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I am submitting herewith a dissertation written by Patricia Dunigan Postma entitled "Entrepreneurship, The Spatial Network, and Local Choice: A Case Study of Differential Economic Development." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Economics.

Henry W. Herzog, Jr.
Henry W. Herzog, Jr., Co-Chairman

John R. Moore
John R. Moore, Co-Chairman

We have read this dissertation and recommend its acceptance:

Walter C. Neale

Accepted for the Council:

L. Evans Roth
Vice Chancellor
Graduate Studies and Research

ENTREPRENEURSHIP, THE SPATIAL NETWORK, AND LOCAL CHOICE: A CASE STUDY OF DIFFERENTIAL ECONOMIC DEVELOPMENT

A Dissertation

Presented for the

Doctor of Philosophy

Degree

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ABSTRACT

Though the disparities which existed among regions of the United States in the 1920's and 1930's--most notably between the Southeast and the northern regions--had decreased by 1980, regional disparities still exist. Looked at from a sub-regional viewpoint convergence of factor incomes and access to markets over the past 50 years appears less uniform. This study is an investigation into the differential rates of economic development experienced by small areas in the Southeast during the past 50 years. Coffee County in Tennessee and Pope County in Arkansas were selected as representative of faster growing counties in their states, and McMinn County in Tennessee and Jackson County in Arkansas represent the slower growing counties.

Using secondary statistical data, local newspapers and other historical materials, and open-ended interviews, most of the growth factors traditionally stressed in regional economics were investigated. It was intended that the evidence should suggest an hypothesis of differential economic development in small areas, and the hypothesis that appears to explain the experience in these four counties rests more upon non-conventional, institutional factors than upon conventional considerations of comparative resources or infrastructure.

Specifically, the investigation supports the hypothesis that differential growth and development in these four local economies of the Southeast over the past 50 years can largely be explained by 1) the regional setting, especially the relationship of the

local economy to the established transaction network of the nation; 2) the presence of entrepreneurs including political and social entrepreneurs; and 3) the community's choice to pursue or not to pursue the path of economic development and change. The two faster growing counties showed clear evidence of individual leaders, positive community support for economic change, access to political decision-making, especially at the federal level, as well as good access to urban areas via transportation routes, among other things. The two slower growing counties did not exhibit a pattern of individual leadership during the 50 year period, had little access to political decision-making, had few ties to large urban areas, and rather than supporting economic change showed clear evidence of internal conflicts and of powerful individuals or groups who saw economic change as inimical to their own interests.

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CHAPTER 1

INTRODUCTION, HYPOTHESIS, AND METHODOLOGY

Introduction

This study is an analysis of economic change from 1929 to the present in four county economies in the Southeast. Coffee County, Tennessee, and Pope County, Arkansas, are counties where economic growth and structural change have been relatively high. McMinn County, Tennessee, and Jackson County, Arkansas, have experienced less growth and structural change relative to their state averages, and relative to the two fast-growth counties. Although the areas of inquiry, and the perceptions of the county economies which resulted in the explanatory hypothesis presented below, were of course influenced by the literature of regional economics, the investigation of these development experiences was not structured by a prior hypothesis or a particular theory of regional growth and development. The questions used in the interviews and the local data gathered were intended to elicit information on physical and human resources; economic and political and social structure; urban relationships; significant events or individuals; and local attitudes. The actual events and local assessments of these events provided the empirical data from which an hypothesis of small area economic development is advanced.

The body of regional literature is extremely diverse. Location literature, city systems theory, pole theory, and demographic theory, all provided areas of inquiry for the interviews and data search. Concepts from economic geography influenced the statement of hypothesis by providing insight about the importance to local economies of the polarized network of economic and social transactions. Chapter 2 presents the literature which relates most closely to the hypothesis. The regional literature which influenced the structure of this investigation can be found in the List of References.

Selection of the Study Area

The Choice of States

The choice of the Southeastern region, and of the State of Tennessee, was made largely because data were more accessible to the author. In particular unique historical data for local areas of Tennessee were available as a result of early Tennessee Valley Authority (TVA) surveys. In addition, the author's familiarity with the region and the state was expected to be useful in assessing the role of qualitative and institutional influences on economic development. The inclusion of Arkansas counties in the investigation was intended to broaden the Southeastern representation slightly and to decrease the influence of any state associated peculiarity while keeping the primary data search within reasonable financial and time constraints. Tennessee and Arkansas are well suited for a joint study of economic development. Although the two states are quite different in shape, they have comparable land areas. Geographically, they are also similar--Arkansas' flat delta farm land bordering the Mississippi River changes quickly to the rugged ranges of the Ouachita and Ozark Mountains, while Tennessee's topography changes from the western delta area on the Mississippi to the Appalachian Mountains to the East. Although both economies were predominantly agricultural in 1929, Arkansas was and remains somewhat more dependent on agriculture. The states have very similar climates and each is netted by an extensive system of waterways fed by heavy annual rainfall. Both Tennessee and Arkansas were covered by dense forests that, along with the water power of numerous streams, provided livelihood for the states' early settlers.

The similarities of the two states include their early settlement patterns. In 1819 McMinn County was formed from land ceded by the Cherokees to the State of Tennessee. Ten years later the Cherokees ceded land to the Territory of Arkansas which subsequently became Pope County. The similar cultural traits of the people in the two states are not only the result of a similar environment but of direct migration streams from Tennessee to Arkansas. Of the 4,000 migrants to the Arkansas Highlands Region (including Pope County) reported by the Census of 1850, 42 percent were from Tennessee. In the next decade, 37 percent were from Tennessee and in each of the succeding two decades, 25 percent. In the Lowlands Region (including Jackson County), Tennessee contributed more migrants than any other state during the mid-1800's (Walz, 1958).

Despite these similarities, development, whether measured in terms of income, economic diversity, or population, came later to Arkansas than to Tennessee. At first, the territory around the Mississippi in both states was the most extensively developed and tended to be the most prosperous. However, Arkansas land, once cleared, was more suitable to the plantation method of cotton farming leading to the heavy concentration of Blacks in the delta region and the higher proportion of Blacks in Arkansas. The major railroads were in operation in Tennessee by the middle of the 1850's, while the main lines in Arkansas were not completed until 20 years later. This later development of the railroads in Arkansas delayed the extensive clearing of the land, and the smaller urban centers and more limited transportation reduced the strength of the internal connections, as well as access to outside cultural influences and technology. This difference in the chronological development of the two states and their consequently different access to national economic and social transactions was an important influence on the course of development of their counties.

The Choice of Counties

Two slow-growth and two fast-growth counties have been chosen as the study regions, primarily for practical reasons. If one wishes to get behind the regression relationships between growth and its determinants which are abstractions of large data sets, to ask why those determinants themselves are present in some places and not in others, feasibility leads one to begin with a small sample and economic communities of a small scale. Though non-metropolitan counties may be geographically large their set of economic activities is generally comprehensible, and at least during the early part of the study period, generally self-contained. Statistics reported for a county are often largely attributable to the activities of the county's urban areas and in spite of the fact that more and more of the income producing decisions are directed by the decision makers of the county's main urban area, and that local labor pools and trade areas cross county boundaries, the dearth of historical data for such county areas precludes studying smaller economic units. It should be noted that the factors which have been identified as critical to growth do have an important political and community focus and therefore give added validity to the choice of a political jurisdiction.

The initial measure used to classify counties as slow- or fast-growth was the rate of per capita income change from 1929 to 1976. The geographic distribution of fast- and slow-growth counties within each state was not random. Arkansas' fast growth region is in the northwestern quadrant and in the counties bordering Missouri, while the slow-growth counties are in the delta region of the Mississippi River. In Tennessee, too, most slow growth counties have been in the western third of the state nearest the Mississippi, while its fast-growing area has been a wide arc of counties from Nashville via Chattanooga to Knoxville and the Johnson City-Kingsport-Bristol region in the northeastern corner, but excluding the metropolitan counties themselves.

For the initial group of 20 fast-growth and 20 slow-growth counties in each state, population growth, SMSA status and per capita income levels were examined. Counties which were included in SMSA's, those which were atypically large for the group, or those which were extremely small in population, were eliminated. Because the objective of development efforts is generally to increase the well-being of the region, those counties which had high rates of growth but which were still extremely poor compared to their state average per capita income also were eliminated. In Tennessee, most of the SMSA counties were present in the slow-growth group, and in order to provide a wider range of slow-growth examples, five additional counties were added to the original twenty. The sets remaining after such eliminations were therefore not random groups of fast- or slow-growth counties, but were sets approximately average for the larger groups and whose 50-year fortunes had significantly affected county well-being as measured by relative per capita income level.

For the selected counties, a statistical profile was constructed using data from the 1930 censuses, and the most recent <u>County and City Data Book</u>, and from computations of decade-to-decade changes in population and per capita income. In addition, a thumbnail sketch of each county was prepared from readily available information. As might be expected, local area data for the early part of the 50-year time span was not abundant.

The final selection criteria in order of priority were (1) the county should not be extraordinary compared to its state or group, (2) the pairs within a state should be reasonably similar at the beginning of the period, and (3) the pairs between states should be reasonably similar. These criteria proved difficult to satisfy. Because of the chronological differences in development between the two states, it was not possible to meet both (1) and (3), thus the study is one of local area experience in two different developmental contexts. While Jackson County is by no means an extraordinary representative, its Black population has been smaller than most of its delta neighbors which largely comprise Arkansas' group of slow-growth counties. The intractable problems presented by a large Black population and the residues of a plantation agricultural structure are discussed in Chapter 3; they may well fall outside the realm of things which can be reasonably addressed by development efforts--at least from a political point of view.

Methodology

The Interviews

The interview subjects. A number of interview subjects were chosen for their prominent role in recent activities related to the county's economic development. Newspaper publishers, county extension agents, bankers, government officials, development or Chamber of Commerce executives, industry officials and history-minded individuals were among those who provided different types of viewpoints. The set of persons in each county varied depending on what influences appeared to be most important to that county. Because some kinds of data were more difficult to find in Arkansas than in Tennessee, an effort was made to interview more Arkansans. A list of the persons interviewed in each county is in the Appendix.

The interview process. Interviews were taped unless the subjects requested othewise. Frequently, sensitive topics or discussions of particular persons prompted subjects to ask that they not be quoted; for that reason most the the material included in the text is not attributed to specific persons. In no case did anyone decline to be interviewed and most were quite interested in the project. The interviews were able to draw on the knowledge of many of the individuals who apparently have played a pivotal role in their county's affairs, both presently and in the past.

Every subject seemed willing to discuss even sensitive topics candidly and honestly, although there was a difference in the ability of interviewees to respond to questions. A number of people perceived the thrust of the study and were helpful in suggesting important factors outside their specific area which should be pursued. Many were able to be analytical and relevant not only about concrete events but also about attitudes and political pressures which shaped local circumstances. There were, on the other hand, a number of instances where interviews were not successful in generating answers beyond the most obvious and where it appeared that the subjects commanded less knowledge or were able to communicate less knowledge of affairs than their position would indicate. The difference in interviews was not randomly distributed, and thus the process itself was one source of information.

In Tennessee, the interviewees were notable for their enthusiasm and interest. Most of the subjects were not only interested in their own jobs but in the affairs of the community as well; persons often had an understanding of events in the past whether or not they were personally involved. The rapport established in the Tennessee interviews may well be a result of representing the State University at home. There were, however, other differences besides rapport. In Jackson County, contacts were harder to come by. Subjects had fewer people to suggest and were less certain who the active community participants were. Very few subjects were able to range outside their specific baliwicks, and some subjects were unable to provide information on matters that were apparently pertinent. Generally, it was not possible to elecit information about matters very far in the past, even from subjects who had lived in Jackson county at that time.

Other Sources of Local Data

In addition to sources available at The University of Tennessee, the special collection of Arkansas literature at the University of Arkansas in Fayetteville provided useful regional and local data. The University's Industrial Research Extension Center in Little Rock provided a variety of studies, and regional development districts provided some recent data. One of the most valuable sources of the details of local history proved to be special editions of the newspapers commemorating county or town anniversaries. The dates and names involved in early industrial ventures and the founding of banks, the family links among various business activities, and short-lived efforts that are no longer in evidence would have been very difficult to discover otherwise.

Formulating an Hypothesis

Levels of Development

International and interregional trade theory has concerned itself with the conditions under which regions will exchange factors or commodities, and the resulting effects of such exchanges on both factor prices and commodity prices. Under the neoclassical assumptions of perfect competition in all markets, if total mobility of factors across regions is present, both commodity and factor prices would behave as they would in a single market and space is of no consequence. Clearly, however, the physical distances between regions or countries, as well as political and cultural constraints, make factor mobility considerably less than perfect, even in the 1970's. Where factors are imperfectly mobile, Hecksher and Ohlin showed that free trade of commodities acts as a surrogate for the mobility of factors and such unrestricted trade will tend in the same direction as factor mobility--that is, the equalization of factor prices and commodity prices among the trading regions.

