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Editor's Notebook

This issue of *Rural Development Perspectives* brings articles on the population rebound in rural America, the rural poor, State and local governments' budgets and strategies, rural education, and the new Telecommunications Act. Kenneth M. Johnson and Calvin L. Beale begin with an update of the population rebound that rural areas have enjoyed in the 1990's. Recent growth has renewed the deconcentration of the 1970's after the slowdown of the 1980's. Growth has come less from natural increase than from migration from metro areas and foreign countries.

Welfare reform has brought about a rethinking of the Federal Government's role in welfare programs. Mark Nord examines payments under the Food Stamp and Aid to Families with Dependent Children (AFDC) programs to see if benefits were being distributed equitably between States and within States. The Food Stamp Program, unlike AFDC, has standard eligibility and benefit levels nationwide. Food stamp benefits were distributed without any disadvantage to rural areas or racial or ethnic minorities. On the other hand, States with high rural or minority populations received relatively less in AFDC benefits, although within those States, the funds were distributed equitably.

Welfare benefits are important in ensuring adequate diets for poor people, but the rural poor often have less convenient access to supermarkets and large grocery stores, where food prices are usually cheaper. Phil R. Kaufman has studied access to food stores by poor households in the Lower Mississippi Delta. He reports that access to larger stores is more difficult than that enjoyed by urban or suburban residents. Many poor people in the region must travel over 30 miles to the nearest large food store.

For the past quarter century, the Federal Government has been returning money and responsibility back to State and local governments. The most recent wave of devolution has brought authority without funds. Mildred Warner finds that rural areas not adjacent to metro areas spend more per capita locally than adjacent rural areas but have a harder time raising revenue. State and Federal governments play an important role in redistributing funds according to financial capacity and need.

Debra L. Blackwell and Diane K. McLaughlin compare the educational aspirations and attainments of rural and urban youths. Using national surveys from 1979 and 1990, the authors find that rural youths had slightly lower goals and attainments. Rural girls and boys, however, were influenced by different factors. Education for girls was more closely tied to family background and resources, while for boys, personal achievement and the presence of well-educated role models was more important. Youths from advantaged backgrounds had much higher levels of attainment than those from disadvantaged backgrounds.

In 1996, a new telecommunications act was passed, as reported in the June 1997 issue of RDP. In this issue, Randall S. Sell, F. Larry Leistritz, and John C. Allen explore the likely consequences of that act for rural telephone companies. Their survey of small telephone companies shows widespread concern that the new provisions will mostly benefit urban and high-toll customers, leaving most rural customers behind.

Finally, Shanna Ratner reports on a new approach tried recently in Maine to improve the coordination of technical assistance to rural manufacturers. In 1994, the State of Maine set up a multi-agency service team (MAST) to see how much the secondary wood products manufacturing industry would benefit from better coordination of services. Most of the firms chosen for this experiment believed they received useful assistance, but the experience also highlighted some weaknesses in working with individual firms and in getting service providers to work as a team.

Douglas E. Bowers

Feature Articles

Indicators

Book Announcements

Kenneth M. Johnson and Calvin L. Beale

The Continuing Population Rebound in Nonmetro America

Since 1990, nonmetro population growth rates have rebounded from the low levels of the 1980's. Three of every four rural counties have grown. Migration from metro areas and foreign countries has produced most of this growth—with a net gain of 1.8 million from 1990 to 1996. In contrast, natural increase from excess of births over deaths contributed less to these recent gains than it did in the past. Current trends are viewed as part of a process of deconcentration that extends back to 1970, with a pause in the 1980's caused by the economic difficulties of that time.

In the 1990's, rural America has been growing at the fastest rate since the 1970's. This rebound contrasts sharply with the outmigration and widespread population loss that had characterized most of rural America since World War I. Most of this recent nonmetro growth is due to migration. This is very different from historical trends, which in this century typically saw nonmetro growth occur only when high rural childbearing outpaced both deaths and outmigration. However, rural and urban fertility have recently converged, making growth differentials now much more dependent on migration. So far in the 1990's, far fewer people have left rural areas and a surprising number of urban residents have moved in. The result is the second largest nonmetro population gain since World War I. Only during the rural turnaround of the 1970's, which the rebound of the 1990's resembles, was the rural population gain greater.

The Rural Rebound Is Widespread

Nearly 75 percent of the 2,304 counties classified as nonmetro in 1993 gained population between 1990 and 1996 (table 1). In all, 680 more nonmetro counties gained population than in the 1980's. The estimated nonmetro population was 53.8 million in July 1996, a gain of nearly 3.0 million (5.9 percent) since April 1990. In contrast, during the entire 1980's, nonmetro areas grew by just over 1.3 million. Thus, the nonmetro population gain between 1990 and 1996 is more than double that during all of the 1980's. The growth was still at a slower pace than that of the metro population (6.9 percent) between 1990 and 1996, but the gap was much narrower than during the 1980's. Year-to-year data indicate that the growth rate slowed somewhat between 1995 and 1996, but it remains to be seen whether this slowdown is temporary. Gains were prevalent in the Mountain West, Upper Great Lakes, Ozarks, parts of the South, and in rural areas of the Northeast. Widespread losses occurred only in the Great Plains, Western Corn Belt, and Mississippi Delta (fig. 1).

A comparison of growth patterns of the 1990's with those for the 1980's underscores three important points. First, the renewal of nonmetro growth in the 1990's is very widespread. Counties rebounding from loss in the 1980's to growth in the 1990's are numerous in all regions of the country. Many are on the periphery of existing concentrations of counties that grew consistently through the 1980's and early 1990's. Second, many counties that lost population during the 1990's are concentrated in areas of the country with long histories of population decline. Third, many counties that resumed growth in the 1990's after losing population in the 1980's either had long prior histories of growth or participated in the nonmetro turnaround of the 1970's.

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Table 1

Population change, net migration, and natural increase by adjacency and metro status, 1980-90 and 1990-96

Substantial migration gains fueled widespread nonmetro growth during 1990-96

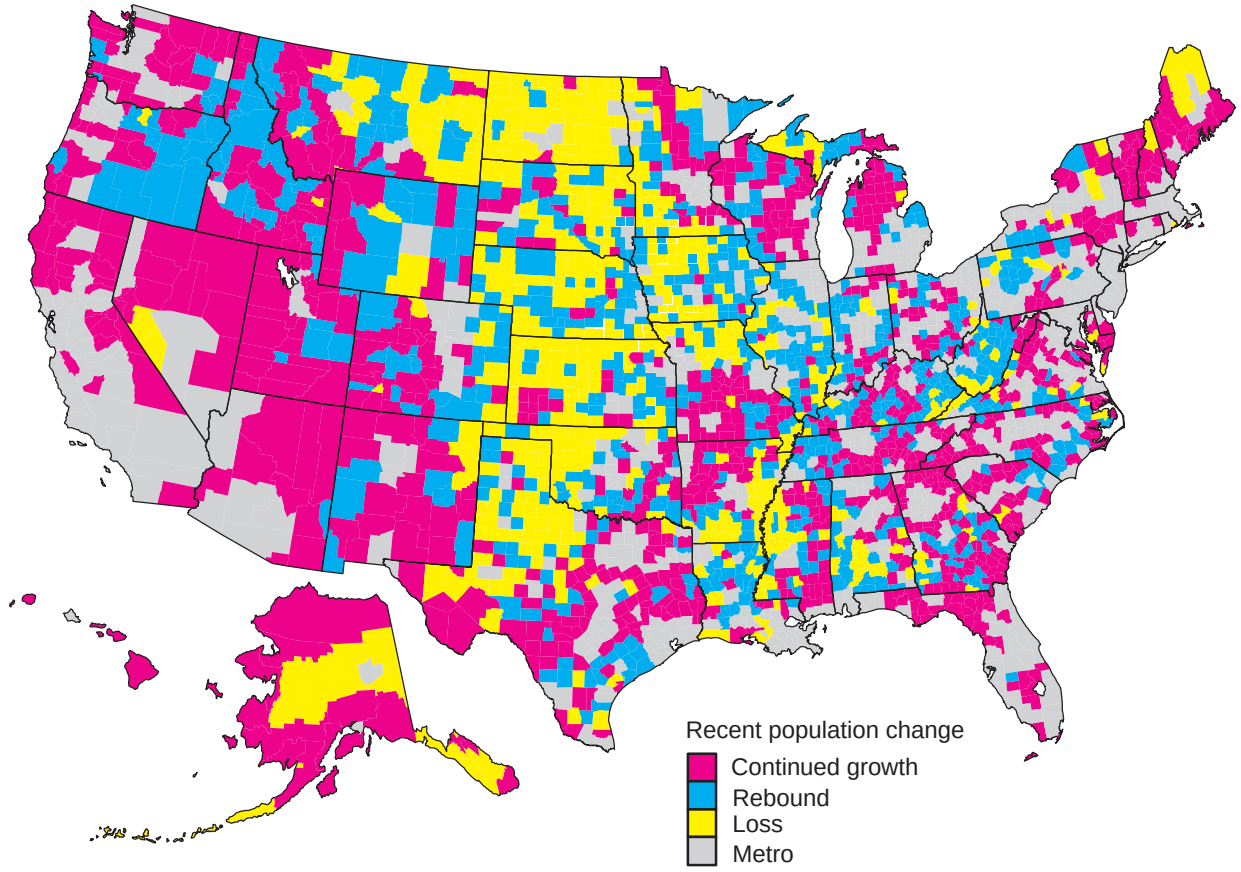
Item	Counties	Initial population	Population change			Net migration			Natural increase		
			Absolute change	Growth rate	Share growing	Absolute change	Growth rate	Share growing	Absolute change	Growth rate	Share growing
	Number	Thousands		Percent		Thousands	Percent		Thousands	Percent	
1980 to 1990:											
All nonmetro	2,305	49,578	1,320	2.7	45.1	-1,370	-2.8	27.3	2,690	5.4	89.6
Nonadjacent	1,298	22,612	134	0.6	36.4	-1,175	-5.2	20.7	1,309	5.8	87.0
Adjacent	1,007	26,966	1,186	4.4	56.3	-194	-0.7	35.8	1,382	5.1	92.9
Metro	836	176,965	20,848	11.8	81.0	6,575	3.7	57.7	14,271	8.1	7.7
Total	3,141	226,543	22,168	9.8	54.7	5,206	2.3	35.4	16,962	7.5	91.8
1990 to 1996:											
All nonmetro	2,304	50,820	2,995	5.9	74.6	1,829	3.6	66.5	1,166	2.3	73.3
Nonadjacent	1,297	22,669	1,117	4.9	65.9	593	2.6	58.4	524	2.3	66.7
Adjacent	1,007	28,151	1,878	6.7	85.7	1,236	4.4	77.0	642	2.3	81.8
Metro	837	197,893	13,570	6.9	89.4	3,627	1.8	73.7	9,943	5.0	96.1
Total	3,141	248,718	16,565	6.7	78.5	5,456	2.2	68.4	11,109	4.5	79.4

Note: 1993 metro status.
Source: Authors' calculations using Census Bureau data.

Figure 1

Recent nonmetro population change

More than 730 nonmetro counties rebounded from loss in the 1980's to growth in 1990-96



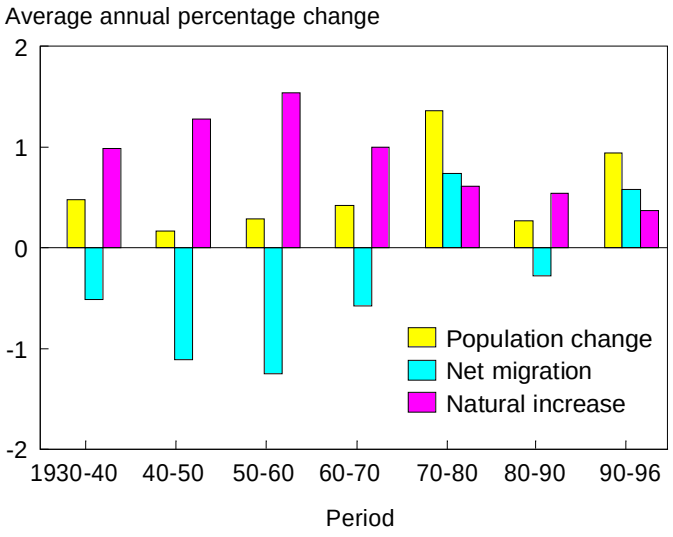
Source: Prepared by authors from Census Bureau data.

The striking contrast between the rural rebound of the 1990's and the demographic trends that predominated in nonmetro areas through most of this century is evident when longitudinal data are examined. From 1930 through 1970, population growth in what are now nonmetro areas was fueled entirely by natural increase (fig. 2). In each decade, migration losses diminished the population gain from the surplus of births, though the magnitude of the migration loss varied from decade to decade. In contrast, growth in the 1970's and 1990's was fueled by both net migration gains and natural increase. The anomalous position of the 1980's is reflected in the minimal migration losses and modest natural increase then. Though similar in form to historical trends, the 1980's are at most a weak echo of the massive outmigration and substantial natural increase of the 1940's and 1950's. In general, nonmetro growth in the 1990's to date is similar in pattern to that during the turnaround decade of the 1970's, though smaller in magnitude. Thus, the 1970's and 1990's represent a significant departure from the historical demographic trends in nonmetro areas of the United States.

Rebound Fueled by More Migration But Less Natural Increase

Migration gains accounted for 61 percent of the total estimated population increase between April 1990 and July 1996. Nonmetro areas had an estimated net inflow of 1.83 million people during the period (including immigrants), compared with a net outflow of 1.37 million during the 1980's. The nonmetro net migration percentage gain (3.6 percent) between 1990 and 1996 was twice that in metro areas (1.8 percent). This is in sharp contrast with the 1980's, when metro areas had net inmigration of 3.7 percent, while nonmetro areas had a net outflow of 2.8 percent. The only other recent period when nonmetro migration gains exceeded those in metro areas was during the population turnaround of the 1970's. Nonmetro migration gains were widely distributed in 1990-96, though they were least evident in the Great Plains, West Texas, and the Mississippi Delta (fig. 3).

Figure 2
Nonmetro demographic change, 1930-96
The 1970's and 1990's are exceptions to the long-term trend of net outmigration from nonmetro areas



Source: Calculated by authors from Census Bureau and other data.

Throughout much of this century, most nonmetro population growth stemmed from natural increase—a surplus of births over deaths. But it accounted for only 39 percent of such growth between April 1990 and July 1996. In all, births exceeded deaths by 1.17 million in nonmetro areas. On an annualized basis, nonmetro gains from natural increase were somewhat lower between 1990 and 1996 than they were during the 1980's. In contrast, the rate of natural increase accelerated in metro areas during the early 1990's. This represents a significant demographic shift in the United States. Traditionally, natural increase fueled all nonmetro growth, whereas metro areas grew through both natural increase and a significant influx of migrants from rural areas, together with immigration. However, during the 1970's and again during the 1990's, the bulk of metro growth came from natural increase, whereas the majority of the nonmetro gain was from net inmigration.

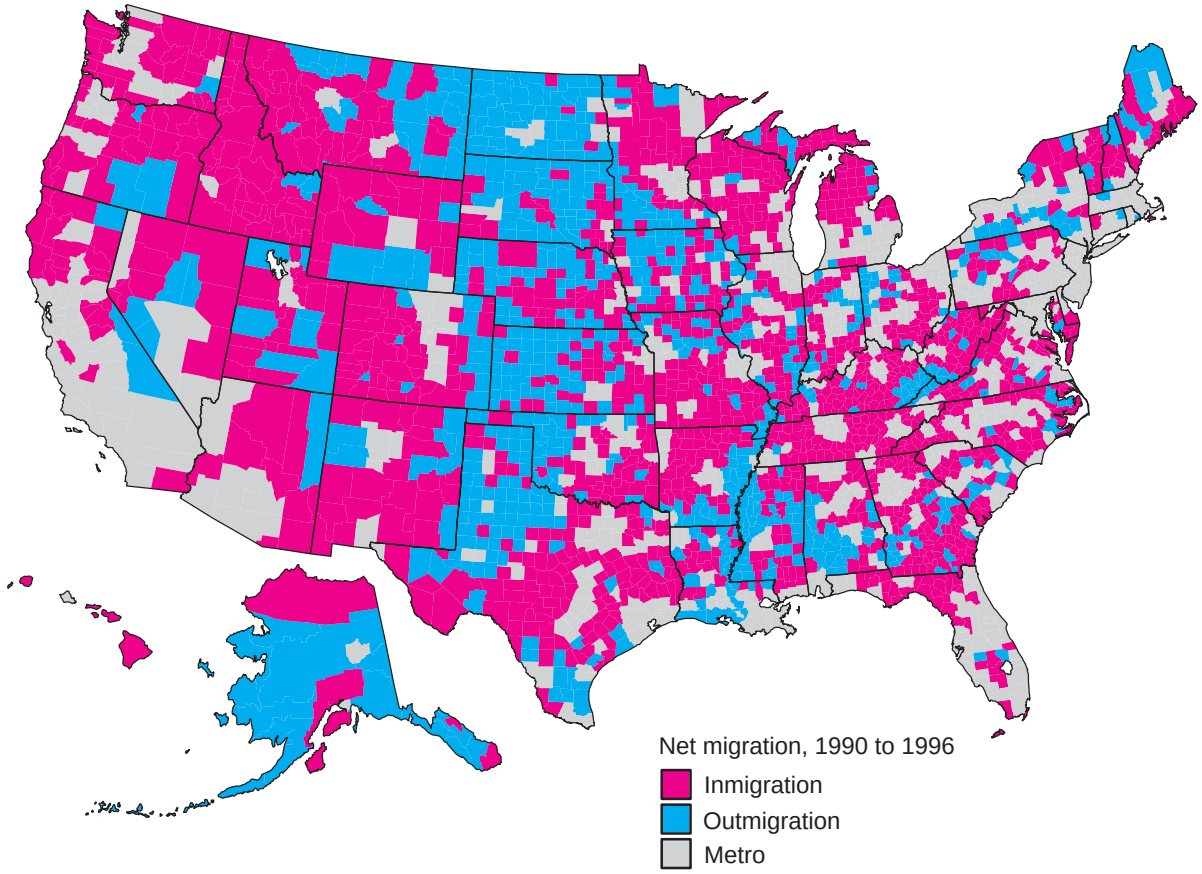
Diminishing natural increase in nonmetro areas is reflected in a sharp increase in the number of counties with more deaths than births. This condition was virtually unheard of in the United States prior to the 1950's, but began to occur in a few isolated areas thereafter. After rising to a peak in the early 1970's after the Baby Boom ended, natural decrease subsided rapidly in the late 1970's and the early 1980's. But in an extraordinary second wave of natural decrease, an estimated 615 nonmetro counties experienced natural decrease from 1990 to 1996, compared with just 240 in the 1980's (fig. 4). The incidence of natural decrease is now higher than at any point in history.

The accelerating occurrence of natural decrease in nonmetro America results from four interrelated phenomena. First, the age structure of many nonmetro areas has been distorted by decades of outmigration by young adults, coupled with the aging in place of older adults. Second, the traditionally higher fertility rates of nonmetro women have converged toward those of urban women. Third, rural women have traditionally borne their children earlier than their urban counterparts; thus, the current shift of the bulk of the Baby Boom from their prime childbearing years to middle age reduced nonmetro births sooner. Fourth, the extensive movement of retired people into many areas has added to the older population. These phenomena have combined to diminish the number of nonmetro births while increasing deaths among the aging residents in many rural

Figure 3

Nonmetro net migration, 1990-96

Two-thirds of nonmetro counties gained from migration in 1990-96, compared with less than a fourth in the 1980's



Source: Prepared by authors from Census Bureau data.

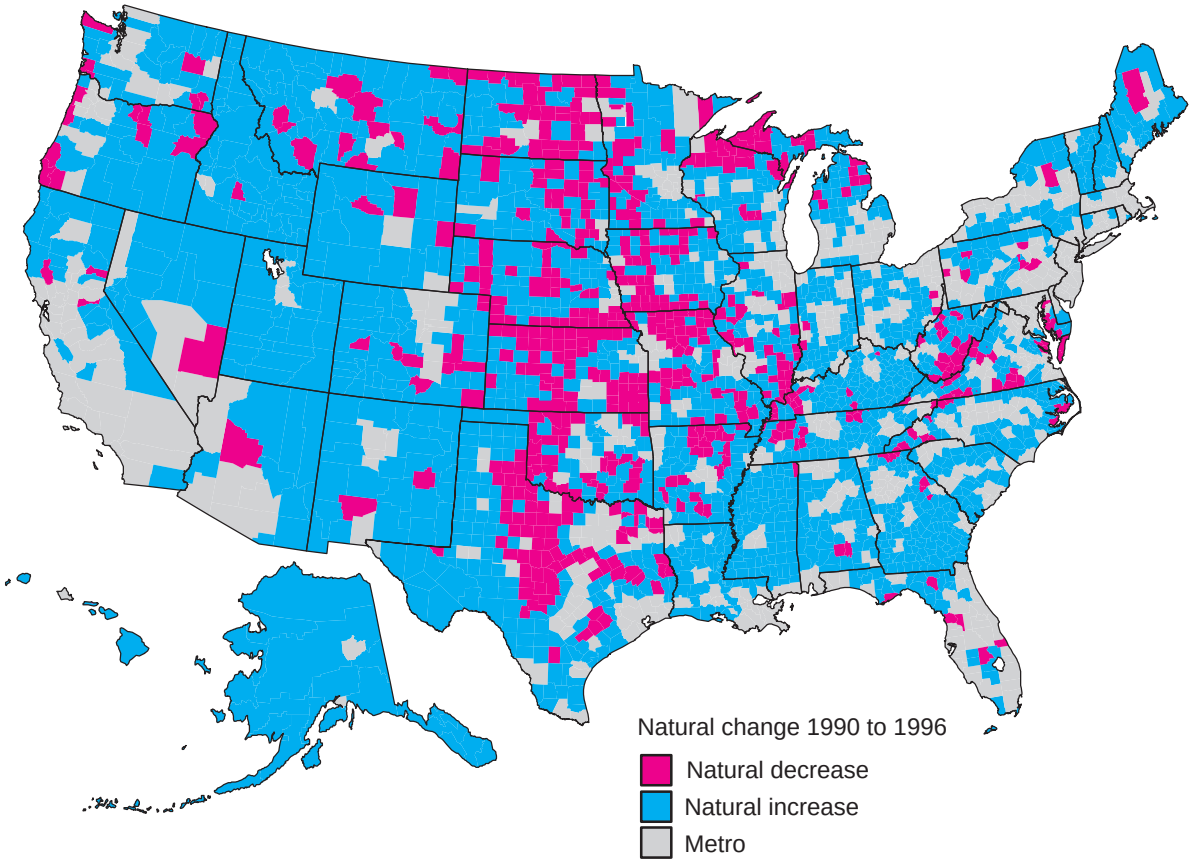
areas. Thus, the natural increase that has traditionally fueled most nonmetro growth has diminished sharply in recent years. A continuation of this trend for an extended period would represent a fundamental turning point in the demographic processes underlying population growth in rural America. How likely this trend is to continue remains in doubt. Recent evidence indicates that the number of older people in many rural areas has peaked. If this is correct, it suggests that counties with long histories of natural decrease may eventually reach a new demographic equilibrium with births and deaths again in balance. Whatever the course of natural decrease, rural growth will probably not be fueled by a substantial excess of births over deaths as it was in the past.

Growth Varies by Location and County Type

Nonmetro counties near a metro center have been more likely than more remote counties to be growing in the 1990's. More than 85 percent of these adjacent counties gained population between 1990 and 1996, and 77 percent had net inmigration (table 1). In fact, the net migration gain in adjacent nonmetro counties (4.4 percent) exceeded that in metro areas (1.8 percent) by a substantial margin during 1990-96. Even among more remote nonmetro counties, recent population gains were significantly greater than during the 1980's (table 1). Growth occurred in 66 percent of counties not adjacent to metro areas in the early 1990's, compared with 36 percent during the 1980's. Such nonadjacent counties had net inmigration (2.6 percent) between 1990 and 1996, compared with a net loss (-5.2 percent) in the 1980's.

Rural destinations for retirement-age migrants and recreation areas are among the fastest-growing counties in the 1990's. All 190 nonmetro retirement-destination counties gained population and 99 percent had net inmigration between 1990 and 1996 (table 2). Such areas are in the Sunbelt, coastal regions, parts of the West, and in the Upper Great Lakes. Population and migration gains were

Figure 4
Nonmetro natural population change, 1990-96
More than 600 nonmetro counties had more deaths than births between 1990 and 1996



Source: Prepared by authors from Census Bureau data.

also the rule in the 285 nonmetro recreational counties we identified (93 percent had growth and 88 percent had net inmigration). Such counties were prominent growth nodes during the 1970's and 1980's, and this trend has persisted in the 1990's. Many recreational counties are also retirement destinations because the amenities, temperate climate, and scenic advantages that attract vacationers and seasonal residents also appeal to retirees. In all, the 101 counties that fall into both destination categories are growing faster than any other identifiable group, with the bulk of such growth attributable to net inmigration.

