CHANGE in Urban America

Concentrated Poverty: A Change in Course

G. Thomas Kingsley and Kathryn L. S. Pettit

From the late 1960s through the 1980s, the trends seemed inexorable. Poverty became more and more concentrated in inner city neighborhoods and conditions in those neighborhoods got worse and worse. Data from the 2000 Census show that *the 1990s broke those trends*:

- Poverty became notably less concentrated in the 1990s. The share of the metropolitan poor who live in “extreme-poverty neighborhoods” (census tracts with poverty rates of 40 percent or more) had jumped from 13 to 17 percent in the 1980s but dropped all the way back to 12 percent in 2000. The share in “high-poverty neighborhoods” (poverty rates of 30 percent or more) increased from 25 to 31 percent in the 1980s but dropped back to 26 percent in 2000. The absolute number of poor people in high-poverty neighborhoods grew from 4.9 million in 1980 to 7.1 million in 1990, but then decreased to 6.7 million in 2000.
- Compensating increases in the 1990s occurred in neighborhoods with middle-range poverty levels rather than in low-poverty areas. The share of all poor people in tracts with poverty rates in the 20–30 percent range increased from 18 to 21 percent and that in the 10–20 percent range from 27 to 29 percent, while that in the 0–10 percent range grew by less than 1 percent.

- An increasing share of high-poverty tracts are in the suburbs of the largest 100 metropolitan areas (15 percent in 2000, up from 11 percent in 1980), but central cities of those metros still retain a dominant if decreasing share (62 percent, down from 67 percent in 1980). The share in the nation’s 230 other metropolitan areas remained about the same over this period (22–23 percent).

- The share of all high-poverty tracts with predominantly (more than 60 percent) African-American populations has declined markedly since 1980 (dropping from 48 percent to 39 percent), while those that are predominantly Hispanic went up from 13 to 20 percent and those with no predominant race grew from 21 to 26 percent.

- Changes in concentrated poverty are not primarily due to population growth or decline in a fixed set of neighborhoods. A surprising number of tracts move in and out of high-poverty status each decade. A full 27 percent of all high-poverty tracts in 1990 saw reductions in poverty that took them out of the category by the end of the decade. This was partially offset by tracts equal to 23 percent of the 1990 total moving into the category, yielding a net loss of 4 percent. Even in the preceding decade, 17 percent of the 1980 total saw sufficient declines in poverty to move them out of the cate-

Poverty became notably less concentrated in the 1990s; the share of metropolitan poor who live in extreme-poverty neighborhoods dropped back to 12 percent in 2000.

gory by 1990. But that was offset by tracts equal to a disturbing 58 percent of the total moving in, largely explaining the sizeable net gain in concentrated poverty in that decade.

- There was a nontrivial number of exceptions to the general trend in the 1990s. Poverty became more concentrated in 17 of the 100 largest metropolitan areas: eight in the Northeast (most were predominantly white metros, such as Albany, Hartford, and Worcester), one farther south (Wilmington, DE), and eight in the West (mostly areas with large immigrant populations, such as Los Angeles, Bakersfield, and Stockton). Why these places did not do better warrants more study. The biggest reductions in concentrated poverty in the 1990s took place in the Midwest (which had experienced the biggest increases in the 1980s) and in the South.
- Conditions in neighborhoods in the high-poverty category in 1990 generally improved in the 1990s. For example, the share of adults without a high school degree dropped from 48 to 43 percent, the share of families with children headed by women dropped from 53 to 49 percent, the share of women over 16 who were working went up from 40 to 42 percent, and the share of households receiving public assistance was cut in half, from 24 percent to 12 percent.
- However, conditions in other parts of most metropolitan areas also improved, so gaps in conditions did not diminish much, if at all. For example, the share of adults without a high school degree in high-poverty neighborhoods was 2.1 times the metropolitan average in 1990 but went up to 2.3 times in 2000. On the other hand, the comparable ratio for the share of fam-

ilies with children headed by women improved from 2.3 to 2.0, and that for the share of women over 16 who were working improved from 0.7 to 0.8.

Purpose and Approach

That conditions in urban neighborhoods can have important effects on the lives of their residents has been suspected for a very long time (Burgess 1925) and confirmed by researchers in a variety of ways over the years (Ellen and Turner 1997). The most vivid accounts are those of the extreme poverty neighborhoods in America's largest cities in the last few decades of the 20th century, most prominently by William J. Wilson (1987). Wilson's story began by highlighting how global trends led to significant changes in the U.S. economy in the 1970s and 1980s. Manufacturing jobs, which had offered the most promising career paths for lower-skilled inner-city residents, dropped significantly as a share of all employment nationwide and, in absolute terms, in many central cities.

In addition, rising incomes and the passage and enforcement of fair housing laws allowed large numbers of middle-income families of color to move out of the central cities to find better housing in the suburbs. As a result, the poor of racial and ethnic minorities wound up much more concentrated and isolated from mainstream society. The families that moved included most of those who had run businesses in the old neighborhoods or were otherwise regularly employed in jobs with reasonable wages. They were also those who had been the mainstays of traditional community institutions and social networks. After their departure, the young people left behind were growing up in a different world, deprived of the role models that healthy communities inherently rely on to guide future expectations for children. Their parents were deprived of the natural

support networks that, among other things, help people access new job opportunities and do a better job of parenting.

Paul Jargowsky (1997) also underlines how this "spatial concentration of poor people acts to magnify poverty and exacerbate its effects" (p. 1). His thorough analysis of the phenomenon revealed a dramatic increase in the share of the poor living in census tracts with poverty rates of 40 percent or more from 1970 through 1990. But what has happened since then? The release of data from the 2000 Census permits researchers to answer that question, and this brief takes on part of that job.

Jargowsky (2003) has examined the new data, again looking at changes in the "extreme-poverty neighborhoods." Our orientation is somewhat different. While we recognize that the problems of the poor are most serious in such neighborhoods, they account for a very small proportion of the nation's poor (only 12 percent in 2000). We think that we need to learn more about the challenges faced by the poor in other types of neighborhoods as well. As a start, we note how the distribution of the poor in metropolitan areas has shifted over the full range of poverty categories in the past two decades.

We then present most of our findings in relation to "high-poverty neighborhoods," defined as tracts with poverty rates of 30 percent or more. They account for more than twice the poor population of the extreme-poverty tracts alone (6.7 million vs. 3.1 million), and they also have scores on most indicators of social and economic distress significantly above metropolitan averages.¹ For example, the share of adults without a high school degree is 45 percent for the extreme-poverty tracts and 43 percent for the high-poverty tracts, compared with the all-metropolitan average of 19 percent. The share of all families with children headed by

single females is 54 percent for the extreme poverty tracts and 49 percent for the high poverty tracts, compared with an all-metropolitan average of 24 percent. But this is just a start. Special conditions and challenges for the poor in neighborhoods with even lower poverty rates also warrant future study.

