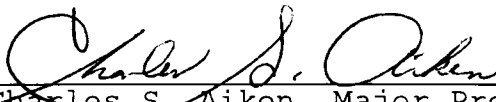
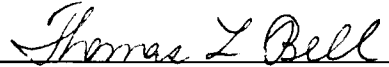


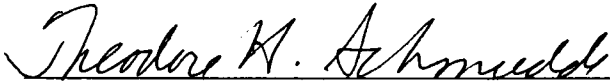
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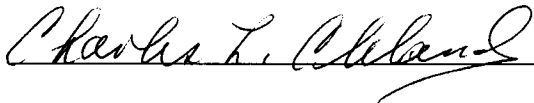
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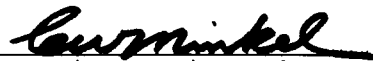
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MOUNTAIN AID: GEOGRAPHIC ASSESSMENT OF THE APPALACHIAN
REGIONAL COMMISSION'S SOCIAL PROGRAMS

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Craig R. Laing
August 1997

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DEDICATION

This dissertation is dedicated to my parents, Clarence R. Laing, Jr. and Patricia Elizabeth Laing, my wife, Leneda Jo Laing, and my son, Westin Joseph Laing.

ACKNOWLEDGMENTS

I would like to thank my major professor, Dr. Charles S. Aiken, for his wisdom and guidance. I would also like to thank the other committee members, Dr. Thomas L. Bell, Dr. Theodore H. Schmudde, and Dr. Charles L. Cleland, for their time and assistance. My appreciation also extends to the staff at the Division of Special Collections and Archives at the University of Kentucky whose knowledge of the Appalachian Regional Commission Archives proved invaluable. I would like to thank Donald and Valetta Halbert of Lexington, Kentucky for providing me a place to rest during my many visits to the University of Kentucky Library. In Washington, D.C., Judy Maher and Henry King, staff members of the Appalachian Regional Commission, were especially helpful during this research. I am thankful for two wonderful parents, Bob and Pat Laing, who made my education possible. Also, the support of my wife's parents, Joe and Belva Crews, is much appreciated. All of this would have been impossible without the sacrifice and unwavering support of my wife, Leneda Jo Laing. This dissertation is as much the result of her support as my effort. Finally, I thank my son, Westin Joseph Laing, who always provided a smile and ray of sunshine throughout this entire experience.

ABSTRACT

Over the past thirty years, the Appalachian Regional Commission (ARC) has expended \$6.5 billion federal dollars on highways and a variety of social programs to stimulate economic development in thirteen states. This research analyzes the geographic character of the ARC's education and health care policies and expenditures. Internal documents of the ARC and interviews with current and former ARC staff members are used to identify policies. A database of pertinent ARC projects and a variety of federal and state statistics are used to map and explain spatial variations in education and health care expenditures.

This research uncovers different spatial patterns for education and health care expenditures that previous studies failed to identify. Statistical analyses reveal several variables that explain the spatial variations of expenditures. The discovery of coal production as an important variable in explaining health care expenditures is interesting for what it says about the relationship between the coal industry and the ARC. While the ARC was conscious not to be critical of the coal industry, the ARC indirectly acknowledged the social and economic malaise the coal industry created by investing heavily in the coalfields. Education expenditures are more evenly distributed among the

population than health care. This research also finds that changes in Congressional appropriation procedures altered dramatically the character of education and health care expenditures.

This research concludes that the ARC's social programs, while not accomplishing its legislative mandate of creating a highly-skilled and healthy labor force, were not complete failures. The ARC significantly improved the region's infrastructure of vocational schools and medical facilities. Without this investment, Appalachia's infrastructure would never have been helped because no other organization filled the financial void left by declining ARC expenditures.

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CHAPTER 1

INTRODUCTION: THE PROBLEM AND ITS SETTING

The presidential primaries of 1960 awoke the American public to the devastating poverty in the Appalachian mountains. Scenes of John Kennedy visiting West Virginia's rural mountain hollows astonished a nation caught up in the rapid economic growth following the Second World War. During the early 1960s, images of urban poverty plus his reading Michael Harrington's The Other America led President Kennedy to request suggestions for legislation to alleviate poverty (Sundquist 1969). As the Administration studied these proposals, Kennedy was assassinated. President Johnson moved quickly to continue preparation of a poverty program. In his 1964 State of the Union Message, Johnson declared war on poverty (Sundquist 1969). Later in that year, Congress established the Office of Economic Opportunity to administer the War on Poverty programs. These programs were strongly oriented toward minority groups in urban areas and largely ignored rural Appalachians, one of the most visible poverty populations (James 1975). In 1974, the Office of Economic Opportunity was abolished and its programs transferred to other federal agencies (James 1975).

The Office of Economic Opportunity and the War on Poverty have been studied extensively by scholars. However, a federal program for Appalachia that began during the 1960s has lasted much longer than the Office of Economic Opportunity or War on Poverty, but it has not received the same scholarly attention. A related set of events led to creation of this federal agency. Appalachia's inability to deal with major destructive floods during March 1963, combined with Kennedy's encounter with Appalachian poverty during the 1960 presidential campaign, led him to ask the Council of Appalachian Governors to develop a comprehensive program for regional development. The result was a joint federal-state regional agency called the Appalachian Regional Commission (ARC). While not a part of the War on Poverty legislation, the ARC emerged from its political climate. ARC support in Congress has been strong as evidenced by a resounding defeat of an attempt to terminate the agency in the summer of 1995.

On March 9, 1965, President Lyndon Johnson signed the Appalachian Regional Development Act (ARDA) creating the Appalachian Regional Commission. ARC's purpose is threefold:

- (1) to assist the region in meeting its special problems, (2) to promote its economic development, and (3) to establish a framework for joint federal and state efforts toward providing essential basic facilities (Bradshaw 1992, 41).

The ARC is a unique federal government agency in two respects. First, it is a regional agency involving 399 counties in thirteen states. The region covers parts of Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and all of West Virginia (Figure 1-1). Second, the federal government and the thirteen state governments share power. The policy-making body of the ARC comprises the thirteen Appalachian governors and a presidentially-appointed federal co-chairman. Projects requesting ARC assistance are initiated by state and county government agencies and local organizations. Each state is responsible for recommending to the ARC which projects its officials wish to be funded. ARC funds are used in tandem with state, local, and other federal funds to pay for a particular project (ARC 1995a).

From ARC's perspective, Appalachian underdevelopment is attributable to a lack of integration with the national economy. To this end, the ARC places heavy emphasis (63 percent of its total funds) on the construction of a highway network throughout the region. By making the region more accessible to the rest of the nation, the ARC assumes economic growth and investment will occur, stimulating regional development. The ARC also provides federal funds

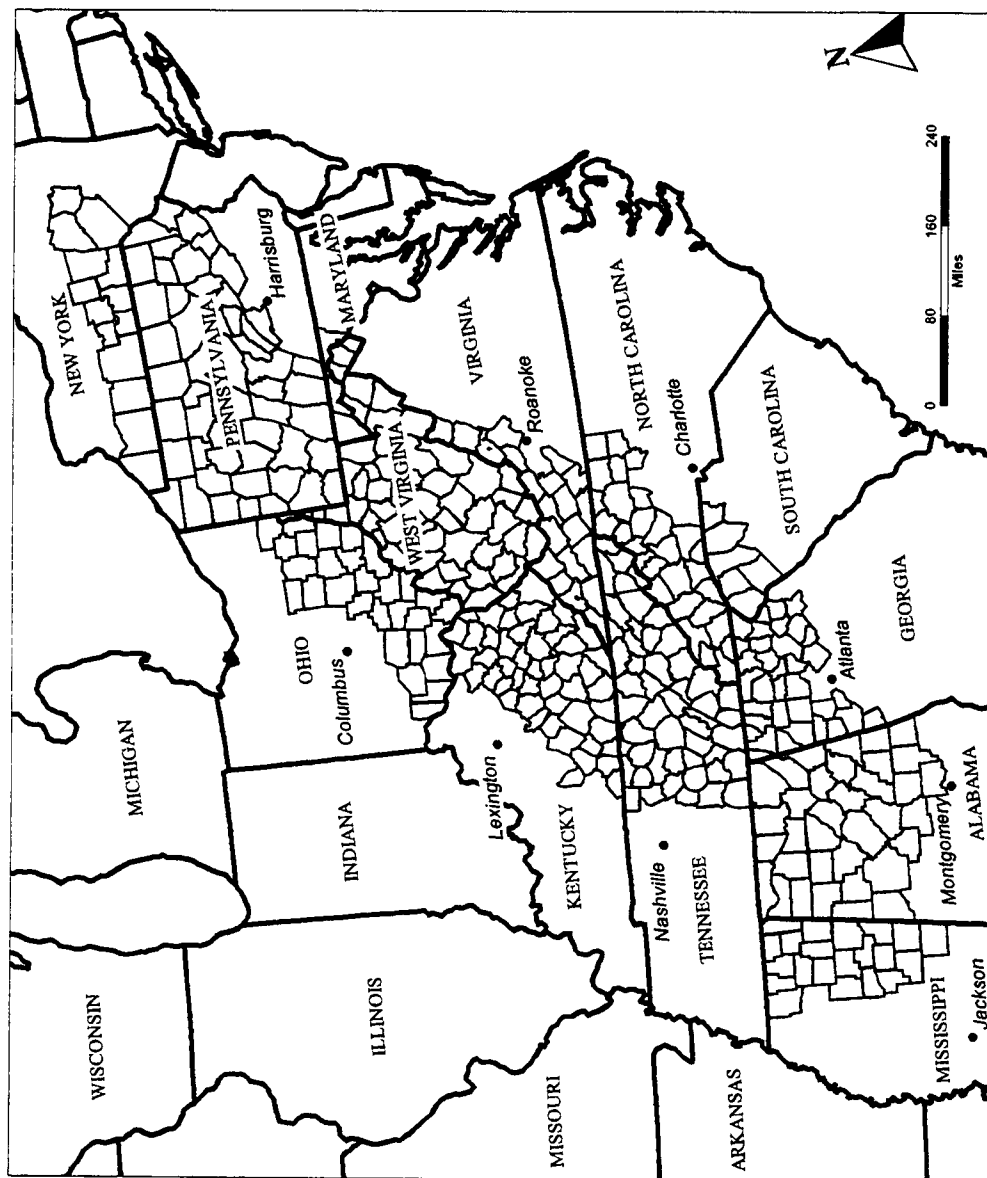


Figure 1-1. The Appalachian Regional Commission area.

for a variety of other programs¹ including health, education, community development², housing, business development, environmental reclamation, and youth leadership development. As of 1994, these programs accounted for approximately 37 percent (\$2.4 billion) of ARC funds (\$6.5 billion).

This study concentrates on education and health programs and, to a lesser degree, on community development. Several reasons support this decision. First, besides community development, education and health programs receive more attention than any other area development program. Education and health projects are the second and third in funding among the area development programs (page 60). Together, they account for 42 percent of ARC area development expenditures. Second, education and health conditions have been the most discussed and analyzed of Appalachia's social problems. Third, philosophical perspectives guide the allocation of education and health care funds more than other area development programs.

¹ The ARC called the other programs "nonhighway," and later "area development." I use "area development" throughout the study.

² ARC's community development projects are predominately water and sewer ones. Other community development projects include recreation facilities, industrial site preparation, and downtown revitalization initiatives.

Community development expenditures are examined because they are tied to education and health care. Analysis of them is important in assessing temporal trends in state expenditures. Also, they are fundamental to understanding ARC projects at the local scale.

Statement of the Problem

The purpose of this study is to analyze the geographic character of the Appalachian Regional Commission's education and health care policies and expenditures. The problem is divided into two subproblems. The first assesses the dynamic character and spatial ramifications of ARC education and health policies. The second analyzes the spatial implementation of ARC education and health policies and explains the distribution of the expenditures.

Four hypotheses guide the study. First, it is hypothesized that national, regional, and local forces influence ARC education and health policies. The national political context is hypothesized to have dramatically altered ARC education and health policy from time to time. More than once under tight fiscal conditions, presidential administrations have threatened or attempted to cancel the ARC. The constant uncertainty made ARC policy dynamic in order to receive continued Congressional support. Local-

level forces emerged as local officials saw the implementation of ARC-funded projects. Criticisms over ARC programs that originated at the local level reached far into the ARC bureaucracy and initiated education and health policy changes.

The second hypothesis is that the dynamic nature of ARC education and health policies influence their spatial implementation. Changes in program policy lead to changes in ARC's allocation formulas that directly alter their resultant geography.

The third hypothesis is that the geographic distributions of education and health care expenditures are strikingly different. Implementation of education and health initiatives followed different geographic patterns because of their governing regimes. Education is largely the responsibility of state governments, while market forces drive the health-care industry. This difference occurs at various scales beginning with the ARC region, then moving to the regional scale (i.e., Central Appalachia), and ending at the local scale (i.e., sixteen sample counties in southeastern Kentucky).

The fourth hypothesis is that variables that explain the spatial variations in ARC's education and health expenditures can be identified through cartographic and statistical analysis. Analysis of the variables help to

explain the geography of education and health program expenditures. The variables, however, account for only part of the spatial variation in expenditures. Decisions regarding expenditures operate within a political context where intangible factors often influence them.

Significance of the Problem

The problem addressed by this research is significant for several reasons. First, in North America few regions have been so frequently stereotyped as one of poverty as Appalachia. Such a description received national attention in the 1960s from Harry Caudill's Night Comes to the Cumberlands and Jack Wellers' Yesterday's People. These books helped to establish Appalachia as a poverty region in the minds of Americans. Appalachia is still depicted this way, as suggested by Salatino's 1996 Will Appalachia Finally Overcome Poverty? Detailed examination of the federal government's response to entrenched regional poverty is important. Second, poverty rates and income levels in parts of Appalachia are worse than when Johnson began the War on Poverty in 1965. While the number of low-income counties has contracted since 1965 (Moore 1994), poverty persists in the most rural and sparsely-settled areas in the region. That large areas of Appalachia were poor was one reason the

region captured the nation's attention in the 1960s. The small residual areas of poverty do not have the ability to draw national attention to their plight.

Third, highway construction is the most common image scholars and Appalachian citizens have of the ARC. As a result, most studies have critiqued the road program to the exclusion of area development. This study is a response to Ralph Widner's, the ARC's first executive director, call for detailed analyses of individual ARC program initiatives (Widner 1990).

Fourth, the ARC's federal-state partnership yields instructive lessons about federal government efforts to return power to the states. The ARC was among the first federal agencies to give block grants to states. Given the 1997 political climate in which efforts are made to increase state flexibility in the use of federal funds, ARC's experience reveals something that is troubling about the outcome of the process.

Finally, this research is significant because the 1990s witnessed a reemergence of rural economic development issues on the national agenda. In 1994, President Clinton introduced a \$3.5 billion empowerment zone initiative to stimulate economic development in approximately one hundred urban and rural areas. In many respects, the empowerment zone/enterprise community program addresses the same types

of rural problems faced by the ARC over the last thirty years. Not only have new governmental programs been introduced in the 1990s, but ARC Congressional appropriations have increased under the Clinton Administration. Therefore, geographic analysis of ARC's education and health expenditures is not only timely, but of potential assistance to future public policy development.

The Study and Contemporary Perspectives in Geography

This study incorporates several contemporary perspectives in geography. First, it represents current interest in geographic analysis of social policies. Second, it reflects contemporary geographical concern with the role of local areas in shaping social policy. Third, this study adopts a relational view of state function.

Several researchers have called for renewed attention to the geographic aspects of social policies (Kodras and Jones 1990; Rosenberg 1988). During the social relevance movement of the late 1960s, geographers began to identify the spatial character of social problems. The spatial character of public policy has been slower to emerge. As recently as 1992, John Adams claimed that geographers have:

a long way to go in characterizing the geography of the policy process, that is, the geographic implications of social policies in their design, their implementation,

and their effectiveness, at national, state, and local levels (1992, 725).

Kodras and Jones (1990) advanced the geographical research agenda on public policy by recognizing that the local context (i.e., social, economic, historical, and political conditions) conditions policy formulation and implementation. They state:

that social policies are conditioned by the contexts from which they emerge, the settings in which they are implemented, the local circumstances surrounding their use, and the spatial aspects of their operation (Kodras and Jones 1990, 3).

Johnston in an analysis of variations in federal and state spending states:

to appreciate the geography of policy implementation at both federal and state levels, in the United States in general and in the South in particular, requires an understanding of the particular nature of the South (1990, 53).

The characteristics of place play a key role in understanding the implementation of ARC education and health policies. Ralph Widner, the ARC's first executive director, believes the reason some states and local development districts have effectively used federally-provided tools for successful development is rooted in the political culture of locality (Widner 1990). Concern for place and local context has direct bearing on research of ARC education and health programs for two reasons. First, initial project proposals come from local and state organizations. Since decision-

making is decentralized in this manner, contextual factors are influential. Second, the sharing of power between the thirteen Appalachian states and the federal government allows individual state concerns to be expressed at the highest level of ARC administration. For example, former ARC federal co-chairman John L. Sweeney, in discussing the merits of the ARC approach, stated that "policy and procedures ... are designed to honor the particular conditions found in each state" (U.S. Congress, Senate 1967, 52).

This study's theoretical perspective on state function is a relational view. The relational view is a middle-ground perspective between society-centered theories of state function that do not allow for much independent state action and state-centered theories that fail to recognize society's influence on state action. Two basic tenets define the relational view. First, the state "cannot be abstracted from society" because states develop and form in society (Jones and Kodras 1990, 24). The contextual operation of economic, social, historical, and political factors at the national, state, and local level are important explanatory variables. Second, this perspective acknowledges the state's ability to effectuate change in its jurisdiction. One weakness of the relational view is that it holds that the state's ability to cause change is

independent of the forces of capitalist production. This has not been the case in Appalachia. As ARC officials learned early, the dominant capitalist force in Appalachia is the coal industry. As for health care initiatives, local private physicians often disagreed with the implementation of innovative policies. Therefore, identification of the constraints placed on ARC policy by various segments of capitalism is important.

Study Area

This study analyzes the geographic character of ARC's education and health care expenditures at multiple scales. Initially, expenditures are mapped at the local development district level for the entire ARC area to identify major differences in the spatial characteristics of both programs. Local development district's are planning units composed of contiguous counties and organized to provide economies of scale for federal funding in rural areas (Widner 1990). The ARC's 399 counties are organized in sixty-nine local development districts.

The next scale of analysis is a 121-county area in Central Appalachia, including parts of Kentucky, Tennessee, Virginia, and West Virginia (Figure 1-2). Since this scale involves statistical analysis, a 121-county area was

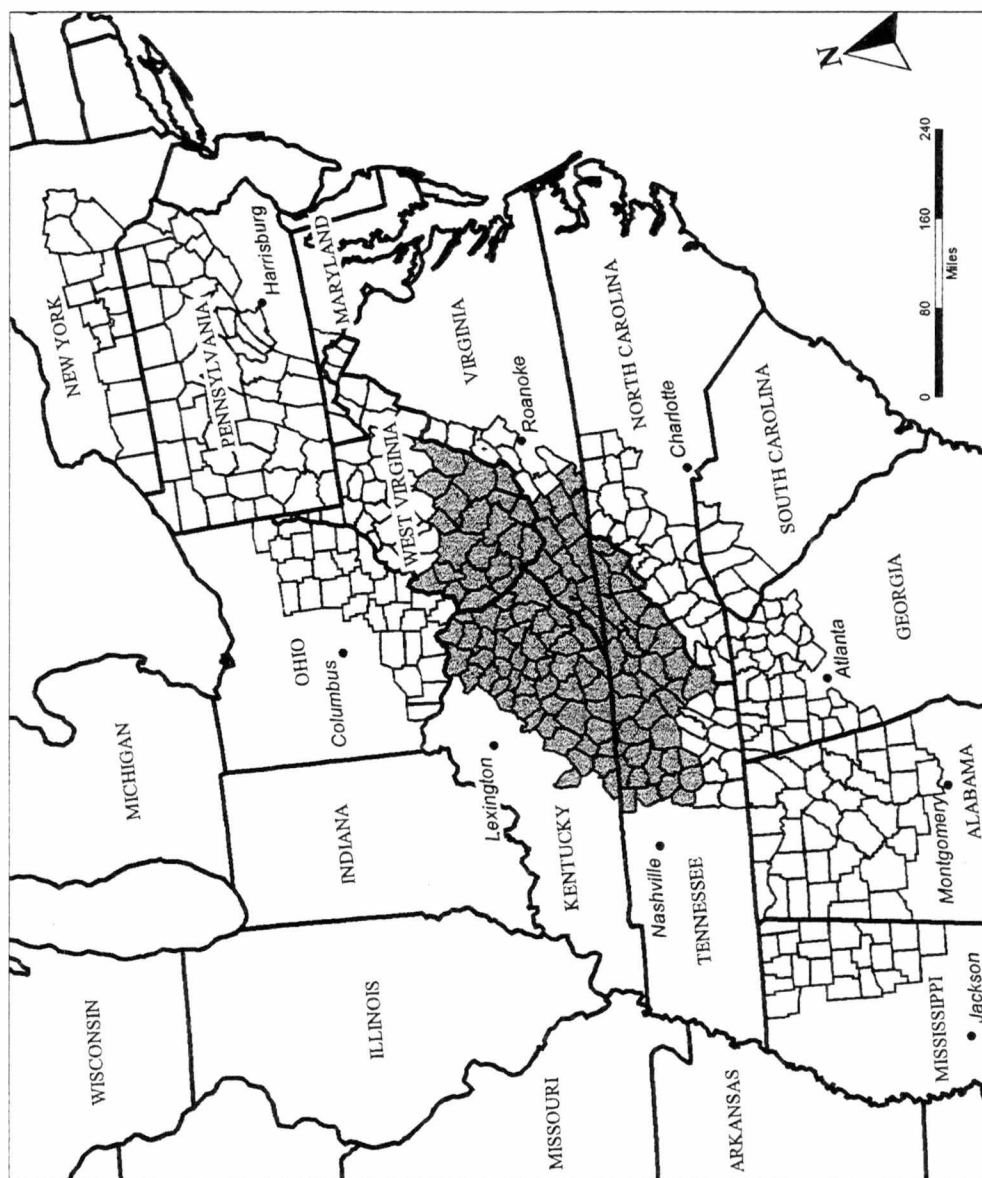


Figure 1-2. The Central Appalachian study area.

selected because it is manageable, yet large enough to assure enough observations for statistical tests. The third scale consists of sixteen counties in the coalfields of southeastern Kentucky (Figure 1-3). The sixteen counties received considerable ARC education and health care expenditures and provide an excellent area for analyzing implementation of individual projects.

Sources

The research for this study relied on five major sources: internal documents of the ARC; interviews with ARC staff members; computer databases of education, health, and community development projects; federal and state statistics on a variety of social variables; and field investigation. Internal documents of the ARC and interviews with current and former ARC staff members reveal how the ARC developed and altered its education and health policies over time. ARC internal documents include transcripts of Commission meetings, the ARC Code, resolutions, memorandums, and reports of ARC subcommittees, particularly the Education and Health Advisory Committees. The documents are housed in Special Collections and Archives at the King Library, University of Kentucky.

All education, health, and community development

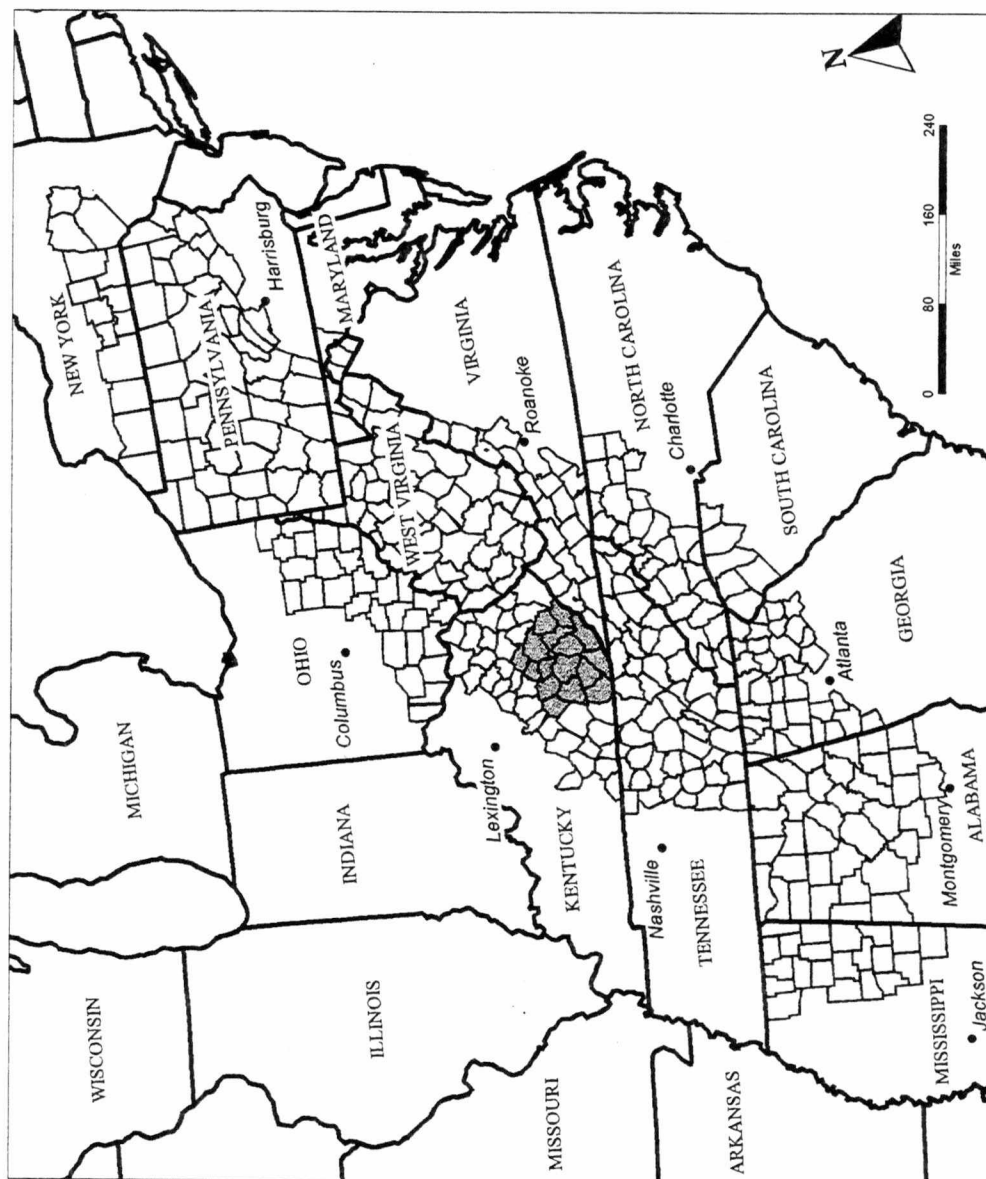


Figure 1-3. The southeast Kentucky study area.

projects through 1992 were placed on computer diskettes by ARC staff members. The databases contain information for more than 9,000 projects,³ and provide information for the cartographic and statistical analyses in the study.

A variety of federal and state statistics are used to analyze spatial variations in education and health expenditures. These statistics are measures of demographic, economic, health, education, and local government conditions. Variables chosen for the statistical analysis reflect characteristics emphasized by ARC policy guidelines or contribute to the explanation of the distribution of expenditures. Data obtained from field investigation provide place-specific examples of ARC policy implementation.

Organization of the Study

The study is organized in the following manner. Chapter 2 surveys major themes in literature concerning the ARC and the geography of social policy. The discussion sets the scholarly context for the research. Chapter 3 analyzes

³ The databases include the following information for each education, health care, and community development project: county, local development district, fiscal year, ARDA section number, type of project, name of project, ARC funds allocated, and total cost of the project.

ARC's education and health policies by tracing the conditions leading to ARC's formation and documenting changes in policy over time. Policy changes are very important in the geographic assessment of expenditures because they produced dramatic spatial reordering. Chapter 3 also identifies national, regional, and local forces contributing to policy changes and discusses other area development programs that had education and health components.

Chapter 4 analyzes the character of ARC's education and health programs from three perspectives. First, the project-approval process is analyzed. Second, a detailed history of the appropriation and allocation formulas for area development programs is developed. Third, patterns of expenditures are assessed through analysis of annual expenditures by project type at the local development district level. How the ARC allotted its annual Congressional appropriation to states was based on agency philosophies that contribute to understanding education and health programs. An important aspect is that in 1975 Congress changed appropriation of area development funds from a categorical-based to a block grant approach.

Further spatial explanation of education and health expenditures is in cartographic and statistical analyses in Chapter 5. The analyses are restricted to the 121-county

area in Central Appalachia. The chapter is organized around major changes in the education and health programs. Chapter 6 concludes the multi-scale analysis of ARC expenditures by extending it to the local scale. Statistical comparisons are conducted of projects in two development districts in southeast Kentucky. Profiling ARC education and health projects in the sixteen counties takes analysis beyond the amounts spent. The long and continuing legacy of social and economic malaise in southeast Kentucky is crucial in understanding local reaction to education and health activities when ARC funds were plentiful. Chapter 7 frames the conclusions within the context of the study's hypotheses. It also places the study in a broader context by discussing the research's applicability to the entire ARC region and the agency's success and future.

CHAPTER 2

FEDERAL FUNDING AND THE APPALACHIAN REGIONAL COMMISSION

Geography of Federal Spending and Social Policy

Geographic analysis of the Appalachian Regional Commission area development programs fits within a much larger framework of literature concerned with both the geographic nature of federal expenditures and state-level variations in implementation of federal programs. Geographic interest in both bodies of literature grew out of the social relevance movement of the late 1960s and early 1970s. Studies of the spatial distribution of federal expenditures have occurred periodically since the late 1960s (Anton 1983; Brunn and Hoffman 1969; Brunn, Lowery, and Webster 1987; Johnston 1980; Lowrey, Brunn, and Webster 1986). Several common themes run through this body of work. First, all seek to identify geographic winners and losers in the allocation of federal dollars. Second, most studies use some form of statistical procedure to explain the inevitable spatial variations in federal expenditures. Third, federal expenditures are often disaggregated at a very general level, such as defense, nondefense, salaries, and wages. The last tendency makes it difficult for researchers to

reach constructive conclusions. For example, in Brunn, Lowery, and Webster's (1987) analysis of changes in federal spending patterns during the Reagan Administration, they conclude that inability to identify regional patterns among the states is due to the aggregation of data in general categories. A similar problem exists in the ARC literature because few researchers have analyzed area development programs separately. This study examines ARC area development programs individually.

Several studies highlight the spatial qualities of federal spending. Anton (1983) characterized federal expenditures between 1971 and 1980, as an era of "stable disparity." Federal spending patterns consistently favored certain states over others. Western states consistently received the most federal expenditures on a per capita basis and North Central states the least. Lowry, Brunn, and Webster (1986) discovered that between 1981 and 1983, "stable disparity" evolved into "dynamic spatial equity." Expenditures were dynamic in the sense that the consistent spending patterns evident before 1981 disappeared. Other states began to replace western and North Central ones as the most-funded or least-funded. States were spatially equitable in that the difference between the most-funded and least-funded decreased. Appalachia, however, was a demonstrable loser between 1981 and 1983.

Research on ARC's area development programs also falls within a larger body of literature concerned with the geographic nature of social policy for the disadvantaged. Despite the economic development nature of most ARC rhetoric and actions, ARC investments in the social arenas of health and education are best interpreted in the context of social policy. The 1960s was a period of intense social policy formulation. In addition to the ARC and the War on Poverty, other programs began at this time including Medicaid, Medicare, and food stamps.

Medicaid was created in 1965, the same year as the ARC. Two researchers (Davidson 1978; Bohland 1990) assessed state variations in the Medicaid program at two different times and came to similar conclusions. Davidson deviated from most research on federal programs at the state level by focusing on the nature of the program rather than variations in expenditures. He developed an index to differentiate state Medicaid programs based on eligibility requirements and the number of and limitations on services provided. On a scale from 6 to 12, the higher the score the closer a state came to matching the Congressional intent of Medicaid. Of the thirteen Appalachian states, ten ranged between seven and nine. Georgia, New York, and Virginia, were the only ARC states to have an index rank of ten or above. Davidson used multiple regression to assess variations in the

Medicaid index. He found that states with low per capita incomes and high proportions of population below the poverty level provided less-generous Medicaid programs. Davidson concluded that a state's socioeconomic context is a powerful explanatory variable in describing variations in Medicaid programs (Davidson 1978, 64). Bohland discussed Medicaid's impact on the distribution of the medically vulnerable. According to him, Medicaid has perpetuated the inequalities it was mandated to eliminate because states were allowed to decide how many services could be reimbursed (beyond a federal minimum) and the level of financial participation, and to determine eligibility standards (Bohland 1990, 141).

Cowart (1969) and Wohlenberg (1976a, 1976b) examined interstate disparities in several anti-poverty programs. In one study, Wohlenberg measured the effectiveness of a state's public assistance program in lifting families out of poverty and in reducing the poverty gap (1976b). The most effective public assistance programs among the ARC member states were found in the northern states -- New York, Pennsylvania, Ohio, and Maryland. Central Appalachian states -- West Virginia, Virginia, Kentucky, Tennessee, and North Carolina -- were particularly noticeable in their inability to raise individuals out of poverty. Wohlenberg used stepwise multiple regression models to assess variations in state public assistance effectiveness. He

found that the best predictors of the variations included state and local expenditures on public assistance and the percentage of public assistance derived from state and local sources.

Christopher Smith assessed the pattern of federal funding for community mental health centers (Smith 1986). As had the ARC, the mental health centers grew out of the War on Poverty legislation of the 1960s and adhered to the strategy, "that federal dollars should be allocated unequally to remedy spatial inequalities in well being and service provision" (Smith 1986, 1070). Therefore, evaluation of the mental health center program provides insight into the ARC. Smith concluded that the program (1965-1980)¹ was moderately effective at redistributing mental health funding to reflect need. Smith also found that early in the program, areas with established urban mental health systems were better able to navigate the bureaucratic red tape and receive funding. However, as the program matured, the bias in favor of mental health systems in large cities declined, and grants for smaller cities dominated the program. Smith also explained how areas with

¹ The period of the community mental health center program corresponds with the apex of ARC appropriations. Like the ARC, it experienced massive retrenchment at the beginning of the Reagan administration. The enabling legislation was repealed in 1981 and grants were combined with other mental health block grants (Smith 1986).

unique regional need could receive priority funding and alter the spatial pattern. Both the ARC and community mental health centers experienced significant policy changes that gave states more responsibility in the provision of services. Repeal of the Community Mental Health Center Act left states with the bulk of responsibility for mental health care.

Janet Kodras showed how a national, supposedly aspatial, social policy--the food stamp program--developed spatial inequalities due to contextual factors (Kodras 1990). To assure Congressional passage, the program was made voluntary. Responsibility for selecting project areas rested with state welfare departments. As a result, counties became project areas based on willingness to share the cost of administration rather than on the need of inhabitants. In locating food stamp project areas, the Department of Agriculture believed:

it was politically strategic to establish the program first in places where it could be assured of good administration, the lowest possible administration costs, and effective results, in order to present the program in a favorable light to other communities and to the Congress (Segal 1970, 52).

When need far exceeds the funds available, this philosophy is often used to maximize investment. Such a perspective places economic concerns above social ones by focusing on areas willing to share costs rather than those with the

greatest need.

Kodras' research provides a model for the statistical analysis used in this study. Kodras first divided the food stamp program into policy periods based on program revisions in 1969, 1975, and 1979. Using state participation in the program for 1969, 1975, and 1979 as a dependent variable, a series of multiple regressions were run to account for variation in participation. Kodras showed that in 1969, five years after the program started, date of project establishment and cultural stigma attached to food stamp participation were the significant explanatory variables of the spatial pattern. When food stamp eligibility standards became uniform nationwide in 1975, measures of economic hardship became the best predictors of program participation.

The Appalachian Regional Commission

The academic literature dealing with the ARC is not voluminous. However, it does involve many disciplines, including economics, geography, sociology, planning, and regional science. The quantity of literature on the ARC is sparse for two reasons. First, in terms of dollars invested, the ARC is not a major federal program. Also, because ARC expenditures are always teamed with state,

local, or other federal funding, awareness of the agency has been limited even within its boundaries. Second, academic research on the ARC is limited because measuring the agency's effectiveness and impact is difficult. This difficulty was expressed by one critic of the ARC:

Getting a handle on the ARC is like sticking your hand in a big bucket of jelly. When you think you've got ahold of it and squeeze, it squirts out between your fingers (Whitt 1981c, A16).

The major reason for this difficulty is the ARC's failure to develop specific measurable goals. This is one major criticism of the ARC in a 1979 General Accounting Office study:

ARC has not established quantified goals and objectives or specific time frames needed to determine when its efforts to reduce disparity with the Nation and achieve regional economic self-sufficiency are accomplished (31).

Such ambiguity has contributed to the small amount of interest by scholars in the agency.

ARC research falls into four categories: political histories, evaluations of effectiveness, analyses of individual programs, and ARC's supposed strategy of concentrating expenditures in growth centers. Several works fall into more than one of these categories.

Political Histories

Political histories of the ARC have been written from a variety of perspectives. Early histories by Rothblatt (1971) and Newman (1972) discussed the pros and cons of ARC's planning and development philosophies. Such works were limited in scope simply because they occurred too early to document a long history. Other works such as one by Derthick (1974) concentrated on the unique organizational structure between the federal government and the states. She used the term "creative federalism" and touted it as a model for the creation of regional commissions across the country. Other works claimed that the cooperation among federal, state, and local governments in operating the Appalachian development program was one of the most important political lessons from the ARC (Estall 1982; Widner 1990).

The foremost political history to date is Bradshaw's The Appalachian Regional Commission: Twenty-five Years of Government Policy (1992). It is the first academic book to deal solely with the ARC since the early 1970s and provides the most thorough documentation of the political history of the agency within the context of national politics, presidential administrations, and approaches to Appalachian development. The book is a chronology of changes in ARC

policy combined with analyses of Northern Appalachia, Central Appalachia, and Southern Appalachia at the end of each decade. Bradshaw makes two important contributions. First, he discusses how implementation of ARC's mandate was conditioned by the political process. As will be seen in this study, ARC education and health policies were often directly influenced by political decisions. Second, Bradshaw conducts statistical analyses of the spatial variations in ARC expenditures. Using local development district data, Bradshaw finds that total population and population density are strongly correlated with total ARC expenditures; but he also discovers that total population and population density have significant inverse relationships with ARC funds per capita. Bradshaw concludes that ARC projects have focused on the more rural parts of Appalachia. My research moves beyond Bradshaw's by disaggregating ARC's individual programs to show that spatial variations in them were different.

Evaluations of ARC's Effectiveness

Evaluations of ARC's effectiveness are the most numerous type of research on the agency. However, there is no agreement on whether the ARC has benefitted the region's development. Conclusions regarding ARC's effectiveness are

dependent on one's view, but two dominant perspectives are evident. Many researchers frame the success or failure of the ARC within the context of eliminating poverty in Appalachia. Because the ARC originated at the same time as the War on Poverty, this perspective assumes that poverty elimination was the agency's primary goal. Despite President Johnson's visit to eastern Kentucky a year before signing ARC legislation during which he promised to "drive poverty underground," the legislation that created the ARC makes no mention of eradicating poverty. The ARC was organized with the clear intent that other War on Poverty programs would more directly address reduction of poverty.

A more appropriate perspective measures the ARC's effectiveness against its legislative mandate to stimulate and improve economic development in the region (Bradshaw 1992; Widner 1990; Isserman and Rephann 1993). An example of this perspective is the recent work of Isserman and Rephann (1993). Using rigorous statistical methodology, they measure the economic impact of the ARC by comparing Appalachian counties with similar counties outside the region. This approach allows the researchers to establish the hypothetical argument that development trajectory in the external counties represents what would have occurred in Appalachia without the ARC. The study showed that the Appalachian counties grew faster than their twins in per

capita income (17 percent), population (5 percent), and personal income (48 percent). Isserman and Rephann concluded that the ARC contributed to the faster growth. Without ARC expenditures, economic progress would have been much slower. Isserman and Rephann's assumption that if greater economic improvement occurred in Appalachian counties ignores significant spatial variation in ARC expenditures. How could the ARC be credited with economic improvement in a county with very little or no investment? Isserman and Rephann admit their assumption is questionable for all counties (1993, 11). The assumption also masks local economic situations that may be responsible for improvements that Isserman and Rephann attribute to the ARC.

A major body of literature that is very critical of ARC's effectiveness falls under the rubric of "Appalachian studies." This literature is by community activists and scholars critical of capitalist exploitation. From their perspective, the ARC is a political agency that legitimizes capitalism and serves the needs of capitalist enterprises. Whisnant's profile of several federal development efforts in Appalachia, including the ARC, is an excellent example of this literature (1980). His perspective and the Appalachian studies' view of the ARC are exemplified by the following:

The main development agency since the mid-1960s has been ARC, a nearly unmitigated disaster in every respect. ARC is conventional, business-oriented, status quo,

pork-barrel politics masquerading as "creative federalism." Prohibited by its legislative charter from addressing the critical problem of natural-resource development, ARC settled for a growth-center, trickle-down, infrastructural approach. In practice this amounted to building roads and vocational schools to serve business and industry; hiring consultants to rationalize the importation of fugitive apparel plants; paying doctors to build themselves new hospitals; encouraging socially and culturally destructive, economically marginal tourist development; and cavalierly advising people in its administratively created hinterlands to move to town if they wanted jobs and services--or out of the region if they didn't like it. Lately, ARC has been tinkering with communications satellites and industrial site development. Pressing problems of strip-mining, black lung, and other occupational diseases, secondary and higher education, housing, and community-based primary health care have been dealt with belatedly and gingerly if at all. The energy question has been sidestepped entirely (Whisnant 1980, xxi).

The most consistent critic of the ARC, the Louisville Courier-Journal, has followed the agency closely since its inception. Articles on ARC policy changes appear frequently in the newspaper. Reviews of the program are featured each time ARC comes up for reapproval by Congress. Two major series of articles appeared in 1973 and 1981. The 1981 series, entitled "Battle of Appalachia," assessed the impact of the War on Poverty in eastern Kentucky (Dunlop and Whitt 1981a). The newspaper's three-month study concluded that "federally-financed programs have succeeded in treating some of the symptoms of poverty but generally have failed to eliminate its causes" (Dunlop and Whitt 1981b, 1). Criticisms of the ARC also included an underestimation of

the roots of poverty by legislators in the 1960s, a larger share of funds going to more developed parts of the region, and an inability to diversify the Appalachian economy by creating stable private-sector jobs. Though these criticisms are justified, the series recognized that infrastructural improvements occurred in highways, vocational schools, health clinics, and sewer and water systems. The series also admitted that these improvements led to an enhancement in the region's quality of life since the War on Poverty began. However, the infrastructural improvements did not lay the foundation for economic diversification, at least in eastern Kentucky, as claimed by the ARC.

Other studies have been less critical of the ARC, but most conclude that ARC's effectiveness is limited. While often critical of the political process surrounding the ARC, these studies recognize that infrastructural improvements occurred in Appalachia because of the agency. For example, Estall's analysis (1982) concluded that the region-wide effectiveness of the ARC was minor but beneficial. He found that in some local areas the ARC's impact had been "highly significant." Alan Batteau's analysis is similar:

the ARC has devolved into a mechanism for dispensing development patronage, with projects being doled out according to a formula based on population, taxation, ability, and poverty levels (1990, 177-178).

Despite his criticism of ARC's political structure, Batteau concludes the ARC made significant progress in the provision of health facilities, vocational schools, and sewer and water systems. Bradshaw's recent evaluation of the ARC recognizes the agency "only as a catalyst for economic development and social improvements" (1992, 141). He sees public agencies such as the ARC as having limited impact on regional development. National and international factors are viewed as more influential on improvements in Appalachia since 1960 than the ARC. Ralph Widner, the first executive director of the ARC, provides an interesting perspective on the agency's effectiveness (1990). Despite criticisms of policy decisions, he concludes that the ARC has been generally beneficial to the region but the effectiveness has been spatially uneven. That some states and local areas were able to use ARC expenditures more effectively than others was one of Widner's most disturbing findings. Widner suggests the spatial disparity is a result of the unique political culture at local and state levels.

Individual ARC Programs

Highway construction has received the greatest attention by scholars examining ARC's individual programs (e.g., Gauthier 1973; Weiss 1972; Munro 1969). The purpose

of the highway program was to increase the accessibility of areas with development potential (i.e., growth centers). Growth centers were municipalities that states identified as having certain advantages. Since ARC funds were not able to reach every area of need, initial legislation called for investment in municipalities with the best growth potential. Of the original authorization, \$840 million, 77 percent was set aside for highways and access roads. The general strategy was for the highways to connect designated growth centers with the interstate highway system. In addition to ARC investment in growth centers, it was expected that outside investment would filter into them.

Research on ARC's highway program is overwhelmingly critical. For example, Weiss suggested that the location of the highways reflected two criteria other than the strategy of connecting growth centers (1972). First, ARC highways filled the gaps in the interstate highway system. Second, ARC highways were distributed among the states to maintain a fair share of funds. Leinbach suggested that states without ARC funds for highway improvement (Alabama and South Carolina) received substantial funding for access roads to make up for the highway deficit (1984). Widner believed the Appalachian highway system improved access to services, facilitated commuting, and allowed some places to grow as service centers (1990). He was less complimentary of the

ARC's premise that the highways would attract manufacturing establishments. Widner thought that the highways were not designed well enough to support large flows of traffic that were to be generated by increased industrial activity.

ARC's area development programs have received little detailed analysis. In fact, few studies have concentrated solely on area development programs or any of the individual programs. This neglect was identified as recently as 1990 when Widner called for more scholarly analyses of the ARC's program initiatives in health, education, and community development. Batteau's only mention of area development programs was that the ARC made significant progress in the provision of health facilities, vocational schools, and sewer and water systems (1990, 176). Commenting on the changes in Appalachia due to national and international forces, Bradshaw claimed:

the Commission's provision of local infrastructure and human resource investments have often made it possible for local areas to take advantage of the changes (1992, 142).

Like Batteau, Bradshaw did not pursue details regarding the implementation of area development expenditures.

Whisnant (1980) provided a strong negative critique of the ARC health and education programs. He was especially critical of the ARC's inability to deal adequately with black lung, a disease of coal miners. Whisnant's view of

the ARC health program is best summarized by his statement:

The limits it set in its own guidelines prohibit truly innovative approaches, and even within the narrow limits set by the guidelines the stated objectives were not achieved (1980, 159).

Within these narrow limits, Whisnant concluded that the level and quality of medical services were not improved and that the ARC did not introduce any innovative approaches to health care delivery in the region (1980, 159). He was critical of ARC's education program, specifically the decision to concentrate on vocational education. Whisnant believed this emphasis does the Appalachian population a disservice:

It locks them into the fickle job-demand system of marginal industries and deprives them of the analytical skills needed to press for long-term reconstruction of the region (1980, 158).

Merrill Johnson's research disputed Whisnant's critique of ARC's vocational education program (1985). In an analysis of marginal industries in the South, Johnson suggested that, at least in Southern Appalachia, the textile and apparel industries paved the way for higher wage manufacturing jobs. Whisnant, however, concluded that ARC's education program catered to and served the needs of industry rather than the people.

Widner's assessment of ARC's education and health programs were quite candid (1990). Regarding the ability of Appalachia's educational system to train highly-skilled

workers for today's high-tech economy, Widner said:

the Appalachian development program was assigned the tools only to nibble at the margins of this basic education problem (1990, 305).

Widner credited the ARC for improving vocational education facilities, training programs, and curricula relevant to the job market. He also believed that resources should have been devoted to improving the quality of labor rather than to programs such as agricultural land reclamation, timber development, and a water resource survey. As for health, Widner only cited a decline in the region's infant mortality rate as indication that ARC's initiatives improved primary care and the health of children in Appalachia.

The Louisville Courier-Journal's 1981 ten-part series "Battle of Appalachia" contained cursory assessments of federal assistance in housing, health, and education in eastern Kentucky. The articles did not address the ARC specifically, but analyzed total federal assistance to the region. The article on housing concentrated on the difficulty Kentucky's state housing authority had in obtaining adequate federal assistance (Dunlop 1981). The ARC was only mentioned as a source of federal funds for site development. The article on health care painted a much more complimentary portrait of the impact of federal intervention in the region's delivery system (Whitt 1981a). This is one of the few assessments that admits that construction of

hospitals and clinics with federal money was of significant benefit to the region.

Assessment of the impact of federal assistance on the region's educational system is mixed and is best summarized by the following quotation:

Eastern Kentucky has undergone an educational metamorphosis that has taken it from one-room schools to indoor swimming pools. However, better facilities have not enabled Eastern Kentucky to close the educational gap with other regions (Whitt 1981b, A1).

Why have federal efforts not been able to close this gap?

The Courier-Journal series offered two reasons. First, a historical indifference to education in the region fosters high rates of school dropout and low standardized test scores. Second, the inability to develop adequate local sources of school revenue keeps the region from providing a stimulating educational experience for the students despite a marked improvement in educational facilities.

ARC's Growth Center Strategy

Because this dissertation documents the geographic character of ARC education and health expenditures, a brief discussion of the agency's policy regarding distribution of investment is necessary. ARC's enabling legislation called for investment in areas with potential for future growth

where returns on investment would be greatest (ARDA of 1965, 1988).

