Federal Funding in Appalachia and Its Three Subregions

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Appalachia received more per capita Federal funds than the U.S. average, but this was only true for urban areas, where income support and payments for national functions were larger. Appalachia received lower per capita payments than the U.S. average in agriculture and natural resources, and in defense and space programs. It also received less in community resources and human resources—the programs that create jobs and economic growth. Central Appalachia, the most distressed area, received more per capita Federal funds than the entire Appalachian region.

Appalachia is characterized by high rates of poverty and unemployment, low per capita income, widespread school dropouts and low educational achievement, and significant physical isolation of its sparse population in the high rugged mountains (Appalachian Regional Commission, 1997 and 1998). The mountains raise transportation costs, which discourages some businesses from locating in the region. These problems have long handicapped economic development for Appalachia, but improvements have occurred over the last 30 years.

In 1960, every third person living in Appalachia was poor, compared with one in five for the Nation as a whole. By 1990, Appalachia's poverty rate had declined to half of that level, while the national poverty rate had decreased by 40 percent, and Appalachia's per capita income had risen from two-thirds of the national average in 1960 to 84 percent by 1994 (Appalachian Regional Commission, 1997). A majority of Appalachian counties have achieved some economic progress, but about one-fourth have still not made any significant economic gains (Appalachian Regional Commission, 1998).

Appalachia has long looked to the Federal Government for assistance, and it has responded, creating unique institutions such as the Appalachian Regional Commission (ARC) and the Tennessee Valley Authority (TVA). However, the Federal Government has many other programs that are important for the region. Since Appalachia is not a homogeneous region, this article examines differences in Federal funding (fiscal year 2000) by various county types and subregions, then posits some effects of potential Federal policy changes.

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Appalachia and Its Three Distinct Subregions

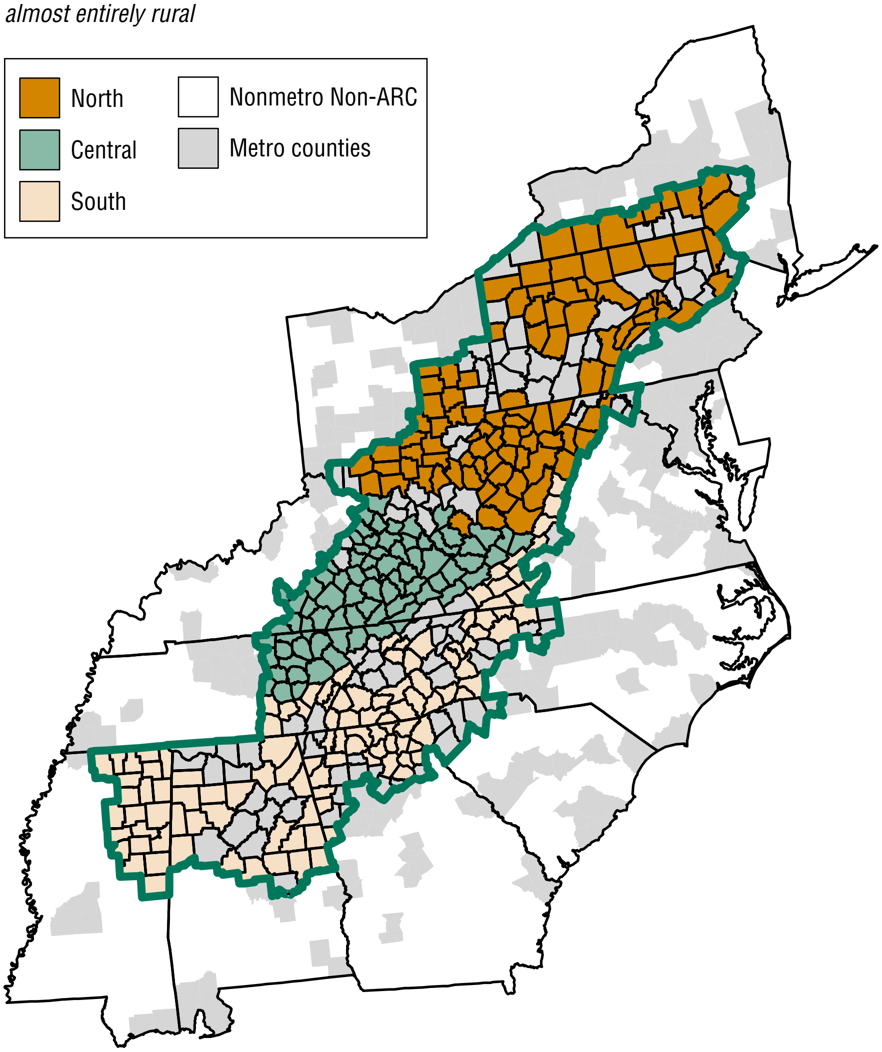
The legislation that established the Appalachian Regional Commission (ARC) described its area of about 200,000 square miles as running along the spine of the Appalachian Mountains from southern New York to northern Mississippi (fig. 1). (For a list of States and the number of counties that comprise Appalachia, see "Appalachia and Its Subregions," p. 34.)