After answering the basic question (Did poverty get more or less concentrated overall in the 1990s?), this paper looks at three other questions at the national level: (1) How has the composition of concentrated poverty shifted between different types of locations (e.g., central cities vs. suburbs)? (2) How has the composition of concentrated poverty shifted by race and ethnicity? and (3) How have the changes taken place (e.g., how much is explained by tracts moving in and out of high-poverty status as opposed to populations growing and declining in a relatively fixed set of tracts)?

Then we recognize that the changes have not been uniform across the nation. We look at how concentrated poverty has shifted: by region, by type of metropolitan area within regions, and for specific metropolitan areas. Finally we look at how various indicators of social problems have changed for high-poverty neighborhoods, again noting variations by region and by type of metropolitan area within regions.

The analysis uses census tracts as its units of reference (we use the terms *tracts* and *neighborhoods* interchangeably throughout). Data came from the Neighborhood Change Database (NCDB), the only source of tract-level census data in which tract boundaries are defined consistently over time. We also hold metropolitan area and city boundaries constant; data for all geographic units and years are presented for boundaries as defined in 2000.² Our analysis covers 330 U.S. metropolitan areas officially

defined at the time of the 2000 Census, but we sometimes contrast conditions in the 100 largest metropolitan areas (listed in appendix table A1, available at <http://www.urban.org>) with those in the other 230.³

Poverty: Spreading into the Middle Ranges

The data show that the 1990s brought a sharp reversal in the poverty concentration trend (figure 1). The most pronounced change was at the high end of the spectrum. The share of metropolitan poor who live in extreme poverty tracts, which had jumped from 13 to 17 percent in the 1980s, dropped all the way back to 12 percent in 2000. The share in the 30–40 percent range stayed the same over the decade, but putting these two categories together, the share in high-poverty neighborhoods increased from 25 percent in 1980 to 31 percent in 1990 and then fell back to 26 percent in 2000.

One-quarter of America’s metropolitan poor lived in low-poverty neighborhoods (rates in the 0–10 percent range) in 2000, not much different than the figure for 1990. The compensating increases occurred in

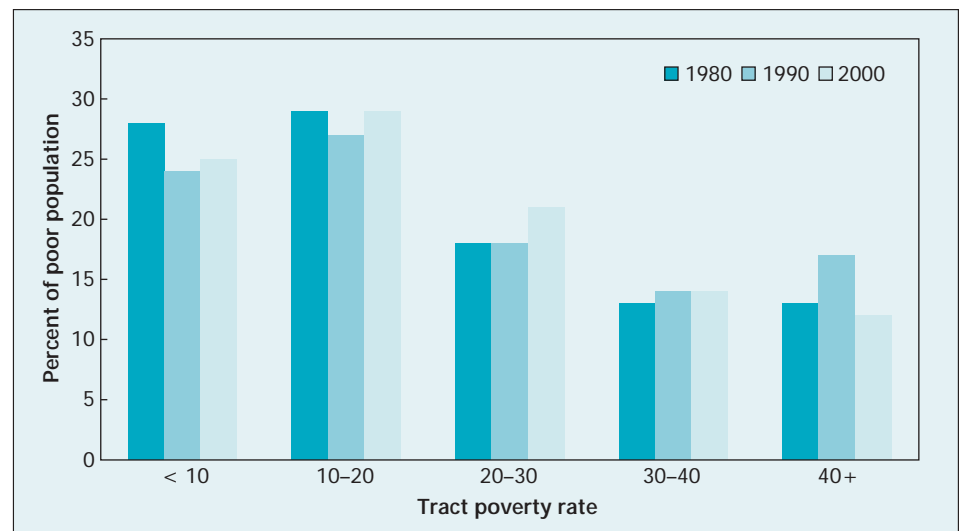
the two intermediate categories. The share of all poor people in tracts with poverty rates in the 20–30 percent range increased from 18 to 21 percent and that in the 10–20 percent range from 27 to 29 percent.

The overall poverty rate in U.S. metropolitan areas remained virtually constant (11–12 percent range) from 1980 to 2000, but with increasing total population, the absolute number of poor people increased from 19.3 million in 1980 to 23.1 million in 1990 and 25.8 million in 2000. The number living in high-poverty neighborhoods increased from 4.9 million in 1980 to 7.1 million in 1990, but then declined to 6.7 million at century’s end (table 1). In contrast, the number of poor people in tracts with poverty rates ranging from 10 to 30 percent went up from 10.4 million to 12.7 million in the 1990s.

Shifting Patterns by Location and Race

In 2000, America’s metropolitan areas had a total of 50,502 census tracts and a population of 223 million. The central cities of the 100 largest metros accounted for 28 percent of those tracts (14,060) and 24 percent of that

FIGURE 1. Share of the Poor by Tract Poverty Rate, U.S. Metropolitan Areas, 1980–2000



Source: Neighborhood Change Database.

TABLE 1. Changes in Concentrated Poverty, U.S. Metropolitan Areas

	1980	1990	2000
Poverty rate 30% or more			
Number of tracts	3,856	5,433	5,224
Total population (thous.)	12,764	18,454	17,957
Poor population (thous.)	4,884	7,104	6,701
Percent of total population	7	9	8
Percent of poor population	25	31	26
Poverty rate 40% or more			
Number of tracts	1,662	2,791	2,222
Total population (thous.)	5,312	9,093	7,033
Poor population (thous.)	2,439	3,968	3,088
Percent of total population	3	5	3
Percent of poor population	13	17	12

Source: Neighborhood Change Database, 1980, 1990, 2000.

population (54 million), and for 60 percent of the metropolitan poor people who lived in high-poverty tracts in 2000. The number of central city high-poverty tracts increased from 2,595 in 1980 (poor population of 3.4 million) to 3,366 in 1990, and then declined to 3,231 in 2000 (poor population of 4.0 million). The central city dominance in this regard has diminished, however. Their share of the high-poverty tracts in all metros decreased from 67 percent in 1980 to 62 percent in 1990 and stayed at that level in 2000 (figure 2).

In contrast, the suburbs of the 100 largest metros have experienced the most rapid growth in concentrated poverty. There are 23,974 tracts in these suburbs, but only 408 of them were in the high-poverty category in 1980 (482,000 poor residents). Over the next two decades, the number of such tracts grew by 89 percent (to 772) and the number of poor residents grew by 121 percent (to 1.07 million). Their share of total high-poverty area tracts in all metros had increased from 11 to 15 percent in the 1980s and to 23 percent in 2000.

In 1980, 853 of the 12,468 tracts in the other 230 metropolitan areas were in the high-poverty category (with 1.0 million poor residents). By 2000, the number of such tracts had increased by 43 percent (to 1,221) and the number of poor residents by 58 percent (to 1.6 million). However, their share of all metropolitan high-poverty tracts remained relatively flat over this period, increasing from 22 to 25 percent in the 1980s and then dropping back to 23 percent in 2000.