There is a consensus that ARC's growth center strategy was never taken very seriously. Ralph Widner, ARC's first executive director, claimed the growth center statement was included in the legislation to dispel concerns among President Johnson's staff that the program's funds would be spread too thin, as were Area Development Administration funds (1990, 296). Bradshaw stated that from the outset ARC's staff paid little attention to the statement because they recognized it was included for political expediency (1992, 64). As early as 1966, top ARC officials were fending off criticisms of the growth center approach and assuring state officials that it did not make other areas ineligible for the agency's funds (Marsh 1966). In fact, education and health projects were eventually removed from the growth center strategy (Widner 1982; Napolitano 1994; Rottenberg 1995).

ARC scholars also agree that interest in the growth center strategy declined over time (Estall 1982, 48; Bradshaw 1992, 84). Widner summarized this view:

Over the years it was the logic of projects and services themselves that came to dictate appropriate location rather than the designation of areas with supposed potential for growth (1990, 296).

Such a view is supported by the fact that in the late 1970s and early 1980s the ARC abandoned the growth center strategy for one that focused on economically and socially depressed counties.

Despite the apparent purposeful neglect of the growth center strategy by ARC officials, several researchers analyzed implementation of it at the local scale and compared it with the pattern of expenditures. Both Bradshaw (1992, 83) and Carnathan (1973) documented local officials' dissatisfaction with the strategy to the point of discarding it. Estall (1982) conducted a state-level analysis of whether the spatial distribution of area development expenditures reflected early plans to concentrate them in growth centers. Despite later ARC statements that funding was to be decentralized, Estall concluded that the pattern of expenditure concentration continued. He also interpreted ARC's concentration of investment in a few counties as evidence that the growth center strategy was implemented (Estall 1982, 48). The problem with Estall's conclusion is that he did not explain if the counties receiving the investments included designated growth centers. Concentration of investment does not necessarily mean the growth center strategy was implemented. However, it is reasonable to assume that ARC investment patterns at least

followed the geographic spirit of the growth center strategy.

Conclusion

This chapter places the study within the context of research on the ARC. The tendency in the ARC literature is to make only passing reference to the construction of hospitals, health clinics, and vocational education schools. Not only is there an absence of detailed examination of area development programs, no spatial examination of the expenditures exists. Even geographers Bradshaw and Estall failed to document their dynamic spatial characteristics. In addition, no attempt is made to explain the spatial variation in the implementation of the expenditures. Another tendency in the literature is to lump all ARC's area development programs, including education and health, together. This ignores significant policy and geographic differences among the programs. This study resolves these inadequacies in the ARC literature

Before documenting and explaining the geography of education and health care expenditures, it is necessary to describe the initiatives undertaken. Expenditure patterns were significantly affected by the policy changes analyzed in Chapter 3.

CHAPTER 3

ORIGINS AND STRATEGIES OF APPALACHIAN REGIONAL COMMISSION
SOCIAL PROGRAMSEvents Leading to Creation of Appalachian Regional
Commission

The ARC was not the first effort launched by outsiders to assist the people in the Appalachian Highlands. Henry Shapiro (1978) in a historical examination of the concept of Appalachia shows that social assistance had roots in the missionary efforts by Northern churches following the Civil War and in the local-color writings of the late 1800s. The incursion of Protestant missionaries into the Appalachians in the 1870s, coupled with a growing body of literature about the region, led to a plethora of benevolent associations and activities. Local-color writings, which appeared frequently in magazines such as Harper's, Atlantic Monthly, and Lippincott's, were nothing more than travel sketches.¹ Their impact on the American public was to shape perception of Appalachia as a region distinct from the rest

¹ Shapiro estimates that between 1870 and 1890 more than 90 sketches and 125 short stories emphasized Appalachia's distinctiveness from the existing American culture.

of America. Shapiro suggests the reason for early Appalachian benevolent action was the idea of Appalachia as a region apart from the American mainstream rather than the existing social conditions.

During the local-color movement, the earliest calls for federal assistance to the Appalachian Highlands were heard. One of the earliest was in 1899 by William Frost, president of Berea College. In discussing assistance, Frost claimed:

The means for extending this saving aid must be furnished by the patriotic people of the nation. It cannot be left to the states concerned; for these are all poor Southern states, inexperienced in popular education. Appalachian America is a ward of the nation, such a ward as we have never had before (1899, 319).

Frost continued by explaining the method of aid:

The question of the method by which these contemporary ancestors of ours are to be put in step with the world is an educational one. . . . So, too, the whole aim of our aid should be to make them able to help themselves. Industrial education, instruction in the care of the forests, rotation of crops, and similar elementary matters will make them sharers in the gifts of science. Normal instruction will help them to get some benefit from the newly organized and very inadequate public schools (1899, 319).

David Whisnant described the nature of early social assistance in Appalachia:

During the decade and a half prior to World War I, innumerable "uplift" enterprises were added to those of the churches and the independent and denominational schools as state and federal agencies, private foundations, and such other groups as the Red Cross sent "mountain workers" to organize clinics, literacy programs, and agricultural improvement projects (1980, 3).

Whisnant continued by detailing the efforts of the Council of the Southern Mountains. This organization included a combination of religious denominations and independent groups who provided a variety of social services to Appalachian citizens.

The geographic pattern of Appalachian social assistance up to the 1960s was characterized by a fragmented system of small-scale charitable organizations. Undoubtedly, these organizations were influenced by the local color writings. Many originated with Northerners and their continued existence depended on Northern financial support. Several of the organizations survived into the late 1960s and 1970s and became geographic focal points of ARC social expenditures. Three organizations, which continue to assist the region, one addressing health and two addressing education, illustrate such activities.

In 1925, a wealthy northerner, Mary Breckenridge, came to Leslie County, Kentucky to provide health care to a rural, isolated area. Regarding the isolation, Breckenridge said:

In 1925 the territory in the Kentucky mountains where Frontier Nursing Service began its field of operations, was a vast forested area inhabited by some 10,000 people. There was no motor road within any direction. Horseback and mule were the mode of travel. Brought-on supplies came from distant railroad points and took from two to five days to haul in. U.S. mail sacks travelled in little carts or slung across the backs of horses and

mules. There was not in this whole area a single licensed physician - not one (9).

This area of southeastern Kentucky was typical of much of Appalachia, particularly Central Appalachia. The Frontier Nursing Service emphasized prenatal and postnatal care of women and children using nurse-midwives. Today, the Frontier Nursing Service serves all of Leslie County and parts of Clay, Harlan, and Perry counties. The agency operates a 40-bed hospital constructed with assistance from the ARC, five primary care clinics, and two educational programs for registered nurses interested in becoming certified nurse-midwives.

In Knott County, Kentucky, two educational institutions exemplify how social assistance in the region was provided by small-scale charitable organizations. The Hindman Settlement School originated in 1899 when two women from central Kentucky visited Perry County to teach short courses in homemaking, reading, writing, and arithmetic (Cornett 1981, 180). The two women responded to a request by an elderly Knott Countian to begin a school. Local support in the form of labor, supplies, and land combined with private contributions allowed the Hindman Settlement School to open in 1902. Even after the creation of publicly-funded state schools, the school continued to operate, concentrating on training teachers about the region's heritage through arts,

crafts, and recreation programs. Alice Lloyd College, a small four-year college also in Knott County, began much like the Hindman Settlement School. Alice Lloyd came to Knott County from Massachusetts in 1916 to a Presbyterian outreach mission to escape the northern winters, participate in social work, and see the region profiled by local-color writers (Cornett 1981, 183). Alice Lloyd and her mother were convinced by a local resident to come to his part of the county to start a school. By 1923, the facility consisted of an elementary school, a high school, and a junior college. A college curriculum was the priority and became the sole focus when publicly-funded elementary and secondary schools opened in the area.

Despite the valiant efforts of such organizations as the Frontier Nursing Service, Hindman Settlement School, and Alice Lloyd College, social conditions in Appalachia remained acutely bad. National attention to the region's problems lessened between 1920 and 1950 for two reasons. First, the Great Depression drew the nation's attention away from Appalachia and toward conditions in the industrial core of the Midwest and Northeast. Second, a strong coal industry in Appalachia lessened concern over social conditions in the region. Literature on the status of education and health conditions during this period is sparse. The best sources are several government reports.

Federal agencies studied the problems of Appalachia in 1902 and 1935, but the government failed to act because the problems were too large (ARC 1985b).

The most comprehensive record of health care in Appalachia before the 1960s is a 1947 federal study of medical services in the bituminous coal industry (U. S. Dept. of Interior 1947). Approximately 73 percent of mines surveyed were within ARC boundaries. Therefore, this study provides a reasonable assessment of health care conditions in Appalachia before large-scale government intervention. The study found medical facilities were generally inadequate in the coal fields. In two-thirds of the coal mining communities in ARC boundaries, general medical services were provided by prepayment plans that included regular deductions from miners' pay. Soon after this report was published, the United Mine Workers forced an agreement with coal operators that included a health plan funded by a royalty on each ton of coal (Boyd 1982, 124). This agreement ended the prepayment and company doctor system. However, the plan left a legacy in the coalfield's health care infrastructure that confronted ARC politicians and planners.

In the 1950s, several trends again focused national attention on social conditions in Appalachia. First, changes in the coal industry, particularly automation,

shattered the coalfield's traditional economy. Nationwide, the number of employed bituminous coal miners decreased 56.8 percent between 1950 and 1959, while the average tons mined per worker per day increased 80.5 percent (U.S. Dept. of Energy 1982, 32). Second, the post-war prosperity experienced by most Americans exacerbated the economic and social problems of Appalachia. Also, local and state organizations, especially ones in eastern Kentucky, began to address regional problems that eventually led to large-scale relief efforts such as the Area Redevelopment Administration and the ARC.

In 1956, John Whisman, a businessman in eastern Kentucky, became president of the Kentucky Jaycees (Whisman 1982). Whisman formed the Eastern Kentucky Development Council in September 1956. Fifty people comprised this voluntary council. Half were presidents of Jaycee chapters in eastern Kentucky, and half were other local leaders. After devastating floods in February 1957, combined with the council's inability to coordinate relief efforts, a regional commission similar to the voluntary Eastern Kentucky Development Council, but part of state government, was formed. The Eastern Kentucky Regional Planning Commission was part of Kentucky's economic development department. Nine commissioners comprised the commission: two coal company executives, a realtor, a newspaper editor, an oil

company executive, a college president, a minister, a physician, and an oil and gas well driller. John Whisman was chosen the Commission's first executive director. The legacy of the Eastern Kentucky Regional Planning Commission was different from its intended goal of improving the social and economic infrastructure of eastern Kentucky. The commission produced Program 60: A Decade of Action for Progress in Eastern Kentucky that became the blueprint for the ARC (Eastern Kentucky Regional Planning Commission 1960). The plan called for a number of state and federal actions: a regional highway system, community development, industrial development, and improvements in education and health. Another important contribution of the commission was that it stimulated interest in the Appalachia problem and made state and local leaders aware of the need for a special regional development program.

Another important event leading to the formation of the ARC was the 1960 call by Maryland's governor Millard Tawes for a meeting of Appalachian governors. Tawes and Governor Bert Combs of Kentucky organized the Conference of Appalachian Governors. Tawes and Combs faced significant economic and social disparities within their states. Both were convinced that regional cooperation with large-scale federal assistance was the best response to the region's problems (ARC 1985b, 19). The Conference of Appalachian

Governors got Appalachian poverty on the national agenda during the 1960 Democratic presidential primary in a meeting with John F. Kennedy. West Virginia was an important battleground during the primary, which heightened national awareness of Appalachia (Bradshaw 1992). Kennedy's victory in 1960 was another major step toward federal aid to Appalachia, for Kennedy promised to assist the nation's poorest areas (ARC 1985b, 19).

While specific legislation for Appalachia was another four years away, Congress passed in 1961 the Area Redevelopment Act aimed at "depressed areas." Though Appalachian leaders supported the legislation, there was justifiable concern that the act was not financially strong and comprehensive enough to assist the region (Bradshaw 1992). The Area Redevelopment Act's primary focus was not on Appalachian problems but on building an industrial infrastructure in areas with high unemployment. Eligibility criteria were very liberal and included more than 900 counties, diluting the program's impact on Appalachia. Through 1964, about 29 percent of the funds had been spent in Appalachia (Whisnant 1980, 74). However, more than 50 percent of Appalachian Area Redevelopment Act funds went to West Virginia. At the end of 1962, the Conference of Appalachian Governors was dissatisfied with the percent of the funds received by Appalachian states, and an interagency

committee was formed to work out differences between the two organizations (Bradshaw 1992, 32).

Before the committee met in the spring of 1963, Central Appalachia experienced another major flood. Following a Congressional tour of the flood-damaged area, President Kennedy became convinced that Appalachia needed more federal assistance than what the Area Redevelopment Administration offered (Bradshaw 1992, 32). At an April 1963 meeting between the Area Redevelopment Administration and the Conference of Appalachian Governors, Kennedy announced the formation of the President's Appalachian Regional Commission whose objective was to develop "a comprehensive program for the economic development of the Appalachian Region" (ARC 1985b, 21). The commission was a comprehensive effort. More than 300 persons representing Appalachian states and federal agencies were organized into many committees that studied highways and transportation, water resources, physical resources, human resources, and comprehensive program development. James L. Sundquist, a Commission member, wrote:

In every corner of the federal establishment, during the summer of 1963, ideas for the Appalachian program began to grow--usually in the form of regional addenda to agency budgets. Often new legislation was not even needed, just money. . . .It fell to Roosevelt [Jr.] [chairman of the President's Appalachian Regional Commission] and a small central staff under John L. Sweeney, executive director of the temporary commission, to try to assemble these proposals in some kind of

balance, respond to priorities felt by the governors, develop the theoretical rationale for giving Appalachia preferential (or differential) treatment, plan the structure of a permanent Appalachian regional commission, and draft a report (ARC 1985b, 22).

During the meetings, state and local officials continually voiced concern about the lack of highways. John L. Sweeney, executive director of the commission and the ARC's first federal co-chairman, felt there was an overwhelming consensus among state leaders that Appalachia's most pressing problem was a lack of highways (Sweeney 1982).

Two decisions in drafting Appalachian Regional Commission legislation are particularly relevant. First, given the statements by local leaders on the need for highways, the President's Appalachian Regional Commission emphasized economic development at the expense of social programs. Several social programs in the Commission's report were deleted from the Appalachian bill because the Economic Opportunity Act of 1964 provided funding for them (Fleming 1982). Also, social initiatives in education and health related to economic development. Second, a major debate within the Commission concerned the organizational structure of the government agency responsible for Appalachia. The strong influence of governors played an important role in the debates. According to Ralph Widner, a member of the Commission's development team and the ARC's first executive director, the most practical organizational

structure was some form of federal-state partnership patterned after the Delaware River Basin Commission (Widner 1982). This commission was an interstate contract among Pennsylvania, New Jersey, Delaware, New York, and the federal government. The President's Appalachian Regional Commission recommended an Appalachian Regional Commission consisting of the governor of each Appalachian state and a federal representative appointed by the President.

In the spring of 1964, the President's Appalachian Regional Commission submitted a report to President Johnson recommending a plan of action for the federal government to address the conditions in Appalachia. The report began:

Appalachia is a region apart--geographically and statistically. . . .Appalachia has natural advantages which might normally have been the base for a thriving industrial and commercial complex. Below its surface lie some of the Nation's richest mineral deposits including the seams which have provided almost two-thirds of the Nation's coal supply. . . . Yet this natural endowment has benefitted too few of the 15.3 million people of Appalachia. The average Appalachian, whether he lives in a metropolis, in town, on the farm, or in a mountain cabin, has not matched his counterpart in the rest of the United States as a participant in the Nation's economic growth (Roosevelt, Jr. 1964, xv).

The region's major problems included: low income, high unemployment, lack of urbanization, deficits in education and living standards, and population decline. Appalachia's per capita income in 1960 was 74 percent of the national average. Also, 30.7 percent of Appalachia's population was poor compared with 20.5 percent for the nation. Appalachian

unemployment in 1960 was 7.1 percent compared with a national rate of 5.0 percent. While these rates were not far apart, the figures did not include 700,000 Appalachians who had quit searching for work. Between 1950 and 1960, urban areas in Appalachia grew at a slower rate than cities in other parts of the United States. In 1960, only 47.5 percent of Appalachia's population was urban compared with 72 percent for the nation's. Appalachia's rural non-farm population had grown faster than the nation's.

The President's Appalachian Regional Commission report noted the uniqueness of rural Appalachia's cultural landscape:

For in much of Appalachia, "rural" comes with a difference; the rural scene is in fact unique. Rural in Appalachia does not mean a checkerboard of rich farms; instead, dense but narrow ribbons of bleak habitation wind along the valley roads and up the tributary hollows, threading among the wooded hills. It suggests, in fact, an endless town, but it is not a town, for typically there is no central water supply or disposal, no police station or firehouse, no hospital or hotel, no streets or sidewalks, no shops or places of amusement (Roosevelt, Jr. 1964, 4).

Such a view resulted in an ARC policy, though not explicitly stated, that attempted to reorient the region's settlement pattern toward small urban centers. The report also identified the region's most significant educational problems as the low level of attainment and an inadequate tax base to fund education. The report described low living standards as one of the realities of the region by

documenting Appalachia's poor performance in per capita retail trade, per capita savings, quality and value of housing, and public assistance. In 1963, 6 percent of Appalachia's population received some form of public assistance compared with 4.1 percent for the nation. The report concluded by documenting Appalachia's changing age structure. Between 1950 and 1960, Appalachia experienced a 5.1 percent decrease in the number of people 18 to 64 compared with an 8.6 percent increase for the nation. The number of people over 65 increased 32.3 percent compared with a 26.7 percent increase for the nation. It is significant that although the report included recommendations for the construction and operation of demonstration community health centers, it did not mention health care deficiencies.

In April 1964, President Johnson sent legislation to Congress based on the President's Appalachian Regional Commission report. Debate over the Appalachian legislation involved the bill's mix of programs and concern for regional favoritism rather than the unique organizational structure of the proposed agency. Most modifications to the bill centered around natural resource issues, not social programs or organization (Bradshaw 1992, 40). On March 9, 1965, President Johnson signed into law the Appalachian Regional Development Act creating the ARC, the largest and most

significant federal government effort to address the region's economic and social problems. When President Johnson signed the act he said:

The Appalachian Ranges were the first challenge and the first test to the settlers of this seaboard. Through the Cumberland Gap Americans found their way to the promise and the plenty of a continent that is united. It is not too much to suggest that today we may again find our way to new promise and new fulfillment by taking up the human challenge of modern America (ARC 1985b, 33).

Appalachian Development Programs

At the aggregate level, the ARC subdivides its development programs into two major categories: highway and area development. The highway program includes the 3,025 mile Appalachian Development Highway System and access roads. The area development program is an amalgam of other ARC programs including health, child development, education, community development, energy and business development, environment and natural resources, housing, community service and youth leadership, local development district planning/administration, and research/technical assistance.

A consensus existed among formulators of the ARC that the best way to stimulate self-sustaining growth in Appalachia was to increase the accessibility of areas with development potential (i.e., growth centers) via a highway

system. The general strategy was for the highways to connect designated growth centers with the interstate highway system.² Besides ARC investment in growth centers, it was expected that outside investment would occur due to better access. The original ARC area development investment strategy was to fund projects that enhance economic development in growth centers. Of the \$840 million authorization for 1965 through 1971, 77 percent was spent for highways and access roads. This level of commitment to highways continued. The 1995 appropriation for highways was \$195 million, 69 percent of the total ARC appropriation (ARC 1995a).

As a result of the emphasis on highways, ARC's area development program has played a secondary role. This secondary status can be partially attributed to the historical context. At the time of the Appalachian Regional Development Act's passage, President Johnson was implementing a variety of programs in his War on Poverty. Each was planned to serve a niche in the "poverty market." ARC's niche was to be regional economic development in the form of an improved transportation infrastructure. Appalachian social problems were to be predominately served by other federal programs. There was an agreement among

² Responsibility for designation of growth centers rested with the states.

government officials that the ARC would provide for the physical infrastructure of Appalachia and leave the majority of human resource initiatives to existing institutions and other War on Poverty programs (Sweeney 1982).

The ARC invested in a variety of area development programs, but only a few have received substantial funding (Table 3-1). The five programs receiving the most emphasis (in descending order of funding) through 1994 are community development (largely water and sewer projects), education, health, child development and adult care, and local development district planning/administration (Table 3-1). Community development accounted for 31.3 percent of area development expenditures, followed by education (23.5 percent) and health (18.6 percent). Together, health and education accounted for 42.1 percent of area development expenditures. Table 3-1 indicates the level of assistance by other federal programs, by states, and by local governments. ARC funded 31 percent of the cost of health projects and 36 percent of education projects. The agency funded smaller percentages of costs of programs such as community development (19 percent) and housing (14 percent). Other programs, including child development and adult care (51 percent) and energy and business development (47 percent), received much greater amounts of assistance from the ARC.

Table 3-1. Appalachian Regional Commission area development project funding through fiscal year 1994.
In millions of dollars.

Project Categories	Percent of Area		State and		Total Project Funds	Number of Projects
	ARC Funds	Development Funds	Other Federal Funds	Local Funds		
Community Development	\$743.5	31.3%	\$1,489.9	\$1,592.6	\$3,826.0	3,569
Education	558.4	23.5	196.2	791.3	1,545.9	3,375
Health	443.2	18.6	246.6	738.2	1,428.0	3,633
Child Development and Adult Care	172.0	7.2	73.8	88.5	334.3	1,980
Local Development District Planning and Administration	105.8	4.4	27.0	74.8	207.6	1,859
Energy and Business Development	96.3	4.0	21.8	85.9	204.0	820
Research and Technical Assistance	95.5	4.0	6.3	61.7	163.5	2,079
Environment and Natural Resources	78.4	3.3	3.3	20.3	102.0	255
Housing	65.7	2.8	234.8	162.8	463.3	322
Community Service and Youth Leadership	2.8	0.1	0.3	1.4	4.5	106
Other Programs and Special Demonstrations	18.9	0.8	8.4	16.3	43.6	109

Source: Appalachian Regional Commission 1995a.

A comparison of yearly appropriations for highway and area development indicate the differences in levels of commitment to the two programs (Figure 3-1). Though area development appropriations never reached the level of highway spending, their similarity over time reflects changes in the ARC programs. Several important points can be drawn from Figure 3-1. First, the sharp reduction in appropriations between 1967 and 1969 was due to the Vietnam War. President Johnson's budget for fiscal 1967 cut aid to the ARC by more than \$100 million. Second, the greatest disparities between area development and highway appropriations occurred in the late 1970s and early 1990s. Third, the early 1980s was a volatile time for the ARC, for appropriations were severely reduced during the Reagan Administration. The average yearly appropriation for the ARC for 1982 through 1987 was \$142.7 million, a decrease of 58 percent from the average appropriation for 1977 through 1980, prior to Reagan's attempt to terminate the agency. Average appropriations for area development programs decreased 67 percent, from \$118.1 million to \$39.3 million. Fourth, in the late 1980s, the highway program was rejuvenated under the Bush Administration and continued to increase under the Clinton Administration. Fifth, area development programs received a significant boost under the Clinton Administration beginning in 1993. The 1994 area

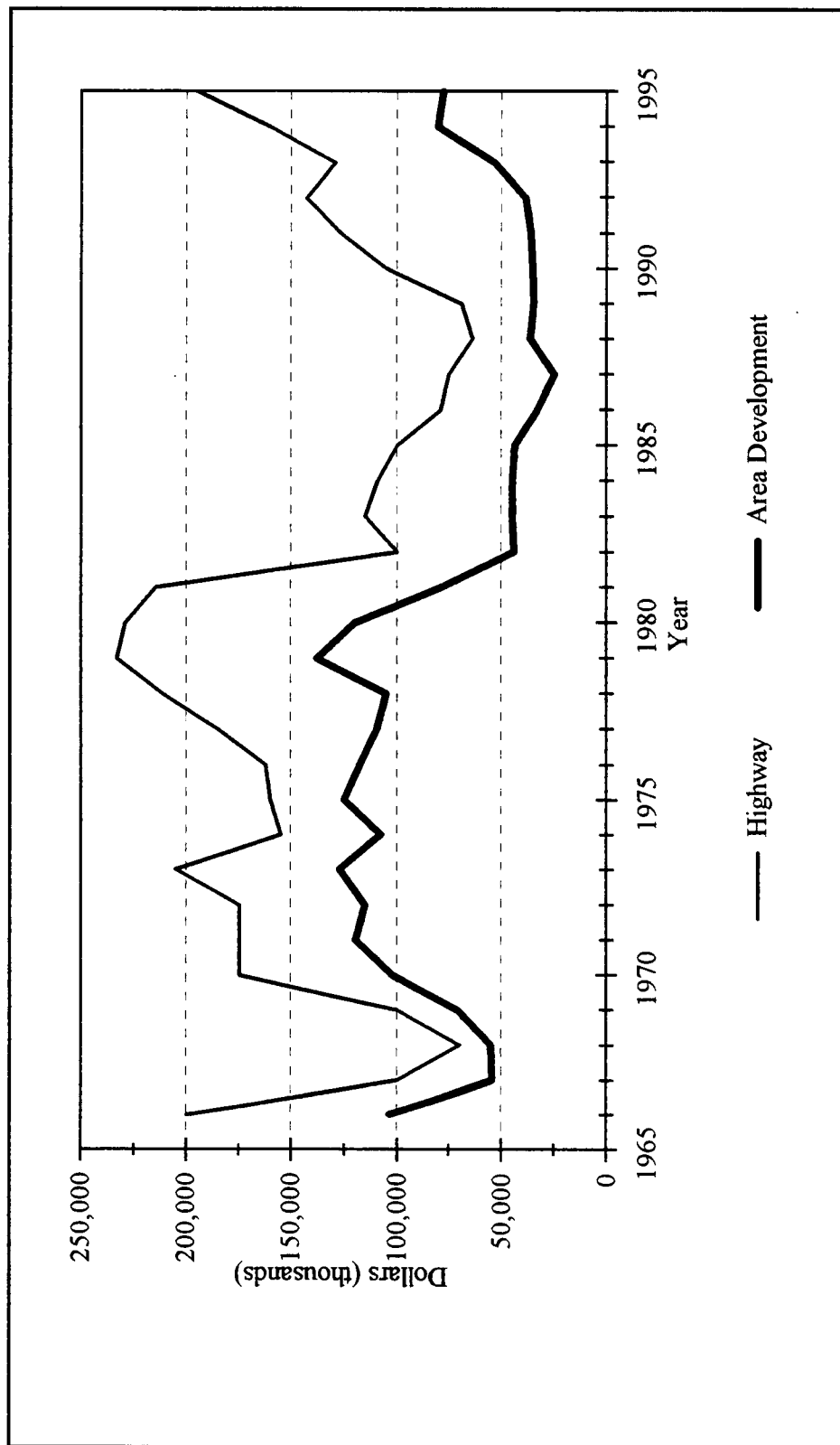


Figure 3-1. Appropriations for Appalachian Regional Commission programs, 1965 to 1995. Source: ARC 1995a.

development appropriation was the highest since 1981. The peak period of area development appropriations occurred between 1968 and 1982. This fourteen-year era was a window of opportunity for states in Appalachia to organize, plan, and request ARC funds for social programs.

Education and Health Care Strategies/Emphases

The ARC's education and health care efforts were the only social programs directed by goals and objectives. Though many of the goals and objectives were nebulous, they provide a general framework in which to analyze and understand the spatial pattern of funding for each program. In addition, operational changes in the ARC greatly influenced the strategies of various programs.

From the outset, the framers of ARC legislation viewed adequate health and education opportunities as necessary social components to economic development. The impetus behind health and education initiatives was to provide the region's businesses and industries a healthy, skilled labor force. The link between the social concerns and economic development is evident in the language of many ARC documents. For example, the heavy funding of vocational education is because the ARC recognized the direct relationship between it and economic development. One

resolution stated that curricula in vocational and technical schools receiving funding reflect the region's fastest growing jobs (ARC Education Advisory Committee 1971, x).

Health care projects were also justified on the grounds of fostering regional growth and development. The primary goal of early health projects was "to demonstrate the value of adequate health facilities to the economic development of the region" (ARC 1965c, 1).

Health Care Initiatives

Section 202 of the Appalachian Regional Development Act was the mandate for health care initiatives. Part (a) of Section 202 laid out the strategy:

In order to demonstrate the value of adequate health and medical facilities to the economic development of the region, the Secretary of Health, Education, and Welfare³ is authorized to make grants for the construction, equipment, and operation of multi-county demonstration health facilities, including hospitals, regional health diagnostic and treatment centers, and other facilities necessary to health (ARC Health Advisory Committee 1966, 3).

Grants under Section 202 included up to 80 percent of project construction costs, 100 percent of equipment and operation costs for the first two years, and 50 percent of

³ In 1967, an Appalachian Regional Development Act amendment shifted this responsibility to the President who in turn transferred it to ARC's federal co-chairman (Lewis 1974).

operation costs for the following three years. Operating grants did not exceed five years.

To assist the ARC in formulating policies for its health programs, a Health Advisory Committee was formed in October 1965. Funding of health projects was delayed until after the Committee presented its report. During the formulation of the report, the ARC in 1965 allocated \$1.2 million to Appalachian Regional Hospitals to assist in the operation of ten hospitals in the coalfields of eastern Kentucky, southwestern Virginia, and southern West Virginia.⁴ Appalachian Regional Hospitals, led by the Board of National Missions of the Presbyterian Church, USA, assisted by Kentucky Governor Bert T. Combs and the Area Redevelopment Administration, assumed control of the hospitals after the United Mine Workers decided to close them (Swann 1965, 20). The survival of these facilities was crucial for two reasons. First, they were an essential and integral part of the coalfields' underdeveloped health care system. Second, they proved to be important centers of subsequent ARC health expenditures.

In early 1966, the Health Advisory Committee presented its report to the ARC. The report statistically documented

⁴ The hospitals were located in Harlan, Hazard, McDowell, Middlesboro, Pikeville, South Williamson, and Whitesburg, Kentucky; Wise, Virginia; and Beckley and Man, West Virginia.

the region's health problems. A major problem for the committee was implementing the vague mandate in Section 202

(a). To fulfill it, the following criterion was set:

Each demonstration health facility project should have as its objective the phased development, through clearly defined steps, of comprehensive health services for all segments of the population in a designated area. Comprehensive health services for individuals and families include these essential components: health education, personal preventive services, diagnostic and therapeutic services, rehabilitative and restorative services, and community-wide environmental health services (ARC 1966a, 1).

Coordination with the designated areas' health care providers, as well as use of other existing health facilities, was emphasized. The decision to provide a comprehensive range of health services in designated areas led to several unintended consequences. Funding a broad range of health services diluted rather than concentrated the potential health benefits within the areas. The low level of ARC health care funding also weakened the potential impact of attempting to provide comprehensive services.

The decision to spatially concentrate health expenditures was not the result of a formal policy. According to Joseph Napolitano, the first director of the ARC health program, the decision to concentrate expenditures rather than disperse them by formula was due to two factors (Napolitano 1994). First, several administrators and ARC staff members believed that to fulfill the mandate in

Section 202 meant funds could not be ubiquitously distributed. John Whisman firmly believed that health dollars would be wasted if distributed on a formula basis. Whisman's philosophy was evident in the Health Advisory Committee report (ARC Health Advisory Committee 1966). Second, the quick passage of the Appalachian Regional Development Act in 1965 left ARC officials searching for guidelines for the disbursement of health and education funds. The committee responsible for health policy was organized six months after passage of the act.

While health expenditures were not allocated on a formula basis, several stipulations guided their disbursement. When the first demonstration areas were designated in 1967, three guidelines were set for funding during 1968 (ARC 1968a, 1). First, each demonstration area was to receive at least two million dollars. Second, there was to be an open fund for projects. Third, no demonstration area was to receive more than five million dollars.

The real challenge in the ARC's health demonstration program was designation of demonstration areas. Selection rested with the states with approval by the ARC. States were given guidelines. An area had to be: (1) a natural or logical region or medical trade area; (2) an area where barriers to providing comprehensive health services existed

such as geographic isolation, shortage of health personnel, financial limitations, or fragmentation of services; (3) an area of high health need such as one of low income, high morbidity and mortality rates, and few health resources; and (4) an area with persons who were willing to become involved in the planning and implementation of the demonstration program (ARC Health Advisory Committee 1966, 22-24).

Examination of the areas selected reveals that states relied on criteria other than those mandated by the ARC. Existing health infrastructure was an important factor in the selection of areas. The most developed infrastructures were in large urban centers. Because large cities were not the focus of the ARC, states chose the most densely-settled nonmetropolitan areas for the majority of their expenditures. Such areas, at least in Central Appalachia, were the hubs of existing health care systems.

In November 1967, the ARC designated health demonstration areas in eight states, and by August 1968 the areas had received their first grants (ARC 1968a, 1). The states with the first demonstration areas were Alabama, Georgia, Kentucky, North Carolina, Ohio, South Carolina, Virginia, and West Virginia. By the end of 1970, the ARC had designated additional demonstration areas in Maryland,

Mississippi, Pennsylvania, and Tennessee (Figure 3-2).⁵ The number of demonstration areas expanded because states without such areas were jealous of the large influx of health dollars into the states with areas.

Considerable resentment built among states without a demonstration area over the "continuation burden." According to ARC guidelines, a construction grant would be dispersed in a lump sum. Funds for operating a facility would be spread over five years. As each new year began, health money was first allocated to support projects started in previous years. After the "continuation burden" was distributed, new projects were funded. As a result, several demonstration areas, most noticeably South Carolina's, geared their programs toward operation grants. States without demonstration areas witnessed more and more health money being tied up in continuation burdens. Consequently, twelve of the ARC's thirteen states developed demonstration areas.

Section 202 was not the only source for health funds under the Appalachian Development Program. For Appalachian areas that were unable to meet the 50 percent matching funds required for federal grants or were not designated as demonstration areas, the Appalachian Regional Development

⁵ New York was the only Appalachian state that never had a health demonstration area.

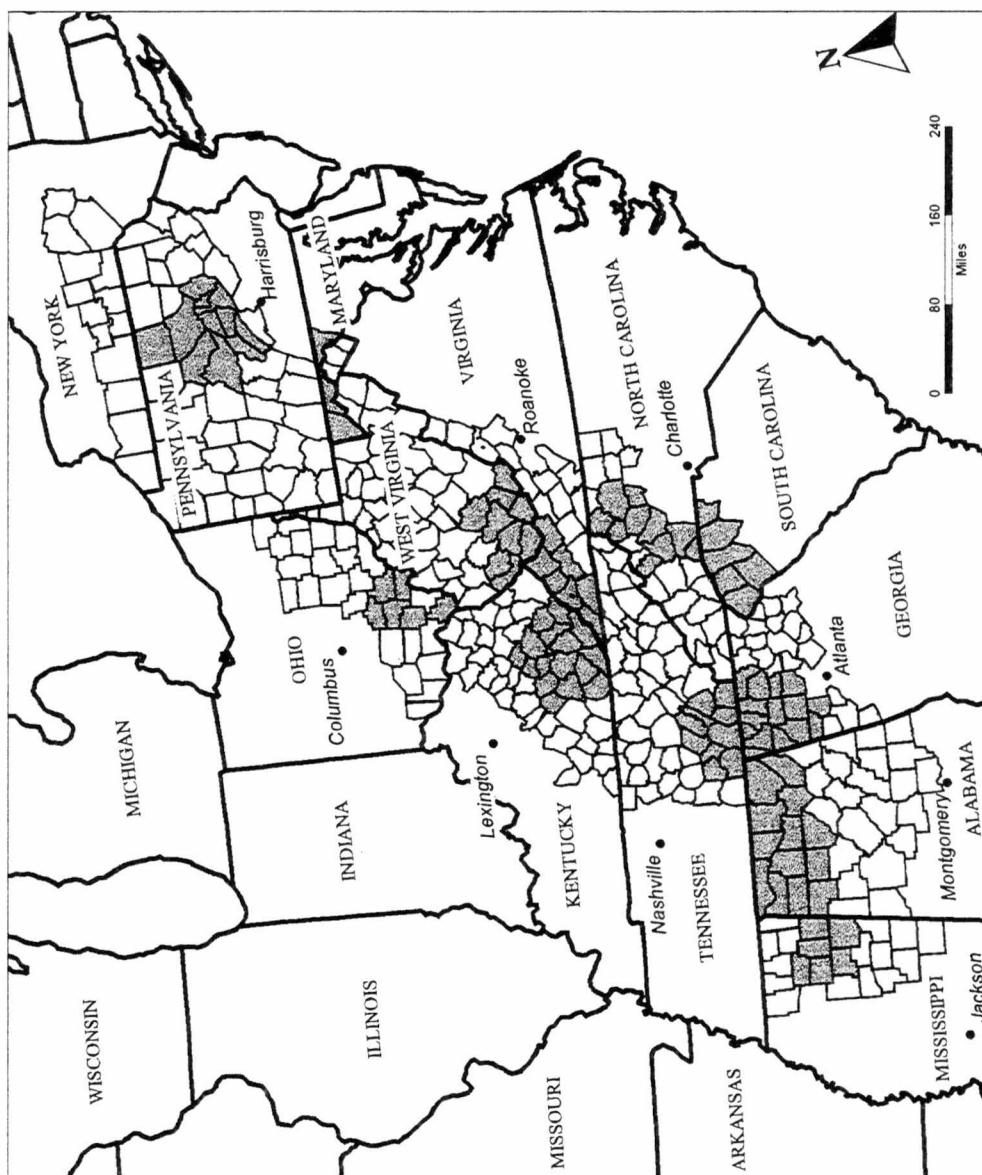


Figure 3-2. Appalachian Regional Commission's health demonstration areas, 1967 to 1974. ARC 1972.

Act provided supplemental funds under Section 214. The program provided up to 30 of the required 50 percent. Relying only on Section 214, a few counties outside demonstration areas received more funds than many demonstration counties. For example, Pike County, Kentucky received more than \$2.2 million during the demonstration phase (1967-1974) for a mental health program and two hospital construction projects. Though Section 214 funds accounted for only 23.5 percent of all health dollars spent by the ARC, they were especially significant during 1966 and 1967 when the health policy was developed.⁶ The majority of Section 214 funds were for new hospitals or nursing homes or additions to them. By the mid-1970s, the use of Section 214 funds for health projects had declined. New allocation procedures led states to direct greater amounts of the funds to water and sewage system projects.

Over the next decade, the health demonstration program continued with slight modifications. Amendments to the Appalachian Regional Development Act in 1967, 1969, 1971, 1975, and 1977 further refined the program (Table 3-2). A survey of the amendments reveals broadening of the health program's scope and more flexible use of Section 202 funds.

⁶ The ARC allocated \$14 million in Section 214 funds in 1966 and 1967. Fifty percent went to Pennsylvania, Tennessee, and West Virginia.

Table 3-2. Significant amendments to Appalachian Regional Development Act's health initiatives.

Year	Amendment
1967	Funds can be used to acquire and operate existing non-profit hospitals. Placed greater emphasis on health services (not just facilities); funds for operation of facilities; and attracting, training, and retaining health personnel.
1969	Extended grant authorization to include nutrition and child care projects. Added provisions for grants to research the detection and treatment of occupational diseases resulting from coal mining. Federal share of operating costs raised from 50 to 75 percent for the third through the fifth years of project existence. Allowed combining Section 202 funds with other federal grant-in-aid programs.
1971	Removed the requirement in the Social Security Act that projects funded under Appalachian Regional Development Act must provide services on a statewide basis.
1975	Authorized the purchase of for-profit hospitals if the Commission showed this approach as the most cost-effective means to providing improved health services.
1977	Allowed an additional two years of funding for current child development demonstrations beyond the fifth year if there were no federal, state, or local funds available to continue the project.

Sources: ARC 1967; McCloskey 1971, 1976; ARC 1985b.

Several amendments illustrate the financial difficulty faced by project administrators in securing funding beyond the ARC. The federal share of operating costs was raised from 50 to 75 percent for the third through the fifth year. Funding was increased to a sixth and seventh year for child development projects if no other source was found. The amendments reflect the austere economic conditions in much of rural Appalachia. A 1974 survey found that only three of five non-construction projects survived beyond ARC support (ARC Health and Child Development Subcommittee 1974, 9). The principal means of support for more than 25 percent of the surviving projects were grants from private foundations or federal, state, or local governments.

Modifications to the health program during the demonstration phase are evident in several ARC resolutions. In May 1967, the ARC bowed to pressure from the medical community and passed a resolution that proposed projects prove that they would not interfere with the existing private health care infrastructure (ARC 1967). Potential conflict and competition between federal programs and the private medical establishment were the reason that the West Virginia demonstration area emphasized public health programs (Napolitano 1994). Conflict was unavoidable. According to Napolitano, the ARC received letters and phone calls from dental associations claiming ARC-funded programs

were drawing patients away from dentists. In September 1970, under continuing pressure from state and local governments, the ARC opened the entire region to Section 202 funds. The resolution stated:

the Commission will, from time to time, designate as Section 202 Demonstrations of Special Significance or Special Regional Impact, programs and projects anywhere in the Region which appear to have special regional or other particular significance for demonstrating an objective of Section 202 of the ARDA or this Chapter (ARC 1970, 2).

This resolution officially ended the demonstration areas' monopoly on health funds. However, the large continuation burdens of the early demonstration areas created a funding momentum that favored them for years.

In the fall of 1973, the ARC initiated a comprehensive examination of its programs in preparation for Congressional reauthorization hearings in 1975. ARC officials believed it crucial to refine policy to win Congressional approval in a political climate in which the Nixon Administration twice attempted to terminate the agency (Peterson 1973). Out of these reviews came, not only a major change in the distribution of ARC's area development funds, but a wholesale alteration in the philosophy and policy of the health program. Instead of concentrating on providing comprehensive health services in targeted areas, the ARC eliminated preferential funding and encouraged all medically-underserved areas to seek funding for primary

health care projects.⁷ A goal of the new policy was to make primary health care within a thirty-minute drive of every Appalachian citizen. Geographically, this policy shift was the antithesis of that during the demonstration phase.

The ARC's public rationale for redirecting its health program toward primary care differed from the real reason for the policy shift. Publicly, the ARC claimed that the demonstration program had been successful in improving health care and that it was time to take the most successful portion of the demonstration phase, primary care, regionwide (Napolitano 1994). In testimony before the United States Senate Committee on Public Works, ARC's federal co-chairman Donald Whitehead claimed that the health demonstration program had done much to overcome deficiencies in the demonstration areas but that outside them basic health care remained a major problem (U.S. Congress, Senate 1975, 25). Pressures from within the ARC and from outside were more influential in the shift to primary care than success of the demonstration areas. Health experts on the Health Advisory Committee and ARC staff had long argued for a primary care

⁷ The ARC defined primary health care as "daily personal health care on a continuing basis and is required to include maintenance of complete records and to be extended when necessary to the secondary level (i.e. hospital services) and the tertiary level (i.e. highly specialized research-oriented services usually centralized in regional hospitals)" (ARC 1975b, 42).

emphasis (Napolitano 1994). However, political pressure from local constituents led most state governors to press for construction of health facilities. Consequently, large amounts of early health care money was spent on the construction of hospitals.

Between 1975 and 1981, further modifications were made to the ARC health program. Confronted with a continuing problem of attracting physicians to the region, in 1976 the ARC recommended that primary health care provided by physician assistants and nurse practitioners be reimbursed by Medicaid and Medicare (ARC 1976b, 1; ARC 1981a, 22). In 1978, the ARC passed a controversial resolution allocating four million dollars in special assistance funds to health care facilities in Kentucky, Pennsylvania, Virginia, and West Virginia (ARC 1978, 1). Facilities that received funds were facing severe financial difficulties resulting from the elimination of health care reimbursements by the United Mine Workers Health and Retirement Fund.⁸ A bitter four-month coal strike ended in March 1978 when miners agreed to a reorganization of their health plan which terminated the UMW health fund (Boyd 1982).

⁸ A 1977 ARC survey in Central Appalachia found ten hospitals where more than 25 percent of admissions were paid by UMW funds (ARC Health Division 1978).

The health program experienced another dramatic change in 1981, when President Reagan proposed termination of the Appalachian Regional Commission. The ARC, like many other federal agencies, was targeted for elimination under the Reagan Administration to decrease federal expenditures on social programs in favor of defense spending (Brunn, Lowery, and Webster 1987). Alarmed by the potential termination of the ARC, the thirteen governors of Appalachia in 1981 asked Congress to reconsider ending the agency (ARC 1981b). After arduous negotiations with Congress, the ARC was requested to develop a "finish-up" plan by the end of 1981. The finish-up plan accepted by Congress included completing a slightly shorter highway system in eight years and funding area development for three to five years. The area development plan consisted of three major components: jobs and private investment, distressed counties, and health care. Though the health program was touted as a major part of the finish-up plan, states spent only 10 percent of their area development funds on it. The health program was continued during the finish-up phase for two reasons. First, the ARC could not simply abandon health projects where several years of funding were already promised. Second, the newly appointed federal co-chairman, Winifred Pizzano, was a public health administrator. She had served in the Illinois Department of Public Health as executive administrator of

the Division of Emergency Medical Services. At her Senate confirmation hearings she stated that she wanted to "take a personal interest in improving the health of Appalachian families" (ARC 1982, 3).

Just as under Richard Nixon in 1974, ARC health policy was dramatically altered as a consequence of Reagan's threats to the agency. The most curious feature of the finish-up phase was that, as during the demonstration phase, specific areas were targeted to receive most of the funds (Figure 3-3). This geographic limitation was a significant departure from regionwide funding during the primary care phase (1975-1981). Three goals guided the health finish-up program. One was to complete the goal set during the primary care phase of making primary health care services available to all Appalachians within thirty minutes. The second was to reduce infant mortality rates, and the third was to provide assistance in the recruitment of physicians.

Selection criteria for eligible counties during the finish-up phase differed from those during the demonstration phase. With vague guidelines from the ARC, states were responsible for selection of demonstration areas. During the finish-up phase, the ARC set the criteria. Counties eligible for primary health care projects were ones that had never received funding as of 1981 (King 1994). Other counties were eligible if primary care facilities were not

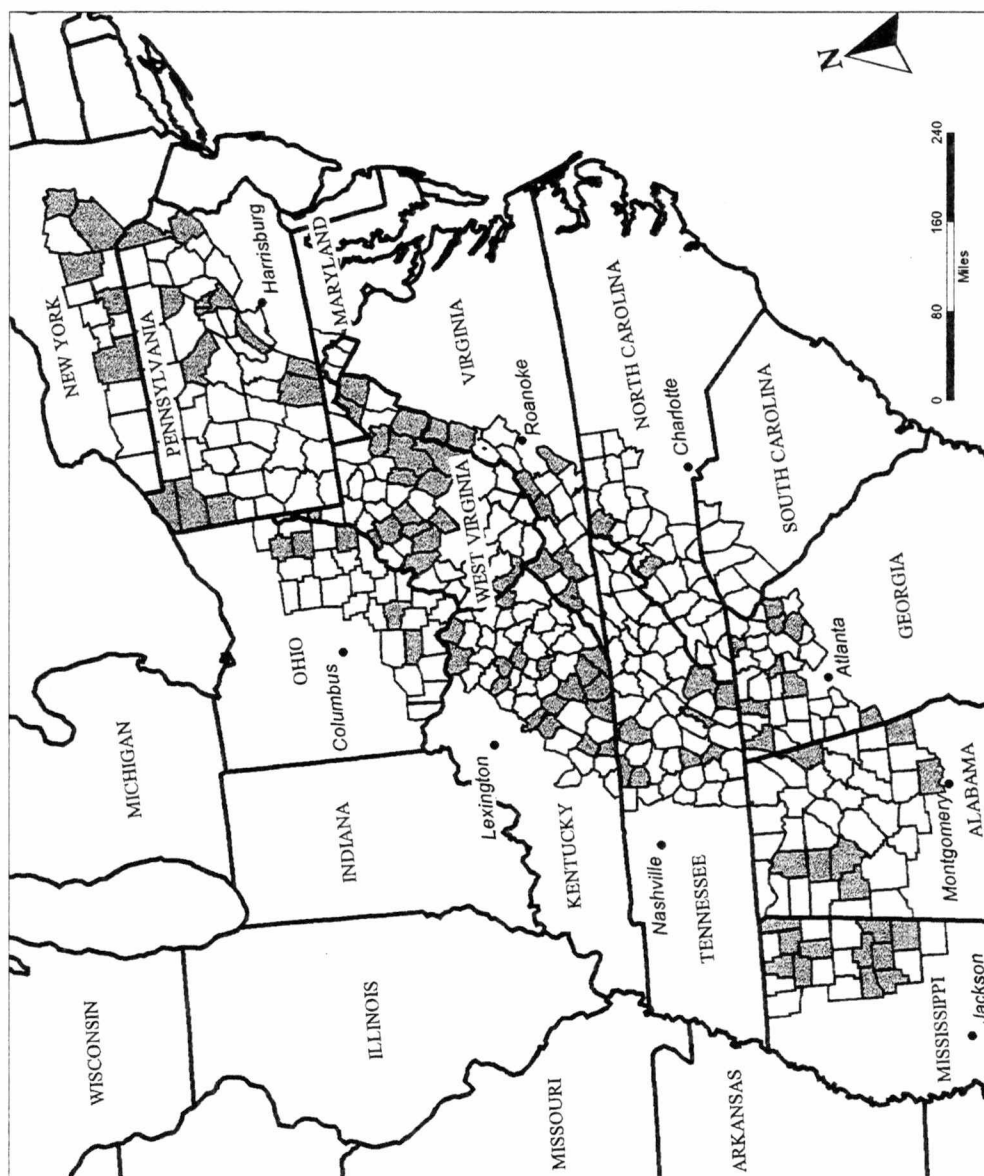


Figure 3-3. Appalachian Regional Commission's health finish-up areas, 1982 to 1985. ARC 1982.

within thirty minutes of citizens. Infant mortality reduction programs were limited to counties where the three-year average infant mortality rate (1977-1979) was 150 percent above the national average. Technical assistance for physician recruitment was available to 281 counties designated by the Department of Health and Human Services as Health Manpower Shortage Areas. Yearly additions and deletions were made to the list of eligible counties. Overall, only 66 counties were eligible for primary care projects and 53 for infant mortality reduction programs (Figure 3-3).

