Consequences from the Redistribution of Urban Poverty During the 1990's A Cautionary Tale

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ABSTRACT

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Conventional wisdom notwithstanding, the recent spatial redistribution of the urban poor does not necessarily bode well for the future. During the 1990s, the share of metropolitan population living in census tracts with high percentages (over 40 percent) of poverty indeed has fallen significantly, but the shares with 10-20 percent and 20-40 percent poverty rates have each risen one percentage point. These latter shifts are worrisome because many neighborhoods may have been pushed over their thresholds where poverty concentrations start to create significant externalities for neighbors.

Two recent reports, by Paul Jargowsky (2003) and Tom Kingsley and Kathryn Pettit (2003), have deservedly received a great deal of publicity, for they have documented the dramatic shifts in the spatial concentration of poor households in American metropolitan areas during the 1990s. The central theme of these reports: the number and population of metropolitan census tracts with more than 40 percent of their residents living in poverty fell significantly from 1990 to 2000.

As is conventional among scholars, policymakers, and the public alike, the authors have interpreted this finding in unabashedly favorable terms. Unfortunately, an assessment of additional information indicates that such a rosy interpretation may be premature, or at least partial.

I argue in this commentary that, conventional wisdom notwithstanding, the recent spatial redistribution of the urban poor does not necessarily bode well for the future. True, the share of metropolitan populations living in neighborhoods with high percentages of poor residents has fallen significantly during the 1990s, but so too has the share living in moderate-poverty neighborhoods. This redistribution may portend an overall intensification of several socially problematic outcomes because more neighborhoods have been pushed over the thresholds where concentrated poverty starts to generate negative externalities for the neighborhood. Implications for the economic development prospects of our metropolitan areas may not be as encouraging as once imagined.

The commentary is organized as follows. I first review briefly a specialized econometric literature on the non-linear impacts of neighborhood poverty rates on the probability that adults and youths in the area will commit crimes, work for lower wages, and experience poverty for a longer duration. This empirical literature suggests the existence of a threshold relationship between the probability of such individual outcomes and the percentage of poor in the census tract. That is, increasing numbers of poor

neighbors apparently has indecipherable effects on the individual until they exceed roughly 5 to 20 percent of the census tract population (depending on the indicator), whereupon the marginal impact rises dramatically.

In the second section I develop a simple model of how, under very general assumptions, the overall well-being of a metropolitan area will vary according to how poor households are distributed across its neighborhoods. This model shows that, based on the evidence above, a metropolitan area with the poor distributed in such a way that no neighborhood exceeds the metropolitan average poverty rate (i.e., each neighborhood has the same poverty rate) will have a lower total incidence of social problems than one in which high-poverty neighborhoods house all the poor while the rest house none. But, of more importance here, a metropolitan area may well raise its total incidence of social problems if its poor population is redistributed so that both its high-poverty and low-poverty neighborhoods are replaced by moderate-poverty neighborhoods.

In the final section I link the empirical literature on poverty neighborhood effects, the model of social well-being associated with the spatial distribution of poverty developed in the previous section, and the actual changes in neighborhood poverty rates that occurred during the 1990s, reporting unpublished data on the last. The conclusion is cautionary, though several caveats appertain.

Evidence on the Non-Linear Relationship Between Individual Propensities for Undesirable Social Outcomes and Neighborhood Poverty Rates

I do not attempt here a detailed review of the "neighborhood effects" literature, inasmuch as this has been provided by Briggs (1997), Gephardt (1997), Jencks and

Mayer (1990), Leventhal and Brooks-Gunn (2000), Sampson, Morenoff and Gannon-Rowley (2002), and Turner and Ellen (1997). Rather, I focus only on the (unfortunately, limited) evidence that has tested for non-linear relationships between neighborhood poverty rates (as opposed to other neighborhood conditions) and various individual outcomes. This focus is required because, as I will demonstrate in the next section, the precise nature of these non-linearities drives the conclusion about how the spatial redistribution of the poor will affect the overall well-being of the metropolitan area.