Even though the absolute numbers in the suburbs and other metros

went up over the two decades, all saw declines in concentrated poverty rates (share of the poor in high-poverty areas) in the 1990s. From 1990 to 2000, those rates dropped from 48 to 41 percent in the central cities of the 100 largest metros, from 12 to 11 percent in their suburbs, and from 29 to 25 percent in the other metros.

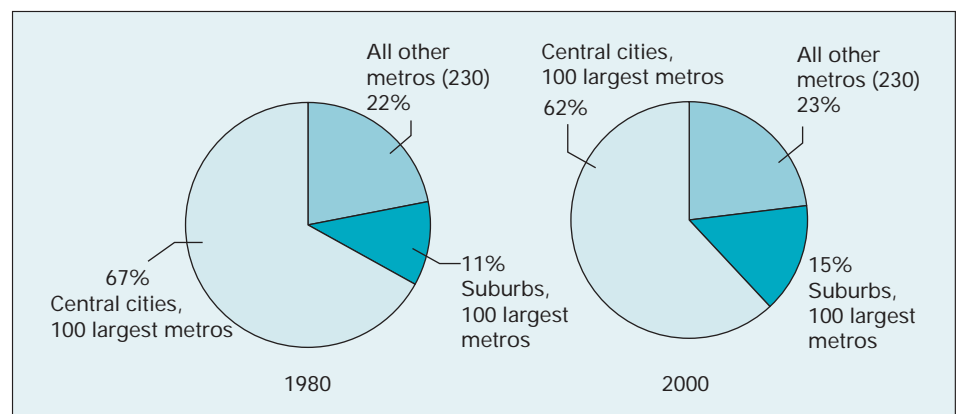
Changes in the composition of concentrated poverty by race were more dramatic (figure 3).⁴ In 1980, African Americans were the predominant race (more than 60 percent of total population) in almost half (48 percent) of all high-poverty tracts, and those tracts accounted for more than half (54 percent) of the poor population in high-poverty neighborhoods. By 2000, the predominantly black share of tracts had dropped to 39 percent of the poor population in such tracts and to only one-third of the total.

The share of all high-poverty tracts that were predominantly white also decreased (from 18 percent in 1980 to 14 percent in 2000). Compensating increases occurred in the shares that were predominantly Hispanic (up from 13 to 20 percent) and the share that had no predominant race (growing from 21 to 26 percent).

Components of Change

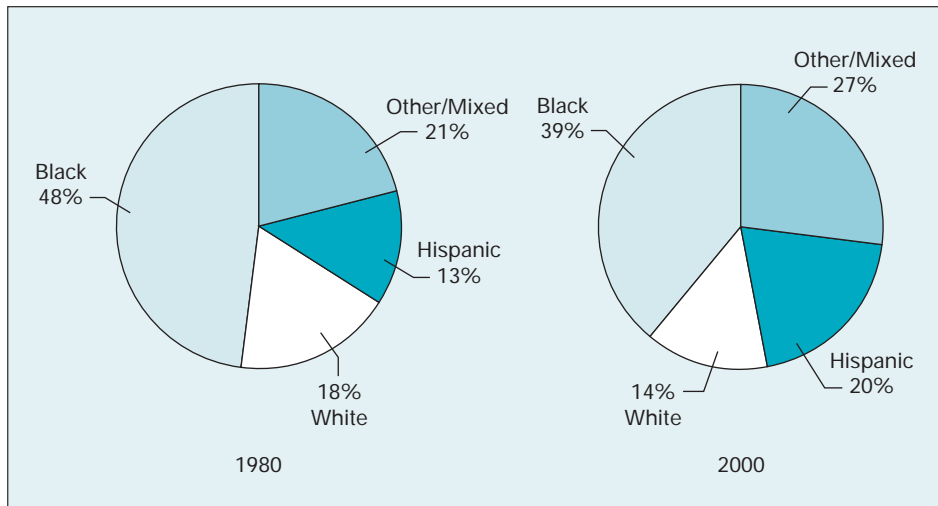
The way concentrated poverty changes is generally not well under-

FIGURE 2. High-Poverty Tracts by Location, 1980 and 2000



Source: Neighborhood Change Database.

FIGURE 3. High-Poverty Tracts by Predominant Race/Ethnicity, 1980 and 2000



Source: Neighborhood Change Database.

stood. Contrary to what the name might imply, levels of concentrated poverty are not much influenced by population growth or decline in tracts that were in the high- or extreme-poverty categories at the beginning of a decade. Rather, the outcome is determined more by the number of tracts moving in and out of those categories. And it is important to know that when tracts reach high-poverty status, further deterioration is not at all inevitable. In fact, even when concentrated poverty was increasing overall, many tracts experienced reductions in poverty rates and moved out of the category. The overall increase occurred only because, on balance, more moved in.

Table 2 accounts for these interactions since 1980, looking at changes in the total poor population in high-poverty tracts. In all metropolitan areas, there were 4.9 million poor people living in these high-poverty tracts in 1980. Over the decade, the population of the tracts that stayed in the category (the constant tracts) experienced a net growth of only 151,000. In contrast, the gain from tracts that moved into the category (poverty rates having moved above 30 percent over the decade) was 2.7

million. These gains were partially offset by the loss of 608,000 poor people in tracts who moved out (poverty rates declined to below 30 percent). The addition of new tracts to the high-poverty category clearly had the most important impact in increasing the total to 7.1 million in 1990.

The pattern was quite different in the 1990s. The poor populations of the tracts that stayed in the category

experienced a net decline (378,000), and the gain from new tracts entering the category (1.5 million) was more than offset by the loss of tracts whose poverty rates had dropped (1.6 million). The net effect was to reduce the total to 6.7 million by 2000. The gain from tracts entering the high-poverty category in the 1990s (22 percent of the 1990 total) was much smaller proportionally than the comparable gain in the 1980s (55 percent of the 1980 total).

Table 2 also shows these components of change for the high-poverty areas in the central cities of the largest 100 metros. The basic patterns were similar, but losses were larger in comparison to gains in each decade. On net, the poor population in high-poverty tracts there rose by 31 percent in the 1980s (compared with 45 percent for all metros) and declined by 9 percent in the 1990s (compared with a drop of 6 percent for all metros).