Counties where much of the land is federally owned also had much growth in the early 1990's. Most of these counties are in the West and many have experienced significant net inmigration in recent years, with migrants attracted by the scenic and recreational amenities. Nonmetro population gains were also widespread in manufacturing and government-dependent counties, though the gains were smaller than those in recreational and retirement counties. Growth in such counties was more evenly balanced between natural increase and net inmigration. Other county types with high growth rates fueled by net inmigration include those with a large proportion of their work force commuting to jobs in other counties and those with economies dominated by service-sector jobs.

Farming and mining-dependent counties have been the least likely to gain population during the 1990's. Only 50 percent of the farming-dependent group gained population and only 47 percent had net inmigration. Nearly half had more deaths than births. Population gains were only slightly more widespread in mining counties, and here too, the magnitude of the gains was quite small. Many mining areas had net outmigration as well. The below-average population gains and widespread outmigration from mining- and farming-dependent counties during the 1990's represent a continuation of the trends of the 1980's. However, even among these counties, the trends moderated in the 1990's compared with the 1980's,

Table 2
Nonmetro population change, migration, and natural increase by county type, 1990-96
Nonmetro growth was widespread but varied by type of county

County type	Counties	Population change		Net migration		Natural increase	
		Growth rate	Share growing	Growth rate	Share growing	Growth rate	Share growing
	Number	Percent					
Retirement	190	16.3	100	14.6	99	1.7	63
Federal lands	269	14.2	95	10.3	86	3.8	84
Recreational	285	11.2	93	8.7	88	2.5	76
Manufacturing	506	5.2	87	3.0	75	2.2	88
Commuting	381	8.4	90	6.3	85	2.1	83
Government	242	6.1	87	2.0	76	4.2	83
Service	323	8.4	83	6.5	76	2.0	72
Nonspecialized	484	6.2	81	4.5	75	1.7	73
Transfer	381	5.7	76	4.3	69	1.4	65
Poverty	535	4.9	74	1.8	57	3.1	82
Mining	146	2.8	64	0.2	52	2.6	83
Low-density	407	6.9	54	3.4	45	3.6	64
Farming	556	4.0	50	2.1	47	1.8	54
Total nonmetro	2,304	5.9	75	3.6	66	2.3	73

Notes: 1993 metro definition. Recreational counties defined by authors. Low-density counties contain fewer than six persons per square mile in 1990. All other types defined by ERS.
Source: Authors' calculations from Census Bureau data.

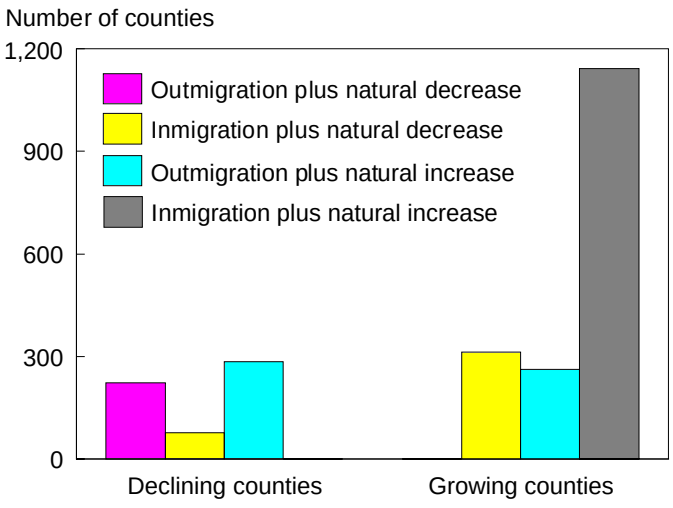
when population decline and migration losses were much more prevalent. Counties with histories of persistent poverty have also had low growth rates during the 1990's to date, and, as in the case of the mining and farming counties, natural increase accounted for most of the growth.

Inmigration Plus Natural Increase the Most Common Combination

The mix of natural increase and migration in the 1990's also contrasts with historical trends. For example, three-eighths of the nonmetro counties that lost population during the 1990's did so through both natural decrease and net outmigration (fig. 5). Such a combination was rare prior to 1970, but it has become more common as natural decrease has become more prevalent. In most cases, this pattern emanates from decades of young adult outmigration, exacerbated more recently by low rural fertility rates and the passing of the Baby Boom from their prime childbearing years.

An even more unlikely historical combination is the simultaneous occurrence of natural decrease and net inmigration. Yet, between 1990 and 1996, it occurred in 391 counties. More than 13 percent of the counties that lost population did so because net inmigration was insufficient to offset natural decrease. On the other hand, 18 percent of the growing counties gained population only because inmigration was more than enough to offset losses from natural decrease. Some of these counties are retirement and recreational areas that attract streams of

Figure 5
Patterns of nonmetro population change, 1990-96
A large proportion of growing counties benefit from both inmigration and natural increase



Source: Calculated by authors from Census Bureau data.

Data and Procedures

Most of the demographic information used here is from the Federal-State Cooperative population estimates series developed jointly by the U.S. Bureau of the Census and the States. Additional data are from the U.S. decennial censuses of population. A typology used to classify counties by economic function was developed by the Economic Research Service. We developed the recreational specialty variable. Net migration is calculated by subtracting natural increase from the population change during the appropriate time period.

Counties are the appropriate unit of analysis because they have historically stable boundaries and are a basic unit for reporting fertility, mortality, and census data. Counties are reclassified from time to time as new metro areas are formed or fringe counties are added to or deleted from existing areas. Such metro reclassification complicates efforts to compare trends over time. To minimize such complications, the 1993 metro classification is used here to identify counties as metro or nonmetro. This definition results in somewhat greater nonmetro losses during the 1980's and smaller nonmetro gains during the 1990's than would have been the case had an earlier metro definition been used.

older migrants who contribute to the mortality but not to the fertility of the area.

Natural increase combined with net outmigration in 547 counties between 1990 and 1996 and predominated in many rural areas throughout most of this century. In such counties, whether the population grows or declines in a given period depends on whether the gain from natural increase is sufficient to offset net outmigration. Though far less common than it once was, this combination remains the most typical one for declining areas in the 1990's.

Between 1990 and 1996, a slight majority of counties (51 percent) combined natural increase with net inmigration. In contrast, comparatively few nonmetro counties had this combination in the 1980's. In fact, the only other period since World War I when growth from both factors was widespread in nonmetro areas was during the turnaround of the 1970's.

Examples of Rebounding Counties

The following examples of counties that have been growing in population through inmigration since 1990 after decline in the 1980's will illustrate some of the sources of demographic recovery, such as agribusiness, natural amenities and tourism, factories, prisons, intercounty commuting, retirement, and urban flight.

Mercer and Sullivan Counties, MO, which adjoin one another, are located in the southern Corn Belt, where productivity is below that of the best midwestern farming areas. Here, the growth of nonfarm job opportunities has never been enough to offset the decline in farm employment. The result has been an extraordinarily prolonged downward trend in population. Mercer County reached a peak of 14,700 residents in 1900 and then decreased in each subsequent census to a low of 3,700 in 1990—a decline of 75 percent. Sullivan County followed the same pattern, with a drop from 15,200 in 1900 to 6,300 in 1990, a loss of 58 percent. Their history is an extraordinary example of how very drawn out the consequences of successive waves of labor-reducing agricultural change can be.

After 1991, however, their populations began to rise. By July 1996, Mercer had grown 7.6 percent in just 6 years, while Sullivan had recovered by 5.1 percent. Yet their populations were so advanced in age by 1990 that both counties were still regularly having more deaths than births. All recent growth has come from net inmovement of people that has outweighed the excess of deaths. The source of the growth is agribusiness. An entrepreneur developed a large new hog-raising and pork-processing business. The hogs are produced in very large numbers in confinement-feeding operations requiring many workers. The headquarters of the firm is in Mercer County, with the packing plant in Sullivan County, and both counties have had an influx of labor force.

Chaffee County, CO, and Grand County, UT, are examples of Western counties whose former heavy dependence on mining employment led to population loss in the 1980's, when the demand for most metals fell. Hundreds of Chaffee residents commuted to a neighboring county, which was the site of a major molybdenum mine that closed. With the loss of these jobs, the population fell by 4.1 percent from 1980 to 1990. From 1990 to 1996, however, the population level rose by 15.7 percent, all from inmigration. The county, with a scenic location in the Rockies, exemplifies a number of Western counties that are attracting people who are drawn to their natural beauty and amenities and dissatisfied with urban conditions. In Chaffee County, newcomers have started businesses, bought out older proprietors, or brought in businesses, including small-scale manufacturing. Retirees are present as well. Many newcomers have come from the Front Range (stretching from Fort Collins through Denver to Pueblo) and others from out of State.

In Grand County, UT, the loss of uranium mining brought a precipitous decline of nearly a fifth of the population (19.7 percent) in the 1980's. The county government decided to

promote the area for tourism, for it contains Arches National Park and large areas suitable for mountain biking. Their efforts were more successful than they had dreamed—perhaps more so than they had wished—and by 1996 the population had risen by 18.2 percent as the area was publicized and became a vacation destination.

A more prosaic case is that of Dickinson County, KS. The presence of a service-center town of 6,000 people (Abilene) and location on an interstate highway did not prevent this Great Plains farming county from declining by 6.0 percent during 1980-90, when many years were marked by agricultural crisis and consolidation. In the first 6 years of the 1990's, though, the county grew by 4.7 percent, despite no surplus of births over deaths. The key event has been the opening of a large national-brand candy factory, employing about 600 workers. In addition, construction of residential housing for older people has brought in retirees.

A common means of job development in rural and small-town areas over the last 10 years has been the acquisition of prisons. Communities desperate for steady, decently paid jobs have not hesitated to bid for them. More than 50 nonmetro counties that have rebounded from population loss in the 1980's to gain in the 1990's have done so in part or in whole by obtaining prisons.

An example from the old Cotton Belt is Lake County, TN. Lake County is a Delta farming area whose census population peaked in 1950 not long after the mechanization of cotton farming began. From then until 1990, population loss was continuous, with a 40-percent decline. A shift into manufacturing—dominated by low-wage textile work—cushioned the fall but did not end it. Since 1992, however, when a State prison with over 1,000 inmates and 350 workers opened, the loss has ended, with a growth of 16.9 percent by 1996. For census purposes, prison inmates are counted as residents of a county. This type of population growth may seem somewhat artificial, since the prisoners are not in the community, but the jobs have a stabilizing effect.

A frequent source of new population increase is the greater propensity now for people to commute across county lines to work. In each census since 1960, when commuting data were first obtained, cross-county job commuting has grown. Hundreds of nonmetro counties adjoin metro areas, and some are always in the process of becoming transformed into metro fringe counties. But many other areas that lie yet another tier of counties beyond the metro border are getting new commuter residents, and the same residential deconcentration is going on around nonmetro job centers. Local officials interviewed during the preparation of this article often cited as a growth factor an influx of commuters wanting to live in a smaller scale community while retaining their well-paying urban jobs.

For instance, Wolfe County, KY, is a completely rural Appalachian area that lies three counties distant from Lexington, the nearest metro center. Population fell by 2.9 percent in the 1980's as coal mining jobs there and in neighboring counties ended. But the county benefits from a four-lane limited-access highway that permits residents to work in Lexington or even go to newer highly desired auto plant jobs yet another county distant. Wolfe County also attracts retired people, and so has once again grown (13.2 percent during 1990-96), despite an exceptionally high poverty rate of 44 percent at the last census that one might think would deter new residents.

In the West, population gains are reported in a number of counties without accompanying job growth or commuting access to employment centers. These cases exemplify the nonpecuniary, quality-of-life motives that seem to characterize much recent nonmetro population increase, in a manner similar to the 1970's (See *RDP*, vol. 14, no. 2). Idaho and Lewis Counties, ID, are examples. Timber and agriculture dependence led to 1980's population losses of 6.7 and 14.6 percent respectively in these adjacent areas, which in 1990-96 reversed to growth of 8.4 and 13.8 percent. People of mostly urban background, who want open space and relish the low level of local government regulation, are described as moving into the countryside from other States, with land being subdivided for this purpose.

What Does the Rebound Suggest About the Future of Rural America?

Since 1990, population growth rates in nonmetro areas have rebounded from the minimal levels of the 1980's. In all, three-fourths of nonmetro counties are growing and two-thirds are experiencing net inmigration. Although rural growth rates are slightly lower than those in metro areas, the gap between the relative growth rates is quite small. The higher growth rates in metro areas stem from higher rates of natural increase there. In contrast, nonmetro natural increase is lagging far below historical levels. Overall, the growth patterns in nonmetro America during the early 1990's resemble the patterns of the turnaround of the 1970's more than those of any other period. At the very least, these findings suggest that the renewed growth in nonmetro areas first evident in the 1970's was not just a short-term phenomenon.

Nonmetro and metro areas may be entering a period of relative equilibrium where short-term demographic shifts are sensitive to "period effects" resulting from changes in the economic, political, and social climate. Such "period effects" include the protracted economic recession of the 1980's, which hurt nonmetro areas more than urban areas. In addition, agricultural areas were hit hard by the long farm financial crisis of 1980-86 and nonmetro manufacturing faced increased competitive pressure from offshore firms during the 1980's. All these factors slowed nonmetro

growth through most of the 1980's. Only late in the decade, as the differential impact of these periodic factors began to subside, did nonmetro growth rates begin to rise again. No such pronounced period effects are evident in the 1990's. The milder recession of the early 1990's seemed more oriented to urban-based white-collar and defense jobs, with the result that metro unemployment rates rose above those in nonmetro America. Presumably, this provided less incentive for rural and small-town people to move away (rural outmovement is known to have dropped), and stimulated some net inmovement from the metro centers. However, a net influx from the cities has continued since the end of that recession.

Our findings on the rural rebound of the 1990's cast doubt on the argument that the turnaround of the 1970's was a function of unique factors, whereas the redistributive patterns of the 1980's represent a reversion to historical patterns. The nonmetro demographic trends of the 1980's were neither a repeat of the nonmetro turnaround of the 1970's nor a reversion to the patterns of the 1950's. It is more likely that the diminished nonmetro gains of the 1980's were just a pause—due to period effects—in the growth of nonmetro areas through the combination of net inmigration and modest natural increase that began during the 1970's.

The overall pattern of population change in nonmetro areas between 1970 and 1996 appears most consistent with a process of selective deconcentration. Over time, such deconcentration will result in the growth of smaller places as spatial constraints on the location of work and residence diminish because of improvements in the transportation and communication systems. Diminished spatial constraints allow some individuals to exercise longstanding preferences for lower density, higher amenity areas. Such deconcentration forces have been and are likely to continue to be selective. For example, growth has been quite common in recreational and retirement areas, beyond the metro periphery and in diversifying manufacturing, commuting, and service counties. Other parts of nonmetro America are likely to continue to lose population because they remain linked to extractive industries which, despite a century of adjustment in which capital and technology replaced labor, continue to shed jobs and consolidate. Such extractive industries are also subject to significant cyclical swings resulting from world economic and political conditions, as well as climate, environmental, and energy issues. The deconcentration slowdown during the 1980's reminds us that such trends seldom proceed at an even pace.

Predicting future nonmetro population redistribution is perilous given the fluidity of the demographic shifts in the United States during the past several decades. This reflects the complexity of the forces affecting rural America in the 1990's. Future nonmetro demographic trends are likely to be more volatile than in the past. Recent reductions in nonmetro fertility rates and a changing age structure are likely to diminish the substantial contribution that natural increase has traditionally made to nonmetro population gains. This makes future nonmetro growth increasingly dependent on net migration, which is extremely sensitive to external factors. And, as the people and institutions of nonmetro America approach the new century, such factors and their future will be increasingly linked to national and global economic, political, and social forces.

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Mark Nord

Racial and Spatial Equity in Welfare Programs

Interstate and Intercounty Differences in Welfare Spending

States where a large proportion of the poor are rural residents or racial/ethnic minorities offered lower levels of welfare support under the Aid to Families with Dependent Children (AFDC) program than did other States. No corresponding rural or racial/ethnic disadvantages are observed in the Food Stamp Program, which has standard eligibility criteria and benefit levels nationwide. The rural AFDC disadvantage could be accounted for by the fact that States with lower per capita income and higher poverty rates generally offered less generous AFDC benefit levels. The minority disadvantage was substantial even when the effects of State per capita income and poverty rate were controlled. Among counties within States, on the other hand, there is no evidence that rural counties or counties with high proportions of minority population fared worse than other counties. Household-level analyses corroborate the county-level findings in general, except that they point to substantial underuse of AFDC by rural Hispanics. The findings suggest that national welfare program standards are important for maintaining or improving equity in welfare access and highlight the importance of progressive funding of block grants. They also suggest that the rural and minority poor have an important stake in the design of State welfare programs.

The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 increased the role of the States in the design and implementation of welfare programs. Under that act, the Federal Government provides funds in the form of annual block grants to each State for the Temporary Assistance for Needy Families (TANF) program, which replaced the Aid to Families with Dependent Children (AFDC) program and several related programs. Although States already had substantial discretion in setting benefit levels and eligibility requirements in the AFDC program, they have much broader discretion under the TANF program. States have increased discretion in shaping the Food Stamp Program as well, although it remains an entitlement with standard eligibility and benefit levels nationwide. For example, State governments can request waivers to certain work requirements in high-unemployment areas of their States, and under some conditions, States can "cash out" Food Stamp funds and use the funds as wage subsidies in welfare-to-work employment programs.

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AFDC was an entitlement program of cash assistance for low-income families with children, jointly funded by Federal, State, and, in some cases, local governments. The Federal share of benefits depended on State per capita income and varied from 50 percent in higher income States to 80 percent in the lowest income States. States had a large degree of discretion in setting benefit levels and other program policies.

Rural areas and rural racial and ethnic minorities were disadvantaged in the level of support they received from AFDC. For example, rural families who participated in the AFDC program in 1996 received, on average, $305 per month compared with $402 received by urban families. Rural Hispanic families in the program received an average of $285, and rural Black families received $214. Differences of this sort were not seen in the Food Stamp Program, which has nationally consistent eligibility and benefit standards. This situation raises the questions of how rural areas and rural racial and ethnic minorities will fare as social support programs are increasingly decentralized and where efforts should be focused to remediate the disadvantages those groups face.

The first question I explore is, "To what extent do State-level differences in AFDC support account for the rural and minority disadvantages?" AFDC benefit levels varied greatly among States. Average monthly benefit per enrolled family varied from $121 in Mississippi to $560 in California and $735 in Alaska (fig. 1). States with large rural populations and States with large Black, Hispanic, and Native American populations had generally lower benefit levels than did other States. However, most of the low-benefit States were also States with low per capita incomes and high poverty rates—factors that would be expected to depress State welfare capacity and generosity. It is not immediately clear, therefore, whether the lower AFDC benefits in States with large rural and minority populations resulted from racial and urban bias in the political processes that set State benefit levels, or whether those lower benefits were just coincidences arising from the predominance of minority and rural populations in low-income, high-poverty States. To answer this question, I estimate the effect of rurality and race/ethnicity on AFDC generosity at the State level, while statistically controlling for the effects of State per capita income and poverty rate.

The second question I address is, "Were rural households and racial/ethnic minorities further disadvantaged by uneven administration of welfare programs across regions and racial/ethnic groups within States?" Eligibility and benefit levels were consistent in all jurisdictions within the same State for the AFDC program and across all States for the Food Stamp Program, but it is not certain that the administration of the programs was uniform in all counties. Were rural counties and counties with high concentrations of racial and ethnic minorities treated the same as other more urban and White counties in the State? To investigate this question, I look at differences in AFDC and Food Stamp Program generosity among counties within the same State and assess how rurality and the racial/ethnic composition of county populations affected those differences. Finally, I use family-level data to verify the results of the county-level analysis.

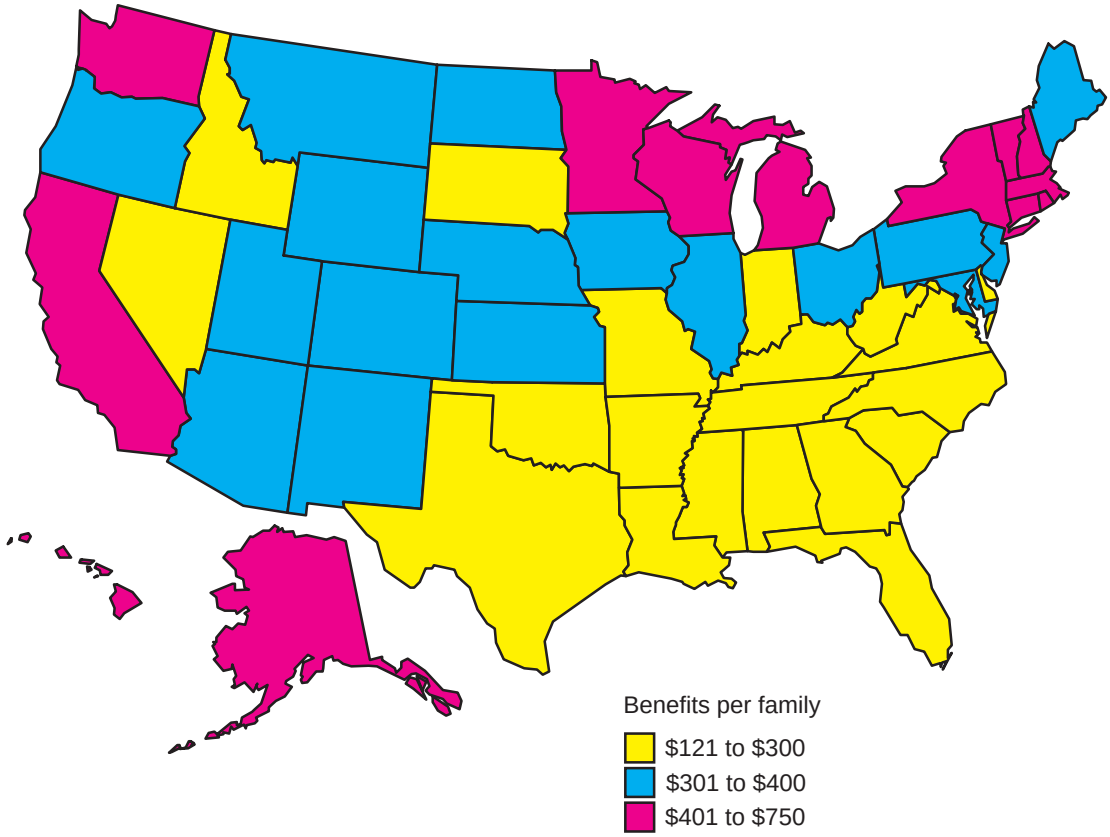
The practical implications of the answers to these questions are considerable. For those concerned that rural areas and rural racial/ethnic minorities not be disadvantaged in access to social and economic support programs, knowing where to focus efforts is important. If welfare inequities reflect differences among States and result primarily from interstate economic inequality, then attention should be given to Federal funding formulas to ensure that adequate resources are available to States with less economic capacity to fund welfare programs. If substantial inequities exist at the State level, but are not primarily a result of interstate economic inequality, then national standards may be essential to achieve equity. Also, in that case, attention might be given to increasing the participation of rural and minority populations in the State political processes through which welfare policies are set and programs designed. Finally, if there are substantial inequities among regions within States, then attention would need to be given to the administrative processes through which welfare programs are implemented at the local level.

State-Level Differences in Per Capita Income Accounted for the Rural, But Not the Racial/Ethnic, Disadvantage

To measure State-level AFDC support, I calculated the ratio of total annual AFDC benefits paid out in each State to the total number of poor children in the State. This ratio varied from $252 to $3,635 with a mean value of $1,513. The denominator of this measure is a proxy for all needy children, not just those enrolled in the program. The measure is, thus, a broader indicator of welfare support than average benefits per enrolled family (the measure depicted in figure 1) because it is sensitive to program eligibility requirements and to the participation rate of eligibles as well as to the amount received by those who do participate. Analyses using the two measures gave almost identical results. Here I report on total annual AFDC benefits per poor child because this links the State-level analysis of AFDC support to the county-level analysis described later.

Statistical analysis revealed that total annual AFDC benefits per poor child were primarily determined by State per capita income (fig. 2). States with higher income generally offered higher levels of AFDC support. The line in figure 2

Figure 1
Average monthly AFDC benefit per enrolled family, 1994
Low-benefit States are home to 50 percent of the rural population, and 60 percent of the rural poor, but only about a third of the urban population



Source: Prepared by ERS based on *Social Security Bulletin Annual Statistical Supplement, 1996.*

summarizes the statistical association between per capita income and AFDC support.