Vartanian (1999) undertook a comprehensive investigation of the neighborhood conditions experienced by children that may influence their economic well-being when they reach young adulthood, using Panel Study of Income Dynamics data. He found that, compared to otherwise comparable children growing up in low-poverty (the least poor tercile, roughly under 5 percent poverty rate) neighborhoods, children growing up in neighborhoods with roughly 5 to 15 percent poverty rates (i.e., the 34th to 66th percentiles) evinced 13 percent lower annual labor incomes and 16 percent longer durations of poverty spells when they were young adults. In a similar comparison, those growing up in neighborhoods with 15 to 30 percent poverty rates (i.e., the poorest 11 to 33 percent of all neighborhoods) had 12 percent lower hourly wages, 18 percent lower annual labor income, and 21 percent longer durations of poverty spells.[1] Finally, those growing up in neighborhoods having over 30 percent poverty rates (the poorest ten percent of neighborhoods) experienced 18 percent lower hourly wages, 21 percent lower annual labor income, and 25 percent longer poverty spells.

Krivo and Peterson (1996) investigated crime rates in various neighborhoods of Columbus, OH. In the case of property crimes, they found that, compared to neighborhoods with less than 20 percent poverty rates, crime rates were 20 percent higher in those with 20 to 39 percent poverty rates and 25 percent higher in neighborhoods with over 39 percent poverty rates. In the case of violent crime,

compared to neighborhoods with less than 20 percent poverty rates, crime rates were five (5) percent higher in those with 20 to 39 percent poverty rates and 17 percent higher in neighborhoods with over 39 percent poverty rates. Further experimentation with category-specific slope coefficients indicated that there was a positive, linear association between neighborhood poverty rates and violent crime over all neighborhoods with less than 40 percent poverty rates, but no further association once neighborhood poverty exceeded this point.

In summary, these findings consistently suggest the existence of thresholds: critical values of neighborhood poverty rates after which significantly different marginal external impacts on residents' outcomes occur. The literature identifies one and perhaps two thresholds.[2] One appears at the intuitive demarcation between low- and moderate-poverty neighborhoods (approximately 50 to 20 percent) and denotes a point after which socially problematic outcomes begin to rise rapidly with increasing concentrations of the poor. The second appears (though more speculatively, given that Vartanian did not test for this) at the demarcation between moderate- and high-poverty neighborhoods (approximately 30 to 40 percent) and denotes a point after which further concentrations of the poor produce no noticeable additional negative consequences. When the first threshold is exceeded and how rapidly the incidence of problems rises thereafter appears to depend on the indicator in question. Of course, the evidence consistently supports the conventional wisdom that the highest *level* of negative social impacts of all sorts occurs in the highest-poverty neighborhoods.

But, as I will emphasize in the next section, it is the relative *differences* in impacts between low-, moderate-, and high-poverty neighborhoods that is the central consideration when evaluating variations in overall levels of social problems associated with different spatial distributions of the poor. And here the evidence above is mixed, depending on outcome investigated.

A Simple Model of Social Well-Being and the Spatial Distribution of the Poor

Imagine a society in which the poverty rate of a neighborhood deleteriously influences a variety of social and economic outcomes for individuals, independent of their individual and parental characteristics. This assumption is not sufficient to indicate how the poor should be distributed across neighborhoods in such a way that social well-being is maximized (or social harms from negative individual outcomes are minimized) in the aggregate. Precisely how the neighborhood poverty rate affects individual outcomes must be specified before any conclusions about which spatial distributions of the poor will yield which changes in social well-being. For a more detailed model and explanation see Galster (2002).

To illustrate this key principle, imagine a hypothetical metropolitan area with 10 neighborhoods of equal populations of 1,000 people each; 10 percent (1,000 people) in the area are poor. We focus on some representative "social problem" (such as property crime) that is influenced by the percentage of the poor in the neighborhood. Now [1]consider the overall incidence of this problem in alternative forms of this metropolitan area, each characterized by a different distribution of the poor across the ten neighborhoods.

First, consider what would be concluded if there was a linear relationship between the neighborhood poverty rate and negative outcomes for all residents of the neighborhood, i.e., for each *additional* poor neighbor there was a constant marginal increase in the propensity for each resident to commit a property crime, regardless of the overall neighborhood poverty rate. In this case the surprising conclusion would be that there is no difference in social well-being regardless of how the poor are distributed.