Variations by Region and Type of Metropolitan Area

The general patterns we have described—increases in concentrated

TABLE 2. Components of Change: High-Poverty Tracts in U.S. Metropolitan Areas

	Total all metropolitan areas		Central cities, largest 100 metros	
	Poor population (thous).	Pct. of start of decade	Poor population (thous).	Pct. of start of decade
Total 1980	4,884	100	3,399	100
Change population, constant tracts	151	3	(23)	(1)
Plus tracts entering high-poverty	2,677	55	1,464	43
Minus tracts leaving high-poverty	(608)	(12)	(404)	(12)
Total 1990	7,104	145	4,436	131
Total 1990	7,104	100	4,436	100
Change population, constant tracts	(378)	(5)	(358)	(8)
Plus tracts entering high-poverty	1,528	22	832	19
Minus tracts leaving high-poverty	(1,553)	(22)	(862)	(19)
Total 2000	6,701	94	4,048	91

Source: Neighborhood Change Database, 1980, 1990, 2000.

poverty in the 1980s and declines in the 1990s—applied to most metropolitan areas in the country, but not to all of them. To examine differences, we begin by separating metros by region and size (largest 100 vs. others). We then further sort the 100 largest metros according to categories developed by demographer William Frey (2001): *Melting Pot* metros are those where

whites account for no more than 69 percent of the 2000 population and minorities other than blacks account for more than 18 percent. *Largely White-Black* metros are metropolitan areas where blacks account for at least 16 percent of the population. All other metropolitan areas are classified as *Largely White* (see table 3).⁵

Levels of Concentrated Poverty in 1990

Before talking about patterns of change in the 1990s, it is worth reviewing the coming-in position: variation among the levels of concentrated poverty in different locations at the start of that decade. We continue to refer to the share of the poor living in high-poverty neighborhoods

TABLE 3. Changes in Concentrated Poverty by Region and Type of Metro

	Number of metros	Population (millions) 2000	Percent population growth 1990-00	Poor population in high-poverty tracts (thousands)			Percent of poor population in high-poverty tracts		
				1980	1990	2000	1980	1990	2000
Northeast									
Melting Pot	4	13.3	8	876	785	878	47	44	41
Largely White	15	15.9	2	233	329	358	17	23	23
Largely Wh.-Bl.	1	5.1	4	199	182	214	36	36	39
Total top 100	20	34.3	5	1,308	1,296	1,450	35	35	34
Other Metros	39	13.3	7	69	123	155	8	14	15
Total Metro.	59	47.6	6	1,377	1,419	1,605	29	31	30
Midwest									
Melting Pot	2	11.1	13	346	381	279	37	38	27
Largely White	13	12.4	9	222	416	267	21	33	23
Largely Wh.-Bl.	5	11.4	4	318	599	393	30	46	33
Total top 100	20	35.0	9	886	1,396	938	29	39	28
Other Metros	58	12.0	9	143	314	226	15	26	20
Total Metro.	78	47.0	9	1,029	1,710	1,165	26	36	26
South									
Melting Pot	10	23.0	24	406	756	602	25	33	22
Largely White	8	7.8	15	131	187	156	19	23	18
Largely Wh.-Bl.	19	23.0	19	704	758	625	32	32	25
Total top 100	37	53.8	21	1,241	1,701	1,383	28	31	22
Other Metros	91	20.1	15	702	1,091	936	31	38	31
Total Metro.	128	73.9	19	1,943	2,792	2,319	29	34	25
West									
Melting Pot	18	36.3	18	402	869	1,295	15	24	27
Largely White	5	8.4	24	45	88	48	10	14	7
Total top 100	23	44.8	19	447	958	1,343	14	22	24
Other Metros	42	9.8	22	86	224	269	11	21	21
Total Metro.	65	54.6	19	533	1,182	1,613	14	22	24
Total U.S.									
Melting Pot	34	83.8	17	2,030	2,791	3,054	29	32	28
Largely White	41	44.6	10	631	1,020	829	18	25	19
Largely Wh.-Bl.	25	39.5	12	1,222	1,538	1,232	32	37	29
Total top 100	100	167.9	14	3,882	5,350	5,115	27	31	26
Other Metros	230	55.2	13	1,000	1,753	1,586	20	29	25
Total Metro.	330	223.1	14	4,883	7,103	6,701	25	31	26

Source: Neighborhood Change Database, 1980, 1990, 2000.

(tracts with poverty rates of 30 percent or more) as the “concentrated poverty rate.” While the numbers would be different, the general pattern (which areas rank comparatively high or low) would be very similar if we used the share living in extreme-poverty neighborhoods instead.

Important differences are shown on table 3. The highest level of concentration in 1990 was for Largely White-Black metros in the Midwest (rate of 46 percent) followed closely by Melting Pot metros in the Northeast (44 percent), both well above the 31 percent national average. The lowest rate was for the Largely White metros in the West at 14 percent. Averages for three of the regions as a whole (Northeast, Midwest, and South) were reasonably close to each other (31–36 percent). The West, at 22 percent overall, was the outlier.

Ranges are even greater when we look at individual metropolitan areas. El Paso had the highest rate in 1990 (65 percent), followed by four others in the 50–53 percent range (New Orleans, Milwaukee, Detroit, and Memphis). The five lowest (all in the range of 0–6 percent) were Honolulu and four coastal metros in California (Vallejo, Orange, Ventura, and San Jose).

It is also worth noting that regional differences in the concentration of poverty are considerably wider than differences in the poverty rate itself, and, as noted earlier, those rates did not change much over the 1990s. The 1990 poverty rates for top 100 metros fell in the 11–14 percent range in all four regions; the rates for all metros ranged from 10 percent (Northeast) to 14 percent (South).

Trends in the Northeast

The concentrated poverty rate for this region dropped only slightly in the 1990s: from 31 to 30 percent (the highest average among the four regions in 2000). Actually, the region is a composite of quite different stories. Its

Melting Pot metros include New York and four others in northern New Jersey. This group experienced considerable population growth in the 1990s (unlike the other groups in this region). Its average concentrated poverty rate had been highest of all categories in 1980 (47 percent) before declining to 44 percent in 1990 and then 41 percent in 2000. One in this group, Bergen, did experience an increase in rate in the 1990s, but the others saw sufficient decreases in concentrated poverty to more than make up for it.

The other areas in this region had lower concentrated poverty rates to begin with, but many of them moved in the wrong direction. Population growth typically has been sluggish at best. The Largely White metros are the only group for which central city populations grew less or declined more in the 1990s than they had in the 1980s (Kingsley and Pettit 2002). And this is one of two categories on table 3 with a sizeable number of metros (6 of 15) that experienced increases in concentrated poverty (by more than 1 percent) in the 1990s. These were Albany, Allentown, Hartford, Providence, Syracuse, and Worcester. Philadelphia (the only Largely White-Black metro in this region) also saw an increase in its concentrated poverty rate in the 1990s (from 36 to 39 percent).

Trends in the Midwest

These trends were much more positive in this regard over the past decade. The region’s overall concentrated poverty rate dropped markedly, from 36 percent—the highest regional average in 1990—to 26 percent in 2000, and declines were significant for all types of metros in the region. Probably most impressive was the change in the Largely White-Black group in this region—Cleveland, Detroit, Gary, Milwaukee, and St. Louis. The rate for this group went up from 30 percent in 1980 to 46 per-

cent in 1990 and then dropped all the way back to 33 percent in 2000. The average for the two Melting Pot metros in this region (Chicago and Minneapolis-St. Paul) also dropped significantly in the 1990s, from 38 to 27 percent.

