Place-Based Aid Versus People-Based Aid and the Role of an Urban Audit in a New Urban Strategy

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Abstract

Cities with relatively high poverty rates remain high-cost places in which to live and work, even with hundreds of billions of dollars in means-tested monetary and in-kind transfers flowing annually to their poorer residents. Consequently, place-based aid to jurisdictions is needed to eliminate the cost differential between central cities and many of their suburbs that firms and middle-class households correctly perceive when they make location decisions. An Urban Audit is needed to provide estimates of how much aid is required to equalize poverty-related costs of various public services across jurisdictions and to provide localities incentives to employ the funds efficiently.

The Absolute and Relative Decline of America's Big Cities and Its Fiscal Consequences

It is not new for cities to bear economic and social burdens for the Nation. In the past, however, cities had the economic and political resources to respond dynamically to the burdens imposed on them. The situation today is different because structural problems have so weakened many cities that they are unable, and sometimes unwilling, to respond adequately to the difficulties they now face.

The old economic predominance of cities has been eroded by the decentralization of both population and jobs within metropolitan areas, a process that dates back many decades. Exhibits 1 and 2 document these changes over the past 20 years for a selected group of large metropolitan areas, their central cities, and their outlying suburban regions. Even in the high-growth Sunbelt region, the population increase and employment growth in these metropolitan areas generally have been due to growth primarily outside the central cities.

Although public policies have increased the decentralization of population within metropolitan areas beyond what would have occurred from technological change alone, the problem of cities is not one of loss of population share relative to the suburbs. Much more problematic is the sharp rise—beginning in the 1970s—in the poverty concentration

Exhibit 1

Population Growth for Selected Large Metropolitan Areas, 1970–90 (in Percent)

	1970–80			1980–90		
Metropolitan Area	**Central City**	**Outside Central City**	**Entire Metropolitan Area**	**Central City**	**Outside Central City**	**Entire Metropolitan Area**
Atlanta	-14.5	45.8	27.0	-7.3	43.4	32.8
Boston	-12.2	-2.6	-4.7	2.0	2.6	2.5
Chicago	-10.6	13.5	4.5	-7.4	9.2	2.2
Detroit	-20.4	-13.9	-15.8	-14.6	6.5	0.7
Houston	29.4	70.9	45.3	2.2	42.2	20.2
Los Angeles	5.4	6.9	6.3	17.5	19.2	18.5
New Orleans	-6.1	39.2	13.5	-10.9	4.7	-2.6
New York City	-10.4	1.0	-8.1	3.5	0.0	2.8
Philadelphia	-13.4	5.6	-2.1	-6.1	8.0	3.0

Source: Bureau of the Census, U.S. Department of Commerce, 1970, 1980, 1990

Exhibit 2

Employment Growth for Selected Large Metropolitan Areas, 1970–90 (in Percent)

	1970–80			1980–90		
Metropolitan Area	**Central City**	**Outside Central City**	**Entire Metropolitan Area**	**Central City**	**Outside Central City**	**Entire Metropolitan Area**
Atlanta	-16.4	87.4	45.8	0.2	59.3	48.6
Boston	-3.9	17.0	12.3	12.8	11.8	12.0
Chicago	-11.0	36.8	13.6	-2.3	16.2	9.2
Detroit	-29.7	26.5	7.4	-15.0	18.9	11.3
Houston	60.4	116.9	80.6	-4.7	45.3	16.8
Los Angeles	21.2	23.9	22.8	19.8	22.0	21.1
New Orleans	4.7	73.2	34.4	-14.9	7.6	-2.4
New York City	-8.6	14.7	-3.6	11.6	7.4	10.6
Philadelphia	-18.2	22.4	5.9	4.3	21.3	16.0

Source: U.S. Department of Labor, Bureau of Labor Statistics

within the central cores of major metropolitan areas. Exhibit 3 illustrates that, by 1980, about one-fifth of households in many larger central cities lived in poverty, according to U.S. Government definitions. Columns two and three show that this situation stayed the same or even worsened for many cities during the 1980s. Even in cities such as Boston, where the measured poverty rate fell during the 1980s, the ratio of city-to-suburban poverty continued to rise.

The fiscal consequences of dealing with such high levels of poverty are substantial. In larger cities—defined here as those with populations of at least 1 million—23 percent of noneducational expenditures ($520 per resident on average) in 1989–90 were spent on three services (public welfare, health, and hospitals) that are heavily poverty related. The analogous percentage in smaller cities—defined here as those with populations of less than 300,000—is about 5 percent ($31 per resident, on average).[1]

The ways in which these burdensome expenditures are met vary widely across cities because of differing local governmental structures and State and Federal aid programs. However, larger cities are bearing more than their proportional share of the national poverty burden, because intergovernmental aid covers a far higher proportion of these three poverty expenditures in smaller cities. In 1989–90, intergovernmental aid of all kinds amounted to more than 200 percent of this direct poverty spending in smaller cities, versus just above 100 percent in larger cities.

Of course, public welfare, health, and hospitals are not the only programs with high costs from increased poverty. Corrections, education, housing and community development, and public safety are among the local government functions that are likely to be more expensive the greater the percentage of the population in poverty. Even excluding education, Janet Rothenberg Pack (1995) estimates that each additional percentage point of poverty is associated with another $23 per capita in these municipal expenditures in 1989–90. Even if all the intergovernmental aid not tied to public welfare, health, and hospital expenditures had been targeted to indirect poverty costs associated with corrections, housing, and public safety, it would account for only 60 percent of these higher expenditures.

In a select group of cities, the poverty problem is compounded by a recent large influx of immigrants. Immigration policy is nationally designed and provides an especially clear example of an uncompensated financial burden borne by cities. Numerous studies show that immigrants probably still provide a net benefit to the Nation because in the long run their productivity level tends to make up for the high costs they generate upon arrival. However, during the 1980s immigrants generated a serious cash flow problem for the nine metropolitan areas that are home to almost 60 percent of all immigrants entering the United States.[2]

The concentration of immigrants is even greater than that of poverty. Three cities—Los Angeles, Miami, and New York—were home to 43 percent of the total inflow in the 1980s, and Los Angeles is estimated to account for nearly 25 percent of all recent immigrants. The primary reason that immigrants are at least a temporary resource drain on these cities is that most of the tax revenues generated by immigrants go to State and Federal Governments, while the bulk of the services they use—primarily education, health, and hospital related—is provided by counties and cities.

The U.S. General Accounting Office (GAO, 1992) has estimated that, of the revenue generated by all immigrants in Los Angeles County in 1991–92, 60 percent (or $1,130 per immigrant) went to the Federal Government, 29 percent (or $538 per immigrant) went to the State of California, with the county and other local governments receiving the remaining 11 percent (or $204 per immigrant). Immigrants account for a disproportionate 31 percent of Los Angeles County expenditures, equivalent to about $350 per immigrant. If education costs are included—they are not a county responsibility in California—the net financial cost rises to about $870 per immigrant. GAO figures show that these immigrants represent a net financial gain for the Nation and that the county and local governments could be properly compensated for their costs from the revenues generated by the immigrants themselves.