Consider the outcomes in two neighborhoods, as illustration. Every time one imagines an alternative distribution of the poor, the gain (of lower crime) to residents in the neighborhood with the now-lower poverty rate is exactly offset by the loss (of higher crime) to residents in the neighborhood with the now-higher poverty rate. This is true no matter what the original poverty rates of these two neighborhoods are. This is why non-linearity of the relationship between the neighborhood poverty rate and the individual outcome is a necessary condition for drawing any social well-being conclusions from alternative spatial distributions of the poor.

Next consider a more complex case, using the parameters for property crime estimated by Krivo and Peterson (1996). Suppose that an individual's likelihood of committing a property crime in "low-poverty" neighborhoods (under 20 percent poverty rate) during a given period is ten in one thousand. In "moderately poor" (20-40 percent) neighborhoods it is 20 percent higher (12 in one thousand); in "high-poverty" neighborhoods (over 40 percent) it is 25 percent higher (12.5 in one thousand). Now, how the poor are distributed matters for the total incidence of property crime.

Take the case when all poor reside in one neighborhood. The 1,000 (poor) individuals will experience the 12.5 property crimes per thousand environment, thus their total incidence will be 1,000 x 12.5 / 1,000 = 12.5 crimes in their single neighborhood. The remaining 9,000 residents of the other nine neighborhoods will experience the 10 per thousand environment, yielding a total incidence of 9,000 x 10 / 1,000 = 90 crimes for their neighborhoods combined. For the metropolitan population as a whole, therefore, the total property crime incidence would be 12.5 + 90 = 102.5

By comparison, if the poor were evenly distributed across all ten neighborhoods, each (low-poverty) neighborhood would record 1,000 people (10 percent of whom would be poor) experiencing a 10 per thousand environment, for a total incidence of 10,000 x

10 / 1,000 = 100 property crimes. In this case, the situation of widely dispersed poverty is superior to that of concentrated poverty: the latter has a 2.5 percent higher overall rate of property crime across all neighborhoods (102.5 vs. 100). This resulted because: (1) adding more poor to low-poverty neighborhoods is possible without creating negative externalities for residents there (i.e., increasing their likelihood of committing crime); and (2) changing the status of a high-poverty neighborhood to a low-poverty one greatly reduces the likelihood of its former (poor) residents committing crimes.

So far this scenario comports well with the conventional wisdom about the evils of high-poverty neighborhoods and the social desirability of replacing them with low-poverty ones. Without disagreeing with this position, there is a less obvious, and gloomier, possibility associated with having a large fraction of moderate-poverty neighborhoods. Imagine the following alternative: four neighborhoods with 25 percent poverty rates and six with no poor. Proceeding as before with the calculations, the four moderate-poverty neighborhoods would have a total of 4,000 residents exposed to a 12 per thousand environment, generating 4,000 x 12 / 1,000 = 48 property crimes. The six low-poverty neighborhoods would generate 6,000 x 10 / 1,000 = 60 property crimes. The total incidence of property crimes for this alternative would thus be 108, considerably inferior to either completely deconcentrated poverty or, surprisingly, completely concentrated poverty scenarios! In this case the undesirable social outcome is produced anytime a high-poverty neighborhood and a low-poverty one is traded for two moderate-poverty ones (by reallocating the poor from the high- to a low-poverty one and thereby pushing the latter above the threshold of moderate-poverty). Any such trade results in a larger increase in per capita crime stimulus in the erstwhile low-poverty neighborhood (i.e., from 10 to 12 per thousand) than a decrease in such in the erstwhile high-poverty neighborhood (from 12.5 to 12 per thousand).