AFDC support was substantially lower in States where a large proportion of the poor lived in rural areas (fig. 3). However, when State income and poverty rate were held constant, the association between rurality and AFDC generosity was negligible. This was almost completely a result of controlling for per capita income. At the State level, then, the rural disadvantage in AFDC support was accounted for by the low average income of most States with large rural populations.

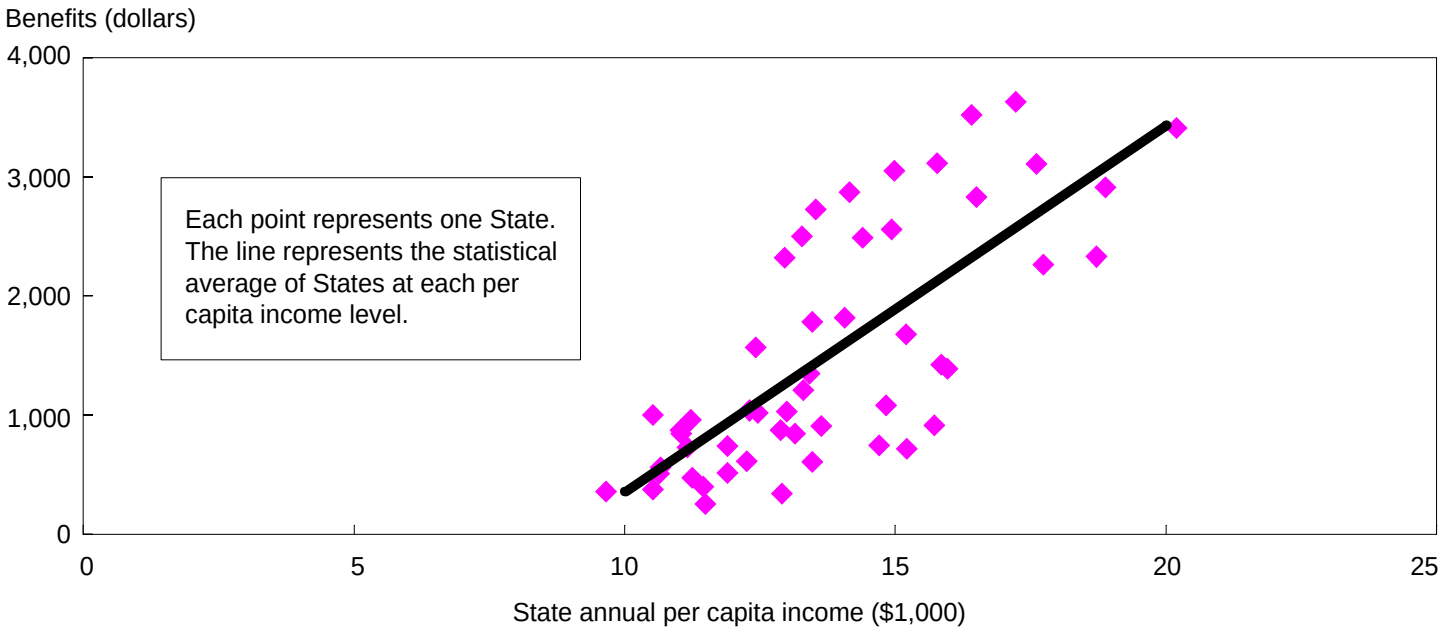
The State-level association of AFDC support with the proportion of the State's poor who are racial/ethnic minorities (Black, Native American, or Hispanic) is depicted in figure 4. This is quite a different story than that of the rurality of poverty. Here the observed association was negligible, but when other relevant factors were held constant (especially State per capita income), the minority share of poverty exerted a substantial negative effect on State AFDC support. States in which a larger proportion of the poor were racial/ethnic minorities provided lower AFDC benefits per poor child than did other States with similar average income. Most urban low-income minorities live in States with relatively high average income, so for them the positive effects of State income on AFDC support offset the negative effects of the higher minority share of the poor. However, most rural minorities live in States with low average income, where AFDC support was depressed both by the low State income and by the high proportion of minorities among the poor.

A similar measure of State Food Stamp Program support was calculated as the ratio of total annual food stamp benefits paid out in each State to total persons in households

Figure 2

State total annual AFDC benefits per poor child versus State per capita income, 1989

States with higher per capita income generally offered more generous AFDC support

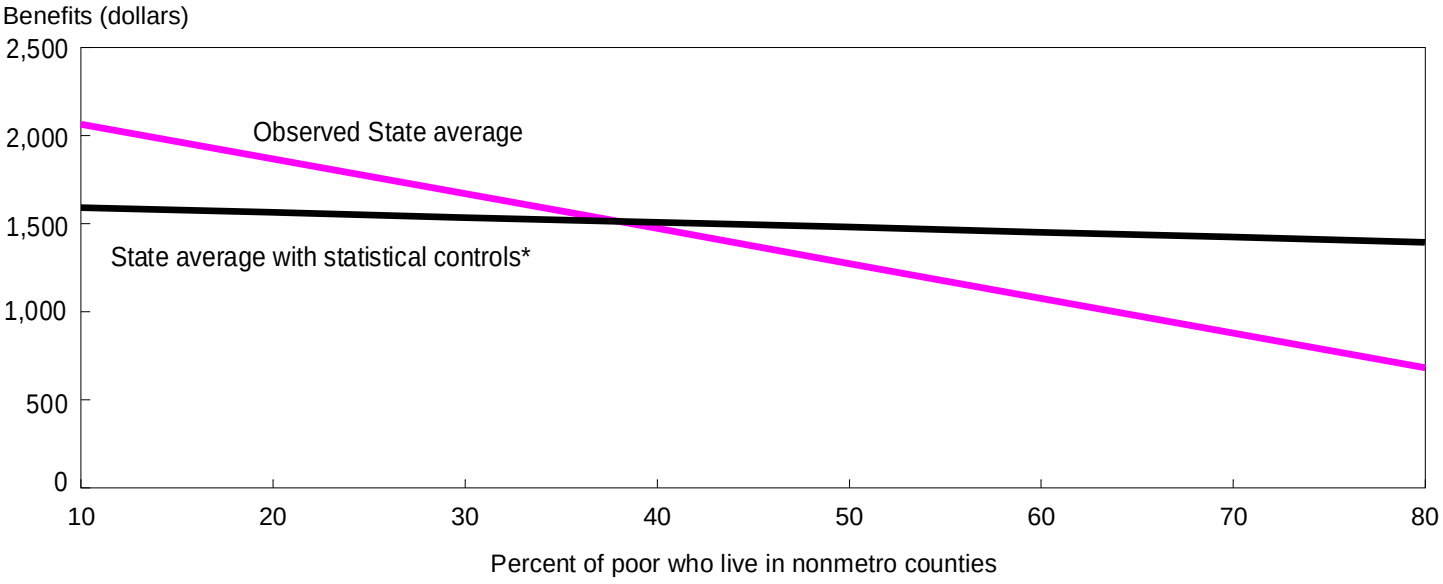


Source: Prepared by ERS using data from the Bureau of the Census STF3C, 1990, and the Bureau of Economic Analysis Transfers File 1969-95.

Figure 3

State total annual AFDC benefits per poor child versus rural share of State's poor, 1989

States in which a larger proportion of the poor live in rural areas offered lower levels of AFDC support; the association was negligible, however, when other relevant factors—especially State per capita income—were statistically controlled

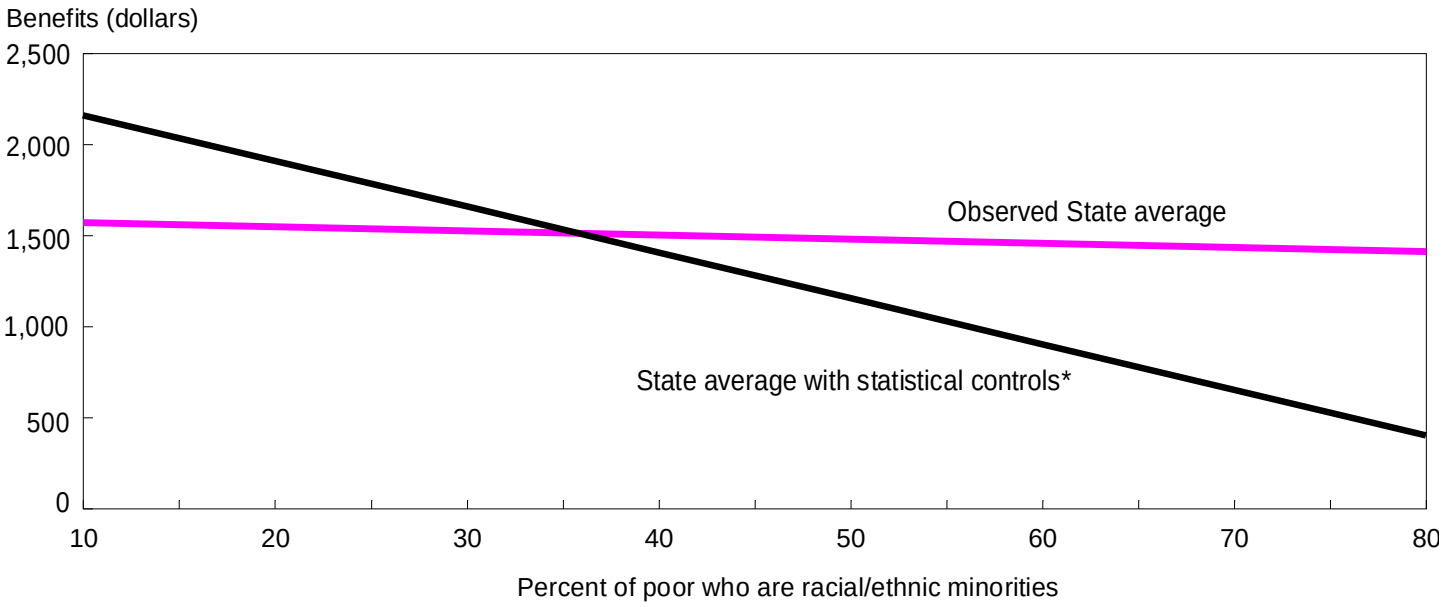


*Statistical controls for State per capita income, State poverty, and proportion of State's poor who are racial/ethnic minorities.
Source: Prepared by ERS using data from the Bureau of the Census STF3C, 1990, and the Bureau of Economic Analysis Transfers File 1969-95.

Figure 4

State total annual AFDC benefits per poor child versus minority share of State's poor, 1989

States in which a larger proportion of the poor are racial/ethnic minorities offered lower levels of AFDC support than other States with similar per capita income, poverty rate, and rurality



*Statistical controls for State per capita income, State poverty, and proportion of State's poor who live in nonmetro counties.
Source: Prepared by ERS using data from the Bureau of the Census STF3C, 1990, and the Breau of Economic Analysis Transfers File 1969-95.

with income below 125 percent of the poverty line (approximately the income level at which households become eligible for food stamps). There were no statistically significant associations between this measure and the rural share of the poor or the minority share of the poor. Nor did State food stamp support depend on State per capita income. Further, multivariate analysis of State food stamp support found no statistically significant effects of any of the variables, even when other relevant factors were controlled. This is not surprising, because the national standard eligibility and benefit levels of the Food Stamp Program should result in similar benefit expenditures per eligible population in all States, regardless of the State's income, poverty, and demographic characteristics.

Taken together, the State-level analyses point to four important conclusions:

(1) For the AFDC program, in which States had substantial autonomy, State generosity was strongly affected by per capita income of the State. Lower income States provided lower levels of support.

(2) States in which a large share of the poor are rural generally provided lower levels of AFDC support, but this was completely accounted for by the lower average income of those States.

(3) State AFDC support was substantially affected by the racial and ethnic composition of the poor. States in which a large proportion of the poor were minorities provided lower levels of AFDC support than did other States with similar average income. This especially affected rural minorities, because most of them live in low-income States, where both income and minority effects depressed AFDC support.

(4) State support levels in the Food Stamp Program were not substantially affected by either rurality or the racial/ethnic makeup of the poor, nor did they depend on State per capita income.

Within the Same State, Welfare Support Was Similar in Rural and Urban Counties, and Greater in High-Minority Than in Low-Minority Counties

To assess variation in welfare generosity across areas within the same State, I calculated AFDC and food stamp generosity measures for each county, using the same method I used for the State measures. The ratio of each county-level measure to the corresponding State-level measure was then analyzed. As a measure of rurality, nonmetro counties were identified in one of two categories depending on whether they are adjacent to metro areas or not. The concentration of racial/ethnic minorities among the poor was measured, as at the State level, by the proportion of the poor who were Black, Hispanic, or Native American. I controlled for the proportion of poor

children who lived in single-parent families, since those families generally have more ready access to welfare benefits than do other families.

The results of these analyses show no evidence of lower levels of welfare support in rural areas compared with metro areas in the same State. AFDC support in both rural categories was essentially equal to that in urban counties in the same State. The effect of rurality on food stamp support was weakly positive—about 5 percent higher in both nonmetro categories than in metro counties in the same State.

Counties with higher proportions of racial/ethnic minorities had somewhat higher levels of welfare support than other counties in the same State. On the average, a county in which 50 percent of the poor were racial/ethnic minorities provided about 10 percent higher AFDC support and about 20 percent higher food stamp support than a county in the same State in which the poor were all non-Hispanic Whites.

Because most of the rural population and a very high proportion of rural racial/ethnic minorities live in the South census region, I repeated the county-level analysis for only the counties in that region. The results were entirely consistent with the national results. Taken together, the county-level findings provide convincing evidence that administration of AFDC and Food Stamp programs within States was not systematically biased against rural areas or against regions with high proportions of racial/ethnic minorities. This is not to say that administration was even across all counties. There was substantial variation in both of the county-level welfare generosity measures. But that variation was not due to rurality in any important way. And to the extent that it was related to racial/ethnic population composition, variation actually favors areas with higher concentrations of minorities.

Rural Hispanics Use AFDC Much Less Than Other Persons

The county-level findings on the effects of minority status were somewhat unexpected. Do welfare programs really benefit racial/ethnic minorities more than Whites of similar income level in the same State? To shed further light on this question, I analyzed family-level data from the Current Population Survey. For this analysis, I considered only single-parent families with children, and I controlled for relevant State-level factors and for family income (compared with the poverty line for the family).

The family-level analysis confirmed the county-level results for Blacks, but revealed a more complex picture for Hispanics. To summarize the analysis, the following statements compare participation in welfare programs by families with similar incomes living in the same region in States with the same State AFDC benefit levels:

In urban areas:

Blacks and Hispanics used AFDC and Food Stamp programs substantially more than Whites

In rural areas:

Blacks used AFDC at virtually the same rate as Whites

Blacks used food stamps at a much higher rate than Whites

Hispanics used AFDC at a much lower rate than non-Hispanic Whites

Hispanics used food stamps at about the same rate as non-Hispanic Whites

This family-level evidence generally supports the county-level findings, but points to a substantial underuse of AFDC by rural Hispanics. It is not clear whether this is a result of cultural bias in program administration, eligibility factors characteristic of rural Hispanics that are not reflected in the analytic models used here, or cultural factors that may predispose rural Hispanics to avoid using the AFDC program.

Summary and Policy Implications

Rural residents, and especially rural racial/ethnic minorities, received lower levels of AFDC support than did urban residents. These disadvantages were almost entirely the result of differences among States. Within the same State, rural regions and regions with high proportions of racial/ethnic minorities received AFDC benefits no less generous than urban and predominantly White regions in the State.

The lower level of welfare support in States with large rural populations and high proportions of racial/ethnic minorities was observed only in the AFDC program—the major welfare program with the greatest degree of State autonomy. There was no corresponding State-level disadvantage in the Food Stamp Program, which has nationally consistent eligibility and benefit standards.

States in which a high proportion of the poor live in rural areas had lower levels of AFDC support. This rural AFDC disadvantage was, however, completely accounted for by the fact that States with low per capita income provided less generous AFDC benefits, and States with large rural populations generally have lower per capita income than more urbanized States. The rural poor were, in fact, disadvantaged with respect to AFDC assistance. But this disadvantage did not result from an urban bias in the political process that sets AFDC policies, but rather from the State-level coincidence of large rural populations with low State per capita income.

The race and ethnicity of the poor affected State AFDC generosity substantially. States in which a large propor-

Data and Methods

Annual average monthly AFDC benefits per enrolled family (fig. 1) are published in the *Social Security Bulletin Annual Statistical Supplement*. The data are based on administrative records and are provided for each State. I used data for 1994, published in the 1996 Bulletin. The other measures of AFDC and food stamp generosity for States and counties combine data from two sources. The benefit amounts are from the Bureau of Economic Analysis Transfers File. AFDC benefits include Federal, State, and local funds paid to families under the AFDC program. Food stamp benefits consist entirely of Federal funds. Administrative funds are not included for either program. The denominators for these measures were based on data from the 1990 Census of Population Summary Tape File 3C. For the AFDC generosity measure, the denominator was the number of poor children; for the food stamp generosity measure, the denominator was the total number of persons with income below 125 percent of the poverty line. Additional data on income, poverty, race/ethnicity, and family structure from the 1990 Census of Population were used to characterize States and counties. Nonmetro counties adjacent to and not adjacent to metropolitan statistical areas were identified in accordance with the ERS rural-urban continuum codes (Beale codes).

Data for the family-level analyses were from the March 1997 Current Population Survey (CPS). The CPS is a monthly survey of about 50,000 households carried out by the Census Bureau for the Bureau of Labor Statistics. The March survey each year includes a Demographic Supplement with information about income from all sources, including welfare programs. Demographic data such as age, race, ethnicity, and family structure are also provided.

Regression Analyses

State-level analyses consisted of ordinary least squares regression models. The lines in figures 3 and 4 are based on the regression equations and represent predicted values of the dependent variable with control variables (if any) at their mean values. County-level analyses consisted of weighted least squares regression models, weighted by the natural logarithm of 1990 county population. Weighted least squares regression was appropriate because there was evidence of heteroschedasticity in ordinary least squares estimates. In the State and county regression models, the linearity of the effects of income and poverty measures as well as that of the minority share of the poor was explored by using quadratic forms of the independent variables. None of the associations was substantially nonlinear.

The family-level analyses consisted of logistic regression models, since the dependent variables were categorical (whether or not the family participated in the program under investigation). Only single-parent families with children were included in these analyses. Independent variables of interest were as follows:

Dummy variables for Black (non-Hispanic) and for Hispanic,

Dummy variable for nonmetro residence,

Interaction variables for Black X nonmetro and for Hispanic X nonmetro.

Additional variables included as controls were:

The family's income-to-poverty-line ratio,

Dummy variable for residence in a State in the South census region,

Dummy variable for noncitizen,

Average AFDC benefit per month in the State of residence (only in the AFDC regression).

tion of the poor were Black, Hispanic, or Native American provided lower levels of funding for AFDC than did other States with similar average income. This affected rural minorities much more than urban minorities because most rural minorities live in States with low average income, where AFDC support was depressed both by the low State income and by the high proportion of minorities among the poor.

These findings suggest strategies for addressing rural and minority disadvantages in welfare access during an era of welfare block grants, reduced national welfare standards, and increased State discretion. First, for federally funded programs without a national standard or entitlement, progressive Federal funding is crucial. State-level economic capacity, as measured by per capita income, is the strongest predictor of State welfare generosity. The historic pattern of Federal funding for AFDC was progressive only in proportion to State funding, but not in an absolute sense. That is, in spite of the higher share of Federal funding in low-income States, the amount of Federal funding per enrolled family was much lower in those States than in high-income States. And this funding pattern, with minor modifications, is now incorporated in the block grant formula. The 1996 legislation took the first step toward more progressive Federal funding by gradually increasing the size of the block grants to the lowest benefit States over the next 5 years. But this will benefit only five States, and the total increase by the end of the period will be only 10 percent.

The lowest benefit States had levels of Federal support per enrolled person about half that of the median State, and less than one-third that of the highest benefit States, so further equalization will be required to achieve equity.

Second, rural areas and especially racial and ethnic minorities have an important stake in State-level welfare policies, State funding of welfare programs, and State welfare program design. Since county-level administration is not systematically biased against either rural areas or minorities (with the possible exception of rural Hispanics), State-level decisions will largely determine welfare access and generosity for all low-income families in the State.

Finally, unless past patterns change, none of these strategies will redress State-level tendencies toward lower welfare generosity in States where the poor are disproportionately racial/ethnic minorities. National standards or entitlements will be important to achieve equal welfare support for minorities. This suggests caution in further devolution of welfare programs until the effects of the current level of devolution on racial equity in welfare access are known.

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Phil R. Kaufman

Rural Poor Have Less Access to Supermarkets, Large Grocery Stores

Poor households in rural areas rely more on smaller grocery stores and supermarkets than do metro area households, and they may face higher average food prices and reduced access to food as a result. Net accessibility—a ratio of available large grocery store sales to potential food spending by households in a ZIP Code-based area—was found to be lower for a greater percentage of low-income households compared with all households in the Lower Mississippi Delta. Over 70 percent of the total low-income population (eligible to receive food stamp benefits) in the 36-county area suffered accessibility shortfalls, requiring trips of more than 30 miles to reach a large retailer. Smaller foodstores typically offer less variety, fewer lower cost foods, and higher food prices.

Differences in access to foodstores can significantly affect both the prices households face and their average food costs. A recent ERS report found that the retail food prices faced by households varies with the type of store and its location. Rural households face supermarket prices about 4 percent higher than suburban area supermarkets, where prices are lowest (Kaufman and others). Overall, supermarkets had lower prices—about 10 percent lower nationwide, on average—than other grocery stores such as superettes, convenience stores, and "mom and pop" stores. Prices are likely to be lower in supermarkets because supermarkets can take advantage of scale economies (as sales increase, per unit costs decline). As a result, supermarkets have lower store margins—the markup over cost of goods sold—compared with smaller outlets, allowing for lower prices. The larger physical size of supermarkets also allows for greater product variety, including many lower cost store-label and generic items.

Rural areas contain fewer supermarkets and a larger proportion of smaller grocery stores compared with metro areas. Low-income rural households are less likely to use supermarkets, according to analysis of food stamp redemption data. Although poor households spent 76.7 percent of food stamps in supermarkets nationwide, rural supermarkets accounted for just 58.9 percent of all rural food stamp redemptions. In low-income rural areas, supermarkets accounted for only 52.8 percent of total redemptions while, by contrast, 84.1 percent of all suburban area food stamps were redeemed in supermarkets. Because of price differences between supermarkets in rural and suburban areas, and the lower use of supermarkets in poor rural areas, those households face food prices about 2.5 percent higher, on average, than other rural households and 3.1 percent higher than suburban households. While these differences reflect the average for all poor rural households, more distant households may face significantly higher food prices to the extent that supermarkets and other large retail food outlets are not accessible to them.

Although households in poor rural areas may face higher food prices, their actual food costs may vary through more economical and lower quality item selections. The ERS study also compared different brands and package sizes available within a food category, such as canned peaches, and found considerable variation after converting to a price per ounce. Compared with a leading brand and package size, both larger container sizes and store-label brands contributed to a lower price per ounce. Households are able to offset higher item prices by selecting

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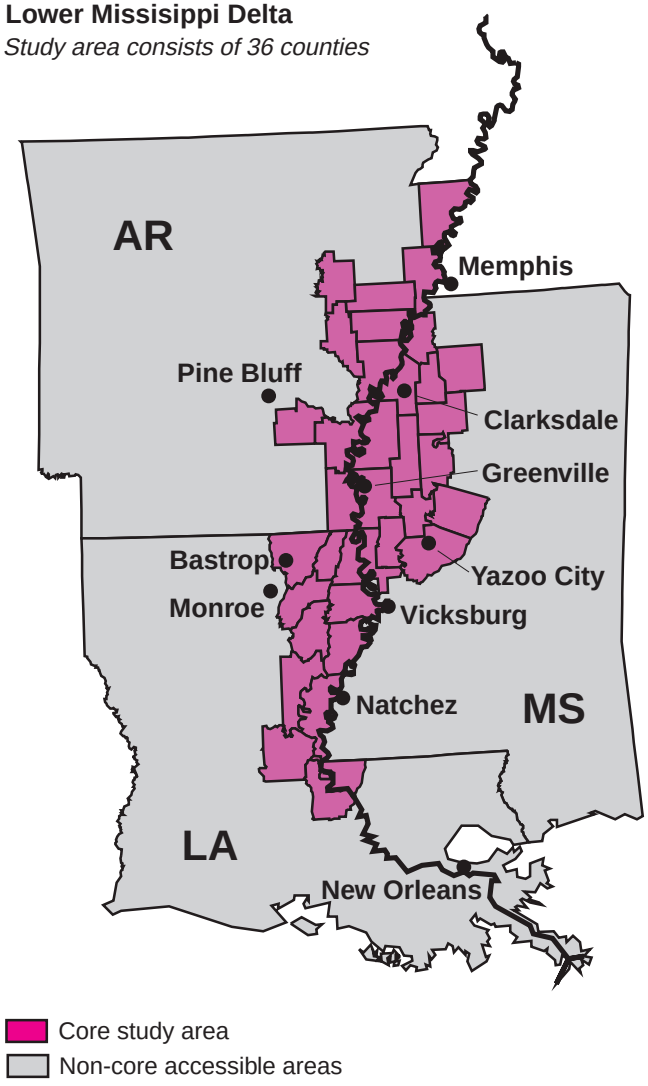
items within food categories that have a lower price per ounce. Larger retail food outlets are more likely to offer greater variety and more economical brands and package sizes, relative to smaller foodstores.