The equalization of factor prices occurs because regions will specialize in and export those commodities which make use of factors which they have in relative abundance. The demand for the relatively abundant factors within a country brings an increase in their formerly lower prices while scarce factors are now less in demand and their prices decline. Samuelson and Stolper illuminated the obverse of the factor-price equalization tendency when they showed that the imposition of restraints on trade tended to bring about higher than equilibrium prices on goods, and a factor price disequilibrium in favor of a country's relatively scarce factor.

It has been a plausible assumption that within an open national economy the cultural, political, and trade barriers that prohibit factor-price equalization are minimized, and that especially in a highly developed country with advanced communication and transportation systems, factor prices will tend to equalize with little impediment via both commodity and factor mobility. Yet the long standing disparities in income among regions in the United States have made it clear that migration of goods and factors are not quickly achieved.

In the United States where high and low levels of development and income have coexisted over long periods of time, one of three conditions prevails: 1) less developed areas (that is, the economic actors or potential actors in less developed areas) are unaware of higher levels of development elsewhere; 2) less developed areas are aware of development alternatives and would prefer them but are unable to implement them locally; and 3) less developed areas are aware of development alternatives but choose not to implement them.

Ignorance of development alternatives. Less developed areas will be unaware of development alternatives if the transfer of communications via personal contact or the communications media is seriously deficient. Although communications in economically advanced nations appears to be efficient and widespread, in fact, economic information, and especially information of development-inducing economic innovations, travels along specialized, selected channels which are not ubiquitous. Such information is spatially biased. Furthermore, the usefulness of economic information may depend upon its early receipt. If it involves oligpolistic industrial structure, sales to specialized markets, or where its benefits depend upon initial monopoly profits only a few users can benefit. Basic to the adoption of sophisticated economic activities and products are an appropriate social structure and value system. Changes in community values and practices are likewise implemented by personal contact and exposure to the communications media. Where economic information is physically available but the local areas have no specialized receivers or where local areas do not perceive the information as appropriate or useful, the effect is the same as if the information were not available.

Inability to implement development alternatives. When less developed areas are aware of alternative economic possibilities, they may be unable to implement the changes if there is an absolute or comparative lack of indigenous, economically valuable factors and natural resources and insufficient interregional mobility. Where factors and resources are available, the execution of economic activities requires an entrepreneur. Local areas may be prevented from making desired changes because effective entrepreneurs are not present or because exogenous entrepreneurship cannot be attracted to the area. Finally, local areas may be prevented from participating in economic activities, not from a lack of local resources, including entrepreneurs, but from a failure of power--the ability to direct the course of relevant events. If local areas are in the thrall of external private interests, or if they simply have no access to private and public decisionmaking, economic development will be constrained.

Rejection of development alternatives. Less developed areas may explicitly choose not to pursue higher levels of economic development through a consensus that present circumstances are more desirable, or implicitly, via inertia or complacency. A pattern of behavior such as conflict or incompetence on the part of local leadership may also effectively preclude the achievement of intended changes. Likewise, the public or private power structure may view further economic development as inimical to its interests and may effectively prevent changes, thus choosing a course of retarded or sub-optimal development for the community. Kindleberger (1951), studying national responses to changes in the international wheat market, reached similar conclusion. That is, national responses were dependent on the relationships of various sub-groups within the society and not on "rational" market behavior.

Hypothesis

An examination of the four counties substantiates the role of each of these factors in local development, yet the role of endogenous resources, which has received a large share of attention in location theory and in comparative cost analysis of regional economics, appears to play a far smaller role than other factors. This study concludes that differential development in small regions can be explained largely by 1) the larger regional setting, which includes especially access to transactions and information from the outside; 2) local entrepreneurship broadly defined, including political entrepreneurship; and 3) the choice of the local area to effectively pursue additional development.

The Regional System and the Spatial Network

The larger regional setting provides a development probability for the local area. From an exogenous point of view the characteristics of the region with respect to physical resources, human skill levels, infrastructure, and social traits will be assigned to the local areas by those unfamiliar with it unless they have information which is specifically about the local area. Friedman (1973), in this context, speaks of the image of the region. Siebert (1969) and Pred

(1977) are among the authors who comment on the limited search that is done prior to location decisions. Decisions are generally made on the basis of readily available information, and that information will be about existing spatial patterns. Equally important, the possibility of allocating resources to ventures of local entrepreneurs may often depend on the intra-regional resources--those of the surrounding counties or nearby metropolitan centers. If financing, ancillary services, or regional markets are inadequate, local area development is much less likely to occur. Most influential is the importance of the larger region and its metropolitan areas to the national spatial network. If local areas have poor access to transfer of goods, to high density travel routes, and to information which relays technical and social innovations, significant development, either external or internal, is unlikely to occur.

Local Entrepreneurs

Entrepreneurship, in the traditional business enterprise sense, flourished in each of the counties during their developing periods in the late nineteenth and early twentieth centuries. During the 50-year period of study, however, the records of the four counties diverge. Business entrepreneurship, entrepreneurship with respect to community and regional infrastructure, and political entrepreneurship have played important roles in the counties with records of high growth, but have been absent or absent for long periods in the slower growing counties. The political entrepreneurs who have been able to direct state and federal expenditures to their local areas have brought significant development to the South as a whole, but especially to the recipient local economies.

Local Choice

At the local level, the explicit or implicit choice not to pursue more or different economic development plays a major role in differential economic growth. In the slow growth counties, complacency, conflict, or self-interested power structures are all clearly identifiable. Even if entrepreneurship does exist in such an environment, the local prevailing attitudes may prohibit development.

Summary

When disparate levels of economic development coexist among regions or areas of an open national economy, less developed areas may be unaware of development alternatives, may be unable to implement development alternatives, or may reject development alternatives. Coffee County, Tennessee, and Pope County, Arkansas, areas where economic change has been positive and relatively great--and McMinn County, Tennessee, and Jackson County, Arkansas--where economic change has been considerably less--were chosen as the areas for an investigation into the circumstances of differential area development between 1929 and 1979. The development experiences were not tested against a prior hypothesis or theory of regional growth. Instead, secondary data, interviews, and local histories provided a set of empirical data which then led to an hypothesis of small area development.

The investigation led to the conclusion that at the local level it is not the absolute or comparative lack of resources which has determined differential growth in local economies of the Southeast during the past 50 years, but rather 1) the relationship of the local economy and region to the established transaction network of the nation; 2) the presence of entrepreneurs, especially political entrepreneurs; and 3) the local choice to pursue or not to pursue the path of development.

CHAPTER 2

THE SPATIAL NETWORK, ENTREPRENEURSHIP, AND LOCAL CHOICE

In Chapter 1 it was noted that the regional setting of local economies affected their development in two ways: 1) through the actual and perceived level of physical, financial, and human resources, and 2) through the region's linkages in the nation's network of transactions and information flows. Both of these affect the probability that developmental innovations will occur endogenously or be attracted from the outside.

Two other factors have also been of primary importance in the differing rates of economic growth within the four communities. Local entrepreneurship has been notable in Coffee County, and recently in Pope County, while it has not been in the other two counties. Entrepreneurship has contributed to local development, whether in its classical role as effector of new business enterprises which create local income, or whether by "boosterism"--the support of, and creation of enthusiasm for improvements in local infrastructure, cultural access, or amenities. In the period of time under consideration, however, entrepreneurship of another kind has played a most significant role: political entrepreneurship. In an era of large federal expenditures on defense and research, and still other expenditures explicitly directed toward regional development, the South as a region has garnered a disproportionate share.[1] To the expanding public sector, southern political figures have played entrepreneur, introducing to their region the exotic technology of weapons and space research, and the more mundane opportunities of military procurement and river control. The impact on relatively rural economies of sizable public projects secured by a political mentor is likely to be profound. In the case of Coffee County and Pope County, public projects are clearly associated with the measured increases in income.

The third factor is that of choice: behavior which has as its basis the premise that growth and innovation are desirable, and seeks them. In the two communities with high economic growth, the preponderance of community leadership has been explicit in support of multifaceted economic development, of the value of an educated population, and of aspiring beyond the present circumstances, favorable or unfavorable. In the slower growth communities, the leadership has intentionally acted to resist changes in the economic or government structure, and the communities have reinforced that choice by internal conflict and complacency.

The purpose of this chapter is to note the theoretical and empirical regional literature which provided insight into these findings. The first section explores the concept of the spatial network and its relation to economic development. The polarized intra- and interregional network of economic and social transactions has received an

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[1]This point is developed in Chapter 3. Roger Bolton, in Defense Purchases and Regional Growth, Weidenbaum, in The Economics of Peacetime Defense, and Catsambas, in Regional Impacts of Fiscal Policy, all lend support to this view.

accelerating amount of theoretical and empirical attention in the last decade. Much of the literature lies outside traditional regional or development economics and within the broader area of regional science; and a number of valuable contributions have been made by Swedish regional scientists whose publications are not always as accessible as those of British and American regional economists. For these reasons the section on the spatial network is more extensive than the two following sections.

Section two notes several views of entrepreneurship: classical entrepreneurship which initiates innovative economic activity is central to Schumpeter's theory of economic development. Thompson and others have likewise noted classical entrepreneurship but have also touched on the concept of social entrepreneurship. Lastly, the second section develops the concept of political entrepreneurship proposed in this study. Section three calls attention to the dearth of literature on local choice and finds that local conditions relating to the propensity to adopt technical innovations are the relevant part of economic literature.

The Spatial Network

The Literature

The central place theories associated with Lösch and Cristaller were among the earliest theoretical attempts to understand the nature of the spatial system and its relationships. The simplifying assumptions of their theoretical structure are unsatisfactory, and, empirically, their perceived patterns of the descending hierarchical provision of services seems appropriate to trade and service activities, but not to the complex integration of present day manufacturing operations. Nonetheless, the insights of Lösch and Cristaller must be recognized as major contributions to any set of theories about regional systems.

Perroux's theory of industrial complexes which provide a propulsive impetus to economic development drew upon Schumpeter's theory of innovation as the key to economic development. Perroux, however, did not provide a model which traced the operational mechanisms whereby waves of sectoral innovations manifest themselves in spatial patterns.

A parallel development, and one which may go a long way toward providing an operational mechanism for Perroux's propulsive sectors, is the work on innovation, or technological, diffusion. Economists such as Mansfield (1968a, 1968b) treat the adoption of technical innovations from the micro-analytic viewpoint of the firm. Regional scientists, accepting Schumpeter's view of innovation as a source of development, have looked at the diffusion of innovation over time and space. By the early 1970's, a number of studies had investigated the diffusion and adoption of agricultural, industrial, or household innovations.[2] Brian Berry, whose work on city systems is another contribution to the literature under review here, argues that "the role

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[2]See, for example, Z. Griliches, "Hybrid Corn: An Exploration in the Economics of Technical Change," Econometrica, Vol. 25 (1957); A. Sutherland, "The Diffusion of Innovation in Cotton Spinning," Journal of Industrial Economics, Vol. 7 (1959); R. Dernberg, R. Rosetti, and H. Watts, Studies in Household Consumer Behavior, New Haven, Yale University Press, 1958; Robert L. Crain, "Fluoridation: The Diffusion of an Innovation Among Cities," Social Forces, Vol. 44 (1966); Brian J. Berry, "Hierarchical Diffusion: The Basis of Developmental Filtering and Spread in a System of Growth Centers," in Niles Hansen, ed., Growth Centers in Regional Economic Development, New York, The Free Press, 1972.

played by growth centers in regional development is a particular case of the general process of innovation diffusion" (1972:108). His model of diffusion includes both diffusion down the hierarchy of cities and diffusion outward from urban centers to their hinterlands.

In addition to Berry, other economic geographers have been major developers of regional systems theory; their primary emphasis has been on the theory and empirical study of information flows. In the United States, Pred (1966, 1973, 1977) has focused his studies on historical trade and information flows among urban areas, and the implications for regional development. Some of these findings are discussed below. Swedish geographers (Hagerstrand 1976; Törnqvist 1971, 1973) have done unique empirical work on the face-to-face contacts among business persons at various levels in an organization, and Thorngren (1970) provides a perceptive model of contact systems and regional development which is sketched briefly below. It is perhaps worth noting that Harry Richardson, in his 1978 survey of regional economics, comments on the difficulties of drawing the boundaries of regional economics and adds that some of the economic geography is indistinguishable from regional economics.

Finally, Siebert makes an important contribution to understanding the role of the regional system in local development. The focus of Siebert's open-regional model is on resource mobility and he is one of the few economists who deals explicitly with the role of information in economic growth. Siebert, in fact, believes that of all growth determinants, spatially immobile technical innovations has the strongest reinforcement effect. He notes that "the reinforcing effect of an immobile growth determinant may become even more apparent if we engage in a disaggregated analysis" --as we do in the present study (1969:144).