The preceding comparison of respective "gains and losses" in various types of neighborhoods is central to my argument, and thus is worth emphasizing. If the incidence in particular negative social outcome "step up" from low- to moderate-poverty neighborhoods is greater than its "step down" from high- to moderate-poverty neighborhoods (as in the above scenario), trading high- and low-poverty neighborhoods for an *equivalent number* of moderate-poverty ones will result in a higher total incidence of the problem at hand, thus reduced social well-being. But, if the relative "steps" at these thresholds were of the opposite sizes the conclusion would be reversed. Of course, regardless of the relative size of "steps", trading low-poverty for either moderate- or high-poverty neighborhoods one-for-one would reduce overall social well-being. Conclusions about the social desirability of alternative distributions of poverty populations across neighborhoods thus depend crucially on: (1) the precise location and magnitude of non-linearities or threshold points in the relationship between neighborhood poverty rates and a variety of individual outcomes that are of prime social interest; and (2) the magnitude of population redistributions across *all* types of neighborhoods, low-, moderate- and high-poverty. Only a partial view can be had by examining changes in high-poverty concentrations.

Changes in the Distribution of Poverty Across U.S. Metropolitan Neighborhoods in the 1990s

Tom Kingsley and Kathryn Pettit of the Urban Institute kindly provided me with tabulations of metropolitan census tract poverty rates in 1990 and 2000 that were not published in either their or Jargowsky's aforementioned reports. These data are presented in Table 1.

They show that, indeed, the metropolitan population residing in high-poverty (40 percent or more poverty rate) tracts declined by 1.5 million people over the decade, reducing the share of the population in these tracts from 4.4 to 3.2 percent. However, another redistribution—from the under ten percent-poverty to all other classes of moderate-poverty neighborhoods—was also underway. The share of the metropolitan population residing in tracts with below-10 percent poverty rates declined from 58.8 to 58.0 percent, whereas the shares residing in 10 to 20 percent, 20 to 30 percent, and 30 to 40 percent poverty rate tracts all increased; see Table 1. In other words, the actual patterns of the data correspond generally to the last scenario described in the previous section: during the decade we redistributed population from some high-poverty and low-poverty census tracts to moderate-poverty ones.

This raises the issue of social consequences. Had the number (or proportion) of high-poverty tracts declined and low-poverty tracts correspondingly risen during the 1990s, with moderate-poverty tracts holding fairly constant, the prior theoretical analysis would have suggested an unambiguous gain in social well-being, regardless of the precise magnitudes of the non-linear patterns in the relationship between neighborhood poverty and social outcomes. However, with the observed redistributions toward the intermediate-poverty categories, the consequences are less obvious, with conclusions about social well-being dependent upon the magnitude of the "steps" of impact between the different neighborhood categories as well as the population that changed categories, as explained above.

An approximation of how these various factors played out in the 1990s can be gained by conducting an empirical simulation analogous to the thought experiment above. I use the magnitude of the different "steps" in incidence of various social indicators estimated by Vartanian (1999) and Krivo and Peterson (1996) between various poverty categories of census tracts, and the actual population distributions

reported for 1990 and 2000 to generate (by weighted averaging) the total incidence of the indicator for both years.[3] Three indicators suggest an increase and two a decrease in well-being in U.S. metropolitan areas collectively since 1990 that can be purely attributable to this spatial redistribution of poverty. Compared to the situation where the spatial distribution of poverty remained constant, the simulations indicate that metropolitan areas by 2000 had 0.15 percent lower violent crime rates and 0.10 percent lower property crime rates. Similarly, in aggregate the hourly wages of our metropolitan areas' children were predicted to be 0.03 percent higher when they become young adults. However, these children were also predicted to have 0.03 percent lower incomes and 0.03 percent longer durations of poverty as young adults. These last two results occur because their thresholds were estimated at a lower concentration of poverty than for the other indicators.

The magnitude of these results may strike some as trivial. Regardless, these results fly in the face of (typically implicit) conventional wisdom suggesting that the recent spatial redistribution of poverty has been an unambiguous social good for American metropolitan areas.

Conclusions, Caveats and Conundrums

I have argued that the mere fact of a reduction in the incidence of high-poverty urban neighborhoods during the 1990s cannot automatically be associated with improved well-being for our metropolitan societies overall. Given that populations in moderate-poverty neighborhoods have risen significantly during this period, the implications for social well-being are not clear. Studies have indicated that poverty concentrations start to create negative external effects when they exceed 5 to 20 percent. Regardless of what this precise point is (and it seems to vary depending on the

outcome in question), the last decade saw a redistribution of metropolitan populations such that the share living in neighborhoods having 10-20 percent poverty rose one percentage point, and the share living in neighborhoods having 20-40 percent poverty also rose one percentage point. The result is that a larger fraction of the population may be living in neighborhoods with poverty rates that exceed the threshold for one or more social problem externalities, even though a smaller fraction reside in extreme-poverty neighborhoods. My estimates based on limited extant empirical evidence indicate that two important social indicators, income and duration of poverty, have been pushed in the wrong direction by the spatial redistribution of urban poverty during the 1990s (though others have not).