After the end of the finish-up phase in 1985, the role of the ARC health program shifted from a provider of federal dollars to Appalachian communities to an advocate and monitor of rural health care. The majority of health dollars in the late 1980s were spent on studies ranging from the impact of Medicare changes on rural hospitals to strengthening health care delivery in rural America (Abt Associates 1987, 1988).

After 1985, the ARC reassessed its role in health care. Various opinions existed as to the use of scarce health dollars. A meeting of ARC officials and health professionals in 1988 identified possible directions for the agency's health policy (Decker 1988). A majority of the participants felt that health dollars would be better used

on health care in the region. A minority believed that the funds should be used to publicize the region's health problems and research solutions to them. For political reasons, the majority recommendation was accepted by the ARC.

In 1989, the ARC initiated a new direction in health care, the Appalachian Rural Health Program. An important reason the ARC reinvigorated its program, albeit modestly, was at the request of local and state administrators (King 1994). The new initiative consisted of three components: (1) technical assistance to encourage public and private partnerships, (2) personnel recruitment and retention projects in federally-designated Health Manpower Shortage Areas, and (3) projects to improve prenatal care in areas where infant mortality rates exceed the national average by 50 percent (ARC 1989). The last two components were continuations of health problems the ARC has battled since its inception.

Current efforts in recruiting physicians do not occur within the context of the Appalachian Rural Health Program. Since 1990, the ARC has placed more than 800 doctors under its J-1 Visa Waiver Policy, far more than the agency did under its rural health program (King 1994). The Waiver Policy allows the ARC's federal co-chairman to recommend a waiver of the foreign residence requirement for recently

graduated immigrant physicians with J-1 Visas. These doctors are to work in a Health Professions Shortage Area in a primary-care clinic or hospital that is Medicare-Medicaid certified. They are to have completed a residency in family practice, internal medicine, general pediatrics, obstetrics, or psychiatry (Phillips 1992). Fifty-eight percent of the physicians have been placed in Alabama, Kentucky, and West Virginia (ARC 1995b). After the physicians finish their service, they can remain in the United States. Unfortunately, the majority leave Appalachia to practice in urban areas (King 1994). Development of a revolving door of foreign physicians is like many other ARC attempts to solve Appalachian health problems, a short-term solution to a long-term problem.

Education Initiatives

Unlike health care, deficiencies in education were elaborated in the 1964 President's Appalachian Regional Commission report to the President. Two points were emphasized (Roosevelt 1964). First, levels of educational attainment were far below the national average. In 1960, 41.8 percent of the American population had finished high school, while in Appalachia only 32.3 percent had. Only 5.2 percent of Appalachians were college graduates compared to

7.9 for the United States. Twelve percent of the Appalachian population had less than a fifth grade education compared to 8 percent for the nation. Second, the report underscored the lack of financial resources within Appalachia, especially an adequate tax base, to address educational inadequacies. Appalachia's low personal incomes depressed state income and sales tax collections which that customary sources of education revenue.

The report gave an early indication of the scope of the effort needed in education:

Current proposals for Federal aid to primary and secondary education, if enacted, will provide substantial assistance for education in Appalachia in fiscal year 1965 and additional means to strengthen basic education in future years will have to be surveyed carefully. Supplementation is necessary, however, in the training and vocational education programs despite the increased Federal expenditures programmed for 1965. The combination of too few vocational school buildings and a hostile terrain has seriously restricted the area effectively served by existing schools; a supplementation is needed in the construction provisions of the recently enacted [1963] Vocational Education Act (Roosevelt 1964, 49).

Section 211 of the ARC Code formalized the approach and was the centerpiece of the education program until the mid-1970s. Other education initiatives were begun in 1965, but at a much smaller scale. Section 214 could be used to supplement other federal education acts related to the construction and equipping of higher education and library facilities. Between 1965 and 1984, ARC expenditure on such

projects totaled only \$83.4 million compared to \$335.7 million for vocational education facilities (ARC 1985b).

A senior ARC education and manpower advisor gave the following reasons for the agency's decision to concentrate on vocational education (Rottenberg 1995). First, part of ARC's mandate was to improve the skill levels of the region's labor force. Second, national attention was directed toward vocational education as a result of the Vocational Education Act. Third, several early ARC studies concluded that Appalachia lacked primary industrial recruitment criteria, including an adequately-trained labor force.

Table 3-3 shows the level of state and local funds per dollar of federal funds expended under the Vocational Education Act between 1969 and 1974. Maryland, New York, North Carolina, Ohio, and Pennsylvania were the only Appalachian states to consistently exceed the national average. The inability of central and southern Appalachian states to meet the national average motivated the decision to use ARC funds to supplement the Vocational Education Act. Criticism of ARC's long-term emphasis on vocational education is unwarranted in light of the economic development mission of the agency and the fact that this type of training is probably most appropriate for large parts of Appalachia that can only attract labor-intensive,

Table 3-3. State and local funds expended per dollar of federal funds under the Vocational Education Act, 1969 to 1973.

State	1969	1970	1971	1972	1973
Alabama	\$3.22	3.80	3.01	2.64	2.68
Georgia	3.04	3.72	3.15	2.42	2.86
Kentucky	2.98	3.94	3.36	2.71	2.69
Maryland	4.80	7.39	7.77	8.96	7.45
Mississippi	2.06	2.12	2.65	2.55	3.33
New York	12.75	16.29	8.85	8.72	10.20
North Carolina	4.59	5.70	5.48	5.33	6.01
Ohio	3.41	5.72	7.84	5.18	5.32
Pennsylvania	6.24	5.74	6.81	5.22	6.01
South Carolina	3.40	2.95	1.94	1.64	1.98
Tennessee	2.10	2.20	2.76	3.21	3.21
Virginia	3.31	3.32	3.01	2.67	3.42
West Virginia	2.68	1.92	1.72	1.77	2.32
National Average	4.37	5.14	4.92	4.71	5.29

Source: U.S. Congress 1976.

natural resource processing industries.

The first legislation specifically crafted for vocational education was the Smith-Hughes Act of 1917 (U.S. Congress 1963). The 1963 Vocational Education Act grew out of an advisory body created by President Kennedy to review, evaluate, and recommend changes to existing vocational educational legislation. Three major changes were initiated by the 1963 legislation. First, the act broadened the definition of vocational education by including additional occupations. Second, the act significantly increased the level of federal appropriations. Between 1965 and 1974, federal expenditures under the Vocational Education Act grew from \$103 million to \$468 million (U.S. Congress 1976). Third, for the first time, federal funds were provided for the construction of vocational education facilities.

Three allocation procedures of the Vocational Education Act were significant: the manner in which the federal government allotted Vocational Education Act funds among the 50 states, how the ARC allocated its Section 211 funds among its states, and the ARC criteria for approval of education projects. Because Section 211 funds were used to supplement federal funds, ARC's distributions to its states were directly influenced by the federal allotments to states. Under the Vocational Education Act, 90 percent of a state's

allotment was based on the numbers of persons in various age groups.

The ARC established criteria for approving Section 211 project proposals. A 1966 resolution gave highest priority to projects located in state-designated growth centers (ARC 1966c). However, the resolution stated that a project outside a growth area would be considered if it made a local population economically competitive. This vague exception opened more areas to education assistance. Several other policies of ARC officials also weakened the link between the education program and the growth center strategy. Ralph Widner, former executive director of ARC, stated that education requirements were detached from growth center strategies for practical reasons (Widner 1982). At a 1966 conference of West Virginia community officials, many were opposed to the growth center concept. John Sweeney, ARC states' representative, said regarding disbursement of funds for education:

while we're going to try to put our expenditures in places that will attract industry . . . that does not mean that the rest of the region is ineligible for Appalachian aid. . . It would be perfectly foolish to put all the money into the key areas [growth centers] . . . Let's put them out where people can use them (Marsh 1966, 1).

According to a former ARC education official, reviews of education projects did not take into account whether the project was in a designated growth center (Rottenberg 1995).

Education proposals, particularly for vocational education, had to include local employment projections, which indirectly tied education projects to growth centers. A contributing factor to decoupling education from growth center strategies was a statement in the Vocational Education Act of 1963, "that all persons in all communities of the State will as soon as possible have ready access to vocational training suited to their needs, interests, and ability to benefit therefrom" (U.S. Congress 1963, 448). By funding projects only in growth centers, the ARC would ignore small, rural schools that needed supplemental money the most.

In August 1966, the ARC established an Education Advisory Committee and gave it the responsibilities to assess the region's educational system, make recommendations to improve existing vocational education, and suggest new education initiatives (ARC Education Advisory Committee 1971). Members of the committee represented a range of education and business leaders. The committee issued three reports which dealt with the status of education in Appalachia, analysis of vocational education, and the impact of early ARC education expenditures. Two actions by the committee had a long-term influence on education policy. A 1968 report on vocational education found that more than 50 percent of the curricula was geared toward occupations, such

as agriculture, that were declining in employment (ARC Education Advisory Committee 1968). The committee recommended, and the ARC agreed, that schools applying for Section 211 funds provide a job-relevant curricula. This new policy fostered curriculum improvement during the late 1960s and 1970s. In November 1968, the ARC adopted six education priorities recommended by the committee that guided education policy for the next fourteen years (ARC 1968b).⁹

Vocational education had strong advocates. With the acceptance of the priorities, the ARC significantly expanded its education program beyond supplemental construction and equipment funds for vocational schools, colleges, universities, and libraries. The goal emerged that 50 percent of the region's eleventh and twelfth-graders should be enrolled in ARC-assisted vocational education programs.¹⁰ Justification for this goal was that 50 percent of the region's high school graduates attended college. Vocational

⁹ The six priorities were: (1) long-range statewide education planning, (2) regional education service agencies, (3) vocational education programs, (4) career information and guidance programs, (5) early childhood programs, and (6) improvement of teacher's skills (ARC Education Advisory Committee 1971). A seventh priority was added by the ARC that included other education programs identified in individual state plans.

¹⁰ This goal was never placed in the ARC Code or ever put in resolution form, but it guided vocational education initiatives through the 1970s (Rottenberg 1995).

education was to serve the 50 percent who were not bound for college. Over the next several years, the ARC implemented some of the recommendations with varying degrees of success. Most noteworthy was a program to inform local school systems about federal education programs (Rottenberg 1995).

During the early 1970s, the ARC was involved in a variety of education initiatives. None was more controversial than the Appalachian Education Satellite Project. Despite the controversy, no other ARC education initiative has led to as much national recognition as this program. The project used a National Aeronautics and Space Administration satellite to broadcast teacher training courses to selected sites in Appalachia. During its first year (1974-1975), four graduate-level, in-service training courses were broadcast for 1,067 teachers (Bramble, Ausness, and Goldstein 1976). Whisnant (1980) provided a brutal critique of the satellite project, claiming it was poorly conceived, did not address the region's most basic educational needs, and did not help the teachers. However, Whisnant provides little support for his criticisms. Fundamentally, the satellite project was a way for the ARC to legitimize itself by integrating high-technology with its legislative charge. During the 1970s, the program grew into the Appalachian Community Services Network, which in 1980 became the private national cable service called the

Learning Channel. No other ARC education initiative has had as much influence on as many American citizens as the legacy of the Appalachian Community Services Network.

By fiscal 1972, ARC expenditures totaled \$154.1 million in vocational education, \$51.5 million in higher education, and \$18.6 million in a variety of other programs (ARC Education Subcommittee 1974). Between 1972 and 1974, approximately \$4.7 million was spent on Section 302 nonvocational education demonstration projects, with 85% of the projects associated with a Regional Education Service Agency. As of 1973, \$4.9 million in Section 211 funds had been spent on 52 vocational education grants. Forty-one percent of eleventh and twelfth-graders were enrolled in ARC-assisted vocational education programs, short of the 50 percent goal set in 1971. The 1973 review made several lofty statements about education accomplishments. It claimed that the region no longer faced a crisis in higher education facilities because of ARC assistance. The 1971 education recommendations made no mention of higher education or the need for increased capacity. ARC also took credit for bringing additional dollars to Appalachia from other federal agencies. Agency officials concluded that they were responsible for increases in levels of state and local funding in vocational education. The role played by the agency was much less than its lofty claims, for ARC

funds were less than one percent of total education expenditures in Appalachia (ARC Education Subcommittee 1974).

In 1974, the Education Subcommittee made several recommendations for changes in ARC policy. Vocational education was to remain a priority, but the focus was to shift from construction to equipment and operation. Also, funding for counseling and job placement, adult education, and early childhood education was to increase. Significant changes based on the report were reflected in 1975 amendments to the Appalachian Regional Development Act. Authority to fund nonvocational education demonstration projects was allowed under Section 211 of the revised act (Appalachian Regional Development Act of 1965 1988).

Another significant policy change in the 1976 revision of the ARC Code was the deemphasis on vocational education construction (ARC 1976c). Support for construction and equipment was narrowed to existing facilities where there was a distinct need for expansion. The belief prevailed among ARC staff that some states had overbuilt vocational facilities at the secondary level. Several ARC-assisted vocational education facilities that lacked sufficient enrollment were modified for other uses (Rottenberg 1995). In Mississippi, one facility was turned into a weight room for the high school football team. In West Virginia, a

facility was converted into a girdle factory. The 1976 revision specifically stated that decrease in high school dropout rates and adult illiteracy were objectives. This was the first time that dropout rates were directly addressed despite their clear mention in the President's Appalachian Regional Commission 1964 report. Dropout prevention and adult literacy programs did not become important foci of ARC education initiatives until 1985.

There was little change in ARC's education program from the late 1970s until the finish-up phase begun in 1982. The most significant change in education policy occurred in 1978 as a result of an Asheville conference on Appalachia's next generation. North Carolina Governor James B. Hunt outlined what he foresaw as the future direction of the ARC education program (Morse 1978). The recommendations included both old and new initiatives. Old initiatives included the goal now to enroll 60, rather than 50 percent of eleventh and twelfth-graders in vocational education. New initiatives were related to younger children and included improvement of reading and mathematics achievement scores. As a result of the conference, funding for Basic Skills Improvement, Community Education, and Gifted and Talented increased under the Elementary and Secondary Education Act (ARC 1979). By the early 1980s, education policy was shifting toward improving the basic education level of people ignored by

vocational programs. In 1980, the ARC established the Education and Human Development Program (ARC 1980). Construction of vocational education facilities was restricted even more and limited to counties that had no facility or could demonstrate that existing facilities were inadequate.

ARC's education program experienced significant changes as a result of the 1981 attempt to terminate the agency. The incremental shift toward children and adult education came to an abrupt halt. Education policy reverted to its roots in vocational education and job training. Education projects were restricted to improving the job skills of adults and vocational students to attract, create, and retain jobs. By the 1980s, new buzz words such as "technical education" and "customized training" had replaced traditional terms. In 1990, the Vocational Education Act of 1963 was renamed the Carl D. Perkins Vocational and Applied Technology Education Act.

Unlike health, education had no self-identity during the finish-up phase of the Reagan years. Education initiatives were subsumed under the Jobs and Private Investment program. The program's purpose was to "support the creation and retention of private sector jobs, upgrade manpower for jobs in the Region or stimulate private-sector expenditure" (ARC 1981a, 38). Projects were to provide

evidence that they would lead to the location or retention of businesses. The program was dominated by improvements or extensions to water and sewer systems and other infrastructure, including rail lines to industrial parks. The Jobs and Private Investment program was ARC's most explicit effort at corporate welfare. The education component of the program was to focus on increasing job prospects (ARC 1981a). Three types of projects were thought to accomplish this goal: customized training for a specific employer, equipment purchases to remain current with technology, and improvement of basic skills for adults and high school students for the job market.

In 1983, the ARC further strengthened the connection between education and economic development. According to resolution 555, the Appalachian economy was challenged by rapid changes in the job market in response to increased foreign competition and advancing technologies.

Appalachia's dependence on labor-intensive industries was vulnerable to these changes (ARC 1983). The ARC was directed to conduct research related to such issues, concentrating on modernization of vocational education, impact of work force displacements, and development of new strategies to improve state job training programs.¹¹ One

¹¹ In addition, this resolution lead to a variety of research reports on the Appalachian economy. Topics

million dollars was allocated to upgrade the region's labor force. Since such projects were already fundable under the Jobs and Private Investment program, the only contribution of the policy change was to increase the funds available.

Another important directional change in ARC education policy occurred in 1985. Resolution 569 reinvigorated emphasis on dropout prevention, with one million dollars set aside for projects to address this problem and \$1.4 million pumped into the Jobs and Private Investment program for dropout prevention (ARC 1985a). Appropriation cutbacks by the mid-1980s made the ARC more realistic in its goals. Unlike the 1970s, when the ARC often set unobtainable goals, the dropout initiative did not attempt to narrow the difference between national and Appalachian dropout rates. It only sought to initiate participation of public and private agencies in prevention programs.

No major policy changes occurred in the education program between the mid-1980s and the mid-1990s. Three themes dominated ARC's education program between 1987 and 1995: high school dropout prevention, adult literacy, and customized training (Rottenberg 1995). ARC funds are used differently by each state for these projects (ARC 1995b).

included how to increase the potential of the region's industries, the role of branch manufacturing plants in Appalachia's economy, and alternatives to solid waste management (ARC 1995b).

All states have invested in dropout prevention. However, Kentucky used more than four million dollars between 1985 and 1995, but no other state invested more than one million. Tennessee spent over four million dollars in adult literacy programs over the same period, but the other twelve states invested less than one million each. South Carolina has long used ARC funds to purchase updated equipment for technical colleges. West Virginia leads all states in the amount invested in customized job training, followed by Ohio, New York, and South Carolina.

Other Area Development Programs

After 1982, new area development programs were created and marked a significant departure from health and education. Beginning in 1982, the ARC responded to a longstanding criticism that it neglected the most underdeveloped counties in the region. The 1981 Appalachian Governor's report to Congress acknowledged this criticism, but offered the following justification:

The Appalachian Regional Development Act . . . established ARC as an economic development agency and requires it to focus its expenditures where they can be expected to bring about the highest economic development returns. Few of these expenditure opportunities are found in the most distressed and underdeveloped counties (ARC 1981a, 79).

With the introduction of the Distressed Counties Program and the health finish-up plan, the ARC directed funding toward the most underdeveloped counties in Appalachia. Both programs were unique in policy because for the first time the Commission set eligibility criteria for counties.¹² ARC expenditures were restricted to counties based on predetermined statistical breakpoints. Potential termination and the need to streamline the agency under a tighter budget strongly influenced the decision.

The Distressed Counties Program was funded in 1982 for five years at \$15 million annually to assist primarily in building water and sewer systems. A county was classified as distressed if it was in the bottom 25 percent of all Appalachian counties in three of four criteria: low per capita income (excluding welfare and transfer payments), three-year high unemployment average, large percentage of population below the poverty level, and high infant mortality rate. Counties were added or deleted every fiscal

¹² In 1979, the ARC rejected a recommendation by the General Accounting Office to examine the possibility of implementing a "relative need" index to allocate area development funds. The General Accounting Office did not specifically define what needs should be included but mentioned "environmental and socioeconomic problems" (U.S. General Accounting Office 1979, 52). Also, during the writing of the Appalachian Regional Development Act in 1964, the House Committee on Public Works rejected an effort to restrict expenditures to areas with the greatest need (U.S. General Accounting Office 1979).

year. Over 70 counties were initially eligible for this program (Figure 3-4). There were two spatial concentrations of distressed counties: southern Appalachia, including Alabama and Mississippi, and Central Appalachia, particularly the Cumberland Plateau of Tennessee, Kentucky, and central West Virginia. In 1976, these counties had 32 percent of their population below the poverty level, compared to 12 percent for the nation and 15 percent for other Appalachian counties. They had a 1979 per capita income of \$3,896, compared to \$7,616 for the nation and \$6,153 for other Appalachian counties (ARC 1984).

ARC staff reports on distressed counties in Kentucky, Tennessee, and West Virginia during the winter of 1981 provide insights into the problems. In Pickett County, Tennessee, the only incorporated town, Byrdstown, had the county's only water and sewer system. Most rural residents obtained water from wells, springs, and cisterns. Water quality was poor as the result of pesticides and high quantities of sulfur. Local officials wanted to extend water lines from Byrdstown eastward to several settlements totaling 160 homes (Lambert 1981). In Cumberland County, Tennessee water and sewer systems were not the first priority. According to local officials, priorities included job creation, access roads to industrial parks, and a multi-purpose civic center (Lambert 1981). Campbell County,

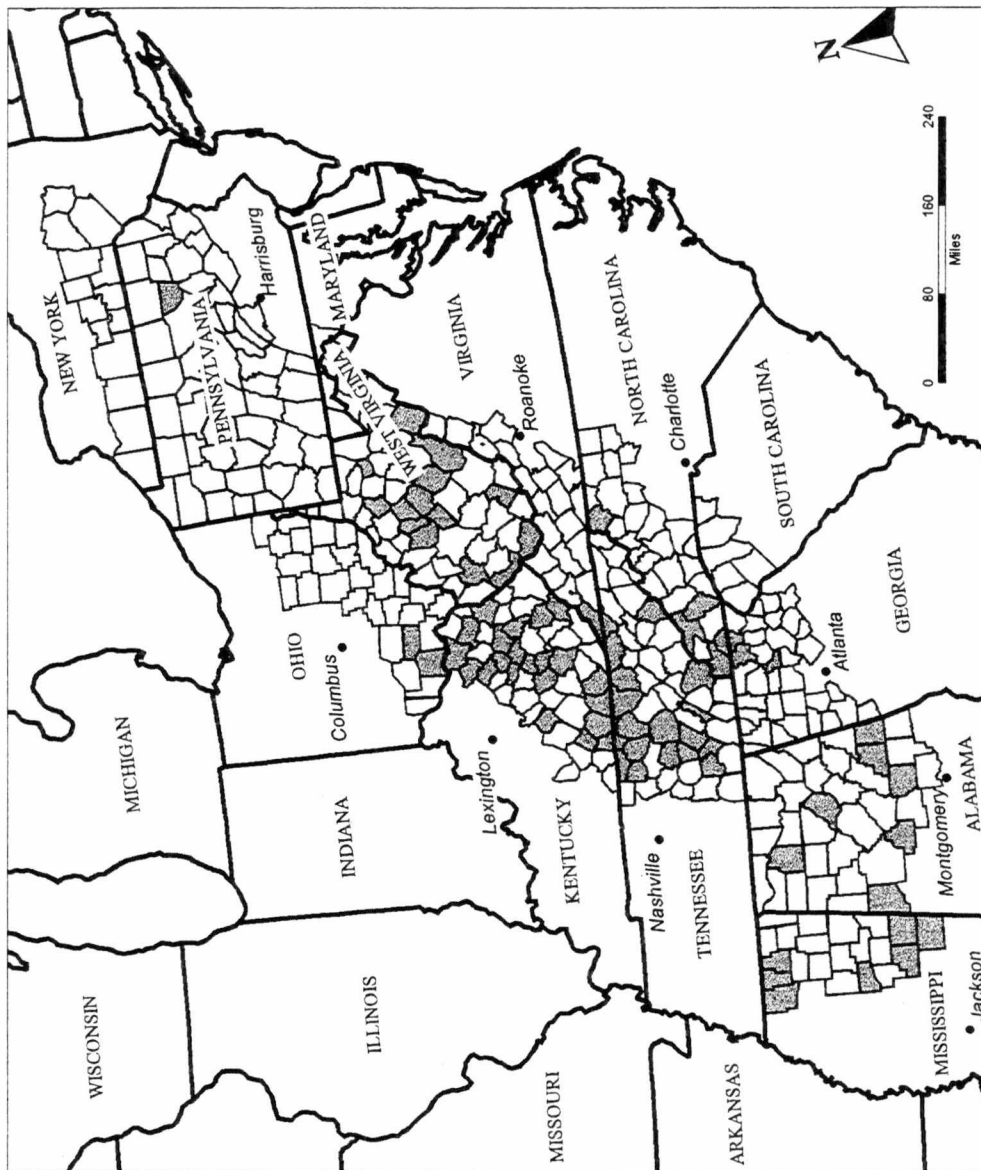


Figure 3-4. Appalachian Regional Commission's distressed counties, 1982 to 1985. ARC 1984.

Tennessee illustrates a smaller scale problem faced by the ARC. Local officials planned to seek ARC assistance to extend a water line from the largest town, LaFollette, eastward along the county's major east-west route. The area was the county's growth corridor, and the line was expected to serve a factory, two schools, a nursing home, and new homes. When asked by ARC staff why a small hollow northeast of LaFollette was excluded from water service, local officials replied that it was cost prohibitive (Lambert 1981). Campbell County officials chose to invest where the returns on expenditures were greatest rather than in areas of greatest need. The ARC has long faced a similar dilemma at a regionwide scale.

The following projects are representative of ones funded under the Distressed Counties program. A \$35,000 supplement to a community development block grant to the North Carolina Housing Finance Agency was used to provide water and sewer connections to homes in Sylva. In Virginia, a \$75,000 grant was used to help Lee County replace a destroyed earth-moving machine used at the county landfill (ARC 1984).

As the Jobs and Private Investment Program and Distressed Counties program drew to a close in 1987, the ARC was again faced with the potential elimination of the agency. In response to this threat, the ARC, as in times

past, proposed new policy directions in its area development programs to gain Congressional support. Bradshaw (1992, 111) calls this shift a "new vision," but it was really a continuation of previous policy. The ARC officials justified continuing the agency because they argued that the Appalachian economy was unable to recover quickly from the recession of the mid-1980s. In addition, they felt that rural areas faced new challenges in keeping up with technological developments and remaining competitive in the emerging global economy (ARC 1987).

Three area development programs were designated under the 1987 policy changes: Area Economic and Human Resource Development, Regional Program Initiatives, and Distressed Counties. Despite new terminology, these programs provided little substantive change in the area development programs. However, a theme in the 1987 policy changes was a decrease in the ARC share of a project's total cost. States were required to designate economically competitive counties where ARC funding was to be limited to 30 percent of total project cost.¹³ The counties were ones in which poverty and unemployment were below the national average or per capita income was 80 percent or more of the nation's. Reasons for

¹³ Most area development programs limited ARC funding to 50 percent of total project cost. The Distressed Counties Program and Regional Program Initiatives allowed ARC funding up to 80 percent of the cost.

the more stringent criteria included a national climate of federal cutbacks and a desire to streamline the agency to attract Congressional support.

The Area Economic and Human Resource Development Program is a slightly broader version of the previous Jobs and Private Investment one. The Area Economic and Human Resource Development Program includes a greater number of eligible activities. Just about any community improvement project is fundable if it has the potential to attract, retain, or expand jobs. Regional Program Initiatives is supposedly a new one designed to address specific economic problems, including introduction of new technologies, promotion of entrepreneurship, and expansion of markets for Appalachian industries. The program also deals with human resource problems such as adult literacy, school dropout, infant mortality, and rural health care.

The only change to the Distressed Counties Program under the 1987 resolution was in the criteria for designating a distressed county. Most noteworthy was the elimination of high infant mortality rates. A subtle, but significant, change was that counties were no longer compared with other Appalachian counties but with national averages. This change had the impact of increasing the number of distressed counties from 76 to 88 (ARC 1987).

Economic changes during the early 1990s forced the ARC to revise its distressed county designation. Unemployment rates were declining in many distressed counties in Central Appalachia, but economic conditions were not improving. The reason for the decline was that many Appalachians quit looking for work; therefore, they no longer appeared in unemployment statistics. In response to this problem, in 1994 the criteria for distressed county designation were revised. Under the changes, a county could be classified distressed in one of two ways. First, a county would be designated distressed if it met the three criteria established in the 1987 definition. Second, a county would be so designated if it had a poverty rate twice the national average and met one of the other two criteria (Maher 1995).¹⁴ More lenient criteria increased the number of counties eligible for assistance to 94 in 1997. This only increases competition between already financially-strapped counties for scarce funds.

In conjunction with its thirtieth anniversary in 1995, the ARC initiated a review of its programs and developed a new strategy. The plan included five areas of emphasis: education, physical infrastructure (i.e., transportation,

¹⁴ The ARC also included a special rule that if a county missed distressed designation on one of the three measures by less than five-tenths of 1 percent it would be designated distressed.

telecommunications, sanitation, industrial, and housing), community leadership, business development, and health care (ARC 1996). While the ARC touted this as a "new" strategic plan, none are new major emphases except the commitment to assisting citizen and community-based organizations and leadership.

Conclusion

Two important points emerge from discussion of the evolution and character of education and health policies. Although scholars lump the ARC education and health programs together, they were noticeably different. Health policies began with efforts to provide a comprehensive range of health facilities and services in selected areas during the demonstration program. Over time policies became more focused on regional health problems, including primary care and infant mortality reduction. Education policies have always been directed at a few selected education issues beginning with vocational education but also including basic skills, adult education, and dropout prevention. Health policies began with a clear preferential bias toward selected areas during the demonstration program. These biases disappeared during the 1970s as all areas became eligible for funding, but they returned in the 1980s as

appropriation cutbacks forced spatial restrictions on funding. Education policies never offered preferential funding to specific areas.

Education and health policies have been dynamic due to various political and regional forces. Changes in Presidential administrations contributed to fluctuations in Congressional appropriations, which often led to new policies. ARC's continued desire for Congressional approval and support led to significant changes in 1975 and 1987. President Reagan's attempt to end the agency forced more austere spending policies. Starting in 1992, the Clinton administration breathed new life into the ARC with increased appropriations for area development programs. Regional conditions also led to policy changes. Complaints of preferential funding by areas without health demonstration programs helped end demonstration projects. The difficulty of attracting physicians to Appalachia led the ARC to lobby to get nurses and physician assistants reimbursed by Medicare and Medicaid.

The focus of Chapter 4 is to document how ARC education and health policies were put into practice. The chapter first describes the project approval process and then examines the formulas used to appropriate and allocate funds to states. Annual expenditures by states are also examined to see how policy changes affected various parts of the

region.

CHAPTER 4

CHARACTER OF APPALACHIAN REGIONAL COMMISSION SOCIAL PROGRAMS

Procedure for Funding Area Development Projects

An explanation of the ARC project funding process is important to this study. All project applications follow the same procedure. Figure 4-1 shows the typical sequence for a proposed project. The process consists of three phases: planning and coordination, review and approval, and execution and monitoring.

Requests for ARC funds come from a variety of sources including state agencies, county and municipal governments, and other organizations including development districts. Every project is first submitted to the local development district. Because the ARC cannot fund every proposal, development districts establish priorities among the requests for ARC funds. The development district's list becomes part of a state's annual project package. The ARC staff reviews each project application and prepares a report. The reports along with the federal co-chairman's recommendations are submitted to

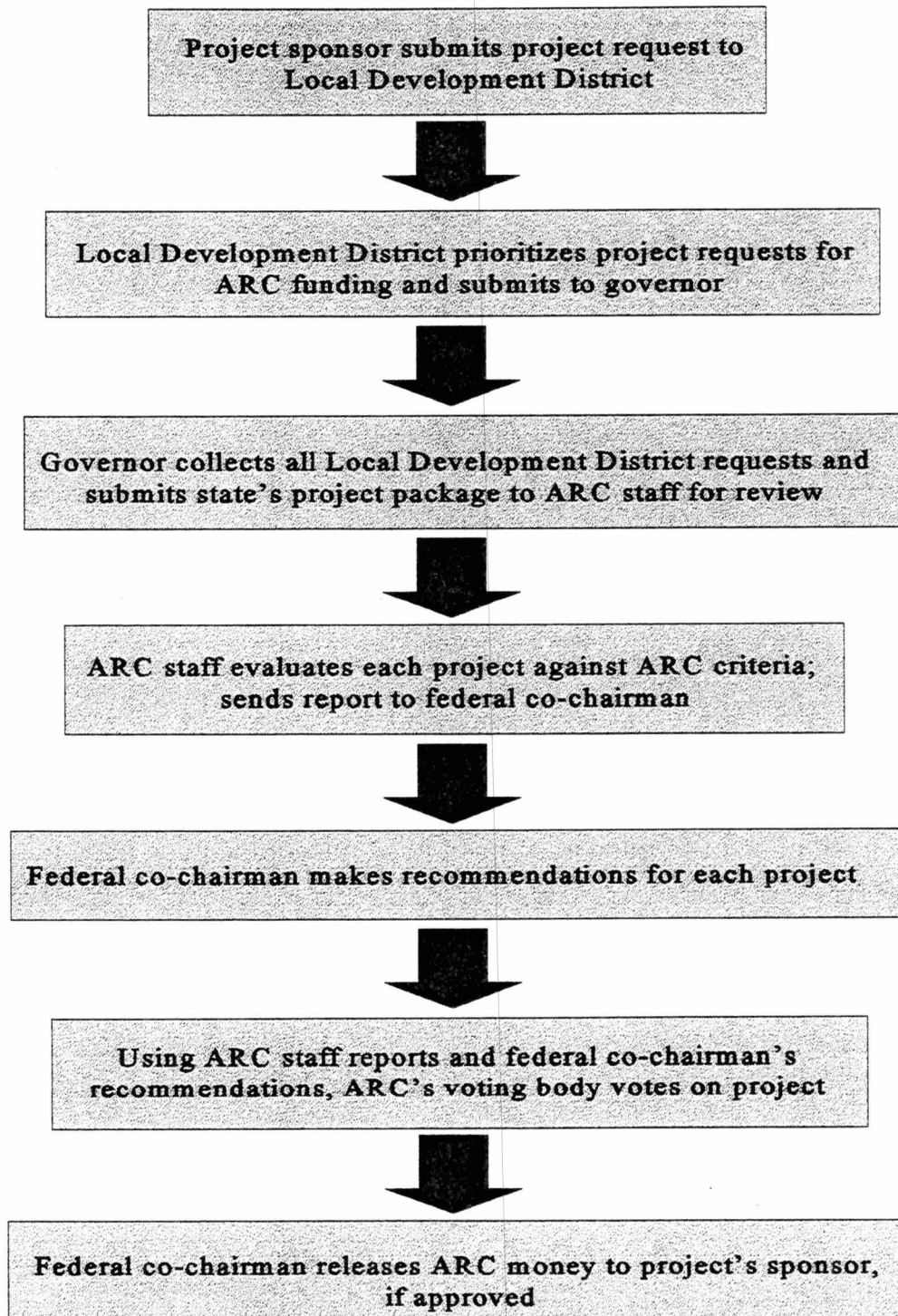


Figure 4-1. Approval process for projects seeking Appalachian Regional Commission funding.

the ARC's voting body.¹ After the ARC approves a project, the federal co-chairman releases the money to the project's sponsor. In the original legislation, authorization of funding belonged to the appropriate federal agency. For example, health and education project authorization rested with the Secretary of Health, Education, and Welfare. A 1967 amendment gave the responsibility to the federal co-chairman, further strengthening the independence of the ARC.

History of Area Development

Appropriation and Allocation Procedure

Pre-1975 Appropriation and Allocation Procedure

The greatest challenge that initially confronted the ARC was the distribution of area development funds. While Congress was responsible for annual appropriations, the ARC was responsible for allocating funds to the states. The Appalachian Regional Development Act lacked specific guidelines about the distribution of funds, except for a vaguely worded statement:

¹ This body includes the federal co-chairman and the thirteen state governors or their representatives. Project approvals require the affirmative vote of the federal co-chairman and a majority of the state's representatives (ARDA of 1965 1988).

The public investments made in the region under this Act shall be concentrated in areas where there is a significant potential for future growth, and where the expected return on public dollars invested will be greatest (ARDA of 1965 1988, 1308).

Between 1965 and 1974, Congressional appropriations for area development programs were categorically-based. The appropriation specified the amount to be spent for each program. Congress stipulated specific amounts for health demonstrations (Section 202), vocational education (Section 211), and supplemental grants (Section 214). The categorically-based appropriations gave states little flexibility.

ARC funding formulas, which were comprised of two sets of variables, determined how much each state received from annual appropriations. The first set assured each state a share of program funds. Variables included the proportion of each state's land area and population within ARC's boundary. The second set measured need in each state.² For example, the vocational education program used the number of high-school-age children not enrolled in school. The supplemental grants program employed per capita income weighed inversely, an attempt to assure the poorest states a greater proportion of the funds.

² All programs did not use formulas measuring need, including the construction of access roads and development district planning and administration (U.S. General Accounting Office 1979).

In the late 1970s, the General Accounting Office examined ARC's allocation procedures (U.S. General Accounting Office 1979). The study compared each state's per capita allocation rank (1965-1975) with its relative need rank (Table 4-1)³ and concluded that area development funds were inequitably distributed among the states. Based on relative need, Alabama, Kentucky, Tennessee, and West Virginia were underfunded and South Carolina and Maryland overfunded.

The allocation of health demonstration funds was handled differently than other area development programs because of geographic restrictions. ARC's allocation to health demonstration areas consisted of two parts. First, each area received the same amount. Second, states could receive additional funds up to a specified limit. While these stipulations maintained some equality among the demonstration areas, the opportunity for additional funds allowed the earliest organized areas to capture greater shares. Early areas had a distinct advantage because the health demonstration program lasted only seven years.

³ This index is not clearly explained in the General Accounting Office report, but it is based on four factors given equal weight: poverty level, adult education level, unemployment, and deficient housing. The GAO claimed that the index was developed by a member of the ARC's Planning and Evaluation Division.

Table 4-1. Rankings of states by per capita area development allocation and relative need index between 1965 and 1975.

State	1965-75 per capita ARC area development allocation	Ranking by amount of ARC per capita allocation	Ranking by ARC relative need index
Alabama	\$ 50	10	7
Georgia	88	6	6
Kentucky	101	5	1
Maryland	178	1	11
Mississippi	117	4	3
New York	49	11	13
North Carolina	68	7	8
Ohio	65	8	10
Pennsylvania	29	13	12
South Carolina	124	2	9
Tennessee	45	12	5
Virginia	120	3	2
West Virginia	62	9	4

Source: U.S. General Accounting Office 1979.

Allocation of vocational education funds was more complex than health funds (Table 4-2). Education funds were allocated to states in the following way: 10 percent shared equally among the states, 10 percent based on a state's percentage of land area in Appalachia, 20 percent based on a state's proportion of Appalachia's population, 30 percent based on a state's per capita income weighed inversely, and 30 percent based on a state's proportion of Appalachian fourteen-to-seventeen-year-olds not enrolled in school. Table 4-3 shows the percent of education funds allocated to each state for 1965, 1967, and 1972. In 1967 and 1972, the percentage changes reflect the addition of New York and Mississippi. Despite the changes, states remained stable in their rankings. New York and Mississippi received low shares of vocational education funds because of their late start.

Because each state's share of Section 211 funds remained stable until the mid-1970s, analysis of the 1965 formula provides insight into early funding strategy. Table 4-4 ranks the percent of each state's Section 211 allocation by the two "need" variables (per capita income and high-school-age children not enrolled in school) and the three "equality/stability" variables (Appalachian population, Appalachian land area, and the percent distributed equally

Table 4-2. Allocation procedure for Section 211 vocational education funds.

State	Equality (x 10%)	Appalachian Land Proportion (x 10%)	Appalachian Population Proportion (x 20%)	Per capita income as proportion of average Appalachian per capita income (x 30%)	Proportion of Appalachian population aged 14 to 17 not in school (x 30%)	Total allocation percentage
Alabama	.91	1.36	2.40	2.70	3.54	10.91
Georgia	.91	.63	.83	2.87	1.49	6.73
Kentucky	.91	.97	1.12	3.40	3.05	9.45
Maryland	.91	.09	.24	2.29	.30	3.83
North Carolina	.91	.70	1.16	2.90	2.02	7.69
Ohio	.91	.80	1.38	2.57	1.53	7.19
Pennsylvania	.91	2.14	7.31	2.12	6.92	19.40
South Carolina	.91	.23	.72	2.76	1.59	6.21
Tennessee	.91	1.12	1.98	2.77	3.88	10.66
Virginia	.91	.55	.57	3.05	1.53	6.61
West Virginia	.91	1.41	2.29	2.60	4.16	11.37

Source: ARC 1965a.

Table 4-3. Section 211 vocational education allocation percentages for 1965, 1967, and 1972.

State	1965		1967		1972	
	Percent of total	Rank	Percent of total	Rank	Percent of total	Rank
Alabama	10.9	(3)	10.2	(3)	10.3	(2)
Georgia	6.7	(8)	6.3	(8)	6.3	(8)
Kentucky	9.5	(5)	8.7	(5)	8.0	(5)
Maryland	3.8	(11)	3.8	(12)	3.1	(13)
Mississippi	-		-		5.0	(12)
New York	-		5.6	(11)	5.4	(11)
North Carolina	7.7	(6)	7.1	(6)	6.6	(6)
Ohio	7.2	(7)	6.8	(7)	6.5	(7)
Pennsylvania	19.4	(1)	18.6	(1)	18.0	(1)
South Carolina	6.2	(10)	5.8	(10)	5.5	(10)
Tennessee	10.7	(4)	10.1	(4)	9.6	(4)
Virginia	6.6	(9)	6.3	(8)	5.8	(9)
West Virginia	11.4	(2)	10.8	(2)	10.0	(3)

Sources: ARC 1965b, 1966b, 1971.

Table 4-4. Section 211 vocational education allocation rankings for 1965 based on equality/stability and need variables.

State	Equality/ Stability Rank	Need Rank	Overall Rank
Alabama	2	5	3
Georgia	8	8	8
Kentucky	6	4	5
Maryland	11	11	11
North Carolina	7	6	6
Ohio	5	10	7
Pennsylvania	1	1	1
South Carolina	10	9	10
Tennessee	4	3	4
Virginia	9	7	9
West Virginia	3	2	2

The need variables include per capita income and high-school-age children not enrolled in school. The equality/stability variables include Appalachian population, Appalachian land area, and the 10 percent of funds distributed equally among the states.

Source: ARC 1965a.

among the states).

Several observations are drawn from Table 4-4. First, states had remarkably similar rankings in need and equality/stability although each set of variables had a uniquely different theoretical purpose. For Alabama and Ohio, the need ranks were significantly lower than their equality/stability ranks. Because of concern for equity, they received more education funds than their need suggested. Second, the four states (Kentucky, Tennessee, Virginia, and West Virginia) comprising Central Appalachian counties had need ranks higher than their equality/stability ranks (Figure 4-2). This is not surprising because the area had long been recognized as the core of Appalachian poverty. North Carolina and South Carolina were the only other states with need ranks higher than their equality/stability ranks. In hindsight, ARC administrators admit more should have been done for Central Appalachia. Francis Moravitz, executive director of the ARC, regrets that administrators did not recognize the depths of the area's problems earlier. If early recognition had occurred, allocations would have been more favorable to the region (Moravitz 1983).

A third conclusion is that Table 4-4 identifies states where the need rank forces the overall rank above the equality/stability rank. Kentucky, North Carolina, and West Virginia exceeded their fair share allocation of Section 211

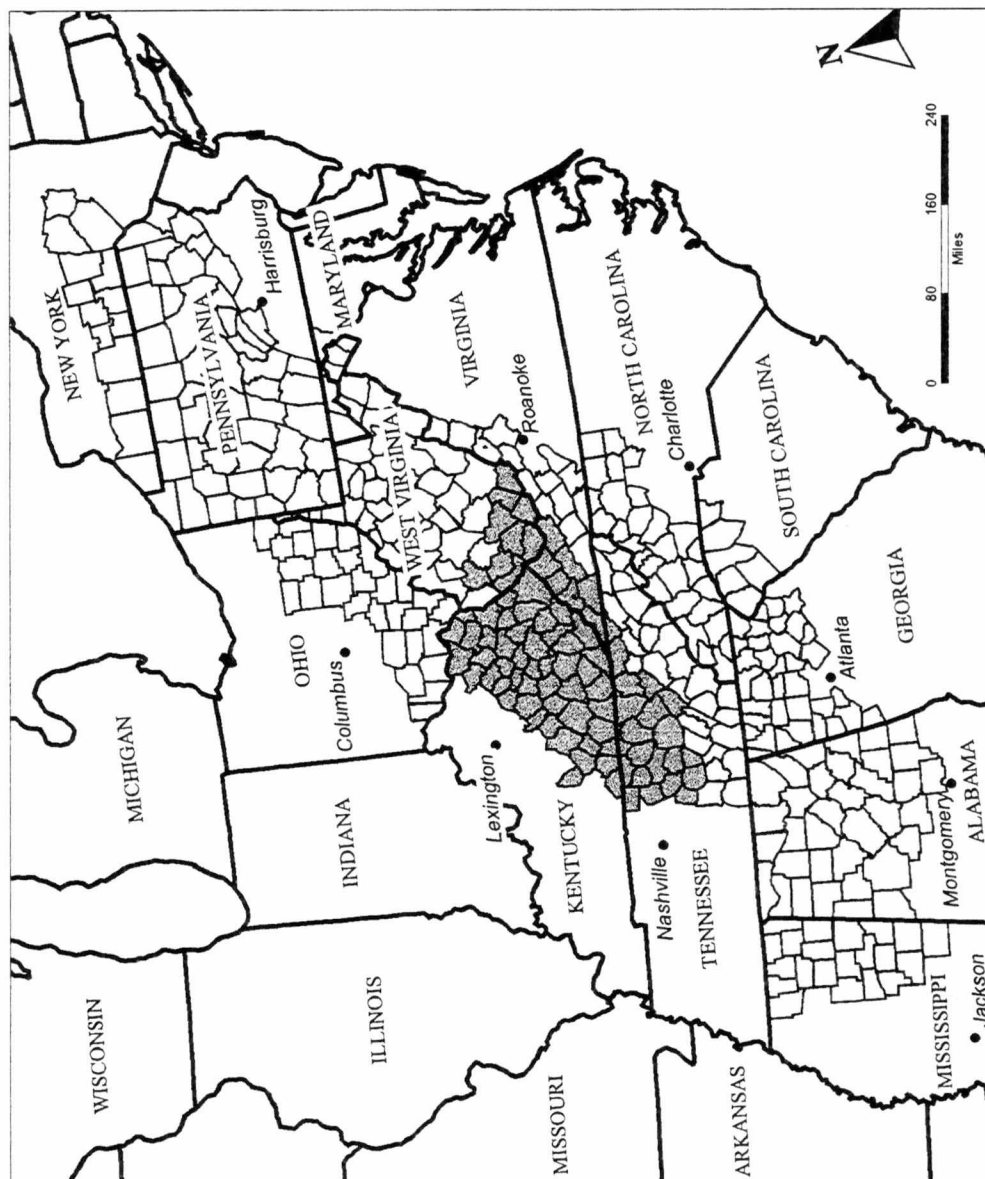


Figure 4-2. Appalachian Regional Commission's definition of Central Appalachia. Bradshaw 1992.

funds. A fourth conclusion is that Pennsylvania's high overall rank is a result of its large share of the total Appalachian population (36.5 percent)⁴ and the total ARC land area (21.4 percent).⁵ It is not surprising that Pennsylvania also ranked high in need for Section 211 funds. The state had 23 percent of Appalachia's high school children not enrolled in school.

Did allocation percentages match the actual distribution of funds? Table 4-5 shows the allocation percentages for 1967 and the actual distribution of Section 211 funds for 1968. The differences are due to several factors. An important one is that in 1968 the ARC was still in its infancy, and some states had not developed detailed plans for ARC money. As a result, states such as Kentucky that developed project plans early received more funds. Another important factor was that some states traded away part of their allocations in return for greater ones in other programs. This "horse-trading" allowed states to make up the difference between the costs of their project packages and their ARC allocations (Widner 1982; Lewis 1974). The imbalance also spawned trading among the states.

⁴ Alabama was a distant second because it had only 12 percent of the Appalachian population in 1960.

⁵ West Virginia had only the second largest area within the ARC boundary (14.1 percent of the total land area) even though the entire state was included.

Table 4-5. Section 211 vocational education allocation percentages for 1967 and actual distribution of Section 211 funds in 1968.

State	1967 Allocation Percentage ^a	1968 Percentage of Total 211 Funds ^b	Percentage Difference
Alabama	10.2	6.2	- 4.0
Georgia	6.3	5.2	- 1.1
Kentucky	8.7	14.2	+ 5.5
Maryland	3.8	2.0	- 1.8
Mississippi	-	3.4	+ 3.4
New York	5.6	10.5	+ 4.9
North Carolina	7.1	7.9	+ 0.8
Ohio	6.8	7.5	+ 0.7
Pennsylvania	18.6	16.6	- 2.0
South Carolina	5.8	4.7	- 1.1
Tennessee	10.1	4.7	- 5.4
Virginia	6.3	9.9	+ 3.6
West Virginia	10.8	7.4	- 3.4

Source: (a) ARC 1966b. (b) Compiled by author from ARC documents.

If Kentucky's yearly project package for Section 211 required more than its allotted share, another state could transfer it funds. Such a transfer included an agreement that in the future Kentucky would give the same amount back. John Sweeney, former federal co-chairman, acknowledged that states were willing to transfer funds to other states where greater needs existed (Sweeney 1982). Pennsylvania recognized West Virginia needed more highway dollars, and in return, Pennsylvania received additional funds for mine-fire control. Comparison of Tables 4-5 and 4-6 suggests that the practice of trading decreased over time, and changes in the ARC in 1975 eliminated the need for states to trade.