The Form of the Network

Nodes. The regional scientists noted perceive the regional system to be propelled by the activities of its urban nodes. With their juxtaposition of people, sophisticated services, varied economic activities, educational and research activities, and mixed cultural heritage, they not only possess the preponderance of present economic activity, but are most likely to generate and execute the innovations leading to further economic development. Hinterlands surrounding these large, innovating urban nodes, urban areas in lower orders of the regional hierarchy, and remote intra- or interregional places with specialized relationships to the innovating urban nodes, are the selected beneficiaries of the knowledge generated there. Friedmann, studying development in Venezuela (1966) and Chile (1973) and Richardson (1973), both emphasize the view of urban-centered activities and polarized diffusion patterns as central to regional development.

What is transmitted. The traffic density map which charts the polarized pattern of vehicular traffic in space, and the levels of vehicular flow between various nodes, is an excellent analog for the tangible and intangible traffic of goods, innovation, and values in space at a single point in time. Pedersen (1971) makes a distinction between entrepreneurial and household innovations is useful here. Household innovations are those which spread among individuals or households; each new adoption increases the speed of diffusion. Pedersen suggests durable consumer goods or membership in associations as examples. Entrepreneurial innovation has consequences for people other than the adopter; risks are greater, and entrepreneurial innovations tend to be competitive in space since threshold sizes for markets generally accompany them.

Behind the adoption of innovations which stimulate economic development lie a number of social and cultural characteristics. The traits of attitude toward change, education levels, aspirations, cosmopolitanism, condition the receptivity and ability to act upon information about innovations (Pederson 1971; Siebert 1969; Freidmann 1973). Siebert (1969) postulates that where there is a strong tendency to equalize these traits among regions, the mobility of all factors is enhanced and regional growth differentials will be smaller. Such characteristics are transmitted in much the same patterns as technical information or market transactions. The polarized network of economic and social transactions both shapes the characteristics of a regional population and is shaped by them. The spatial organization of established economic activities and settlement networks affects the spatial organization of modernization (socio-cultural patterns and power relationships)--and vice-versa.

Patterns of transmission. In addition to the long recognized hierarchical patterns of the transmission of urban goods and services, Lampard (1968), Friedmann (1973), and Pred (1977) point out the importance of interregional relationships among urban areas of similar, large size. Pred presents empirical evidence of these lateral relationships, although he believes hierarchical relationships prevail wthin a region. Richardson (1973) suggests that hierarchical diffusion operates among the higher orders of urban size, but the pattern is ill-defined, and apparently random, among urban centers of moderate and small size. The types of relationships which exist among urban areas, described below, and our examination of four local economies, provide some insight into the "apparently random" linkage of small urban areas to the spatial network.

In addition to the hierarchical and lateral relationships among larger urban areas and the selective relationships of some small urban areas, radial transmission from the urban core to the periphery occurs, and applies especially to household innovations and social traits where numerous, personal exposures may be required before individual adoption is undertaken.

The Relationships of the Network

The private sector. The market relationships of the private sector are a major part of the transactions of the spatial network. These market relationships include the search for, payment of, and transport of resources, intermediate and final products, to their point of use. Just as the traffic density map offered a conceptual analog of the total set of spatial flows, the interregional input-output table charts the physical manifestations of these functional market transactions within and among regions at a point in time. To the extent that migration is a response to wage differentials or employment opportunities, it falls within the realm of interregional flows generated by the private market.

The spatial distribution of market transactions is clearly interdependent with the transportation network and much of the economic analysis of industrial location has been related to transportation costs. The structure of business organization has not received as much attention from regional economists, yet it is of increasing importance to the spatial distribution of economic activity and to the distribution of innovations leading to further economic development. The vertical organization of multi-local corporations creates a flow of physical goods between firms located in different areas, while horizontal or conglomerate organization implies the flow of financial resources. Both involve the transmission of information via correspondence and via personal contact among high level personnel (Thorngren, 1970).

Functional linkages play a central role in the diffusion of technical innovation. Many innovations are industry specific, thus any concomitant benefits to economic development will be limited to areas where adopting firms of the particular industry reside. Even for more generally applicable innovations, the technical information will only be perceived by educated, specialized receivers. Underdeveloped areas with low levels of education, simple processing industries, or firms representing only a single industry thus have inherently low access to economic development via technical innovation. For innovations too, business organization influences transmission along the spatial network.[3]

The public sector. The obvious relationship between a region or local area and its state and national government is the two-way flow of tax revenues. Dollars are redistributed to local jurisdictions in the form of equalization funds, block grants, capital expenditures, and purchases of goods and services from the private sector. Over the 50-year period of study, the scale of these financial transactions has increased dramatically, as has awareness of the broad economic ramifications of local area investment and disinvestment. Where the federal government itself has operated facilities such as military bases, weapons production, or power production, economic impacts are generally confined to the local area, or at most the local area and the communities of one or two major sub-contractors. Where the government has contracted for research and development activities which opened previously unexplored fields to development the effects are much greater than those measured by the flow of dollars to specific local sites.

In the United States, the federal government played the major role in the development of computers and semi-conductors by providing, at the initial stages of development, financial support,

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[3]There is general agreement among the authors cited throughout this chapter on the importance of industrial and business organization in the transmission of innovation. Pred deals with it at length in City-Systems in Advanced Economies.

quality standards, and a sufficient demand to allow multiple firms. During the 1950's, government contract research supplied approximately 60 percent of IBM's research budget and was the total market for commercial production of integrated circuits in the early 1960's (Ginzberg 1976). The priority of reliability over cost considerations no doubt enabled the products to be perfected more quickly than would have been the case under private sponsorship, and many of the new commercial firms were established by employees of the original development contractors. Weidenbaum observes that in spite of significant economic opportunity costs on credit markets, and sometimes on employment, these research and development industries have been leaders in productivity increases and foreign exports, and he concludes, "like virtually every other study," that the contribution to economic growth and living standards is positive and substantial (1974:136). When these research and development activities have generated local spin-offs or attracted adopters to the local site--as they have at Huntsville and Houston and, to a lesser extent, Coffee County--local economic development (whether viewed as good or bad) can be extraordinary.

Power relationships. Friedmann (1973, 1975) equates decisionmaking roles, whether in the public or private sector, with the power to influence economic development. He defines power as the ability to mobilize and allocate resources, and to control institutions in places external to the decisionmaker. These power relationships are, in his view, of such importance as to define the spatial network, though they have been neglected by regional and urban economists.[4]

Power relationships, like market relationships and changes in social mores, tend to be dominated by the larger urban nodes of the spatial network. The concentration of innovating establishments, the resources and traits which lead to early adoption of innovation, and the presence of corporate and financial headquarters all strengthen the economic power of large urban areas. In addition, Thompson (1965) suggests that the power politics of large urban areas have obtained federal programs for urban areas which probably contributed to their ability to sustain growth in this century.[5]

Power has played an important role in the distribution of federal funds and southern regional development over the past 50 years. When the federal government locates a business enterprise or military base, or funds research work, the ultimate effect of that location decision in the local area may be no different from a similar decision by the private sector. Yet for the local community there are two important ways in which government decisions are different from

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[4]Friedmann notes that our understanding of power relations is correspondingly poor, but he says, "The only firm conclusion we may draw is that the process of national development and spatial integration is an eminently political one, involving fundamental relations of power and exchange and the resolution of resulting conflicts. Planning which fails to recognize this basic truth and proceeds as though the spatial allocation of resources were merely an exercise in applied rationality is bound to be disappointing in its results" (1975:17).

[5]Carter Goodrich (1956) points out that the power of these urban areas to direct federal resources toward their ends predates the twentieth century.

those made in the private sector: 1) government enterprises need not be subject to the profit-making constraints of the private sector and, in fact, location decisions may be made specifically to compensate for non-competitive conditions in the local area; and 2) local communties may have access to government location decisions through well-placed that is, powerful--political representatives.

Information as a Fundamental Factor of the Network

Fundamental to any intentional economic, political, or social arrangements--whether mutually negotiated or coercive--is prior information. Likewise, the developmental stimuli of cultural or technical innovations must be transmitted as information before their adoption can be undertaken. Access to information is a problem of comparative cost which fits squarely into the framework of microeconomics, and of location theory, though it is seldom dealt with explicitly. From the viewpoint of the organization, the personnel and pecuniary costs of identifying, obtaining, and beneficiating[6] information are important ones. Spatial biases in the availability of pertinent information influence locational choices, and are vital to the diffusion pattern of new technology or forms of organization (Pred 1973). The undertaking of specialized economic activities, and especially innovative activities, requires personal contact

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[6]*Beneficiating* is a word borrowed from mining technology; it refers to the process of cleaning and discarding wastes which convert the mineral to a more technoligically/economically usable form. Its use for the culling and transformation of data toward a particular end seems particularly apt.

among decisionmakers, information holders, and resource owners (Pedersen 1971).

Thorngren (1970) suggests a three-way taxonomy of economic activities on the basis of information needs: programmed activities, planning activities, and orientation activities. For each the technological content will differ, the time horizons of the information gatherers will be different, and the contact systems will be different.

Programmed activities are those which involve the choice and implementation of generally accessible, "tested" information. Thorngren's description of programmed economic activities is the routinization of previously innovative tasks. Empirical analysis shows that information flows parallel the flow of the physical product involved, and the information contacts tend to be quickly established, short in duration, well-structured, and often mechanized rather than face to face. Thorngren's description of routine activities with low needs for information is very suggestive of Thompson's "trickle-down" economic activities.

Planning activities deal with well-defined topics, but require more complex information from a variety of sources, some outside the field of the organization's usual contacts. They seek to identify the probable choices available to the organization and more participants are involved in the information exchange in total and in any single decision than is the case with routine activities.

Most far reaching in the need for information are orientation activities. These activities are concerned with the discovery of new choices. As exploratory activities seeking to generate innovations, they must link previously unconnected parts of the environment. Contacts in these activities will often be with information holders who have met for the first time; they involve multiple participants, usually in group conferences; they are time consuming and are always on a face-to-face basis.

The ability to carry out these three types of activities within a region depends either on the existence there of the necessary elements, or else on persons or organizations with knowledge of and appropriate access to the necessary activities in other regions. In less developed regions, where economic activities are few and of the programmed type, planning and orientation activities are not feasible. Furthermore, innovation within existing firms, or innovation via the tapping of information sources outside the region, involves personal contact and the established regional communication system is critical to this contact. Highways, airline routes, frequencies of flghts, and convenient destinations; the pattern exemplified by the regional I-O structure; the location of other establishments and the headquarters of local firms in multi-local corporations; the nature of the political relationships with those in a position to allocate state and federal funds: all are examples of tangible and intangible communications links which must function well if endogenous or exogenously initiated development is to occur. Thus in some areas development will be constrained because these various communications systems do not provide access to information essential to planning activities, or the juxtaposition of previously unconnected elements of the environment essential to innovation.

Thorngren, in his information-contact system, has simply made explicit the operational mechanism of the agglomeration economies often cited by urban economists. The potential for gathering information for planning and orientation activities probably increases with urban size and the ability of small urban areas and regional hinterlands to obtain access is a function of their communications contacts with that spatial network, as stated above.

Stability and change in the network. In the discussion of the spatial network we have repeatedly alluded to the preeminence of urban areas derived from the accretion of specialized resources, transactions with other urban areas, high access to information, and favorable attitudes toward change. This stock of resources implies political and economic power in the urban areas--the ability to make, or to affect, decisions favorable to urban interests.

Emphasis on the stability of cities' position in the urban size hierarchy has been a common feature of urban economics texts. The discussion above provides some rationale for that stability. If innovation is a primary stimulus to development, and if the juxtaposition of varied technical resources, entrepreneurs and financial resources occur primarily in urban areas, and if urban areas have the power to influence the execution of private and public decisions, then cumulative advantages will tend to accrue to the established urban system (Thompson 1968; Richardson 1973; Lasuen 1975).

Pred's study, City Systems in Advanced Economies, is an attempt to identify the origins of cumulative growth patterns in the United

States. He contends that the long-term rank stability of the urban system is most plausibly explained by patterns of trade among early American cities. Information pertinent to economic growth traveled with the physical goods. Efficient dispatch of goods and information existed among the northeastern cities and between those cities and the port cities of the South. The trade area information channels once set continued to reinforce each other. The more varied and numerous the economic associations between two spatially separated points, the more varied and frequent the information exchange.[7]

Within the southeastern region, however, the limitations of the waterways system, the region's single dominant agricultural commodity and the dearth of manufacturing activities precluded the flow of economic and cultural information. The Southeast has had fewer, smaller, and later developing urban areas with fewer intra-regional links and Weiher (1976) relates the cotton economy to its under-developed city-system as Chapter 3 explains. It has been disadvantaged in cumulative growth activities. The pattern of northern regional dominance was set, Pred believes, by these early trade and information patterns. A number of factors have contributed to the shift: access to transportation and communications has altered the regional differentials in these costs; as products have become more

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[7]Borts and Stein look at growth patterns among states, rather than urban areas. Considering rate of growth of manufacturing employment for states since 1869, they too observed that the "remarkable stability of performance is an indication that the growth and decline of states are subject to forces that take a long period of time to work themselves out and may be said to be permanent influences on the growth position of different regions" (1964:40).

complex, the production of specialized intermediate goods has inevitably required more diverse spatial connections; changes in business organization and the acquisition of horizontally or vertically integrated firms, or the addition of unrelated firms to a conglomerate company, have automatically created new spatial relationships.