Trends in the South

These trends were similar to those in the Midwest. The overall regional concentrated poverty rate dropped markedly in the 1990s from 34 to 25 percent. Only one of the 37 metros from the 100-largest group located in this region (Wilmington) saw an increase in concentrated poverty in the 1990s, and 27 of them saw declines that brought their 2000 concentrated poverty rates below those of 1980. The biggest drop in concentrated poverty occurred for the 10 Melting Pot metros in this region: from 33 percent to 22 percent on average. All of these are either in Texas or Florida except for one, metropolitan Washington, D.C., which had a different experience in the 1990s. Its rate of concentrated poverty as defined here remained quite low and constant (at 14 percent), but it is one of a small number nationally in which the share of the poor in extreme-poverty neighborhoods went up: from 3 to 8 percent.⁶

Trends in the West

The West is the only region with an overall increase in its concentrated poverty rate in the 1990s (from 22 to 24 percent), albeit remaining at a fairly low level overall. This region is composed of three distinctly different groups in the largest-100 category, and trends for them diverge. For the five Largely White metros (Denver, Portland, Salt Lake City, Seattle, and Tacoma), concentrated poverty started comparatively low and then dropped significantly in the 1990s (from 14 to 7 percent on average).

The other two groups are in the West's Melting Pot category; 7 of the 18 in this category experienced increases in concentrated poverty of 1 percentage point or more. The most important news probably is that concentrated poverty in metropolitan Los Angeles increased to a level comparable to some of the older urban areas in the East (from 29 to 36 percent).⁷ A second group of interest in this category is the set of troubled, rapidly growing metropolises in California's Central Valley. Bakersfield, Stockton, and Sacramento all saw large increases in concentrated poverty in the 1990s (rates ranging from 23 to 48 percent), and Fresno's rate, while not increasing, held constant at one of the highest levels in the nation: 50 percent. It is ironic that while California's Central Valley is home to several of America's most severe concentrations of urban poverty, the same state dominates the list of metropolitan areas that have the lowest concentration rates nationally, with San Francisco, San Jose, Ventura, and Vallejo registering less than 5 percent in 2000 (others with 2000 rates below that level are Portland and Jersey City).

All in all, the 1990s witnessed important changes in the pattern of concentrated poverty. In 1990, six metros had concentrated poverty rates of 50 percent or more (the highest being El Paso at 65 percent); in 2000, there were only two (again El Paso was highest, but at only 55 percent). In 1990, only one metro had a rate of 5 percent or less; in 2000, as noted above, there were six. In the 1980s, concentrated poverty rates for eight metros increased by 20 percentage points or more (the highest being Fresno at +38 percent), while in the 1990s there were no increases that large (the highest was Bakersfield at +18 percent). In the 1980s, there was only one metro whose rate declined by 15 percent or more (Bridgeport), while in the 1990s there were seven in

that category. These started with Grand Rapids (-15 percent), included Dallas, Austin, Denver, Columbus, and Detroit, and were topped by San Antonio (-24 percent).

High-Poverty Neighborhoods—Some Reduction in Distress

Whether the concentration of poverty increased or decreased would not make much difference if there were no corresponding change in indicators of the well-being of the residents of the neighborhoods in question. Census data show, however, that as poverty became less concentrated in the 1990s, there was a change. Conditions did improve in the tracts that were in the high-poverty category at the start of the decade.

Between 1990 and 2000, on average for these high-poverty neighborhoods in all U.S. metropolitan areas,

- the share of people age 25 and over without a high school degree dropped from 48 to 43 percent,
- the share of people age 25 and over who had graduated from college went up from 9 to 11 percent,
- the share of families with children headed by women dropped from 53 to 49 percent,
- the share of women age 16 and over who were employed went up from 40 to 42 percent, and
- the share of households receiving public assistance was cut in half from 24 to 12 percent.

There were some important variations across the country in these conditions and how they changed. Data for three of these indicators are presented by region and type of metropolis in table 4. The share of adults in high-poverty tracts without a high

school degree, for example, ranged from 33 percent (Largely White metros in the Midwest and West) to 54 percent (Melting Pot metros in the West). Improvements occurred in the 1990s in every category on the table, but they were not uniform. The smallest declines occurred in the West (-0.7 percent overall) and then in Melting Pot metros to the Northeast and South (all areas with large and rapidly growing immigrant populations). The largest declines (-9.0 to -9.3 percent) were in the Melting Pot metros of the Midwest and all categories except the Melting Pot metros in the South.

The pattern for the high-poverty area share of families with children headed by women was almost the reverse. All parts of the West come in low by this measure (regional average of 33 percent). Four other categories had rates in the 61–64 percent range (almost twice as high): the Largely White-Black metros of the Northeast, Midwest, and South, and the Largely White metros of the Northeast. Again, the 1990s saw improvements in all categories, but the biggest declines were in the Largely White metros of the West (-10 percent) and the Melting Pot metros of the Northeast and Midwest (-5 to -6 percent).

The third measure is the share of women age 16 and over in high-poverty neighborhoods who are employed. Here, the highest rates (48–50 percent) are in the Largely White metros of the Midwest and West, and the lowest is in the Melting Pot metros of the Northeast (35 percent). In terms of improvement in this rate in the 1990s, all parts of the Midwest stand out (regional average of +6 percent, in contrast to averages of less than +1 percent for the other three regions).

While these improvements in high-poverty tracts are noteworthy, conditions in other parts of most metropolitan areas also improved, so