Funds from the supplemental grants program (Section 214) could be used to assist health, education, community development, and other area development programs. Equality/stability variables accounted for 56 percent of each state's allocation. The other 44 percent was allotted on per capita income weighted inversely (U.S. General Accounting Office 1979).

Post-1975 Appropriation and Allocation Procedure

In preparation for Congressional reauthorization hearings in 1975, the ARC reviewed all programs and policies. This review led to a new area development

Table 4-6. Section 211 vocational education allocation percentages for 1972 and actual distribution of Section 211 funds in 1973.

State	1972 Allocation Percentage ^a	1973 Percentage of Total 211 Funds ^b	Percentage Difference
Alabama	10.3	10.4	+ 1.0
Georgia	6.3	7.1	+ 0.8
Kentucky	8.0	8.4	+ 0.4
Maryland	3.1	2.8	- 0.3
Mississippi	5.0	7.3	+ 2.3
New York	5.4	1.0	- 4.4
North Carolina	6.6	9.7	+ 3.1
Ohio	6.5	5.7	- 0.8
Pennsylvania	18.0	16.4	- 1.6
South Carolina	5.5	6.5	+ 1.0
Tennessee	9.6	11.7	+ 2.1
Virginia	5.8	6.6	+ 0.8
West Virginia	10.0	6.5	- 3.5

Source: (a) ARC 1971. (b) Compiled by author from ARC documents.

appropriation procedure that was the most important change in the history of ARC policy. The new strategy no longer made categorical appropriations for each area development program. Starting in 1975, Congress began making annual block grant appropriations for all area development programs, including health, education, and community development. Block grants allowed states to spend their allocations in any way they wanted. If a state wished to spend its entire allocation on only one program, it could.

In 1973, states began complaining about the lack of flexibility in the categorical appropriations. Federal co-chairman, Donald Whitehead, responded:

the final answer lies in a better figuring out of an allocation process, how we apportion our funds among the states. . . . the way we're doing business now makes each one of us feel that each state ought to have an equal share or its share of each program, when it may very well be that the needs for new vocational schools, for instance, have been exhausted in one state, but that state has a greater need than its sister in some other area, mine rehabilitation for instance. . . . Meaning that the problem that Bill Horne faces in New York is far different than the problems that Blue Barber faces in Alabama . . . (ARC 1973a, 126)

During the summer of 1973, John Whisman and Donald Whitehead worked on solutions and presented their ideas to the Commission. Whitehead supported the idea of one block grant appropriation for area development programs (ARC 1973b). He believed that the new procedure supported a Nixon Administration objective of increasing state and local

governments' management of their own affairs. Whitehead was looking for something to court continued White House and Congressional support for the ARC. Also, he believed that the Office of Management and Budget would support this new approach. While self-perpetuation is a favorite criticism of the ARC (Atta 1993), in 1975, this concern led to a new appropriation procedure that was more flexible. In seeking Commission members support, Whitehead claimed that categorically-based appropriations did not adequately deal with the region's problems because Congress not state and local leaders, determined local priorities (ARC 1973b). In October 1973, Whitehead met with the Office of Management and Budget, and the idea was well received (ARC 1973c). At the January 1974 Commission meeting, the block grant proposal was formally approved (Peterson 1974).

The area development block appropriation idea is also attributed to another person. At the February 1973 ARC meeting, William Pate, Maryland's director of economic development, urged the Commission to consider reorienting the agency toward economic and community development. Pate's rationale was that the ARC had been creating the conditions for external investment by improving the region's education, health, and highway infrastructure. Other state leaders agreed that it was time for the ARC to become more economic development-minded. Before 1975, the ARC

deliberately refrained from funding projects that directly benefitted business. Section 224b of the Appalachian Regional Development Act placed restrictions on direct assistance to businesses because of criticism of the Area Redevelopment Administration.⁶ The Area Redevelopment Administration was criticized for too much government assistance (Storm 1995). According to John Whisman, ARC states' representative, existence of the Economic Development Administration precluded ARC involvement with the private sector (ARC 1973a).

Support for Pate's suggestion was strong. By 1975, the ARC code allowed the agency to address economic development problems. In addition, the ARC began co-funding projects with the Economic Development Administration. ARC's conscious effort to address economic and business development issues led to a significant decrease in expenditures in health and education and an increase in ones for community development (water, sewer, and industrial site

⁶ The Area Redevelopment Act, which was passed by Congress in 1961, emphasized infrastructure development of economically depressed areas. Most ARC counties were eligible for the grants, except ones in New York and parts of Virginia, Tennessee, North Carolina, South Carolina, and Georgia. However, loose eligibility requirements meant that almost one-third of the nation's counties were eligible. Programs included industrial and commercial loans and loans and grants for public facilities, training the unemployed, and technical assistance (Levitan 1964).

preparation).

Each state's area development allocation consisted of base and subregional allocations (Lewis 1974). The base allocation was approximately 66 percent of the total and was proportional to what the state had been receiving under the 1974 procedure. The subregional allocation was based on a revised Section 214 formula that considered equity among states and population, land area, and per capita income weighed inversely. Built into the allocation was a bias toward Central Appalachia in recognition of its greater need (Figure 4-2). Though Central Appalachia received only 23.2 percent of the \$38.6 million subregional allocation in 1975, on a per capita basis the amount was much larger, \$5.14 compared to \$1.47 for Northern Appalachia and \$2.29 for Southern Appalachia (Lewis 1974, 8). The new formula, including the subregional allocation, resulted in only minor changes to the distribution of ARC funds because 67 percent was based on 1974 allocations (Tables 4-7 and 4-8). What changed dramatically was how each state spent its allocation.

Patterns of Education and Health Care Expenditures

Patterns of the ARC's education and health care spending are examined using: (1) annual expenditures for

Table 4-7. Block grant allocations to the states for the area development programs for fiscal year 1976.

State	Base Allocation	Subregional Allocation			Allocation Total
		Northern	Central	Southern	
Alabama	\$ 6,969,398	\$ 0	\$ 0	\$ 3,001,635	\$ 9,971,033
Georgia	5,238,387	0	0	2,102,100	7,340,487
Kentucky	5,888,461	0	4,166,366	0	10,054,827
Maryland	3,348,637	1,481,256	0	0	4,829,893
Mississippi	4,474,928	0	0	1,912,365	6,387,293
New York	5,261,064	2,076,749	0	0	7,337,813
North Carolina	6,092,554	0	0	2,162,160	8,254,714
Ohio	5,646,573	2,222,507	0	0	7,869,080
Pennsylvania	9,478,986	4,868,586	0	0	14,347,572
South Carolina	5,631,455	0	0	1,804,530	7,435,985
Tennessee	6,954,280	0	1,968,303	1,602,510	10,525,093
Virginia	3,809,736	0	1,496,692	1,064,700	6,371,128
West Virginia	6,795,541	1,808,902	1,670,639	0	10,275,082

Source: ARC 1976a.

Table 4-8. Allocation percentages for area development programs, 1975 and 1976.

State	1975	1976
Alabama	9.06	8.98
Georgia	6.70	6.61
Kentucky	8.76	9.06
Maryland	4.27	4.35
Mississippi	5.82	5.75
New York	6.66	6.61
North Carolina	7.50	7.44
Ohio	7.20	7.09
Pennsylvania	13.19	12.93
South Carolina	6.72	6.70
Tennessee	9.27	9.48
Virginia	5.72	5.74
West Virginia	9.13	9.26

Sources: ARC 1975a, 1976a.

education, health, and community development;⁷ (2) expenditures by project type for education and health care; and (3) the spatial distribution of expenditures at the local development district level.⁸ Analysis concentrates on ARC funds which comprise only part of the total cost of any project. ARC funds accounted for 28.6 percent of the total cost of area development projects through 1996, while other federal funds made up 27.7 percent and state and local funds 44 percent (ARC 1996).

Annual Expenditures

Large fluctuations in annual ARC expenditures make identification of trends difficult. In the analysis, I used a five-year moving average to smooth the lines. The period 1975 to 1981 is of particular interest because it is the only one in ARC history when states operated under the block grant appropriations and received large Congressional

⁷ Though community development projects are not the foci of this dissertation, examination of their expenditure patterns is essential to understanding the history of education and health care expenditures.

⁸ Data on education, health, and community development projects through 1992 were supplied by the ARC. The databases contain: project number, fiscal year, overrun/underrun, section number of the Appalachian Regional Development Act, project type, project name, ARC funds, total eligible cost, local development district, and county.

appropriations. Before 1975, expenditure patterns portray priorities established by Congress. After 1975, the patterns reflect state priorities. In 1981, Congress severely reduced ARC's appropriations. The agency barely survived President Reagan's attempt to close it. Under Reagan, allocation policies stressed community development. The health care program ended, and education projects became part of business development initiatives. Therefore, particular attention is paid to changes in expenditures after introduction of block grants in 1975 and before major policy changes in 1982.

Education and health care expenditures have similar patterns, but community development expenditures have a very different one (Figure 4-3). The declines in education and health care expenditures after 1975 and the subsequent increase in community development expenditures is the most significant trend. Introduction of the block grant appropriation is the primary reason for this shift. Continuation burdens for operating grants caused slow, but steady, declines in education and health care expenditures after 1975 as funds began to be shifted to community development projects, primarily water and sewer system construction.

Another noticeable change in education and health care expenditures occurred after President Reagan took office in

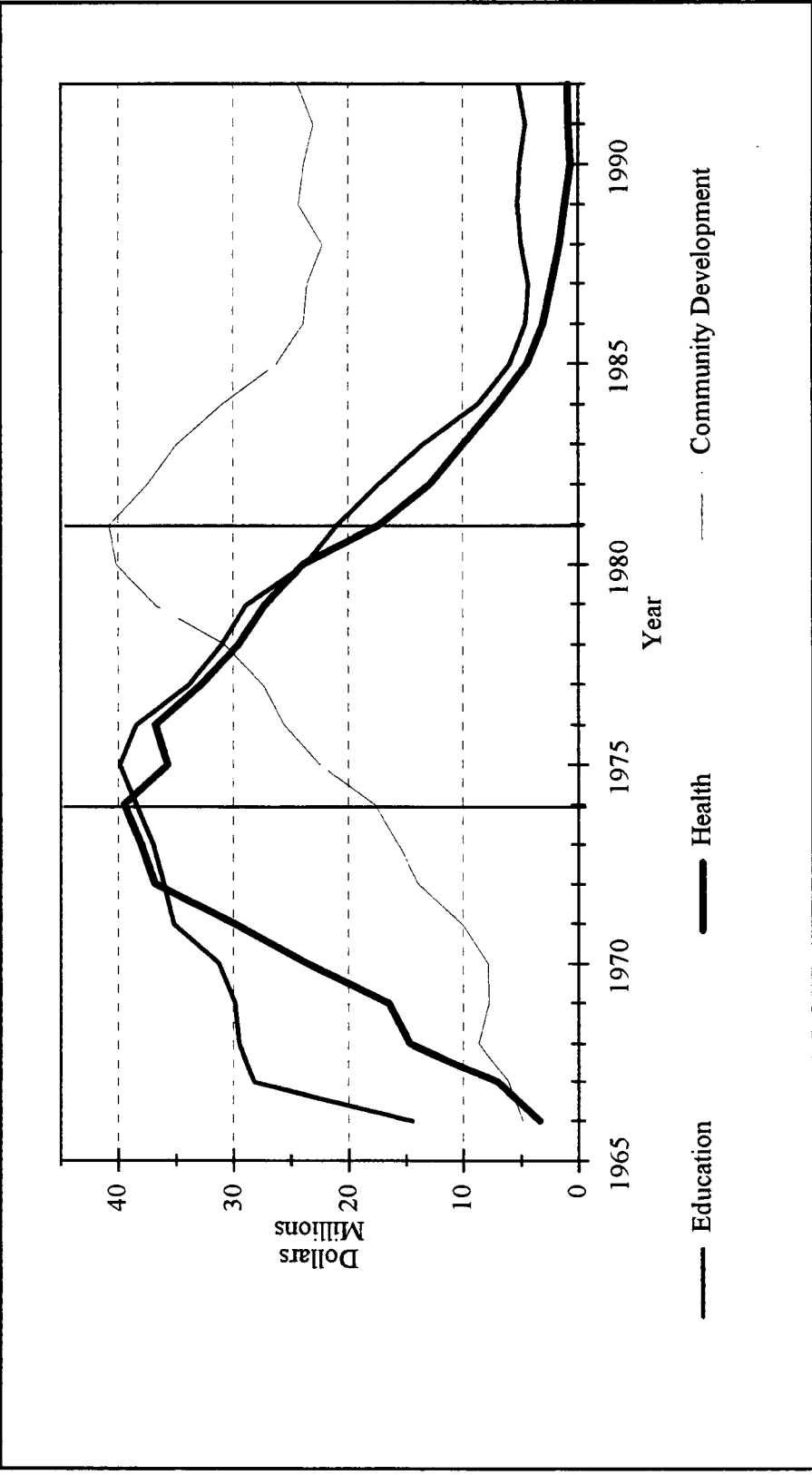


Figure 4-3. Appalachian Regional Commission education, health, and community development expenditures by five-year moving averages, 1965 to 1992. Source: Compiled by author from ARC documents.

January 1981. His 1982 budget called for termination of the ARC. The ARC responded quickly by asking for reconsideration (ARC 1981b). Three reasons were given for continuing the agency. First, the unique nature of ARC's federal-state partnership was an example of Reagan's desire to return power to the states. Second, the ARC claimed the program was successful, and there was still considerable need throughout the economically depressed region. Third, elimination of funding would adversely affect 700 communities with approved ARC projects that were not complete. The response also proposed a compromise, a phase out of the agency rather than sudden termination. In August 1982, the House of Representatives passed a bill that supported the compromise.

Even after the funding cutback in 1982, states continued to emphasize community development (Figure 4-3). Yearly expenditures for community development projects between 1982 and 1992 were not much lower than those for education and health during their peak years. The average annual expenditure for community development projects between 1982 and 1992 was \$23.5 million. Between 1967 and 1975, average yearly expenditure for education was \$37.9 million and \$32.6 million for health. After 1986, health care expenditures were negligible. Education funding, though considerably lower than in previous years, continued

beyond the finish-up phase because of ARC emphases on basic education skills and customized training programs.

States are assured of some autonomy within the ARC because of the strong role played by the Conference of Appalachian Governors in founding the agency. Each state is responsible for developing an investment strategy for ARC funds based on actual and perceived needs. The unique character of place and region is revealed in each state's annual expenditures for education, health, and community development. Despite diversity, graphs of expenditures by state show similarities in the effects of major ARC policy changes. Of the thirteen ARC states, only four--Alabama, Georgia, Mississippi, and Ohio--had education or health care expenditures that remained above that for community development between 1975 and 1981 (Figure 4-3).

Georgia and Mississippi are examples of why an immediate shift in expenditures did not occur from social projects to economic development ones. Before 1975, Georgia funded the three programs almost equally, except for a rise in health expenditures toward the end of the period because the health demonstration area received funding (Figure 4-4). Community development was emphasized early because industrial and population growth in Appalachian Georgia required assistance for housing and water and sewer projects (Carnathan 1973). Georgia is unique among states for

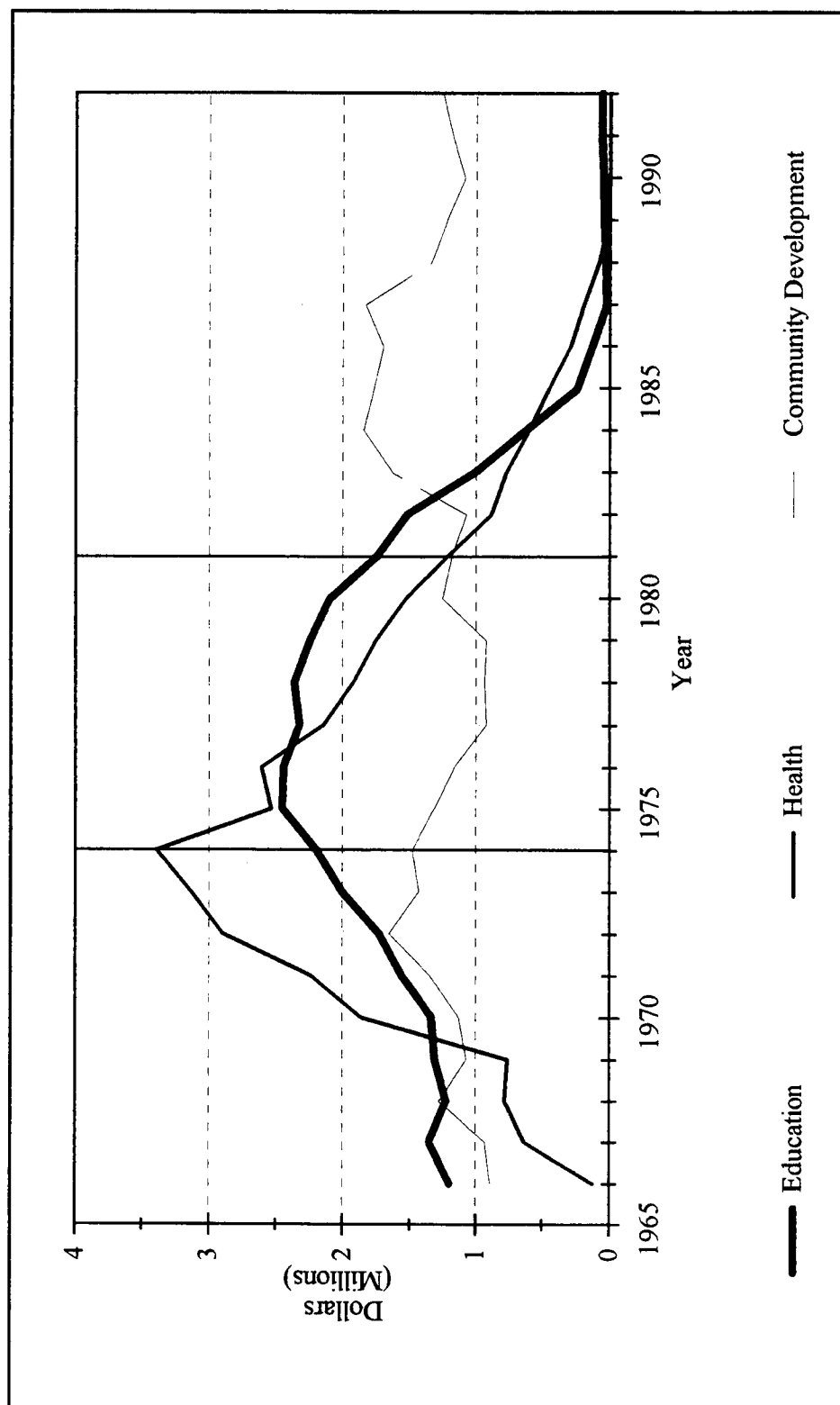


Figure 4-4. Georgia's Appalachian Regional Commission education, health, and community development expenditures by five-year moving averages, 1965 to 1992. Source: Compiled by author from ARC documents.

community development expenditures declined during the block grant period as more attention was paid to education.

Mississippi's expenditure pattern shows a much later peak in education and health care than other states because it was not a founding member of the ARC, joining two years later in 1967 (Figure 4-5). Before 1975, the state was equally committed to the three programs. However, education, particularly community colleges, was the primary focus and received more attention when block grants allowed greater flexibility. Between 1975 and 1981, the state kept community development constant, decreased health care expenditures, and redirected money toward education. In the late 1980s the state ranked fifth in ARC expenditures for distressed counties, which explains the increase in community development (ARC 1995b).

After 1975, the other nine ARC states quickly shifted expenditures from social projects toward economic development. This is largely explained by the introduction of block grants, but changes in the state agencies responsible for the ARC program contribute to the shift. Several states, including Tennessee and Virginia, moved the Appalachian program to an economic or community development agency. Because persons responsible for ARC administration were in economic development, they were more inclined toward water, sewer, and industrial development projects than ones

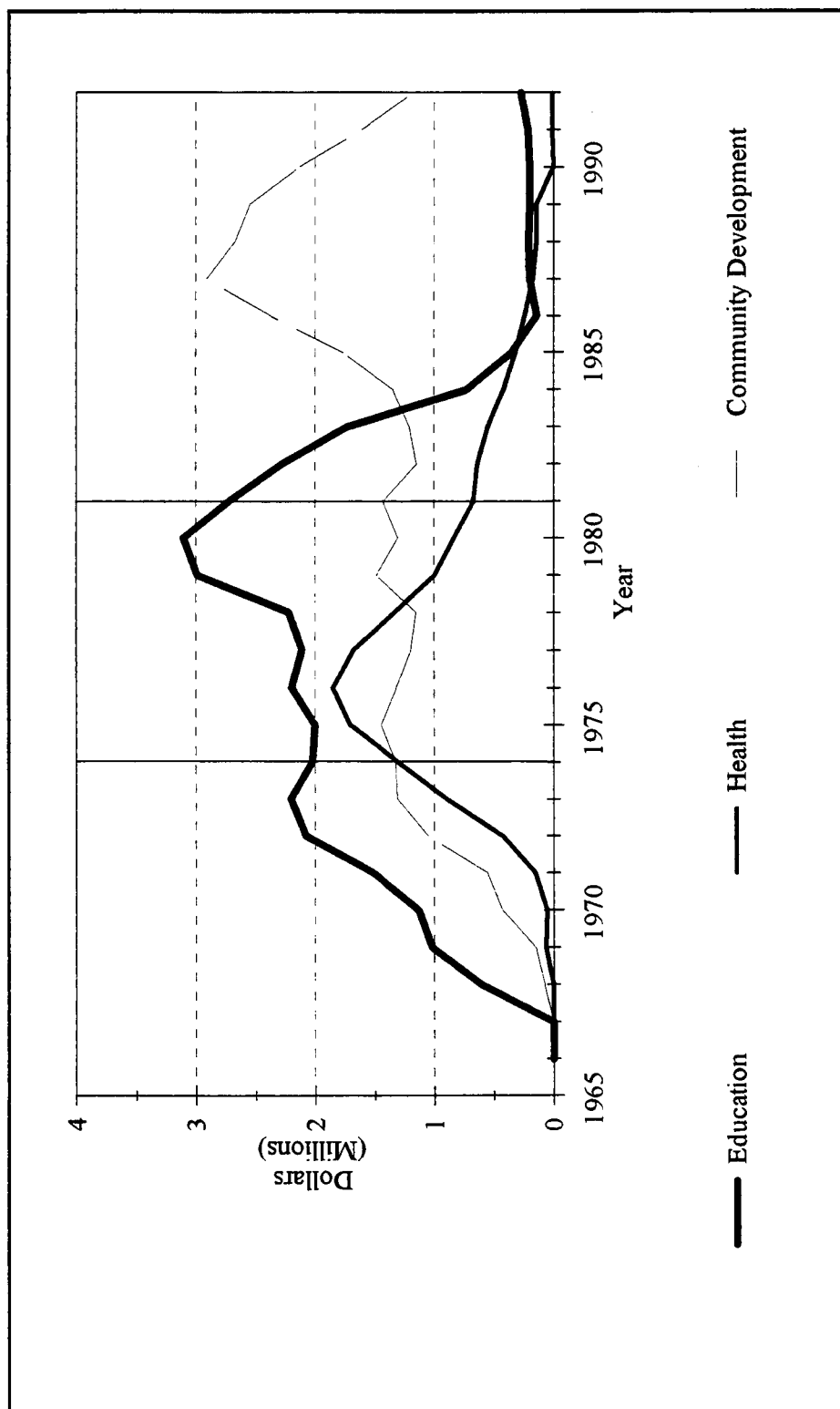


Figure 4-5. Mississippi's Appalachian Regional Commission education, health, and community development expenditures by five-year moving averages, 1965 to 1992. Source: Compiled by author from ARC documents.

for education and health (Storm 1995).

Central Appalachian states are good examples of block grants' reorientation of expenditure patterns. Kentucky's large expenditures on health were because the state's health demonstration area was funded at the highest level in the ARC (Figure 4-6). The high levels of expenditures for both education and health care contributed to the decision to shift to community development. State officials believed that early expenditures had created favorable conditions for outside investment and that lack of attention to community development was a major barrier to growth (Kentucky Area Development Office 1976). The volume of expenditures for community development after 1982 is attributed to the large number of distressed counties in the state,⁹ which accounted for almost 30 percent of the ARC's total expenditure on the program (ARC 1995b).

Tennessee devoted a large portion of its area development block grant to community development for several reasons (Figure 4-7). The Department of Economic and Community Development assumed responsibility for the program from the Office of Urban and Rural Affairs. Also, Tennessee was experiencing nonmetropolitan industrialization in the 1970s, and community development projects were a way to make

⁹ In 1996, 73 percent of the Kentucky ARC counties were distressed.

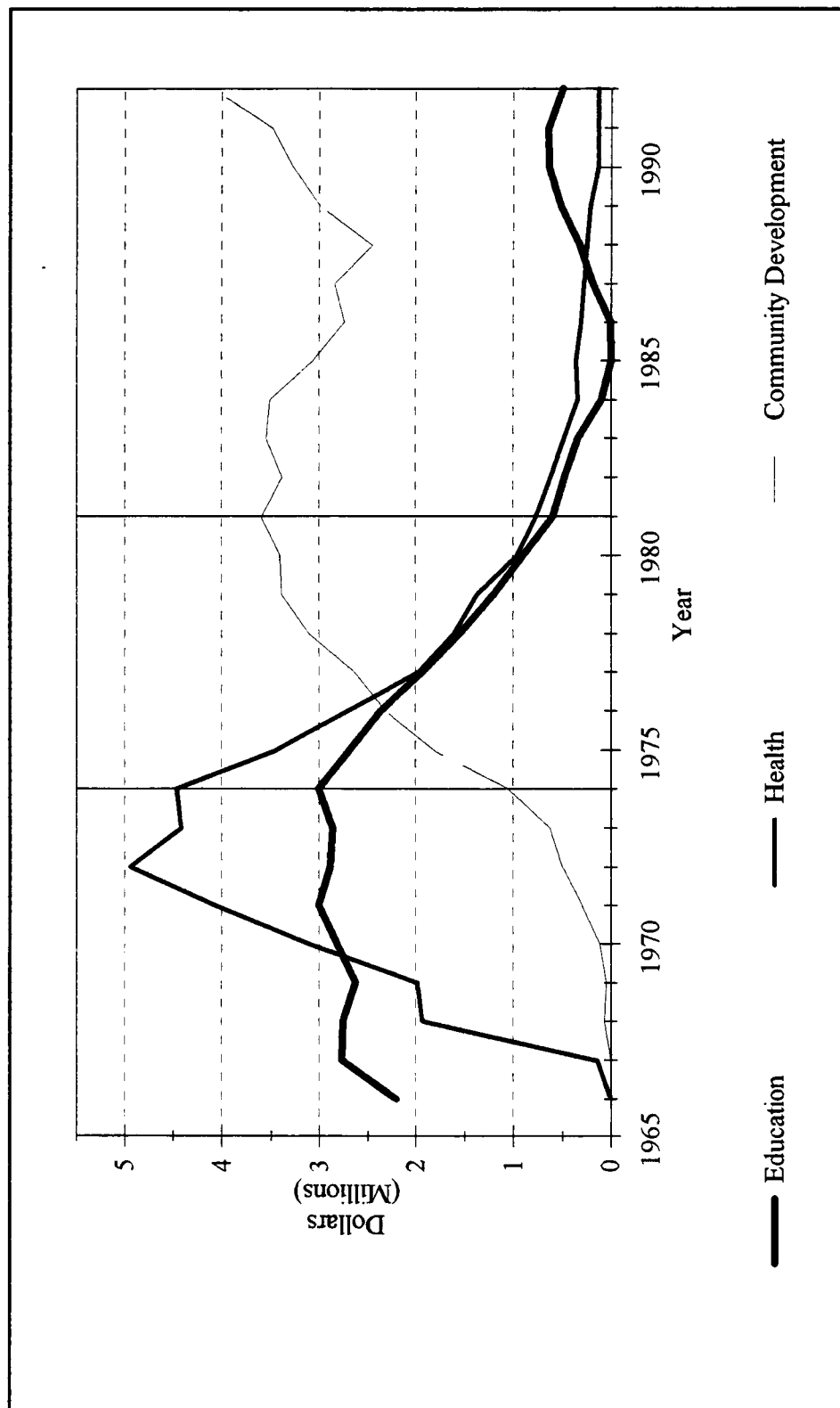


Figure 4-6. Kentucky's Appalachian Regional Commission education, health, and community development expenditures by five-year moving averages, 1965 to 1992. Source: Compiled by author from ARC documents.

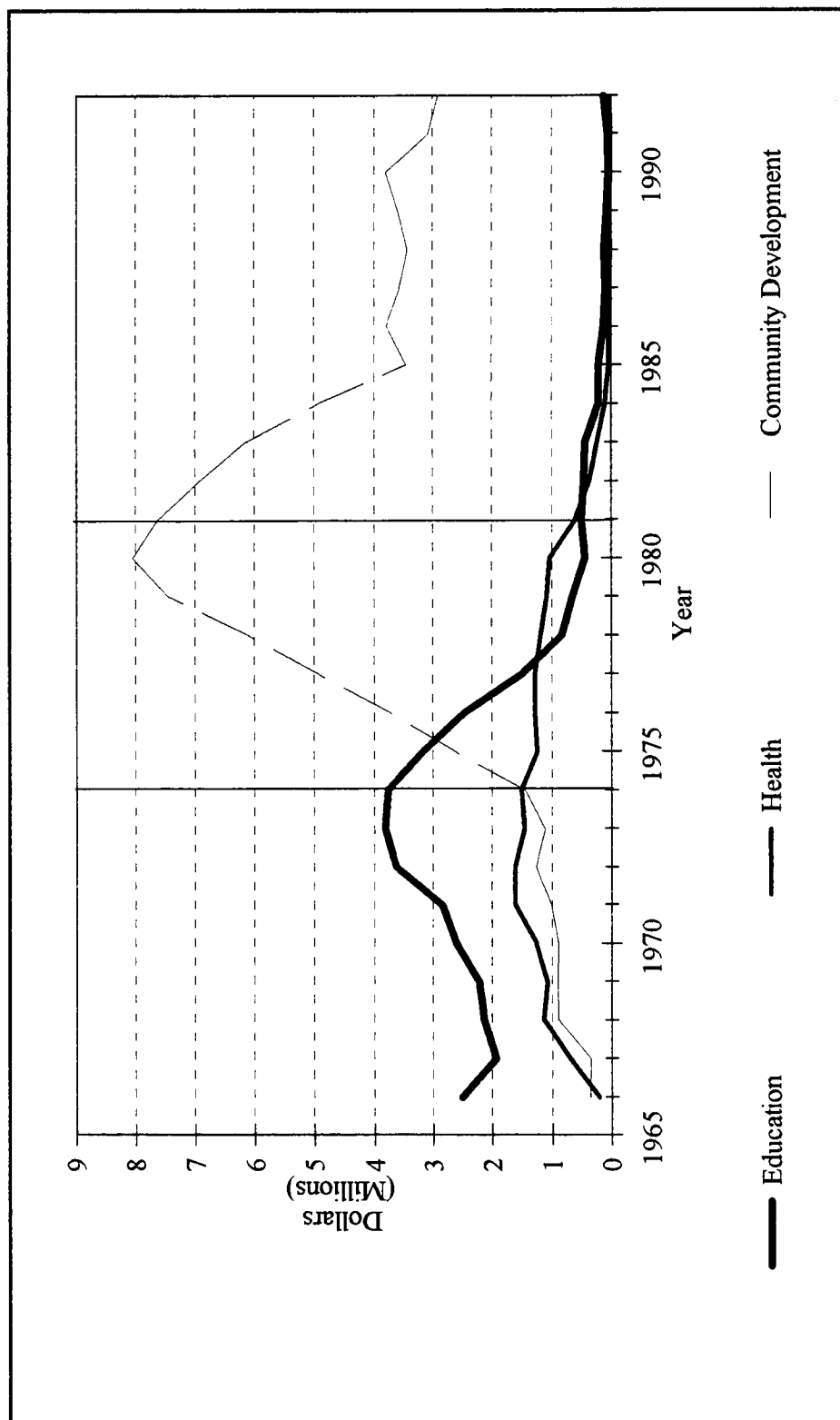


Figure 4-7. Tennessee's Appalachian Regional Commission education, health, and community development expenditures by five-year moving averages, 1965 to 1992. Source: Compiled by author from ARC documents.

areas more attractive to outside investment (Laing 1991). Tennessee used almost twice as much money for industrial site development than any other state (ARC 1995b). The large expenditures did not survive the cuts in 1982, and community development dropped rapidly. Still, Tennessee maintained a moderate level of expenditures for community development during the late 1980s. The state received approximately 18 percent of the ARC's distressed county funding through 1994 (ARC 1995b).

Virginia's ARC expenditure history tells a similar story (Figure 4-8). Virginia recognized early the need to improve Appalachia's community college system, and considerable funds were used to build and equip new institutions. Virginia's rapid increase in community development expenditures after block grants were introduced in 1975 is attributed to the belief that there was the need to create industrial sites and expand water and sewer systems in remote rural areas.

Pennsylvania's expenditure history is different from those of the Central Appalachian states (Figure 4-9). It shows a more even mix of program funds prior to 1975. Unlike Central Appalachia, Pennsylvania did not face desperate education and health problems that needed immediate attention in the 1960s. This meant that Pennsylvania was able to begin shifting ARC funds toward

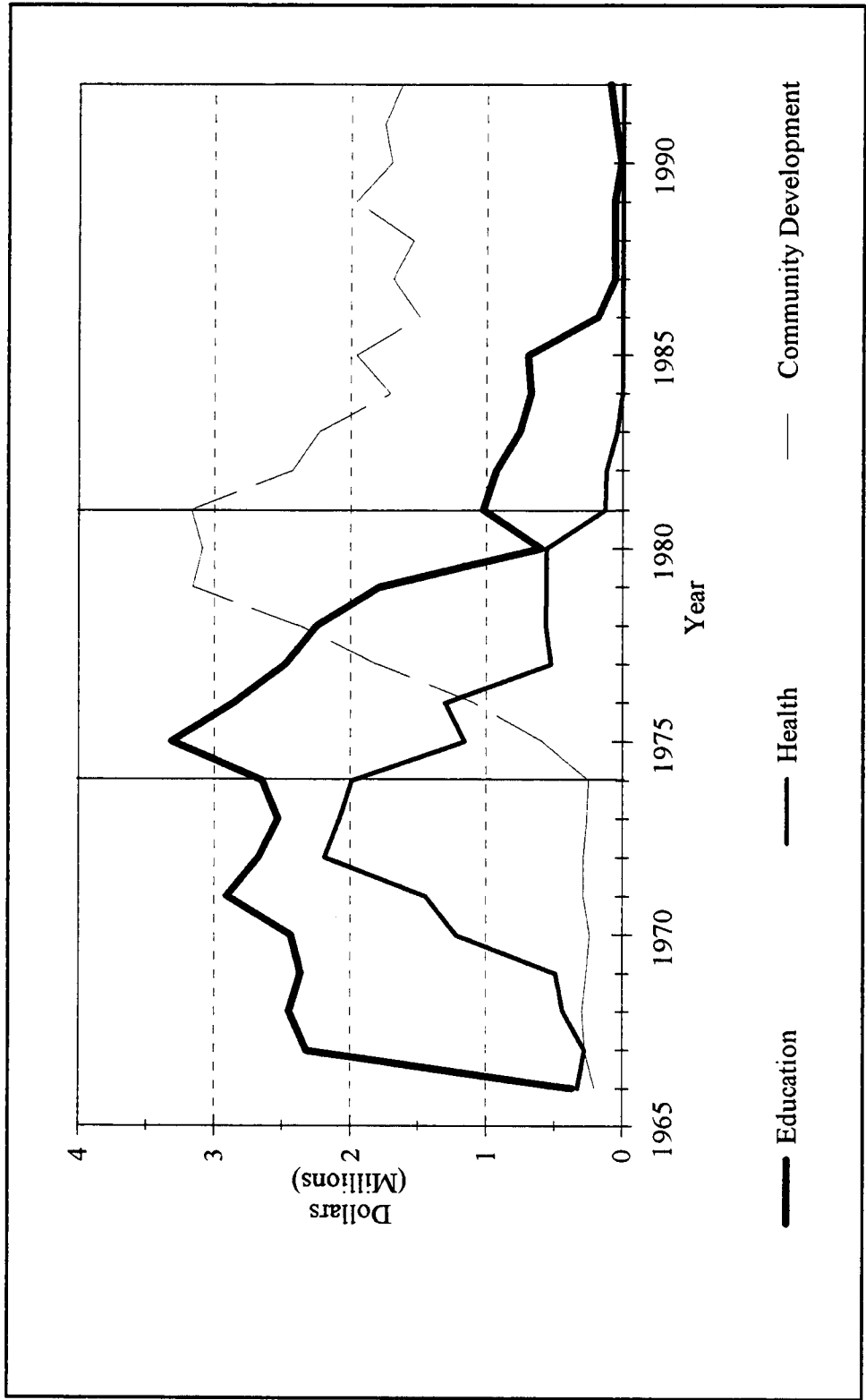


Figure 4-8. Virginia's Appalachian Regional Commission education, health, and community development expenditures by five-year moving averages, 1965 to 1992. Source: Compiled by author from ARC documents.

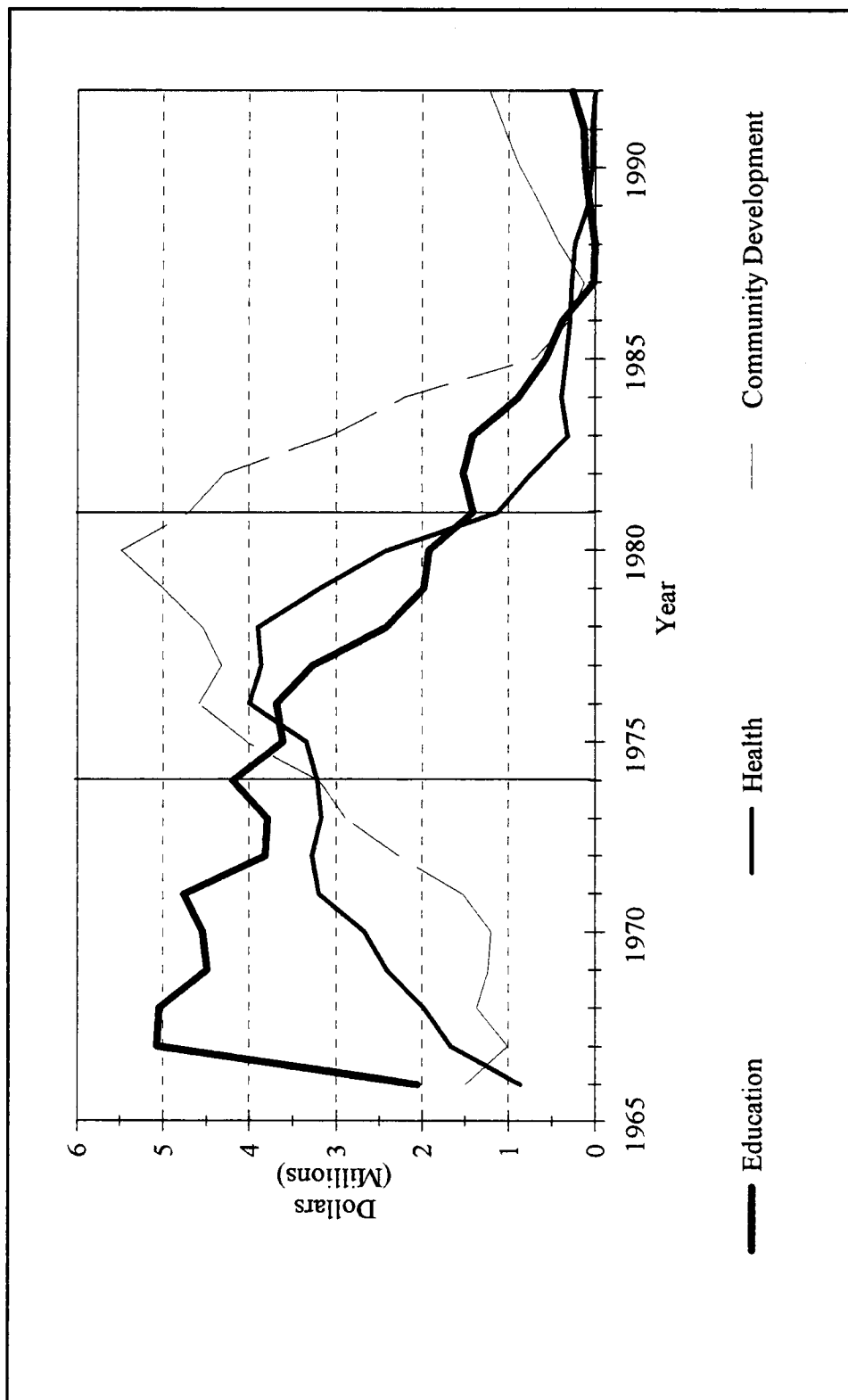


Figure 4-9. Pennsylvania's Appalachian Regional Commission education, health, and community development expenditures by five-year moving averages, 1965 to 1992. Source: Compiled by author from ARC documents.

community development much earlier than other states. The early high education expenditures were not the result of Pennsylvania's emphasis on education, but a result of the state's high ranking in ARC's education funding formula. The early education allotment was apparently more than the state officials wanted, for they slowly decreased expenditures in favor of health care and community development. The result was that Pennsylvania's expenditure patterns were not influenced as much by policy changes as the Central Appalachia states.

There is a clear regional character to state expenditure patterns. Northern and Southern Appalachia states¹⁰ had a balanced mix of expenditures for education, health, and community development before 1975. Central Appalachia states focused on education and health problems because of their near crisis situation. Community infrastructure was given low priority until large amounts had been spent on education and health care. Introduction of block grants had a dramatic impact in Central Appalachia. Community development quickly surpassed education and health. Southern Appalachia states were either ones in which community development surpassed education or health

¹⁰ Northern Appalachia consists of Maryland, New York, Ohio, and Pennsylvania. Alabama, Georgia, Mississippi, North Carolina, and South Carolina comprise Southern Appalachia.

(North Carolina and South Carolina) or ones where education or health remained above community development (Alabama, Georgia, and Mississippi). The commitment to social programs by Southern Appalachia states during the block grant period helped to compensate for their fiscal problems in funding for public assistance (Wohlenberg 1976b, 1996).

Since the mid-1980s, the increase in community development expenditures in several states is the result of their socioeconomic status, not strategic planning decisions by state officials. The most notable are Kentucky and West Virginia. These states have numerous counties that meet the criteria for distressed status (ARC 1995b). Through 1994, Kentucky and West Virginia accounted for 50 percent of all distressed county expenditures.

An important factor in understanding the different expenditure paths followed by states, particularly the shift to community development projects, is the way that the ARC program fits within the organization of state government (Rottenberg 1995; Storm 1995). States assigned responsibility for administration to a variety of agencies. Typically, two government agencies are involved with the program. One is responsible for coordination with the ARC; the other is responsible for administration. Both can change with each new gubernatorial administration. Analysis for 1970 and 1995 reveal the importance of state

administration (Table 4-9 and 4-10).

In 1970, almost half the state coordinators were in a department within the governor's office (Alabama, Kentucky, Mississippi, South Carolina, Tennessee, and West Virginia) (Table 4-9) (ARC 1972). Two (North Carolina and Virginia) had the program in the Department of Administration, and two (Georgia and New York) allowed the state planning agency to coordinate the program. Three states (Maryland, Ohio, Pennsylvania) coordinated the program from the economic development department. Program administration was predominately located in state development or planning departments. Only Pennsylvania, Tennessee, Virginia, and West Virginia administered the program from other agencies.

In 1995, most ARC coordinators were located in three agencies within state government: the governor's office (Georgia, Kentucky, Mississippi, and Ohio); the state's Washington, D.C. office (North Carolina, South Carolina, and Virginia); and the state's economic and/or community development office (Alabama, Pennsylvania, and West Virginia) (Table 4-10). There are three types of program administration (Table 4-10). Five states (Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia) administer the program from an economic development office; four (Georgia, Kentucky, New York, and North Carolina) administer from a department of government affairs and

Table 4-9. Location of Appalachian Regional Commission programs within state governments, 1970.

State	ARC Coordinator	Agency with ARC Administration Responsibility
Alabama	Program development section within Governor's office	Alabama Development Office
Georgia	State Planning Agency	Bureau of State Planning and Community Affairs
Kentucky	Program development section within Governor's office	Kentucky Program Development Office
Maryland	Department for Economic Development	Department of Economic and Community Development
Mississippi	Administrative section within Governor's Office	Appalachian Development Office (Tupelo)
New York	State Planning Agency	Office of Planning Coordination
North Carolina	Department of Administration	Department of Administration
Ohio	Department for Economic Development	Department of Development
Pennsylvania	Department for Economic Development	Department of Commerce
South Carolina	Independent Division within Governor's Office	Appalachian Regional Planning and Development Council (Greenville)
Tennessee	Federal-State Relations section within Governor's Office	Office of Urban and Rural Affairs

Table 4-9. (continued)

State	ARC Coordinator	Agency with ARC Administration Responsibility
Virginia	Department of Administration	Office of Commission of Administration
West Virginia	Federal-State Relations section within Governor's Office	Office of Federal and State Relations

Source: Appalachian Regional Commission 1972.

Table 4-10. Location of Appalachian Regional Commission programs within state governments, 1995.

State	ARC Coordinator (State Alternate)	Agency with ARC Administration Responsibility
Alabama	Department of Economic and Community Affairs	Northeast State Community College (Rainesville)
Georgia	Intergovernmental Relations, Governor's Office	Department of Community Affairs
Kentucky	Chief Executive Officer, Office of the Governor	Department of Local Government
Maryland	State Office of Planning (Baltimore)	Executive Director for Rural Maryland (Crownsville)
Mississippi	Deputy Chief of Staff, Office of the Governor	Director, ARC Office (Tupelo)
New York	Secretary of State	Office of Local Government Services
North Carolina	Director, State's Washington, D.C. Office	Local and Regional Affairs Coordinator, Department of Administration
Ohio	Director, Governor's Office of Appalachia	Governor's Office of Appalachia
Pennsylvania	Deputy Secretary, Trade, Technology, and Economic Development, Department of Commerce	Bureau of Small Business and Appalachian Development
South Carolina	Director, State's Washington, D.C. Office	Division of Economic Development, Office of the Governor
Tennessee	Director, Grants and Loans	Commissioner, Economic and Community Development

Table 4-10. (continued)

State	ARC Coordinator (State Alternate)	Agency with ARC Administration Responsibility
Virginia	Director, State's Liaison Office	Director, Department of Housing and Community Development
West Virginia	Director, Community Development Division, State Development Office	Local Capacity Development, State Development Office

Source: State Directory, Appalachian Regional Commission, 1995.

services; and two (Alabama and Mississippi) have special offices in the ARC region. Maryland is unique because the administrative office is not located in the capital or the ARC portion of the state.

State coordination with the ARC has become less attached to governors' offices. As the ARC matured, Alabama, Tennessee, and West Virginia removed the program from the governor's office. Also, as the ARC matured, the agency with administration responsibility shifted from development and planning offices to economic development or ones assisting local governments. Only Georgia, Mississippi, North Carolina, and Pennsylvania have retained the program in the same agency since 1970.

Expenditures by Project Type

Education

Of the \$540.8 million spent on education through 1992, vocational education accounted for \$389.6 million, 72 percent, of the total (Figure 4-10). Job-relevant training at the secondary and post-secondary level was viewed as a necessary component to stimulating economic development. Colleges and universities received the second largest share (12.4 percent), mostly for construction and equipment. Dropout prevention and adult literacy accounted for 5.4

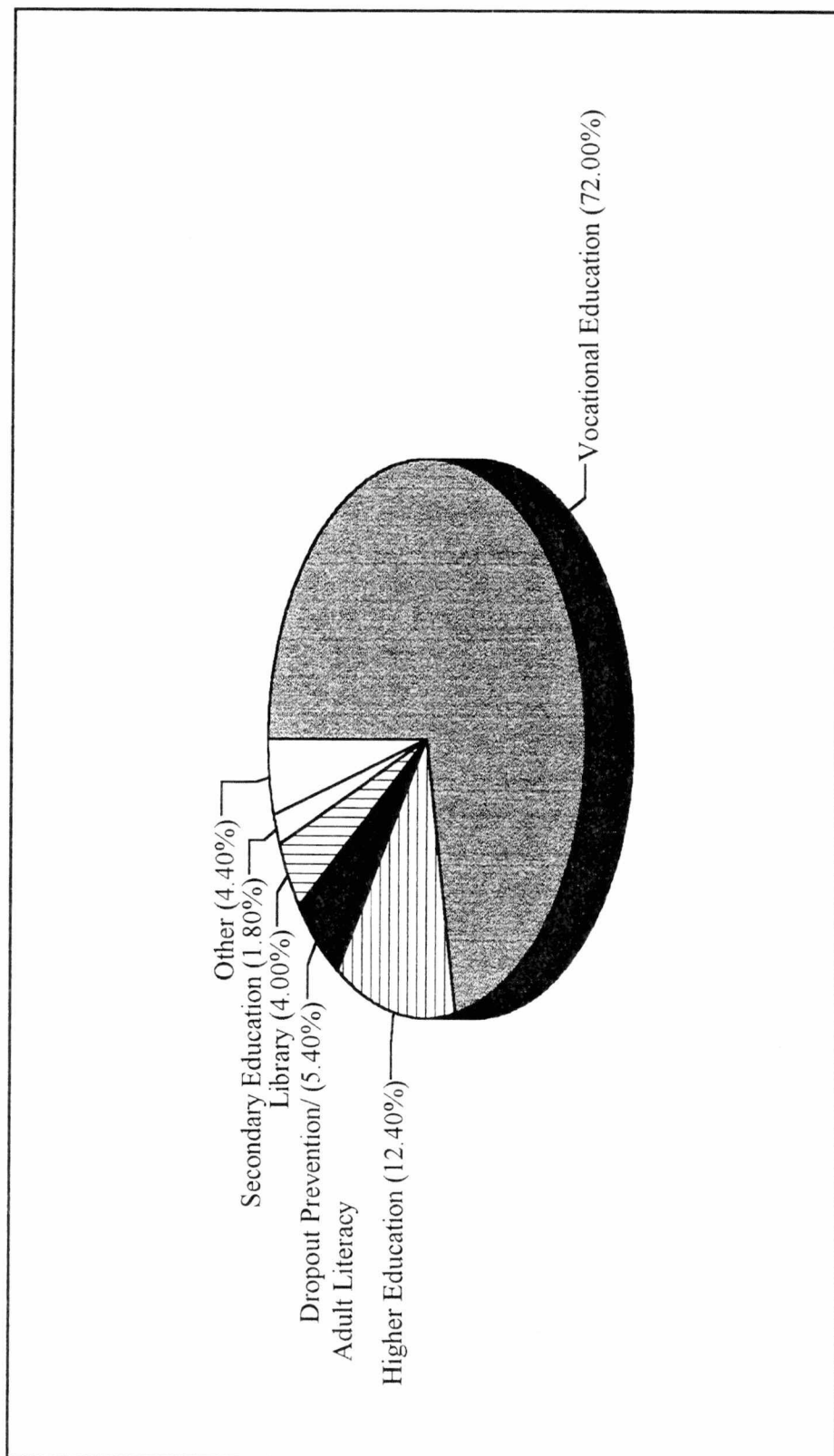


Figure 4-10. Appalachian Regional Commission education expenditures by project type, 1965 to 1992. Source: Compiled by author from ARC documents.

percent. Libraries, 4.0 percent, were the only other category to receive significant funding.