The northern, central, and southern subregions of Appalachia face different prospects and challenges, as do different types of counties. Almost one in three rural counties in the region are classified as distressed, according to the Appalachian Regional Commission, while only 17 percent of rural counties in the rest of the country are so categorized. Rural central Appalachia is particularly distressed, with the unemployment

Figure 1

Counties in northern, central, and southern subregions of Appalachia

Appalachia is more rural than the rest of the country; central Appalachia is almost entirely rural



Note: Ninety one percent of the counties in central Appalachia are rural counties.
Source: ERS calculation using data from the Appalachian Regional Commission.

rate much higher than the national average, per capita personal income only two-thirds of the national average, and more than one in four persons living in poverty (Appalachian Regional Commission, 1998; Glasmeier and Fuelhart, 1999). The dropout rate there exceeds 40 percent, and in 61 of its 68 counties the dropout rate is above 50 percent. Because Central Appalachia is dominated by high mountains and is less connected to the surrounding States, large highways, and interstates, rural counties there face special challenges such as inflated highway expenses.

The Appalachian Regional Commission (ARC) coordinates economic development in the entire region. The Tennessee Valley Authority (TVA) serves only the southern part of Appalachia. Southern Appalachia thus benefits from both ARC and TVA activities. In addition, 13 States are included in northern, central, and southern Appalachia, and each State commits different levels of resources to its Appalachian counties. Because of this, we expect Federal funding to vary across these three subregions (see "Data and Definitions," p. 36).

Funding Varies by Function

In fiscal year 2000, Appalachia received $354 more per capita than the U.S. as a whole in total Federal funding (table 1). Rural Appalachian counties received $65 (1 percent) less per capita Federal funds than the rural U.S. county average. But urban Appalachia received $819 (14 percent) more per capita in Federal funds than the U.S. urban average.

Appalachia received less per capita funding for agricultural and natural resources, community resources, and defense/space functions than the entire Nation (see "Data and Definitions" for function categories). This Appalachian disadvantage held for both its rural and urban areas. Funding for human resources functions was similar for Appalachia and the U.S. and for Appalachia's rural and urban counties. On the other hand, Appalachia (rural and urban) received higher amounts of Federal funding for income security programs and national functions.

Rural Appalachia is not a productive agricultural region due to its mountainous terrain, so it receives relatively little of such funding. However, rural Appalachia received $568 per capita (16 percent) more for income security programs than did the rural United States. Urban Appalachia fared even better—$1,069 per capita

(34 percent) more than the urban United States. Income security includes Federal payments for the retired, unemployed, and the poor. Appalachia's advantage here reflects its disproportionate share of retired, disabled, unemployed, and poor persons.

National functions include criminal justice and law enforcement, energy, higher education and research, and all remaining programs not covered under any other function (except insurance programs). For national functions, the Appalachian region received an average of $43 per capita (5 percent) more than the United States as a whole (table 1).

Funding Varies Across County Types and Subregions

We used ERS's county typology, which covers only nonmetro counties, to examine funding differences by economic and policy type of county (Bagi, Reeder, and Calhoun).

Mining-dependent counties received the most Federal funding among economic types—$826 (15 percent) per capita higher than for rural Appalachia as a whole. Government-dependent and manufacturing-dependent counties received the least (table 1).

Among policy county types (which are overlapping), persistent-poverty counties received per capita funding well above the average for rural Appalachia, and $2 higher than that received by mining-dependent counties. (Many of Appalachia's mining-dependent counties are also persistent-poverty counties.) Retirement-destination and commuting counties received the lowest ($4,607) and the second lowest ($4,875) per capita funding (table 1), reflecting low receipts for income security programs and some other national functions.