TABLE 4. Selected Indicators, High-Poverty Areas versus Metro Averages

	Population 25 and over without HS degree (%)			Female-headed families as % of families with children			Women 16 and over employed (%)		
	High-poverty tracts		High-pov/metro. 2000	High-poverty tracts		High-pov/metro. 2000	High-poverty tracts		High-pov/metro. 2000
	2000	Change 1990-00		2000	Change 1990-00		2000	Change 1990-00	
Northeast									
Melting Pot	47	(5.9)	2.0	57	(4.5)	1.9	35	(0.5)	0.72
Largely White	37	(6.1)	2.3	62	(0.3)	2.6	43	2.5	0.77
Largely Wh.-Bl.	43	(7.9)	2.4	63	(1.1)	2.4	38	1.5	0.70
Total top 100	44	(5.8)	2.3	59	(3.2)	2.2	38	0.4	0.71
Other Metros	38	(6.5)	2.4	49	(2.4)	2.6	42	3.2	0.76
Total Metro.	44	(5.9)	2.4	58	(3.1)	2.4	38	0.6	0.71
Midwest									
Melting Pot	38	(9.0)	2.3	56	(5.8)	2.5	43	5.6	0.73
Largely White	33	(7.0)	2.2	58	(0.6)	2.4	48	6.3	0.81
Largely Wh.-Bl.	38	(8.3)	2.2	61	(4.3)	2.3	43	7.5	0.77
Total top 100	37	(8.1)	2.3	59	(3.7)	2.4	44	6.6	0.77
Other Metros	28	(6.0)	1.9	49	(0.6)	2.3	51	5.0	0.85
Total Metro.	35	(7.7)	2.2	57	(3.3)	2.4	46	6.3	0.79
South									
Melting Pot	49	(5.0)	2.4	40	(3.8)	1.7	40	(1.6)	0.72
Largely White	38	(9.0)	2.0	55	0.8	2.2	43	0.9	0.82
Largely Wh.-Bl.	39	(9.3)	2.1	64	(0.7)	2.4	42	1.4	0.74
Total top 100	43	(7.0)	2.3	51	(3.1)	2.0	42	(0.1)	0.74
Other Metros	43	(6.3)	2.0	41	(1.9)	1.6	41	0.8	0.81
Total Metro.	43	(6.7)	2.2	47	(2.8)	1.8	41	0.3	0.76
West									
Melting Pot	54	(0.5)	2.4	34	(3.8)	1.5	38	(2.0)	0.73
Largely White	33	(1.3)	2.7	38	(10.4)	1.9	50	5.7	0.83
Total top 100	52	(0.7)	2.5	34	(4.3)	1.6	39	(1.2)	0.73
Other Metros	37	(0.3)	2.1	29	(1.0)	1.4	46	2.9	0.84
Total Metro.	49	(0.7)	2.5	33	(3.8)	1.5	41	(0.3)	0.76
Total U.S.									
Melting Pot	49	(4.1)	2.3	45	(4.8)	1.8	39	(0.6)	0.72
Largely White	35	(6.6)	2.3	57	(1.5)	2.4	45	4.0	0.80
Largely Wh.-Bl.	39	(8.8)	2.2	63	(2.2)	2.3	42	3.7	0.75
Total top 100	44	(5.5)	2.3	51	(4.2)	2.1	41	1.4	0.74
Other Metros	40	(5.3)	2.2	41	(2.0)	1.8	44	2.0	0.80
Total Metro.	43	(5.5)	2.3	49	(3.8)	2.0	42	1.6	0.76

Source: Neighborhood Change Database, 1980, 1990, 2000.

gaps in conditions did not shrink much, if at all. For example, the share of adults without a high school degree in high-poverty neighborhoods was 2.1 times the all-metropolitan average in 1990 but went up to 2.3 times in 2000. On the other hand, the compara-

ble ratio for the share of families with children headed by women improved from 2.3 to 2.0, and for the share of women age 16 and over who were working, it improved from 0.7 to 0.8.

These ratios also vary by region and type of metropolis. For example,

the ratio of the share of adults without a high school degree in high-poverty neighborhoods to the metropolitan average was lowest in the “other” (not in the top 100) metros of the Midwest (1.9), while the level of disparity by this measure was

highest in the Largely White metros of the West (2.7). The ratio for the share of families with children headed by women ranged from 1.4 (“other” metros of the West) to 2.6 (Largely White metros of the Northeast). The ratio for the share of women age 16 and over who were working was quite small (0.70 to 0.84).

Implications

Against the overwhelmingly negative mindset that long dominated America’s thinking about cities, our story is astonishing. No writer of a decade ago even hinted at so dramatic a reversal in the concentration of poverty by the end of the century. And it is not just the spatial pattern that changed. By a sizeable number of indicators, there have been measurable improvements in conditions in high-poverty neighborhoods since 1990.

Why did it happen? More research will be needed to answer that in a fully satisfying way. However, it is hard to believe that the booming economy of the late 1990s did not have a great deal to do with it. Jargowsky’s 1997 analysis showed the strength of the local economy as the most important factor in explaining the variation in concentrated poverty across regions in 1990. Contrary to the view that a “culture of poverty” would prevent the residents of the ghettos from ever moving up the economic ladder, his models suggested that if the economy improved, they would benefit. It looks like he was right. Appropriately enough, researchers have been stressing other supports (e.g., the Earned Income Tax Credit, more funding for child care) important to improving outcomes in the late 1990s as well, but a sound economy was fundamental.

While this news is good, two other points should be kept in mind. First, while things got better in high-poverty neighborhoods in the 1990s,

in most places they got only a little better. In 2000, conditions remained significantly more problematic in high-poverty areas than other neighborhoods with respect to every indicator. For example, those living in high-poverty areas at the end of the decade were still 3.4 times more likely to be receiving public assistance, 2.3 times more likely to lack a high school degree, and 2.6 times more likely to be unemployed than metropolitan residents on average. There is still a long way to go.

Second, there is nothing to suggest that this shift in trends is at all permanent. It is important to remember that the reference date of the recent decennial census (April 2000) was near the peak of the economic boom of the late 1990s. Circumstances most probably have deteriorated again since then, although no one knows reliably by how much.

Nonetheless, the fact that the improvements of the 1990s could occur is important in itself. There are good reasons to suspect that one of the reasons the drive to revitalize America’s cities had foundered was that too many people came to believe it was all hopeless, that nothing one could do would make a difference. The 1990s proved that supposition wrong. The story told most often in the past (that things keep getting worse and worse) motivated sympathy, but not action. The story of the 1990s suggests that renewed investment in urban America can pay off.

The data presented here also hint at avenues for further research that might tell us more about *how* to make renewed investment pay off. One of them is to find out more about the neighborhoods that did experience significant reductions in poverty over the past 20 years and how those changes took place. To be sure, gentrification probably played an important role in some cases, but given the scale and locational spread of such changes, it is clearly not the only

force at work. Researchers and policymakers generally have underestimated the number of tracts where poverty has declined and have missed opportunities to learn from them.

Notes

1. Some evidence suggests that the critical threshold in the relationship between poverty rates and social problem conditions may be closer to 30 percent than 40 percent (Galster 2002) (i.e., a threshold above which further increases in the poverty rate are not associated with substantial further worsening of problem conditions).
2. The NCDB was developed by the Urban Institute and GeoLytics, Inc. Documentation can be found at <http://www.geolytics.com>. To avoid outliers, the database for this analysis excludes 286 tracts with population less than 200 in 1980, 1990, and 2000. It also excludes 679 metropolitan tracts as defined in 2000 that were in areas that were not tracted in 1980 (i.e., for which no 1980 tract-level data exist). Since census tract boundaries do not always conform to municipal boundaries, we define each city as the aggregation of 2000 Census tracts that most closely approximates the official place boundary, and use those same boundaries for 1980 and 1990. Thus our city population totals may differ from the Place totals published by the Bureau of the Census.
3. Actually, there were 331 metropolitan areas in 2000, but we exclude Barnstable-Yarmouth because census tracts were not defined within it in 1980. We selected the largest 100 Primary Metropolitan Statistical Areas (PMSAs) and Metropolitan Statistical Areas (MSAs) based on their 1990 populations. We exclude suburban PMSAs that did not have large central cities within their own boundaries. The Bureau of the Census recognizes several individual municipalities as “Central Cities” in many metropolitan areas. For this analysis, we generally accept only the predominant city as the Central City (e.g., Chicago in the Chicago PMSA). In seven cases, however, we classified two municipalities as together making up the Central City: Anaheim/Santa Ana, CA; Fort Lauderdale/Hollywood, FL; Greensboro/Winston-Salem, NC; Greenville/Spartanburg, SC; Minneapolis/St. Paul, MN; Tampa/St. Petersburg, FL; and West Palm Beach/Boca Raton, FL.
4. For simplicity, we consistently divide the population for all years into four groups by

ethnicity and race: “Hispanic” and three racial groups (white, black, and other), always defined to exclude Hispanics of those races. To allocate non-Hispanics who identified more than one race in the 2000 Census into the three racial categories, we applied an algorithm developed by demographer Jeffrey Passel that we believe does a reasonably good job of achieving comparability over time (see explanation in Tatian 2002).