Health

Health care expenditures were more diverse than those for education (Figure 4-11). Of the \$441.9 million spent on health care through 1992, three categories accounted for more than 60 percent: primary care (28.7 percent, \$127.5 million); hospital services (26.4 percent, \$117.4 million); and health education and prevention, and emergency services (21 percent, \$92.8 million). The only other category to account for more than 10 percent of health care expenditures was mental health and rehabilitation (12 percent, \$53 million).

The bulk of health care expenditures in the early years involved construction, especially clinics for primary care and hospitals. According to initial ARC plans, this was not to be the case. The ARC's Health Advisory Committee in 1966 urged the use of other federal funds and Section 214 funds for construction projects. Section 202 funds were to be reserved for "experimental or demonstration programs" (ARC Health Advisory Committee 1966, 33). By the mid-1970s, construction had declined as a health program priority.

Health personnel recruitment deserves special attention. A theme running through ARC health reports is

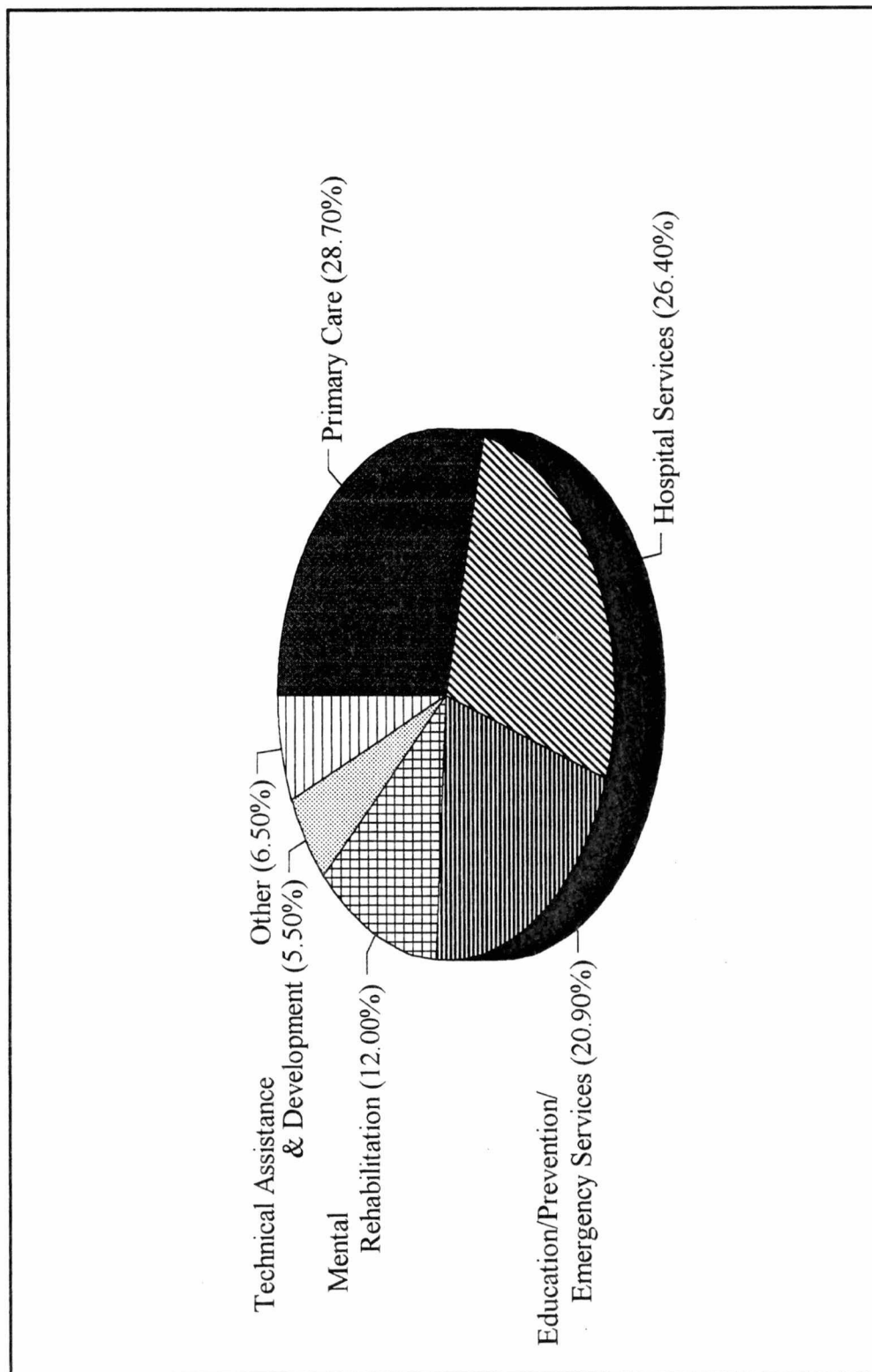


Figure 4-11. Appalachian Regional Commission health expenditures by project type, 1965 to 1992. Source: Compiled by author from ARC documents.

the lack of health care professionals in the region. The 1966 Health Advisory Committee report documented that the physician/population ratio in Appalachia was only 66 percent of the national average. This problem persisted in 1989 because a new policy on rural health emphasized the recruitment and retention of health professionals. Examination of ARC health care documents reveals that through 1992 only \$817,000 had been spent on personnel recruitment. When the J-1 Visa Waiver project, which is not included in the amount because no money was given to states, is considered, ARC's efforts are more substantive.

Community Development

Table 4-11 shows community development expenditures by project type from 1965 to 1994. Water and sewer-related projects accounted for 71.6 percent of total expenditures. The projects include construction of new lines, improvements to existing lines, and construction of treatment plants. Industrial site development projects accounted for 12.4 percent of total expenditures. Examples of community improvement and development projects included downtown revitalization, assistance to museums and county human services centers, construction of community buildings and storm drainage systems, and fire protection programs. Community improvement accounted for 5.5 percent of

Table 4-11. Appalachian Regional Commission community development expenditures by project type, 1965 to 1994.

Project Type	Dollars (millions)	Percent of total
Water System	\$ 278.4	39.2
Sewage System	165.6	23.3
Industrial Site Development	87.9	12.4
Water and Sewer	51.4	7.3
Community Improvement and Development	39.1	5.5
Environment and Solid Waste	29.4	4.1
Recreation	24.6	3.5
Airport and Airport Safety	17.3	2.4
Waste Treatment	13.0	1.8
Access Road	.97	.14
Other Basic Services	.83	.12
Rail Access	.60	.08
Communication System	.09	.01
Solid Waste	.03	.00
Total	709.2	100.0

Source: Compiled by author from ARC documents.

expenditures. Environmental and solid waste projects included funds for landfill construction and other types of garbage disposal systems. The only other project type of any consequence was recreation, with 3.5 percent of total expenditures. Recreation included county park improvements, development of recreation areas, and swimming pool construction.

All ARC community development projects are geared toward improving local infrastructure. Industrial site development, which include airport investments, access road construction, and rail line extensions, are expected to stimulate economic development. Community improvement, recreation, and water and sewer systems address quality of life as well as local infrastructure.

Geography of Expenditures at Local Development District Level

Another perspective on the patterns of education and health care expenditures is geographic. The spatial perspective is especially relevant because states shared decision making with the federal government. A premise of this study is that the unique geographic context of each state, not only influenced policy formulation, but also the spatial distribution of expenditures.

The initial scale of spatial analysis is the Local Development District. Total ARC education and health care expenditures were calculated for each Local Development District from 1965 to 1992. The figures were then divided by the local development district's 1990 population, giving a per capita value for education and health care. The per capita values were mapped (Figures 4-12 and 4-13).¹¹ The average Local Development District expenditure per capita for education was \$34.95. The range was from a high of \$149.88 in west-central Virginia to a low of \$6.14 in southwestern Pennsylvania (Figure 4-12). The average Local Development District expenditure per capita for health care was \$22.39. North-central Alabama ranked highest with \$92.79. Several Local Development Districts in Virginia and south-central Kentucky received no health care funds (Figure 4-13).

Education

Per capita education expenditures were concentrated in the central part of Appalachia between the southern border

¹¹ The databases for education and health care do not include a Local Development District designation for every project. Eleven percent of health care expenditures and 9.3 percent of education expenditures lack such designations. These projects were not included in the analysis. A small number of projects involved more than one Local Development District. Such projects were assigned to the district designated by the ARC.

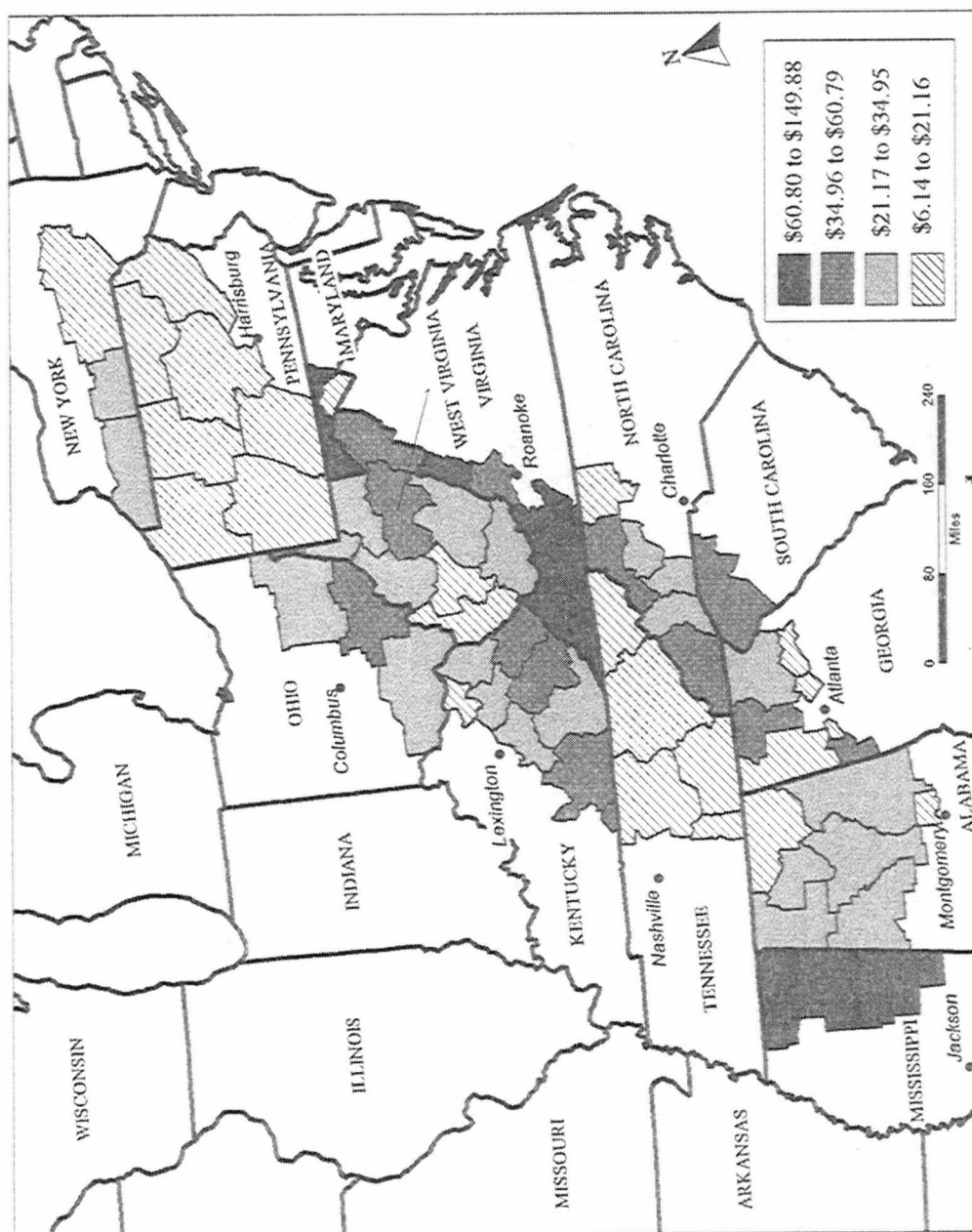


Figure 4-12. Per capita Appalachian Regional Commission education expenditures by Local Development District, 1965 to 1992.

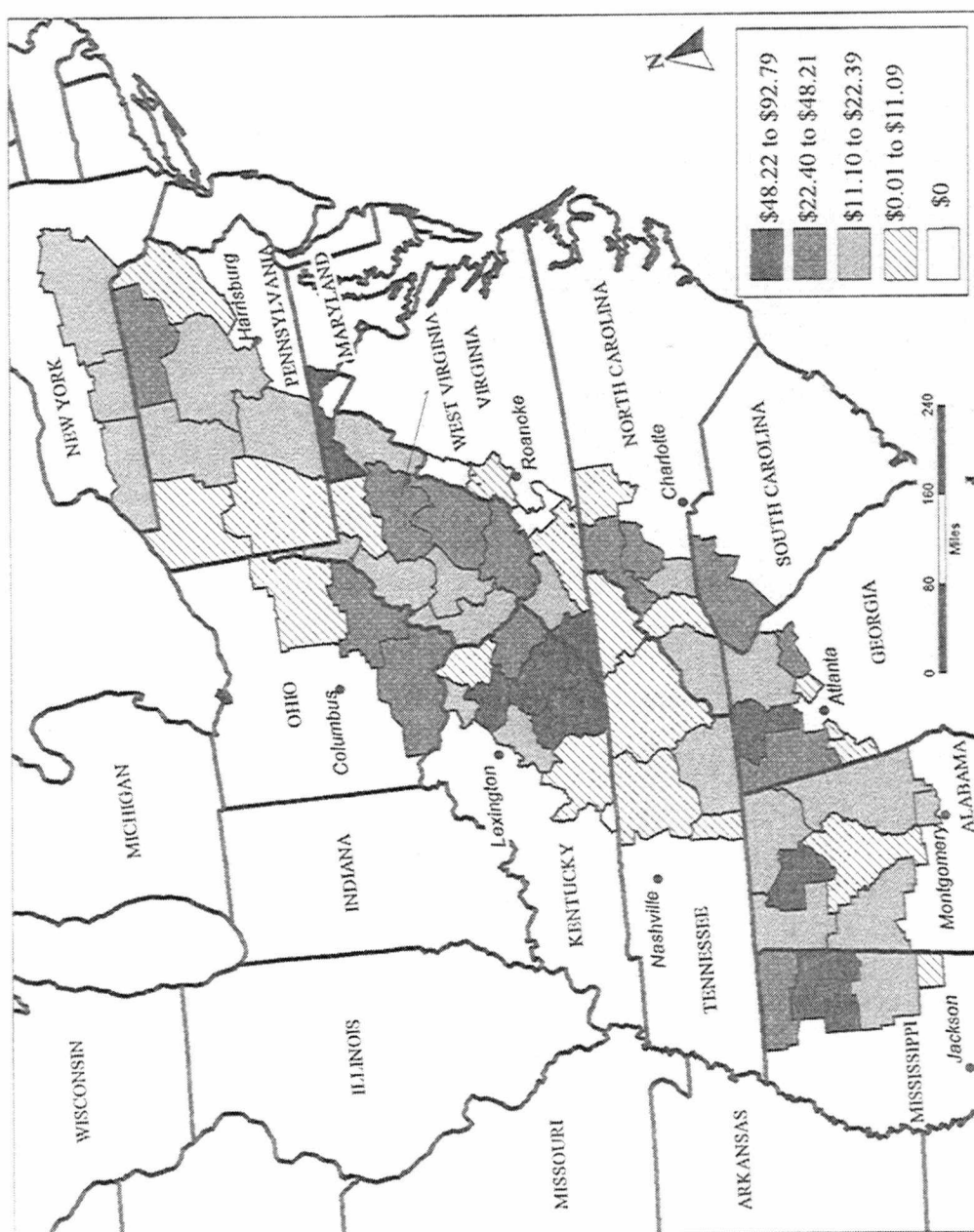


Figure 4-13. Per capita Appalachian Regional Commission health care expenditures by Local Development District, 1965 to 1992.

of Pennsylvania and the northern borders of Tennessee and North Carolina (Figure 4-12). Education expenditures in the Appalachian portions of Maryland, Mississippi, and most of Virginia were well above the regional average. Small areas in West Virginia, Ohio, Kentucky, North Carolina, South Carolina, and Georgia also exceeded the regional average.

States with high per capita education expenditures (Maryland, Virginia, Mississippi, and South Carolina) illustrate that care should be taken in interpreting Figure 4-12. One reason these states have high per capita values is that they have the smallest populations in the region. However, this masks differing state commitments to the ARC's education program. For example, Virginia, Mississippi, and South Carolina spent 30 percent or more of their total area development funds for education (Table 4-12). Maryland spent only 20.4 percent, approximately 10 percent less than Virginia, Mississippi, or South Carolina. Maryland's high per capita value is not the result of emphasis on education, but its small Appalachian population. Low per capita values for education occur in New York, Pennsylvania, and Tennessee (Figure 4-12). At first glance, it might be assumed that these values are a reflection of the states' large Appalachian populations, particularly in Pennsylvania and Tennessee. These two states ranked first and third in population in the ARC region. Further examination reveals

Table 4-12. Education and health care expenditures as a percentage of total area development expenditures by state, 1965 to 1993.

State	Education	Health Care
Alabama	<u>30.6</u>	<u>21.4</u>
Georgia	23.3	<u>23.0</u>
Kentucky	19.0	<u>23.8</u>
Maryland	20.4	<u>20.6</u>
Mississippi	<u>30.1</u>	13.8
New York	<u>25.5</u>	16.0
North Carolina	23.5	18.0
Ohio	<u>26.3</u>	<u>25.8</u>
Pennsylvania	19.3	16.9
South Carolina	<u>30.2</u>	<u>27.3</u>
Tennessee	17.6	11.8
Virginia	<u>30.3</u>	14.4
West Virginia	23.6	<u>21.3</u>
Regional Average	24.0	19.5

Note: Percentages greater than the regional average are underlined.

Source: ARC 1994.

that Pennsylvania and Tennessee were not heavily committed to using ARC funds for education (Table 4-12). The low per capita education values are the result of state funding decisions rather than large Appalachian populations.

Health

Per capita health care expenditures reveal significant clusters of high expenditures in Central and Southern Appalachia (Figure 4-13). Major concentrations of health care expenditures occur in Maryland, southeastern Kentucky, southwestern Virginia, northeastern Mississippi, north-central Alabama, and northwestern Georgia. Other areas where health care expenditures exceed the regional average include northeastern Pennsylvania, eastern West Virginia, southern Ohio, northwestern North Carolina, and South Carolina. Areas of low health care expenditures are scattered throughout the region but are concentrated in northern Appalachia, Tennessee, and central Alabama.

The most striking feature of Figure 4-13 is the spatial clustering of health care expenditures. Intra-state differences are more pronounced than in the spatial distribution of education expenditures. The clustering is the legacy of the demonstration phase when health policy was spatially-biased toward selected areas. For example, in Alabama the three original demonstration area counties

(Lawrence, Morgan, and Cullman) received 61.3 percent of Alabama's health care expenditures between 1967 and 1974. The remaining 38.7 percent was shared by the other thirty-two counties in Appalachian Alabama.

Intra-state distributions of per capita education expenditures tend to be relatively homogeneous (except in West Virginia, Kentucky, North Carolina, and Georgia) compared to health. There are three reasons for the contrasting spatial distributions. First, unlike the health program, education never targeted demonstration areas. As a result, no pockets of high expenditures are evident in education (Figure's 4-12 and 4-13). Second, funding formulas fostered a more even intra-state distribution of education funds. A structured formula for education that included measures of equity, together with no formula for health expenditures contributed to the spatial differences.

A third factor affecting spatial differences in expenditures is education and health care's different positions in the United States' political and economic structures. Health care is market-oriented and driven by market principles, while states are responsible for the administration and funding of education. Private industry has a greater influence on the spatial distribution of health care expenditures than those for education. Physicians and owners of health care facilities choose

locations based on profit-making. The result is an uneven distribution. ARC's health demonstration program was an effort to concentrate expenditures in areas disadvantaged by this process. However, obligations of a state to educate its citizens means that all areas must have school systems. This forces state governments to address, at least in part, equity issues. When ARC money was available to supplement the Vocational Education Act of 1963, states made a conscious effort that all school districts should have access to the funds. No matter whether a state was highly committed to using ARC funds for education (Mississippi) or not (Tennessee) a relatively even distribution occurred within most states.

There is evidence that the private sector influenced ARC health policy. For example, one ARC resolution stated:

The development of any community health service under Section 202 shall preserve and encourage all existing programs and arrangements involving the relationship between the physician and patient (ARC 1966a, 1).

Another resolution reemphasized the need for Section 202 proposals to prove that a project would not infringe upon the private sectors of medical and health care (ARC 1967). Concern for equity in health care expenditures developed only after the bulk of ARC funds had been obligated to the demonstration areas. Health policy partially addressed equity concerns because only one demonstration area was

funded in each of twelve ARC states. New York did not have a demonstration area. Despite change in policy, a significant intra-state disparity in ARC health care expenditures still exists.

Conclusion

Analysis of the Congressional appropriation procedure before 1975 reveals that state officials eventually became disenchanted because it gave them little flexibility in spending funds on specific programs. Formulas used by the ARC to allocate appropriations to states shows that the agency was concerned with achieving a balance between equal treatment among states and giving more funds to ones with the greatest needs. The vocational education formula did an adequate job in allocating proportionally higher amounts to states with great need.

No event affected the character of ARC's area development program more than the 1975 change in how Congress appropriated funds to the agency. Several factors contributed to this change, including growing dissatisfaction with the existing procedure, a conscious decision by ARC officials to shift emphasis from social programs to economic development, and the agency's need for continued Congressional support. The shift to block grants

had significant consequences. Geographical and contextual factors shaped the outcomes of funding by block grants. Each state's geographic, economic, and political circumstances led to different uses of ARC funds once the block grant started. The shift to block grants illustrates state governors' strong roles in formulating ARC policy.

The ARC's area development efforts were predominately a program of constructing vocational education facilities, primary care clinics, hospitals, and water and sewer systems. Before 1975, funds were almost exclusively used for construction of hospitals, primary-care clinics, and vocational education schools. After 1975, funding for construction of education and health care facilities ended. Projects became more related to issues, including literacy, dropout prevention, and infant mortality. Also, the decision to focus on economic development meant that community development projects, primarily water and sewer, dominated the program after 1975.

One of the more interesting findings is that the geographic distribution of education and health care expenditures are dramatically different. While previous research treated these expenditures similarly, cartographic analysis shows otherwise. Their spatial patterns result from different policies and that health care is market-oriented while education is the responsibility of states.

Chapter 5 is more detailed with cartographic and statistical analyses of expenditures in Central Appalachia. Detailed study of implementation reveals not only the nuances of regional and local contexts but also identifies variables that contribute to the geographic variation in expenditures.

CHAPTER 5

IMPLEMENTATION OF APPALACHIAN REGIONAL COMMISSION

SOCIAL PROGRAMS AT THE REGIONAL SCALE:

EVIDENCE FROM CENTRAL APPALACHIA

Study Area

An in-depth examination of the spatial variations in ARC's education and health care expenditures requires the selection of a subregion of Appalachia. Central Appalachia is chosen for several reasons. First, this area has long been considered the core of Appalachian poverty where social conditions and lack of an adequate infrastructure led to the formation of the ARC (Bradshaw 1992; Caudill 1962; Moore 1994; Widner 1990). Revision of the ARC allocation procedure in 1975, in part, was to assure that a higher proportion of funds went to Central Appalachia because of the subregion's continued economic and social malaise.

Central Appalachia is a 121-county area consisting of the 49 Kentucky counties plus 38 in Tennessee, 13 in Virginia, and 21 in West Virginia (Figure 1-2). The area includes 30 percent of the ARC counties, 121 of 399, and 27.5 percent, 19 of 69, of the Local Development Districts. This definition of Central Appalachia is more comprehensive

than the ARC's definition (Figures 1-2 and 4-2). The boundary extends farther north in West Virginia and farther east in Virginia and Tennessee than the ARC sub-region. Several reasons justify using this larger area. First, 58 percent of the counties in ARC's Central Appalachia are in Kentucky. The percent is reduced to 40 in the 121-county area. Second, the 121-county study area corresponds with Local Development District boundaries, while ARC's Central Appalachia cuts across them. Entire Local Development Districts are included because of ARC's emphasis on regional planning. Third, Central Appalachia as defined for this study provides a larger number of counties for statistical analysis.

The study area lies almost entirely within the Appalachian Highlands physiographic province. Several Kentucky and Tennessee counties along the area's western border are in the Interior Low Plateaus (Fenneman 1938) (Figure 5-1). Of the four subprovinces that comprise the Appalachian Highlands, three are included in the study area: Appalachian Plateaus, Ridge and Valley, and Blue Ridge. Most of the study area lies within the Appalachian Plateaus; but, a significant portion of Tennessee and parts of Virginia and West Virginia are in the Ridge and Valley. Portions of counties in Virginia and Tennessee lie within the Blue Ridge subprovince at the eastern end of the study

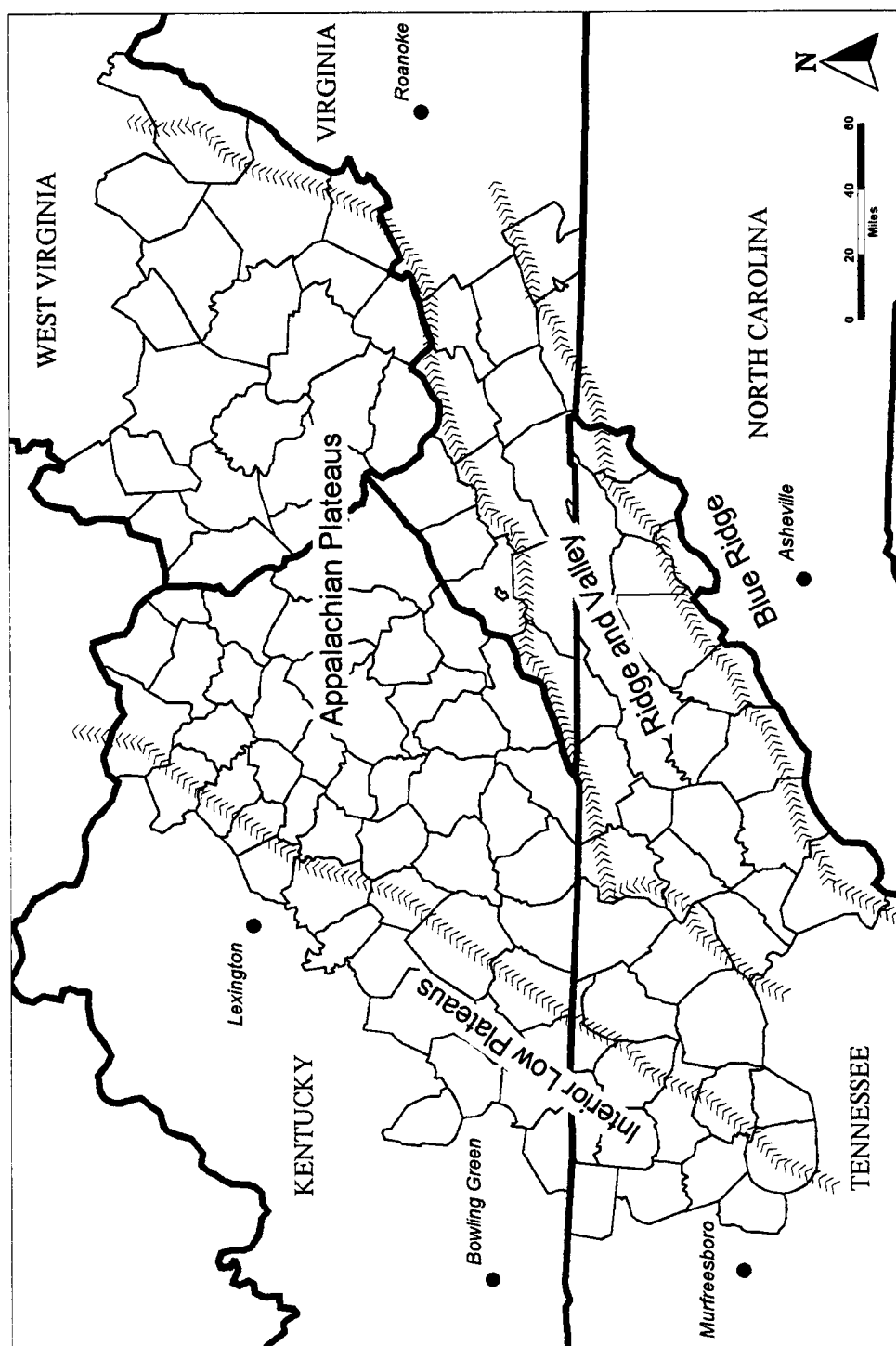


Figure 5-1. Landform regions of Central Appalachia. Fenneman 1938.

area.

The Interior Low Plateaus is a transition between the Appalachian Highlands and the Central Lowlands. It is a region of great relief and rolling hills but lower in elevation than the Appalachian Plateaus. Some of the counties are parts of the eastern rims of the Nashville and Bluegrass Basins. The Appalachian Plateaus are elevated and have severely dissected horizontal sedimentary strata. Within these strata are vast coal deposits that have been a blessing and a curse to Central Appalachia. Due to the mature stage of denudation, travel within the plateau is difficult, contributing to the low population totals, but high densities, in the deep narrow valleys. In the Ridge and Valley subprovince tremendous crustal folding coupled with differential erosion produced a series of northeast to southwest parallel ridges and valleys. More resistant sandstone formed long narrow ridges separated by fertile limestone valleys. The Ridge and Valley is home to Central Appalachia's densest populations.

In 1990, Central Appalachia had a population of 3,913,035. A 4 percent loss occurred between 1980 and 1990. However, during the 1970s, the area witnessed a population increase of 19.6 percent. The population gains in the 1970s and subsequent losses during the 1980s have been documented by Raitz and Ulack (1984) and White (1983). Central

Appalachia benefitted from nonmetropolitan growth that was faster than metropolitan during the 1970s. Major contributors to this population increase were return migrants from Northern cities (White 1983). Reasons for the increase also include: job growth in Appalachia, lack of jobs and opportunities in Northern cities, development of recreation and retirement facilities, returning military personnel, increase in black-lung benefits and social security payments, and ARC programs (Raitz and Ulack 1984, 171). Despite the impressive population gains of the 1970s, the 1980s were characterized by significant outmigration as Central Appalachians left once again, this time to Southern cities that included Atlanta, Charlotte, and Greensboro.

Twenty-two percent of the 1990 population was in five counties: Knox, Sullivan, and Washington, Tennessee (335,749, 143,596, and 92,315) and Cabell and Kanawha, West Virginia (96,827 and 207,619) (Figure 5-2). The five counties contain the six largest cities in Central Appalachia: Knoxville, Charleston, Huntington, Johnson City, Bristol, and Kingsport (Figure 5-3). These and other cities with populations of 10,000 or more are shown in Table 5-1. Twelve of the twenty-three cities are in Tennessee. The largest cities are along the northern and southern edges of Central Appalachia, leaving a large nonmetropolitan center (Figure 5-3).

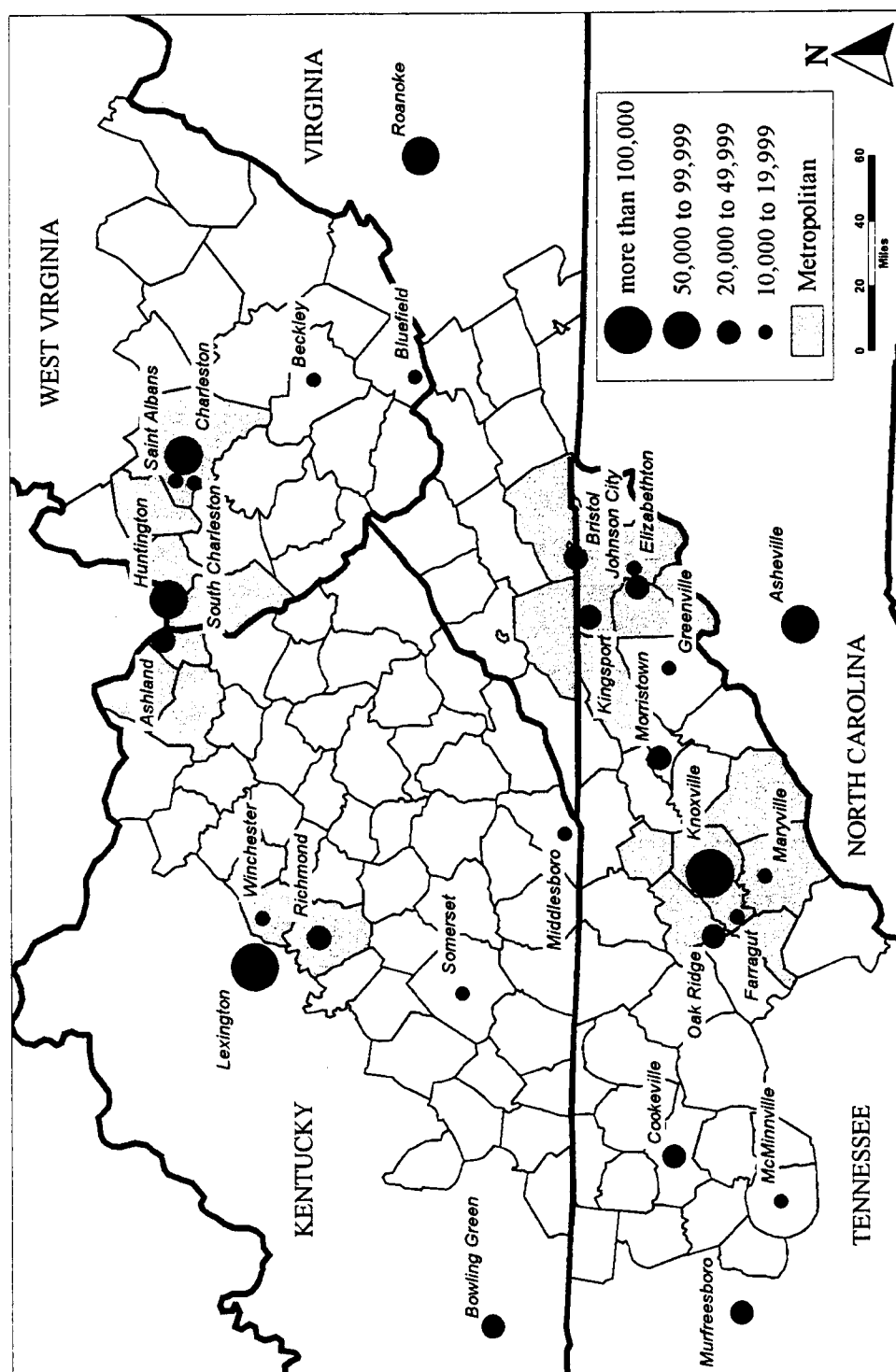


Figure 5-3. Cities with populations of 10,000 and more and metropolitan counties of Central Appalachia, 1990. U.S. Bureau of Census. 1990.

Table 5-1. Cities with populations of 10,000 and more in Central Appalachia, 1990.

City	Population	County	State
Knoxville	165,039	Knox	Tennessee
Charleston	57,287	Kanawha	West Virginia
Huntington	54,844	Cabell	West Virginia
Johnson City	49,479	Washington	Tennessee
Bristol	41,847	Sullivan	Tennessee/ Virginia
Kingsport	36,353	Sullivan	Tennessee
Oak Ridge	27,310	Anderson/Roane	Tennessee
Ashland	23,622	Boyd	Kentucky
Cookeville	21,744	Putnam	Tennessee
Morristown	21,316	Hamblen	Tennessee
Richmond	21,183	Madison	Kentucky
Maryville	19,208	Blount	Tennessee
Beckley	18,274	Raleigh	West Virginia
Winchester	15,799	Clark	Kentucky
South Charleston	13,645	Kanawha	West Virginia
Greenville	13,532	Greene	Tennessee
Farragut	12,802	Knox	Tennessee
Bluefield	12,756	Mercer	West Virginia
Elizabethton	11,931	Carter	Tennessee
Middlesboro	11,328	Bell	Kentucky
Saint Albans	11,257	Kanawha	West Virginia
McMinnville	11,194	Warren	Tennessee
Somerset	10,735	Pulaski	Kentucky

Source: U.S. Bureau of the Census. 1990.

A distinction should be made between municipalities within metropolitan counties and nonmetropolitan ones. Those within metropolitan counties were not primary foci of ARC expenditures. However, municipalities in nonmetropolitan counties, including Cookeville, Greenville, McMinnville, and Morristown, Tennessee; Middlesboro and Somerset, Kentucky; and Beckley and Bluefield, West Virginia received substantial funding (Figure 5-3). Cities of less than 10,000 that were foci of ARC expenditures include Hazard, Harlan, Morehead, and Pikeville, Kentucky; Norton, Virginia; and LaFollette, Tennessee.

Central Appalachia is geographically diverse. Despite historical tendencies to stereotype Central Appalachia as "coal country," bituminous coal underlies only part of the area (Figure 5-4). The coalfields taper from the northeast to the southwest in the center of the area. Portions of Kentucky, Virginia, Tennessee, and West Virginia lack minable coal deposits. These areas surround the coalfields and provide interesting contrast.

The coalfields, the core of Central Appalachia, are located on the severely dissected Plateaus. Little land is level and stream valleys are narrow and deep. Development of the coalfields started in the 1870s when railroads penetrated the region and opened it to mining. The West Virginia coalfields were the first to experience large scale

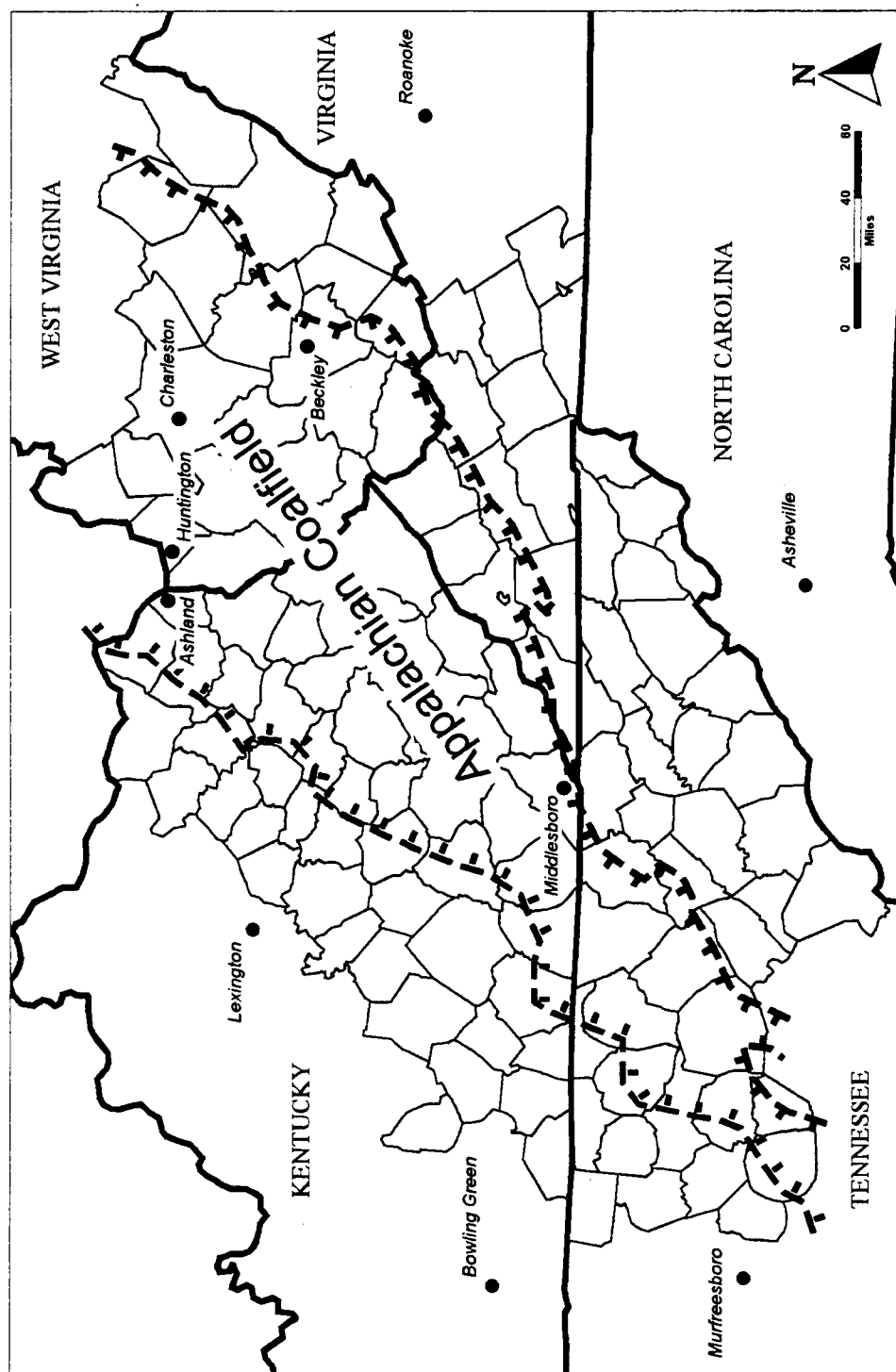


Figure 5-4. Bituminous coalfields of Central Appalachia. Raitz and Ulack 1984.

development, followed by those in eastern Kentucky after the turn of the century (Eller 1982). Development of Tennessee's and Virginia's coal resources was on a much smaller scale. The vagaries of the coal industry determine the economy because topography limits commercial agriculture and manufacturing is low-wage or tied to coal. The largest cities in the coalfields are Charleston, Huntington, and Beckley, West Virginia; and Ashland, Kentucky. Middlesboro, Kentucky is the only other coalfield city of any significance. Small towns strung linearly in narrow mountain valleys typify the settlement pattern.

Despite more than thirty years of federal anti-poverty programs, persistent poverty and difficult economic conditions still plague much of the coalfield core (Moore 1994). Appalachian Kentucky is illustrative. Its poverty rate in 1990 was 31 percent, compared to the national average of 13 percent. In 1970, regional poverty was 37 percent and the national average 13 percent. While the gap between regional poverty and the national average declined, poverty remains a major problem. Twenty-five of Appalachian Kentucky's 49 counties have more than 30 percent of their populations in poverty, and in Owsley the rate is 52 percent. Between 1982 and 1992, coal industry employment declined from 35,101 to 19,419 (Voskuhl 1994b). Between 1989 and 1994, thirty-nine manufacturing plants were

attracted to the region by state tax credits (Voskuhl 1994b). The problem with the growth in manufacturing is that the factories pay only slightly above the minimum wage. From 1980 to 1990, the region's per capita income dropped from 67 percent of the national average to 60 percent (Voskuhl 1994a).

In 1960, the region's economy included a mix of employment types with coal mining in the center, agriculture in the west, manufacturing in the north and south, and services scattered throughout the region (Figure 5-5). Summers County, West Virginia is unique because transportation is the leading source of employment. Hinton was a major junction for the Chesapeake and Ohio Railroad.

Coal mining was the major economic sector for a group of counties in Kentucky, Virginia, and West Virginia in 1960. Mining truly dominated the economies of these counties. For example, 49 percent of McDowell County, West Virginia's labor force in 1960 was employed in coal mining. Coal mining not only dominated the economy, but also domineered the landscape with features such as coal processing plants, railroad yards, and coal trucks.

Agriculture was important in most of the counties of the Interior Low Plateaus and the western edge of the Appalachian Plateaus (Figure 5-5). Less topographic relief contributed to agriculture remaining the leading employment

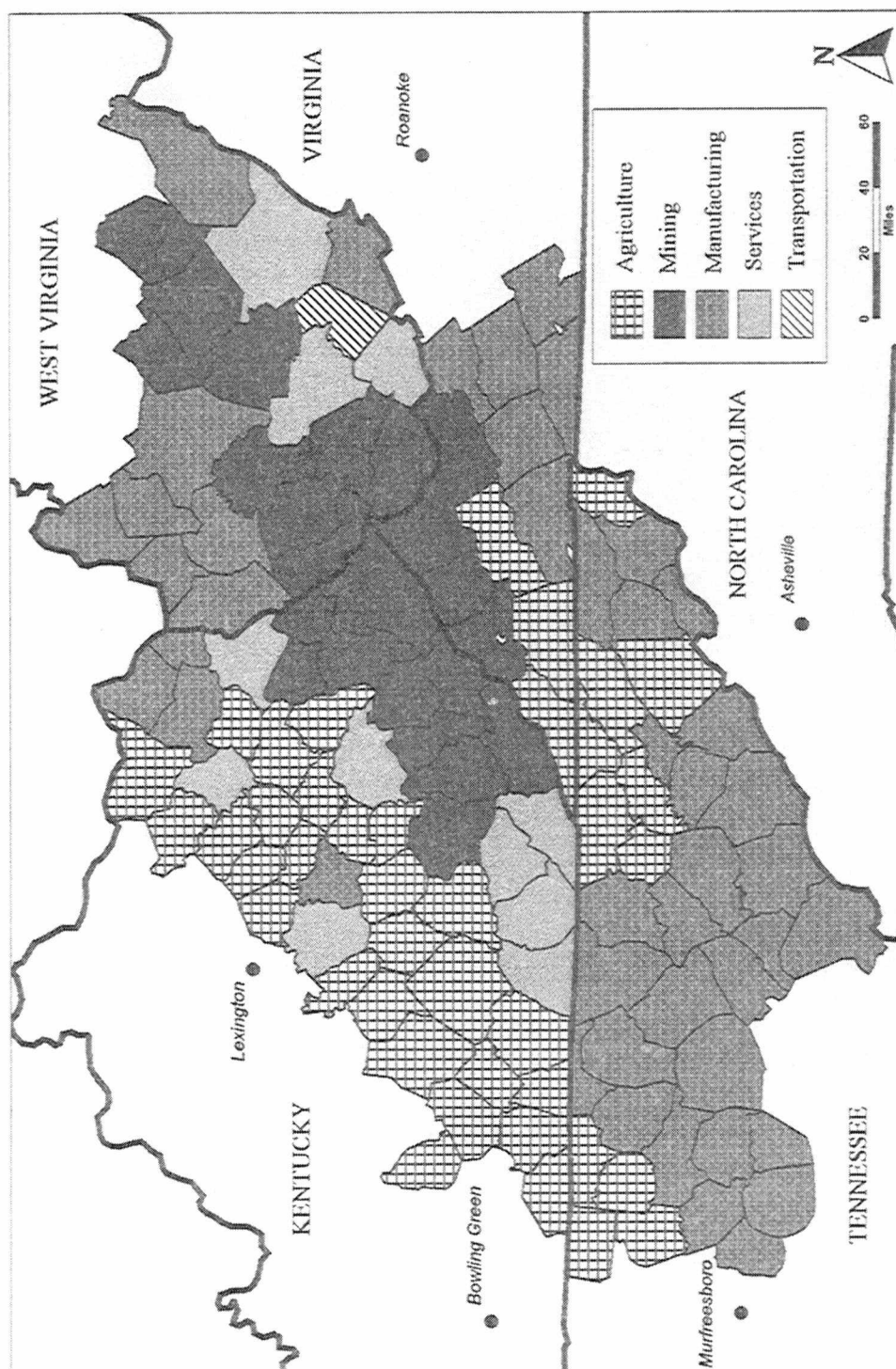


Figure 5-5. Leading types of employment in Central Appalachia, 1960.
U.S. Bureau of the Census 1960.

sector, while neighboring counties had shifted to other types of employment. A cluster of counties in Virginia and Tennessee were also predominately agricultural. Tobacco, livestock, and dairy farming were leading activities in both areas (Bogue and Beale 1961).