In fiscal year 2000, central Appalachia received substantially higher per capita Federal funding than both other subregions (table 2).

Table 1

Per capita Federal funds by function and county type, fiscal year 2000

Rural Appalachia received less funding, per capita, than urban Appalachia and the Nation as a whole

County type	All Federal funds	Agriculture and natural resources	Community resources	Defense and space	Human resources	Income security	National functions
				Dollars per person			
United States	5,690	116	680	678	119	3,276	822
Metro	5,743	39	728	771	113	3,182	910
Nonmetro	5,481	427	486	303	143	3,656	467
Appalachia	6,044	36	504	282	119	4,239	865
Metro	6,562	32	571	432	104	4,251	1,172
Nonmetro	5,416	40	423	99	138	4,224	491
By economic county type:							
Mining-dependent	6,242	26	402	74	177	4,932	629
Manufacturing-dependent	4,925	51	481	85	104	3,810	395
Government-dependent	5,199	74	391	90	168	3,972	504
Services-dependent	5,449	18	340	168	140	4,434	348
Nonspecialized	5,481	48	420	95	150	4,084	684
By policy county type:							
Retirement-destination	4,607	19	326	273	82	3,776	130
Federal lands	5,324	35	350	125	119	4,237	458
Commuting	4,875	57	348	64	131	3,929	347
Persistent poverty	6,244	41	381	105	217	4,934	565

Note: Individual figures may not sum to total because of rounding.
There were only three counties in Appalachia classified as farming-dependent, so this economic type was excluded from this table; transfer payment policy type was also excluded because of significant overlap with the poverty county type.
Source: Calculated by ERS using Federal funds data from the Bureau of the Census.

Appalachia and Its Subregions

The Appalachian region is defined following a modified version of the counties identified in Bogue and Beale. The region includes the entire State of West Virginia, and part of 11 other States (from north to south): New York, Pennsylvania, Ohio, Maryland, Virginia, Kentucky, Tennessee, North Carolina, Georgia, Alabama, and Mississippi. One county in Kentucky and two in Virginia were dropped from the list identified by Bogue and Beale because these counties are not under ARC's jurisdiction.

Appalachia is further subdivided into subregions. **Northern Appalachia** includes 2 counties in Maryland, 23 in Ohio, 37 in Pennsylvania, and 46 in West Virginia. Of these, 34 are metro (urban) and 74 nonmetro (rural) counties. In other words, almost one-third (32 percent) of counties in this region are urban counties, and thus this subregion is the most urbanized of all three subregions.

Central Appalachia includes 43 counties in Kentucky, 9 in Tennessee, 7 in Virginia, and 9 in West Virginia. Of these, only 6 (9 percent) counties are metro, and the remaining 62 are nonmetro (rural). Thus, Central Appalachia is more rural than the rest of Appalachia.

Southern Appalachia includes 10 counties in Georgia, 16 in North Carolina, 28 in Tennessee, and 16 in Virginia. Almost one out of every four (24 percent) counties in this subregion is urban (metro). So, while southern Appalachia is also predominantly rural, it is much more urbanized than central Appalachia.

Urban Central Appalachia Benefits Mainly from Defense/Space and National Functions

Two of the six urban counties in the Central Appalachian subregion stand out in defense and space receipts. One (Christian County, KY) has a military base with over 24,000 active military employees, receiving over $600 million in salaries and wages in FY 2000. Since these military personnel live either on base or in the nearby communities, their spending and savings mostly remain in the area and thus provide a direct economic boost to the local economy.

The Department of Defense issued procurement contract awards worth over $130 million in fiscal year 2000 for this county. If the procurement orders were filled by local businesses, then the salaries and wages received by the workers engaged in the production and shipment of the procurement items would also be spent in the local economy, giving an additional boost to local businesses.

In fiscal year 2000, Federal agencies other than the Defense Department issued about $1.7 billion in procurement awards to businesses located in Anderson County, TN, another urban county in Central Appalachia. These funds support employment for many more residents in this and the surrounding counties.