5. Note that we applied Frey’s (2001) framework to our selected metros using 2000 data as he did in his paper.
6. For an extensive analysis of the changing concentration of poverty in metropolitan Washington and its implications, see Turner et al. (forthcoming).
7. Changing spatial patterns of concentrated poverty and their determinants in the Los Angeles region are analyzed by McConville and Ong (forthcoming).

References

- Burgess, E. 1925. “The Growth of a City.” In *The City*, edited by R. Park, E. Burgess, and R. Mckenzie. Chicago: University of Chicago Press.
- Ellen, Ingrid Gould, and Margery Austin Turner. 1997. “Does Neighborhood Matter? Assessing Recent Evidence.” *Housing Policy Debate* 8: 833–866.
- Frey, William H. 2001. *Melting Pot Suburbs: A Census 2000 Study of Suburban Diversity*. Washington, D.C.: Center on Urban and Metropolitan Policy, The Brookings Institution.
- Galster, George. 2002. “An Economic Efficiency Analysis of Deconcentrating Poverty Populations” *Journal of Housing Economics* 11: 303–29.
- Jargowsky, Paul A. 1997. *Poverty and Place: Ghettos, Barrios, and the American City*. New York: Russell Sage Foundation.
- . 2003. *Stunning Progress, Hidden Problems: The Dramatic Decline of Concentrated Poverty in the 1990s*. Washington, D.C.: Center on Urban and Metropolitan Policy, The Brookings Institution.
- Katz, Bruce, and Alan Berube. 2002. “Cities Rebound—Somewhat.” *The American Enterprise* 13(4): 47.
- Kingsley, G. Thomas, and Kathryn L. S. Pettit. 2002. *Population Growth and Decline in City Neighborhoods*. Washington, D.C.: The Urban Institute. *Neighborhood Change in Urban America* Brief 1.
- McConville, Sharon, and Paul Ong. Forthcoming. *The Trajectory of Poor Neighborhoods in Southern California, 1970–2000*. Washington, D.C.: Center on Urban and Metropolitan Policy, The Brookings Institution.
- Tatian, Peter A. 2002. *CensusCD Neighborhood Change Database (NCDB) Data Users’ Guide: Short Form Release*. Washington, D.C.: The Urban Institute.
- Turner, Margery Austin, Kathryn L. S. Pettit, G. Thomas Kingsley, Christopher Snow, Peter Tatian, and Alisa Wilson. Forthcoming. *Housing in the Nation’s Capital: 2003*. Washington, D.C.: The Fannie Mae Foundation.
- Wilson, William Julius. 1987. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*. Chicago: University of Chicago Press.

About the Authors



G. Thomas Kingsley coordinates the *Neighborhood Change in Urban America* series and is director of the National Neighborhood Indicators

Partnership.



Kathryn L. S. Pettit is deputy director of the National Neighborhood Indicators Partnership and codirector of a project examining the relationships

between neighborhood conditions and health outcomes.

Address Service Requested

For more information,
call Public Affairs:
202-261-5709
or visit our web site,
<http://www.urban.org>.
To order additional copies
of this publication, call
202-261-5687
or visit our online bookstore,
<http://www.uipress.org>.

The Rockefeller Foundation has funded the Urban Institute to conduct a project that will advance knowledge about neighborhood change in America's urban areas, particularly as it occurred over the 1990s. The project has had two purposes. The first was to develop the Neighborhood Change Database (NCDB)—the only database that contains nationwide census data at the tract level with tract boundaries and variables consistently defined across the four U.S. censuses from 1970 through 2000 (for more information about the NCDB, visit <http://www.geolytics.com>). The second was to conduct research on neighborhood change using the NCDB, focusing particularly on changes in the concentration of poverty, conditions in distressed neighborhoods, and racial patterns. This paper is one product of that research.

THE URBAN INSTITUTE
2100 M Street, NW
Washington, DC 20037
Copyright © 2003
Phone: 202-833-7200
Fax: 202-293-1918
E-mail: pubs@ui.urban.org

The views expressed are those of the authors and do not necessarily reflect those of the Urban Institute, its board, its sponsors, or other authors in the series.

Permission is granted for reproduction of this document, with attribution to the Urban Institute.

TABLE A-1. Change in Concentrated Poverty (100 Largest Metropolitan Areas)