In 1960, manufacturing was the leading type of employment in counties that were included in or were near metropolitan areas (Figure 5-5). In northeast Kentucky, Ashland, in Boyd County, has a large primary metals industry and is the national headquarters for Ashland Oil. Labor forces of both commuted from surrounding counties. Also, the counties are part of the Huntington, West Virginia metropolitan area. Manufacturing also led in several nonmetropolitan counties, particularly in Tennessee where apparel and textile production were important. In Virginia and West Virginia, forest products dominated manufacturing in nonmetropolitan counties.

Services were the leading employment sector in several nonmetropolitan counties scattered throughout Central Appalachia (Figure 5-5). These counties included some of the region's medium-sized municipalities such as Beckley, West Virginia; and Middlesboro, Morehead, and Richmond, Kentucky. Large service sector employment in Rowan County, Kentucky was due to Morehead State University. Greenbrier County, West Virginia relied heavily on a small tourist

economy based on mineral springs and the large Greenbrier resort complex.

The period 1960-1990 saw dramatic changes in Central Appalachia's leading sectors of employment. The most significant shifts were in counties that moved from manufacturing to services and from agriculture to manufacturing (Figure 5-6). By 1990, the service sector was the leading employment type in most counties, with the exception of the western and southern parts of the area where manufacturing led. Coal mining employment declined, and the number of counties in which it led decreased. Agriculture ceased to be the leading employer in any county.

By 1990, services, rather than manufacturing, had become the most important source of employment in most counties that included or were next to metropolitan areas in 1960. Between 1960 and 1990, the Central Appalachian metropolitan areas experienced a post-industrial transformation. Putnam County, West Virginia had experienced significant growth because it is halfway between Huntington and Charleston. Putnam's retail trade employment increased 277 percent between 1965 and 1981. Its population grew 55 percent between 1970 and 1990 (U.S. Bureau of the Census 1973b, 1990). Other counties with dominant service sectors in 1990 were either ones with medium-sized municipalities or the least-populated ones with little

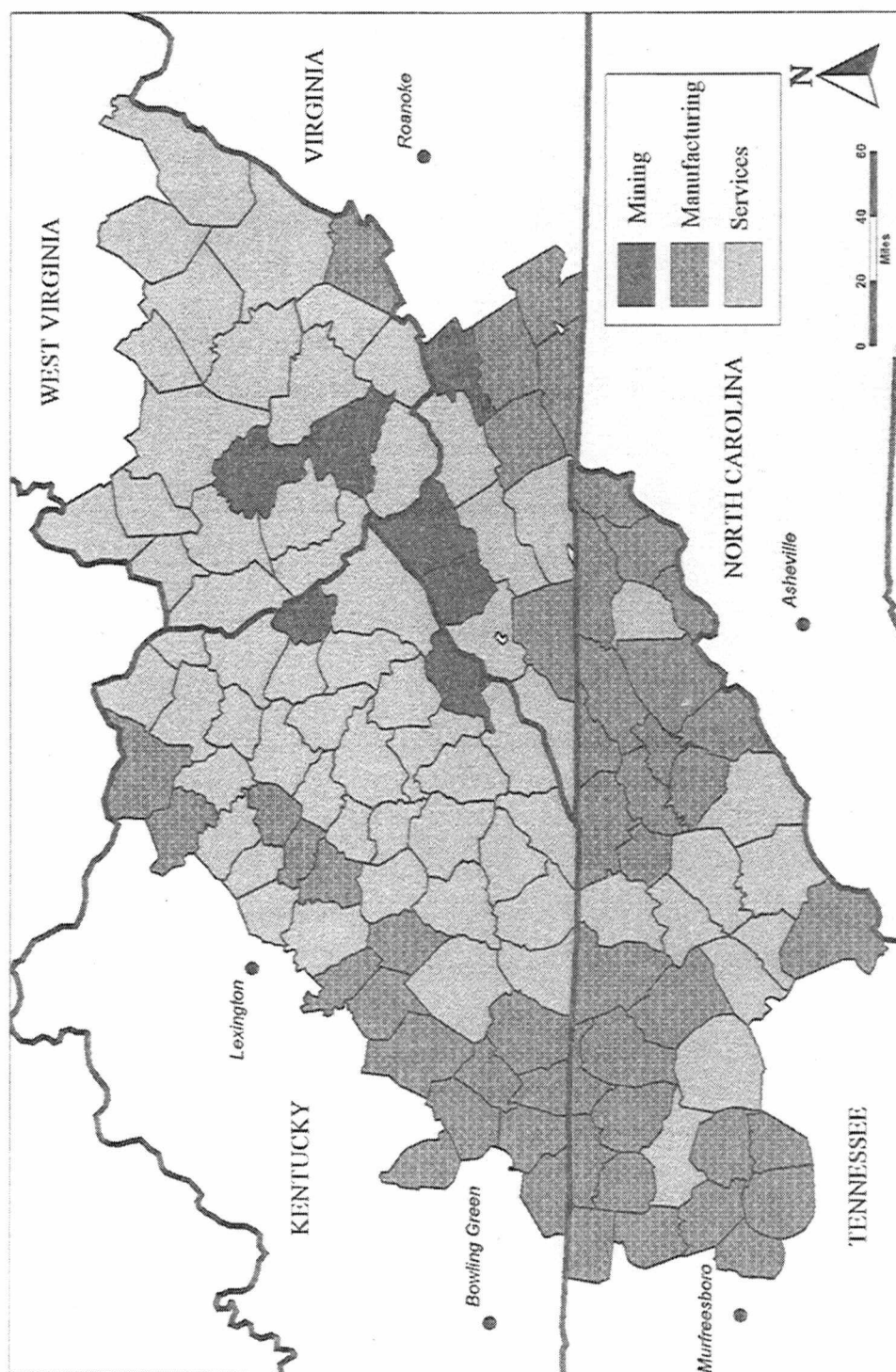


Figure 5-6. Leading types of employment in Central Appalachia, 1990.
U.S. Bureau of the Census 1990.

economic activity.

Counties in Kentucky which shifted from agriculture to manufacturing were in the Interior Low Plateaus and those that changed from agriculture to services were along the western edge of the Appalachian Plateaus (Figure 5-6). This fact, combined with the absence of manufacturing in the rest of the plateau, indicates the reluctance of factories to locate in a coal-producing region with strong union membership. The cluster of service counties in the Interior Low Plateaus from Bath to Madison have benefitted from their proximity to Lexington.

From 1965 to 1992, Central Appalachia received more than \$86.7 million for health care (22.2 percent of the ARC total) and \$107.4 million for education (21.9 percent of the ARC total). In 1990, the study area had 18.9 percent of the ARC's total population. These figures indicate that the ARC was successful in redirecting greater portions of education and health care expenditures toward Central Appalachia than its population suggests.

The percent of each state's education and health care expenditures in Central Appalachia is proportional to or slightly greater than its share of ARC population (Table 5-2). The bulk of Kentucky's, Tennessee's, and Virginia's ARC population is found in the study area. However, a little over half of West Virginia's ARC population is located in

Table 5-2. Percent of state Appalachian Regional Commission education and health care funds spent in Central Appalachia, 1965 to 1993.

Variable	State			
	KY	TN	VA	WV
Health care expenditures	100	62.8	98.3	64.9
Education expenditures	100	75.5	77.4	39.0
1990 ARC population	100	73.0	76.0	51.0

Source: Calculated by the author from ARC documents.

Central Appalachia. Seventy-six percent of Virginia's ARC population was in the area, yet, 98.3 percent of the state's ARC expenditures for health care and 77.4 percent for education occurred here. Only Tennessee's health care expenditures and West Virginia's education ones were less than the proportion of ARC population.

Procedure for Statistical Analysis

Central Appalachia is the area for which spatial variations in ARC education and health care expenditures are examined. The statistical data are from several sources, including the ARC, the Bureau of the Census, and state agencies. Statistical and cartographic analysis are employed. Separate statistical procedures for education and health care expenditures are the organizational framework. The analysis is divided into periods to enhance interpretation. Because the ARC initiated major policy shifts in 1975 and 1982, the periods 1965-1974 and 1975-1981 are employed. The low amounts of expenditures on education and health care restricts statistical analysis after 1982. The post-1982 analyses of these programs employ only cartographic analysis.¹

¹ ARC health care expenditures are practically nonexistent after 1986 making even cartographic analysis

Dependent and independent variables used in the statistical analyses are listed in Table 5-3. Four dependent variables are used in the regression models. The dependent variables are total ARC education funds expended 1965-1974 and 1975-1981, and total ARC health care funds expended 1965-1974 and 1975-1981.² A value was obtained for each county in Central Appalachia that received education and health funds.³

Fifty-one independent variables were used in the statistical analysis. Twenty independent variables were used with each dependent one. Independent variables were classified into six categories: administrative, demographic, economic, education, health, and local government. Selection of independent variables followed two lines of reasoning. First, a variable was included if it reflected characteristics emphasized by ARC policy. This allowed me

ineffective (Figure 4-3).

² Preliminary analysis showed that total expenditures of ARC programs had better explanatory power than per capita expenditures.

³ These values actually represent a slight undercount of total ARC funds expended in each county. In the ARC databases, the field labeled "county" sometimes had the designation "multi," meaning the project was intended for several counties. It was impossible to determine precisely which counties were involved. ARC funds for projects with the designation "multi" are not included in calculations of dependent variables. The ARC funds expended on multi-county projects, however, are included in Figures 4-12 and 4-13.

Table 5-3. Variables used in correlation and regression analyses.

Variable Description

Dependent Variables

- * Total ARC education dollars expended 1965 - 1974^a
- * Total ARC education dollars expended 1975 - 1981^a
- * Total ARC health care dollars expended 1967 - 1974^a
- * Total ARC health care dollars expended 1975 - 1981^a

Independent Variables

Administrative

- * Years of local development district operation 1965 - 1985^a

Demographic

- * Dependent population, ages 0-14 and 65 and over (expressed as a percent of population between ages 15 and 64) 1970^b
- * Dependent population, ages 0-14 and 65 and over (expressed as a percent of population between ages 15 and 64) 1980^c
- * Total population 1970^b
- * Total population 1980^c
- * Percent change in population 1960 - 1970^d
- * Percent change in population 1970 - 1980^e
- * Population density per square mile 1970^b
- * Population density per square mile 1980^c
- * Percent of population rural 1970^b
- * Percent of population rural 1980^c

Economic

- * Percent of families below poverty level 1970^b
- * Percent of families below poverty level 1980^c
- * Bituminous coal production (thousand short tons) 1975^f
- * Bituminous coal production (thousand short tons) 1981^g
- * Percentage change in manufacturing employment 1965 - 1974^{h,i}
- * Percentage change in manufacturing employment 1975 - 1981^{j,k}
- * Median family income 1970^b
- * Median family income 1980^c
- * Per capita income of persons 1970^b
- * Per capita income of persons 1980^c
- * Percent of labor force employed in manufacturing 1970^d
- * Percent of labor force employed in manufacturing 1980^e

Table 5-3. (continued)

Variable Description

Independent Variables (cont.)

Economic (cont.)

- * Percent of labor force employed in wholesale and retail trade 1970^d
- * Percent of labor force employed in wholesale and retail trade 1980^e
- * Percent change in retail trade employment 1965 - 1974^{h,i}
- * Percent change in retail trade employment 1975 - 1981^{j,k}
- * Percent of total civilian labor force unemployed 1970^d
- * Percent of total civilian labor force unemployed 1980^e

Education

- * Percent of school budget from federal sources 1975^{l,m,n,o}
- * Percent of school budget from federal sources 1981^{p,q,r,s}
- * Percent of population over age 25 high school graduates 1970^b
- * Percent of population over age 25 high school graduates 1980^c
- * Percent of school budget from local sources 1975^{l,m,n,o}
- * Percent of school budget from local sources 1981^{p,q,r,s}

Health Care

- * Death rate per 1,000, 1969^d
- * Death rate per 1,000, 1980^e
- * Hospital bed rate per 100,000, 1973^t
- * Hospital bed rate per 100,000, 1980^e
- * Infant mortality rate (per 1,000 live births) 1974^{u,v,w,x}
- * Infant mortality rate (per 1,000 live births) 1981^{y,z,aa,bb}
- * Non-Federal physician rate (per 100,000 population) 1975^{cc}
- * Non-Federal physician rate (per 100,000 population) 1980^e

Local Government

- * Expenditures per capita 1976 - 1977^e
- * Expenditures per capita 1981 - 1982^{ff}
- * Expenditures for education per capita 1976 - 1977^{dd}
- * Expenditures for education per capita 1981 - 1982^{ee}
- * Percent of total local government expenditures for education 1976 - 1977^e
- * Percent of total local government expenditures for education 1981 - 1982^{ff}

Table 5-3. (continued)

Variable Description

Independent variables (cont.)

Local Government (cont.)

* Percent of total local government expenditures for health and hospitals 1976 - 1977^e

* Percent of total local government expenditures for health and hospitals 1981 - 1982^{ff}

Sources:

- (a) Calculated by the author from ARC documents.
- (b) U.S. Bureau of the Census. 1973b.
- (c) U.S. Bureau of the Census. 1981.
- (d) U.S. Bureau of the Census. 1973a.
- (e) U.S. Bureau of the Census. 1983.
- (f) U.S. Bureau of Mines. 1976.
- (g) U.S. Department of Energy. Energy Information Administration. 1982.
- (h) U.S. Bureau of the Census. 1966.
- (i) U.S. Bureau of the Census. 1977a.
- (j) U.S. Bureau of the Census. 1977b.
- (k) U.S. Bureau of the Census. 1982.
- (l) Kentucky. Department of Education. 1976.
- (m) Tennessee. Department of Education. 1976.
- (n) Virginia. Department of Education. 1976.
- (o) West Virginia. Department of Education. 1976.
- (p) Kentucky. Department of Education. 1982.
- (q) Tennessee. Department of Education. 1982.
- (r) Virginia. Department of Education. 1983.
- (s) West Virginia. Department of Education. 1982.
- (t) U.S. Department of Health, Education, and Welfare, Public Health Service. 1976.
- (u) Kentucky. Department for Human Resources. 1975.
- (v) Tennessee. Department of Public Health. 1975.
- (w) Virginia. Department of Health. 1976.
- (x) West Virginia. Department of Health. 1975.
- (y) Kentucky. Center for Health Statistics. 1983.
- (z) Tennessee. Department of Health and Environment. 1982.
- (aa) Virginia. Center for Health Statistics. 1983.
- (bb) West Virginia. Health Statistics Center. 1982.

Table 5-3. (continued)

(cc) U.S. Bureau of the Census. 1978.
(dd) U.S. Bureau of the Census. 1979.
(ee) U.S. Bureau of the Census. 1984.
(ff) U.S. Bureau of the Census. 1987.

to test if ARC funds went to areas where the agency tried to direct them. Second, a variable was included if it tangentially-related to ARC objectives and might help explain variance in dependent variables.

The administrative variable included in all four regression analyses is the years of operation (1965-1985) of the Local Development District to which a county belongs. In a study of the spatial pattern of federal funding of community mental health centers, Smith found areas which participated in the program the longest attracted the majority of funds (1986). Of the four states in the study area, only Kentucky had multi-county regional planning units before 1965.

Demographic characteristics used as independent variables included total population in 1970 and 1980, percent of dependent population in 1970 and 1980, percentage change in population between 1960-1970 and 1970-1980, population density in 1970 and 1980, and percent of population rural in 1970 and 1980. Dependent population in 1970 and 1980 are used only in health regressions and reflect demand by the young and old for health care services. All other demographic variables are used in both education and health regressions. Some demographic variables, including total population, population density, and percent rural were thought to identify geographic

tendencies of ARC funding as pro-urban or pro-rural. Because ARC policy generally ignored both large urban centers and isolated rural communities, these variables are of particular interest. Ralph Widner, former executive director of the ARC, said that for practical purposes, locational criteria for education and health expenditures were separated from the growth center strategy (1982).

Eighteen independent economic variables measure poverty and economic structure. Economic variables are included in education and health regressions except unemployment rates in 1970 and 1980, which are used only in analysis of education expenditures.

Several independent variables measure economic status: percent of families below the poverty level in 1970 and 1980, median family income in 1970 and 1980, and per capita income in 1970 and 1980. Income level and poverty rate are often used to justify federal intervention in Appalachia. Therefore, these variables test if education and health expenditures reached the poorest areas. Independent economic variables that identify economic structure include bituminous coal production in 1975 and 1981, percent change in manufacturing employment 1965-1974 and 1975-1981, percent of labor force employed in manufacturing in 1970 and 1980, percent of labor force employed in wholesale and retail trade in 1970 and 1980, percent change in retail trade

employment 1965-1974 and 1975-1981, and percent of labor force unemployed in 1970 and 1980. Coal production reveals the degree to which ARC expenditures are concentrated in areas traditionally viewed as lacking quality education and health services.

Six independent variables are directly related to education: percent of county school budget from federal sources in 1975 and 1981⁴, percent of county school budget from local sources in 1975 and 1981, and percent of population over age twenty-five who are high school graduates. These variables are included in the education regressions but not the health ones. Sources of school revenue are logical to include because the 1964 President's Appalachian Regional Commission report claimed that low incomes in Appalachia contributed to an inadequate tax base to fund education improvements (Roosevelt 1964). Variables assessing the sources of school revenue are also used for other reasons. Because most ARC education expenditures were not "first dollar" ones but supplemental to projects funded under the Vocational Education Act of 1963 (ARC 1972), federal sources as a percent of school budgets examine if ARC education expenditures are geographically similar to other federal education expenditures. These variables also

⁴ If a county had more than one school district, all budgets were summed to arrive at the average percentage.

indirectly measure education need. Counties with high percentages of school budgets derived from federal sources indicate systems with inadequate tax bases or inability to sufficiently tax their populations. Significant positive correlations between ARC education expenditures and percent of school budgets from federal sources would suggest that funds went to the poorest school systems. A negative correlation between percent of school budgets from local sources and ARC education expenditures also would indicate that funds were directed toward the poorest school systems. High school graduation rates are used because they are a primary concern of the ARC. The 1964 President's Appalachian Regional Commission report documented the low levels of educational attainment in Appalachia (Roosevelt 1964). In 1985, the ARC began a new initiative to reduce school dropout rates (ARC 1985a).

Eight independent variables are measures of health care: death rate per 1,000 for 1969 and 1980, hospital beds per 100,000 for 1973 and 1980, infant mortality rate per 1,000 live births for 1974 and 1981, and number of non-federal physicians per 100,000 for 1975 and 1980. Death rate and infant mortality rate indicate overall health conditions, and the number of hospital beds and non-federal physicians reveal the health care infrastructure.

Eight independent variables measure local government expenditures: general expenditures per capita for 1976-1977 and 1981-1982, expenditures for education per capita for 1976-1977 and 1981-1982, percent of total expenditures for education for 1976-1977 and 1981-1982, and percent of total expenditures for health care and hospitals for 1976-1977 and 1981-1982. These variables were chosen to discover if counties with low levels of local government expenditures for health care and education were the ones that received ARC assistance.

The multivariate statistical procedures used in the analysis are correlation and stepwise multiple regression. Other geographers have used the same techniques to analyze complicated spatial patterns. Moon used correlation coefficients and stepwise multiple regression to account for the variation in the amounts of solid waste managed in Ohio's management districts (1994). Kodras used a similar approach to examine state-level variations of participation in the federal food stamp program (1990).

The data were analyzed using the Statistical Package for the Social Sciences for Windows. Pearsonian correlation coefficients indicate the strength of the relationship between each independent variable and a dependent variable. Stepwise multiple regression analysis may be used to construct an equation which includes only the independent

variables that significantly describe the variance in a dependent variable. The stepwise regression model maximizes the explained variation by adding one independent variable at a time. Independent variables enter the regression model based on their partial correlations and F-values. The first variable is the one with the largest positive or negative correlation with the dependent variable. This variable enters into the equation if its F-value exceeds an established value.⁵ Each of the remaining variables is examined, and the one with the largest partial correlation coefficient enters the model if its F-value meets the established criterion. Stepwise selection ends when no more independent variables can be entered.⁶ The model is complete when no more variables are entered or removed based on F-value criteria. Correlation coefficients indicate how strong each independent variable is associated with ARC health and education expenditures. The goal of the stepwise regression model is to maximize the explained variation in the distribution of the expenditures.

⁵ In the analysis, the F-value equals or exceeds 3.84 to be included in the regression.

⁶ After each step, variables in the model are reexamined and the one with the lowest partial correlation coefficient is removed if its F-value falls below 2.71.

Implementation of ARC Health Care Programs

Demonstration Phase, 1967-1974

Spatial Pattern of Funding

Health care expenditures in Central Appalachia during the demonstration phase totaled \$43.2 million. The average per capita expenditure was \$18.93. Counties exceeding the regional average are spatially concentrated in southeast Kentucky, particularly from Whitley County northeastward to Pike County (Figure 5-7). Other counties whose expenditures exceeded the regional average are north and east of this cluster, extending into Virginia and West Virginia. Further evidence of clustering is that five counties (Bell, Pike, Tazewell, Whitley, and Wise) accounted for 35 percent of Central Appalachia's health care expenditures but contained only 5.8 percent of its 1970 population. Low levels of per capita expenditures are in Tennessee and along the western and northern edge of the study area in Kentucky and West Virginia. Large urban counties such as Cabell and Kanawha in West Virginia and Knox in Tennessee also had low per capita expenditures. The low per capita amounts are not the result of large populations but moderate expenditures. For example, Cabell County received \$281,249 and Kanawha County \$378,043 when the county average for 1967-1974 was \$357,081.

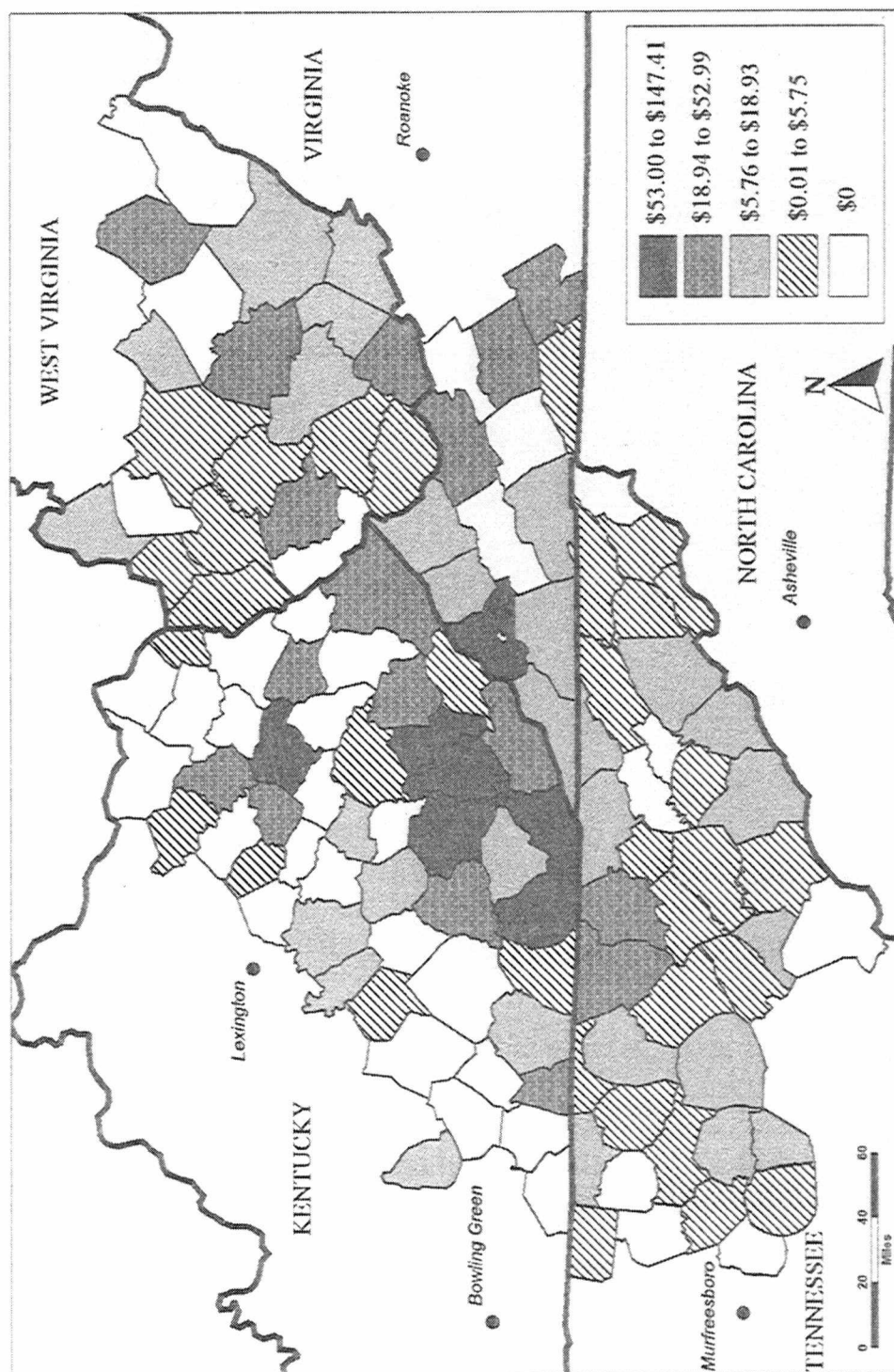


Figure 5-7. Per capita Appalachian Regional Commission health care expenditures, 1967 to 1974.

The emphasis from 1967 to 1974 was concentration of expenditures in twelve multi-county areas, with the goal of providing a comprehensive range of health services. Central Appalachia includes three demonstration areas. Sixty-six percent of health care expenditures occurred in thirty demonstration area counties. Despite a 1970 ARC resolution ending preferential funding for demonstration areas, they remained pockets of high expenditures.

Statistical Analysis

Twenty independent variables were correlated with ARC health care dollars spent in each county from 1967-1974. Pearson correlation coefficients and levels of significance are listed for each independent variable in Table 5-4. Bituminous coal production is the most strongly correlated and statistically significant independent variable ($r = .4319$). Other independent variables moderately correlated with health care expenditures and significant at the .01 level include, in order from strongest to weakest correlation: percent of labor force employed in wholesale and retail trade ($r = .4221$), percent of labor force employed in manufacturing ($r = -.3941$), death rate ($r = .3452$), and non-federal physician rate ($r = .3090$). Population change from 1960 to 1970 is significant at the .05 level but has a weak correlation coefficient

Table 5-4. Correlation coefficients for Appalachian Regional Commission health care dollars expended 1967 to 1974.

Independent Variables	Coefficient
Percent of families below poverty 1970	.0971
Dependent population, ages 0-14 and 65 and over 1970	.1430
Per capita income 1970	-.0435
Total population 1970	.1076
Population density per square mile 1970	.0661
Percent of population rural 1970	-.1500
Bituminous coal production 1975	.4319**
Infant mortality rate 1974	.0603
Non-federal physician rate 1975	.3090**
Years of local development district operation 1965-1985	.0694
Percent change in population 1960-1970	-.2713*
Death rate per 1,000, 1969	.3452**
Percent of labor force employed in manufacturing 1970	-.3941**
Percent of labor force employed in wholesale and retail trade 1970	.4221**
Percent of local government expenditures for health and hospitals 1976-1977	-.1440
Local government expenditures per capita 1976-1977	-.0389
Median family income 1970	-.0423
Percent change in manufacturing employment 1965-1974	-.0965
Percent change in retail trade employment 1965-1974	.0301
Hospital bed rate per 1,000, 1970	.2014

Note: * Significant at .05 level.

** Significant at .01 level.

($r = -.2713$). These results start to paint a picture of the geographical character of ARC health expenditures during the demonstration period.

First, demonstration health care expenditures were greatest in the coalfields. The coalfields have very little manufacturing employment because of the successful unionization of mining earlier in this century. For this reason manufacturers have been hesitant to enter the coalfields. Coal production for 1975 had a strong negative correlation with percent of labor force in manufacturing ($r = -.6179$).

Second, the coefficients for the demographic variables indicate health care expenditures tended to be spent in the more populous nonmetropolitan counties. Population and population density coefficients are positive, while the percent rural coefficient is negative. However, the coefficients are too low to indicate statistical significance. A positive, moderate correlation between health care expenditures and percent of labor force in wholesale and retail trade also signifies that the expenditures from 1967-1974 were oriented toward Central Appalachia's more populous nonmetropolitan counties. Such counties have a municipality that provides goods and services to several surrounding counties, creating slightly higher employment.

Third, the coefficients for income and poverty variables yield interesting results. They are negative for per capita and median household income, while the one for percent below poverty is positive. All of these coefficients have weak correlations, indicating only a slight tendency of health care expenditures toward counties with low incomes and high rates of poverty.

Fourth, two of the four health variables, non-federal physician rate ($r = .3090$) and death rate ($r = .3452$) have moderately strong and statistically significant (.01 level) correlations with health care expenditures. The relationship between non-federal physician rate and health expenditures means that ARC funds strengthened the existing health infrastructure. Health dollars flowed to where the physicians were. The relationship between death rate and health care expenditures is harder to interpret. Death rate does not correlate with coal production ($r = .0313$) dismissing the notion that the death rate's significant correlation with health care expenditures is due to coal mining.

The twenty independent variables are regressed against total ARC health care dollars expended from 1967-1974. Four variables enter the stepwise regression equation and account for 37 percent of the variation in demonstration period expenditures (Table 5-5). The four are coal production,

Table 5-5. Stepwise regression results for Appalachian Regional Commission health care dollars expended 1967 to 1974.

Statistic	Variables Included			
	Step 1	Step 2	Step 3	Step 4
	COALPR75	DEATHR69	PWHRET70	YRSLDDOP
Regression Coefficient	79.0	158901.2	61771.7	59754.2
Standard Error of Regression Coefficient	20.2	44508.3	19867.8	29667.8
Beta Coefficient	.3519	.3188	.2868	.1779
T Value	3.91	3.57	3.14	2.01
Significance Level	.0002	.0006	.0024	.0473
Cumulative R^2	.1866	.2967	.3651	.3954
Change in R^2	.1866	.1101	.0684	.0303

Multiple R = .6288

R^2 = .3954

Adjusted R^2 = .3656

COALPR75 = Bituminous coal production 1975

DEATHR69 = Death rate per 1,000, 1969

PWHRET70 = Percent of labor force employed in wholesale and retail trade 1970

YRSLDDOP = Years of local development district operation 1965-1985

death rate, percent of labor force employed in wholesale and retail trade, and years of local development district operation. Two variables that had significant correlation with health care expenditures, non-federal physician rate and percent of labor force employed in manufacturing are absent from the model.

The strong role coal production plays in explaining the variation in health care expenditures is one of the significant findings. The ARC strongly supports the coal industry, and the agency links successful Appalachian development with its viability. The President's 1964 Appalachian Regional Commission report stated:

All efforts at increasing coal production--both for domestic and foreign uses--must be vigorously pursued if the region is to obtain maximum economic benefit from this resource. . . The most promising opportunities for industrial diversification within the region appear to be in localized processing and utilization of coal (42)

However, it is well-documented that the coal industry is partly to blame for the severe social, economic, and health problems in the coalfields. Inadequate health services is a common theme in much of the literature regarding social conditions in the coalfields (Eller 1982; Hiscoe 1991). The ARC is reluctant to publicly agree with this view because of its organizational structure. Considering the coal industry's powerful position in Central Appalachia, no governor has questioned the relationship between the

industry and the social and economic problems (Napolitano 1994). The ARC's pro-coal stance is interpreted by many to mean the agency is more responsive to big business than social problems.

However, the connection between coal production and ARC health care expenditures implies that the ARC recognizes coal's role in Central Appalachia's problems. The ARC was careful to remain an ally of the coal industry while concentrating health care dollars in the coalfields without publicly blaming the industry for creating the need for the investment. ARC's position was an unintended consequence of the geographic implementation of policy during the demonstration phase of the health-care program. The coalfields were not the intended focus of the program, but state officials chose coalfield counties as demonstration areas because health care services were deficient. The ARC's acceptance of the demonstration areas and expenditures of millions of dollars in them is an indirect indictment of the coal industry.

Death rate enters the model in the second step and increases explanation 11 percent. Counties receiving the most ARC health-care expenditures were the ones with the highest death rates. Other than total ARC health funds expended 1967-1974, death rate had significant correlations with dependent population and population change from 1960 to

1970. Neither of the independent variables had any relationship with total ARC health funds expended 1967-1974. If death rate is used as a surrogate for the overall health of the population, states selected, and the ARC approved, counties with the greatest health problems as demonstration areas.

Percent of the labor force in wholesale and retail trade enters the regression model in the third step and increases explanatory power seven percent. This variable supports the vaguely-defined ARC spatial policy of concentrating area development funds in growth centers. Wholesale and retail trade employment depicts the growth center strategy because the centers were to be identified on the basis of service functions. The ARC was never required to comply with the growth center strategy (Preston 1971), but the agency's use of it is verified in two ways. First, the statistical significance of the percent of labor force in wholesale and retail trade reveals that Central Appalachia municipalities with populations between 5,000 and 20,000 in nonmetropolitan counties were targets of significant health care expenditures. Second, the explanatory power of the stepwise regression model increases when the five most populous counties (Knox, Sullivan, and Washington, Tennessee; and Cabell and Kanawha, West

Virginia) are excluded.⁷ The modified regression model explains 42 percent of the variance in ARC health funds expended 1967-1974 compared with 37 percent for the initial model (Table 5-6). Percent of labor force in wholesale and retail trade entered the modified model first because it had the largest correlation coefficient. The same independent variables entered with the addition of non-federal physician rate. The entrance of non-federal physician rate is important because it verifies the concentration of health care expenditures in Central Appalachia's medium-sized municipalities and proves that the funds were used to enhance the existing health infrastructure.

Primary Care Phase, 1975-1981

Spatial Pattern of Funding

The spatial distribution of health expenditures during the primary care phase is shown in Figure 5-8. The average per capita expenditure in Central Appalachia was \$13.82. Two clusters of counties appear on the map. The first runs from Bell County eastward to Wise County, then northward toward Lee and Magoffin County in Kentucky. The second

⁷ These counties include Knoxville, Bristol, Kingsport, and Johnson City Tennessee; and Huntington and Charleston, West Virginia.

Table 5-6. Stepwise regression results for Appalachian Regional Commission health care dollars expended 1967 to 1974 excluding Central Appalachia's five most populous counties in 1970.

Statistic	Variables Included				
	Step 1	Step 2	Step 3	Step 4	Step 5
	PWHRET70	COALPR75	DEATHR69	MDRATE75	YRSLDDOP
Regression Coefficient	48397	78	149364	4962	62578
Standard Error of Regression Coefficient	22067	21	45572	2073	30785
Beta Coefficient	.2144	.3411	.2912	.2261	.1769
T Value	2.19	3.81	3.28	2.39	2.03
Significance Level	.0314	.0003	.0016	.0192	.0456
Cumulative R^2	.2048	.3102	.3875	.4233	.4534
Change in R^2	.2048	.1054	.0773	.0358	.0301

Multiple R = .6734

R^2 = .4534

Adjusted R^2 = .4170

PWHRET70 = Percent of labor force employed in wholesale and retail trade 1970

COALPR75 = Bituminous coal production 1975

DEATHR69 = Death rate per 1,000, 1969

MDRATE75 = Non-federal physician rate per 100,000 1975

YRSLDDOP = Years of local development district operation 1965-1985

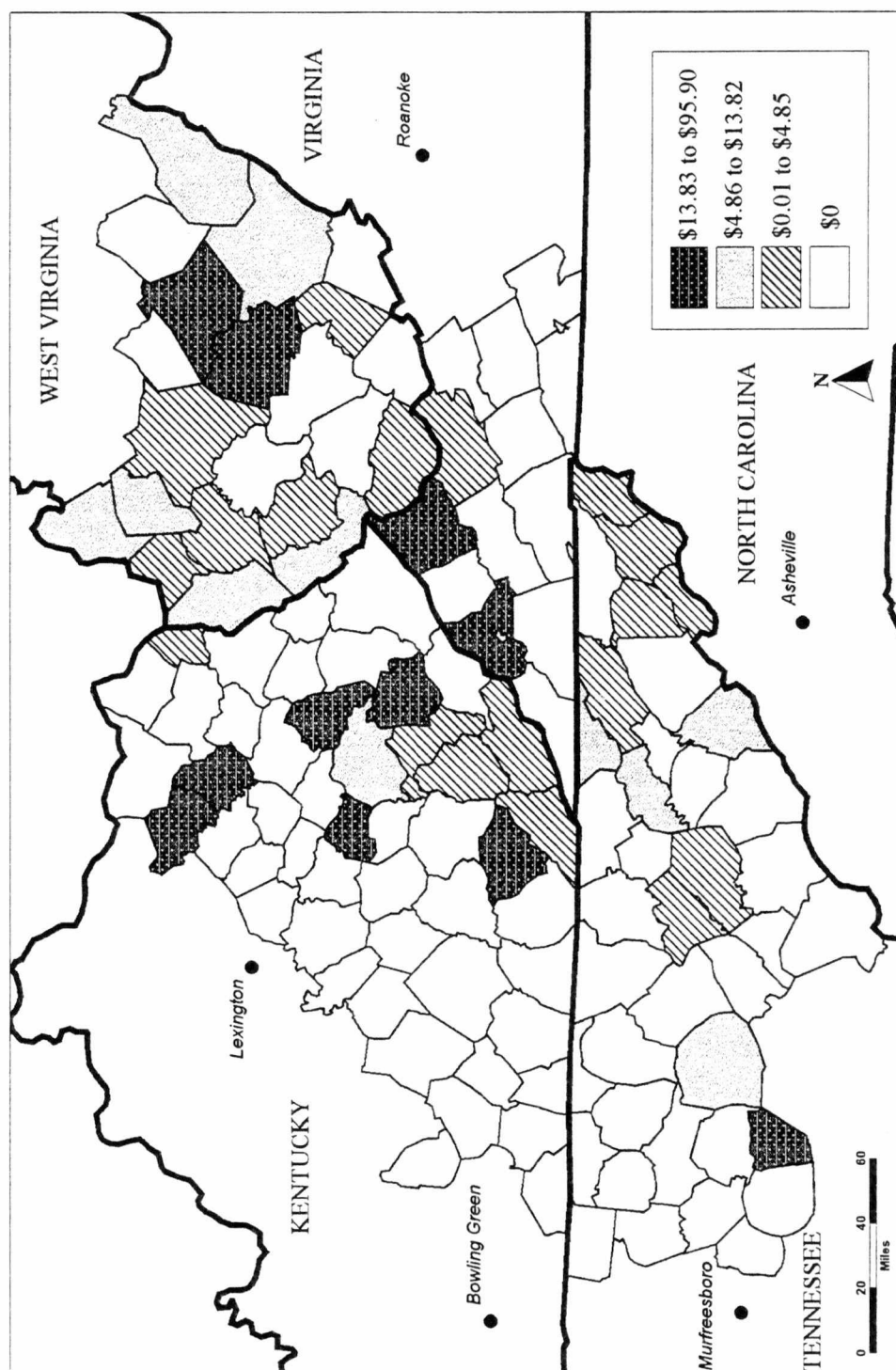


Figure 5-8. Per capita Appalachian Regional Commission health care expenditures, 1975 to 1981.

includes two Virginia and fourteen West Virginia counties. A concentration occurs in the eastern part of West Virginia. The most striking feature of Figure 5-8 is the sharp numerical and spatial contraction in health care expenditures from the demonstration phase (Figure 5-7). Expenditures decreased 69 percent, from \$43.2 million to \$13.4 million. Five counties with only 8.9 percent of Central Appalachia's population (Buchanan, Virginia; Fayette and Kanawha, West Virginia; and Knott and Rowan, Kentucky) received 49 percent of primary care funds. This concentration is quite remarkable considering that spatially-biased funding was to end and all counties were to be eligible for ARC health assistance. Funding change in 1975 to block grants caused the decline and concentration. With greater flexibility in use of area development funds, states turned from health care projects toward community development ones. Also, these counties were completing expensive projects that started during the demonstration phase.

Statistical Analysis

Twenty independent variables were correlated with total ARC health care expenditures from 1975 to 1981. Pearson correlation coefficients and levels of significance are listed for each independent variable (Table 5-7). The

Table 5-7. Correlation coefficients for Appalachian Regional Commission health care dollars expended 1975 to 1981.

Independent Variables	Coefficient
Percent of families below poverty 1980	-.0984
Dependent population, ages 0-14 and 65 and over 1980	-.0717
Per capita income 1980	.0632
Total population 1980	.0467
Population density per square mile 1980	-.0610
Percent of population rural 1980	.0131
Bituminous coal production 1981	.4142**
Infant mortality rate 1981	.0248
Non-federal physician rate 1980	.1318
Years of local development district operation 1965-1985	-.0494
Percent change in population 1970-1980	-.0293
Death rate per 1,000, 1980	-.1684
Percent of labor force employed in manufacturing 1980	-.3165*
Percent of labor force employed in wholesale and retail trade 1980	.1504
Percent of local government expenditures for health and hospitals 1981-1982	-.1182
Local government expenditures per capita 1981-1982	-.0862
Median family income 1980	.1325
Percent change in manufacturing employment 1975-1981	-.0072
Percent change in retail trade employment 1975-1981	-.0760
Hospital bed rate per 1,000, 1980	.0561

Note: * Significant at .05 level.

** Significant at .01 level.

strongest correlated variable with ARC health care funds is bituminous coal production ($r = .4142$). Percent of labor force in manufacturing ($r = -.3165$) is the only other variable with a significant correlation, and it was at the .05 level.

Most of the independent variables' correlation coefficients are lower for the primary care phase compared with the demonstration phase. The five variables that yielded larger correlation coefficients (percent of families below poverty level, 1980; per capita income, 1980; per capita local government expenditures, 1981-1982; median family income, 1980; and percent change in retail trade employment, 1975-1981) increased only slightly, and none were significantly correlated with health care expenditures 1975-1981. However, the change in sign from negative to positive for per capita income and median family income suggests that primary care phase dollars tended to be spent more in high-income counties than demonstration phase funds. The large decline and change in sign of death rate show decreasing importance of the health of the population in explaining the location of health care expenditures. Non-federal physician rate and percent of labor force employed in wholesale and retail trade were significantly correlated with health care funds 1967-1974 but had no correlation with them from 1975 to 1981.

Twenty independent variables were regressed against health care dollars expended 1975-1981. Coal production was the only variable to enter the regression equation, and it accounted for 15 percent of the variation in health care expenditures (Table 5-8). As during the demonstration phase, coal-producing counties attracted most of the health care funds.

Results of the correlation and regression analyses provide significant insights when they are compared with ARC policy objectives for the primary care phase. The principal objective of making health care funds available to all counties with emphasis on rural, medically underserved areas was not achieved. Independent variables that identify rural areas and areas deficient in medical services, including percent of population rural, non-federal physician rate, and hospital bed rate, have no correlation with health care dollars. The average population of those counties that received funding was noticeably larger (45,255) than the average of those that received none (27,502).

During the first two phases of the health program, sparsely populated, rural counties in Central Appalachia had little chance to acquire ARC funds. For example, the northern tier of counties in the Kentucky demonstration area from Rockcastle northeastward to Wolfe were largely ignored (Figure's 5-7 and 5-8). Jackson and Lee received funds, but

Table 5-8. Stepwise regression results for Appalachian
Regional Commission health care dollars expended
1975 to 1981.

Statistic	Variable Included
	Step 1
	Coal Production 1981
Regression Coefficient	40.0
Standard Error of Regression Coefficient	13.9
Beta Coefficient	.4142
T Value	2.88
Significance Level	.0064
Cumulative R^2	.1715
Change in R^2	.1715
Multiple R = .4142	
R^2 = .1715	
Adjusted R^2 = .1508	

the amounts were below the regional average. During the primary care phase, only Lee was funded. The six small rural counties received an average of only \$7.55 per person during the time 96 percent of ARC health care dollars were spent.

Finish-Up Phase, 1982-1985

Spatial Pattern of Funding

The spatial distribution of health expenditures during the finish-up phase is presented in Figure 5-9. The average per capita expenditure in Central Appalachia was \$8.63, and only 16 of the area's 121 counties received funds. Reduced Congressional appropriations explain the spatial contraction of expenditures, but Kentucky and West Virginia received greater funding than Virginia and Tennessee. Ninety-two percent of the expenditures in Central Appalachia occurred in these two states. A minor concentration in West Virginia was from Kanawha County eastward to Pocahontas.

As discussed in Chapter 3, the finish-up phase was a response to President Reagan's attempt to eliminate the ARC. Only 29.7 percent of Central Appalachia's counties were eligible for finish-up funds. Because eligibility was based on health statistics, for the first time, the pattern of expenditure reflected health need. Unfortunately, the ARC

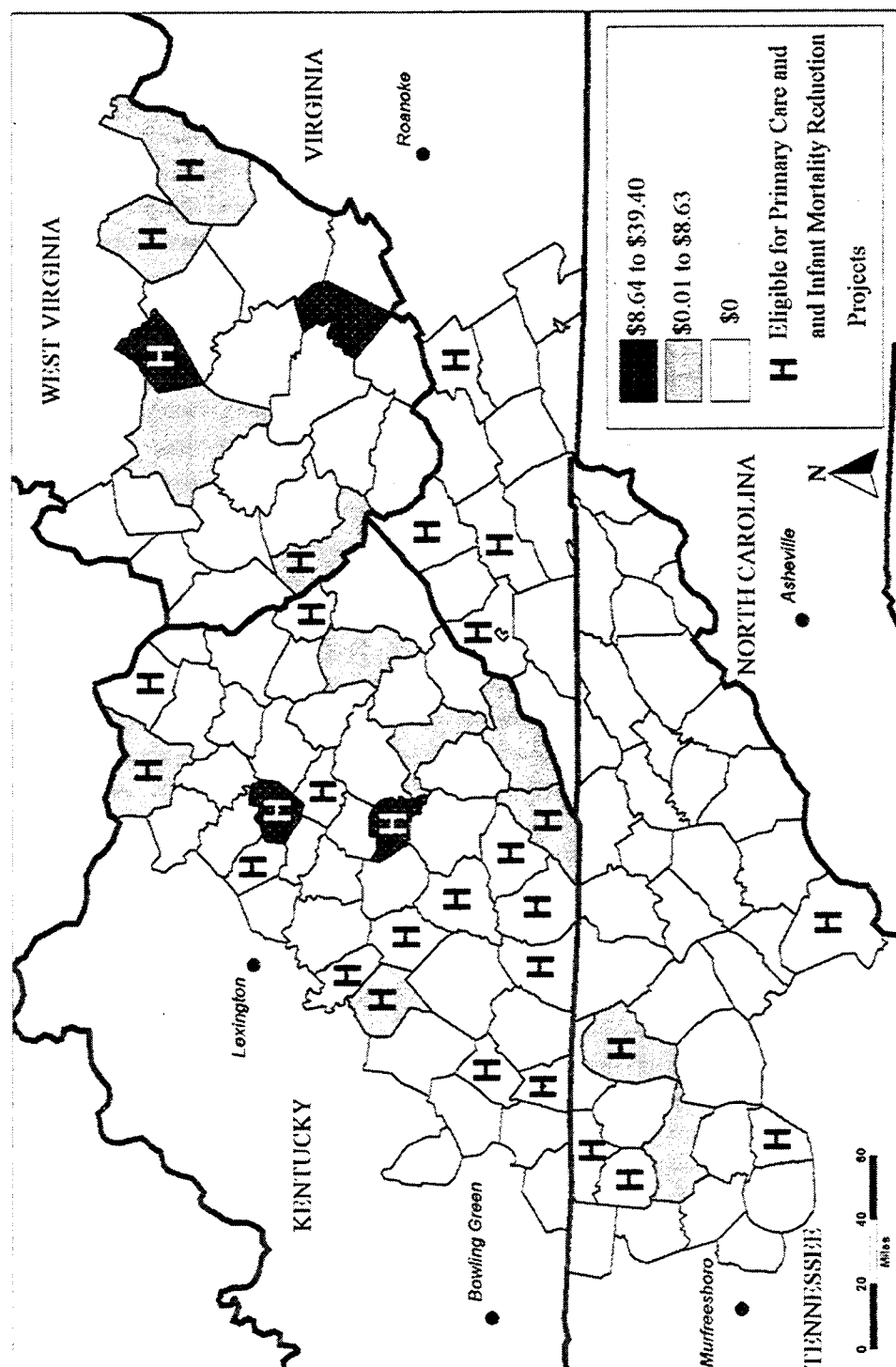


Figure 5-9. Per capita Appalachian Regional Commission health care expenditures, 1982 to 1985.

began to address the region's most severe health needs at a time of diminishing funding. Between 1986 and 1993, the ARC spent only \$760,137 annually on health care in Central Appalachia. Although the group of underfunded counties in southeast Kentucky were now eligible for ARC health care projects, only Owsley County received funding.