Rural Central Appalachia Received Highest Income Security Payments

Whereas urban counties in central Appalachia received very large amounts of Federal funds ($7,097), per capita, from national function programs, the opposite was true for central Appalachia's rural counties. These rural counties received the lowest per capita funding ($416) for national functions of all the subregions (table 2). Actually, in central Appalachia, the rural residents received less than six cents for every dollar received by its urban residents from the national functions.

Rural central Appalachia benefited mainly from income security programs, receiving $5,135 per capita, $1,479 (41 percent) more than the rural U.S. average and $911 (22 percent) more than the average amount received by all rural Appalachians. High income-security payments indicate the prevalence of retired, disabled, unemployed, and poor in rural central Appalachia.

South Appalachia Received Lowest Federal Funds

South Appalachia received $739 (12 percent) less per capita in Federal funds for all functions than did Appalachia as a whole. Urban south Appalachia received $820 (12 percent) less than did the average urban county in Appalachia, and rural south Appalachia received $609 (11 percent) less than rural Appalachia as a whole (table 2). Southern Appalachia as a whole received lower funding for every function but agricultural and natural resources.

South Appalachia received lower per capita Federal funds from income security programs than did the other two subregions, partly because its proportion of retired, disabled, and poor persons is the lowest. Also, State governments in southern Appalachia provide lower per capita income security payments—since some of these programs involve matching Federal funds, this results in lower Federal payments.

North Appalachia Is Close to National Average in Federal Funds Receipts

While northern Appalachia received $5,951 per capita in Federal funds, slightly above the national average, this is mainly due to its urban areas. Its urban areas received $6,325 per capita while its rural areas received $5,248 (table 2). Its metro areas receive more funds due to relatively high receipts from income security payments ($4,445) and national functions ($798). North Appalachia's rural areas received less from these two functions than did urban areas. However, rural north Appalachia received more from national functions than did rural areas in other regions (table 2).

Policy Implications

With the help of the Appalachian Regional Commission and increased funding from other Federal programs, the region has made significant progress over the past 30 years (Isserman and Rephann). But Appalachia still lags behind in economic development. Much remains to be done toward reducing unemployment and poverty and toward improving the quality and availability of infrastructure, communications, education, and job training.

Recent changes that might affect the Appalachian region include increased highway funding, tighter environmental regulations, electric and telecommunication deregulation, welfare reform, and slower growth of domestic assistance programs. Possible impacts of changes in Federal policies and programs, as cited here, are general and may not be uniform across the three subregions.

Manufacturing is located in counties close to the outer boundary of Appalachia, along the roads and highways. Justifiably, the region's development policy and ARC's focus are on building and improving roads and highways. Therefore, the region would benefit from the $2.5 billion in newly authorized funds for the Appalachian Highway System. In addition, there will be matching State and local funds. But it costs from $11 million to $20 million to build a 1-mile stretch of highway

Table 2

Per capita Federal funds by function and region, fiscal year 2000

Central Appalachia, both rural and urban, received the largest funding and South Appalachia the lowest funding, per capita, among the three subregions, and compared with all of Appalachia and the Nation

County type (# counties)	All Federal funds	Agriculture and natural resources	Community resources	Defense and space	Human resources	Income security	National functions
				Dollars per person			
United States	5,690	116	680	678	119	3,276	822
Metro	5,743	39	728	771	113	3,182	910
Nonmetro	5,481	427	486	303	143	3,656	467
Appalachia (246)	6,044	36	504	282	119	4,239	865
Metro (57)	6,562	32	571	432	104	4,251	1,172
Nonmetro (189)	5,416	40	423	99	138	4,224	491
North Appalachia	5,951	26	546	276	109	4,270	724
Metro (34)	6,325	16	592	370	104	4,445	798
Nonmetro (74)	5,248	45	460	99	118	3,942	585
South Appalachia	5,305	56	467	81	102	3,754	845
Metro (17)	5,742	70	540	68	102	3,736	1,225
Nonmetro (53)	4,807	40	383	97	103	3,773	411
Central Appalachia	7,730	37	401	661	193	4,974	1,465
Metro (6)	15,455	56	413	3,655	128	4,105	7,097
Nonmetro (62)	6,292	33	399	103	206	5,135	416

Note: Individual figures may not sum to total because of rounding.
Source: Calculated by ERS using Federal funds data from the Bureau of the Census.