Innovation too contributes to the shift in spatial network. Borts and Stein (1964) and Lampard (1968) cite evidence that the slower growth of older urban areas is not due to the decline in their existing industrial sectors so much as in their failure to capture the emerging sectors. Lasuen (1971) believes that complexly organized businesses are more likely to innovate and the financial and physical resources necessary to institute the innovation may be allocated to locations which otherwise would not have been able to provide them. Finally, as we have noted above, one critical factor which has altered the spatial network during the period under study has been investments by the public sector in the southern region. The South has had decision-making power in the public sector, and the siting of military bases, defense production, and space facilities often required the absence of large urban agglomerations rather than being dependent upon them.

Entrepreneurship

Schumpeter, Thompson, and Friedmann have all emphasized the essential role of the entrepreneur in economic development. Schumpeter's discussions (1936, 1939) center on the role of the entrepreneur as "prime mover" of technical or organizational innovations which permanently change the course and level of economic activity in the nation. Thompson (1965, 1968) believes the course of economic history is not dependent on the existence of particular individuals but local histories certainly may be, saying "whatever may be the prime source of national economic development, entrepreneurship must be the heart of comparative regional growth in any system of open regions" (Thompson 1968:53).

Entrepreneurship is leadership which brings about a change in the economic or social structure of the community by identifying and organizing the necessary resources and support toward a desired end. Beyond the traditional role of the entrepreneur in establishing business activities, Thompson (1965) suggests that local governments must serve as social entrepreneurs. In the competition for the expenditure on income-elastic goods, local government leaders, like entrepreneurs of privately produced consumer goods, must create demand for their products of education, recreational facilities and the like. Lambright suggests that this advocacy and implementation of developmental changes in public services will be seen as a part of the job by professional public servants and personal rewards will be measured not only in terms of salaries but also in the ability to get innovative practicies and projects incorporated locally.

Professionalism, whether in city managers, police chiefs, development officials or county executives,

> refers to work related skills and techniques as well as to the sense of commitment to citizens with whom those skills are put to use. Professionals read journals in

> their field, attend professional meetings, and know the leaders in their specialty as well as laggards. . . . They listen to various business suppliers. They keep abreast of federal and state initiatives. They aggressively search for solutions and are open to ideas. Above all, professionals are service oriented. They care about the quality of service they deliver to clients. They also try to save money where possible, but not at the expense of diminished service to clients (Lambright, 1979:154).

Lambright, who offers this definition in the context of a study which had the objective of analyzing under what circumstances innovations in public services were successfully adopted, was studying small metropolitan areas rather than rural counties with limited administrative staffs, but the essence of this description of professionalism applies whether there is one manager or a full blown set of bureaucracies. He goes on to say that having professionals lead public bodies does not guarantee success in every attempt at community improvements, but the climate for change is much more favorable than where patronage appointments prevail.

Törnqvist and Gould (1971) point out that the acceptance of new ideas, social or technical, depends on an initial few adoptors, and these should be considered entrepreneurs. Thus entrepreneurship in the local community may take many forms. Schumpeter points out that

> It is no part of his function to "find" or to "create" new possibilities. They are always present, abundantly accumulated by all sorts of people. . . . It is this "doing the thing," without which the possibilities are dead, of which the leader's function consists. . . . . Even leadership which influences by example, as artistic or scientific leadership, does not consist simply of finding or creating the new thing but in so impressing the social group with it as to draw it on in its wake. It is therefore, more by will than by intellect that the leaders fulfill their function, more by "authority," "personal weight," and so forth than by original ideas (1936:88).

As has been emphasized above, awareness of new ideas may be constrained by the regional setting and in particular by the connection of local access to the urban-centered spatial network of transactions and information. There will, however, certainly be some possibilities for leadership among either business, cultural, or social and economic infrastructure activities in a community and every community has persons recognized as having authority or community credibility, whether they have official or private roles in the community. Characteristics of leadership are clearly present in the fast growth counties of the study, or in the fast-growth episodes of slow-growth counties. It is the absence of such leadership, especially the failure of those in a position to exercise it, which has been detrimental to the development of the slow growth counties. In Coffee County the newspaper publisher has used his five regional newspapers "in so impressing the social group," that a number of regional development projects have been accomplished. In McMinn County, the well established, affluent, industrial families, who also directed the banks, were in a position to increase industrial development and provide more jobs for the large regional labor pool, but their intent was precisely the opposite.

Like so much else in local development, the characteristics of local leadership will be shaped by previous levels of development. Paradoxically, where previous social and economic levels are comparatively low, the entrepreneurship required will be greater. Greater foresight, greater financial and personal risk, greater ambition will be required to execute innovative projects in poorly developed local areas (Friedmann 1966). Yet where local areas have experienced low levels of development with few models of successful entrepreneurship, individuals with these traits will have exercised them through emigration.

For those who remained in the sparsely populated, agricultural areas of the Southeast, away from the mainstream of economic activity, the practice of political leadership was frequently the only kind of entrepreneurship about which information was readily available. County offices offered numerous point of entry and office holders could minimize personal risk by maintaining their usual means of livelihood. For the entrepreneur in the era of industrial capitalism, Schumpeter claimed social standing and admiration along with entrepreneurial profits as the motivation. For the politician in the South, the social standing that came with office was considerable and on the local and state level at least, the economic rewards if not personally, then to one's friends and family via the patronage system, were also considerable. A bilateral reward system of political leadership exists at the local, state, and national levels, but the rewards of status and respect to the office holder as well as the potential economic stakes to local areas, get correspondingly larger. For those with long tenures in state and national office, one important means of maintaining the loyalty of the local constituency has been the expenditure of public dollars at home. The number of Southerners who rose to strategic positions of power in the Senate and Congress over the past 50 years has been impressive indeed. For the South as a whole the impact of federal expenditures has been significant; for local economies such as Coffee County and Pope County, the result of such successful political entrepreneurship has been change at a pace rarely matched by private development experience.

Local Choice

The desire of local areas to pursue economic development or discourage it, receives almost no explicit comment in the regional literature. It is perhaps assumed obvious that in the competition for the location of economic activity, those communities which do not seek it will remain at lower levels of development. What may not be so obvious, however, are the complex and indirect ways by which development alternatives are rejected or supported. Kindleberger's (1951) observations about group behavior are directly relevant to the matter of local choice. He describes the Danish adjustment from wheat to livestock products as a function of the emphasis on education and cooperatives which in turn related to the eqalitarian nature of Danish agriculture. In contrast Germany perpetuated domestic wheat production through a tariff which was inimical to the interests of the peasant agricultural class, but was possible because of shared class interests of the dominant steel producers and the Junkers. The crux of many development choices in local economies also lies in the perception of group interests.

Thompson (1965) recognizes one option local communities have when he observes that wealthy residents may choose to support local industrialization by providing risk capital or short-term cash flow to small local industries, or conversely may refuse to do so. Both slow-growth counties show evidence of local wealth which has not been supportive of industrial development. In McMinn County, the early successful industrial families comprised a power structure whose resources included control of the local banks, and they pursued a policy of discouragement to outside industrial interests. In Jackson County, local wealth has taken the form of accumulating large tracts of agricultural land, especially around the town periphery. Restraints on development have not been as overt as they have in McMinn County, but residential, commercial or industrial land use is almost entirely under the control of these few families.

Friedmann (1966) points out that the development of recreational and cultural amenities, as well as the attainment of high educational levels is also a matter of community choice which directly relates to economic development. No matter how supportive state or federal government policies, social and economic transformation is ultimately a matter of local effort.

The literature, already referred to, on innovation as a source of development, and on innovation diffusion, touches on the area of local choice. The authors cited universally agree that attitudes and social institutions influence the probability of early adoption and that early adoption yields economic and political advantage. Richardson (1973) notes the conservative attitudes and infexibilities often found in rural areas which tend the community away from developmental choices and for these reasons too finds the adaptiveness and cosmopolitanism of a large urban area to be essential to regional development.

Though the regional literature makes scant reference to the matter of local choice, the four counties studied offer abundant examples of the ways in which it has affected local development.

Summary

Chapter 2 has reviewed the regional literature pertinent to the three factors which have been identified as critical to economic development in local areas: the spatial network; entrepreneurship; local choice. Because the spatial network, which provides access to technical and cultural information--especially innovation information leading to developmental changes--is part of a literature usually considered outside the boundaries of regional economics, and because some of the important empirical studies have been conducted by Swedish regional scientists, most of the chapter describes that concept. The literature of the spatial network is, in any case, considerably more extensive than that of entrepreneurship or local choice.

The spatial network is formed by the transactions of the private and public sector between areas. Historically established patterns of trade among areas, business organizaton and political relationships have all helped to define that network. The spatial network is an urban centered, spatially biased flow of transactions and information. Interregionally transactions tend to be among large urban areas of similar size, within a region, transactions tend to occur down the urban hierarchy and radially from urban centers out to their hinterlands.

Siebert cites access to technical information as the single most important factor in sustaining economic development in particular areas. (The development of access to information in economic growth and development can be seen as making explicit one of the aspects of agglomeration economies cited by urban economists.) Studies of innovation diffusion manifest one aspect of the network and it was suggested that the patterns of innovation diffusion along the spatial network may provide an operational mechanism for Perroux's provocative concept of propulsive sectors as the source of economic development. Thorngren classifies economic activity into three tiers of information needs and develops the implication of these requirements for regional economic development. Friedmann and Siebert, among others, note the importance of socio-cultural characteristics as important to economic development and Friedmann points out that such traits are both a cause and an effect of the spatial network.

Though students of the spatial network stress the cumulative growth effects of the spatially biased network, and suggest it as a factor in the long remarked rank stability of the system of cities, the form of the spatial network has altered over the past 50 years. It seems clear that increased access to transportation and communication has been important, but also that the change in business organization to multi-local operations, and especially the increasing expenditures of state and federal government have been very important.

The four counties will show that federal expenditures have been significant in growth differentials and that local political entrepreneurship has been important in directing these expenditures to local areas. Entrepreneurial individuals in southern rural areas not closely tied to the physical transactions and information of the existing spatial network, found entry into the political arena more readily available and less risky than entry into the private sector. In addition to political entrepreneurship Schumpeter's classic concept of economic entrepreneurship is descriptive of the events in the two faster growth counties as are his less traditional examples and so is Thompson's concept of social entrepreneurship.

Finally, the literature reveals little direct comment on the role of community choice in economic development though the investigations of the four counites shows that it is a determinant, and operates in a variety of ways.

CHAPTER 3

THE REGIONAL SYSTEM AND THE SPATIAL NETWORK

The Southeast of the Thirties

To use Friedmann's term, the "image" of the Southeast in 1930 was one of poverty, inadequate public services, provincialism, and an unassimilated Black population. In 1931 in a series of articles in the widely read American Mercury, H. L. Mencken assembled hundreds of statistics assessing quality of life in the 48 states. In measure after measure the bottom twelve ranks were held by the southeastern states. That image, distilled by Mencken, was based on fact. The Southeast had generally been excluded from the diversified industrial development of the late nineteenth century; its chief source of income, agriculture, was crippled by the decline in prices of the 20's, by record breaking floods and drought and, finally, enervated by the Great Depression. In 1938 the Committee on Population Problems of the National Resources Committee attempted to gauge the condition of the American people in the wake of the Depression. The quantitative and qualitative picture of the Southeast presented in the report was of a chasm of deep and consistent poverty amidst the national distress.

The Private Sector and its Network Characteristics

In 1929 the per capita personal income average for the southeastern states was 53 percent of the United States average. The source of that income was an economic structure heavily dependent on three declining extractive industries: 46 percent of the gainfully employed workers in the Southeast worked at agriculture, forestry, or mining and that proportion had been declining at a much slower rate than elsewhere.

The decline in agriculture prices and the consequent decline in the value of farm assets during the 20's was a national phenomenon, but the problems of the region's agricultural sector were not only exogenous. In the mid-20's figures show that the gross-value product of each farm worker in the Southeast was less than one-half that in the rest of the United States (Committee, 1938). On 17 percent of the nation's farmland, the Southeast was attempting to support 40 percent of the nation's farm workers. The structure of farm ownership was quite different as well; the Southeast had fewer owners and more tenants and almost half of these tenants were sharecroppers--a negligible phenomenon outside the South.