Implementation of ARC Education Programs

First Phase, 1965-1974

Spatial Pattern of Funding

The spatial distribution of education expenditures in Central Appalachia 1965-1974 is shown in Figure 5-10. Expenditures totaled \$74.6 million. The average per capita education expenditure was \$30.89. Unlike the distribution of health dollars 1965-1974, education expenditures are not spatially concentrated in one area but dispersed in three clusters: southwest Virginia, an arc of Kentucky counties from Fleming and Greenup southward to Knott, and an area in southeast Kentucky around Pulaski County, Kentucky. Education expenditures were more evenly dispersed relative to population than those for health care. Five counties--Washington, Virginia; Pulaski, Tazewell, and Knox, Tennessee; and Kanawha, West Virginia--contained 18.7

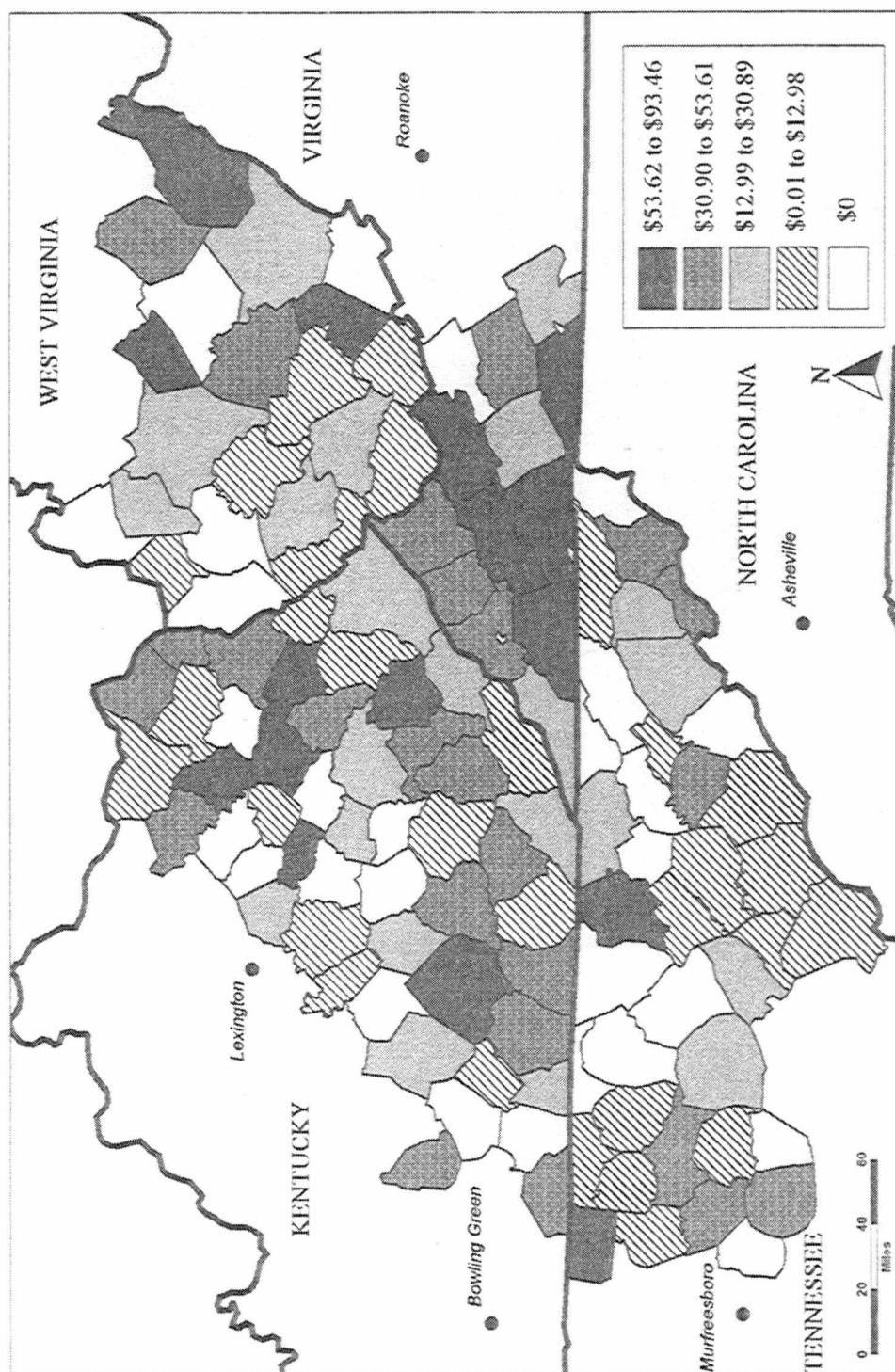


Figure 5-10. Per capita Appalachian Regional Commission education expenditures, 1965 to 1974.

percent of Central Appalachia's population and received 21 percent (\$15.7 million) of the funds.

Statistical Analysis

Twenty independent variables were correlated with ARC education dollars spent from 1965 to 1974. Pearson correlation coefficients and levels of significance are listed for each variable in Table 5-9. Nine independent variables are correlated with education expenditures at the .01 level, some with weak relationships and others with strong ones. The independent variable with the strongest correlation is county population ($r = .4996$). The other eight independent variables with correlations at the .01 level are: percent of school budget from local sources ($r = .4484$), population density ($r = .4176$), percent of population over age 25 who were high school graduates ($r = .3683$), per capita income ($r = .3571$), median family income ($r = .3326$), percent of labor force employed in wholesale and retail trade ($r = .3291$), percent of population rural ($r = -.3331$), and percent of families below poverty level ($r = -.2905$). Percent of school budget from federal sources ($r = -.2642$) and unemployment rate ($r = -.2056$) are weakly correlated with education dollars spent 1965-1974 at the .05 level.

Table 5-9. Correlation coefficients for Appalachian Regional Commission education dollars expended 1965 to 1974.

Independent Variables	Coefficient
Percent of families below poverty 1970	-.2905**
Per capita income 1970	.3571**
Total population 1970	.4996**
Population density per square mile 1970	.4176**
Percent of population rural 1970	-.3331**
Bituminous coal production 1975	.0801
Percent of school budgets from federal sources 1975	-.2642*
Percent of population over 25 high school graduates 1975	.3683**
Percent of school budgets from local sources 1975	.4484**
Percent of total civilian labor force unemployed 1970	-.2056*
Years of local development district operation 1965-1985	.1518
Percent change in population 1960-1970	.0829
Percent of labor force employed in manufacturing 1970	-.0292
Percent of labor force employed in wholesale and retail trade 1970	.3291**
Local government expenditures per capita 1976-1977	.1521
Percent of total local government expenditures for education 1976-1977	-.1570
Local government expenditures for education per capita 1976-1977	-.0572
Median family income 1970	.3326**
Percent change in manufacturing employment 1965-1974	-.0905
Percent change in retail trade employment 1965-1974	.0270

Note: * Significant at .05 level.

** Significant at .01 level.

The correlation coefficients suggest the spatial distribution of early ARC education expenditures. Expenditures were related to a county's population, population density, percent urban, income, and percent of school budget from local sources. The more populous counties were the major benefactors of ARC education funds between 1965 and 1974. Exclusion of the five most populous counties (Knox, Sullivan, and Washington, Tennessee; Cabell and Kanawha, West Virginia) from the correlation matrix results in all but one independent variable--percent of labor force in manufacturing--declining in strength.

Other correlation coefficients reveal additional characteristics of ARC education expenditures. First, coal production, a significant explanatory variable for health care, does not correlate ($r = .0801$) with education expenditures. Unlike health care funds those for education were not concentrated in the coalfields. Despite being lumped together in many evaluations of the ARC, health and education programs were driven by different policies. Second, the negative correlation coefficient for percent of local school budgets from other federal sources contradicts this study's initial hypothesis. Counties with high proportions of federal education assistance were expected to be the ones receiving the majority of ARC education expenditures because the agency's dollars were to supplement

other federal education money. The analysis shows that as reliance on other federal education dollars declined ARC expenditures increased. Also, percent of school budgets from other federal sources correlated negatively with total population ($r = -.3951$) and population density ($r = -.3940$) and positively with percent of population rural ($r = .4550$).⁸

These twenty independent variables were regressed against total education dollars spent 1965-1974. Two, total population and percent of school budgets from local sources, entered the stepwise regression and accounted for 30 percent of the variation in education expenditures (Table 5-10). Total population as an explanatory variable supports the premise that because state and local governments are in charge of education, they are concerned with a fair distribution. The majority of ARC education expenditures supplemented the Vocational Education Act of 1963, which favored the most populous counties. The moderately strong and positive correlation coefficient ($r = .4996$) shows that ARC education funds were distributed in a similar manner.

Percent of school budgets from local sources explain 5.7 percent of the variation in education dollars 1965-1974. Correlation coefficients between percent of school budgets

⁸ All these coefficients were significant at the .01 level.

Table 5-10. Stepwise regression results for Appalachian Regional Commission education dollars expended 1965 to 1974.

Statistic	Variables Included	
	Step 1	Step 2
	Total Population 1970	Percent of school budget from local sources 1975
Regression Coefficient	7.2	18978.0
Standard Error of Regression Coefficient	1.9	7010.2
Beta Coefficient	.3695	.2710
T Value	3.69	2.71
Significance Level	.0004	.0081
Cumulative R^2	.2496	.3061
Change in R^2	.2496	.0565
Multiple R = .5533		
R^2 = .3061		
Adjusted R^2 = .2907		

from local sources and other independent variables help to identify the geographic character of places receiving ARC education funds. Counties with high percentages of school budgets from local sources had higher per capita incomes, lower levels of poverty, and were less rural. Percent of school budgets from local sources correlated positively with per capita income ($r = .6961$), and negatively with percent of families below poverty level ($r = -.7173$), and percent of population rural ($r = -.4636$).

Second Phase, 1975-1981

Spatial Pattern of Funding

The spatial distribution of education expenditures 1975-1981 is presented in Figure 5-11. Expenditures in Central Appalachia totaled \$23.7 million, a decrease of 68 percent from the previous period. The average ARC education expenditure per capita was \$13.30. Education expenditures were a dispersed pattern of clusters, similar to the pattern during the previous period. However, the clusters were fewer and more spatially concentrated (Figure's 5-11 and 5-10). Three clusters of counties exceeded the regional per capita average expenditure for education. One was in western West Virginia centered on the Huntington metropolitan area; another was in eastern West Virginia and

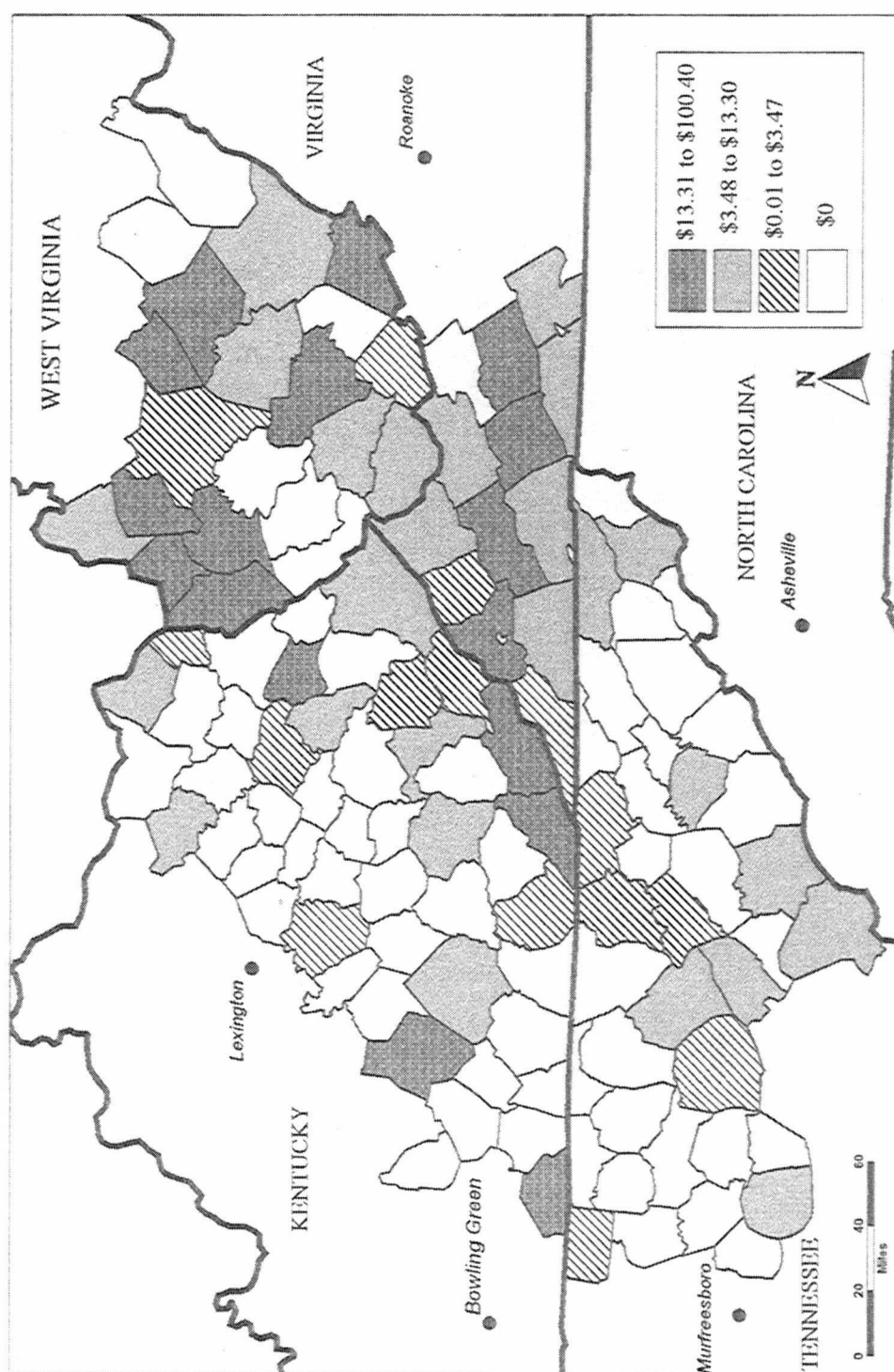


Figure 5-11. Per capita Appalachian Regional Commission education expenditures, 1975 to 1981.

included Raleigh, Clay, Nicholas, and Monroe counties; and the third formed a discernable arch from Bell County, Kentucky eastward to Wythe County, Virginia.

The five counties that received the greatest amounts of education expenditures, Wise, Wythe, Cabell, Johnson, and Bell had only 6.4 percent of Central Appalachia's population but received 41.3 percent of education funds. Wise and Wythe received 25.3 percent.

Statistical Analysis

Twenty independent variables were correlated with ARC education dollars expended 1975-1981 (Table 5-11). Only one independent variable is significantly correlated with the dependent one. Percent of labor force unemployed had a weak negative correlation with ARC education funds spent 1975-1981 ($r = -.2764$). Variables that were significant for education funds expended 1965-1974 were not significantly correlated for 1975-1981. Nevertheless, the coefficients remained negative for percent of families below poverty and percent of population rural. They remained positive for per capita income and population density. This implies that education expenditures between 1965 and 1974 tended to increase as incomes and population densities increased and percent of families below poverty and percent of population rural decreased.

Table 5-11. Correlation coefficients for Appalachian Regional Commission education dollars expended 1975 to 1981.

Independent Variables	Coefficient
Percent of families below poverty 1980	-.2272
Per capita income 1980	.2249
Total population 1980	.1408
Population density per square mile 1980	.0728
Percent of population rural 1980	-.0861
Bituminous coal production 1981	.2223
Percent of school budgets from federal sources 1981	-.1720
Percent of population over 25 high school graduates 1980	.1021
Percent of school budgets from local sources 1981	.0793
Percent of total civilian labor force unemployed 1980	-.2764*
Years of local development district operation 1965-1985	.0029
Percent change in population 1970-1980	-.1073
Percent of labor force employed in manufacturing 1980	-.1584
Percent of labor force employed in wholesale and retail trade 1980	.0925
Local government expenditures per capita 1981-1982	.1360
Percent of total local government expenditures for education 1981-192	-.0316
Local government expenditures for education per capita 1981-1982	.1039
Median family income 1980	.2039
Percent change in manufacturing employment 1975-1981	-.1099
Percent change in retail trade employment 1975-1981	.0198

Note: * Significant at .05 level.

** Significant at .01 level.

The twenty independent variables were regressed against total ARC education dollars spent 1975-1981. Two variables, percent of labor force unemployed and percent of labor force employed in manufacturing, entered the stepwise regression equation but only accounted for 16 percent of the variation in education expenditures (Table 5-12). They replaced the two variables that entered the regression equation for 1965-1974, total population and percent of school budgets from local sources. The change in variables reflects a shift in emphasis of ARC's education program from infrastructural improvements to dropout prevention, adult literacy, and job training programs. Counties with high percentages of labor force unemployed and labor force in manufacturing are representative of the types of places for which adult literacy and job training programs were meant. The underlying reason for the programs was to improve the skill level of the labor force to attract manufacturing establishments.

Third Phase, 1982-1992

Spatial Pattern of Funding

The spatial distribution of education expenditures in Central Appalachia from 1982 to 1992 is presented in Figure 5-12. Education expenditures totaled \$2.1 million, a

Table 5-12. Stepwise regression results for Appalachian Regional Commission education dollars expended 1975 to 1981.

Statistic	Variables Included	
	Step 1	Step 2
	Percent of labor force unemployed 1980	Percent of labor force employed in manufacturing 1980
Regression Coefficient	-90482.2	-15261.5
Standard Error of Regression Coefficient	30316.3	6480.1
Beta Coefficient	-.4011	-.3165
T Value	-3.0	-2.4
Significance Level	.0042	.0221
Cumulative R^2	.0764	.1610
Change in R^2	.0764	.0846
Multiple R = .4012		
R^2 = .1610		
Adjusted R^2 = .1305		

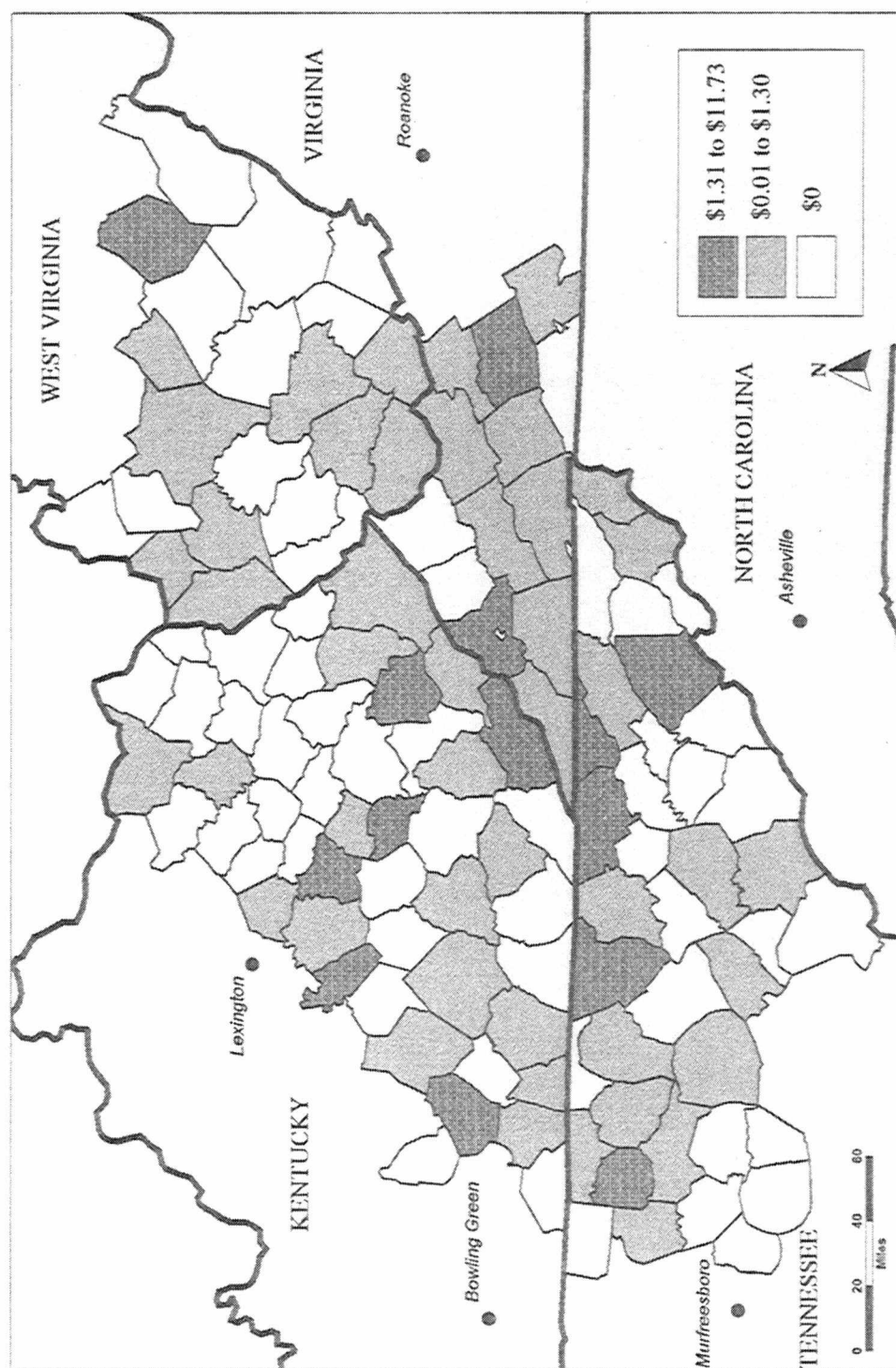


Figure 5-12. Per capita Appalachian Regional Commission education expenditures, 1982 to 1992.

decrease of 91 percent from 1975-1981. Average per capita expenditure was only \$1.30. Counties that exceeded the regional per capita average were scattered throughout Central Appalachia with slight concentrations along the Kentucky-Virginia and the Tennessee-Virginia-Kentucky borders. A few counties received the majority of the funds. Five counties--Wise, Kanawha, Greene, Wythe, and Owsley--had only 9 percent of the population but got 53 percent of the expenditures. Wise and Wythe received almost one-third.

The low amount of education expenditures from 1982 to 1992 made statistical analyses impractical. Even counties with the largest shares received small amounts. Wise County, which received the most ARC funds in Central Appalachia, got only \$475,287. The amounts were for a few projects (Figure 5-12). Ninety-one percent of Wise County's allocation was for purchase of equipment for Mountain Empire Community College's mine technology building. In Kanawha County, which received the second largest sum (\$216,031), the funds were for computer/voice equipment for a high school and several adult literacy programs. The decision not to fund construction projects contributed to the low volume of education funds received. In 1981, the ARC ended construction funding for libraries, cultural centers, hospitals, medical buildings, recreation facilities, schools, and other projects (ARC 1981a, 33).

Conclusion

Central Appalachia is a good location to examine the implementation of ARC's education and health programs because of its considerable diversity. It contains cities and extensive rural areas and areas within and outside the coalfields. Moreover, Central Appalachia provides the ARC its greatest challenge in reducing social and economic disparity.

Both cartographic and statistical analyses reveal significant findings. While health care policy employed preferential funding, education policy did not. The impact of these policies is evident in the spatial distribution of funds. Health-care expenditures were more concentrated and education funds more dispersed. These patterns support the conclusions of Chapter 4.

Significant independent variables that explain health care expenditures during the demonstration phase 1967-1974 include coal production, percent of labor force in wholesale and retail trade, and death rate. ARC's objective in funding demonstration health areas was to develop a comprehensive range of services in areas lacking a coordinated, efficient delivery system. This goal was not achieved. Variables that identify deficiencies in the health care system and infrastructure (the number of

physicians and hospital beds per 100,000 people) did not appear in the regression equation. The demonstration program quickly became a construction program rather than one creating comprehensive health care systems. While ARC's policy goals were not reached, beneficial consequences occurred. Correlation coefficients indicate a slight tendency for demonstration health care expenditures toward lower-income and higher-poverty counties. The presence of death rate in the regression equation suggests that some funds went to areas with health problems. Also, many of the facilities built are still used today and are vital parts of the health-care system.

For the primary care phase 1975-1981, coal production was the only variable to enter the regression equation, but its significance was minor. Correlation coefficients for per capita and median-family income changed from negative during the demonstration period to positive during the primary care phase. Thus, a slight shift of expenditures toward higher-income counties occurred. ARC policy during the primary care phase was to make health care funds available to all counties, but especially rural underserved ones. This policy was not successful. Variables that reflect deficient medical services are not significantly correlated with expenditures. Also, the average population of counties that received funds during this period was

larger than during the demonstration phase.

The presence of coal production in health care regressions for both the demonstration and primary care phases is interesting. In Central Appalachia, state governments chose the coalfields as sites for demonstration programs, and the ARC pumped money into them. This is indirect recognition by the ARC of the poor health conditions in the coalfields, which many scholars hold the coal industry responsible for creating.

Significant independent variables that explain education expenditures during the demonstration phase 1965-1974 included size of population and percent of school budget from local sources. ARC's primary goal during the period was to supplement the Vocational Education Act of 1963. These two variables reflect ARC's supplementation of other federal funds that were distributed proportionally among states by population. The correlation coefficients reveal that the type of county receiving education expenditures from 1965 to 1974 was populous, densely settled, and more urban than other counties. Therefore, education expenditures reflected population distribution better than ones for health care.

From 1975 to 1981, percent of labor force unemployed and employed in manufacturing were significant in explaining education expenditures. Neither one of these variables

entered the previous education regressions. This shift mirrors the change in education policy from vocational education construction to labor force improvement programs, including adult literacy and job training. These variables reveal an unintended consequence of ARC's change in policy because counties with considerable portions of their labor force unemployed or in manufacturing were the likely ones to seek funding for new education programs. Correlation coefficients show that education expenditures during the finish-up phase 1975-1981 still tended toward more populous, higher income, densely settled, and more urban counties.

Counties in Central Appalachia with urban service centers of less than 15,000 were the major benefactors of ARC education and health care programs. Metropolitan counties and the least populated rural ones did not benefit greatly from the programs. Chapter 6 supports this conclusion by profiling individual projects in sixteen southeast Kentucky counties. The chapter also illustrates how the least populated counties, while largely bypassed by the education and health care programs, were eventually able to obtain ARC funds.

CHAPTER 6

IMPLEMENTATION OF APPALACHIAN REGIONAL COMMISSION

SOCIAL PROGRAMS AT THE LOCAL SCALE:

EVIDENCE FROM SOUTHEAST KENTUCKY

Southeast Kentucky

Southeast Kentucky is an appropriate area to examine ARC's education and health programs for several reasons. First, the social problems in southeast Kentucky were the impetus for development of the Eastern Kentucky Regional Planning Commission, the forerunner of the ARC. ARC's heritage lies in the social problems of southeast Kentucky. This area became synonymous with Appalachia and its social problems. Moore profiles how southeast Kentucky became a model of the region, beginning with late nineteenth-century literature (1991). Southeast Kentucky continues to serve as a model of Appalachia. Recent national network news programs are a good illustration. In December 1989, CBS's "Forty-Eight Hours" profiled poverty in Muddy Gut Hollow in Floyd County. On August 8, 1995, NBC's "Dateline," focused on Jenkins in Letcher County and concluded that the ARC had failed to eliminate Appalachian poverty.

Implementation of ARC's education, health, and community development programs is examined in a sixteen-county area in southeastern Kentucky (Figure 6-1). These counties comprise two Area Development Districts: Cumberland Valley and Kentucky River.¹ Cumberland Valley ADD includes Bell, Clay, Harlan, Jackson, Knox, Laurel, Rockcastle, and Whitley counties. Kentucky River ADD contains Breathitt, Knott, Lee, Leslie, Letcher, Owsley, Perry, and Wolfe.

All sixteen counties lie in the Appalachian Plateaus physiographic province. This portion of the Appalachian Plateaus is severely dissected, creating a mountainous landscape. Elevations and relative relief decline northward. Dissection is severe in Bell, Harlan, and Letcher counties. The only significant deviation from the ubiquitous dissected plateau is Pine Mountain, a ridge-like thrust fault that extends northeast to southwest from southern Letcher County through Whitley into Tennessee.

The sixteen counties lie within the Cumberland and Kentucky River drainage basins. The basins determined the location of modern industrial expansion in southeastern Kentucky. Railroads, the coal industry, and subsequent industrial development entered the region along streams because their narrow valleys were the most accessible routes

¹ In Kentucky, Local Development Districts are called Area Development Districts.

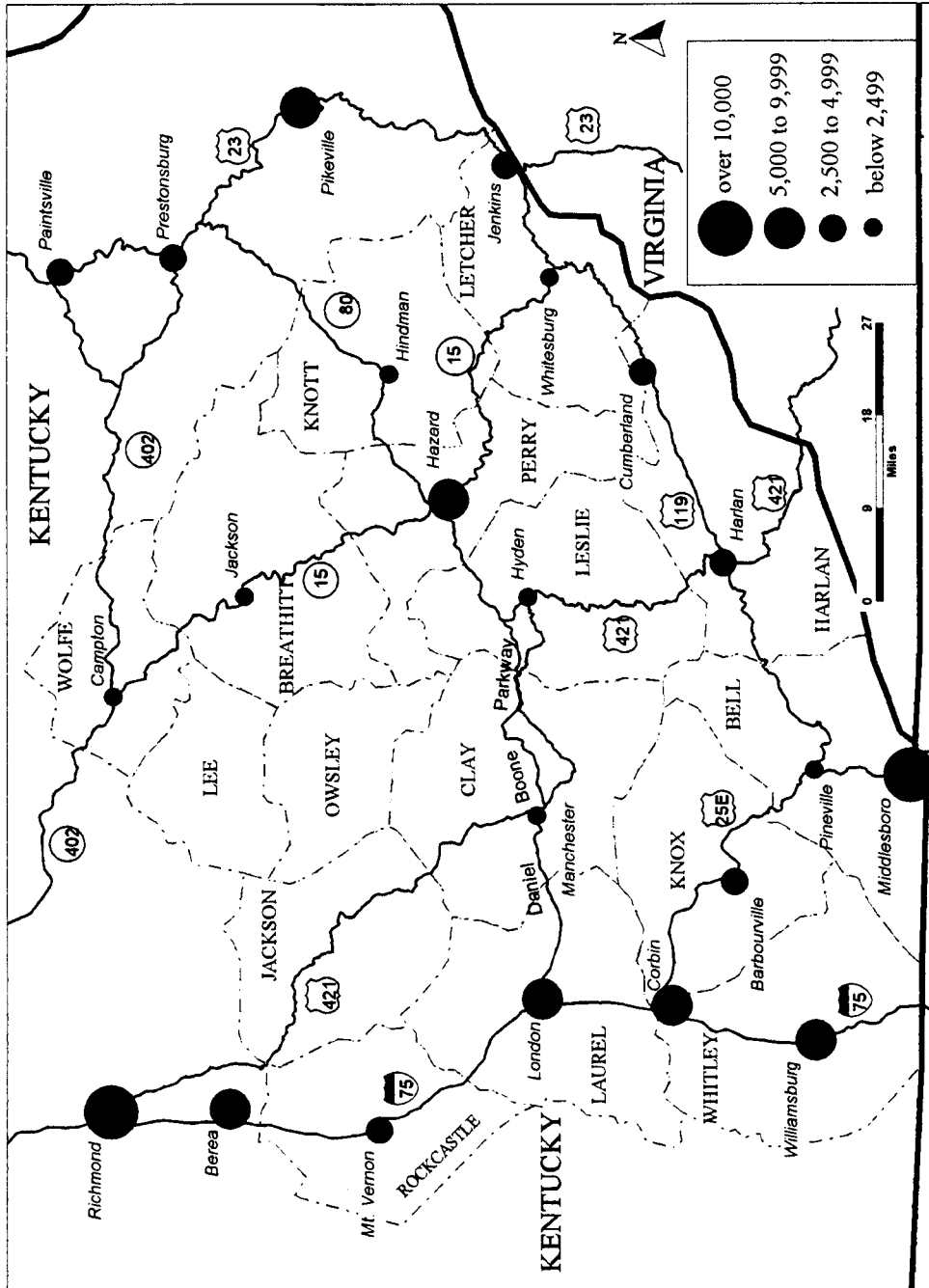


Figure 6-1. Highways and populations of selected cities in southeast Kentucky, 1990. U.S. Bureau of the Census. 1990.

through the severely dissected plateau. Area development district boundaries, at least the three in southeastern Kentucky, correspond with the major drainage basins: Cumberland River, Kentucky River, and Big Sandy River.² The eight counties of the Kentucky River Area Development District are drained by tributaries of the northwest flowing Kentucky River. Except for northern Letcher County and eastern Clay County, which are drained by the Kentucky River, the eight counties of the Cumberland River Area Development District are drained by tributaries of the westward flowing Cumberland River.

Most of the sixteen counties lie within the Appalachian high-quality bituminous coalfield that stretches from northwest Pennsylvania to central Alabama.³ Coal has played an integral role in defining the population and economic character of the area.

² The Big Sandy Area Development District lies northeast of the Kentucky River one and includes Floyd, Johnson, Magoffin, Martin, and Pike counties.

³ The only parts of the sixteen counties not within the coalfield are Rockcastle and the western portions of Laurel and Jackson.

Population

Southeast Kentucky's population in 1990 was 343,843. The sixteen-county area is nonmetropolitan and predominately rural. None adjoins a metropolitan county. Only 14.6 percent of the 1990 population was urban. The largest city is Middlesboro with 11,328. No other city exceeds 10,000, and only four others exceed 5,000: Corbin (7,644), London (5,757), Williamsburg (5,493), and Hazard (5,416) (Figure 6-1). The five largest cities account for only 10.4 percent of the area's population. Rural population densities are high, and physiological density is even higher because population is concentrated in narrow stream valleys. Between 1970 and 1980, the population grew 24.3 percent, but it declined by six percent between 1980 and 1990. This pattern of population gain during the 1970s and loss during the 1980s was characteristic of Central Appalachia. All of the sixteen counties except Laurel and Rockcastle followed this pattern. Laurel and Rockcastle experienced population gains during both the 1970s and 1980s. Location on Interstate Highway 75 contributed to this growth.

Population is concentrated in the southern and western portions of the sixteen-county area. In 1990, 50 percent of the area's population was in Laurel, Whitley, Bell, Harlan, and Letcher counties (Table 6-1). These counties were

Table 6-1. Populations of sixteen counties in southeast Kentucky in 1970, 1980, and 1990.

County	1970	1980	1990	Percent Change	
				1970 to 1980	1980 to 1990
Bell	31,087	34,330	31,506	+10.4	-8.2
Breathitt	14,221	17,004	15,703	+19.6	-7.7
Clay	18,481	22,752	21,746	+23.1	-4.4
Harlan	37,370	41,889	36,574	+12.1	-12.7
Jackson	10,005	11,996	11,955	+20.0	-0.3
Knott	14,698	17,940	17,906	+22.1	-0.2
Knox	23,689	30,239	27,000	+27.6	-10.7
Laurel	27,386	38,982	43,438	+42.3	+11.4
Lee	6,587	7,754	7,422	+17.7	-4.3
Leslie	11,623	14,882	13,642	+28.0	-8.3
Letcher	23,165	30,687	27,000	+32.5	-12.0
Owsley	5,023	5,709	5,036	+13.7	-11.8
Perry	25,714	33,763	30,283	+31.3	-10.3
Rockcastle	12,305	13,973	14,803	+13.6	+5.9
Whitley	24,145	33,396	33,326	+38.3	-0.2
Wolfe	5,669	6,698	6,503	+18.2	-2.9
Totals	291,168	361,994	343,843	+24.3	-5.0

Sources: U.S. Bureau of the Census 1973b, 1981, 1990.

sparsely settled before 1900. In the nineteenth century when the region's economy was based on subsistence agriculture, the northern part of southeast Kentucky was more populous than the southern part (Bogue and Beale 1961). Significant population growth occurred in the southern counties after the coalfields opened around 1900. For example, between 1910 and 1920 Harlan County's population tripled, and it doubled between 1920 and 1930 (Eller 1982). Despite significant out-migration from the southern part of the area during the 1940s and 1950s, population is still concentrated in the south (Bowman and Haynes 1963). Population concentrations in the western part of the region, including the remarkable growth in Laurel County, have occurred since 1960 (Table 6-1).

Transportation

The 1930s were a watershed in road construction in southeast Kentucky. Before 1930, the only paved roads were in the south and connected London, Corbin, Williamsburg, Barbourville, Pineville, Middlesboro, and Harlan (Bowman and Haynes 1963). During the 1930s, the Public Works Administration paved many roads in the area and drastically improved access. However, road conditions remained a serious problem into the 1960s. Manchester, the largest

town along the Daniel Boone Parkway between Corbin and Hazard, was not connected to neighboring towns by a paved road until after World War II.

The road system has improved, but conditions are still poor compared with other rural areas in the eastern United States. The primary north-south route is Interstate 75 which bisects Whitley, Laurel, and Rockcastle counties (Figure 6-1). The Daniel Boone Parkway from London to Hazard is the primary east-west route and continues as state highway 80 eastward from Hazard through Knott County to U.S. Highway 23 at Prestonsburg. Another primary east-west route, the Mountain Parkway, state highway 402, passes through Wolfe County. The Mountain Parkway and state highway 15 provide residents of the northern part of the Cumberland Valley Area Development District access to Lexington. Other important routes include U.S. Highway 25E, connecting Corbin with Middlesboro via Barbourville and Pineville, U.S. Highway 119 joining Pineville with Jenkins, and U.S. Highway 421 linking Harlan with the Daniel Boone Parkway. ARC highway funds were used to improve several routes in the sixteen-county area, including U.S. Highway 119, the Mountain Parkway, and state highway 15.

Railroads played an important role in the history of southeast Kentucky because of their close association with the coal industry. The first railroad to penetrate the

region was the Louisville and Nashville, which extended its line south from Winchester through London and Corbin to Williamsburg in 1882 (Bowman and Haynes 1963). By 1890, the Louisville and Nashville had completed a line from Corbin to Norton, Virginia. In 1911, the Louisville and Nashville constructed a line northeast of Pineville into Harlan County, and in 1912 it extended a line south from Breathitt County into Perry and Letcher. The rail lines initiated population growth and industrial development in their immediate areas.

The Coal Industry

The coal industry in southeast Kentucky did not expand rapidly until after 1910 when railroads opened the coalfields of Harlan, Letcher, and Perry counties. In 1900, mines in eastern Kentucky accounted for 38 percent of the state's coal production. By 1920, production had increased to 78.5 percent (Eller 1982). The first coal mines were in the southwest part of the area. After 1910, coal production began farther north in Harlan, Letcher, and Perry counties and soon surpassed that in the southwest.

Because of the rapid industrial development of this sparsely-settled rural area, coal companies constructed towns to house their workers. Lynch in Harlan County, built

by United States Coal and Coke, a subsidiary of United States Steel, was a typical company town. All coal was shipped to U.S. Steel plants in Gary, Indiana (Eller 1982). The strong economic position of the coal companies made the area susceptible to the economic boom and bust cycles of mineral industries. The challenges confronting the ARC in assisting areas like southeast Kentucky stemmed from the vacuum left as coal companies gradually decreased sizes of their operations.

Social Conditions

In the early 1990s, poverty rates in Appalachian Kentucky were comparable to those in the 1960s. Improvements in population growth, income, and poverty rate that occurred during the 1970s disappeared during the 1980s. In the 49 ARC counties of Kentucky, 31 percent of the 1990 population was below the poverty level. This was much higher than Kentucky's and the nation's rates of 19 and 13 percent respectively. Eller identified the poorest communities in eastern Kentucky where poverty rates ranged between 46 and 63 percent (Eller 1994, 14). Two of the four clusters he identified were in the sixteen-county study area. One was in northern Bell, eastern Knox, and southern Clay counties and the other in eastern Owsley, southern

Breathitt, and northern Clay counties. Rugged topography, poor quality coal, and poor road systems contributed to the desperate social conditions in these poverty clusters. That all but one of the sixteen counties were designated as distressed by the ARC in 1997 is further evidence of poverty in southeast Kentucky. In 1983, six counties were designated as distressed and two more were added to the list in 1984. By 1994, all but Laurel County were so classified.

Implementation of Education, Health, and Community
Development Projects in Southeast Kentucky

By 1992, the ARC had invested \$64.5 million for education, health, and community development projects in southeast Kentucky (Table 6-2). This figure does not include funds from state and local sources. The financial contributions by state and local governments were significant. State, local, and other federal funds averaged 61 percent of project costs (ARC 1993). Using this average, total expenditures in southeast Kentucky for education, health, and community development projects from 1965 through 1992 are estimated to have been \$165 million. Education, health, and community development projects accounted for 65 percent of all area development expenditures (ARC 1993). Therefore, ARC area development projects brought an

Table 6-2. Appalachian Regional Commission education, health care, and community development expenditures in southeast Kentucky by major periods, 1965 to 1992.

County	Period	Education	Health	Community Development
<u>Cumberland Valley Area Development District</u>				
Bell	1965-1974	437,287	4,702,879	518,918
	1975-1981	1,130,403	100,907	0
	1982-1992	-516	151,714	622,000
Clay	1965-1974	140,186	1,914,437	0
	1975-1981	192,000	-18,664	0
	1982-1992	0	0	842,760
Harlan	1965-1974	387,122	2,282,250	185,294
	1975-1981	668,720	-494,445	2,592,792
	1982-1992	91,767	51,043	1,172,712
Jackson	1965-1974	0	60,000	0
	1975-1981	0	-938	396,000
	1982-1992	0	0	961,213
Knox	1965-1974	860,000	311,486	0
	1975-1981	-10,013	597,022	1,828,000
	1982-1992	1,996	0	302,249
Laurel	1965-1974	1,440,228	618,963	0
	1975-1981	27,882	-4,336	1,746,110
	1982-1992	-23,190	0	200,000
Rockcastle	1965-1974	323,278	0	39,000
	1975-1981	0	0	788,570
	1982-1992	0	0	932,000
Whitley	1965-1974	113,000	2,292,803	235,113
	1975-1981	24,000	-22,608	638,237
	1982-1992	0	0	983,990
Multi	1965-1974	66,072	3,445,958	371,550
	1975-1981	32,130	1,368,428	0
	1982-1992	0	0	251,195
<u>Kentucky River Area Development District</u>				
Breathitt	1965-1974	345,641	16,417	347,000
	1975-1981	0	150,000	498,800
	1982-1992	-3,142	0	590,000

Table 6-2. (continued)

County	Period	Education	Health	Community Development
<u>Kentucky River Area Development District (cont.)</u>				
Knott	1965-1974	1,325,985	701,276	0
	1975-1981	1,486	846,926	728,500
	1982-1992	55,000	-98,143	648,382
Lee	1965-1974	126,847	39,126	250,000
	1975-1981	-1,104	250,000	439,500
	1982-1992	6,560	0	528,814
Leslie	1965-1974	477,112	1,422,796	0
	1975-1981	0	44,007	100,000
	1982-1992	8,000	0	145,000
Letcher	1965-1974	498,881	266,175	0
	1975-1981	76,193	-151,176	1,802,000
	1982-1992	3,497	0	1,030,256
Owsley	1965-1974	0	0	0
	1975-1981	0	0	181,000
	1982-1992	66,962	224,952	0
Perry	1965-1974	1,072,000	1,918,344	16,445
	1975-1981	272,265	-2,109	492,356
	1982-1992	-18,869	572,663	962,641
Wolfe	1965-1974	0	0	208,760
	1975-1981	0	0	-669
	1982-1992	0	0	496,000
Multi	1965-1974	0	2,929,085	395,661
	1975-1981	867,065	1,408,698	-18,538
	1982-1992	31,970	0	75,000

Note: Negative values represent adjustments to or project withdrawals from projects in the previous period.

Source: Calculated by author from ARC documents.

estimated \$255 million to the sixteen southeastern Kentucky counties.

Temporal assessment of expenditures in the sixteen counties illustrates how changes in policies influenced local implementation (Figure 6-2). Education, health, and community development expenditures followed a pattern similar to that of the state as a whole (Figures 6-2 and 4-6). Health care projects were heavily funded in the late 1960s and early 1970s, followed by a dramatic decrease (Table 6-2). Education projects were consistently funded, but at a much lower level than health care, followed by steady decline beginning in the mid-1970s. Community development projects were not funded in the sixteen counties until 1970 and then increased rapidly through the mid-1970s. A decline occurred in community development expenditures in the mid-1980s, followed by an increase after 1987. The expenditures were dynamic in space as well as in time. The geographic distribution of expenditures among the sixteen counties was not uniform. Education expenditures ranged from zero in Jackson and Wolfe counties to \$1.56 million in Bell County. Health care expenditures varied from zero in Rockcastle and Wolfe counties to \$4.9 million in Bell County. Community development expenditures fluctuated from \$181,000 in Owsley County to \$3.95 million in Harlan County. The years of peak expenditures reveal that the sparsely

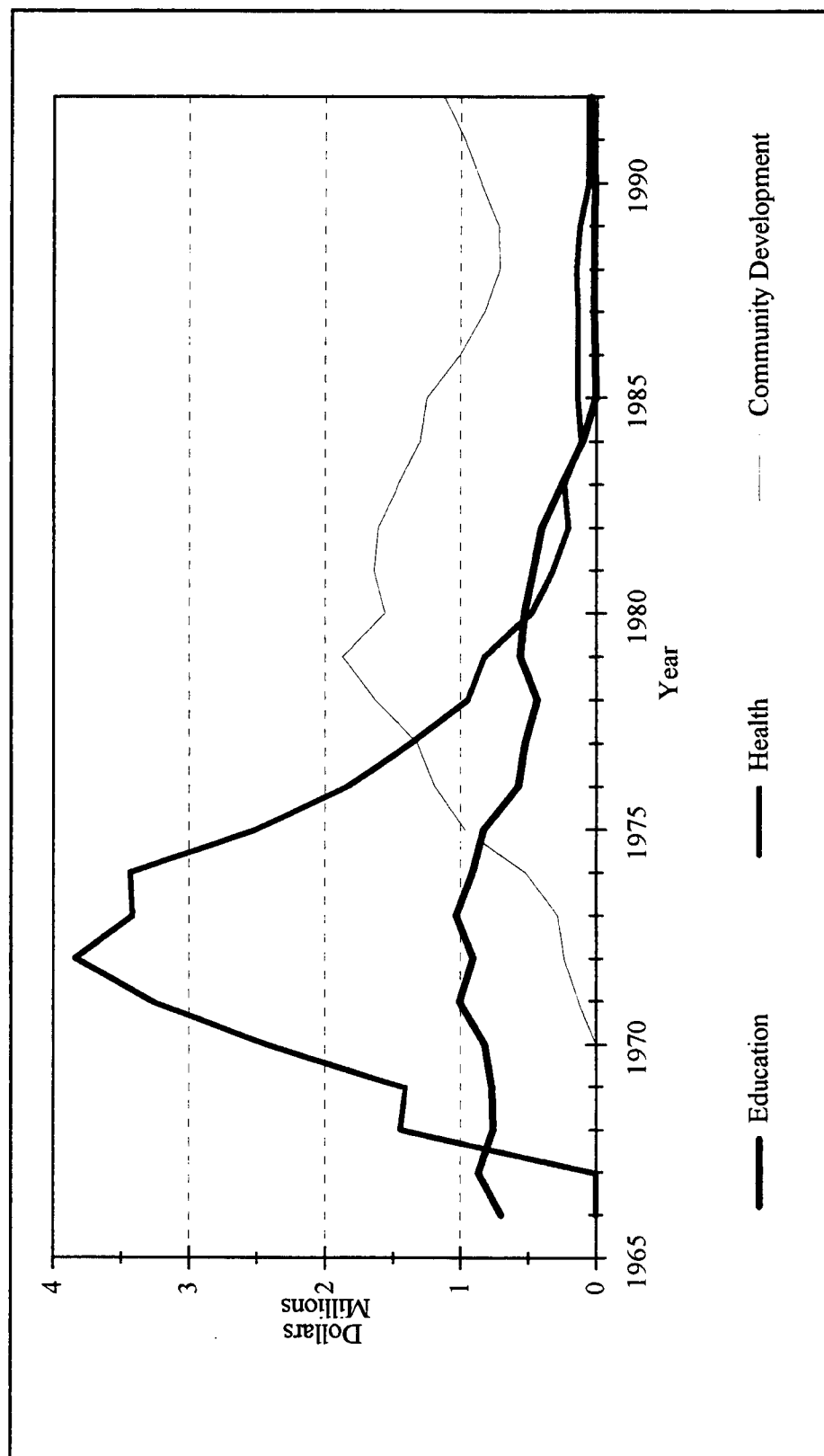


Figure 6-2. Southeast Kentucky's Appalachian Regional Commission education, health, and community development expenditures by five-year moving averages, 1965 to 1992. Source: Compiled by author from ARC documents.

populated counties in the northern part of southeast Kentucky received most of their funding after 1982 in the form of community development projects. The larger, more populous counties received most of their funds between 1965 and 1974. The predominant reason the less populated counties finally obtained funds was their designation as distressed. Sparsely populated rural counties were at a distinct disadvantage, particularly in the competition for ARC education and health dollars.

The simultaneous introduction of the block grant type appropriation and shift in philosophy toward economic development is evident at the local scale. The changes had major impacts on the character of ARC area development programs in southeast Kentucky. Area Development District and Kentucky state officials supported the block grant method. As early as 1973, the state began modifying its development strategy to one that placed more emphasis on economic development. The block grant gave Kentucky greater flexibility that resulted in even more attention to economic development. Kentucky's 1975-1976 development plan gave several justifications for the shift in emphasis (Kentucky Area Development Office 1976). First, Kentucky claimed that past education and health care expenditures had established the beginnings of a more diversified economy which now needed to be promoted. Second, it was claimed that a lack

of physical infrastructure, including available industrial sites and water and sewer systems, had become a greater obstacle to economic growth than education and health problems. Third, state officials argued that economic growth would lead to better education and health systems.

Interviews and discussions with Area Development District officials and persons involved in ARC projects at the time, revealed that there was no local opposition to the changes to the block grant's and subsequent emphasis on economic development (Cass 1994, Cornett 1994). Education and health care expenditures were greater in southeast Kentucky than in most areas of the ARC region. There was a general acceptance that enough had been spent and that it was time to address economic development issues.