Data and Definitions

Federal funds data were obtained from the Consolidated Federal Funds Reports (CFFR) produced each year by the Department of Commerce, Bureau of the Census, Governments Division. The Bureau of the Census receives these data from various Federal departments and agencies, covering most Federal obligations, including expenditures and loans. The data for fiscal year 2000 covered 1,165 programs. But the data were not reliable at the county level for every Federal program. We excluded those Federal programs for which 25 percent or more of their funding went to State capitals, because the States may redistribute these funds to some or all counties in their States and Census data do not reveal the amount of this redistribution. We also excluded programs for which most or all of their funding is reported only at the State or National level. Therefore, most of the large block grant programs related to social services, employment, and training were excluded from our analysis. These exclusions understate the amount of Federal funding received, particularly for human resource programs. For fiscal year 2000, we determined that the data were reliable at the county level for 703 Federal programs. Our analysis is based on these programs, accounting for $1.79 trillion, or about 92 percent of the total Federal funds reported by the Bureau of the Census.

Interpretations should be made with caution because Federal funds data are only as good as the information each agency supplies to the Census Bureau. In some cases, as with Medicaid, the data are based not on actual outlays that go to places, but on estimates based on other information, which may involve substantial errors. In other cases, like procurement, expenditures may be reported only at the location of prime contractors or primary subcontractors and ignore further subcontracting that disperses the impact of expenditures. For example, defense procurement, which we found primarily benefits metro areas and government-dependent nonmetro areas, may involve subcontracting that disperses the benefits broadly to some other nonmetro areas.

In table 1, we used ERS's six broad function categories for Federal programs:

- Agriculture and natural resources include agricultural assistance, agricultural research and services, forest and land management, and water/recreation resources.
- Community resources include business assistance, community facilities, community and regional development, environmental protection, housing, Native American programs, and transportation.
- Defense and space include aeronautics and space, defense contracts, and payroll/administration.
- Human resources include elementary and secondary education, food and nutrition, health services, social services, training, and employment.
- Income security includes medical and hospital benefits, public assistance and unemployment compensation, retirement, and disability—including Social Security.
- National functions include criminal justice and law enforcement, energy, higher education and research, and all other programs excluding insurance.

in Appalachia. Thus, depending on the topography, $1 billion might help build only 125 to 225 miles of highway in this region, while there are about 200,000 square miles under the jurisdiction of the Appalachian Regional Commission. The impact of these additional funds will therefore depend on how effectively the new construction of roads and highways can link together the existing transportation systems in the region.

More stringent environmental regulations proposed for air and water present challenges and opportunities for the region. Topography makes building and operating water treatment plants very expensive, and many water treatment facilities already fail to meet existing environmental standards. Much of the region's population and industry are located near rivers and lakes that must be kept clean, but this becomes a burden for some of the region's industries and communities. More stringent requirements for air pollution might pose additional problems for some places. Recent increases in Federal spending on environmental projects would help, but it is unclear whether they will be maintained long enough to meet local fiscal demands.

On the plus side, a cleaner environment might help many Appalachian communities to maintain the natural amenities that attract many tourists and residents to the area. Appalachia is surrounded by densely populated and prosperous regions whose residents can support a vast array of recreational facilities in the Appalachian region. Thus, tourism and recreational facilities may attract enough spending in the region to spur further economic activity.

The proposed electric deregulation is expected to create more uniform rates nationwide; hence, higher rates might be expected in those parts of Appalachia where rates are now artificially low. This may increase the cost of living and the cost of production for the region's businesses. Deregulation may also lead to the privatization of TVA's power plants, possibly resulting in reduced Federal funding in the region.

Major regulatory changes have already begun in telecommunications, which may help the region by expanding services to further reduce isolation in Appalachia. The universal service provisions of the Telecommunications Act of 1996 may be particularly beneficial to rural areas in the region by subsidizing telecommunications in high-cost areas, especially for schools, libraries, and health care facilities. However, it is unclear at this time, what the local economic impact will be. While telecommunications might provide a boost to some industries, like clerical jobs, the region may not be able to attract much high-tech industry and the associated jobs.

Welfare reform significantly affects the region because of Appalachia's generally high rates of poverty and unemployment. It particularly affects distressed, high-poverty counties, where a relatively large share of the population may have to seek employment elsewhere. Increases in Federal training and employment assistance linked to welfare reform will help with the transition, and perhaps encourage more local development if firms respond favorably to labor force improvements. RA

For Further Reading . . .

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