The inevitable cotton farming that characterized southeastern agriculture in the coastal plains and the Mississippi delta, as well as in the Ozarks and Appalachian highlands, was notable for its time-honored techniques. Since cotton growing was confined to the South by climate there were no sources of innovation or change outside the region. Labor-intensive production fostered by the economics of slavery continued unquestioned in a region where there were too many people and too few means of livelihood. Much of the farming off the plantations was a self-sufficiency agriculture passed on, like the land, by generations of families. It consisted of clear-cutting (or burning) the timber, followed by row cropping and, inevitably, soil erosion. There were few institutions in the isolated, rural Southeast outside the farm family itself. The cooperative organizations with their economies of scale and access to newer technology were not an important factor in the Southeast. In the other two agricultural regions, the West North Central and Pacific states, approximately 25 percent of the farms were engaged in cooperative marketing. With the exception of Florida, no southeastern state could claim as much as five percent of its farms engaged in cooperative practices.

In contrast to the marginal farmlands of the southern highlands the plantation lands were often well located and relatively fertile, but the system itself worked against long-run improvements and the generation of new ideas. Land tenancy with its short run security and the high probability of owing more than was earned, with no permanent land and little equipment in which to invest interest, with no legal claim to improvements made, engendered a sense of disregard for the physical capital and a minimal interest in the labor aspects of farming.

Nationally the lumber industry had reached its peak output in 1907, while the Southeast, decreasing its output more slowly, enjoyed an enlarging share of the industry. In 1930, the Southeast had one-third of the country's lumber workers, and in that year output in the region declined by 28 percent. The following year it decreased another 37 percent. The United States coal industry exhibited much the same pattern as the lumber industry. The expansion of mining capacity during World War I had left the country with excess supply and too many miners, although the non-unionized labor of Appalachia had enjoyed an initial advantage. The typical pattern of the rural inhabitants of the agricultural Southeast, especially in the highlands, was to supplement the returns from their marginal farms with income from lumbering or mining. When the mines closed and the lumber remained unsold there were no viable economic alternatives for the population. As the Committee on Population Problems prophetically stated, the most promising possibility was out-migration.

Although the Southeast had only 14 percent of the manufacturing establishments in the United States in 1930, its manufacturing and service employment was increasing at a slower rate than in other regions. Those industries which were present in the region tended to be low capital, labor-intensive activities. Food processing along with textiles and apparel were common, but more than half of all manufacturing establishments in the Southeast were concentrated in the wood products industry.

This economic structure provided few opportunities for participation in the transactions of the national spatial network. The undiversified, simple processing activities of its manufacturing, and its agriculture, mining and lumbering, provided few forward or backward linkages which would have served to strengthen its internal contacts and would have allowed it to import information and gain larger markets from the outside. The severe decline in demand for agriculture, lumbering, and mining further reduced transactions. Urban areas, which both stimulate and depend upon the region's economic activities, were little nourished by activities which inherently involve large land area and remote locations. The low level of capital equipment in every sector, the unskilled labor, and simple activities not only precluded the internal generation of innovation, they provided no specialized receivers to adapt information available from outside the region.

Urban Nodes

In the early days of the nineteenth century, transport cost and time assured regional, rather than national, market areas. New Orleans was the centerpiece of a western and southern network of towns strategically located along the Mississippi and its tributaries, while Mobile, Savannah, Charleston, Richmond and Norfolk served as lesser regional distribution centers. The trade between coastal cities and the larger northern cities was an essential source of goods and information for the Southeast, but unlike the North with its important internal exchange among Philadelphia, Boston, New York, and Baltimore, there was little intraregional commerce in the Southeast. Even adjusted for size differences, no pair of southern ports had levels of trade comparable to any northeastern pair (Pred, 1977).

As Pittsburgh, Cincinnati, Louisville, and St. Louis flourished, they too became part of an interurban commerce system; by the 1840's, Pred's analysis shows, they were within two weeks of information from the eastern metropolitan region. By contrast the southeastern interior was extremely remote. Information from the Northeast, generally paralleling the shipment of goods, required more than 30 days to reach Tennessee and more than 40 days to reach Western Arkansas (Pred, 1977). The commerce among northeastern cities and among the new industrial cities of the Mid-West was further enhanced by the establishment of canals and railroads, while at the same time trade patterns were permanently shifted away from southeastern coastal cities.[1]

The relatively low levels of urbanization in the Southeast compared to the North and Mid-West, is evident from the data of the Census of Population. In 1930, with the exception of Florida, no southeastern state was nearly as urban as the United States average. Every other region, including the Mountain States, had larger percentages of urban population; in the New England and Middle Atlantic regions the average proportion of urban population was more than twice as large as for any southeastern state except Florida.

Urban growth in the South had not been stimulated by intraregional exchanges of trade, as we noted above. The essentially single-commodity agriculture precluded internal economic exchange, however the profound influence of the region's agriculture on its urban growth goes beyond the lack of technology and economic linkages to the institutions of cotton growing and cotton processing. In a recent article, Kenneth Weiher asserts that

> the only clear way to explain the pecularities in the rate and form of southern urbanization is to view the historical process as the evolution of a hierarchy of central places, the primary functions of which were to provide central services to the cotton growing industry (1976:63).

Until 1880 urban development in the South lagged considerably behind the manufacturing North and the agricultural Mid-West. The network

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[1]An 1851 observer remarked that the canals and early railroads had "rolled back the mighty tide of the Mississippi and its ten thousand tributary streams until their mouth, practically and commercially, is more at New York and Boston than at New Orleans" (Perry, 1977:29).

of cotton presses and cottonseed mills had not been established and thus one order in the later urban hierarchy was missing and failed to provide the market for larger places in the hierarchy. Once these aspects of the cotton industry were developed those towns with mills or presses grew significantly faster than other towns. Although southern urban growth was rapid between 1880 and 1930, it was still a region of small, widely dispersed cities and Weiher believes that the whole southern urban hierarchy was retarded by the fact that the smallest towns of the South were more widely spaced than elsewhere. Because the early southern plantations were large and relatively self-sufficient, long distances separated households and increased the threshold size of market areas for goods and services at every level of the urban hierarchy.

Genovese provides additional insight into the sparse urban network of the South. His classic article on the slave plantation and southern economic development is directed toward showing the deficient home market in the South. Citing specifically some of the things Pred alludes to, and in a similar vein to Weiher, states that "the inability of the slave South to generate an adequate rural market inhibited industrialization and urbanization, which in turn limited the market for agricultural produce and attempts at diversification" (1962:279). This lack of diversified urban economies precluded an essential stimulus to regional development in the South and disadvantaged it in the interregional urban exchanges of the national spatial network.

The Cultural Disparity of the Southeast

It was stated in Chapter 2 that the polarized spatial network shapes and is shaped by the characteristics of the regional population. The spatial organization of modernization--that is, attitudes toward change, advanced education, cosmopolitanism, and so forth--are closely associated with the spatial organization of economic activities and the settlement pattern. Along with the weak set of transactions and the small, widely dispersed urban nodes, the Southeast was hampered in the national spatial network by a notable social and cultural disparity.

One source of that disparity was physical. The mountainous areas of the Southern Appalachians and the Ozarks were physically isolated with few roads. The late arrival of railroads in these areas was patterned more by the exploitation of remote stands of timber or coal deposits than by any logic or convenience to the human resources. Even where the terrain was less forbidding, the sparsely settled population and the inadequate resources of local governments precluded a well-developed road system. In 1930 about three-fourths of the farm households in each of the four counties of this study were accessible only by unimproved dirt roads. The heavy rainfall common to most of the region frequently made roads impassable.

Physical isolation was reinforced by poverty. There were fewer vehicles, fewer telephones, fewer radios, fewer opportunities to visit towns with movies, to be aware of public libraries, and there were fewer newspaper subscribers. In terms of development stimulus there was little access to technical or cultural information from outside the immediate community.

The most obvious source of new ideas and stimulus to change--education--like most everything else fared worst in the Southeast. Though the relative tax effort for education was higher than in some other regions, there were fewer dollars to spend and many more children to be educated (Committee, 1938). The Southeast had the lowest attendance levels for children of every age; for high school ages only 66 percent of its young people attended school, while every other region in the United States had at least 72 percent attending. For the adult population the 1930 Census shows illiteracy of the White population in the Southeast to be higher than in any other region. The illiteracy rates of the Black population were generally five times higher than for Whites; the greater the proportion of Black population in a state, the higher the illiteracy rate of that Black population.

The fundamentalist religion which characterized the South, with its emphasis on the rewards of the hereafter and its stoic acceptance of hard work and meager rewards in the present, was undoubtedly another barrier to the internal generation of new ideas or the adoption of cultural or technical alternatives from outside.[2]

The cultural adaptation which was imposed upon the cities of the Northeast and the rural areas of the North Central States by repeated infusions of European immigrants was not shared by the Southeast.

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[2]The social aspects of this religion served to ameliorate the drabness of daily life in the poor South and these social aspects, accompanied by the customary fundamentalist attitudes toward secular entertainments, may have been a deterrent to the development of social opportunities and more varied contacts with urban communities in the Southeast.

The 1930 Census of Population shows a striking contrast between the Southeast and the rest of the United States in the proportion of foreign-born population. The New England and Middle Atlantic States' populations were more than 20 precent foreign-born; the East North Central, Pacific, and Mountain States were more than 10 percent foreign-born. Only three of the 12 southeastern states had more than 1 percent of foreign-born population.

Yet the general cultural isolation of the Southeast pales in comparison with the isolation of the one-third of the Southeastern population which was Black. Deprived of its own ethnic integrity and systematically excluded from attaining even those limited opportunities available to southern Whites, the Black population had almost no possibility of contributing to the economic development of the region. In a trenchant passage from Shadow of the Plantation, Johnson sums up the cummulative inertia.

> The Negro of the plantation came into the picture with a completely broken cultural heritage. He came directly from Africa or indirectly from Africa through the West Indies. There had been for him no preparation for, and no organized exposure to, the dominant and approved patterns of American culture. What he knew of life was what he could learn from other slaves or from examples set by white planters themselves. In the towns where this contact was close there was some effect, such as has many times been noted in the cultural difference between the early Negro house servants and the plantation hands. On the plantation, however, their contact was a distant one, regulated by the strict "ettiquette" of slavery and the code of the plantation.
>
> The present Negro population of these old plantation areas can best be understood by viewing it in the light of this plantation tradition, with its almost complete dependence upon the immediate landowner for guidance and control in virtually all those phases of life which are related to the moving world outside. The Negro families retain, through the older members of the community, a distinct memory of this early society. They take their cues from it; they are seriously affected when the relationship

> fails. Such families as escape from the prevailing economy of dependence into the new responsibilities which go with independence find economic complications and shades of social conflict which manifest themselves in various ways, sometimes prompting them to migration, but as often leading to resignation and relapse from ownership status to tenantry. The gradual decline in Negro ownership and the increase in the tenant class are evidences of this struggle (Johnson, 1934:30).

The physical isolation, poverty, religious practices, and low levels of education which characterized the Southeast from its early settlement through the 1930's produced a regional insularity from technical and cultural change which retarded economic development from endogenous or exogenous sources. No doubt these circumstances alone were sufficient to create the kind of interregional social disparity which Siebert (1969) believes is important to growth differentials between regions, but the crowning impediment was the large proportion of the population who were non-participants in the prevailing economic and cultural life.

The Southeast in the Seventies

Complex structural and cultural changes, beginning with the declining fortunes and technological revolution in agriculture and the economically forced out-migration associated with it, occurred in the Southeast over the period of study. Except for the publicity which attended the desegregation orders of the late 50's--and which undoubtedly tended to reinforce the negative national perception of the South--these changes occurred for the most part without notice except by students of regional science. Led by the unexpected change in migration patterns which began during the late 60's, popular journalists discovered a region of growing cities and space technology and by the 1970's it was clear that the regional image was changing. The development of the South's metropolitan areas and the amenity of its open space and relaxed life style was touted by the media in what has been called the "Sunbelt Bliss Blitz."

The influx of tourists and retirees, notable in the 60's, was joined in the 70's by job seekers from the North and Mid-West, and bolstered by Southerners who chose to remain in the region. Sternlieb emphasizes the momentum of the unprecedented regional population shift.

> The trendlines evident in the two decades prior to 1970 foreshadowed the general pattern of events that was to take place in the 1970's, but not its scale or magnitude. A gradual persistent evolution rapidly accelerated into a process of snowballing momentum....The future (1976) actually arrived much faster than any but the most omniscient seer could have anticipated (1978:63).

From 1970 to 1976 more than half the population growth in the United States took place in the South; for the first time southern inmigrants outnumbered those to the West. The largest metropolitan areas in the South grew more than three times faster than those in the West, and there were absolute declines in the population of the largest metropolitan areas in the Northeast (Sternlieb, 1978).