Exhibit 3

Poverty Rate for All Persons, Selected Metropolitan Areas, 1969, 1979, 1989 (in Percent)

	1969[a]	1979	1989
Atlanta			
Metropolitan area		12.2	10.0
Central city	20.5	27.5	25.9
Suburbs		8.3	7.2
City/suburbs		3.3	3.6
Boston			
Metropolitan area		9.4	8.3
Central city	16.2	20.2	15.4
Suburbs		6.8	4.8
City/suburbs		3.0	3.2
Chicago			
Metropolitan area		11.3	12.4
Central city	14.5	20.3	21.2
Suburbs		4.7	4.3
City/suburbs		4.3	4.9
Detroit			
Metropolitan area		10.2	12.9
Central city	14.9	21.9	30.2
Suburbs		5.7	6.2
City/suburbs		3.7	4.9
Houston			
Metropolitan area		10.1	15.1
Central city	14.2	12.7	20.6
Suburbs		7.1	9.4
City/suburbs		1.8	2.2
Los Angeles			
Metropolitan area		13.4	15.1
Central city	13.3	16.4	18.3
Suburbs		11.2	12.1
City/suburbs		1.5	1.5
New Orleans			
Metropolitan area		17.6	21.2
Central city	27.0	26.4	30.6
Suburbs		9.9	14.5
City/suburbs		2.7	2.1
New York City			
Metropolitan area		16.8	17.5
Central city	14.8	20.0	19.2
Suburbs		5.6	6.5
City/suburbs		3.6	3.0
Philadelphia			
Metropolitan area		12.0	10.4
Central city	15.4	20.6	20.3
Suburbs		7.1	4.8
City/suburbs		2.9	4.4

[a] Data for 1969 are available only for the central city.

Source: Decennial censuses; calculations by Janice F. Madden, University of Pennsylvania

While the Nation's poverty and immigrant populations were increasingly becoming urban phenomena without commensurate real growth in intergovernmental aid to the cities with the greatest poverty and immigrant concentrations, the political strength and will to manage resources efficiently waned in many larger municipal governments. Municipal fiscal planning and management deteriorated for many reasons, including the virtual disappearance of competition among political parties in some locales. In addition, the increased empowerment of individual constituencies and neighborhoods sometimes led political leaders to maximize the welfare of their localized political bases, rather than to achieve the best possible outcome for the city as a whole.

This tendency is seen most clearly in New York City, for which net poverty expenditures (that is, after netting out intergovernmental aid) were 26.6 percent of own-source revenues in 1989–90. New York City's percentage is very high compared with the 12- to 13-percent average for all larger cities. Although redistribution should not be interpreted as evidence of general inefficiency, the outcome in New York City probably serves well key parts of the local political leadership at the expense of the long-run economic health of the city as whole. New York City has enormous location-specific rents arising from its position as the Nation's and world's financial capital, but the high taxes and borrowing this permits help finance a high level of poverty-related local spending that has made the city less attractive to a number of potential residents and businesses.

In sum, the currently precarious social and economic condition of many of the Nation's largest cities has arisen from a combination of factors:

- A long-term trend of job and population decentralization to the outlying parts of metropolitan areas.
- A recent period of two to three decades of increasing poverty concentrations in larger cities.
- A general growing resource mismatch problem caused by intergovernmental aid not being reallocated to compensate those jurisdictions bearing increasing shares of the country's poverty-related burdens.
- A resource misuse problem due to inefficient municipal management of available resources.

Does Urban Decline Warrant Government Intervention and a New Urban Strategy?

It is tempting to follow a classic economic argument that no policy response is needed because cities should compete just like firms—and thrive and die like firms. If cities are inviting places in which to live and work, they will flourish; if they are not, they will decline, and so be it. The case of Smith-Corona, the typewriter company, provides an excellent example of this line of reasoning. To the benefit of its workers and shareholders, Smith-Corona flourished for many years as a premier maker of mechanical and then electric typewriters. However, the company was not able to respond successfully to the development of the personal computer and easy-to-use word processing software. The firm declined and eventually filed for bankruptcy protection, causing shares to lose much of their value and many workers to forfeit their jobs. The mere fact of company decline and its associated costs to shareholders and employees provides no economic justification for public intervention. In fact, the efficient outcome requires that scarce human and financial resources be redeployed from Smith-Corona to more productive computer hardware and software producers.

If the issue were purely one of technological obsolescence, this line of argument would apply to the decline of cities, too. Why the analogy is not completely appropriate to the urban situation is suggested by the fact that poverty burdens of big cities have risen while real intergovernmental aid has fallen. That is, during the past two to three decades, many of the largest cities have taken on responsibilities that extend far beyond their own local markets without being properly recompensed. Thus, the markets for firms and residents in which cities operate are far from perfect, with many larger cities competing at a disadvantage because of their relatively high and underfunded poverty burdens. This leads to a distortion in the location decisions made by firms and people. At the business and household levels, both firms and families correctly perceive that the private costs of locating in a city are higher than in the suburbs. This perception helps lead them to the decision to locate in the suburbs, if moving costs are not too high. However, their purely private location decisions ignore the added costs to society that also arise from these decisions. For example, urban sprawl and congestion are made worse. As a result, trillions of dollars in investments in the public and private infrastructures of cities are being depreciated faster than optimal.[3] With respect to the poor themselves, the aggregate poverty rate is higher than it would be if everybody had to pay the full social costs associated with his or her decision to escape some of its costs by moving outside the central city. In addition, very high social costs may be associated with the increasingly dense concentrations of poverty left in the urban core of our metropolitan areas.[4]

In summary, economic efficiency, not only fairness, calls for a policy response to our heightening urban problems. That strategy must deal with the underlying structural problems besetting the environment in which cities compete. When thinking about that environment and its spatial nature, it becomes clear that an effective policy requires more of a place-based component to complement the people-based aid programs that have been the centerpiece of the Nation's response to the issue of the growing concentration of the urban poor.

Thinking About Place- and People-Based Aid as Part of an Urban Strategy

Current poverty policy in the United States is largely people based—that is, transfers are made directly to individuals or households. Because many larger cities have high concentrations of poor, these programs represent the bulk of urban poverty-related aid. For example, the August 1, 1996, *Philadelphia Inquirer* reported that nearly 228,000 Philadelphia city residents received Aid to Families with Dependent Children (AFDC) payments in May 1996, compared with only 40,000 in the four Philadelphia suburban counties—and these Pennsylvania counties have a greater population than the central city itself.[5]

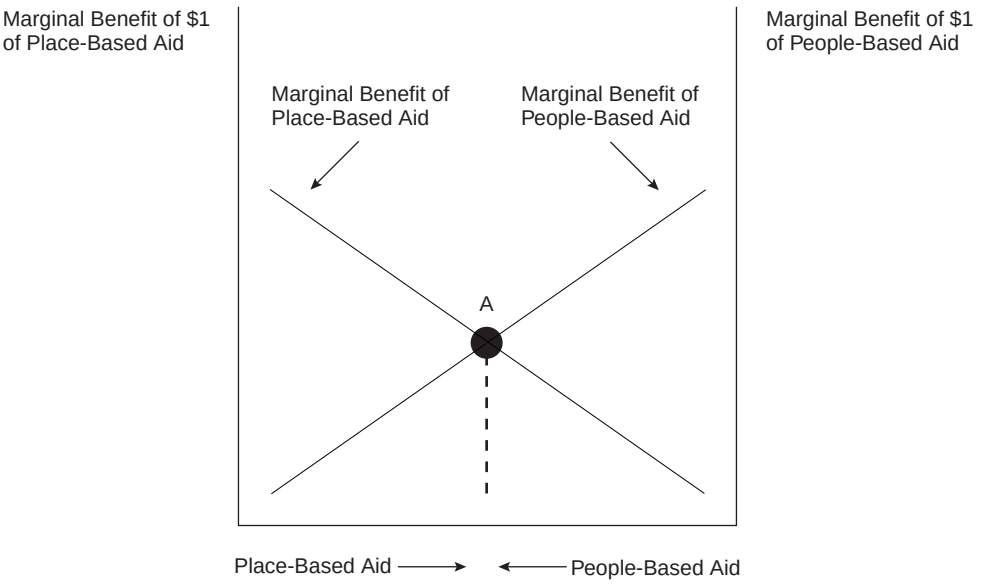
In terms of poverty, policymakers have concluded that aid should pass directly to poor people and that they should decide where and how to live. Substantial sums of money are transferred this way. If we consider only major means-tested cash and noncash income maintenance and housing programs, Federal spending in 1992 totalled roughly $160 billion, and State and local spending was another $82 billion, according to the Bureau of the Census, U.S. Department of Commerce, *Statistical Abstract of the United States,* Table 589.