The \$64.5 million spent in southeast Kentucky was four percent of ARC's total expenditures on education, health, and community development through 1992. Of the \$64.5 million, \$11.1 million was spent on education (2.1 percent of the ARC's total expenditure on education), \$27.9 million on health care (6.3 percent of the total expenditure on health care), and \$25.5 million on community development (4.0 percent of the total expenditure on community development) (Table 6-3). These figures support several findings in Chapter's 4 and 5. The population of the sixteen counties of southeast Kentucky was 1.6 percent of

Table 6-3. Total Appalachian Regional Commission expenditures in the Cumberland Valley Area Development District and Kentucky River Area Development District, 1965 to 1992.

	Education	Percent of Total	Health	Percent of Total	Community Development	Percent of Total	Percent of 1990 ADD Population
<u>Cumberland Valley</u>							
Bell	\$1,567,174	26.6	\$4,955,500	28.6	\$1,140,918	7.3	14.3
Clay	332,186	5.6	1,895,773	10.9	842,760	5.4	9.9
Harlan	1,147,609	19.4	1,838,848	10.6	3,950,798	25.3	16.6
Jackson	0	0.0	59,062	0.3	1,357,213	8.7	5.4
Knox	851,983	14.4	908,508	5.2	2,130,249	13.7	12.3
Laurel	1,444,920	24.5	614,627	3.5	1,946,110	12.5	19.7
Rockcastle	323,278	5.5	0	0.0	1,759,570	11.3	6.7
Whitley	137,000	2.3	2,270,195	13.1	1,857,340	11.9	15.1
Multi	8,202	1.7	4,814,386	27.7	622,745	4.0	-
Total	\$5,902,352	100.0	\$17,356,899	100.0	\$15,607,703	100.0	100.0
<u>Kentucky River</u>							
Breathitt	\$ 342,499	6.6	166,417	1.6	1,435,800	14.5	12.7
Knott	1,382,471	26.5	1,450,059	13.8	1,376,882	13.9	14.5
Lee	132,303	2.5	289,126	2.7	1,218,314	12.3	6.0
Leslie	485,112	9.3	1,466,803	13.9	245,000	2.5	11.1
Letcher	578,571	11.1	114,999	1.1	2,832,256	28.6	21.9
Owsley	66,962	1.3	224,952	2.1	181,000	1.8	4.1
Perry	1,325,396	25.4	2,488,898	23.6	1,471,442	14.8	24.5
Wolfe	0	0.0	0	0.0	704,091	7.1	5.3
Multi	899,035	17.3	4,337,783	41.2	452,123	4.6	-
Total	\$5,212,349	100.0	\$10,539,037	100.0	\$9,916,908	100.0	100.0
<u>Study Area</u>							
Total	\$11,114,701	-	\$27,895,936	-	\$25,524,611	-	-

Note: Percents may not add up to one hundred due to rounding.
Source: Calculated by author from ARC documents.

the total ARC population. Therefore, the study area received greater shares of education, health care, and community development funds than its population suggests. The region's share of education expenditures (2.1 percent) came closer to matching its population share than health care (6.3 percent) or community development (4.0 percent). This corroborates the moderate, but significant, correlation between education expenditures from 1965 through 1974 and county population.

Several factors account for the greater concentration of education, health care, and community development expenditures in southeast Kentucky compared with its share of the ARC's population. First, the area is within Central Appalachia which received a greater per capita allocation of ARC funds than other areas. Second, the sixteen counties are in the heart of the Kentucky coalfields. In Chapter 5 a moderate, but significant, correlation was found between coal production and ARC health care expenditures. Third, the sixteen counties received preferential health care funding compared with other Kentucky counties because they were designated as a health demonstration area from 1965 to 1974.

Further spatial analysis involves comparison of the distribution of education, health care, and community development expenditures with the distribution of

population. The first step in this analysis calculates the percentages of southeast Kentucky's and each area development district's education, health care, and community development expenditures in each county (Table 6-3). The percentages are correlated with the percent of southeast Kentucky's and each area development district's population in each county. The correlation coefficients derived from the analysis are shown in Table 6-4.

Education expenditures have the strongest correlation with southeast Kentucky's population ($r = .7088$) and is significant at the .01 level. Community development and health care expenditures have moderate correlations with population ($r = .6483$ and $r = .5123$) at the .05 levels. Education expenditures have the strongest correlation with the distribution of population in the Cumberland Valley Area Development District ($r = .7302$). This strong correlation is significant at the .05 level. In Cumberland Valley, community development expenditures have a moderate, but not significant, correlation ($r = .4494$) with population. Relationship between health care expenditures and population are moderately weak ($r = .3817$) and not significant. In the Kentucky River Area Development District, education expenditures and community development have the strongest correlations with the distribution of population ($r = .7666$ and $r = .7194$), and both are significant at the .05 level.

Table 6-4. Correlation coefficients for relationships between Appalachian Regional Commission education, health care, and community development expenditures and population for the study area, Cumberland Valley Area Development District, and Kentucky River Area Development District.

	County's Percent of Total Population
<u>Sixteen-county study area</u>	
County's percent of education expenditures	.7088**
County's percent of health care expenditures	.5123*
County's percent of community development expenditures	.6483*
<u>Cumberland Valley ADD</u>	
County's percent of education expenditures	.7302*
County's percent of health care expenditures	.3817
County's percent of community development expenditures	.4494
<u>Kentucky River ADD</u>	
County's percent of education expenditures	.7666*
County's percent of health care expenditures	.5785
County's percent of community development expenditures	.7194*

Note: * Significant at .05 level
 ** Significant at .01 level

Health care expenditures have a moderate ($r = .5785$), but not significant, correlation with population.

That expenditures for education are more evenly distributed among the population than for health care or community development, and that health care expenditures correlate the least with population provide further confirmation for the conclusion in Chapter 4 that education's and health care's position in the United States political economic structure influenced the distribution of the funds. States and counties are responsible for education and community development activities, including water and sewer infrastructure, parks, and several other services funded under ARC community development. Health care is quite different because it is market-oriented with government only providing oversight. Concern by state and local officials for an equitable distribution of education funds per capita resulted in a strong relationship between these funds and population distribution. Health care expenditures are less correlated with population because the location of a region's health infrastructure is more concentrated than its education infrastructure. In a market-driven industry, a physician will typically choose an urban location with an established health infrastructure. Because ARC health care expenditures were tied to infrastructure, they were concentrated in the larger

municipalities. This concentration is supported by the statistical analysis in Chapter 5. In the 121-county area of Central Appalachia, the correlation between non-federal physician rate and population density decreased noticeably (.6710 to .4860) when the large urban counties were excluded.

Health care expenditures were not even equitably distributed among southeast Kentucky's most populous counties. Perry County had 24.5 percent of Kentucky River Area Development District's population and received 23.6 percent of the health care expenditures. The large regional hospital in Hazard accounted for this concentration. However, Laurel County, Cumberland Valley's most populous with 19.7 percent of the total, received only 3.5 percent of the area development district's health care expenditures. Laurel County's hospital, Marymount, is a small community one. Cumberland Valley's largest regional hospitals are in Bell and Whitley counties. Although Bell County had only 14.3 percent of the area development district's total population it received more than 28 percent of the health care expenditures. Bell County had two hospitals that received ARC funds.

Health Care Projects

Southeast Kentucky was an early focus of health care expenditures. Between 1965 and 1992, the ARC spent \$27.9 million on health care projects (Table 6-3). More than 82 percent of this total was disbursed between 1965 and 1974, only 14.6 percent was spent between 1975 and 1981, and 3.2 percent between 1982 and 1992. Few nonmetropolitan areas the size of southeast Kentucky have received this level of federal health-care funding. A major reason that Kentucky and the sixteen counties garnered a significant share of ARC's health care expenditures was an early start. Soon after the Appalachian Regional Development Act was passed in March 1965, Kentucky applied for and received a grant from the Office of Economic Opportunity to begin planning health care activities to be funded by the ARC (Singer and Holden 1970). With the assistance of the state health department and the University of Kentucky Medical Center, the state's Area Development Office chose eleven counties in southeast Kentucky to serve as a demonstration area. The Southeast Kentucky Regional Health Demonstration Area proposal was submitted to the ARC in January 1967 and approved in November among the first projects (ARC 1968a).

In 1969, five counties were added to the demonstration area to make its boundaries coincide with redefinition of

Kentucky's Area Development District boundaries (Groschelle 1969).⁴ The demonstration area was located in the heart of the Central Appalachian coalfield, and "the natural inter-relationships of traffic and economic patterns among the counties made them a homogenous unit" (ARC 1968c, 9). The homogeneity, however, was compromised by the inclusion of the five counties, which are part of a topographic, demographic, and economic transition zone between the coalfields to the south and the Bluegrass Basin to the north. In 1970, the five had no urban population. Because of the differences, they were never effectively incorporated into the Southeast Kentucky Regional Health Demonstration's plans, evidenced by low health care expenditures. Between 1965 and 1974, ARC health expenditures in the five totaled only \$99,126 (Table 6-2).

In 1970, Southeast Kentucky had sixteen general hospitals with a total of 1,000 beds (Southeast Kentucky Regional Health Demonstration, Inc. 1971). The small sizes of the hospitals restricted the quality and level of services. None was a major emergency facility staffed with physicians twenty-four hours a day (Southeast Kentucky Regional Health Demonstration, Inc. 1968). Despite the uneven spatial distribution of the hospitals, locations

⁴ The counties added were Rockcastle, Jackson, Owsley, Lee, and Wolfe.

corresponded to population. The southernmost counties--Whitley, Knox, Bell, Harlan, and Letcher--had 48 percent of the area's population and 58 percent of the hospitals. The higher concentration of hospitals in the southern portion of the area was largely due to the system of miners' hospitals established by the United Mine Workers in the 1950s. Health clinics had a similar pattern. A significant absence of health facilities and personnel existed in the northern portion of southeast Kentucky. All counties had health departments, but several were staffed by part-time employees (ARC 1968c). Nurse and physician-population ratios were well below national averages. The Kentucky River Area Development District physician-population ratio was 2.5 times below the national average in 1970 (Singer and Holden 1970).

Between 1968 and 1974, the Southeast Kentucky Regional Health Demonstration Area received \$22.9 million, 82.2 percent of ARC health care expenditures in the sixteen counties. A variety of health care projects were funded including grants for operating county health departments, clinics, emergency services, home and mental health programs, recruitment of personnel, and construction of facilities.

Construction projects, \$11.6 million, accounted for 51 percent of ARC health care expenditures in the Southeast

Kentucky Regional Health Demonstration Area between 1965 and 1974.⁵ Seventeen projects were funded at ten hospitals, two county health departments, and a primary-care clinic. Most hospital projects involved additions for extended care, emergency care, and mental health. Three were United Mine Worker hospitals saved from bankruptcy by the ARC in 1965. Only one new hospital was constructed. Three primary-care clinics received ARC construction funds in the sixteen counties. Two were grants of less than \$100,000 to expand health departments in Clay and Jackson counties. The only primary-care facility to receive substantial ARC construction funds was the June Buchanan Clinic in Knott County, which was granted \$572,879. This facility also received ARC operating funds totaling \$822,331 between 1975 and 1978.

Hospital construction projects are a lasting legacy of ARC health care programs, for the hospitals still serve southeast Kentucky's population. The five-year operating grants ended more than twenty years ago. The Frontier

⁵ This percentage is slightly higher because a portion of the regional mental health funds given to each Area Development District included a construction component. Usually, the ARC-provided database gave adequate information about the type of project funded. However, in some instances, the project name was not descriptive enough to decipher between construction and operating funds. Project descriptions and figures are limited to ones that are identifiable.

Nursing Service received \$1.3 million from the ARC in 1970 to replace the old Hyden hospital in Leslie County with a new facility that also would serve as a clinical training center for family nurse practitioners. In 1997, the Mary Breckenridge Hospital still provided essential services to an economically-depressed rural area. In Clay County, \$1.8 million was used to reconstruct the old Manchester Memorial Hospital, which still functioned in 1997. Bell County received more than \$2.9 million in construction projects between 1965 and 1974 for hospitals in Pineville and Middlesboro. Pineville Community Hospital's new addition almost doubled the size of the facility.

Field investigation revealed that eight of the ten hospitals which received ARC construction funds are still in operation. The two that closed, Corbin and Hazard, were replaced with larger, more modern facilities in the early 1980s. During the late 1970s, there was discussion of constructing a regional facility that would combine Marymount, London's hospital, with Corbin's. Intense arguments between local officials killed the proposal and resulted in expansion of Marymount Hospital and construction of the new Baptist Regional Medical Center in Corbin (Cass 1994). Neither the new Hazard Appalachian Regional Hospital nor the Baptist Regional Medical Center in Corbin received ARC construction funds. The ARC gave the new Hazard

hospital \$500,000 for equipment. In 1997, the old Hazard hospital building, which received ARC construction funds, provided crucial space for the University of Kentucky Center for Rural Health, offices for the Appalachian Regional Hospital Corporation, and classrooms for Hazard Community College. The old Corbin hospital, however, sat abandoned. The building was structurally sound, but Cumberland Valley Area Development District officials had been unable to find a suitable tenant or use for the facility.

ARC operating grants were primarily used to help existing health facilities provide primary-care services. While primary care was highly touted by the ARC, few facilities in the sixteen counties received operating funds because of the heavy emphasis on construction. The June Buchanan Clinic in Knott County and the Clover Fork Clinic in Harlan County were the only two facilities in southeast Kentucky that received substantial operating assistance. The Clover Fork Clinic in Evarts was one of the best-known ARC-funded primary health care projects. The first director of ARC's health program claims Clover Fork was the most successful primary-clinic project funded by the ARC (Napolitano 1994). The ARC praised Clover Fork because of its early success in one of Appalachia's most economically depressed regions and its ability to be self-sufficient after ARC funding ended. Evarts is approximately seven

miles east of Harlan, nestled along the Clover Fork River Valley in the heart of the coalfields. In 1968, Ewart's only physician left to join a group-practice in Harlan because of the heavy patient load. The city council formed a non-profit organization to hire a doctor and to seek federal assistance to open a primary-care clinic. Between 1970 and 1974, the ARC provided \$640,597 in operating funds for the clinic. By 1977, Clover Fork was operating without any federal funds. In 1997, the clinic still provided basic medical, dental, and pharmacy services in one of the poorest regions of Appalachia.

Emergency services were modestly dealt with during the demonstration period. They accounted for 8.5 percent of the Southeast Kentucky Regional Health Demonstration Area expenditures and were for an emergency communications network and ambulance services. Between 1969 and 1971, more than \$260,000 was spent on an emergency radio communications network that linked small hospitals with larger ones in Corbin, Harlan, and Hazard. Eventually, the Kentucky Hospital Association connected the system to the statewide one (Southeast Kentucky Regional Health Demonstration, Inc. 1971). Ambulance service accounted for 64 percent of emergency services expenditures during the demonstration period. A 1968 survey of southeast Kentucky highlighted the inadequacies and difficulties local governments experienced

in providing ambulance service. Only 10 percent of the area's ambulances had adequate equipment to provide minimum emergency services (Southeast Kentucky Regional Health Demonstration, Inc. 1968). Only seven counties and one city funded emergency and/or rescue squads. Funeral homes were the main providers of ambulance service, especially in the Cumberland Valley Area Development District. An ambulance service was funded by the ARC for each Development District. Ambulance service for Cumberland Valley received \$403,580 between 1970 and 1972. Implementation of ambulance service in Cumberland Valley proved difficult because funeral homes initially resisted the competition (Singer and Holden 1970). Kentucky River's ambulance service received more than \$1 million and did not experience similar difficulties. More local governments were providing ambulance services in Kentucky River than in Cumberland Valley. After 1975, the sixteen counties did not receive any additional ARC funds for emergency services. This did not mean that provision of emergency services was no longer a problem in southeastern Kentucky. For example, ambulance services put a strain on the Leslie County budget in 1994 (Hall 1994).

During the first year of the Southeast Kentucky Regional Health Demonstration Area, \$202,400 in operating funds were distributed among twelve home health agencies. Because at the time the five northern counties were not part

of the demonstration area, they did not receive any funds, and no attempt was ever made to assist home health agencies in them. Six of the twelve agencies were operated by county health departments, two by hospitals, three by private clinics, and one by the Frontier Nursing Service. In an early review of the Southeast Kentucky Regional Health Demonstration Area, Singer and Holden found hospital and clinic agencies were more efficient than those operated by county health departments (1970, 13). Lack of technical competence and emphasis on prenatal care were among the problems of county agencies. Most of the county agencies, or their "descendants," still operate, but the one-time grant from the ARC was inconsequential in their success.

Mental health and rehabilitation account for 17.5 percent of the Southeast Kentucky Regional Health Demonstration Area expenditures. More than \$4 million was given to three regional mental health centers in Corbin, Hazard, and Harlan. The Southeast Kentucky Regional Health Demonstration Area administration assigned these projects a low priority, but, according to Singer and Holden, the ARC approved early funding because the proposals were well written (1970, 16). Singer and Holden discovered that the problems with mental health care were typical of operating grants funded by the ARC: inability to recruit qualified personnel, in this case psychiatrists, and lack of adequate

funding once ARC aid ended (1970, 16). The education and recruitment of health personnel received little financial attention during the demonstration period. Only \$292,828, 1.3 percent of Southeast Kentucky Regional Health Demonstration Area expenditures, were used for such grants.

During the primary care phase between 1975 and 1981, the ARC spent \$4.1 million on health care projects in southeast Kentucky, 14.6 percent of total health care expenditures. Introduction of block grants in 1975 had a significant impact on health care expenditures in the area (Figure 6-2). The decline in expenditures after 1975 was a conscious decision by state officials that enough had been spent on health care infrastructure, despite persistence of a mediocre one in southeast Kentucky. The time had come to use ARC funds for other projects. The type of health care projects changed. Sixty-eight percent of the \$4 million was spent on regional projects rather than on individual ones.⁶ Regional projects involved education and technical assistance. In Cumberland Valley, the projects included a \$746,988 health professions' scholarship program, \$179,355 in technical assistance funds for health planning, and more than \$1 million to create Mountain Trails Health Maintenance

⁶ Regional projects refer to projects labeled "multi" in the ARC databases. These projects provided funds to be used throughout an Area Development District.

Organization. However, by 1991 Mountain Trails was no longer operating because of financial difficulties (MDS Associates 1991, 5). A few expenditures were overruns from projects funded during the demonstration phase. Such projects included completion of Mary Breckenridge Hospital, Middlesboro Appalachian Regional Hospital, and Pineville Community Hospital. Primary care clinics in Breathitt, Knott, Lee, and Perry counties also received ARC funds averaging \$296,000 per project.

Between 1982 and 1992, the ARC spent \$902,229 on health care projects, 3.2 percent of total health care expenditures in southeast Kentucky. While the amount was much less than during the two earlier phases, southeast Kentucky still received more than most areas of the ARC region. Bell, Harlan, Perry, and Owsley were the only counties that received funds. More than half of the funds (\$574,917) were used to purchase equipment for the new Hazard Appalachian Regional Hospital. Two projects in Bell County totaling \$151,714 were aimed at reducing infant mortality. However, five additional counties qualified for such projects but received no funds. Other projects included \$51,043 to the Clover Fork Clinic and \$75,000 to the Owsley County Medical Clinic. While four of the five projects reflected stated ARC health objectives of reducing infant mortality and assisting primary care providers, most expenditures were for

purchase of equipment that did not support policy objectives.

Education Projects

Between 1965 and 1992, the ARC spent \$11.1 million for education projects in southeast Kentucky (Table 6-3). Vocational education projects comprised 76 percent of the expenditures. Higher education projects ranked second and accounted for 16.5 percent. The majority of education expenditures were for construction. Education expenditures peaked in the early 1970s and then decreased (Figure 6-2). More than 68 percent of education funds were spent between 1965 and 1974, 29.5 percent between 1975 and 1981, and two percent between 1982 and 1992. Although the pattern is similar to health care expenditures, the amounts were smaller (Figure 6-2).

The condition of vocational education in 1965 helps to explain the ARC's commitment to it. In 1965, vocational education schools in southeast Kentucky were at Hazard, Harlan, Barbourville, and Jackson (Figure 6-3). The schools at Hazard and Harlan opened in the mid-1940s and were funded primarily with state money. By the mid-1960s, both schools had moved into new facilities. The new Hazard facility was constructed with federal assistance under the Vocational

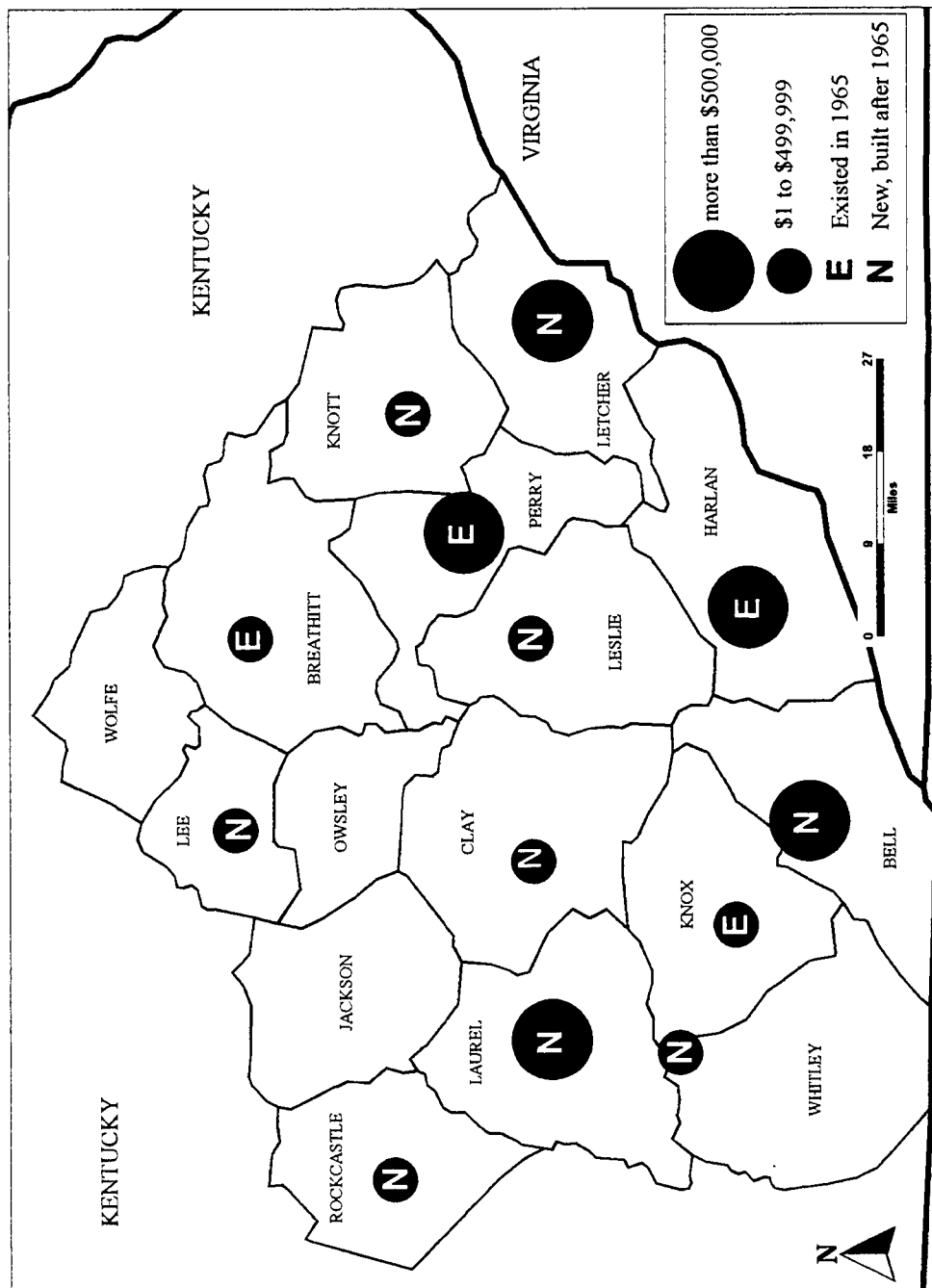


Figure 6-3. Vocational education construction expenditures in southeast Kentucky, 1965 to 1992. Compiled by author from ARC documents.

Education Act of 1963. The Barbourville and Jackson schools opened in 1963 and were small extension centers of vocational schools in Paintsville and Harlan. The extension centers were constructed with local school district funds and equipped using state funds.

State officials were not satisfied with the geographical distribution of vocational schools in Appalachian Kentucky. The ARC's decision to concentrate on vocational education caused Kentucky officials in 1965 to embark on a seven-year, capital-intensive program to construct more vocational education schools in Appalachian Kentucky. Ten new schools were proposed in southeast Kentucky, as well as additions to the four existing ones. ARC funds significantly added to the vocational education capacity of the schools in the region (Figure 6-3). Kentucky used ARC funds to supplement those from the Vocational Education Act of 1963 to help construct nine new vocational education schools in the area.⁷ ARC funds totaled more than \$8 million. Geographically, vocational schools were distributed according to population. Such a spatial pattern is confirmed by ARC education expenditures correlation with population (Table 6-4).

⁷ The only proposed school not funded by the ARC was in Jackson County.

A brief profile of ARC's expenditures at one of the vocational schools illustrates the type of assistance. The Hazard Area Vocational Technical School received more than \$1.3 million from the ARC between 1967 and 1979. About one-half of the funds were used to construct a heavy equipment building in the late 1960s. Other projects included equipment, housing, and a mock mine structure. Most vocational schools that received ARC funds taught industrial trade skills to secondary school students, but there were exceptions. In 1977, a major flood destroyed the Pineville School for Practical Nursing. The school received \$832,101 from the ARC in 1979 and 1980 to rebuild. The facility reopened in 1982 as the Cumberland Valley Health Occupations Center (Sharpe 1994). In 1994, the facility was one of five health centers in the Kentucky Tech system. The center had 113 students and thirteen faculty members. Its degrees included ones in surgical technology, radiology, respiratory care, and nursing. The facility's success was evidenced by a five-year wait in 1994 to enroll (Sharpe 1994).

Constructing and equipping higher education facilities were the second most heavily funded education projects in southeast Kentucky, but totaled only \$1.8 million. Only three of the region's nine higher education facilities received ARC funds. Lee Junior College in Breathitt County obtained \$114,128 for laboratory equipment and a closed

circuit television system, Union College in Barbourville got \$808,289 to construct a science building addition and purchase laboratory equipment, and Alice Lloyd College in Knott County was granted \$908,469 for several projects. The concentration of expenditures at Alice Lloyd College is partly related to its well-known history of providing low-cost education for poor Appalachian youth. That several influential Kentuckians attended Alice Lloyd, including Congressman Carl Perkins, aided the college in obtaining ARC funds.

The largest education expenditure, other than for vocational and higher education, was a teacher development project by a regional education cooperative in the Kentucky River Area Development District. A legacy of the ARC's push for creation of regional education service agencies, the Kentucky Valley Educational Cooperative was organized in 1970. In 1996, it served eleven school districts in Kentucky River's eight counties. The cooperative had forty employees and an annual budget of two million dollars. Fifteen percent of the cooperative's budget came from the federal government, particularly the Department of Education (Cornett 1994). More than 50 percent of the budget was used for General Equivalency Diploma training and adult education. Three hundred people annually receive their diploma through the cooperative (Cornett 1994). The

cooperative also was responsible for most of the driver's education courses taught in the local schools and assisted with special education.

Kentucky Valley Educational Cooperative received ARC funds for two projects. Between 1976 and 1980, it obtained \$446,008 to implement an in-service training program for teachers. During the program's second year (1977-1978), the cooperative offered 43 in-service classes at eleven schools. Most classes focused on traditional instructional topics. Several classes were creative and included team teaching, non-graded classrooms, and implementing Appalachian heritage in the English curriculum. What happened to the in-service program is typical of ARC projects. When the five-year ARC funding ended, the project ended. The cooperative continued to offer in-service programs, but not of the quantity and quality of the ARC-supported ones (Cornett 1996).

The second Kentucky Valley Educational Cooperative project funded by the ARC was a five-year, dropout-prevention program which extended from 1986 to 1991. To understand ARC's financial contribution to this project, it is important to remember ARC's status in the late 1980s. The agency was existing on its lowest appropriations since its inception (Figure 3-1). A private organization, the Steele-Reese Foundation, provided 60 percent of the dropout-prevention project's budget. ARC's contribution was only

\$8,500, 10.2 percent. The State Department of Education and local school districts were responsible for 30 percent. The program included teachers' visits to parents, an adopt-a-student service in which individuals from the community were teamed with students, and a variety of other activities to prevent drop-out. The project's goal of improving the percentage of students retained by 8 percent was slightly surpassed (Cornett 1996).

ARC support was not crucial to Kentucky Valley Educational Cooperative's survival. State funds have kept the cooperative functioning. However, the cooperative's ability to innovate and experiment with new educational techniques and philosophies was seriously hampered by the absence of ARC expenditures (Cornett 1994). While a private foundation provides the bulk of funds for innovative projects such as dropout-prevention, it does not replace the void left by absence of ARC expenditures.

Although ARC education expenditures in southeast Kentucky declined after 1982, several notable initiatives were funded. Most were adult literacy and dropout-prevention programs. Such programs became part of ARC education policy in 1976, but funding was minimal until 1985. In addition to the Kentucky Valley Educational Cooperative, two other dropout-prevention programs were funded in southeast Kentucky, one at the Pine Mountain

Settlement School in Harlan County and one administered by the Owsley County Board of Education. Collectively, the three programs received only \$91,283 in ARC funds. After nearly 20 years of documenting school dropout problems, the ARC finally funded programs that specifically addressed the problem. Between 1986 and 1992, the ARC funded eight adult literacy programs in southeast Kentucky, totaling \$36,650. Other miscellaneous education projects funded by the ARC included a program for dyslexic students at Hindman Settlement School and a student-parent resource center in Owsley County. Hindman Settlement School's summer tutorial program for dyslexic students received \$40,000 from the ARC in 1991 and 1992 as "scholarship" money for students from eastern Kentucky (Mullins 1996). ARC funds were 20 percent of the total. In 1992, the school expanded to a full-time program for dyslexic students with \$70,000 from the ARC for start-up and staffing. Hindman Settlement School's executive director stated that the ARC made it possible for the school to get "over the hump" in funding the program (Mullins 1996).

Community Development Projects

The ARC spent more than \$25.5 million for community development projects in southeast Kentucky between 1965 and

1992 (Table 6-2). Water and sewer systems were the most frequently funded projects, accounting for 73 percent of the total. Community improvement projects ranked second with 12.8 percent of the funds, and industrial site development ranked third with 4.7 percent. Only 9.2 percent of the \$25.5 million was spent between 1965 and 1974, 43.5 percent between 1975 and 1981, and 38.2 percent between 1982 and 1992. This expenditure pattern is opposite those for education and health care (Figure 6-2).

Between 1965 and 1974, 45 percent of community development expenditures were for county and regional solid waste disposal systems. Each area development district received more than \$350,000, and Bell and Harlan counties obtained additional funds to improve their solid waste disposal systems. Since 1975, water and sewer system projects have comprised the majority of community development expenditures. Between 1982 and 1992, 93 percent of community development expenditures were for such projects. Other community development project types were largely ignored. Industrial site development expenditures decreased from \$1.3 million between 1975 and 1981 to zero between 1982 and 1992. Community improvement expenditures, including parks and community facilities, declined from \$2.9 million, 23.7 percent of the total, between 1975 and 1981, to \$363,216, 3.4 percent, between 1982 and 1992. Compared

to ARC averages, southeast Kentucky used a smaller percentage of funds for industrial site development (4.7 percent compared to 12.4) and a greater percentage for community improvement projects (12.8 percent compared to 5.5).

Explanations for these patterns are rooted in southeast Kentucky's unique economic and social milieu. The shift in emphasis to water and sewer systems after 1975 was primarily due to the concentration of distressed counties in southeast Kentucky. These counties were and still are in need of basic infrastructural services. Industrial site development and community improvement projects are more practical after adequate water and sewer systems are created. Another reason for lack of emphasis on industrial site development is that southeast Kentucky is at a competitive disadvantage in competition for manufacturing plants due to rugged topography, distance from major transportation arteries, and a dispersed undereducated rural population. The three industrial sites that received ARC funds are in the western part of southeast Kentucky. Two of the sites, Corbin and Mt. Vernon, are adjacent to Interstate Highway 75 and the other site, McKee in Jackson County, is within thirty minutes of the interstate. No industrial sites were developed in the heart of the coalfields using ARC funds.

Geographically, ARC community development funds in southeast Kentucky were spent in rural areas (Figure 6-4). Small communities in sparsely populated counties, including Mt. Vernon in Rockcastle, McKee in Jackson, Beattyville in Lee, Booneville in Owsley, and Campton in Wolfe were assisted in improvements to water and sewer systems. The moderately strong and significant correlations between population and community development expenditures in the sixteen counties and the Kentucky River Area Development District ($r = .6483$ and $r = .7194$, respectively) illustrate that sparsely populated counties received community development expenditures (Table 6-4). In these counties, community development expenditures were comparable to those for education and health care (Table 6-3). Expenditures in the five less-populated counties along southeast Kentucky's northern border support this conclusion. None of the five received a larger percentage of ARC education or health care funds than their population (13.3 percent) indicated. The counties got only 4.7 and 2.1 percent of southeast Kentucky's education and health care funds, but community development expenditures were 20.5 percent of the area's total. The large share of community development funds was because of the five's designation as distressed counties and also because of past neglect by the ARC. Rockcastle County is an example. Between 1965 and 1992, Rockcastle County

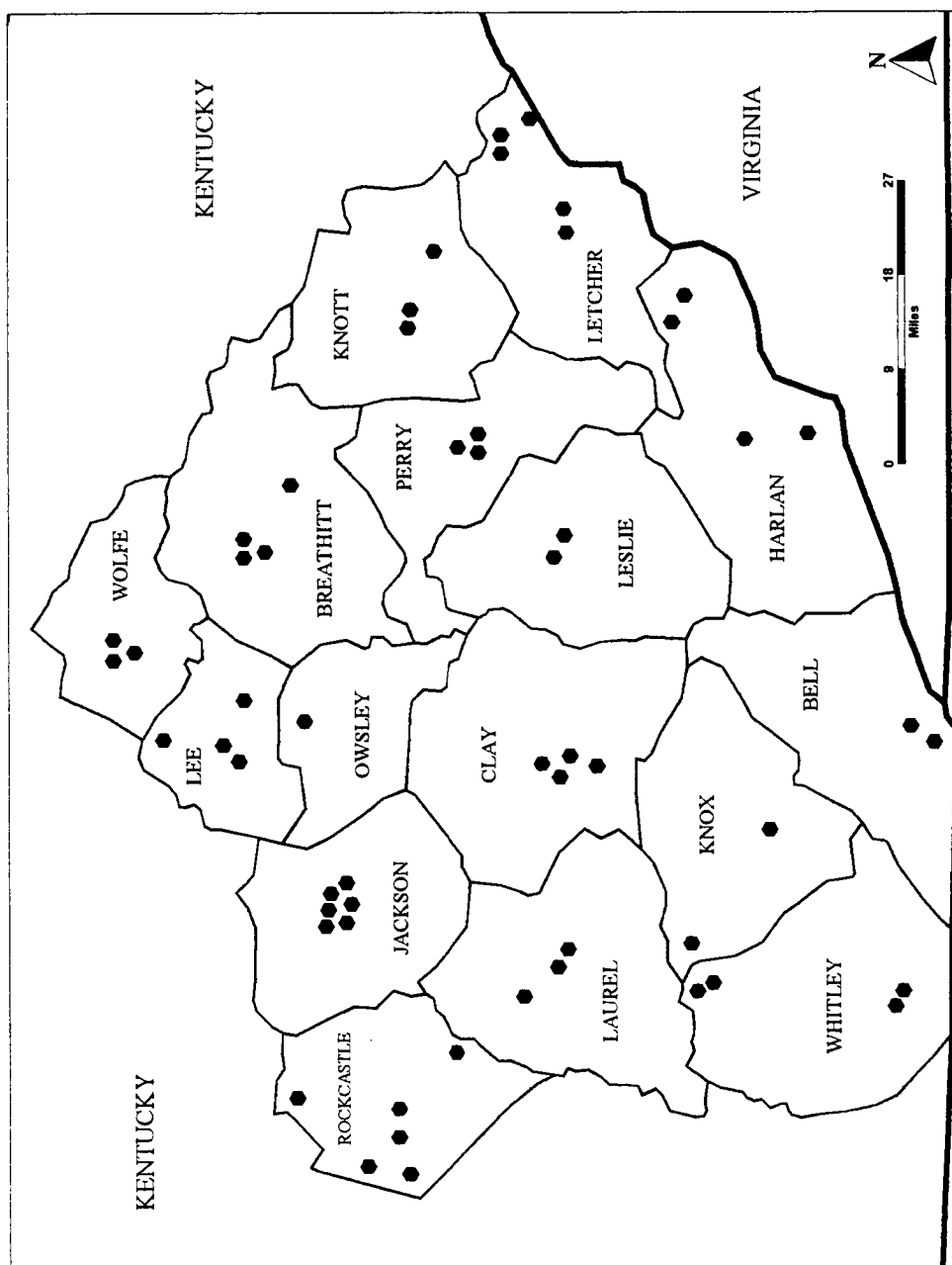


Figure 6-4. Water and sewer projects in southeast Kentucky, 1965 to 1992. Compiled by author from ARC documents.

received no ARC-funded health projects and only two education projects were funded. However, ten community development projects were funded, including seven for water and sewer systems, two for industrial site development, and a planning grant for a museum. While Rockcastle accounted for only 6.7 percent of the Cumberland Valley Area Development District's population, it received 11.3 percent of the community development funds.

During the winter of 1981, members of the ARC staff toured several areas in Kentucky, Tennessee, and West Virginia in preparation for the distressed county program. In Kentucky, they visited Owsley and Wolfe counties. Owsley County's water supply had high levels of iron and sulfur which caused chronic health problems. In 1978, the ARC contributed \$181,000 to expand Booneville's water system. Two problems were identified by the ARC staff with the project (Lambert 1981). There was a lack of licensed operators to administer, operate, and maintain the system. Also, residents were reluctant to give easement rights to extend water service to their homes. Skepticism of companies wanting access to private land is a cultural trait in Appalachia that was born from the legacy of unethical practices by coal companies to obtain mineral rights.

Wolfe County fared better than Owsley County in ARC funded community development. Before the distressed

counties program, the county had received \$11,160 in 1970 for a community service center in Campton and \$196,931 in 1974 to improve the town's water and sewer systems. The project proposed in 1981 involved extension of Campton's water system eastward to the small community of Hazelgreen. In 1988 the ARC funded a \$200,000 project to improve Campton's water system. In 1990, a \$296,000 grant was used to renovate the town's sewer treatment plant.

While the majority of community development consisted of water and sewer projects, there were several unusual and controversial undertakings. One was a 1991 planning grant of \$75,000 for a Kentucky Country Music Hall of Fame Museum in Rockcastle County. The museum was to be part of an existing small entertainment complex that included live music shows and craft shops on Interstate Highway 75 at Renfro Valley. There was considerable opposition to the project because federal money was to be used to assist a private business. The museum was unable to secure funding from other sources. In 1997, local officials were still interested in developing the Renfro Valley complex (Cass 1996). Sanctified Hill Park in Harlan County was another unusual community development project. The ARC used \$1.8 million to purchase property and relocate several families from a steep hillside that had begun to slide. This project received considerable media attention because it was the

first time that federal funds had been used in the area for this type of project (Cass 1996).

Conclusion

The types of ARC projects pursued by local and state officials reveal desire for economic development. While federal policy limited use of ARC funds, the agency's expenditures disclose that programs in southeast Kentucky were shaped as much by the unique character of the area as by ARC policy.

The legacy of ARC education and health care expenditures in southeast Kentucky was not what the agency originally intended. ARC's purpose in funding projects was to diversify the area's economy by creation of a well-educated, healthy work force that would attract industrial investment. The actual legacy was the creation of health care and vocational education infrastructures. While ARC expenditures did not add significantly to the region's health infrastructure, they did improve it. As for vocational education, the impact was greater, for ARC funds were spent in the right place at the right time. With the passage of the 1963 Vocational Education Act and the ARC's financial commitment to vocational education, state officials quickly took advantage of the federal funds to

build new schools in southeast Kentucky. ARC funds played a significant role in Kentucky officials' ability to locate new vocational education facilities in areas that needed them.

ARC's influence on southeast Kentucky's health infrastructure is more visible in small municipalities than large ones. ARC-funded construction projects play an integral role in the health care of rural communities and in small municipalities with community hospitals, including Manchester, Hyden, and Pineville. Because, rural Appalachia has difficulty in securing federal grants to replace ARC funding, facilities constructed more than two decades ago have not been replaced as many have in larger municipalities, like Corbin and Hazard.

The legacy of organization operating grants has been ephemeral. While these projects did benefit people at the time, over the long-term their contribution to regional improvement was minor. In a region of continued social and economic malaise, it is unrealistic to expect most organization operating grants to live beyond their funding. ARC's three to five-year operating grants created dependency on federal assistance without long-range planning for financial independence. An external review of the Southeast Kentucky Regional Health Demonstration Area plan for 1969-1970 questioned the lack of attention to continuing

financial support for projects (Singer and Holden 1970). From the perspective of the 1990s, if the ARC had not invested in construction, the region's infrastructure would be little improved from that of the mid-1960s. No other organization stepped in and filled the financial void left by declining ARC expenditures.

CHAPTER 7

CONCLUSION

The paradox of poverty amidst American prosperity still confronts our society. Attempts to redress these inequities have included private and public organizations. The efforts have been both small and large in scale. In Appalachia, the geographic pattern of social assistance prior to 1965 was characterized by an uncoordinated collection of small-scale, private charitable organizations. Strong-willed individuals like Alice Lloyd and Mary Breckenridge and religious organizations such as the Southern Mountain Workers Conference were the main providers. While such services improved the living conditions of a few people, they did not rectify Appalachia's widespread economic and social disparity.

In 1965, the federal government intervened and attempted to address Appalachia's problems. The Appalachian Regional Commission is one of the federal government's largest and most ambitious attempts to attack regional underdevelopment. The ARC's primary goal is to stimulate economic development with the indirect objective of improving social conditions. After thirty years and six billion dollars, the ARC's accomplishments receive mixed

reviews. Scholarly assessments of the agency's programs concentrate on highways with little attention given to education and health care. This study of ARC's education and health programs concludes that like pre-1965 assistance, the agency's social programs benefitted a limited number of people locally but were unable to reduce the region's poverty and underdevelopment significantly.

This study has several important insights missing in previous research. First, the geographic character of ARC education and health care expenditures differ. Previous studies failed to reveal them. Research at three scales uncovers the reasons for the differences. Examination of expenditures at the Local Development District level reveals that health care expenditures are clustered within the ARC region. Also, sharp intrastate differences exist. Education expenditures are more evenly distributed with less intrastate variation. The primary reason for the differences is that geographic decisions within the health industry are market-driven, while in education they are determined by state policy. Further explanation of the differences is revealed in statistical analyses of expenditures in Central Appalachia. Bituminous coal production, the number of non-federal physicians, and percent of labor force employed in wholesale and retail trade are significant explanatory variables for the

distribution of early health care expenditures. County population is a significant explanatory variable for early education expenditures but is insignificant in explaining health care expenditures. Consequently, education expenditures were more evenly distributed among the population than health care. The analysis of ARC expenditures in sixteen southeast Kentucky counties also revealed education expenditures more closely correlated with population than health care. Because states are responsible for education, expenditures are dispersed among the school districts in proportion to population.

A second important discovery concerns the ARC and the coal industry. The ARC views the coal industry as a positive factor in Appalachia's development. To the ARC, a strong coal industry means a strong regional economy. However, the agency has never questioned the industry's role in the region's problems. ARC's silence is a result of the strong role played by governors in the agency. Coalfield areas were major recipients of early health care expenditures. Given that ARC policy was to concentrate expenditures in areas lacking coordinated and efficient health care systems, the ARC indirectly acknowledged the social and economic malaise the coal industry created.

A third important insight relates to ARC's federal-state partnership and discussions in the 1990s of returning

power to the states. When Congress changed in 1975 appropriation of area development funds from a categorical approach to a block grant one, expenditure patterns were altered dramatically because states received greater discretion in the use of funds. This change led to a rapid decline in education and health projects and to an increase in sewer and water projects to stimulate economic development.

What lesson is learned from ARC's experience with the block grant appropriation? In dealing with disadvantaged areas, expenditures for economic development takes precedence over social spending because government officials are still wedded to the notion that economic development spending pays off in benefits more quickly and directly than social expenditures. State officials do not oppose using federal dollars for social programs, but when given the option of funding social needs or economic development leaders opt for the latter. If the ARC had used a block-grant approach from the beginning, the agency's most enduring social legacies, health care facilities and vocational schools, would not have been built.

While this study focuses on Central Appalachia, a larger question is the applicability of the findings to the ARC region. Would analysis in Northern and Southern Appalachia discover similar variables to explain expenditure

patterns? The spatial patterns of expenditures found in Central Appalachia are repeated throughout the region. Analysis of Local Development Districts reveals that health care expenditures exhibit a cluster pattern throughout the region while education expenditures are more ubiquitous (Figure's 4-12 and 4-13). However, the study's statistical findings are only partly applicable to the rest of the ARC region. Variables that explain education expenditures, including total population, percent of labor force unemployed, and percent employed in manufacturing are more likely to be found in other parts of Appalachia than variables that account for health care spending. State responsibility for education and concern for fairness in making ARC funds available to all counties of a state within the ARC region suggest these variables could be important outside Central Appalachia. However, the most notable variable that explains health care expenditures--coal production--is not likely to be found in many other parts the region because coal deposits are not ubiquitous in Appalachia. Other variables, including percent of labor force employed in wholesale and retail trade and the number of non-federal physicians, have better chances to be significant in other areas because service centers are locations of ARC health care expenditures irrespective of whether an area produces coal.

Were the ARC's social programs successful? If measured against the legislative mandate to create a highly-skilled and healthy labor force for the region, the answer is no. However, the programs were not complete failures. The unintended consequences of the large federal investment in Appalachia may be the most important legacies of the ARC. In attempting to accomplish its larger goals, the ARC significantly improved the infrastructure of schools, medical facilities, and water and sewer systems. Though gaps in the infrastructure still exist, particularly for water and sewer systems, the improvements since 1965 are dramatic. For Central Appalachia, these facilities are crucial to people's welfare.

Was the ARC successful? Though the agency's legislative mandate to stimulate and create a diversified economy was not fulfilled, again the unintended consequences are important. The ARC highway system opened Appalachia to outside investment, particularly retail trade. While the agency would have preferred manufacturing investment, the growth of retail trade in parts of Central Appalachia is important to local economies. ARC highways facilitate greater regional interaction, for travel times have been noticeably reduced. The ARC also creates mechanisms through which poor rural areas are able to capture federal attention and dollars. Without the ARC, many counties and

municipalities would not receive federal assistance.

Finally, the ARC's federal-state partnership is unique among federal programs, for it gives greater decision-making to states. This is extremely important in a region that is physically, socially, and economically diverse as Appalachia.

Debates over the successfulness of the ARC lead to questions regarding the distribution of highway and area development funds. The agency would have been more successful in accomplishing its legislative mandate of economic diversification if these funds had been distributed more equitably. An increase in the area development share from one-third of the Congressional appropriation to one-half not only would have put more money into the programs, but may have stimulated more creative ways to address health and education problems. For example, funding limitations caused health demonstration areas to be limited to one per state irrespective of need. Additional funds directed toward education may have encouraged innovative programs rather than ones that supplemented the Vocational Education Act.

What about the future of the ARC? In recent years, the ARC began identifying economically strong counties and has restricted funding for them. These are counties that have reached or exceeded economic equality with the nation in

terms of income, poverty and unemployment rates. Such prosperity in parts of Appalachia suggests that the ARC region could be geographically reduced. If the ARC has limited funding for economically strong counties, why continue to keep them part of the ARC? A more streamlined ARC focused on the distressed areas, particularly Central Appalachia, seems a viable option given the current Washington atmosphere of fiscal retrenchment. A more radical alternative would be to eliminate the agency and transfer the most viable programs, such as the distressed counties program, to another agency. For Appalachia advocates, the end of the ARC would be a tremendous setback because the existence of a distinct federal program legitimizes identification of the region and draws attention to its problems.

In the 1990s, the ARC survives on Congressional appropriations which are much smaller than in earlier years. Under the Clinton administration annual appropriations increased slightly, but attempts to terminate the agency also continue in the Republican-controlled House and Senate. ARC's impact on the region is much less in the 1990s than in the 1960s and 1970s. Since 1981, ARC's role has dramatically declined. Private institutions and foundations continue to work in the region and again have become the major providers of Appalachian social assistance. Articles

in the ARC's magazine, Appalachia, reveals that agency money is secondary to that provided by private organizations (Baldwin 1993; Casto 1992, 1996). Will a resurgence of the ARC occur and massive federal intervention in Appalachia happen again? While there may be further efforts to address rural poverty such as the rural Empowerment Zone/Enterprise Community Program of the mid-1990s, I do not believe Appalachia will again receive the attention given it during the 1960s and 1970s. The ARC emerged during a unique period in American history. The social and political turbulence of the 1960s led to creative federal legislation. The political climate was one in which government and society felt a moral obligation to assist Appalachia. At no other time in our history except the 1960s could ARC legislation have received Congressional approval. More than thirty years of special attention to Appalachia by the federal government may work against financial reinvigoration of the ARC and even against the agency's survival. While the future of the ARC is uncertain, Appalachia, particularly Central Appalachia, remains an area of economic and social disparity.

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