These results underscore the importance of access to larger retail food outlets as sources of both lower food prices and average household costs—features less likely to be found in many rural areas. ERS has recently attempted to measure access to foodstores in rural counties of the Lower Mississippi Delta region of Arkansas, Louisiana, and Mississippi to better assess the availability of retail foodstores to poor households there.

Lower Mississippi Delta Region Households Mostly Rural, Low-Income

The study area consisted of 36 rural, high-poverty counties bordering the Mississippi River (fig. 1). The selection of the Lower Mississippi Delta region serves two objectives. First, prior studies of food access have mostly centered on households in urban metro areas, since they account for more than three-fourths of the total U.S. population (Cotterill and Franklin). However, rural areas tend to lack public transportation services and large food retailers are fewer, resulting in greater travel distances. Second, the selection of the Lower Mississippi Delta region for the study of rural access supports the work of the Nutrition Intervention Research Initiative (NIRI). The NIRI is a consortium of seven partners, including the U.S. Department of Agriculture and six higher education and research institutions located in the region, whose aim is to improve the health and well-being of people in the Lower Delta region. Access to foodstores and the development of initiatives to improve low-income household access to affordable, quality food is one of the objectives of the NIRI consortium.

Figure 1
Lower Mississippi Delta
Study area consists of 36 counties



Source: Economic Research Service, USDA.

The Mississippi River dissects the region, extending more than 375 miles and separating Arkansas and Louisiana from Mississippi. This contributes to the isolation of the region, due to the limited number of crossings. Between the northernmost and southernmost counties of the core study area, there are crossings at Memphis, TN; Greenville, MS; Vicksburg, MS; and Natchez, MS. Major cities and towns in the area include Greenville, MS (pop. 45,226), Vicksburg, MS (pop. 20,908), Natchez, MS (pop.19,460), and Clarksdale, MS (pop. 19,717). The nonurban and rural population (that is, living in places of less than 2,500 inhabitants) represented 55 percent of the total. The non-White population represented 49.5 percent of the total, with Blacks the largest minority group.

The core study counties are characterized by relatively high poverty rates. For the 36 counties, median household income averaged $14,696 per year in 1990, according to the Census of Population, compared with the U.S. median household income of $35,225 per year. This is just above the poverty income threshold for a family of four in 1990. In the core study region, 20.2 percent of all households received some form of public assistance (excluding food stamps) while 29.4 percent of households received food stamp benefits. Analysis of household income by ZIP Code revealed that 54.5 percent of households in the study area had incomes of less than $15,000 annually in 1990.

Poor Households Rely More on Smaller Foodstores

The 36-county core study area contained 222 large food retail outlets, including both grocery stores (annual sales between $500,000 and $2 million) and supermarkets (annual sales of $2 million or more). Their combined gross sales (both food and nonfood items) amounted to $909 million in 1993, while food stamp redemptions in these stores totaled $113 million (table 1). Among large food retailers, super-

Table 1

Large food retailer sales and food stamp redemptions by store sales class, Lower Delta core counties

Low-income households spend more in smaller supermarkets and grocery stores than larger supermarkets

Store sales class	Gross sales		Food stamp redemptions	
	$1,000	Percent	$1,000	Percent
Large supermarkets[1]	493,282	54.3	47,826	42.4
Small supermarkets[2]	317,984	35.0	50,361	44.6
Large grocery stores[3]	97,672	10.7	14,721	13.0
Total food retailers ≥ $500,000	908,938	100.0	112,908	100.0

[1]Annual sales $6 million or more.
[2]Annual sales $2 million up to $6 million.
[3]Annual sales $500,000 up to $2 million.
Source: Food and Nutrition Service, U.S. Dept. of Agriculture.

markets with annual sales of $6 million or more accounted for the largest share of gross sales (54.3 percent) but only made up the second-largest share of food stamp redemptions (42.4 percent). Low-income households relied on smaller supermarkets and grocery stores somewhat more than did all households in the core counties. These differences in spending at large retailers between all households and low-income households are consistent with reduced mobility among the poor in rural regions.

Large food retailer availability can also be gauged by the average number of square miles per store for a given region or area. Overall, rural counties in Arkansas, Louisiana, and Mississippi averaged one supermarket per 153.5 square miles (Morris). By comparison, the 36 core counties averaged one supermarket per 190.5 square miles. When large grocery stores are included, the average square miles per large retailer in the core counties improved to 101.6. However, the food stamp redemption data indicate that only a small proportion of low-income food spending occurs in large grocery stores. Thus, as an indicator of distances between stores, the supermarket-based density measure is probably the more relevant.

Many Rural Households Face Accessibility Shortfalls

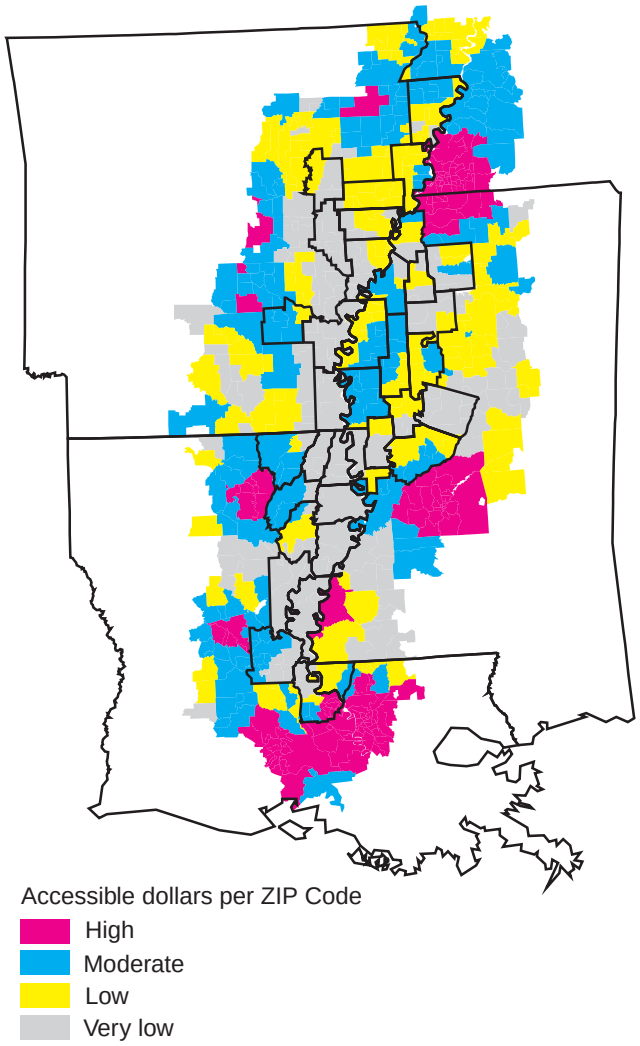
Results of the measure of household access to larger grocery stores—a measure of retail food supply—are given in figure 2. The level of accessible annual food dollars in the study area was separated into four ZIP Code quartiles. ZIP Codes in the highest accessible food sales quartile accounted for 57.2 percent of the study-area population, while 7.8 percent of the population were located in the lowest quartile.

A measure of accessible food spending demand—the level of household food expenditures available to a retail food location—was calculated in a manner similar to accessible

Figure 2

Accessible large grocery stores sales

The number and sales of grocery stores vary by location



Note: Outlined counties represent the core study area.
Source: Calculated by ERS from data provided by the Food and Nutrition Service, USDA.

retail food sales (accessible supply). Similar to the accessible supply measure, the ZIP Codes in the Lower Delta region were broken into quartiles for comparison purposes (fig. 3). The highest quartile accounted for 51.4 percent of the total study-area population, while 19.4 percent of the population were located in the lowest quartile.

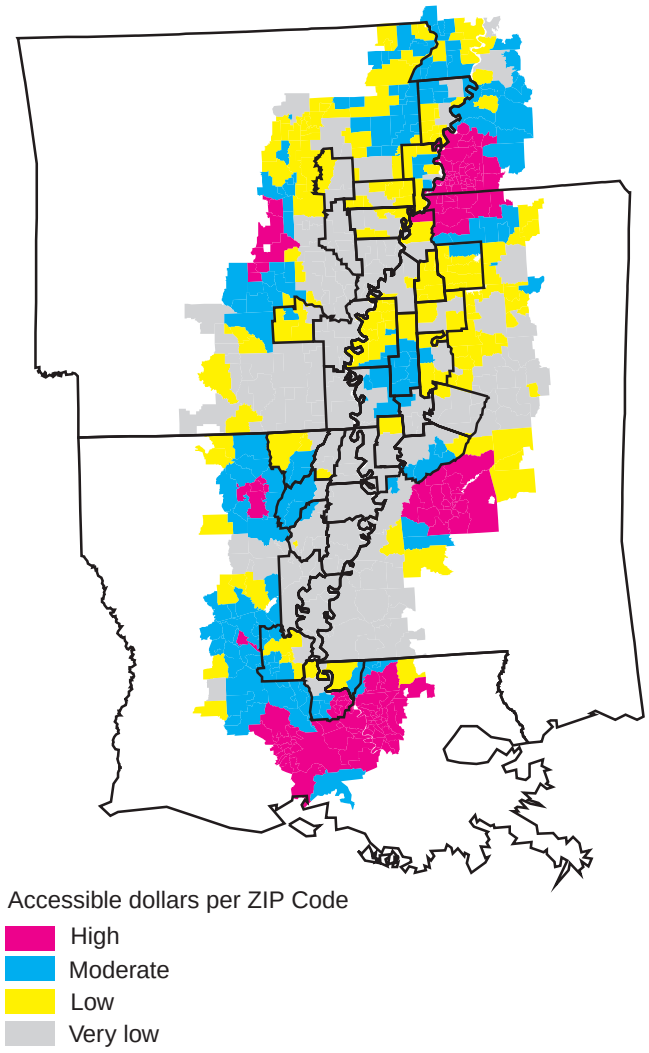
The range of net accessibility ratios in the Lower Delta region are tabulated in table 2 and depicted in figure 4. Of the 200 ZIP Codes that make up the 36-county core area, there were 76 ZIP Codes, or 38 percent, in which the accessibility ratio exceeded 1.0.

The remaining ZIP Codes experienced net accessibility ratios of less than 1.0—areas in which food expenditures are not fully satisfied by accessible large retailers.

Figure 3

Accessible retail food demand

Spending varies by population and income

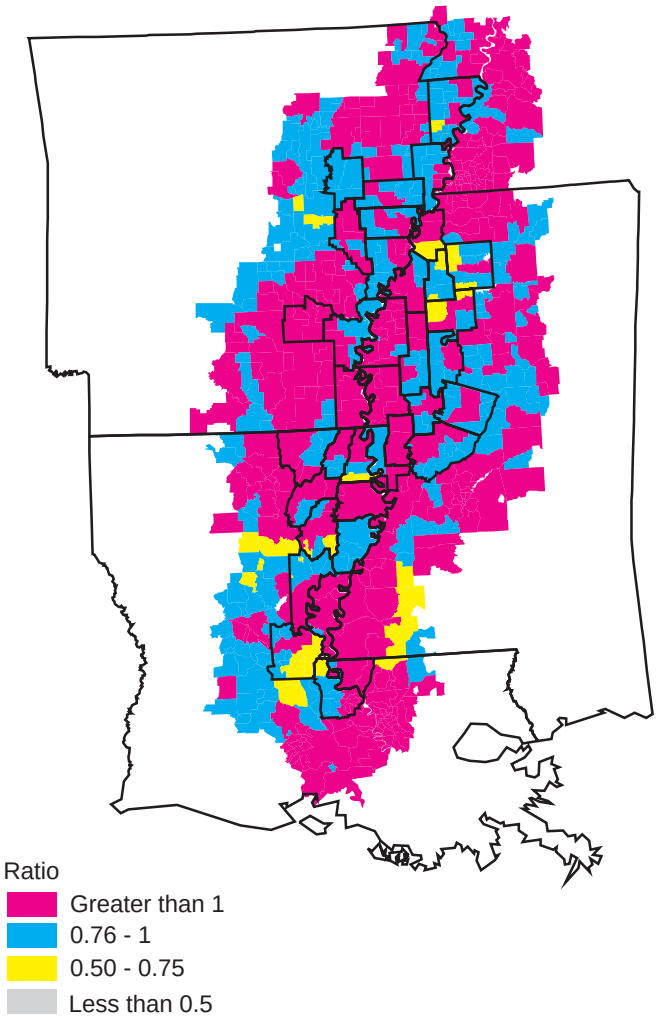


Note: Outlined counties represent the core study area.
Source: Calculated by ERS from data provided by the Food and Nutrition Service, USDA.

Figure 4

Net accessibility ratio, all households

Ratio measures supply relative to demand for retail food



Note: Outlined counties represent the core study area.
Source: Calculated by ERS from data provided by the Food and Nutrition Service, USDA.

Low-Income Households Face Lower Accessibility

The above analysis applies to all households, including higher income families that may find it feasible to travel considerable distances to reach large retail food outlets. Low-income households are less likely to travel greater distances if they (1) do not own or have access to transportation or (2) cannot afford the cost of transportation. In addition, while most low-income households are eligible to receive food stamp benefits to purchase food, transportation costs are not included. As a proxy for low-income household food purchases and sales by large retailers, aggregate Zip Code-level data were obtained from the Food and Nutrition Service, U.S. Department of Agriculture (FNS-USDA). These data include food stamp

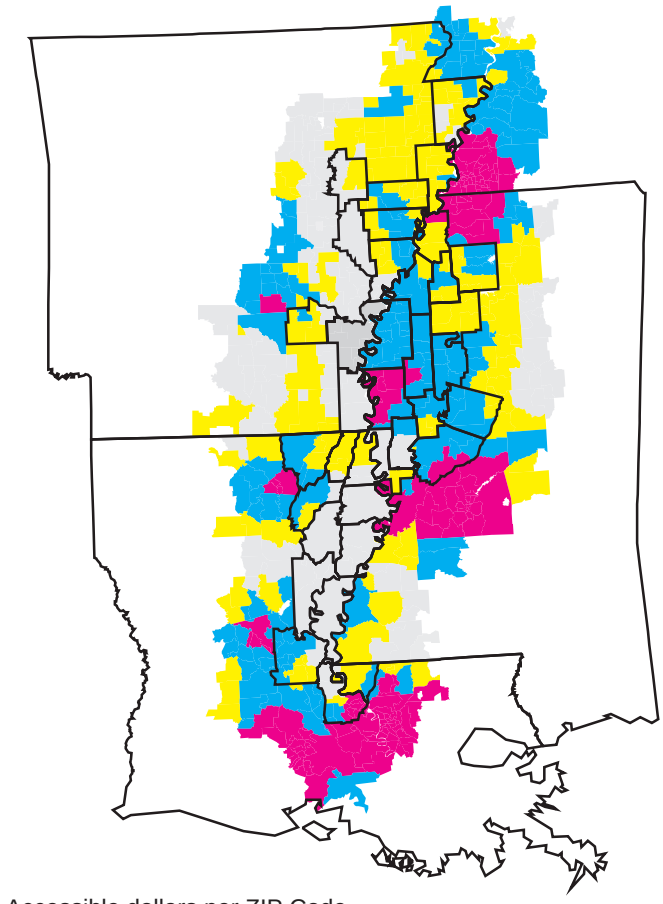
redemptions by large retailers and food stamp issuances made to households from each Zip Code in the Lower Delta region.

Low-income accessible supply was determined for each ZIP Code by calculating annual food stamp redemptions by stores to represent retail food sales. Differences in the level of accessibility to large grocery stores, including supermarkets, by low-income households are shown in figure 5. Low-income household accessible retail food demand is represented by total annual food stamp issuances to households for each ZIP Code in the Lower Delta region; accessibility is arranged by quartile (fig. 6).

Figure 5

Accessible large grocery store sales by poor households

Poor households have lower access to grocery stores

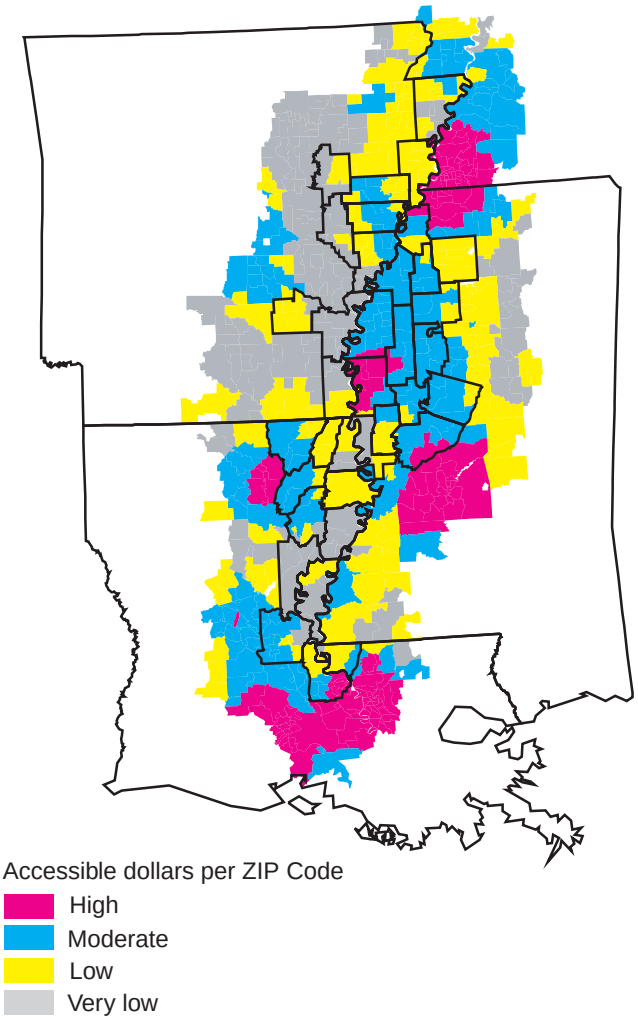


Note: Outlined counties represent the core study area.
Source: Calculated by ERS from data provided by the Food and Nutrition Service, USDA.

Figure 6

Demand for retail food by low-income households

Poor houseolds spend less for food



Note: Outlined counties represent the core study area.
Source: Calculated by ERS from data provided by the Food and Nutrition Service, USDA.

The ratio of accessible food stamp redemptions to accessible food stamp issuances is calculated for each ZIP Code similarly as the net accessibility ratio for all households. Of the 200 ZIP Codes in the 36-county core area, only 45, or 22.5 percent, have ratios exceeding 1.0, the condition most favorable to low-income households (table 3). Fully 77.5 percent of ZIP Codes experienced net accessibility shortfalls, affecting 69.2 percent of the total low-income population in the 36-county core area. Compared with net accessibility ratios of all households, low-income households appear to be disproportionately located in areas of net accessibility shortfalls (tables 2 and 3). Differences in net accessibility ratios in the Lower Delta region are depicted in figure 7. Within the core study counties, a

Table 2

Net accessibility of all households to larger food retailers: Lower Delta core counties[1]

The net accessibility ratio exceeded 1.0 in 38 percent of ZIP Codes, representing 72.4 percent of the total population in the Lower Delta region

Net accessibility ratio (R)	ZIP Codes	ZIP Code households	ZIP Code population	ZIP Code households without car
		Number		
Less than 0.5	0	0	0	0
0.5-0.749	22	9,567	28,319	1,570
0.75-1.0	102	65,832	198,526	11,950
More than 1.0	76	197,389	584,508	37,892
36-county total	200	272,788	811,353	51,412
		Percent share[2]		
Less than 0.5	0	0	0	0
0.5-0.749	11.0	3.5	3.5	16.4
0.75-1.0	51.0	24.1	24.5	18.1
More than 1.0	38.0	72.4	72.0	19.2

[1]Net accessibility ratio = (accessible food sales) / (accessible food expenditures).
[2]Percentages may not sum to 100 due to rounding.
Source: Economic Research Service, USDA.

Table 3

Net accessibility of low-income households to large food retailers: Lower Delta core counties[1]

The net accessibility ratio exceeded 1.0 in only 22.5 percent of Lower Delta ZIP Codes, representing less than one-third of the total low-income population

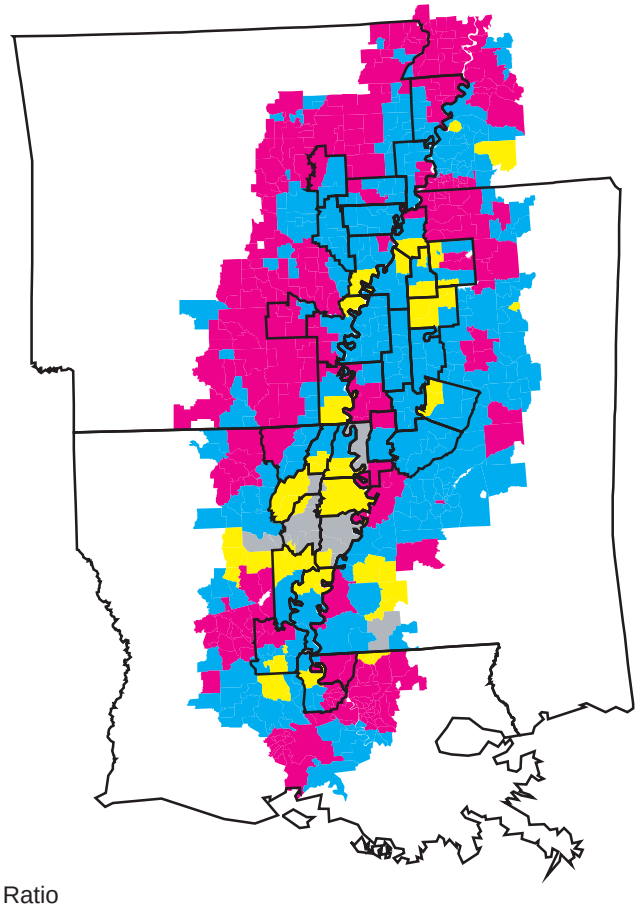
Net accessibility ratio (R)	ZIP Codes	ZIP Code low-income households[2]	Zip Code low-income population[3]	ZIP Code households without car
		Number		
Less than 0.5	9	7,209	21,626	na
0.5-0.749	35	21,698	65,097	na
0.75-1.0	111	49,137	245,051	na
More than 1.0	45	81,683	147,412	na
36-county total	200	159,727	479,186	na
		Percent share[4]		
Less than 0.5	4.5	4.5	4.5	na
0.5-0.749	17.5	13.6	13.6	na
0.75-1.0	55.5	51.1	51.1	na
More than 1.0	22.5	30.8	30.8	na

[1]Net accessibility ratio = (accessible food stamp redemptions) / (accessible food stamp issuances).
[2]Estimated.
[3]Based on 130 percent of poverty household income threshold.
[4]Percentages may not sum to 100 due to rounding.
na = Not available.
Source: Economic Research Service, USDA.

Figure 7

Net accessibility ratio, low-income households

Almost 70 percent of poor households have inadequate access to large grocery stores



Note: Outlined counties represent the core study area.
Source: Calculated by ERS from data provided by the Food and Nutrition Service, USDA.

relatively large share of the total area has insufficient net accessibility. Given their low-income status, households in these areas are less likely to travel to large retailers beyond the 30-mile retail range. To meet their retail food needs, they must rely more on small grocery stores and convenience stores.

Conclusions

Analysis of all households and low-income households indicated wide disparities in levels of accessibility to large food retailers across the Lower Delta region and within the core study area. Compared with the larger Lower Delta region, the 36-county study area had a greater share of highly rural households, a smaller share of urbanized population, and lower average household incomes—characteristics associated with less desirable locations for large food retailers. These factors likely contribute to the lower levels of net accessibility observed in the core study area.