The problem with this approach is that the work by Pack (1995) and Kermit Daniel (1994) clearly indicate that this aid has not fully recompensed cities for being home to increasing numbers of the impoverished. Cities with large poor populations are still forced to use

relatively large amounts of own-source revenues to care for their poor. To reiterate, this situation requires higher local taxes paid predominantly by the resident nonpoor or lower quality public services or both, leaving the city uncompetitive from a fiscal perspective.

Admittedly, the goal of people-based transfer schemes is to help recipients, not to make cities financially competitive. The argument here is not that people-based schemes are somehow bad or inappropriate; rather, it is that such programs involving even very large dollar amounts cannot be viewed as comprising a well-rounded urban strategy. From an economic perspective, exhibit 4 illustrates how we should think about the proper distribution of people- versus place-based aid, given some fixed amount of total aid available. The vertical axes measure the marginal social benefit of an added dollar of placed-based aid and people-based aid. Both marginal benefit curves slope downward because each added dollar tends to generate less benefit than the previous dollar.[6] The optimal distribution of people-based aid versus place-based aid is where the two curves intersect, for that is where the social benefit of a dollar spent on each type of aid is equated. Where the curves cross in reality is a question in urgent need of research. However, this discussion strongly suggests that, in terms of an urban strategy, we are well to the left of point A in exhibit 4 and that we need to increase the relative amount of place-based aid.[7] Of course, the research suggests that an inefficiently small number of transfers is currently being made. If so, place-based aid should greatly complement, not substitute for, people-based aid.

Exhibit 4



Some insight into why direct transfers to the poor in cities are not likely to have much impact on net city revenues, and thus not likely to do much to reduce the distortion in firms' and households' location decisions, can be gained by considering the three possible impacts such spending could have on the city treasury. The first way direct transfers to the poor could affect city revenues is by income effects on the city tax base and, hence, its tax revenues. People-based transfers make the poor less impoverished, leaving them able to pay higher rents or house prices than would otherwise be the case. Thus, average property

values are higher. If all else is held constant, the city realizes added revenues equal to the sum implied by equation (1):

$$\Delta City\ Revenue = \#Poor \times Local\ Property\ Tax\ Rate \times \Delta Mean\ Property\ Value\ of\ the\ Poor. \quad (1)^{8}$$

The added revenues realized from the increased property tax base mean that tax rates themselves do not have to be as high as would otherwise be the case. However, this income effect on property values is likely to be small for the simple reason that the per capita level of the transfer is small. That is, welfare-related payments do not turn the poor into middle-class households that could substantially bid up property values by demanding a much higher quality housing stock.

The second way that direct transfers could affect city finances is by influencing the cost of local service provision. City service costs are probably a decreasing function of the income of the poor, as illustrated in equation (2):

$$City\ Costs = \#Poor \times Service\ Costs/Poor\ Person\ \{Income\ of\ the\ Poor\},\ with\ \partial City\ Costs/\partial Income\ of\ the\ Poor < 0. \quad (2)$$

Lower costs imply that taxes do not have to be as high, thereby improving the city's competitive position. Unfortunately, from a city treasurer's perspective, the savings to the city are probably minimal compared with the level of those costs (that is, $\partial City\ Costs/\partial Income\ of\ the\ Poor$ is small compared with the amount of *City Costs*). Just as food stamps and AFDC payments do not generate large income effects that could substantially increase the tax base, they also do not cut service costs enough to pay anywhere near the full costs of services, such as educating the children of poor households.

The third possible avenue of impact of people-based aid on the health of the city treasury is through its influence on the poor choosing to live in the city. This effect probably is small because, as one examines this problem today, most poor already reside in the central city. The spatial distribution of the poor within a metropolitan area probably has more to do with local zoning than with Federal or State poverty programs. Hence, direct people-based transfers probably have little effect on the number of poor in the city, except to the extent that the payments are housing related.[9]

To summarize, although direct means-tested transfers to individuals may greatly benefit their recipients, their impact on net city revenues is fairly limited—at least at current transfer levels. Hence, a purely or predominantly people-based strategy does not internalize the spatial distortion and its associated social costs as firms and people avoid high-poverty-rate jurisdictions.

The Costs to the Nation

There is relatively little empirical research into the social costs of this distortion, even though these costs are likely to be very large. They include the following:

- A small portion of the costs of urban sprawl; for example, the value of wasted time because of roadway congestion is estimated to be about $39 billion a year in the 50 largest metropolitan areas.[10] While not all, or even most, urban sprawl should be attributed to location decisions influenced by the high costs to cities of having to care for large numbers of impoverished households, attributing even a small fraction of the associated costs yields a large number.

- A large portion of the social loss associated with the high writeoff of the trillions of dollars of investments in city infrastructures. Writing off these assets faster than would be the case if nonpoor city and suburban residents truly bore the same costs for caring for the poor that are increasingly concentrated in large central cities yields a social loss that easily runs into the billions of dollars each year.
- The added social costs associated with the fact that the national poverty rate is higher than it would be in the absence of the distorted location decision. This may seem perplexing, but it follows from basic microeconomics that if the more well-off households were able to avoid some of the full costs of poverty simply by locating in a suburban jurisdiction, more poverty would result. Simply put, if many people do not have to pay the full price for something, the quantity demanded (tolerated in this case) will be higher. Social costs here probably are greatest in terms of the lost labor-force productivity associated with the greater number of poor households.
- The added social costs of destructive and dysfunctional behavior that some social scientists claim have arisen from the increased concentration of poverty in some urban areas. This research into so-called peer-group effects is controversial, but compelling evidence for it is increasing; in economic terms, the biggest part of the social loss arises from reduced productivity from people damaged by highly concentrated poverty.

Eliminating or reducing these social costs requires a place-based strategy explicitly acknowledging that impoverished households are likely to generate significant fiscal losses to cities if direct transfers to households remain near current levels. Dealing with the problem also requires taking into account the cost-benefit calculus of the nonpoor. Indeed, one possible place-based strategy would be to transfer resources directly to the nonpoor *if* they choose to live or invest in a high-poverty-rate city.[11] An important economic drawback of these schemes is that they typically do not target only those decisionmakers who would not locate in the city in the absence of the transfer. However, if the population elasticity of the subsidy to the nonpoor is high or the income effect on the local tax base is high or if both apply, the city's fiscal situation could markedly improve as the number of nonpoor residents or investors grows and bids up the value of the tax base.[12]

A closer look reveals that transfers to the nonpoor choosing to live in a high-poverty-rate city generate income effects on property values qualitatively similar to those illustrated in equation (1). A key issue for the city's treasury and its overall competitiveness is whether the effects will be quantitatively larger. Equation (3) illustrates the impact on net city revenues:

$$\Delta \textit{City Revenue} = \Delta \textit{\#Nonpoor} \times \textit{Local Property Tax Rate} \times \Delta \textit{Average Property Value of the Nonpoor.} \quad (3)$$

In addition to the income effect on property values represented by the term Δ*Average Property Value of the Nonpoor*, we have also included a term for the changing number of nonpoor *(*Δ*#Nonpoor).* This latter term represents the population elasticity and is greater than zero. Transfers to the nonpoor could also affect city service provision costs, but this effect is likely to be small on the margin (that is, ∂*City Costs/*∂*Nonpoor Income* is negative, but small).