	High-poverty tracts (30% or more)							Extreme-poverty tracts (40% or more)		
	No. of tracts.		Poor pop. (thous.)		Percent of poor population			Percent of poor population		
	1990	2000	1990	2000	1980	1990	2000	1980	1990	2000
Northeast, Melting Pot	510	558	785	878	47	44	41	29	27	22
Bergen, NJ	8	12	9	15	26	11	15	13	2	5
Jersey City, NJ	9	3	12	4	15	15	4	4	5	3
New York, NY	448	493	714	811	51	49	46	32	31	25
Newark, NJ	45	50	51	47	41	31	25	26	14	12
Northeast, Largely White	280	344	329	358	17	23	23	7	12	10
Albany, NY	8	19	11	16	15	16	20	1	5	7
Allentown, PA-NJ	6	10	6	11	10	15	20	0	8	10
Boston, MA	36	37	39	43	16	15	15	3	5	4
Bridgeport, CT	7	9	8	7	38	23	19	25	8	8
Buffalo, NY	39	39	56	45	25	40	33	12	23	17
Harrisburg, PA	7	8	10	10	12	23	20	7	6	6
Hartford, CT	18	32	23	29	25	28	30	16	17	10
New Haven, CT	8	10	10	13	21	25	26	7	5	9
Pittsburgh, PA	54	49	57	40	14	21	17	7	12	9
Providence, RI	16	28	19	40	6	18	29	3	3	10
Rochester, NY	35	42	30	35	19	31	32	6	16	17
Scranton, PA	6	4	6	4	1	9	7	0	3	4
Springfield, MA	15	18	26	26	34	37	33	16	29	22
Syracuse, NY	17	26	20	25	24	27	29	12	20	17
Worcester, MA	8	13	8	15	9	20	32	6	10	8
Northeast, Largely White-Black	109	140	182	214	36	36	39	23	23	20
Philadelphia, PA-NJ	109	140	182	214	36	36	39	23	23	20
Midwest, Melting Pot	345	277	381	279	37	38	27	21	25	13
Chicago, IL	294	246	331	246	41	40	29	25	27	14
Minneapolis, MN-WI	51	31	50	33	14	25	17	5	18	9
Midwest, Largely White	370	291	416	267	21	33	23	10	19	9
Akron, OH	29	18	29	15	19	37	23	4	23	10
Cincinnati, OH-KY-IN	45	46	56	42	28	34	29	20	25	17
Columbus, OH	42	29	64	37	35	41	25	16	25	13
Dayton, OH	28	24	38	23	21	35	24	11	22	7
Flint, MI	24	22	35	24	13	50	42	0	34	16
Grand Rapids, MI	21	11	23	10	14	26	12	3	10	3
Indianapolis, IN	27	21	26	18	16	19	13	5	7	2
Kansas City, MO-KS	49	36	35	27	17	23	18	7	10	5
Lansing, MI	15	13	18	12	17	34	25	10	22	13
Omaha, NE-IA	18	12	16	11	14	28	18	11	13	4
Toledo, OH	35	29	38	26	24	45	34	11	25	11
Wichita, KS	10	6	12	6	14	23	11	0	11	5
Youngstown, OH	27	24	26	17	22	34	29	6	23	5
Midwest, Largely White-Black	506	440	599	393	30	46	33	14	30	14
Cleveland, OH	132	120	112	87	28	43	36	17	22	15
Detroit, MI	211	164	285	161	30	52	34	12	36	10
Gary, IN	23	18	24	17	19	34	25	6	17	12
Milwaukee, WI	73	78	84	68	30	52	44	12	43	22
St. Louis, MO-IL	67	60	92	60	33	35	24	17	20	13
South, Melting Pot	492	389	756	602	25	33	22	11	16	8
Austin, TX	36	17	46	29	33	40	23	15	15	13
Dallas, TX	72	44	97	58	23	31	16	11	15	6
El Paso, TX	55	45	102	88	42	65	55	15	35	20
Fort Lauderdale, FL	14	18	22	29	17	17	15	11	5	4
Fort Worth, TX	31	23	32	23	17	22	13	5	10	4
Houston, TX	108	85	160	131	17	32	23	8	15	6
Miami, FL	61	63	122	121	32	36	31	12	21	14
Orlando, FL	13	11	18	18	18	15	10	8	7	5
San Antonio, TX	66	39	121	58	43	49	25	20	29	8
Washington, DC-MD-VA	36	44	37	47	15	14	14	5	3	8

TABLE A-1. Change in Concentrated Poverty (100 Largest Metropolitan Areas) (Continued)

	High-poverty tracts (30% or more)						Extreme-poverty tracts (40% or more)			
	No. of tracts.		Poor pop. (thous.)		Percent of poor population			Percent of poor population		
	1990	2000	1990	2000	1980	1990	2000	1980	1990	2000
South, Largely White	173	155	187	156	19	23	18	11	11	9
Chattanooga, TN–GA	14	10	14	10	25	25	18	18	14	12
Johnson City, TN–VA	6	6	8	6	1	12	10	0	0	0
Knoxville, TN	18	20	17	18	28	23	24	16	12	13
Louisville, KY–IN	28	21	41	28	30	35	27	18	18	19
Oklahoma City, OK	40	40	28	28	20	22	20	6	13	10
Tampa, FL	35	28	44	34	19	20	13	12	10	6
Tulsa, OK	19	14	20	13	7	22	14	2	13	7
West Palm Beach, FL	13	16	16	19	20	20	17	11	9	8
South, Largely White-Black	607	583	758	625	32	32	25	18	21	12
Atlanta, GA	65	53	79	65	32	27	17	20	15	11
Baltimore, MD	63	70	87	71	38	38	29	23	23	14
Baton Rouge, LA	31	27	48	39	30	50	41	12	29	18
Birmingham, AL	24	26	45	36	32	36	31	18	22	13
Charleston, SC	16	18	19	17	33	25	23	19	18	15
Charlotte, NC–SC	18	13	16	11	14	15	8	9	11	2
Columbia, SC	12	14	9	11	18	19	19	9	18	10
Greensboro, NC	16	17	14	17	17	14	14	4	8	6
Greenville, SC	14	16	13	15	13	15	14	5	9	8
Jacksonville, FL	20	16	28	18	35	27	16	17	10	7
Little Rock, AR	17	14	17	14	22	27	21	4	9	4
Memphis, TN–AR–MS	65	66	91	72	56	50	42	32	40	21
Mobile, AL	34	27	42	28	44	45	32	27	34	21
Nashville, TN	21	19	26	20	21	24	16	16	15	8
New Orleans, LA	116	105	136	106	44	53	46	26	35	23
Norfolk, VA	34	30	46	32	31	29	20	14	20	14
Raleigh, NC	16	19	15	21	13	18	19	2	8	6
Richmond, VA	18	22	22	22	26	27	24	11	15	10
Wilmington, DE–NJ–MD	7	11	4	10	23	11	21	13	5	13
West, Melting Pot	591	775	869	1,295	15	24	27	4	8	11
Albuquerque, NM	19	14	24	18	20	29	20	4	7	6
Bakersfield, CA	17	31	27	63	7	30	48	4	12	22
Fresno, CA	41	45	78	102	12	50	50	5	25	34
Honolulu, HI	5	7	3	8	7	6	10	4	5	5
Las Vegas, NV	8	13	12	23	8	15	16	0	5	1
Los Angeles, CA	252	369	383	611	22	29	36	5	9	15
Oakland, CA	26	26	31	34	18	16	15	4	6	6
Orange County, CA	7	13	13	25	2	6	9	0	0	1
Phoenix, AZ	64	63	82	93	25	29	24	14	15	10
Riverside, CA	27	60	38	104	4	12	22	0	3	8
Sacramento, CA	17	26	29	44	7	20	23	1	5	5
San Diego, CA	42	47	60	76	10	22	22	1	6	9
San Francisco, CA	10	5	11	7	11	8	5	3	4	2
San Jose, CA	7	2	8	2	3	7	2	0	0	0
Stockton, CA	16	23	24	40	18	33	41	5	15	16
Tucson, AZ	29	26	43	41	21	39	34	9	21	9
Vallejo, CA	0	2	0	1	0	0	2	0	0	0
Ventura, CA	4	3	3	3	0	6	4	0	0	0
West, Largely White	80	50	88	48	10	14	7	4	6	2
Denver, CO	30	10	38	13	14	25	8	7	8	2
Portland, OR	15	12	13	8	7	9	5	2	4	2
Salt Lake City, UT	16	11	13	6	7	13	6	3	4	3
Seattle, WA	12	11	14	13	9	9	7	2	5	2
Tacoma, WA	7	6	10	7	10	16	9	7	10	5

Source: Neighborhood Change Database, 1980, 1990, 2000.