Low-income households had a greater share of food stamp redemptions in smaller supermarkets and grocery stores, indicating that low-income households within the study area were more likely to use smaller grocery stores, convenience stores, and specialized foodstores offering fewer selections and generally higher prices. These results indicate that potentially large numbers of low-income households in the 36-county study area may lack access to lower cost foods.

For Further Reading . . .

Ronald Cotterill and Andrew Franklin, *The Urban Grocery Store Gap*, Food Marketing Policy Issue Paper No. 8, Food Marketing Policy Center, University of Connecticut, April 1995.

Phillip R. Kaufman, James MacDonald, Steve Lutz, and Dave Smallwood, *Do the Poor Pay More for Food? Item Selection and Price Differences Affect Low-Income Household Food Costs*. AER-759, USDA-ERS, Nov. 1997.

Patricia M. Morris, *Higher Prices Fewer Choices; Shopping for Food in Rural America*, Washington, DC: Public Voice for Food and Health Policy, May 1990.

U.S. Department of Agriculture, Food and Nutrition Service, "Food Stamp Statistical Summary of Project Area Operations Report," July 1993.

Measuring Accessibility to Foodstores

To compare differences in accessibility of households to foodstores in the Lower Mississippi Delta study area, the Geographic Information System (GIS) was used.

GIS is a research tool for analyzing spatial relationships, such as a geographic representation. GIS relies on geographic coordinates (latitude and longitude) to convey geographic, or "spatial," information. GIS also allows for the combining of traditional empirical information (data) associated with physical coordinates (locations), resulting in a spatial representation of empirical data. For example, GIS typically includes geo-reference data to create maps of ZIP Code boundaries within a given spatial area. Considerable demographic data, such as population characteristics, are available from the 1990 Census of Population, and other sources are available for ZIP Codes. When these data are combined with the geo-reference data of GIS, maps can be created to provide a spatial representation of the ZIP Code demographic data.

GIS can also be used to aid our understanding of spatial relationships, such as the relationship of a household location to a foodstore destination in a specified geographic area. All else being equal, as distance to a destination increases, the accessibility of the destination is said to decrease. In economic terms, the relationship of distance to retail food spending can be thought of as a "spatial demand curve" in which the quantity purchased of a good or service decreases both as the good's price increases and as the household's transportation costs to purchase the good increase.

In this study of rural foodstore access, GIS methods were used to calculate two separate accessibility measures: (1) accessibility to large retailers by households, a measure of accessible foodstore sales (accessible supply); and (2) accessibility to household food expenditures by foodstores, a measure of accessible household food spending (accessible demand). Due to the lack of detailed geographic coordinates (latitude and longitude) for locations of grocery stores, supermarkets, and households, ZIP Code area centroids (the physical center of a ZIP Code) were used to represent their geographic location. Accessibility measures were made from each ZIP Code location in the study to all ZIP Code destinations within a 30-mile radius of the ZIP Code.

The separate measures of accessibility corresponding to the supply and demand for retail food by themselves provide only partial indicators of food sufficiency. The overriding question concerning food accessibility is to what extent are the food needs of households being met by large retailers. The answer lies in the relative comparisons of accessible supply with accessible demand or the degree to which the two measures are in balance. In economic terms, we want to test whether accessible supply equals accessible demand for retail food. A "net accessibility" measure was developed to account for disparities between geographic areas, using the ZIP Code centroid as the reference location. For each ZIP Code, the ratio of accessible retail sales (supply) to accessible food expenditures (demand) was calculated. A "net accessibility ratio" of 1.0 indicates food supplies and expenditures are in equilibrium for a given ZIP Code centroid. When net accessibility exceeds 1.0, accessible supplies exceed demand. Of greatest concern is the condition in which the ratio falls below 1.0. Here, accessible supplies fall short of demand, implying that some portion of households' food spending cannot be met by accessible large food retailers.

Mildred E. Warner

Local Government Financial Capacity and the Growing Importance of State Aid

Since the 1970's, the Federal Government has been turning back funding and authority to State and local governments. Devolution has important implications for local government finances. As direct Federal funds to counties decline, local wealth and the redistributive role played by the States become more important in determining local capacity for spending. These developments are illustrated by the experience of counties in eight Mid-Atlantic and East North Central States.

The devolution, or decentralization, of funding and program authority from Federal to State and local governments has been an American political theme for about three decades. Decentralization appeals to notions of efficiency and local autonomy. However, in the current debate on devolution, few are asking whether local governments have the capacity to meet the new demands being placed upon them. To be effective, local governments must have both the managerial and financial capacity to assume wider responsibilities. This article examines the growing imporance of devolution with particular attention to the financial capacity of counties in eight Mid-Atlantic and East North Central States.

Local governments' ability to raise revenue is limited in large part by local well-being. Because macroeconomic forces favor some locations over others, local ability to raise revenue is unevenly distributed across the Nation. State and Federal aid, as political sources of revenue, can ameliorate or exacerbate unequal financial capacity across local governments. For less prosperous counties, the developmental and redistributive roles of government can be critical in regaining economic activity and building the local tax base. In fact, per capita costs of service provision may actually rise during times of fiscal distress. Publicly provided goods and services are critical components of local well-being and "poor governments," which spend less than some minimum relative to other counties, have been found to persist in poverty longer than or emerge from crisis slower than other counties (Reeder and Jansen). As direct Federal aid to localities declines in both relative and absolute terms, the redistributive nature of State aid (both State-generated aid and Federal block grants to States) becomes more critical.

Mildred E. Warner is assistant professor in the Department of City and Regional Planning at Cornell University. This research was supported in part through USDA Hatch Act research funds (project 163939) administered through the Cornell University Agricultural Experiment Station. Additional research on this topic is being supported by USDA's National Research Initiative.

Three Waves of Devolution Since the 1970's

Since the 1970's, the United States has experimented with three different waves of devolution. The first, under Presidents Nixon and Ford in the 1970's, reflected a belief that the Federal Government could play a role in targeting support to people and places that were not prospering. Nixon shared President Johnson's commitment to providing Federal support for services but funneled this support through States and localities. He initiated general revenue sharing in 1973, bringing direct Federal aid to many localities for the first time. Local governments were also given freedom to allocate funds within a single, broad policy arena through the Comprehensive Employment and Training Act (CETA, 1973) and Community Development Block Grants (CDBG, 1974). Direct Federal aid to local governments reached its peak in 1978. This first wave can be described as "devolution with dollars."

The second wave came with the Reagan administration's "New Federalism," which brought a very different meaning to devolution—devolution of responsibility without funds, or "devolution without dollars." National attention shifted to performance of the economy as a whole. General economic reforms such as deregulation reduced Federal spending, and policies to lower inflation and interest rates were promoted with little regard to their differential impact on place. Responsibility for spatial inequality became the problem of States and localities. General revenue sharing to States ended in 1980 and was phased out for localities in 1986.

In the 1990's, relief from unfunded mandates became the battle cry of States and localities as they struggled to meet the challenges of devolution. In response, a third wave of devolution began, "devolution of authority." Some direct Federal programs have been cut back and converted into block grants over which States and localities will have wider discretion. Welfare reform represents the most far-reaching of these reforms, where Congress is shifting some authority over program standards to the States and reducing individual entitlements outright.

While the first wave of devolution acknowledged a major redistributive role for the Federal Government, the second and third waves of devolution are ceding this role to the States. However, interstate and interregional differences in welfare may not be addressed effectively at the State level. The Federal Government, because it draws its revenue from a wider array of tax instruments and from across all regions and economic sectors, is in a better position to finance equalizing investments than are the States (Peterson). Thus, we might expect increasing inequality among counties if redistributive funding is left to governments at the county and State levels. By looking at the response of State and local governments to the first two waves of devolution in the 1970's and 1980's, we may be alerted to key issues as our Nation continues the experiment with devolution in the 1990's.

Expenditures Higher in Metro Core and Nonadjacent Rural Areas

The fiscal needs of counties differ. Government expenditure is one reflection of fiscal need. After adjusting for inflation, per capita local government expenditures in the eight Mid-Atlantic and East North Central States increased by almost 17 percent during 1972-87 (from $1,029 in 1972 to $1,204 in 1987), partly as a result of expanded responsibilities due to devolution. Most of this increase was concentrated during 1982-87 ($1,073 in 1982 to $1,204 in 1987) when responsibilities, but not funds, were transferred to local governments. This was also a period of rapid economic growth following the severe recession in 1981-82. Since income is the key indicator of fiscal capacity, some of the spending increase is also attributable to increased fiscal capacity.

Population is the most common measure of fiscal need (one indicator used for most State and Federal general revenue sharing) but it does not reflect higher costs at both ends of the urban-rural spectrum. Reeder and Jansen argue that government costs are higher in metro areas due to concentrated population (and hence the need for more services) and in rural areas due to lack of economies of scale. Age of infrastructure, poverty level, and other demographic characteristics are also important determinants of need.

The most interesting aspect of local government expenditure is the dramatic differences in per capita spending levels across counties. Metro core counties (central cities) spent 70 percent more, on average, than their urban and rural counterparts in 1972. While other counties' spending increased in real terms relative to the metro core, there was still a 40-percent difference in mean local per capita expenditure by 1987. In 1982 and 1987, a clear pattern of higher expenditures for the nonadjacent rural counties emerges. This pattern lends credence to the notion of a cost curve with higher costs in both congested inner-city and sparsely populated rural areas (fig. 1).

Raising Revenue Is More Difficult in Metro Core and Nonadjacent Rural Counties

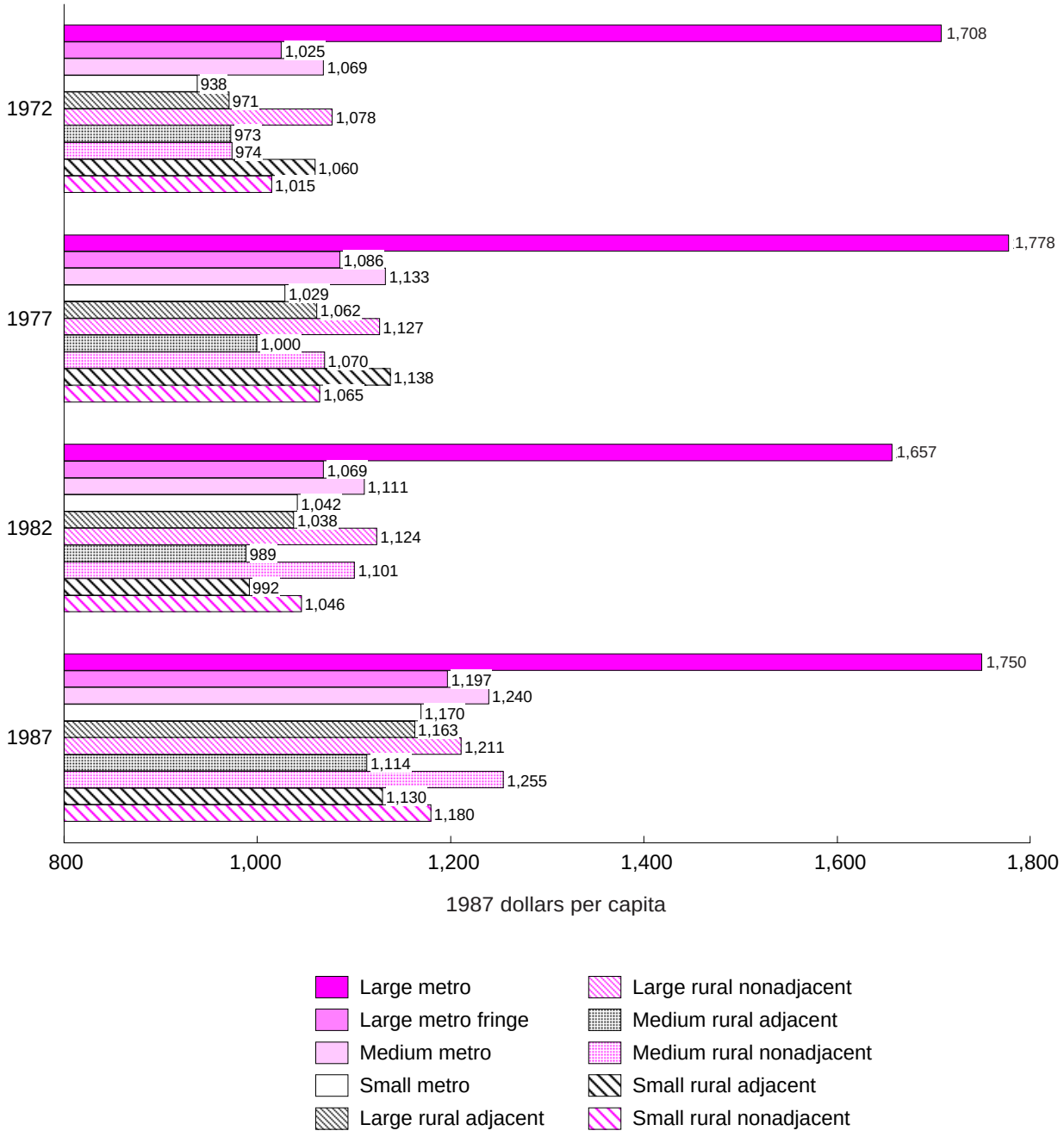
A county's tax burden can be better understood by looking at the amount of local effort it takes to obtain revenue. Local effort is usually measured as the ratio of locally raised revenue (taxes, user charges, and miscellaneous revenues) to local capacity (per capita income). In rural-urban comparisons, Reeder found that in rural areas with lower service levels, locally raised revenue accounts for a higher percentage of per capita income due to the high cost of providing essential services. Urban core counties have higher effort as well—a reflection of the higher service levels and higher taxes characteristic of large urban centers (fig. 2). Although effort dropped for nonadjacent rural areas in 1977 as rural counties gained access to Federal aid for the first time—through such programs as CDBG, general revenue sharing, and CETA—such relief was short-lived. By 1982, nonadjacent rural counties' effort rose dramatically again and, like the metro core counties, maintained a higher level than adjacent rural or small and medium urban counties.

An important aspect of local effort is the increasing reliance on user fees and other nontax sources of revenue over time. The tax (property, sales, income) portion of locally raised revenue declined by almost 9 percent in real terms from 1972 to 1977, as State aid and Federal aid rose. Real per capita tax revenue continued to fall in 1982, despite a drop in Federal and State aid levels. By 1987,

Figure 1

Mean current expenditures by county type

Expenditures are higher for metro core and nonadjacent rural counties

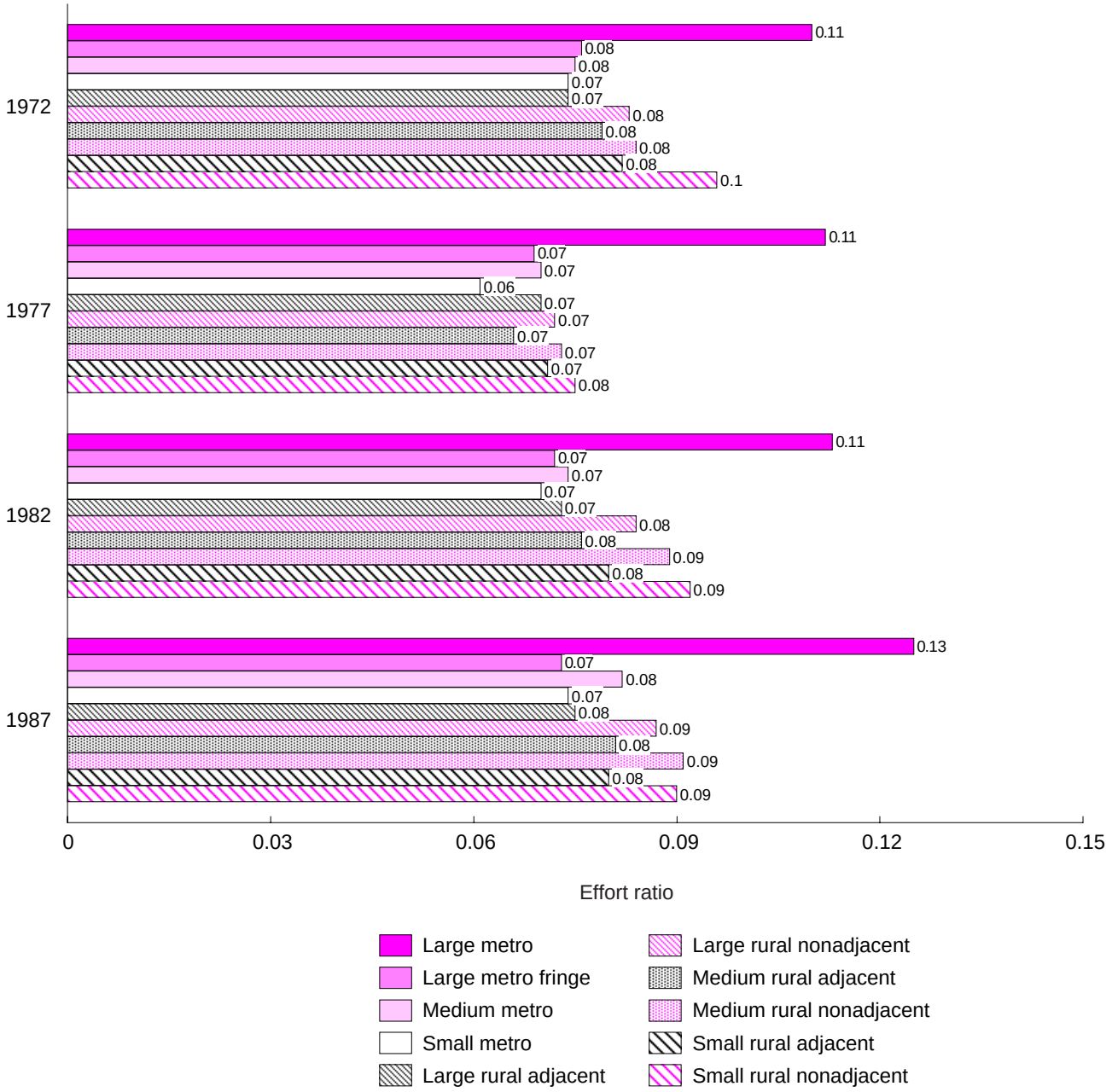


Note: All government finance data deflated by GDP Implicit Price Deflator for State and Local Government Services. Data reflect 587 counties in Mid-Atlantic and East North Central States, 1987 = 100. Per capita income data deflated by Consumer Price Index, 1987 = 100.
Source: U.S. Census of Governments, 1972, 1977, 1982, and 1987.

Figure 2

Mean fiscal effort by county type

Fiscal effort is higher for metro core and nonadjacent rural counties



Note: Effort ratio = (per capita local taxes + per capita user charges and miscellaneous revenue) / per capita income. All government finance data deflated by GDP Implicit Price Deflator for State and Local Government Services, 1987 = 100. Per capita income data deflated by Consumer Price Index; 1987 = 100. Data reflect 587 counties in Mid-Atlantic and East North Central States.

Source: U.S. Census of Governments 1972, 1977, 1982, 1987.

taxes had risen again but were still below their 1972 levels in real terms. Locally raised revenue increased in real terms in the 1980's in large part because of dramatic growth in miscellaneous revenues and user fees (table 1).

Local Investment Capacity Depends on Economic and Political Forces

The ability of local governments to raise revenue comes from both economic and political sources. The economic capacity to raise revenues is determined by local economic well-being—commonly measured as per capita income. Per capita income represents the relative wealth of a place and hence the ability to raise local revenue. Local wealth derives primarily from two sources: the local labor market and transfer payments. Larger macroeconomic forces determine the structure of local labor market opportunity, and demographic features (especially the proportion of elderly and children) determine the level of pension and transfer income.

While real per capita incomes grew for all county types in the Mid-Atlantic and East North Central States during 1970-80, there was an important spatial dimension to that growth. While the rural-urban income spread narrowed from 1970 to 1980, it widened again between 1980 and 1990 (table 2). By 1990, mean per capita income had

Table 1

Components of locally raised revenue, mean dollars per capita, 1972-87

Taxes remain flat, while user fees rise

Year	Locally raised revenue	Taxes		Miscellaneous revenue and user fees	
	Dollars per capita	Dollars per capita	Percent of total	Dollars per capita	Percent of total
1972	738	559	76	179	24
1977	687	501	73	186	27
1982	757	487	64	270	36
1987	844	539	64	305	36

Note: Constant dollars, 1987=100. Government Finance Data deflated by Implicit Price Deflator for State and Local Government Services, 1987=100. Mid-Atlantic and East North Central States, N=587 counties.

Source: U.S. Census of Governments, 1972, 1977, 1982, 1987.

Table 2

Mean per capita income by county type, 1970-90

Per capita income rose for all counties from 1970 to 1980, but fell for all rural county types from 1980 to 1990

County type*	1970	1980	1990
		Dollars (1987=100)	
Large metro core	11,028	11,818	14,447
Large metro fringe	10,381	12,499	12,103
Medium metro	9480	10,935	11,456
Small metro	9139	10,926	10,536
Large rural adjacent	8829	10,404	10,223
Large rural nonadjacent	8083	9689	9374
Medium rural adjacent	8174	9861	9656
Medium rural nonadjacent	7653	9360	9049
Small rural adjacent	7576	9208	9078
Small rural nonadjacent	6373	8536	8350

Note: Income is deflated by the Consumer Price Index, 1987=100. Mid-Atlantic and East North Central States, N=587 counties.

*Number of counties in each category varies slightly over the time periods due to recalculation of the county typology for each decade: 1970, 1980, and 1990, respectively.

Source: U.S. Census of Population and Housing, 1970, 1980, and 1990.

increased dramatically for large metro core counties and significantly for medium metro counties but had fallen for all other county types. Variation within county types increased for all except the rural counties, and this variation was especially dramatic for large metro core counties, suggesting significant differences in fate due to economic restructuring for large cities across the eight-State region.

Local governments can do little to increase economic capacity since local economic well-being is primarily determined by broader macroeconomic and demographic forces. Thus, we must look to political sources to equalize capacity for investment across counties. Political capacity reflects the will to tax and spend. It includes local effort (willingness to tax oneself) as well as State and Federal redistributive aid. We already see higher effort levels among large metro core and nonadjacent rural counties. However, local political capacity is constrained by competition among localities; firms and residents will move to lower cost jurisdictions, everything else being equal (Peterson). Thus, an equalizing role is left primarily to Federal and State governments.

Redistributive Aid Depends on State and Federal Sources

A common rationale for intergovernmental aid is to equalize the burden of providing standard-quality public services. Fiscal disadvantage arises from both below-average capacity to raise revenues and above-average costs of providing service quality (Ladd and Yinger). Rural areas have both of these disadvantages. Local fiscal capacity, effort, and need all figure into the rationale for intergovernmental aid.

The importance of economic capacity is reflected in table 3, where we see that local investment capacity is primarily a function of locally raised revenue. Own-source (locally raised) revenue is the most significant component of total local revenue across all county types and all years. State aid is next in importance, hovering around 38 percent of the total. Federal aid is interesting because of its extreme volatility and its small magnitude relative to other sources of revenue. Most Federal aid—such as Social Security and Medicaid—goes directly to individuals: thus, direct per capita aid to places (the variable measured here) is relatively small. Some Federal aid to localities passes through States first as block grants. This aid is counted in the State aid total because decisions about how to redistribute the funds are made at the State level.

To equalize capacity and service quality across places, State and Federal aid to local governments is key. During the first wave of devolution (1972-77), direct Federal aid to local governments rose dramatically for all county types, but has been falling steadily (in real terms) since. State aid tracked Federal aid, rising in 1977 and falling in 1982 (table 3). Although mean Federal aid continued to fall in 1987, State aid rose again, suggesting an increasingly important role played by States during the Reagan years. Both Federal and State aid are disproportionately distributed to metro core counties. Throughout 1972-87, metro core counties received roughly double the Federal aid and 50 percent more State aid per capita than other counties. Nonadjacent rural counties also received more Federal aid, but not significantly more State aid. Large metro fringe counties received the lowest per capita State aid of any of the county types (figs. 3 and 4).