The primary conclusion is that, if the location distortion is important, even direct transfer programs to individuals must have a place-based component. And, if the income effects and population elasticities are greater for the nonpoor, as seems likely, incorporating place-based transfers will help reduce this distortion.

An Urban Audit To Determine Place-Based Aid

Politics will rightly play a large role in determining the ultimate shape of any place-based urban aid strategy. In this section, we describe an Urban Audit that can be used to design a system involving transfers to local jurisdictions that are functions of their local poverty burden and their efficiency at delivering local public services.[13]

The overarching goals of the Urban Audit are twofold:

- Measure the costs of burdens that cities are bearing for the rest of the country and efficiently allocate those costs across the entire citizenry so that individuals bear their share of the overall burden, no matter where they live or work. As discussed above, the present system simply allows too many Americans to act as if the true costs of high levels of poverty and immigration in central cities are relatively small.
- Provide an incentive structure for municipal governments to use the resources that are available to them more efficiently. In addition, cities whose managements are focused on delivery of key services should also receive more than those that expend scarce resources on local redistributional programs that properly are the functions of State and Federal governments. Local governments typically are so severely constrained by their boundaries that their efforts to redistribute tend to be counter-productive and excessively costly.

Political realities also appear to require that any restructuring of resources for urban areas be expenditure neutral in the aggregate. Beyond that, expenditure neutrality enforces the necessary tradeoffs between more and less efficient spending. A meaningful, expenditure-neutral lifeline can be implemented if the new aid allocation criteria are applied to the full complement of intergovernmental revenues that flow to local jurisdictions (for example, infrastructure development funds for roads and sewerage), not just to the portion traditionally thought of as *urban aid* (for example, Community Development Block Grants).[14]

Implementing an Urban Audit would be difficult because the data requirements for its proper functioning are rigorous. Building a capacity that includes the collection and maintenance of a large database of comparable local variables across jurisdictions is critical. While such data presently are not readily available, we can create a stylized, but still informative, illustration of how transfer levels and efficiency ratings could be estimated. This is done for the single local public function, police services, using a limited number of variables for a cross section of central cities.

A Stylized Example of Estimating Costs

The first step is to estimate how much more costly a small increase in the city's household poverty rate (POV_j) is in terms of expenditures per capita on police services (POL_j), holding constant other factors that also influence service delivery costs. For the purposes of illustration only, assume that those other factors are the city's population density $(Popden_j)$, crime rate $(Crime_j)$, and cost of living (COL_j). This leads to the following specification of city j's police expenditures per capita:

$$POL_j = \beta_0 + \beta_1 POV_j + \beta_2 Popden_j + \beta_3 Crime_j + \beta_4 COL_j + \in_j , \quad (4)$$

where $\in_j$ is the standard error term and βs are coefficients.

An immediate econometric problem arises from the possibility that police spending could also influence the level of each of the right-side variables in equation (4). This suggests

that they are simultaneously determined. The possibility that police spending influences the crime rate rather than the amount of crime driving police spending probably is the most obvious problem. That is, one reason crime rates might be high is that not enough is spent on police services. This means that our coefficients potentially suffer from simultaneity bias.[15]

While this problem can be dealt with via more complex econometric techniques, which require better data, the simple single equation (4) suits our needs because it outlines the basic strategy underlying the implementation of the first stage of the Urban Audit without getting bogged down in econometric details. In addition, amid all the potential biases arising from a single-equation estimation, the results of equation (4) reported below most probably represent a lower bound on the true impact of the effects of poverty on police spending. The two dominant biases have to do with selectivity issues. First, the sample used contains no suburbs. Including safe suburbs—with virtually no impoverished households and very low expenditures on public safety—would certainly steepen the regression line for the relation between local poverty rates and police spending. Second, city-level data do not permit the equation to capture the effect that would result if well-off city residents experienced the same amount of crime that exists in poor areas of the city. That is, the estimated relation between poverty and police spending is probably less strong the greater the degree of residential segregation by income.

One serious counter to the argument that β_1 is biased downward involves not controlling for taxes. If higher spending is associated with higher taxes and higher taxes lead to increased outmigration of the well-off, the coefficient on poverty may be picking up this omitted variable effect. Future research certainly should build larger and more representative samples, so that structural equations of all relevant variables can be specified and a system of equations estimated.

The underlying data for each city are reported in exhibit 5, with the results of estimating equation (4) presented in exhibit 6. More than one-half of the variance in police spending per capita across our sample of cities is explained by the four variables. This discussion focuses on the coefficient for the local poverty rate, because of its implications for the level of transfers needed to equalize burdens for higher poverty jurisdictions. Its estimated value of about 222 implies that a city with a poverty rate 1 percentage point greater than the sample mean spends an extra $2.22 per capita on police services, all else held constant. Stated differently, this is the per person fiscal cost to the city of added poverty for police services, holding constant the crime rate, the cost of living, and population density.[16]

If we apply this regression result and use a more nationally representative 14-percent poverty rate as the base for determining transfers, the estimated transfer to the city of Philadelphia—with a 20.3-percent poverty rate—will be approximately $22 million dollars.[17] This is the annual transfer needed so that residents of Philadelphia do not have to spend more per capita than would be the case if the city had only the 14-percent poverty rate. This figure is obtained by first determining the extra per capita spending by the city due to poverty, with all else held constant. This per capita spending is 6.3 (Philadelphia's 20.3-percent poverty rate, less the presumed 14-percent national average rate) times the $2.22 per capita estimated poverty effect, or 6.3 x 2.22 = 13.99. This translates into $22.182 million for the 1.586 million residents of Philadelphia in 1990 (that is, 13.99 x 1,586,000).