The influx of permanent population has been paralled by the visitors to the region. Expenditures on tourism and on recreation have increased everywhere but the theme parks of the Southeast, the retirement communities of Florida, the Nashville music industry, and the new professional sports franchises are evidence of the regional impact of the changing tastes and increased incomes of the whole United States.[3]

Along with leisure-time activities and services to a growing population, the new high technology and high wages of the space age account for a great deal of the regional momentum; but the Southeast has bettered its position in the older industries as well. Outside of New York the major ports are still those in the South. The timber industry is strong and its concomitants, the furniture and paper industries, are largely in the Southeast. Seventy percent of the textile workers and one-third of the apparel workers cluster in the Southeastern states. The co-existence of the old and new has prompted Wilbur Thompson (1975) to remark that the South is going through its industrial and post-industrial revolutions at the same time.

The Public Sector and Change in the Southeast

The increasing population and more dynamic economy of the region were in part a response to, and in part a cause of, a different national spatial network which had gradually been altered to include important transactions and urban nodes of the South. Growth in

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[3]However, the particular location of many travel dollar expenditures is attributable in part to public sector decisions. A large part of the income of the town of Manchester, in Coffee County, is derived from 16 motels and from restaurant sales along its stretch of Interstate highway. In Arkansas, the Industrial Research Extension Center estimates that of 19 counties which derive a significant part of their income from travel and tourism, all but two owe that income to the presence of the Interstate. That is, in Arkansas these dollars are travel as opposed to tourism expenditures (Industrial Research Extension Center, 1976).

traditional sectors notwithstanding, it is not too much to say that these new paths of the spatial network were laid out by the public sector.[4]

Even before the era of counter-cyclical fiscal policy and large social programs, the South was on the nation's conscience. The agricultural decline of the 20's was followed by devastating floods along the Mississippi in 1927. Those floods helped galvanize federal activity in the Mississippi Valley for river control and, along with the nitrate facilities at Muscle Shoals, were a major impetus for the formation of TVA in 1933. Yet TVA was not intended to stop at river control. The Act states that it is also "to provide for reforestation and the proper use of marginal lands in the Tennessee Valley; to provide for the agricultural and industrial development of said Valley...." (Public Law 73-17). That intention was interpreted in the broadest way. TVA's systematic approach to flood control became a model for Corps of Engineers projects in Arkansas, among other places, just as its dissemination of agricultural technology through cooperatives, community forums, and demonstration farms became a model for the region's agricultural extension services.

At the end of the Depression decade the needs of the War provided a literal way out for many in the region. Along with the soldiers, workers left to find jobs in the defense plants. The early

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[4]Lampard makes this point with respect to the "rank jumpers" in the system of cities--many of which have been in the South. He states that since the 1930's, "the decisions of government and government-oriented corporations must be invoked, along with the growing weight of market orientation" (1968:137).

out-migrants provided information on employment opportunities and cultural alternatives to those who remained behind. The polarized migration streams, which during the 40's and 50's frequently paired a particular state of the Southeast with a particular urban area to the north, is evidence of the reduction of the psychic costs of migration, but also of the polarized nature of the information network in the Southeast. The War altered the cultural traits of those who stayed behind as well. When the Air Force bases and military training camps were located in the sparsely populated, rural areas of the Southeast, the local communities were brought into close contact with servicemen from all over the United States; in many instances their homes were shared with the visitors. The friendships formed were one small but collectively important contact with other regions of the United States. Recent in-migration of retired military personnel to these local areas has been significant in both Pope County, Arkansas, and Coffee County, Tennessee.

The hiatus in public sector expenditures after the War was brief. The need for aeronautical development had become apparent and the planning which resulted in Arnold Engineering, in Coffee County, was well underway in the late 40's. The Cold War and the space race of the 50's redirected defense expenditures not only categorically but geographically.

The differential impacts of this military spending were the object of much public scrutiny by the early 60's. Bolton's (1966) study reported that 8 of the 12 southeastern states had increased shares of total defense procurement dollars while several of the remaining ones showed increased shares of military payroll. Although absolute levels of defense expenditures in the states were increasing too, these increases represented decreasing shares of most states' income and Bolton found no clear relationship between the increases in defense spending within the states and their increases in total income. In his thoughtful study, The Economics of Peacetime Defense, Weidenbaum notes that the variation in state and local distribution of federal expenditures has brought intense pressures in both directions on the size of military budgets and that "the multiplicity of the ways in which defense spending is measured and reported...[is] a source of some confusion to those who attempt to follow trends" (1974:13). The salient fact was then--and is now--the strong concentrations of such spending. Within any state, impacts are much more marked than is indicated by state proportions, since defense procurement is lumpy and only a few local areas will be affected. Investment and disinvestment in installations are, at least initially, traumatic for local economies and a former Deputy Secretary of Defense likened that action to being Gulliver among the Lilliputians (Weidenbaum, 1974).

Catsambas studied the geographic impacts of federal fiscal policies in general. He agrees with Weidenbaum that measuring the equity of impacts is difficult, especially since the decision to undertake "public expenditures can be determined by such diverse factors as social conditions, demographic trends, and even sheer political compromises" (1978:106). Nevertheless he concluded that there was a clear pattern of net fiscal transfer from the East Coast and Great

Lakes states to the South and Rocky Mountain regions. Fox and Reid, who suggest that it is important to look beyond overall spending totals to the community income multipliers which can be expected from various kinds of programs, concluded that considering both per capita outlays and program mix "it seems probable that the highest total economic benefits from federal funds accrue to the South" (1980:101). Weidenbaum and Bolton are hesitant to claim region-wide benefits, but both would agree that federal expenditures have immensely affected the geographic structure of the United States economy in the present era.

Neither Tennessee nor Arkansas as a whole is high among states in shares of income from defense expenditures, but in two of the counties being studied the federal government has played a critical economic role. The training base for the Second Army was located in Coffee County, and at some periods during the War, the county's 1940 population of 19,000 was supplemented by as many as 145,000 troops. Following the dismantling of the base, the aeronautical research institute was established. In Arkansas, Jackson County had one of a series of World War II Air Force training bases scattered through the flat lands of the state, and beginning in 1960 Pope County had its economy boosted first by the construction of a Corps of Engineers dam and reservoir, and immediately thereafter by the construction of an Interstate highway. The various impacts--or lack of them--for these counties presents an intriguing matter for consideration, as it does for the region as a whole.

The Entrepreneurs of the Public Sector

Many of the World War II installations required large expanses of sparsely populated areas and moderate climates for simulated Army maneuvers, or for Air Force Training Flights. For some installations remote, rural areas were thought to contribute defense security as well. For such installations the probabilities that they would be placed in the South rather than in the more developed areas of the North and Mid-West was increased. Likewise with the social expenditures of the 60's: the needs of the region were specifically recognized with the establishment of the Appalachian Regional Commission as a channel for development projects. Yet the placement of so many federal dollars in the region was not inevitable, nor, of course, was the choice of specific sites. More important than the inherent appropriateness was a kind of political entrepreneurship at which the South became particularly adept, and whose practicioners were as alert to the opportunities of this new era as were the industrial barons of the previous era or the early commercial interests in the East.

The South had the advantage of a disproportionate number of influential persons in Congress--sometimes in a direct position to influence the exercise of federal policy in their area. Sam Rayburn and Lyndon Johnson, Richard Russell, and Herman Talmadge, Wilbur Mills and William Fulbright, John Stennis and Sam Ervin, Kenneth McKellar and Estes Kefauver, Mendel Rivers and Allen Ellender are but a few of the names whose senior posts and personal attributes have commanded attention and dollars for their home regions.

At the federal level, Bolton and others noted that decisions appear to be made within the bounds of logical requirements and not as blatant political favors. Furthermore, attempts to simultaneously accomplish both redistribution and cost-effective procurement has been difficult and has had ambiguous success when tried. Yet the locational requirements for physical facilities or contract work are seldom unique, and within the range of choices political considerations often play an important role. This seems to have been precisely the case with the location of Arnold Engineering in Coffee County.

At the state level the possibilities for personal influence are even greater. The author of Spending in American States found that a small group of officials generally make basic state financial decisions; their criteria are not easily identified, appearing to be neither programmatic nor ideological. Increases in budgets are closely tied to previous levels of expenditure--that is, incrementalism--but large expansions "result from a process that is intimately involved with politics, and the aspirations, alliances and skills of politicians make themselves felt in budgeting (Sharkansky, 1968:64).

At the local level southern businessmen have generally not taken a back seat in the political affairs of their communities. Writing about the levels of public service in the South, Lupsha and Siembieda note that "a traditional aspect of politics in the Sunbelt has always been the close relationship between the private economic community and the public-decision-making community" (1977:185). They cite business groups in Dallas, Phoenix, Alberquerque, Memphis, and Atlanta, and we might easily add Athens and Etowah in McMinn County, Tullahoma and Manchester in Coffee County, Russellville in Pope County and Newport in Jackson County, along with countless other communities throughout the South. Whether such conditions are more common in the South or simply more apparent is an interesting question. In any case, southern businessmen who have been convinced of the benefits of local federal investments have, through campaign contributions, committees, public statements and private visits, impressed the needs of the underdeveloped South upon Congressmen who were often able to deliver.

The political clout of the region has been most apparent in local economies. Apparently it is the unanimous belief of the citizens of Coffee County that they were chosen for the aeronautical research center over sites in Alabama and Arizona because Memphis Senator Kenneth McKellar was Acting Chairman of the Senate Appropriations Committee. Senator McKellar's State campaign chairman was an influential landowner and retailer in Coffee County. In Jackson County, the change in state political access came with the support of Winthrop Rockerfeller. The subsequent appointment of a number of local people to prominent commissions and boards has been paralleled by an equal number of state projects in the county.

Summary

Based almost entirely on the extraction activities of cotton farming, coal mining, and lumber products, the Southeastern economy of 1930 had inherently few intra- and interregional links to bind it to the national spatial network. The simple processing of wood products accounted for the majority of its manufacturing establishments, while the apparel industry claimed most of the rest. There was little in the structure of the regional economy or its labor force to stimulate internal innovation and alternative kinds of development, and few links to or specialized receivers of technical information from the outside.

The circumstances of the Southeast in 1930 were the result of deep-seated historical patterns. The coastal cities of New Orleans, Mobile, Savannah, Charleston, and Norfolk had been the region's early and only thriving ports of trade and sources of information from the urban areas of the Northeast. The interior of the region remained relatively inaccessible. When the canals and railways of the industrializing East and Mid-West permanently altered the nation's trade routes, the modest role of the Southeast in the nation's spatial network was attenuated. Furthermore the urban nodes and the provision of urban goods and services needed to provide a nucleus of intra- and interregional spatial transactions were inhibited from early settlement by a dispersed, rural population, many of whom were slaves and then tenant farmers with little economic impact, and by economic activities which required rural, not urban, settings.

In addition to the economic constraints on the region, the Southeast existed with a cultural disparity that was perhaps more of a barrier to its full participation in the set of national transactions than was the economic structure. The physical and educational poverty of its indigenous White population was notable, relative to other regions of the United States, and the Southeast had been almost entirely by-passed by the large foreign immigration which provided new ideas and forced cultural accomodation in other regions. It seems likely that the large Black population in the Southeast was the biggest obstacle to development. First by the legal sanction of slavery, and later delivered unprepared by experience or expectation, and without the sponsorship of the White community, the Black population was prevented from assuming a functioning role in the social and economic life of the region.

By the 70's the region had undergone radical change, both in image and in fact. The change was marked by an unprecedented population shift including job seekers from the North and retired persons attracted by climate; military personnel whose original contact with the region was a stint in its numerous World War II military installations; by former residents who have responded to the increased number and variety of jobs in the region,[5] and especially by the fact that many more Southerners elected to remain at home.

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[5]The phenomenon of return migration was noted by officials of Coffee, McMinn, and Pope Counties. Thompson believes this outlying labor pool is region-wide. He says the evidence indicates that the labor pools in the smaller Southern towns to which manufacturing is moving or fleeing--choose your own word--are really deeper and richer than they appear on first blush. Relocating manufacturers contend that they do not have to depend on workers already in town. They simply announce in, say, the Baltimore newspapers that they are headed for, say, Lynchburg, and the native sons return with Northern-acquired skills. In almost any Southern town from which blue-collar workers have migrated, some reluctantly, many have tired of the big city and would like to return" (Thompson, 1975:190).

Increased incomes and increased population have contributed to strong expansion in the construction and the leisure sectors of the region's economy, and the region has maintained strong national shares of its traditional sectors. However the most significant changes in the region's economy, and especially the important new links connecting the rural and urban Southeast to the national spatial network, have been forged by large scale projects of the public sector in the area of defense and space research. These high technology, high productivity activities have established an entirely new set of spatial connections. The authors who have studied the geographic impacts of such public sector expenditures over the years conclude that although the impacts are difficult to measure, the net effect has been highly beneficial to the region.