This surprising conclusion holds important implications for local economic development. The heralded reduction of concentrated urban poverty during the last decade is likely seen as a positive omen for regional economies. As the incidence of such neighborhoods wanes, so will disinvestment and many forces that impede the acquisition of human capital, according to conventional wisdom. In turn, this should promote business and residential development in these neighborhoods, the aggregate skill profile of the region's workforce should be enhanced, and personal incomes and local tax bases should rise. The analysis here suggests that not all these optimistic nostrums follow from the spatial redistribution of poverty we have recently witnessed.

Two main caveats are in order that circumscribe this conclusion. First, there may be other valid criteria for evaluating the spatial distribution of the poor besides the total incidence of various social indicators. One might, for example, impose equity standards involving differential weighting of outcomes depending on who is gaining and who suffering the negative consequences. This could, depending on the value judgement weighting employed, alter the conclusions I derived about changes in overall social well-being. Second, there has been no consideration here of the efficiency, effectiveness,

and fairness of prospective policy tools for intentionally redistributing the poor across real, as opposed to hypothetical, urban neighborhoods (Goering, Richardson and Feins, 2003; Galster et al., 2003). Put differently, even if we were unhappy with current tends in the spatial redistribution of the poor it would not necessarily follow that we have appropriate programmatic means at our disposal to change the distribution.

This leaves only a final, albeit massive, conundrum. Do we know enough about the independent effect of neighborhood on individual behaviors or opportunities to draw any substantive conclusions about the impacts of redistributing poverty populations? Unfortunately, there is extremely scanty empirical evidence upon which to assess precisely the relationship between neighborhood poverty and individual outcomes for residents. Many other important social indicators--educational attainment, fertility, marriage, psychological and physical health, e.g.--have not been subjected to the sorts of sophisticated econometric treatment that permits exploration of potentially non-linear neighborhood effects (Galster, 2002). Even the existing work cited here has methodological shortcomings that render the precision of their estimates suspect (Sampson, Morenoff, and Gannon-Rowley 2002). A much richer empirical base for measuring non-linear and threshold relationships for a variety of indicators must be developed that exploits the latest developments in modeling neighborhood effects (Galster, 2003). While awaiting such, this commentary is cautionary, not definitive.

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Table 1
Population Redistribution in U.S. Metropolitan Census Tracts, 1990-2000
by Tract Poverty Rate

	Population (000s)			Percent	
	1990	**2000**	**Change**	**1990**	**2000**
< 10%	115,234	129,486	14,252	58.8	58.0
10-20%	44,973	53,269	8,296	22.9	23.9
20-30%	17,888	22,384	4,496	9.1	10.0
30-40%	9,444	10,924	1,480	4.8	4.9
40% +	8,545	7,033	(1,512)	4.4	3.2
Total	196,084	223,096	27,012	100.0	100.0

Source: Urban Institute Analysis of U.S. Census data

Notes

1 Inasmuch as Vartanian (1999) estimates semi-log equations for wages and income, the coefficient of a dummy variable denoting neighborhood category (as reported in Table 5) must be adjusted to interpret the proportional impact of being in this category, using the formula: impact = exp(coefficient)-1.

2 I know of only one finding that is an exception to this, which identified only one threshold (at 5 percent neighborhood poverty rates) for male dropout effects; otherwise the relationship was linear: Clark (1992).

3 Population estimates were adjusted to correspond to the different neighborhood categories employed by the researchers cited here. Krivo and Peterson used under 20, 20-40, over 40 percent poverty. Vartanian employed percentiles, but they roughly correspond for the period under study to under 5, 5-15, 15-30, and over 30 percent poverty in census tracts.