Exhibit 5

City	Per Capita Police Expenditure ($) (1990)	Poverty Rate Among Individuals (%) (1989)	Crimes Per 100,000 Population (1991)	Residents Per Square Mile (1990)	Cost-of-Living Index (1993)
Akron, OH	120	20.5	8,066	3,585	99.1
Albuquerque, NM	140	14.0	10,284	2,910	104.9
Anaheim, CA	176	10.6	7,152	6,014	126.2
Anchorage, AK	110	7.1	6,687	133	127.4
Arlington, TX	82	8.2	9,480	2,814	99.2
Atlanta, GA	191	27.3	18,953	2,989	100.6
Austin, TX	105	17.9	11,295	2,138	106.1
Baltimore, MD	208	21.9	11,371	9,109	103.8
Baton Rouge, LA	95	26.2	13,118	2,969	100.9
Birmingham, AL	126	24.8	12,586	1,791	102.0
Boston, MA	242	18.7	10,837	11,860	135.6
Buffalo, NY	142	25.6	9,555	8,080	118.5
Charlotte, NC	95	10.6	12,643	2,272	100.1
Cincinnati, OH	172	24.3	9,722	4,714	103.8
Cleveland, OH	239	28.7	8,945	6,571	105.2
Columbus City, OH	165	17.2	10,145	3,315	105.6
Corpus Christi, TX	95	20.0	10,443	1,907	93.8
Dallas, TX	159	18.0	15,066	2,941	104.9
Dayton, OH	198	26.5	11,767	3,309	100.5
Denver, CO	194	17.1	7,625	3,053	107.8
Detroit, MI	294	32.4	12,263	7,412	121.0
Fort Wayne, IN	76	11.5	9,767	2,762	91.0
Fort Worth, TX	124	17.4	16,973	1,592	94.0
Fremont, CA	136	4.3	4,006	2,250	135.6
Fresno, CA	112	24.0	12,031	3,573	115.4
Garland, MS	80	7.8	6,549	3,150	104.9
Grand Rapids, MI	110	16.1	9,178	4,266	102.6
Greensboro, NC	128	11.6	8,990	2,306	97.7
Houston, TX	154	20.7	10,824	3,021	98.8
Huntington Beach, CA	175	5.2	4,334	6,871	126.2
Indianapolis, IN	113	12.5	7,357	2,021	98.8
Jackson, MS	78	22.7	13,687	1,804	96.3
Kansas City, MO	173	15.3	11,898	1,396	97.5
Lincoln, NE	59	11.3	7,718	3,033	89.9
Little Rock, AR	92	14.6	16,171	1,709	89.8
Los Angeles, CA	187	18.9	9,730	7,426	125.2
Louisville, KY	117	22.6	6,425	4,332	92.5
Lubbock, TX	89	19.6	6,542	1,789	92.4
Madison, WI	123	16.1	6,650	3,311	113.8
Memphis, TN	112	23.0	10,184	2,383	98.3
Mesa, AZ	139	9.5	7,595	2,653	102.5
Miami, FL	220	31.2	18,394	10,084	109.8
Milwaukee, WI	188	22.2	9,044	6,535	107.0

Exhibit 5 (continued)

City	Per Capita Police Expenditure ($) (1990)	Poverty Rate Among Individuals (%) (1989)	Crimes Per 100,000 Population (1991)	Residents Per Square Mile (1990)	Cost-of-Living Index (1993)
Minneapolis, MN	139	18.5	11,282	6,703	102.2
Mobile, AL	101	22.4	12,863	1,663	94.6
Montgomery, AL	93	18.1	8,581	1,386	95.7
Nashville, TN	112	13.4	8,665	1,031	90.6
New Orleans, LA	134	31.6	10,830	2,750	98.6
New York, NY	243	19.3	9,236	23,699	149.5
Newark, NJ	220	26.3	14,806	11,555	149.5
Newport News, VA	97	14.0	6,803	2,488	97.8
Norfolk, VA	126	19.3	9,251	4,859	97.8
Oklahoma City, OK	132	15.9	11,073	732	93.8
Omaha, NE	104	12.6	7,081	3,336	91.9
Philadelphia, PA	205	20.3	6,835	11,739	129.7
Phoenix, AZ	150	14.2	9,958	2,341	102.5
Pittsburgh, PA	144	21.4	8,219	6,655	113.3
Portland, OR	147	14.5	11,182	3,504	108.5
Raleigh, NC	98	11.8	7,790	2,360	98.5
Richmond, VA	208	20.9	11,611	3,378	106.6
Riverside, CA	145	11.9	8,935	2,916	117.9
Rochester, NY	157	23.5	11,196	6,480	111.8
Sacramento, CA	170	17.2	10,098	3,836	108.4
San Antonio, TX	105	22.6	12,291	2,811	97.4
San Diego, CA	137	13.4	8,537	3,428	127.5
San Francisco, CA	211	12.7	9,384	15,502	144.8
San Jose, CA	132	9.3	5,364	4,565	135.6
Seattle, WA	166	15.7	12,248	6,150	119.7
St. Louis, MO	228	24.6	16,031	6,414	97.0
St. Paul, MN	126	16.7	7,892	5,157	109.4
St. Petersburg, FL	156	13.6	11,023	4,032	98.2
Tacoma, WA	132	16.8	11,287	3,677	103.0
Tampa, FL	179	19.4	16,557	2,576	98.2
Toledo, OH	136	19.1	9,503	4,132	100.7
Tucson, AZ	128	20.2	10,401	2,594	103
Tulsa, OK	112	15.0	8,887	2,000	90.0
Virginia Beach, VA	102	5.9	5,863	1,583	97.8
Wichita, KS	80	12.5	9,830	2,640	96.3
Mean	143	17.7	10,172	4,344	106.7
Standard Deviation	47	6.23	3,033	3,601	14.2

Sources:
Per Capita Police Expenditure, 1990: City Government Finances, 1990–91
Poverty Rate Among Individuals, 1989: City and County Data Book, 1994
Crimes Per 100,000 Population, 1991: City and County Data Book, 1994
Residents Per Square Mile, 1990: Statistical Abstract of the U.S., No. 38
Cost of Living Index, 1993: ACCRA

Exhibit 6

Regression of Per Capita Expenditure Against Poverty, Crime, Density, and Cost of Living

Regression Statistics	
Multiple R	0.7646
R^2	0.5846
Adjusted R^2	0.5618
Standard Error	31.3308
Observations	78

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	100,826.4958	25,206.6240	25.6786	0.0000
Residual	73	71,658.1642	981.6187		
Total	77	172,484.6601			

	Coefficients	*Standard Error*	*t -Stat*	*P-Value*
Intercept	-69.8875	42.3669	-1.6496	0.1033
Poverty rate	221.6838	73.7767	3.0048	0.0036
Crime	0.0023	0.0014	1.6203	0.1095
Density	0.0043	0.0015	2.8295	0.0060
Cost of Living	1.2328	0.3779	3.2621	0.0017

The third column of exhibit 7 reports the results of analogous calculations for each city in our sample. Positive values represent net inflows needed to ensure that a city's residents would not have to pay more per capita than would be the case if their city had the presumed 14-percent average poverty rate. Negative values represent outflows (that is, payments to high-poverty-rate cities) that would bring the low-poverty-rate cities' costs up to those of the hypothetical city with the presumed 14-percent national-average poverty rate.[18]

The $22 million figure for Philadelphia amounts to only about 1 percent of the city's annual budget of more than $2 billion. This figure is relatively small probably because of the nature of police spending. Many police resources are spent securing relatively safe areas. This is partly due to the political clout of the well-off, for they demand and receive good police services in all cities, regardless of the overall poverty rate. As the regression results imply, a bit more is spent in higher poverty cities. Although it cannot be determined from a regression with city-level data, most of the estimated effect may be due to increased expenditures to secure the relatively well-off who chose to remain in the city.