State Policy a Critical Determinant of Local Economic Health

Although direct Federal aid to local governments is relatively small and has declined dramatically during 1972-87, it plays an important redistributive function—giving more to places exhibiting higher fiscal effort and higher need—both rural and urban. State aid (which includes Federal pass-through aid) is vastly larger in magnitude

Table 3

Mean revenue per capita by source, 1972-87

Local revenue primarily depends on locally raised funds and State aid

Year	Own-source revenue		State aid		Federal aid	
	Dollars	Percent of total	Dollars	Percent of total	Dollars	Percent of total
1972	738	60	476	38	23	2
1977	687	54	516	40	81	6
1982	757	59	469	36	67	5
1987	844	59	538	38	50	3

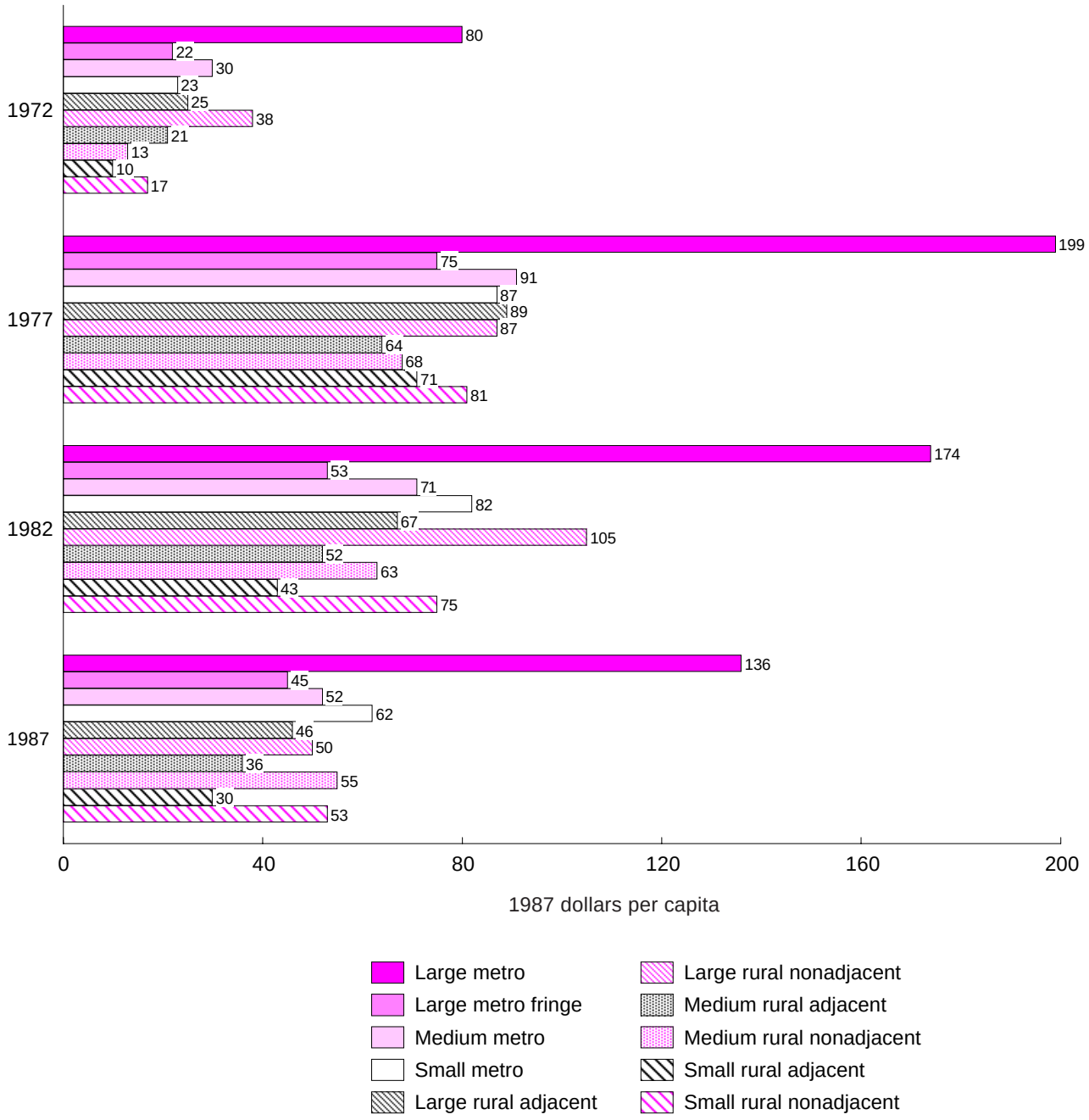
Note: Government finance data deflated by Implicit Price Deflator for State and Local Government Services, 1987=100. Mid-Atlantic and East North Central States, N=587 counties.

Source: U.S. Census of Governments 1972, 1977, 1982, 1987.

Figure 3

Mean Federal aid by county type

Federal aid favors metro core counties

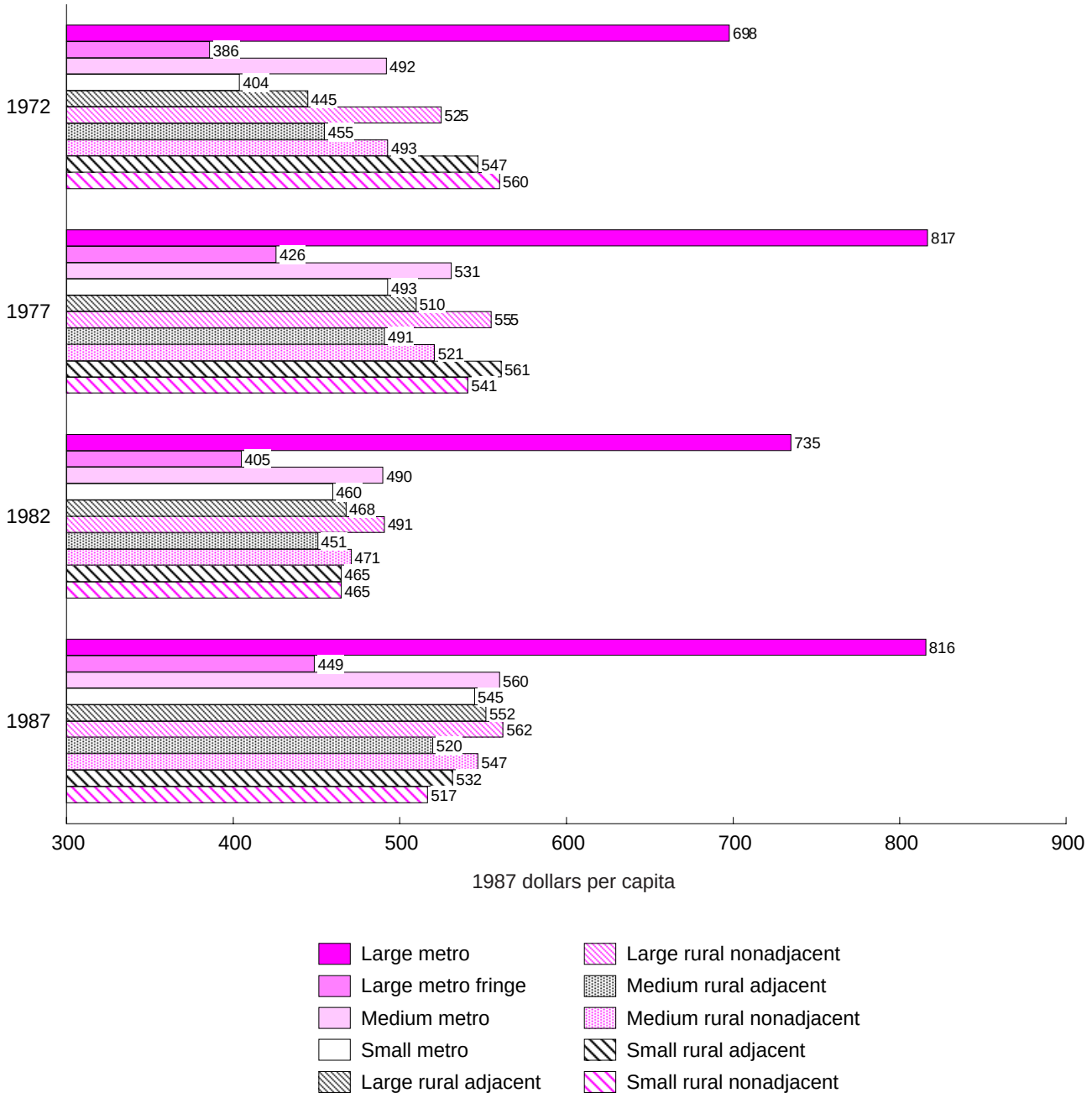


Note: All government finance data deflated by GDP Implicit Price Deflator for State and Local Government Services, 1987 = 100. Per capita income data deflated by Consumer Price Index, 1987 = 100. Data reflect 587 counties in Mid-Atlantic and East North Central States.
Source: U.S. Census of Governments, 1972, 1977, 1982, 1987.

Figure 4

Mean State aid by county type

State aid favors metro core counties



Note: All government finance data deflated by GDP Implicit Price Deflator for State and Local Government Services, 1987 = 100. Per capita income data deflated by Consumer Price Index, 1987 = 100. Data reflect 587 counties in Mid-Atlantic and East North Central States.

Source: U.S. Census of Governments, 1972, 1977, 1982, 1987.

Data, Methods, and Study Region

This article reviews local government expenditure and revenue over 1972-87 among counties in eight States of the Mid-Atlantic and East North Central: Illinois, Indiana, Michigan, New Jersey, New York, Pennsylvania, Ohio, and Wisconsin.

Using census of governments data from 1972, 1977, 1982, and 1987, the study explores shifts in the level and makeup of local government revenue. Current general expenditures and revenue-raising efforts of local governments are studied as well as State and Federal aid. To compare across years and counties of different size, all government finance data are adjusted for inflation and presented on a real per capita basis. I used the Implicit Price Deflator for State and Local Government Services (*Economic Report of the President*, *1993*) to deflate government expenditures and the Consumer Price Index to deflate per capita income. The census of governments includes all governmental jurisdictions (including school districts) that operate in each county and aggregates data to the county level. Jurisdictions that cross county lines are counted in the county of their administrative headquarters.

Nongeneral expenditures (such as spending of publicly owned utilities) and capital expenditures are excluded from the analysis. Utility expenditures vary widely across place. Capital expenditures, reported in the year investments are made, vary dramatically across time. Because census figures are only available every 5 years, general expenditures, which are most comparable across place and time, are used.

Of particular interest is how expenses and revenues differ among counties across the rural-urban spectrum. Rural-urban continuum codes are developed by USDA based on data collected with each decennial census. Counties are grouped into 10 categories based on size of central place and adjacency to metro counties as follows:

Large Metro Core—central counties of metro areas of 1 million population or more;

Large Metro Fringe—fringe counties of metro areas of 1 million population or more;

Medium Metro Core—counties in metro areas of 250,000 to 1 million population;

Small Metro Core—counties in metro areas of less than 250,000 population;

Large Rural Adjacent—urban population greater than 20,000, adjacent to a metro area;

Large Rural Nonadjacent—urban population greater than 20,000, not adjacent to a metro area;

Medium Rural Adjacent—urban population 2,500 to 19,999, adjacent to a metro area;

Medium Rural Nonadjacent—urban population 2,500 to 19,999, not adjacent to a metro area;

Small Rural Adjacent—no places with population of 2,500 or more, adjacent to a metro area;

Small Rural Nonadjacent—no places with population of 2,500 or more, not adjacent to a metro area.

than direct Federal aid, and thus a more important determinant of local capacity for investment. However, the redistributive nature of State aid varies considerably across States, and is not as sensitive as Federal aid to cost differences and the greater fiscal effort of rural places (Warner). If States do not assume a more redistributive role, inequality in local investment capacity may increase for rural counties.

While intergovernmental aid is a very important tool to achieve fiscal equity, it is not the only policy option. States can help localities by assuming more responsibility for providing services and thereby decreasing the need for local expenditures. During 1972-87, most States in the Mid-Atlantic and East North Central regions increased fiscal centralization of local government services (particularly in health and welfare). States also may choose to increase local access to a wider range of fundraising mechanisms. With property tax levels already at a political maximum (as demonstrated by flat real tax revenue over the study period), local governments clearly need access to alternative taxing mechanisms if they are to assume the broader responsibilities being passed down to them with devolution. Access to a portion of State income or sales taxes would be one example. Wider access to user fees (a mechanism of increasing importance to local governments) is another option.

In a global economy, little exists to cushion localities from the vagaries of the global marketplace. This results in wide variation in local well-being across counties. To the extent that local public sector investments are deemed important to create a "level playing field" of basic services such as education and infrastructure to promote local development, we may expect to see rising inequality as a result of both market forces and widely divergent local government investment capacity. State aid to localities has the potential to play a much more significant role in equalizing local capacity for investment.

If States do not become more sensitive to the important redistributive role they play with respect to rural counties, we may see a vicious circle of increasing disadvantage develop. Economic capacity of many rural places is lower due to labor markets dominated by routine manufacturing, services, or extractive industries (McGranahan and Ghelfi). Costs of providing services are higher due to lack of economies of scale. Like their high-cost metro core counterparts, these nonadjacent rural places exhibit higher local effort. However, Federal and State aid are not significantly higher for these rural areas. Without the buffer of redistributive aid from Federal and State sources, nonadjacent rural places may find it increasingly difficult to take on important responsibilities implicit with devolution.

For Further Reading . . .

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Debra L. Blackwell and Diane K. McLaughlin

Do Rural Youth Attain Their Educational Goals?

While boys and girls have similar educational aspirations and eventually attain similar educational levels, family background characteristics matter more to girls, especially rural girls. Additionally, rural girls do not enjoy the same educational benefits from taking part in extracurricular activities, despite the fact that they have relatively high participation rates. In contrast, male aspirations and attainment appear to be less the result of family background processes and more a result of their own achievement and activities. The largest differentials in educational goals and attainment occur within rural and urban areas between those who experience advantaged versus disadvantaged family backgrounds, schools, and communities.

Residents of rural areas typically have lower overall educational attainment than urban residents. Data from the 1993 Current Population Survey reveal that 61.9 percent of nonmetro residents age 25 and over had at most completed high school or earned an associate's degree at a community college, compared with 57.4 percent of metro residents. Only 13.4 percent of nonmetro residents obtained a college degree (at least 4 years of college) compared with 24.3 percent of metro residents. This gap persists even for young adults. Among persons age 25 to 34 in 1993, 71.5 percent of nonmetro persons had completed high school or community college, and 13.2 percent had completed college or more. This compares with 61 and 26.4 percent of metro residents the same age. This can have long-term consequences for nonmetro young adults, as lower rural educational attainment typically translates into reduced access to existing occupational opportunities and lower earnings.

Why does this urban-rural gap in educational attainment remain? Do rural youth have different educational goals and aspirations than urban youth? If not, are urban youth somehow better able to attain their educational goals than rural youth? What family, school, or community factors influence educational attainment? We examine these questions using data from the National Longitudinal Survey of Youth (NLSY). The young men and women in our sample were age 14 to 17 and were still enrolled in school in 1979. By 1990, the sample respondents were 25 to 28 years old and many had completed their educations.

The educational goals of the youth in the NLSY in 1979 show that rural youth aspired to fewer years of education than their urban counterparts (fig. 1). Rural boys' and girls' aspirations averaged 13.8 and 14.2 years of education, respectively. Both urban boys and girls had aspirations of 14.6 years of school, on average. If we look at how much education these individuals had received by 1990 (fig. 1), none of the groups had reached their average educational aspirations. However, rural youth came closer to achieving their goals than urban youth. For example, rural boys' attainment was 1.2 years less, on average, than their aspirations, the smallest difference between attainment and goals of the four groups. But, rural youth had lower aspirations to begin with—and rural boys had the lowest aspirations of the four groups.

Family Background Influences the Attainment of Educational Goals

What factors influence the ability of youth to achieve their educational goals? These influences can be categorized as traits of the individual, the family, the school, and the

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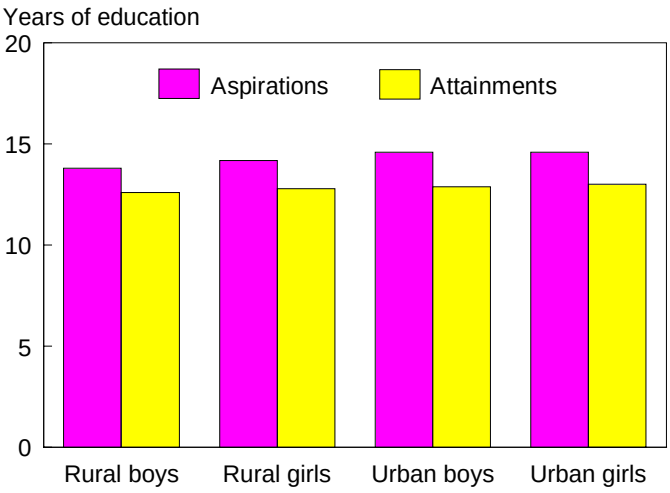
Figure 1
Educational aspirations and attainment
Rural and urban youth have different educational aspirations but end up with similar mean attainment levels



Source: National Longitudinal Survey of Youth, 1979-1990.

community (see "The National Longitudinal Survey of Youth"). A student's characteristics that influence educational attainment can be separated into those that would be expected to increase educational attainment and those that would hinder continued enrollment in school. Students with higher self-esteem and higher educational goals plan their educational careers by taking the college preparatory curriculum in high school, and they have the confidence to follow through on those goals. Having friends with high educational goals also increases student interest in and support for continuing beyond high school. On the other hand, students who experience a teen birth, who face suspension or expulsion from school for behavioral problems, or who are involved in illegal activity are less able to follow through on educational goals, and may have lower goals to begin with. For young women, attitudes toward women's roles may influence their educational aspirations and attainment.

Many characteristics of the students themselves are indeed shaped by the family and community in which the students live. Family background characteristics are important determinants of educational goals and attainment. Children whose parents have attained higher educational levels are themselves more likely to perceive college as a reasonable goal that will be supported by their families. Seeing an older sibling attend college also is likely to give younger siblings a role model and to start them thinking about college sooner. Parents with higher prestige and higher paid occupations may be able to provide more support, both economic and moral, for their children to attain higher education. Family structure may also play a role, with children from female-headed families or poor families less likely to achieve higher levels of education. The reasons for this may range from lack of economic resources to differences in the outlook of children from these families.

The urban youth in our sample are much more likely to have parents who have completed some college and who hold professional occupations. Roughly 40 percent of the urban youth had a father who had some college, while only about 27 percent of rural youth did (table 1). About 20 percent of urban mothers, compared with roughly 11 percent of rural mothers, had some college experience. Rural youth were less likely to be in a one-parent family and were more likely to belong to a two-parent biological family at age 14. For the rural boys, almost 81 percent lived in their biological family at age 14, compared with about 70 percent of urban boys. Differences in poverty and family size were minimal between rural and urban boys and girls.

Families also supply learning resources and emotional support for children's higher educational attainment . Families that have magazines and newspapers and that hold library cards provide resources for learning and an emphasis on the importance of books and reading. In contrast, parents who are influential in their children's lives but discourage their children from attending college can send a very strong message that limits their children's goals and attainment. Urban children had slightly more educational resources in their homes than rural youth (table 1). Also, about one-quarter of rural boys reported that an influential parent discouraged them from attending college, whereas only 16 percent of rural girls reported such discouragement from a parent. Among urban youth of both sexes, over 18 percent had influential parents who discouraged college attendance. The gender difference in discouraging college attendance in rural areas is interesting and may reflect the continued reliance in rural areas on jobs in extractive industries, manufacturing, and low-level services where parents may not perceive a need for a college education. Such practices may also relate to the expectation among rural parents that if their son attends college he will not return home, but will find employment in another location. Daughters may not face the same discouragement because it is assumed that they would not even think about college, or because some jobs held by women in rural areas—teachers, nurses, or health-care workers—require education beyond high school but may not draw women away from home.

School Characteristics and Extracurricular Activities Influence Attainment

School attributes may also influence students in completing high school and attending college. Dropout rates and daily student attendance measure the level of commitment or motivation that students in a particular school have

Table 1

Weighted means for selected family background variables, 1979-90

Urban youth are more advantaged in terms of parental occupation and educational status

Variable	Rural boys	Rural girls	Urban boys	Urban girls
		Years		
Dependent variables:				
Educational aspirations in 1979	13.8	14.2	14.6	14.6
Educational attainment (as of 1990)	12.6	12.8	12.9	13.0
Independent variables:		Percent		
Family background—				
Father attained some college	27.4	27.5	42.2	38.1
Father attained high school diploma	33.8	36.3	31.8	32.5
Mother attained some college	11.7	10.5	22.5	19.7
Mother attained high school diploma	50.2	48.1	43.6	43.0
Eldest sibling attained some college	11.9	10.1	13.0	14.6
Professional/managerial/technical father	17.2	18.0	22.9	21.5
Professional/managerial/technical mother	5.5	6.1	10.0	10.3
Biological family (respondent is 14)	80.9	75.3	69.5	69.5
One-parent family (respondent is 14)	7.9	10.3	16.8	16.6
Family has 4 or fewer members	42.8	44.2	43.2	44.9
Respondent's family was poor in 1979-82	14.9	14.2	15.1	14.8
Family resources—				
Parent did not encourage respondent to attend college	25.5	15.5	18.3	18.9
		Scale, 1-3*		
Newspaper/magazine/library card	2.02	1.97	2.22	2.28

*Receiving a newspaper or magazine or possessing a library card each counted as 1 point.
Source: National Longitudinal Survey of Youth, 1979-1990.

toward education, as well as that school's ability to inspire commitment and motivation in its students. Schools with high dropout and truancy rates are probably not maintaining an achievement-oriented learning atmosphere. Small schools may have limited resources, fewer counselors and teachers, and a less varied curriculum. Schools also vary in the quality of their teaching staffs, particularly regarding the amount of training teachers have received. Salary levels of beginning teachers also reflect the quality of a school's teaching staff and provide an overall indicator of a school's expenditures per student.

Schools also offer opportunities for children to become involved in extracurricular activities. School clubs involve obligations and expectations, serve as information channels for students, reinforce school norms, and are likely to be important for admission to college. Extracurricular activities may also require the participation of parents from time to time, increasing the potential for both parent-child (within and across families) and parent-parent interactions. This, in turn, brings people together and facilitates the formation of school and community connections and networks, a form of social capital. Extracurricular high school activities can also have different effects according to gender. High school team sports, for example, typically involve boys much more than girls. On the other hand, girls typically pursue activities that involve the formation of cultural capital—such as playing in a band or engaging in drama club—more often than boys. In either case, school activities help form social and cultural capital and encourage participants to become more embedded in and committed to their schools. Students may form higher aspirations and attain more years of education as a result.

Rural youth were more likely to have participated in student government; vocational clubs; band, orchestra, or drama clubs; and high school newspaper/yearbook activities than were urban youth of the same gender (table 2). For example, 41 percent of rural girls took part in vocational clubs, as opposed to 30 percent of urban girls; for rural and urban boys, the percentages were 35 and 18 percent.

Finally, the characteristics of the area in which the youth live can influence their attitudes and beliefs about the importance of educational attainment. Areas with higher family incomes, lower poverty rates, and higher educational attainment of adults may provide an atmosphere of strong support for higher levels of educational attainment. Such communities would also provide good role models, showing the advantages of staying in school.

Combined Effects of Family Background, School Attributes, and Club Activity on Educational Attainment

How does educational attainment differ for youth who have different family backgrounds and resources, attend different schools, participate in different extracurricular activities, and live in different types of communities? For the most part, the effects of local-area measures are small or nonexistent. But local-area indicators of median family income and percentage of adults with 4 or more years of college do have statistically important effects on the educational attainment of rural boys. In particular, rural boys gain additional years of school from living in communities with higher percentages of college graduates. For example, if 13 percent of adults in the community (the mean on this variable for rural boys) are college graduates, there is a corresponding increase in educational attainment of nearly 6 months compared with communities where there are no college graduates; if 25 percent of adults are college graduates, the gain is roughly 1 additional year of school. Regarding rural females, the unemployment rate is positively associated with educational attainment, suggesting that young women may remain in school if they live in communities with higher unemployment.

Family background appears to matter more in the educational attainment of young women than young men. Parental education is very important in explaining the educational attainment of both rural and urban girls, and to a lesser extent, urban boys. Rural girls gain more from family background and resource measures than do urban girls. Having college-educated parents—and mothers in particular—pays big educational dividends to young women; even having high school-educated parents is beneficial compared with having parents who did not com-

Table 2

Weighted means for nonfamily variables, 1979-90

Rural girls have the highest overall levels of participation in extracurricular school activities

Variable	Rural boys	Rural girls	Urban boys	Urban girls
		Percent		
Independent variables:				
Extracurricular activities—				
Participation in student government	10.7	18.7	10.4	16.8
Participation in hobby club	8.9	11.5	10.0	13.1
Participation in community club	8.2	10.6	11.1	11.1
Participation in vocational club	35.4	40.9	18.4	30.2
Participation in band/orchestra/drama	19.1	33.6	16.9	26.6
Participation in high school sports	48.5	35.6	44.9	37.4
Participation in honors club/society	10.7	19.7	12.1	17.7
Participation in yearbook/school newspaper	10.1	21.5	8.8	16.8
Local-area measures (1980)—				
Aged 25+, high school diploma	49.4	48.5	50.7	50.4
Aged 25+, college degree or more	13.1	13.7	16.2	16.2
Families with female head	13.9	14.2	18.0	17.9
Families living below poverty line	13.1	13.4	13.5	13.4
Unemployed	7.0	6.8	6.8	6.7
Rural	47.3	44.2	21.1	21.1
		Dollars		
Median family income	18,625	18,854	20,306	20,386

Source: National Longitudinal Survey of Youth, 1979-1990.

plete high school. In contrast, parental education does not explain the educational attainment of rural boys. Rural and urban girls and urban boys benefit from having a father in a professional, managerial, or technical occupation, with rural girls gaining almost 10 months of school. Parental occupation is unrelated to the educational attainment of rural boys, however. Interestingly, having a parent discourage college attendance has no effect on the educational attainment of rural girls. But, a parent discouraging college attendance decreases attainment for the remaining three groups, with rural boys being more affected than either urban boys or girls. Last, family poverty is more detrimental to rural boys than to either rural girls or urban youth.