Like the early mercantile economy of the Northeast and the industrial capitalism which followed, the innovation fostered by the public sector in the Southeast was very much a product of entrepreneurial guidance. With low levels of private sector activity in the rural South, the practice of political leadership was often the only route to status and achievement available to ambitious men. Over the past 50 years the disproportionate number of strategic Congressional and Senate posts held by Southern political entrepreneurs has frequently brought large changes to local areas which have received federal expenditures.

In acknowledging the accelerating changes in the Southeast, it is essential to keep in mind their unevenness: Florida has tripled its population since 1930, but West Virginia, Arkansas and Mississippi have barely maintained theirs. Incomes continue to be low: every

Southeastern state, and almost every county in Tennessee and Arkansas, are below the United States per capita average in 1978. As industry has come to the South, it has located in the White South: northern Mississippi, northwestern Arkansas, Middle and East Tennessee have gained disproportionate shares of the industrial growth in their states. There have been vast differences in the ability of local areas to capture a share of the growth. Identifying the characteristics of local areas associated with success in exploiting the regional trends is the task of the following chapters.

CHAPTER 4

ECONOMIC DEVELOPMENT IN COFFEE COUNTY

An Overview of the Change

The Status in 1929

In an era when most rural economies depended on extractive industries, Coffee County was poorly endowed with natural resources. Tennessee's Eastern Highland Rim, between the Nashville basin and the Cumberland Plateau, contains a long sweep of territory referred to as "The Barrens." The inset in Figure 1 shows the location of Coffee County, southeast of Nashville, and the county map indicates the major communities and the major transportation routes in 1980. This "barren" land of thin topsoil predominates in Coffee County and before the use of fertilizers it was considered more suitable for pasture or woodland than for agriculture. TVA's 1933 survey of county resources found no minerals being mined except a small amount of limestone gravel and chemical lime for export. Within a decade mineral production had ceased altogether. Although the large Campbell and Dann Lumber Company produced oak flooring and bent wood products, and a second Campbell company produced wooden bats, golf clubs, and spokes, most of their timber was imported from an area within a radius of 150 miles. The TVA survey pointed out that local wood was in heavy use as fuel for farm homes but that methods of obtaining it were "wasteful and extravagant." Railroad ties had been a source of income to the county earlier but cutover timber had

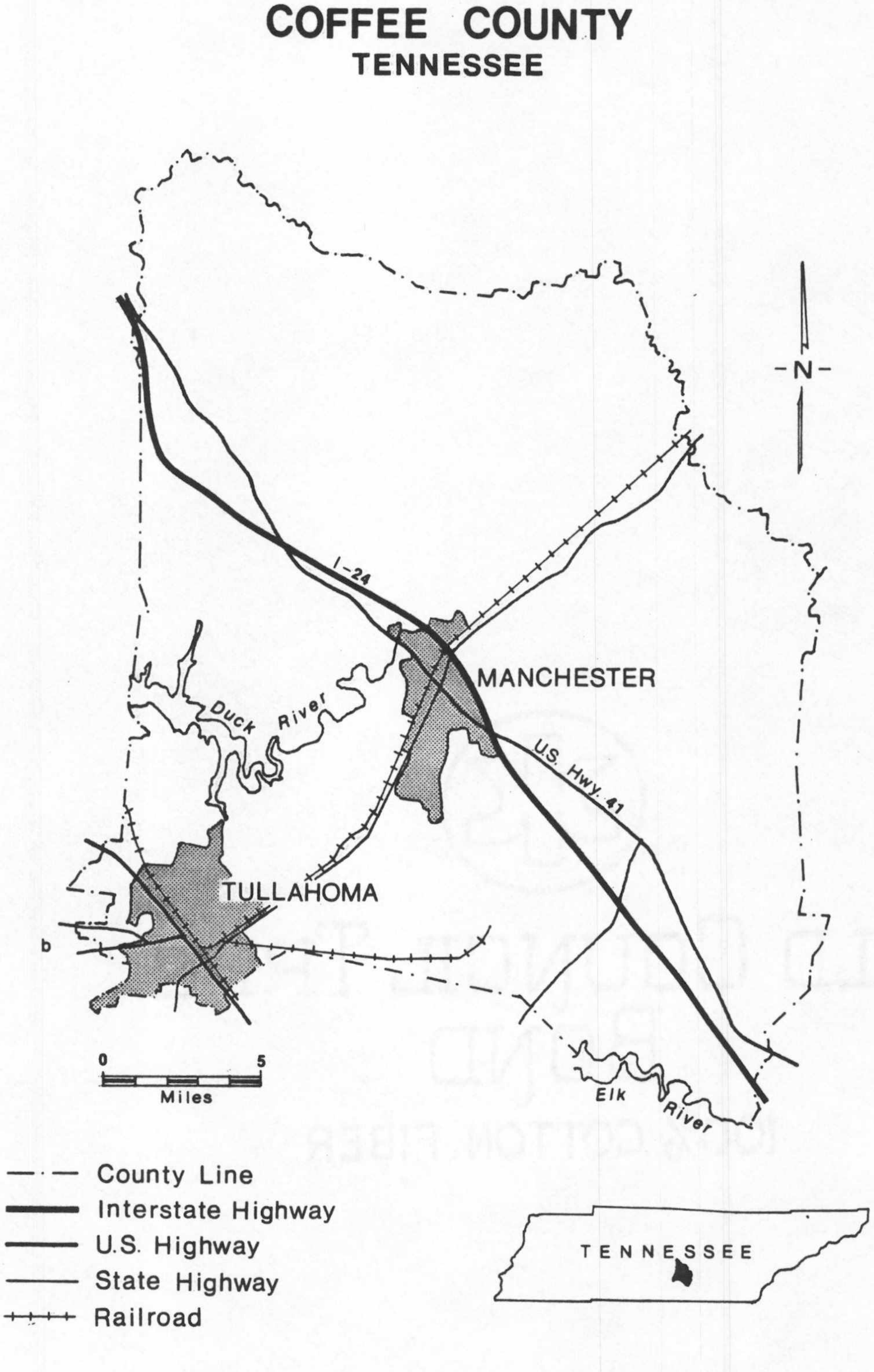

Figure 1. Coffee County, Tennessee.

reduced the supply and sawmilling in general was almost at a standstill (Whitehead, 1934a).

The indices of farming in Coffee County at the beginning of the period were rather bleak compared to most other Tennessee counties. Net farm income per farm acre ranked 87th among Tennessee's 95 counties and Coffee ranked among the bottom half of Tennessee's counties for all 22 measures of farm well-being devised by Allred (1935). The poor soil and cool climate were not suitable for extensive cotton agriculture and general farms were the rule. Local needs for hay and corn were filled and exports of corn, eggs, poultry and livestock were produced along with tobacco. The few prosperous farmers were generally dairy farmers. A successful cooperative creamery had been established in Tullahoma in 1922 and the butter it produced was shipped to metropolitan areas, including Atlanta.

With the exception of the cooperative creamery, formal cooperative efforts in the farm community were non-existent. The agricultural extension program initiated in 1914 had had three agents in Coffee County before 1930, but none had stayed longer than two years. When a county agent was permanently established in 1930, he found farmers, banks, and community organizations eager to improve the agricultural situation though there were few funds available to do so.[1]

In spite of its poor agricultural conditions, more than one-half the employment in Coffee County in 1930 was in agriculture,

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[1]The Agricultural Adjustment program proved to be a boon to the county extension program according to that early agent's report. Most farmers were cooperative in crop reductions and carrying out the program established a network of contacts for the agent.

although it provided less than one-third of county personal income. Manufacturing, trade, and services accounted for similar shares of employment and income, but those fortunate enough to be employed by the railroad brought in a disproportionately large share of the county's income. In 1929 the per capita income of Coffee County was little more than one-half the Tennessee average per capita income and the lowest of the four counties studied. By 1978 the per capita income in the county was the highest of the four and among the highest of Tennessee's 95 counties. The structural change which underlies Coffee County's large increase in income is documented in the following section.

Statistical Overview

Between 1929 and 1978 the per capita personal income of Coffee County grew at twice the rate of the average for the state, as Table 1 shows. This difference in growth pattern is attributable almost entirely to two decades: during the Depression the county managed to increase its per capita income by 20 percent, and during the 50's when Arnold Engineering was built and began operation, the county's increase was more than twice that of the state. As Table 2 shows, the increases in each decade were not due to a declining population, and in every decade Coffee County's rate of population growth exceeded that for Tennessee.

Tables 3, 4, and 5 reveal the structural changes in the Coffee County economy as it has shifted from a predominantly agricultural to a predominantly service and professional economy. As in Table 1, the decades of the 30's and 50's show marked change. Between 1930

TABLE 1

PER CAPITA PERSONAL INCOME AND PERCENTAGE CHANGE BY PERIODS, COFFEE COUNTY AND TENNESSEE, 1929 - 1978

	1929	1940	1950	1959	1970	1978	1929-1978
Coffee	$199	$239	$695	$1,636	$2,720	$6,435	
Percentage Change		20.1	190.8	135.4	66.3	136.6	3,133.7
Tennessee	375	334	994	1,555	3,079	6,561	
Percentage Change		-10.9	197.6	56.4	98.0	113.1	1,649.0

Source: Department of Commerce, Bureau of Economic Analysis, Regional Economics Information System, April 1980. Percentages computed by the author.

TABLE 2

POPULATION, RATES OF CHANGE, AND PERCENTAGE URBAN BY PERIOD, COFFEE COUNTY, TULLAHOMA, AND MANCHESTER, 1930 - 1977

	1930	1940	1950	1960	1970	1977
Coffee County						
Population	16,801	18,959	23,049	28,603	32,572	34,941
Percentage Change from Previous Period		14.4	21.5	21.6	16.0	7.3
Percentage Urban	23.9	24.0	32.8	56.5	66.1	62.61
Tullahoma[1]						
Population	4,023	4,529	7,562	12,242	15,311	15,170
Percentage Change From Previous Period		13.1	66.2	61.9	25.11	-0.92
Manchester						
Population	1,227	1,715	2,341	3,930	6,208	7,266
Percentage Change from Previous Period		39.8	66.2	67.9	58.0	17.04

1. Tullahoma lies partly in Franklin County. Of its 1977 estimated population of 15,170, 558 live in Franklin County.

Source: Department of Commerce, Bureau of the Census: Census of Population and Housing, 1930, 1940, 1950, 1960, and 1970; Current Population Reports, Series P-25, No. 855.

TABLE 3

PERCENTAGE DISTRIBUTION OF TOTAL PERSONAL INCOME BY MAJOR SOURCE, COFFEE COUNTY, 1929 - 1978

	1929	1940	1950	1959	1970	1978
Farming	31.56	21.11	16.08	4.46	2.30	1.46
Mining	--	--	0.03	--	--	--
Construction	2.58	2.27	6.19	3.01	2.03	3.06
Manufacturing	11.39	24.73	23.81	15.93	16.04	17.46
Transportation, Communications, and Public Utilities	10.03	4.28	3.06	2.05	0.98	1.54
Wholesale and Retail	13.90	13.17	15.10	9.69	7.03	6.76
Finance, Insurance, and Real Estate	2.94	2.29	2.22	1.41	(D)	2.08
Services	9.82	8.14	7.78	42.31	42.91	34.89
Government						
Federal	2.59	8.56	1.95	4.16	2.91	2.66
State and Local	4.38	3.71	7.88	4.27	6.09	7.19
Other	0.30	0.24	0.26	0.09	(D)	n.a.
Transfer Payments	3.78	5.23	9.21	5.72	8.60	12.07
Property Income	7.06	6.93	7.56	0.90	9.69	10.67
(Residence Adjustment)	n.a.	n.a.	n.a.	(-11.12)	(-11.38)	(-9.79)

Note: Base for percentage computation is total personal income by place of work. Estimates for 1978 based on 1972 Standard Industrial Classification (SIC).

(D) Raw data undisclosed for reasons of confidentiality.
-- zero or less than $50,000. n.a. not available.

Source: Percentage computations for 1929 through 1959 provided by Center for Business and Economic Research, The University of Tennessee; percentages for 1970 and 1978 computed by the author from Department of Commerce, Bureau of Economic Analysis, Regional Economics Information System, "Personal Income by Major Sources," April 1979 and April 1980.