Exhibit 7

City	Population (1990)	Poverty Rate among individuals (%)	Estimated Transfer ($)
Akron, OH	223,000	20.50	3,217,890
Albuquerque, NM	385,000	14.00	0
Anaheim, CA	266,000	10.60	-2,007,768
Anchorage, AK	226,000	7.10	-3,461,868
Arlington, TX	262,000	8.20	-3,373,512
Atlanta, GA	394,000	27.30	11,633,244
Austin, TX	466,000	17.90	4,034,628
Baltimore, MD	736,000	21.90	12,907,968
Baton Rouge, LA	220,000	26.20	5,958,480
Birmingham, AL	266,000	24.80	6,377,616
Boston, MA	574,000	18.70	5,989,116
Buffalo, NY	328,000	25.60	8,446,656
Charlotte, NC	396,000	10.60	-2,989,008
Cincinnati, OH	364,000	24.30	8,323,224
Cleveland, OH	506,000	28.70	16,512,804
Columbus City, OH	633,000	17.20	4,496,832
Corpus Christi, TX	257,000	20.00	3,423,240
Dallas, TX	1,007,000	18.00	8,942,160
Dayton, OH	182,000	26.50	5,050,500
Denver, CO	468,000	17.10	3,220,776
Detroit, MI	1,028,000	32.40	41,991,744
Fort Wayne, IN	173,000	11.50	-960,150
Fort Worth, TX	448,000	17.40	3,381,504
Fremont, CA	173,000	4.30	-3,725,382
Fresno, CA	354,000	24.00	7,858,800
Garland, MS	181,000	7.80	-2,491,284
Grand Rapids, MI	189,000	16.10	881,118
Greensboro, NC	184,000	11.60	-980,352
Houston, TX	1,631,000	20.70	24,259,494
Huntington Beach, CA	182,000	5.20	-3,555,552
Indianapolis, IN	731,000	12.50	-2,434,230
Jackson, MS	197,000	22.70	3,804,858
Kansas City, MO	435,000	15.30	1,255,410
Lincoln, NE	192,000	11.30	-1,150,848
Little Rock, AR	176,000	14.60	234,432
Los Angeles, CA	3,485,000	18.90	37,909,830
Louisville, KY	269,000	22.60	5,135,748
Lubbock, TX	186,000	19.60	2,312,352
Madison, WI	191,000	16.10	890,442
Memphis, TN	610,000	23.00	12,187,800
Mesa, AZ	288,000	9.50	-2,877,120
Miami, FL	359,000	31.20	13,708,056
Milwaukee, WI	628,000	22.20	11,432,112
Minneapolis, MN	368,000	18.50	3,676,320
Mobile, AL	196,000	22.40	3,655,008
Montgomery, AL	187,000	18.10	1,702,074
Nashville, TN	488,000	13.40	-650,016
New Orleans, LA	497,000	31.60	19,418,784
New York, NY	7,323,000	19.30	86,162,418
Newark, NJ	275,000	26.30	7,509,150
Newport News, VA	170,000	14.00	0

Exhibit 7 (continued)

City	Population (1990)	Poverty Rate among individuals (%)	Estimated Transfer ($)
Norfolk, VA	261,000	19.30	3,070,926
Oklahoma City, OK	445,000	15.90	1,877,010
Omaha, NE	336,000	12.60	-1,044,288
Philadelphia, PA	1,586,000	20.30	22,181,796
Phoenix, AZ	983,000	14.20	436,452
Pittsburgh, PA	370,000	21.40	6,078,360
Portland, OR	437,000	14.50	485,070
Raleigh, NC	208,000	11.80	-1,015,872
Richmond, VA	203,000	20.90	3,109,554
Riverside, CA	227,000	11.90	-1,058,274
Rochester, NY	232,000	23.50	4,892,880
Sacramento, CA	369,000	17.20	2,621,376
San Antonio, TX	936,000	22.60	17,870,112
San Diego, CA	1,111,000	13.40	-1,479,852
San Francisco, CA	724,000	12.70	-2,089,464
San Jose, CA	782,000	9.30	-8,159,388
Seattle, WA	516,000	15.70	1,947,384
St. Louis, MO	397,000	24.60	9,342,204
St. Paul, MN	272,000	16.70	1,630,368
St. Petersburg, FL	239,000	13.60	-212,232
Tacoma, WA	177,000	16.80	1,100,232
Tampa, FL	280,000	19.40	3,356,640
Toledo, OH	333,000	19.10	3,770,226
Tucson, AZ	405,000	20.20	5,574,420
Tulsa, OK	367,000	15.00	814,740
Virginia Beach, VA	393,000	5.90	-7,066,926
Wichita, KS	304,000	12.50	-1,012,320

Estimated Transfer = 2.22 x (*City Poverty Rate* – 14-*percent National Average*) x *City Population*

The results probably would be quite different if corrections or criminal justice spending were analyzed, because spending on those functions probably is much more strongly related to local poverty conditions. Consequently, equalizing the poverty burden might require funding most of the local spending for criminal justice through transfers from low-poverty jurisdictions.[19]

Adjusting the Estimate

The second part of the Urban Audit adjusts the first-stage estimate on the basis of the relative efficiency of a city's expenditures on police services. A rough estimate of whether a city is spending too much on police services can be gleaned by comparing actual police expenditures per capita with those estimated from equation (4). These figures are reported in exhibit 8, along with the difference between the two values, which by definition equals the residual ($\in$) from equation (4).

Exhibit 8

City	Actual Per Capita Police Expenditure ($)	Estimated Per Capita Expenditure ($)	Residual ($)
Akron, OH	120	132	-12
Albuquerque, NM	140	127	13
Anaheim, CA	176	152	24
Anchorage, AK	110	119	-9
Arlington, TX	82	105	-23
Atlanta, GA	191	172	19
Austin, TX	105	136	-31
Baltimore, MD	208	172	36
Baton Rouge, LA	95	156	-61
Birmingham, AL	126	148	-21
Boston, MA	242	215	27
Buffalo, NY	142	190	-48
Charlotte, NC	95	116	-22
Cincinnati, OH	172	155	17
Cleveland, OH	239	173	66
Columbus City, OH	165	136	29
Corpus Christi, TX	95	123	-28
Dallas, TX	159	147	12
Dayton, OH	198	155	43
Denver, CO	194	132	62
Detroit, MI	294	212	82
Fort Wayne, IN	76	103	-27
Fort Worth, TX	124	131	-7
Fremont, CA	136	126	10
Fresno, CA	112	169	-57
Garland, MS	80	106	-26
Grand Rapids, MI	110	132	-22
Greensboro, NC	128	107	21
Houston, TX	154	136	18
Huntington Beach, CA	175	137	38
Indianapolis, IN	113	106	7
Jackson, MS	78	139	-61
Kansas City, MO	173	118	55
Lincoln, NE	59	97	-38
Little Rock, AR	92	118	-26
Los Angeles, CA	187	181	6
Louisville, KY	117	128	-11
Lubbock, TX	89	110	-21
Madison, WI	123	136	-13
Memphis, TN	112	136	-24
Mesa, AZ	139	107	32
Miami, FL	220	221	-1
Milwaukee, WI	188	161	27
Minneapolis, MN	139	152	-13
Mobile, AL	101	134	-33
Montgomery, AL	93	114	-21
Nashville, TN	112	96	16
New Orleans, LA	134	159	-25
New York, NY	243	281	-38
Newark, NJ	220	257	-37
Newport News, VA	97	108	-11

Exhibit 8 (continued)

City	Actual Per Capita Police Expenditure ($)	Estimated Per Capita Expenditure ($)	Residual ($)
Norfolk, VA	126	136	-10
Oklahoma City, OK	132	110	22
Omaha, NE	104	102	2
Philadelphia, PA	205	201	4
Phoenix, AZ	150	121	29
Pittsburgh, PA	144	165	-21
Portland, OR	147	137	10
Raleigh, NC	98	106	-8
Richmond, VA	208	150	58
Riverside, CA	145	135	10
Rochester, NY	157	174	-17
Sacramento, CA	170	142	28
San Antonio, TX	105	141	-36
San Diego, CA	137	152	-15
San Francisco, CA	211	225	-14
San Jose, CA	132	150	-18
Seattle, WA	166	168	-2
St. Louis, MO	228	169	59
St. Paul, MN	126	143	-17
St. Petersburg, FL	156	124	32
Tacoma, WA	132	137	-5
Tampa, FL	179	144	35
Toledo, OH	136	137	-1
Tucson, AZ	128	137	-9
Tulsa, OK	112	104	8
Virginia Beach, VA	102	84	18
Wichita, KS	80	111	-31

Note that Philadelphia's per capita spending level of $205 is $4 more than its estimated $201 level. If one assumes that poverty, crime, population density, and the cost-of-living variables largely determine police spending, expenditures in excess of the level estimated by these factors will not be warranted by objective conditions in the city.[20] The simplest adjustment to the transfer amount would be made by interpreting the $4 per capita residual as pure waste that should not be recompensed by transfers from residents of lower than average poverty cities. For example, Philadelphia would be due only a $9.99 per capita transfer ($13.99 - $4.00), or $15.8 million in aggregate.