Extracurricular activities have an important impact on educational attainment. Despite the fact that we control for a variety of high school clubs, our results suggest that these club activities make statistically significant, independent contributions to overall educational attainment of all four groups. While their overall participation levels are high, rural girls gain the least, in terms of years of schooling, from participating in clubs. Only participation in an honors society increases educational attainment of rural girls. In contrast, rural boys gain from participating in sports, community clubs (like scouting or Junior Achievement), and honors clubs (there is a negative effect associated with participation in vocational clubs). Club activity especially increases the educational outcomes of urban girls, whose participation in student government; band / orchestra / drama activities; and hobby, community, and honors clubs is associated with higher educational attainment (again, girls who join vocational clubs usually finish fewer years of school). Finally, urban males gain additional schooling from participation in student government, community and hobby clubs, sports, and honors societies.

Bundling Advantages Produces More Variation in Educational Goals/Attainment

How do educational goals and attainment differ when we vary individual characteristics, family backgrounds and resources, involvement in extracurricular activities, and community characteristics? We combine characteristics to identify three hypothetical types of youth: advantaged, average, and disadvantaged. The advantaged youth is White, has college-educated parents employed in professional occupations who also provide high levels of family resources, attends a good high school (with well-paid, well-educated teachers, low dropout rates, and high student attendance), is in a college-prep curriculum, has high self-esteem, has a best friend with aspirations for a college degree, and participates in all types of clubs. The advantaged rural boy aspires to 17.3 years of school (fig. 2). Advantaged rural girls aspire to even higher amounts of education, 18.1 years. As high as these aspirations are, they lag those of urban youth, where advantaged boys desire 18.6 years, and advantaged girls want 18.2 years of school, on average.

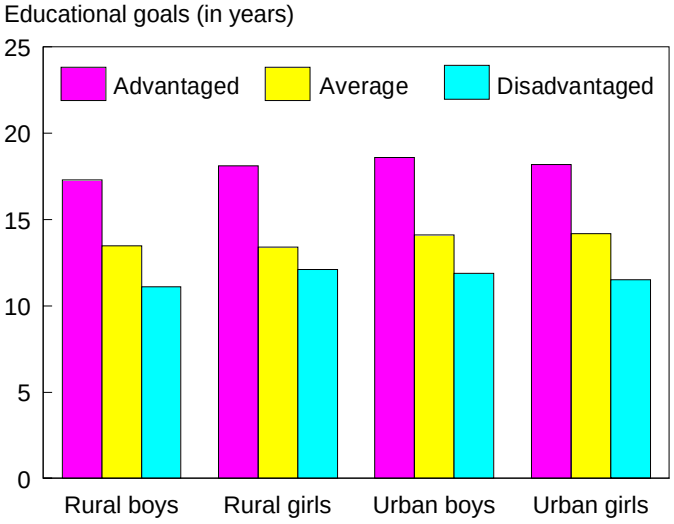
When we look at the average youth, educational aspirations in every group drop by about 4 years, the equivalent of a college education. The average youth is White; has parents who graduated from high school, are not employed in professional occupations, and provide some family resources; attends a good high school (with low dropout rates and high student attendance); is not in a college-prep curriculum; has a best friend with aspirations for "some college"; and does not participate in any clubs. Average rural youth aspire to roughly 13.5 years of school, regardless of gender, while average urban youth want just over 14 years of school (equivalent to an associate's degree), again regardless of gender.

Disadvantaged youth have average educational aspirations that are, for the most part, below high school. Their parents have less than high school educations, are not in professional occupations, provide no family resources, and discourage their children from attending college. Disadvantaged youth attend poor schools, are not in college-prep classes, do not have educationally motivated friends, do not join clubs, engage in delinquent activities, and may become a parent while in high school. Disadvantaged rural boys aspire to just 11.1 years of school, while disadvantaged rural girls want 12.1 years, on average. Among urban disadvantaged youth, boys wish to complete 11.9 years of school and girls only 11.5 years of

Figure 2

Predicted educational goals

Breakdowns by family background and school attributes produce more variation in educational goals



Source: National Longitudinal Survey of Youth, 1979-1990.

school. With the exception of rural girls, none of the disadvantaged groups aspires to a high school diploma.

Regarding educational attainment, advantaged rural boys are likely to complete an estimated 18.4 years of school on average, and advantaged rural girls have an estimated educational attainment of 19.1 years—clearly, well beyond a 4-year college degree (fig. 3). Advantaged urban youth will likely complete even more years of school: girls nearly 19 years and boys 19.3 years. Average rural boys can be expected to complete 13.1 years of school, more than high school but far less than any college degree. Average rural girls attain more schooling, 14.2 years. Among urban youth, average girls and boys will likely complete 13.9 and 12.7 years of school, respectively. Predicted attainments of disadvantaged youth are quite low: rural boys are likely to attain only 9.4 years of school; rural girls, 10.9 years; urban boys, 9.9 years; and urban girls, 9.6 years. The estimated attainments of both average and disadvantaged youth generally fall short of their goals. Advantaged youth, on the other hand, are likely to attain far more education than that to which they aspire. The result, among the underachievers at least, may be a lingering frustration with the school system over unmet educational goals; they may conclude that school was not for them—and is not for their children as well. What these comparisons show is that the largest differentials in educational attainment occur within residence and gender groups.

To further examine residential discrepancies, we asked what the estimated educational attainment of rural girls would be if they received the same educational benefits from participating in high school clubs that urban girls receive. Figure 4 shows predicted educational attainments for disadvantaged (10.9 years), average (14.2 years), and advantaged (19.1 years) rural girls (the same values shown in figure 3), along with adjusted predictions. An advantaged rural girl would gain one-half year of additional schooling (or a predicted total of 19.6 years). And if average rural girls took part in all school clubs (except honors) and benefited to the same extent as urban girls, the gain in schooling is over a year (to 15.3 years). Finally, disadvantaged rural girls would gain 1.5 years of school (attaining 12.4 years) and the equivalent of a high school diploma.

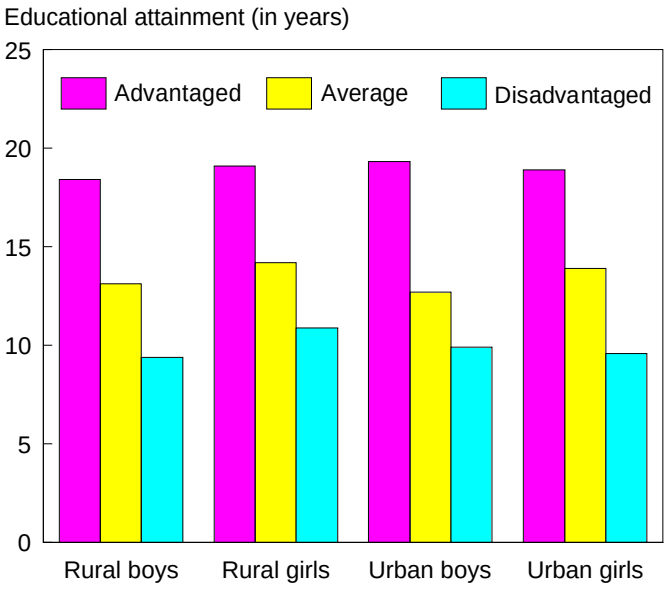
Summary and Conclusions

Our results suggest that, for the most part, rural youth have only slightly lower educational aspirations than urban youth. Moreover, after adjusting for factors that influence educational attainment to varying extents across rural and urban settings, rural youth eventually attain similar levels of education as urban youth with the same characteristics. Different characteristics contribute to these patterns, however. Educational attainment for girls appears to be more closely tied to family background and resources than for boys. Daughters of highly educated parents are clearly more likely to obtain additional schooling, with rural girls being particularly advantaged. In contrast, family back-

Figure 3

Predicted educational attainment

Family background and school attributes also result in gaps in completed schooling

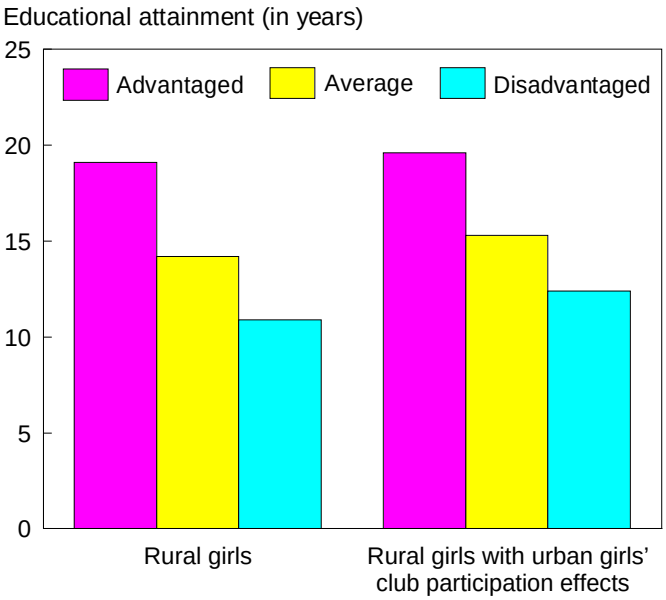


Source: National Longitudinal Survey of Youth, 1979-1990.

Figure 4

Predicted educational attainment of rural girls

Rural girls would attain more education if they benefited from club activities to the same extent as urban girls



Source: National Longitudinal Survey of Youth, 1979-1990.

ground matters less for boys, suggesting that personal achievement or other factors may be more important in determining their educational attainment. Regarding rural boys, community education levels positively influence educational attainment, indicating that the presence of well-educated role models in the community is important for rural boys' educational achievement. Urban girls may represent some middle ground, where both family background and extracurricular activities play important roles.

While the overall educational attainment of rural and urban boys and girls is not very different on average, within both rural and urban areas there are huge gaps in educational attainment between those who come from advantaged situations and those who do not. There is a gap (of at least 8 years) in predicted completed schooling between the advantaged and disadvantaged youth in each setting. Policy efforts to increase educational attainment in rural and urban areas alike would be most fruitful if they focused on strategies to improve the educational goals and attainment of the youth from disadvantaged and average backgrounds. Such strategies should begin well before high school, as the discrepancy in goals in this study was seen for 10th-grade students. Strategies might include exposing grade school and junior high school children to successful adults as role models, and giving students access to such individuals on a regular basis. Extracurricular activities that include a number of other students' parents, or others from the community, may be useful in this regard. Additional resources for learning—books, magazines, access to libraries and computers—and reinforcement to use such resources might increase disadvantaged students' interest in school.

However, it appears that such programs must be combined with efforts to convince parents, as well as children, that higher educational attainment is a realistic goal for the child. Counseling for parents and children on the advantages of attaining additional education, combined with programs that inform parents about financial assistance and scholarship programs, may make college a realistic option for these families. Schools also could establish programs to assist all parents, but especially less-educated parents, with completing the rather complex applications for financial assistance and aid. Helping disadvantaged families realize that college attendance for their child is within their grasp may lead such families to encourage their children to stay in school and work hard.

There also appears to be a need for a re-examination of extracurricular activities in rural schools. Why do rural girls who participate in many extracurricular activities receive little additional benefit from being involved compared with urban girls in terms of schooling completed? Are the extracurricular activities for rural girls not geared to encouraging additional educational attainment or investment in schooling? More detailed information on the types of activities carried out in extracurricular clubs might help explain this important difference in the benefits that clubs offer. Overall, our results suggest that all community members, especially those who have benefited from completing college, should take an active role in participating in school activities, especially with grade school and junior high school students. This participation can provide students with contacts and other adults with whom they can talk or discuss their dreams and goals, while providing successful role models. Such individuals may also be aware of programs that can help disadvantaged students obtain funding for college, or may provide another source of assistance in completing forms for college applications or financial aid.

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The National Longitudinal Survey of Youth

Our analyses are carried out using the data from the 1979 to 1990 surveys of the National Longitudinal Survey of Youth (NLSY). The NLSY is a nationally representative sample of 12,686 young men and young women who were 14 to 22 years of age when they were first interviewed in 1979. Oversamples of Blacks, Hispanics, and low-income Whites are also included in the sample. The initial survey collected detailed information on family background and resources, the influence of significant others, a locus-of-control scale, educational/occupational aspirations and expectations, and sex role attitudes. Subsequent surveys included questions on childhood residence and geographic mobility, delinquent behavior, and self-esteem. Detailed information was also obtained regarding high school experiences and activities (both respondent-specific and school-specific), and educational status and attainment. Additionally, separate data files indicate each respondent's current residence and childhood residence (at age 14), as well as environmental characteristics for the county or metro area of current residence, making the inclusion of local-area variables possible.

The variables are organized into the following categories.

I. Respondent's Personal Characteristics

Female, White, Black, number of siblings, birth order, lived in the South at age 14, childhood religion, church attendance (in 1979), high school parenting, class rank, college-prep curriculum, educational goals in 1979 (attainment analysis only), self-esteem, traditional outlook toward women's roles, educational goals of closest high school friend, residential migration, school suspensions and expulsions, illegal activity in 1980.

II. Family Background

Spanish spoken in childhood home, father's and mother's education and occupation (when respondent was age 14), eldest sibling's education, family structure at age 14, small family, poverty status (during 1979-82).

III. Family Resources

Magazines, newspaper subscriptions, and library card (held or received by any family member, when respondent was age 14), parent did not encourage respondent to attend college.

IV. Characteristics of the Respondent's High School

Public (vs. private), small school (fewer than 1,000 students), agricultural classes or trade/industrial classes available, daily attendance less than 89 percent, dropout rate 7 percent or more, 40 percent or more of students non-White, 60 percent or more of teachers with advanced degrees, (beginning) teacher salary indicator.

V. Respondent's Extracurricular Activities

Vocational club, community club, hobby club, student government, sports, performing arts, honors club, newspaper/yearbook.

VI. Local-Area Characteristics (1980)

Median family income, percentage of adults with high school diploma, percentage of adults with 4 or more years of college, percentage of families below poverty line, unemployment rate, percentage rural.

We split the sample into four different groups (rural boys, rural girls, urban boys, and urban girls) and ran the models separately. We limited our analyses to those respondents who were in high school at the time of the first survey (respondents who were age 14 through 17 in 1979). Rural residence was determined in the first year by asking where respondents were living at age 14; our urban observations were derived from those respondents who replied that they were living in a town or city, while all other respondents (those who said they lived in the country but not on a farm, or on a farm or ranch) were coded as rural. Given this definition, the NLSY contains about 1,200 respondents age 14-17 in 1979 living in a rural area at age 14.

We first predicted educational goals. We then determined the statistically significant variables in the model and used these variables to estimate a simplified, "reduced form" model. We used a two-step procedure to estimate educational attainment. The two-step procedure was carried out in the attainment analysis to control for the fact that some respondents were still enrolled in school at the time of their last interview. Accordingly, these respondents (approximately 400) were used in the first stage to predict the probability of being in school at the time of their last interview; the results of this analysis were used in the second stage, which excludes these respondents, to control for the selection effects associated with educational attainment. Tables showing the complete models are available upon request.

The coefficients that result from the "aspirations" and "attainment" models were then used to predict the educational goals and attainment values shown in figures 2-4. Predictions of educational attainment are insightful because, unlike group means, they take into account the effects of the many individual, family, school, and neighborhood variables known to influence educational attainment.

Randall S. Sell, F. Larry Leistritz, and John C. Allen

Impact of the Telecommunications Act of 1996 for Rural Areas

The goals of the Telecommunications Act of 1996 include lower prices and higher quality services for customers. However, representatives of small telephone companies are concerned that rural areas will bear the brunt of the costs of a more competitive communications sector but receive few of the benefits. About 90 percent of 127 small telephone companies that responded to a nationwide survey believed that rural customers would benefit very little or not at all from the act's provisions. Rather, they believed the major benefits will accrue to business, high-toll (typically high-volume users), and urban customers, and to large telecommunications companies. State governments and public utility commissions may need to take action to ensure that rural residents have reasonably priced access to advanced telecommunications services.

The Telecommunications Act of 1996 (1996 Act) was passed to promote competition and reduce regulation in order to secure lower prices and higher quality services and to encourage the rapid deployment of new telecommunications technologies. The thrust of the 1996 Act is to substitute competition for economic regulation in local telecommunications markets. As such, the 1996 Act contrasts sharply with previous national policy (grounded in the common carrier provisions of the Communications Act of 1934), which was based on the concept that interstate and intrastate telecommunications services would be offered and regulated on a monopoly basis.

Most observers agree that the goals of the 1996 Act are desirable, and many believe that its provisions will ultimately lead to lower prices and higher quality services for the Nation's telecommunications customers. However, one of the concerns regarding the 1996 Act is that sparsely populated rural areas will bear the brunt of the costs of a more competitive telecommunications sector but receive little or none of the benefits. Because rural areas are generally higher cost areas for providing telecommunications services, some fear that telecommunications companies (telcos) will forsake these relatively high-cost areas and focus their efforts to provide higher quality services and/or lower prices on the more profitable urban and metro areas. We undertook this study to learn what small telcos felt the impact of the 1996 Act would be on rural areas and on the smaller telcos that often serve them. Specifically, 127 telecommunications companies were asked (1) how they see their future in the light of the expected increase in competition; (2) how they plan to respond to the new competitive environment; and (3) how various classes of customers, including rural customers, may be affected.

Rural Telecommunications Customers May Benefit Less From New Act

The telco representatives who responded to the survey believed almost unanimously that competition in local telecommunications markets will increase as a result of the 1996 Act and that rural areas will be affected by the increase in local competition. However, over 80 percent of the respondents also felt that the competitive environment resulting from the 1996 Act would not serve the best

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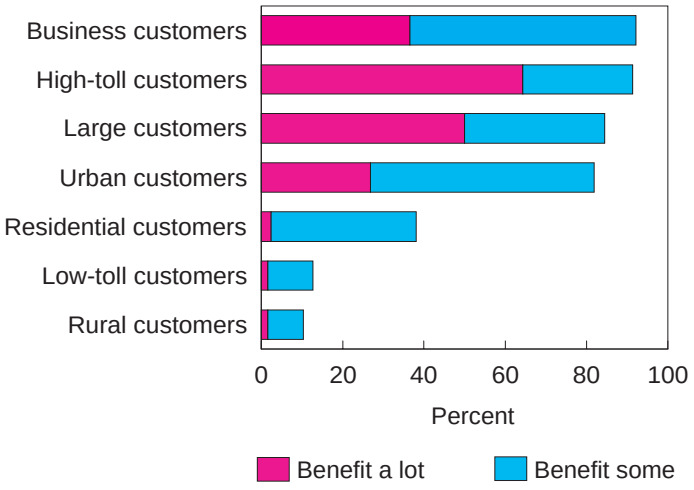
interests of rural customers. Rather, they believed that the major benefits from increased competition would accrue to business, high-toll, and urban customers, and to large telecommunications companies (fig. 1). Only 10 percent of the respondents felt that rural customers would "benefit a lot" or "benefit some" from increased competition, about 32 percent felt they would benefit very little, and 58 percent expected rural customers not to benefit at all.

Figure 1

Survey responses to which customers will benefit from Telecommunications Act of 1996

Business and high-toll customers are expected to benefit most



Source: Small Rural Telephone Firm Survey.

The smallest telcos were most likely to believe that the 1996 Act would not serve the interests of rural customers. Among the respondents with less than 1,000 access lines, 90 percent indicated that rural interests would not be served, compared with about 56 percent of respondents with 10,000 or more access lines.

When asked about the effects of the new competitive environment on rates for rural and urban customers, 63 percent of all respondents expected rural rates to be higher than urban, about 24 percent expected the rates to be equal, and only 13 percent expected rural rates to be lower than those for urban customers.

The respondents expected access to advanced telecommunications services to increase for both urban (89 percent) and rural (80 percent) customers. However, most did not expect that current differences between rural and urban customers' access to advanced services (such as Internet access or high-speed data or video services) would decrease. Opinions concerning these differences varied somewhat by region, as about 64 percent of respondents in the Northeast expected the differences to decrease, compared with only 24 percent in the West.

New Environment Poses Problems for Small Telcos

The respondents viewed the competitive environment resulting from the 1996 Act as posing major challenges to small telcos. Almost 90 percent believed that other telecommunications companies are likely to take their best customers (a practice known as "creaming") (table 1). The respondents also felt that the 1996 Act would result in

Table 1

Expected impact of Telecommunications Act of 1996 on business plans, 1997

Small telcos are expected to increase services regardless of eroding customer base and insecure financial future

	Agree	Disagree	Undecided
		Percent	
Facility upgrade plans are likely to be put on hold	61.4	36.2	2.4
The range of services small telcos offer will likely increase	69.3	28.3	2.4
Telco financing is likely to be harder to obtain	64.6	23.6	11.8
Telco expansion outside current service territories will likely be put on hold	37.0	54.3	8.7
The number of new employees hired will likely go up	37.8	55.1	7.1
The customer base of small telcos will likely erode	58.3	33.1	8.7
The financial future of small telcos is secure	11.0	81.9	7.1
Other telecommunications companies are likely to take the best customers from small telecommunications providers	89.8	9.4	0.8
The level of cooperation among small telcos is likely to increase	62.2	29.9	7.9
The competition between small and large telcos is likely to decrease	18.9	79.5	1.6

Source: Small Rural Telephone Firm Survey.

an increase in the range of services offered by small telcos (69 percent), but that telco financing would be harder to obtain (65 percent) and that facility upgrade plans are likely to be put on hold (61 percent). They agreed that the customer base of small telcos will likely erode as a result of "creaming" (58 percent), and that the level of cooperation among small telcos will likely increase (62 percent). They did not believe that competition between large and small telcos will likely decrease (80 percent disagreed), that the financial future of small telcos is secure (82 percent), that the number of new employees hired will likely go up (55 percent), or that telco expansion outside current service territories will likely be put on hold (54 percent).

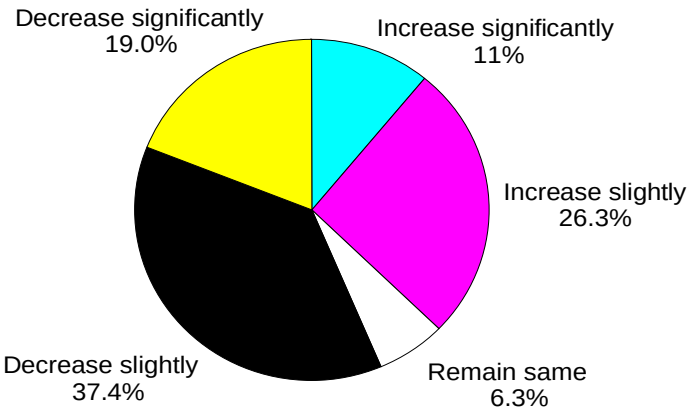
Considering the source and nature of increased competition, the respondents felt that wireless competitors, interexchange carriers (long-distance companies), and large local-exchange carriers were the most likely sources of competition. Most respondents (85 percent) felt that increased competition will most likely occur through resale, rather than through facilities-based competition. Competition through resale is generally less costly and more readily accomplished than competition that requires building infrastructure.

A majority (56.4 percent) of the respondents felt that the number of telecommunications companies would decline over the next 3 years, while 37.3 percent felt that the number of companies would increase and 6.3 percent expected no change (fig. 2).

Figure 2

Expected change in number of telecommunications companies within the next 3 years

The number of telcos is expected to drop



Source: Small Rural Telephone Firm Survey.

Most respondents anticipated that both business and residential telephone rates for rural customers would increase over the next 3 years, but that long-distance rates would decrease.