For a city such as Detroit, its huge positive residual of $82 exceeds its implied transfer of $40.85 per capita.[21] For other cities, even one with a very high poverty rate, it is possible that gross inefficiency in service delivery is largely driving its spending behavior. However, cases such as this raise the distinct possibility that interpreting the entire residual as solely representing waste or inefficiency is in error. No regression can control for all relevant factors determining local spending—and that certainly is the case in our stylized example. Even in a well-specified model estimated on better data, at least some of a city's positive (or negative) residual will be due to uncontrolled-for factors not associated with things such as wasteful overstaffing or unjustified wage premiums. Consequently, some effort should be made to correlate the residuals with measures of staffing and wages before they are used to adjust estimated transfer payments.

Exhibit 9 presents police personnel-staffing and wage data for a subset of cities from exhibit 5. Exhibit 10 reports selected results from the regression of residuals from equation (4) on various combinations of these variables.[22] In general, the results show that differences in staffing account for little of the variance in police-spending residuals across cities. However, differences in wages per city resident are able to explain more than 15 percent of the variance in the city's spending residuals. When both staffing and wages are included as regressors, the results suggest that virtually all explanatory power is due to the wage variable.[23]

Exhibit 9

City Government Finances, Police Department Data

City	Full-Time Employees Per 1,000 Population	Employees That Are Civilians (%)	Minimum Starting Salary	Wages Per Full-Time Employee	Wages Per 1,000 Population
Albuquerque, NM	2.00	36.9	16,640	57.2	114.26
Anaheim, CA	1.98	28.7	34,736	56.0	110.72
Anchorage, AK	1.78	34.8	39,354	66.2	117.53
Arlington, TX	1.50	30.0	28,632	42.9	64.46
Austin, TX	2.73	26.6	24,086	43.7	119.16
Baton Rouge, LA	3.33	11.6	18,639	29.5	98.07
Buffalo, NY	3.29	13.2	28,814	39.6	130.35
Cincinnati, OH	2.71	22.6	34,625	49.2	133.35
Columbus City, OH	2.64	21.6	17,097	23.4	61.69
Corpus Christi, TX	2.15	28.9	23,076	33.7	72.59
Dallas, TX	3.47	20.5	25,093	35.4	122.56
Dayton, OH	3.20	17.0	19,386	55.4	177.39
Fort Wayne, IN	1.97	17.6	26,038	32.9	64.90
Fort Worth, TX	3.07	22.6	26,760	32.9	100.86
Fremont, CA	1.51	32.2	44,232	55.8	84.03
Fresno, CA	1.28	54.9	41,520	63.4	81.47
Garland, MS	1.43	34.4	29,785	47.2	67.71
Grand Rapids, MI	1.97	19.3	28,102	41.5	81.75
Greensboro, NC	2.94	22.6	22,008	35.9	105.60
Houston, TX	4.16	29.7	27,154	31.9	132.60
Huntington Beach, CA	2.07	28.5	40,104	58.2	120.60
Jackson, MS	3.36	37.4	20,904	24.8	83.32
Kansas City, MO	3.23	28.3	25,104	31.8	102.83
Lincoln, NE	1.82	24.3	23,554	31.3	57.03
Little Rock, AR	2.90	16.9	20,202	30.5	88.40
Los Angeles, CA	2.89	24.1	33,157	41.5	119.86
Louisville, KY	0.87	77.4	19,781	108.5	94.76
Lubbock, TX	1.90	13.3	22,567	33.3	63.13
Madison, WI	1.96	18.9	28,370	41.6	81.50
Mesa, AZ	2.46	34.0	28,470	45.2	111.12
Minneapolis, MN	2.81	84.5	27,875	39.8	111.82
Mobile, AL	2.76	21.6	19,860	31.8	87.75
Newport News, VA	2.43	25.6	21,250	26.1	63.57
Norfolk, VA	2.96	12.2	23,270	31.7	93.77
Omaha, NE	2.27	18.4	30,217	41.9	94.85
Phoenix, AZ	3.12	27.0	27,040	36.4	113.83
Pittsburgh, PA	3.69	7.1	26,645	39.1	144.34
Raleigh, NC	2.44	9.9	23,436	35.4	86.27

Exhibit 9 (continued)

City	Full-Time Employees Per 1,000 Population	Employees That Are Civilians (%)	Minimum Starting Salary	Wages per Full-Time Employee	Wages per 1,000 Population
Richmond, VA	3.64	13.1	26,572	33.3	121.10
Riverside, CA	2.36	36.7	33,036	42.0	98.99
Rochester, NY	3.54	16.7	27,410	43.6	154.29
Sacramento, CA	2.52	37.2	32,463	68.8	173.15
San Diego, CA	2.23	25.0	31,609	45.8	102.14
St. Paul, MN	2.64	27.1	32,745	43.3	114.35
St. Petersburg, FL	2.97	28.3	25,072	37.7	111.97
Tacoma, WA	2.22	11.5	32,301	47.4	105.28
Toledo, OH	2.13	7.6	30,278	45.1	96.11
Tucson, AZ	2.49	25.1	28,548	36.4	90.76
Virginia Beach, VA	2.20	26.2	23,237	33.2	73.17
Wichita, KS	2.16	25.6	22,688	30.3	65.42
Mean	2.52	26.3	27,271	42.2	101.33
Standard Deviation	0.69	14.5	6,196	14.2	27.60

Source: International City/County Management Association

Exhibit 10

Regression # 1: Police-Spending Residuals Versus Police Staffing Per 1,000 City Residents

Regression Statistics

Multiple R	0.2060
R^2	0.0425
Adjusted R^2	0.0225
Standard Error	28.1507
Observations	50

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	1,686.4628	1,686.4628	2.1281	0.1511
Residual	48	38,038.2480	792.4635		
Total	49	39,724.7108			

	Coefficients	*Standard Error*	*t-Stat*	*P-Value*
Intercept	-25.6174	15.2359	-1.6814	0.0992
FTE/1,000 pop.	8.5042	5.8295	1.4588	0.1511

Exhibit 10 (continued)

Regression # 2: Police-Spending Residuals Versus Police Wage Bill Per 1,000 City Residents

Regression Statistics	
Multiple R	0.4117
R^2	0.1695
Adjusted R^2	0.1522
Standard Error	26.2170
Observations	50

ANOVA

	df	***SS***	***MS***	***F***	***Significance F***
Regression	1	6,732.9389	6,732.9389	9.7958	0.0030
Residual	48	32,991.7719	687.3286		
Total	49	39,724.7108			

	Coefficients	***Standard Error***	***t-Stat***	***P-Value***
Intercept	-47.1960	14.2404	-3.3142	0.0018
Wages/1,000 pop.	0.4247	0.1357	3.1298	0.0030

Regression # 3: Police-Spending Residuals Versus FTE/1,000 pop. and Wages/1,000 pop.