Rural Telcos Preparing for a More Competitive Future

The telco representatives generally agreed (81 percent) that future growth for their firms would be greater in the nonregulated aspects of their business (for example, Internet services and cellular telephone service) than in the regulated portion (such as local telephone and long-distance service). Nearly 94 percent of the larger telcos (more than 10,000 access lines) expected growth in the unregulated aspects of their business; 66 percent of the smaller telcos (less than 1,000 access lines) also expected growth in their unregulated business.

These companies seem willing to compete. When asked about changes they planned to make within the next 3 years to better position their business, 97 percent indicated that they would attempt to add to their service area. About 84 percent planned to add advanced services and 14 percent planned to maintain existing services. Only one firm planned to reduce its services. About 75 percent planned to add customer-based services (such as web page development and training for web page use), and 73 percent expected to invest in upgraded facilities and infrastructure. There was no difference in plans to add customer-based services by size of telco. Furthermore, about 64 percent of telcos who plan to add customer-based services also believed that the most prudent positioning for small telcos would be to add advanced services. About 61 percent of the firms planned to enter the long-distance market, while 34 percent expected to concentrate on the local exchange only (5 percent did not respond to this question).

The telcos were also asked about their plans to upgrade their copper facilities to fiberoptic cable, a prerequisite for implementing some types of advanced services. About 27 percent of the firms reported that they had already completed the upgrade to fiber, while about 41 percent were currently upgrading and 15 percent expected to upgrade in the future. Only 18 percent of the respondents did not intend to upgrade to fiber. There was no difference in plans to upgrade to fiber by size of telco. Nearly 90 percent of those who do not plan to upgrade to fiber also strongly agreed that the 1996 Act would put upgrade plans on hold for most small telcos. About 55 percent of those not planning to upgrade believed it would be prudent for small telcos to upgrade facilities and infrastructure. Alternatively, 70 percent of telcos who plan to upgrade, and 90 percent of telcos who have already completed upgrading, thought it would be prudent for small telcos to upgrade facilities and infrastructure.

Issues for State Regulators

This study examines small telcos' perceptions of the potential effects of the Telecommunications Act of 1996. Much of this study focuses on areas that State governments and public utility commissions (PUC's) can address. A particular concern is the potential slowing of infrastructure development in rural areas, especially by the smallest telcos with the fewest access lines. Because 61 percent of the telcos responding to this survey believed that facility upgrades will be put on hold as a result of the 1996 Act, State governments and PUC's may need to develop State-level plans to provide incentives or reduce barriers to facility upgrades if rural residents are to continue to participate in the global information society.

State PUC's will also need to monitor the movement of large telcos into rural areas. Given that almost 90 percent of the telcos surveyed believed that larger telcos will take their best customers, leaving the low-volume users (low-toll customers) for the local independent provider to service, regulatory mechanisms may be needed at the State level to ensure that rural residents maintain reasonably priced access to telephone services.

State regulatory commissions may also want to examine the currently unregulated services provided by telcos, given that 81 percent of the respondents indicated that they anticipate future growth to be greater in these aspects of their business than in the regulated portion. Some creative new activities by cable companies, such as providing alternative distance education for K-12 schools, may also come under scrutiny as definitions within the 1996 Act are litigated and established.

Although many rural telcos plan on placing upgrades on hold, they also expect that their competition will come primarily from resale rather than direct competition with new infrastructure (facilities-based competition). Maintaining up-to-date infrastructure may be overseen by State regulatory commissions if the competitive forces within the act fail to provide capitalization for new infrastructure. With 65 percent of the survey respondents believing that access to financing may become more difficult, regulators may need to monitor the credit situation.

In conclusion, the local telecommunications service providers surveyed do not expect the 1996 Act to benefit them or their rural customers. Because this study takes place as the 1996 Act is being implemented, time will tell if these perceptions become reality. These data provide a starting point to clarify issues about providing telecommunications service in rural areas as we approach the year 2000. However, major questions still exist about maintaining reasonably priced local service while upgrading infrastructure for access to more sophisticated technologies and services.

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Shanna Ratner

Multi-Agency Service Teams
A New Approach in Maine To Deliver Technical Assistance to Rural Manufacturers

In 1994, the State of Maine began an experiment to improve the coordination of technical assistance to wood products manufacturers. State and Federal agencies worked with colleges, private consultants, and nonprofit organizations to target assistance to the particular needs of the wood products industry. Results were generally positive but also showed the need to carefully match assistance with the requirements of the individual firm and to improve teamwork among service providers. Preparation and coordination emerged as key factors in determining the success of delivering services.

Providing technical assistance to small- to medium-sized rural manufacturers is a serious challenge. On the one hand, each manufacturer has a unique set of technical concerns plus a full range of business needs, such as financing, marketing, personnel management, and inventory control. Rural manufacturers are also often relatively small businesses, relying on the daily involvement of their owners. These businesses are often located in areas remote not only from markets but also from service providers. Many owners and/or managers of small- to medium-sized rural manufacturing firms are so caught up in day-to-day production challenges that they have little time to investigate the sources of assistance that may be available to them, and even less time to arrange and coordinate delivery of various types of assistance.

Technical assistance services available to manufacturers are often only available offsite. The owner or manager must travel to receive training or advice that may or may not prove applicable to their business. This is costly to the business in time and money. Under these circumstances, many businesses that need assistance receive none at all. Furthermore, technical assistance providers tend to specialize in business planning assistance, marketing, or production-related concerns. For example, the Maine Small Business Development Center helps businesses develop business plans, but its employees have had only limited exposure to the wood products industry. They are not in a position to assist wood products businesses in identifying and assessing new markets, for instance. Industrial Extension (from the Department of Industrial Cooperation) provides consulting in machining and plant layout but not in business practices or marketing. The Workforce Development Center

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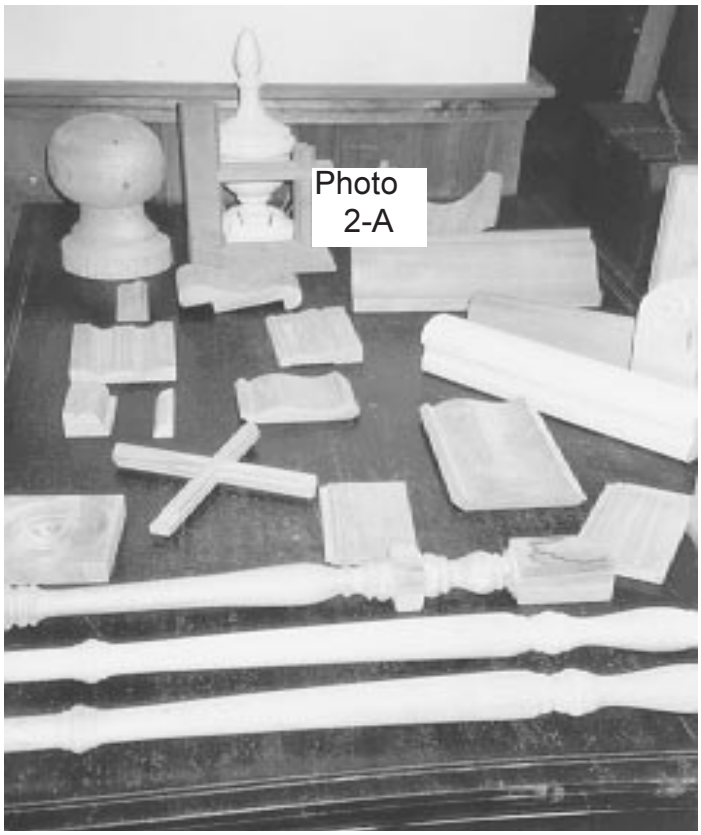
can assist businesses in meeting labor training needs, but has no experience in business development per se or in how to improve manufacturing efficiency and safety. Organizations offering technical assistance rarely take a holistic approach to client needs, nor are they often aware of services available to clients that fall outside their own particular areas of expertise, resulting in fragmented service delivery.

Recent reductions in funding for many Federal and State programs, and the new emphasis in government on reducing duplication of services and stretching existing programs as far as possible, may prompt innovative rural developers to investigate interagency cooperation, outreach to companies, and "teaming" as an approach to service delivery. This happened in Maine when the Maine State Planning Office and the Maine Rural Development Council decided to try a new approach to assisting secondary wood products manufacturers in rural Maine. In the wood products industry, primary manufacturers are sawmills and veneer mills. Secondary wood manufacturers turn kiln-dried boards and/or logs into products like furniture and furniture components, wood novelties, shelving, cabinetry, molding, log home kits, fence posts, and pallets. Experiments in coordinating government and private services to industries in Arizona, Pennsylvania, and Ohio have paralleled Maine's effort.



Molding and other products made by R.L. White & Son, Mount Desert Island, Maine, courtesy of the Maine Wood Products Association.

MAST Pilot Project: Providing Assistance to Secondary Wood Processing Firms

The wood products industry is one of the most important manufacturing industries in Maine. In 1997, according to the Maine Department of Labor, 839 forest products firms (601 primary and 238 secondary) employed 10,921 people with a payroll of $251 million. This represented 14 percent of total industrial employment in Maine. The 1996 Maine Gross State Product from lumber and wood products was $710 million. The industry has hundreds of firms manufacturing thousands of different products. However, the industry's potential is greater than its performance, particularly when it comes to adding value to Maine's forest resources.

Recognizing this, the Maine State Planning Office and the Maine Rural Development Center convened a meeting of service providers in 1992 to discuss "value-adding" as a strategy for economic development. In 1993, a meeting was held with State agencies to discuss the development of interagency marketing strategies. Out of these meetings, a Working Group on Value-Added was formed and began to focus on the small- and medium-sized wood products firms as a target group. Members of the working group realized that the failure to adopt new technology is a critical barrier to increasing the value-added positions of Maine's resource-based industries.

In 1994, a member of the working group suggested an approach to service delivery that would be based on cooperation among agencies, programs, and service providers and would be directed at wood products manufacturers. By 1994, the Multi-Agency Service Team (MAST) Steering Committee had been formed around a shared sense that Maine's existing service delivery system for technical assistance to wood products firms was not meeting its potential. Service providers to the industry were identified and offered the opportunity to work together, and Maine Forest Products Marketing shared a survey of the technical assistance needs of secondary wood products firms.

The MAST pilot project began in October 1994 with the first steering committee meeting, and continued until June 1995. The steering committee (see "MAST Steering Committee") worked with two coordinators—one from the Androscoggin Valley Council of Governments and the other from Maine Forest Products Marketing—who identified and recruited service providers (see "MAST Service Providers") and coordinated service delivery to firms. The steering committee invited each of Maine's five Resource Conservation and Development Districts (RC&D's) to participate in the pilot by assisting in the identification of one target firm in their region. Four of the RC&D's chose to participate. The four firms selected by the RC&D's for the MAST pilot were a fine furniture maker; a job shop (which

custom-manufactures items for other businesses one batch at a time); a manufacturer of cedar log homes, fencing, and novelties; and a maker of fine drumsticks and novelties.

The first firm to participate in MAST—the producer of log homes, fencing, and novelties—provides a good example of how MAST worked. The St. John Aroostook RC&D Forestry Committee visited five firms in their region and chose this one because they felt its needs were most amenable to a MAST approach. The owner agreed to participate. The coordinator from Maine Forest Products Marketing took responsibility for the service delivery to this firm. The coordinator used the firm's response to the Maine Forest Products Marketing needs assessment to identify a group of service providers. The group included people from Industrial Extension, the Heart of Maine RC&D, Cooperative Extension, and Seven Islands, a private forest management company. The group of service providers visited the firm twice, once with the coordinator and once without. During the first visit, the owner reiterated the firm's needs, which included assistance in marketing log homes and new products, sawmill efficiency and safety, and business and office management.

Drumsticks are among the high-quality wood products manufactured in Maine: Vic Firth Manufacturing Company, Newport, Maine, courtesy of the Maine Wood Products Association.

During the course of the two visits, two service providers from Industrial Extension and Cooperative Extension (Forestry Specialist - Wood Technology) toured the manufacturing facility with the owner and addressed several safety issues such as where saw guards should be placed and how to design more effective guards. They also made suggestions for personnel safety. By working together, providers were able to address 80 percent of the safety issues that had been identified by the Maine Labor and Safety Board.

During a tour of the novelties production facility, the Industrial Extension provider was able to identify a problem related to adhesives that was unknown to the owner. The provider researched alternative adhesives and presented a set of very specific and highly useful written recommendations. Service providers also suggested that the owner use his sawmill waste to manufacture wood pellets. From that discussion, the owner installed a drying room for wood waste to allow it to be bagged and sold dry, thus transforming a waste product into a resource. The coordinator also signed the owner up for a regional trade show.

Not all the MAST efforts in this case were successful. As part of one visit, two different service providers met with the owner to discuss his business and office management practices. Although they agreed to return for a second visit, the second visit never materialized. The service providers recall making several suggestions regarding delegation of tasks by the owner, yet several months later the owner was unable to recall any specific recommendations that they had made. Nor did these providers offer written followup. Coordination between the two sets of service providers was lacking.

MAST Experience Provides Important Lessons About Service Delivery

One litmus test for the relative success of a project designed to improve service delivery is whether or not the firms receiving services believed they benefited. In three out of four cases, firms reported concrete improvements, including locating and hiring a subsidized employee to get a computerized inventory system up and running, putting humidifiers in the wood shop, discovering more effective adhesives, adding newly designed guards for saws that led to fewer accidents, and making a strong start on a strategic marketing plan including new accounts with new clients. Despite these tangible successes, all four firms reported areas of dissatisfaction and unmet needs. The owner of the one firm that did not report improvements

felt that the assistance offered, which was mainly in production, did not address his own priorities in the area of marketing. MAST firms were uniformly aware that they needed help. They were not aware of the range of services available to them prior to their involvement with MAST. Outreach to firms not only solved some specific problems but put firms in touch with resources they can use on an as-needed basis in the future.

The MAST experience produced six important lessons in engaging firms and service providers in effective service delivery.

Train service providers in how to listen and respond to owners. In talking with owner/managers and service providers, it became clear that the perceptions of owners and service providers do not always agree. When service providers pursue their own visions at the expense of addressing the firm's priorities, owners become frustrated. Although service providers may perceive real needs that owners do not perceive, owners are far more likely to be receptive to new information once their perceived needs are addressed. Service providers who fail to address the perceived needs of owners in favor of their own observations of need tend to blame the firm for failure to implement their suggestions. Just as owners need assistance in learning how best to work with service providers, service providers would benefit from training in how to work productively with firms.

Prepare firms for providers' visits. The needs of the firms who participated in MAST were identified through a combination of survey responses and discussions with coordinators. The more thorough the assessment of the firm prior to field visits by service providers, the clearer the priorities are and the greater the potential for providing recommendations that fit the overall context of the firm's financial and operational potential. A thorough assessment would include instructions to the owner about how to get the most out of the MAST experience. Three out of four firms who participated in the pilot felt they could have used help in preparing for providers' visits and identifying questions to ask. Owner/managers would have benefited from assistance in framing the problems they were facing and the questions they wanted answered and in preparing the background information service providers need to make informed recommendations. In the absence of this type of preparation, some recommendations will be unfeasible for the firm.

Match service providers' expertise to firm needs. The services being delivered should be carefully matched to the needs of the firm, and should be provided by those who are truly competent and qualified to address those needs. Different levels of expertise are appropriate to different firms. The same service provider will not necessarily be able to meet the needs of every firm. To effectively match service providers to firms, coordinators should understand, at a minimum, the priorities of the owner(s) and the investment capacity of the firm.

MAST Steering Committee

Co-chairs

Maine Rural Development Council
Maine State Planning Office

University

University of Maine at Orono

Private Sector

Moosehead Manufacturing

Public Sector

Maine Forest Service
USDA Forest Service
USDA Natural Resources Conservation Service
Workforce Development Center
Maine Department of Economic and Community Development

Nonprofit

Coastal Enterprises, Inc.
Market Development Center
Androscoggin Valley Council of Governments
Maine Forest Products Marketing
Heart of Maine Resource Conservation and Development District
St. John-Aroostook Resource Conservation and Development District

Focus on one problem at a time. It is difficult for owners to focus on more than one aspect of their operation at a time. Rather than bringing all service providers to the firm at one time, it may make more sense to address issues sequentially, beginning with the problem that is foremost in the owner's mind.

Follow through and request feedback from firms. Firms expect and deserve follow-through from service providers and coordinators. Coordinators should be prepared to intervene in instances where providers are ineffectual by recommending an alternative provider. Service providers would benefit from feedback from coordinators regarding the effectiveness of their interventions.

Train service providers in how to work as a team. The MAST pilot project was based on the notion of a team approach to service delivery, yet very little attention was paid to the process of teaming. Coordinators assumed that service providers would know how to work as a team. In reality, only one provider had previous experience in working as part of a team of professionals from different agencies; several others had experience with

MAST Service Providers

Community Colleges and Universities

Husson College
Thomas College
Department of Industrial Cooperation, University of Maine, Orono

Private Sector

Northern White Cedar, Inc.
Seven Islands
Bob Dionne, Private Consultant

Public Sector

Maine Small Business Development Center
Workforce Development Center
Maine Department of Economic and Community Development
Cooperative Extension

Nonprofit

Maine Forest Products Marketing
Androscoggin Valley Council of Governments
Coastal Enterprises, Inc.

The Goals of MAST

To demonstrate how service providers (Federal, State, nonprofit, and private sectors) can work together to more effectively meet the business and technical needs of secondary wood products firms in Maine

To develop effective coordination and collaborative relationships in a team approach on a pilot basis in five regions of the State

To document and evaluate the demonstration project in terms of both process and outcome so that lessons learned can be applied to similar efforts

To build a stronger network of service providers

To create a delivery system organized and responsive to the needs of the forest products industry

informal or in-house teams, but none had received any training in teaming. MAST failed to provide such training, nor did it clearly spell out its expectations with regard to teamwork. As a result, for the most part, MAST service providers operated independently and made their recommendations to the firms in isolation from the other providers. The benefits of a team approach can only be fully realized if attention and resources are devoted to the process of teamwork itself.

Learning at the Top

The benefits of MAST accrued to participants in the Steering Committee as well as to firms. MAST provided a testing ground for agency assumptions about how best to meet industry needs. Some assumptions were confirmed; others were not.

A highly diverse industry can best be served in a regional context. The diversity in the secondary wood products industry makes it extremely challenging to service. Resources need to be identified and activated on a regional basis. Structures need to be created for firms to learn from one another.

Expertise is relatively scarce. There are a limited number of service providers in Maine who have the real expertise to assist small- to medium-sized firms in solving their technical and marketing problems. Creative solutions must be found to leverage this expertise effectively. The flow of information could be improved through access to electronic networking by regional coordinators and service providers. Coordinators need to take on a larger role in the front end of the process by conducting more thorough needs assessments and giving providers more detailed information up front.

Commitment of midlevel professionals is more important than formal agreements between agencies. The success of MAST depends on the commitment and agility of the midlevel people, the coordinators, and the providers themselves. Formal commitments by the agencies themselves are not necessary, as long as agency staff have enough flexibility to participate effectively.

Different agencies have different incentive structures. Representatives from each agency benefit from understanding the incentives (and constraints) their colleagues face. To the extent that these can be stated and understood up front, communication and interaction between agencies may be improved. One agency with marketing expertise actually dropped out of MAST due to its incentive structure that requires short-term results.

Changing the Way Agencies Do Businesses

Several of the public and nonprofit agencies that cooperated to create and implement MAST have actually changed the way they do business as a result of the experience. The Maine Small Business Development Center used MAST as an opportunity to train most of its counselors statewide in the basics of the wood products industry. Maine's Workforce Development Center has continued to work with the Maine Wood Products Association (an outgrowth of Maine Forest Products Marketing). Husson Community College has expanded its services to wood products firms on the basis of its positive experience using MAST as a training ground for students. Through MAST, the Northern Maine Development Commission is forging new relationships with the Occupational Safety and Health Administration and the Maine Department of Labor. The staff of the Resource Conservation and Development Districts and the Androscoggin Valley Council of

Governments have also gained a greater knowledge of the wood products sector as a result of MAST.

However, none of the benefits of MAST would have been realized without the commitment of a few daring individuals who were willing to cooperate and share resources with other agencies and groups despite, in some cases, a lack of strong institutional support. In the instances where institutional support was weak or lacking at high levels, it is unlikely that MAST will result in significant changes in organizational culture or that the lessons of MAST will be widely shared within the organization.

Maine Forest Products Marketing has been dissolved after 3 years of raising awareness of industry needs. In its place are the Maine Wood Products Association, a trade association, and the Maine Manufacturing Extension Center, a Federal-State-private sector partnership to extend technical services to the manufacturing sector. The Maine Manufacturing Extension Center will use field agents in much the same way that MAST used coordinators. The lessons learned through MAST are already being applied by the Maine Manufacturing Extension Center, which is engaged in ongoing outreach to the wood products sector.

For Further Reading . . .

Carol Conway, "A 'Learning Network' in Southwestern Pennsylvania," Corporation for Enterprise Development, 1995.

June Holley, "A New Approach to Training and Job Creation," Appalachian Center for Economic Networks, 1993.

Yellow Wood Associates, Inc., "Evaluation of the Multi-Agency Service Team Approach to the Delivery of Business and Technical Assistance in Support of the Maine Secondary Wood Products Industry," 1996.

RDP Book Announcements

Compiled by Dennis Roth and Karen Hamrick

Rural Development in the United States: Connecting Theory, Practice, and Possibilities

William A. Galston and Karen J. Baehler. Island Press: Washington, DC, 1995, 354 pages. ISBN 1-55963-326-3 (paperback) $42.00. To order, call (800) 828-1302.

Rural Development in the United States is intended for academics, economic development practitioners, and policymakers. Galston and Baehler assert that "... it is impossible to understand the current problems or future prospects of rural America in isolation from national and global trends" (p. 265). In addition, they think that an interdisciplinary approach is needed in analyzing rural development issues.

The first section focuses on rural development background and economic development theoretical issues: the conceptual framework, the economic process, and the political strategy. Covered is a discussion of Third World economic development and the implications for U.S. rural development. The second section discusses the U.S. rural economy by sector. Included are chapters on natural resources, manufacturing, services, tourism, the elderly, high technology, and telecommunications. Each chapter provides the national and international context, the situation in rural areas, and economic development strategies. Quality of jobs is discussed as well. *Rural Development in the United States* contains extensive endnotes and bibliography.

Making Sense of Qualitative Data

Amanda Coffey and Paul Atkinson. Sage Publications: Thousand Oaks, CA, 1996, 206 pages. ISBN 0-8039-7052-8 (hardcover) $42.00. ISBN 0-8039-7053-6 (softcover) $18.95. To order, call (805) 499-0721.

Making Sense of Qualitative Data offers practical advice on ways of analyzing qualitative data. Coffey and Atkinson, sociologists, wrote this book for those in sociology, anthropology, communications, management, and education. Their intent is not to prescribe methods, for there are many ways of analyzing qualitative data, but to present general guidelines for research. They discuss organizing data, narrative as data, dealing with meanings and metaphors, writing up the research, generalizing the data, and going beyond the data to develop ideas. In addition, there is a chapter on computer-aided analysis, which discusses hypertext and hypermedia. The authors provide numerous examples. The examples are from data collected in interviews with graduate students in social anthropology in several academic departments in the United Kingdom. Each chapter has suggestions for further reading, and the book includes an extensive bibliography.

Of Heart and Mind: Social Policy Essays in Honor of Sar A. Levitan

Garth Mangum and Stephen Mangum, editors. W.E. Upjohn Institute for Employment Research: Kalamazoo, MI, 1996. 413 pages. ISBN 0-88099-171-2 (paperback) $20.00. ISBN 0-88099-172-0 (cloth) $30.00. To order, call (616) 343-4330.

Of Heart and Mind pays tribute to Sar A. Levitan, 1914-1994. During Levitan's long career as an economist, he produced over 50 books, 70 monographs, and hundreds of articles and government reports. He held several government positions, including Chair of the National Commission on Employment and Unemployment Statistics during the Carter Administration. More important than the quantity of his work was the nature of his life and work. His was "... a life centered on public policy and built on an unwavering belief that humankind is basically and inherently good, and that all can rise to accomplishment and prosperity given adequate opportunity and reasonable incentive" (p. 2). His career was spent promoting and evaluating Federal programs concerning poverty, manpower, training, child care, and employment. In recent years, he called himself the "last liberal in Washington."

Of Heart and Mind contains 17 essays by 25 authors. Among them are essays on vocational education (David Stevens), contingent work (Audrey Freedman), minimum-wage policy (Stephen E. Baldwin and Robert S. Goldfarb), programs for at-risk youth (Susan P. Curnan, Alan Melchior, and Alan Zucherman), and welfare reform (Irene Lurie and Colletta Moser). One chapter by Garth Mangum is on "The Life and Times of Sar A. Levitan." Also included are photographs and a bibliography of Levitan's work.