Regression Statistics	
Multiple R	0.4122
R^2	0.1699
Adjusted R^2	0.1345
Standard Error	26.4883
Observations	50

ANOVA

	df	***SS***	***MS***	***F***	***Significance F***
Regression	2	6,748.1946	3,374.0973	4.8090	0.0126
Residual	47	32,976.5162	701.6280		
Total	49	39,724.7108			

	Coefficients	***Standard Error***	***t-Stat***	***P-Value***
Intercept	-46.0867	16.2359	-2.8386	0.0067
FTE/1,000 pop.	-0.9614	6.5198	-0.1475	0.8834
Wages/1,000 pop.	0.4377	0.1629	2.6859	0.0100

Given that overall cost-of-living differences across cities are already controlled for in the regression generating the spending residuals, the findings in exhibit 10 suggest that wage premiums beyond those warranted by the local cost of living can account for just under one-fifth of the variance in city spending residuals. This result leaves most of the residual variance unexplained, but it does suggest that some downward adjustment of transfers to relatively high-poverty-rate cities is warranted if those cities are found to have relatively high public wages.

Given the imprecision of the statistical analysis underlying the second part of the Urban Audit, it probably is best to apply simple rules of thumb—for example, those with positive residuals above the 75th fractal of the distribution would lose 20 percent of their transfer implied by equation (4); those with residuals between the 50th and 75th fractiles of the distribution would lose only 10 percent of their implied transfer, and so forth. Where fine distinctions are not really possible, the goal should be to reward municipal performance that clearly is exemplary with additional resources and to withhold at least some resources from cities that clearly are inefficient. Econometrics can and should be used to help identify those cities, but common sense rules should then come into play.

Conclusions

This article has outlined an urban strategy that calls for a new examination of the need for place-based aid to complement the people-based aid programs currently in existence. Cities with relatively high poverty rates remain high-cost places in which to live and work, even with hundreds of billions of dollars of means-tested monetary and in-kind transfers annually flowing to their poorer residents. Therefore, place-based aid to jurisdictions is needed to eliminate the spatial cost differential that firms and middle-class households perceive. An Urban Audit is needed to provide estimates of how much aid is needed to equalize poverty-related costs of various public services across jurisdictions and to give localities incentives to employ the funds efficiently.

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Notes

1. Figures for the costs of poverty cited here and in the next section are taken from Pack (1995).

2. The figures cited relating to immigration are from Daniel (1994).

3. Haughwout and Inman (1996) conservatively estimate the value of city-owned land, structures, and equipment to exceed $1 billion even in the smallest of America's big cities. The value of private investments in cities is, of course, much larger. Gyourko and Summers (1995) estimate that the sum of the aggregate taxable and exempt property values for the nine largest cities in the United States is nearly $1.6 trillion. The annual social loss from writing down these investments too quickly will easily run into the tens of billions of dollars.

4. In addition, pure externalities may be related to concentrated poverty in cities that warrant corrective action. Crime is perhaps the best example. Recent research suggests that outmigration rates of middle-class households from perceived and actual increases in crime are quite high (Cullen and Levitt, 1996). To the extent the added crime that leads to the mobility is due to increased poverty, which itself is due to public policy, a classic laissez-faire prescription is not warranted, for the city population is inefficiently low in this case.

5. Figures from the 1990 census show that slightly more than 1.58 million people resided in the city of Philadelphia. The four suburban Pennsylvania counties (Bucks, Chester, Delaware, and Montgomery) had 2.1 million residents.

6. Establishing the sign of the slopes is somewhat problematic. For example, strict Libertarians may argue that both schedules are positively sloped, believing that the marginal transfer harms social welfare. However, for those households near the median income level, the negative slope is more likely.

7. It is possible that society cares so much about reducing the Gini coefficient that great social utility is reaped from the direct transfers. If so, it could be that the marginal social benefit curve for people-based transfers starts out well above that for place-based transfers. This influence could lead the slope of the schedule to be relatively flat. Both features would lead to a crossing of curves at a point indicating that the vast majority of transfers be people based. However, a more likely reason so few place-based transfers are implemented is that there is little recognition of their social value in terms of internalizing the spatial distortion associated with firm and household location decisions within the metropolitan area.

8. There could also be some spillover onto nonpoor values because the negative externality of the poor is not as large with the people-based transfers, leading to a lower level of impoverishment.

9. This last point is relevant because almost all public housing is located in central cities, and suburbs are adept at zoning out low-cost, high-density housing. In some large cities, the public housing stock provides a large fraction of the housing service flow consumed by poor households. Hence, the decisions of where to locate public housing may have had a material impact on the location of the poor over time.

10. See Hanks and Lomax (1991). Also see Downs (1992) for a broader analysis of the congestion-related costs associated with sprawl.

11. District of Columbia Delegate Eleanor Holmes Norton's recent proposal for a flat income tax on Washington, D.C., residents and a reduced capital gains tax rate on investments in Washington, D.C., is an example of such a scheme.

12. That is, these schemes could be relatively cost effective in reducing the location decision distortion, even though not targeted toward marginal decisionmakers. The alternative people-based aid clearly does little to reduce the location-decision distortion.

13. Of course, one can envision other types of place-based systems. The simplest conceptually would be to redistribute the poor spatially—that is, to the suburbs—so that each jurisdiction had an equal share of the poverty burden. The same effect could be achieved by changing the service cost level to the city. For example, higher levels of government could take over financial responsibility for expensive local services,

such as primary and secondary education, that are heavily used by the poor. In theory, some form of local regional burden sharing among communities within given metropolitan areas also could be designed to achieve the same end.

14. That is, expenditure neutrality applies only to the system at large. Applying the first part of the Urban Audit to general infrastructure aid programs certainly would result in net transfers from newer suburban areas (and ultimately from their developers or residents or both) to higher poverty-rate cities. In this case, place-based aid would complement, not substitute for, existing people-based aid, and the total amount of transfers to the high-poverty jurisdictions would increase. However, net transfers within the Federal system would not increase, so there would be no increase in the overall budget deficit.

15. Simultaneity problems are likely to exist for the estimation of most other local public function spending.

16. This assumes that all such spending is from own-source revenues. To the extent that this is not true, the estimated transfer amounts reported below would be reduced accordingly.

17. Of course, the estimate is for marginal changes about the sample mean. Again, the estimation and computation are for illustrative purposes only.

18. The transfers do not sum to zero in this case because our base for calculation is 14 percent rather than the 17.7-percent sample mean. The sample mean is higher because it contains no suburbs.

19. Education-related costs of poverty will probably be largest. Summers and Ritter (1996) estimate that a city with 20 percent of its children living in poverty spends, from its own tax dollars, about $400 more per pupil than a city with only 10 percent of its children living in poverty.

20. Obviously, the four regressors do not capture all systematic patterns in spending, as indicated by the R^2 of 0.58.

21. This is computed as its $41,991,774 transfer divided by its 1,028,000 people in 1990.

22. These results are based on a subset of 50 cities for which we have police-staffing and wage information as well as data on all variables needed to estimate equation (4).

23. We also experimented with specifications that included benefit measures, but they yielded no significant results. The sample sizes were small, which certainly could have been a contributing factor. Reestimating the specifications reported in exhibit 10 for subsamples of high- and low-poverty cities also did not yield findings much different from those reported here. Again, working with larger and more diverse samples of cities in the future may lead to somewhat different estimates.

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