TABLE 4

PERCENTAGE DISTRIBUTION OF EMPLOYMENT BY MAJOR SOURCE, COFFEE COUNTY, 1930 - 1978

	Series I					Series II	
	1930	1940	1950	1960	1970	1970	1978
Agriculture	54.90	45.91	30.45	11.62	4.26	10.17	8.20
Mining	0.43	0.21	0.27	--	0.25	n.a.	--
Construction	2.03	3.75	10.35	9.36	6.89	2.83	3.28
Manufacturing	9.74	21.19	22.79	23.27	26.39	26.51	23.27
Transportation, Communications, and Public Utilities	4.58	3.02	4.26	3.36	4.42	1.24	1.29
Wholesale and Retail	7.59	9.97	15.09	14.53	14.75	10.63	10.84
Finance, Insurance and Real Estate	0.95	1.02	1.14	1.84	2.70	1.60	2.13
Services	11.99	12.81	13.23	31.93	36.80	31.70	30.21
Government	n.a.	2.11	2.42	4.11	3.53	2.66	14.55
Total Employment	5,372	6,158	7,838	9,863	12,329	15,630	19,326
Percent Change from Previous Period		14.63	27.28	25.84	25.00		23.65

Note: Consistent data are not available for the whole span of years. Series I is based on employment as reported in the decennial Censuses of Population and Housing and thus is on a place of residence basis. In 1930 government employment was distributed by function and its share cannot be computed.

Series II is based primarily on ES-202 covered wage data and thus is on a place of work basis. It is not possible to assign non-farm proprietors to particular categories so non-farm employment shares are understated in Series II. Non-farm proprietors represented 7.3 percent of non-farm employment in 1978, and 7.0 percent in 1970. 1978 employment is based on 1972 SIC.

n.a. not available. -- zero.

Source: Department of Commerce, Bureau of the Census, Population, 1930, Vol. III, Pt. 2, Table 20; Bureau of Economic Analysis, Regional Employment by Industry, 1940 - 1970; Bureau of Economic Analysis, Regional Economic Information System, "Employment by Type and Broad Industrial Sources," April 1980. Percentage distributions were computed by the author.

TABLE 5

PERCENTAGE DISTRIBUTION OF MANUFACTURING EMPLOYMENT, COFFEE COUNTY, 1930 - 1970

	1930	1940	1940	1960	1970
Food and Kindred Products	9.18	5.36	5.82	10.37	7.59
Textile and Apparel Products	13.96	34.71	27.38	25.32	29.29
Lumber and Wood Products	21.80	12.18	13.49	8.58	4.27
Printing, Publishing and Allied Industries	2.10	1.46	1.90	1.87	2.21
Paper and Allied Products		n.a.	2.24	1.61	2.67
Chemicals and Allied Products	0.38	0.15	0.06	0.52	0.43
Machinery, All	n.a.	0.38	0.51	2.10	11.00
Machinery, Except Electrical	n.a.	n.a.	0.34	1.05	9.34
Electrical Machinery and Equipment	n.a.	n.a.	0.17	1.05	1.66
Primary Metals	6.50	n.a.	0.06	0.35	0.55
Fabricated Metals		n.a.	0.22	1.79	0.71
Other[1]	46.08	45.75	48.04	46.45	41.15
Total Manufacturing Employment	523	1,305	1,786	2,295	3,254
Percent Change from Previous Decade		149.52	36.86	28.50	41.79

Note: Manufacturing employment data are not strictly comparable between 1930 and the later decades. Data from the 1930 Census of Population have been aggregated as nearly as possible to classifications of later years.

1. Coffee County has significant employment in the leather industry which accounts for approximately half of the "other" manufacturing employment. Leather, baseballs, gloves, and jackets are among the local products.

n.a. not available.

Source: Department of Commerce, Bureau of the Census, Population, 1930, Vol. III, Part 2, Table 20; Bureau of Economic Analysis, Regional Employment by Industry, 1940 - 1970.

and 1940 manufacturing employment increased from 523 to 1,305, accounting for the whole of the increase in total employment. In 1950 the construction relating to the building of Arnold Engineering is apparent and by 1960 Arnold's 2,608 technical and professional employees are reflected in the size of the service sector.

The economic shifts during the 30's and 50's were not paralleled by unique population shifts, although the large apparel factory which began operations during the Depression was located in the town of Manchester and, along with a newly established dairy, may account for some of its increase in population during the decade. A more striking change occurred in the two urban areas a decade later, between 1940 and 1950. A look at the employment distribution for that decade reveals a substantial increase in trade employment, but no unusual changes in other employment sectors or income data. The event that spurred the population shifts of the 40's and the permanently increased share of trade activities was the provision of services to the thousands of servicemen housed at Coffee County's Second Army training base. Though the residual effects of those years appear to be few by these statistical benchmarks, they were, in fact, of long-run importance.

Chronological Overview

1930 - 1940. In the rural areas of Coffee County the Depression took its toll. One available indicator is the amount of tax delinquency: two-thirds of the rural land in the county was delinquent--among the highest proportion of all Tennessee counties (Allred, 1939). Yet considering the county as a whole, the strength of employment in urban areas during the decade contributed an unusual prosperity compared to most local economies in the Southeast.

Although Manchester had a vigorous industrial beginning before the turn of the century, and subsequently had been an important regional supplier of railroad ties, by 1930 a flour mill and lumber operation offered its only manufacturing employment. The town served primarily as an agricultural trade center for the county; Tullahoma provided retail trade services for the surrounding area outside the county, and these activities helped to maintain stability during the decade. The size of towns in the surrounding counties, and especially the location of Tullahoma on Coffee County's southern border, seems to indicate that Tullahoma served Coffee, Moore and parts of three other counties as a trade center. Privilege tax information and merchant's ad valorem revenues in 1930 are considerably higher in Coffee County than most others of a similar size. Coffee ranked in the upper one-third of Allred's (1935) retail and wholesale, and service indices--a position which improved during the first half of the decade. Wilson's department store, in business since 1858, had established a reputation as outstanding in the area and had a 50 mile radius of patronage (Tullahoma News and Guardian, July 2, 1952:7-G). A Western Auto Store and two car dealerships, which would have served regional markets, apparently were able to anticipate a demand for automobiles when the worst appeared to be over and they were established about the middle of the decade.

It is, however, the manufacturing sector which marks the decade, both in terms of the relative prosperity it provided to the county, and in terms of a large permanent shift in the employment structure. The establishment of General Shoe Company in Tullahoma and the Star Union Underwear Company in Manchester, each then employing more than 100 people, were responsible for much of the relative prosperity of those days; but contribution was also made by other smaller manufacturing establishments which began at this unpropitious time. In Manchester a Carnation Creamery was started in 1934. Like the Star Union Company, this outside company was brought in as a result of local efforts. In Tullahoma a cheese factory and a box factory were started, and most improbably in 1931, a local businessman began a small boat company.

None of the manufacturing activities established before the Depression closed their doors and several increased employment and output. The baseball company had increased its sales ten times between its opening in 1922 and 1940. The glove company, after a fire in 1928, struggled though the first few years of the decade with a dearth of cash and financial support but managed to add underwear and auto seat covers to its line and to survive. The small bottling company opened in 1930 had doubled its capacity twice by 1940. Resilience and longevity have been a hallmark of the manufacturing sector in Coffee County.

1940 - 1950. The events of this decade were dominated by the construction and occupation of Camp Forrest, the training base for the Second Army of the United States. The suddeness with which Camp Forrest descended upon the county left little time for preparation. How a county of 19,000 might prepare for such an influx in any case is a mind-boggling question and the local economy and the military accommodated to each other as best they could. Every available room was rented and even hot showers were for sale. Employees for civilian positions at the military base were sought on a door-to-door basis. Local businesses sold as much in a day as they had been accustomed to selling in several months. Bank deposits quadrupled during the period and the city of Tullahoma ran a large budget surplus (Tullahoma Chamber of Commerce, N.D.). As apparently was the case in most of the communities affected by wartime military installations the bonanza was seen as temporary. The activities which mushroomed were USO clubs, movie theatres, beer halls and the like which required little capital and were quickly converted or closed when the boom was over. Afterward there was no collapse and no exceptional unemployment. Local business people were apparently content with the respite while bankers took a leery view of new economic expansion and remained conservative for longer than conditions justified.

Aside from the Camp Forrest boom, growth during this decade included small establishments in food processing and lumber for Manchester and, in addition, Manchester began to benefit from its location on the main Mid-West to Florida route by providing tourist camps. In Tullahoma in 1943, one of many local entrepreneurs resigned his position as manager of the local baseball plant and persuaded Wilson sporting goods, then in Michigan, to open its first plant in the South on the basis of his management expertise. In 1949 he designed and supervised the construction of a second plant in Tullahoma to manufacture wooden and metal golf clubs. Within a decade after opening, the two plants provided employment for about 350 people.

By many accounts, including that of a congressional investigating committee, the county's economy was unchanged after the departure and removal of the military base. In fact, a number of changes occurred in the traditional sectors of the economy, during the decade and later, which can be attributed to the military presence. Two establishments which opened to serve the Camp are still in operation in 1980: Columbia Dairy brought in to supplement existing dairies, and Appalachian Tanning which began in 1943 exclusively to produce leather shaving kits for the military. Several of the county's established apparel firms began to do contract work on military boots and clothing in the period following the War.

Of more importance were the changes in physical and social infra-structure. Greatly improved highways, a railroad viaduct, and a new elementary school were provided by the military to ameliorate the impact of the training base, and in 1946 a commercial flying service began at the military airfield.[2] The introduction of public health immunizations, garbage collection and the building of the largest municipal sewage plant in the state mark a threshold in public service that was made imperative by the size of the county's temporary population and became a permanent feature.

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[2]Today the per capita number of liscensed pilots in Coffee County is among the highest in the country. It has more aircraft per capita than the city of Nashville and has begun to host conferences and conventions related to aviation.

But the most significant legacy of the wartime military presence was to establish Coffee County as a primary contender for the location of the aeronautical research institute, which in turn wrought radical changes in the county's economic and demographic structure during the 50's.

1950-1960. With the recollection of their earlier bonanza, the county received the 1949 announcement of Arnold Engineering with jubilation. As events unfolded the impact was less spectacular, but there was little doubt in anyone's mind that it would be irreversible. In order to supply the large construction undertaking local businessmen established the county's first ready mix concrete company along with a concrete pipe company by 1950. In 1954 a metal culvert company began and the three organizations merged. The volume of this company is among the largest in the United States and it has become a large supplier of state and federal construction projects. Arnold operations began on a small scale in 1950. By 1959 there were 2,608 Arnold employees engaged in aeronautical research and testing in addition to the county's other employment. Slightly more than one-fourth of its employees are engineers and another 30 percent are white collar workers. This relatively high-wage employment is classified in the service sector of Tables 3 and 4 show. Approximately two-thirds of Arnold's employees live in Coffee County and the private sector management company of Arnold Engineering, ARO, estimates that 70 percent of its payroll is spent in Coffee County and another 16 percent in adjacent Franklin. One of every 13 Tullahoma residents is an Arnold employee. Seventy-five percent of Arnold's retirees have remained in Coffee and Franklin counties (High Mach, 1971).

The employment multiplier that Arnold's presence undoubtedly generated in trade and consumer services did not extend to business services or other sectoral linkages. Of necessity in 1950 in a rural area, Arnold was a self-sufficient operation. Nearly all of its original technical personnel were brought in from outside the county, and, unlike many federal research projects, there was no sub-contracting. Consequently, Coffee did not have the benefit of extensive ancillary developments. Nearly all of the major procurement went to firms outside of Tennessee in its first two decades and by 1960 only one additional local industry can be attributed to Arnold. That firm manufactured prototype models for wind tunnel testing, but its output has gone not to Arnold, but to NASA and the major aircraft companies.

During the decade when the large physical, fiscal, and social changes associated with Arnold were occurring, other employment growth in the county was small. By virtue of a special referendum, the Schenley Company, having bought the expatriated George Dickel distillery, returned its operations to Coffee County, within a quarter mile of its original location (Trichey, 1972:33). Manchester, chagrined that Arnold Engineering, located between the two towns, was considered to be in Tullahoma, could claim no other new sources of employment during the decade.

1960 and after. Although population growth in Coffee County during the 60's and 70's has slowed relative to the two previous decades, the rate of job creation remained as high as it had been under the extraordinary stimulus of the military base or the start-up of Arnold Engineering. Many of the new jobs originated from a cluster of high technology companies which were a direct result of the research conducted at Arnold and its associated educational facility, the University of Tennessee Space Insitute (UTSI).

The permanent campus for UTSI was established near the Arnold complex in 1965, but the idea for its existence dated back to the original planning for Arnold, and the University Extension courses which were offered shortly thereafter. The research at Arnold was exploratory in the sense that any research is, but in addition the whole field of aeronautical engineering was relatively undeveloped and there were few if any educational institutions which could provide the range of academic preparation required. It was clear from the beginning that a specialized educational institution was an essential concomitant to the stated objective of being at the frontier of aeronautical research; yet the questions of timing, sponsorship, financing and structure were nowhere specified. The actual establishment of UTSI resulted from the joint effort of the Air Force, Arnold and its parent company, and a number of dedicated local individuals who formed the regional UTSI Support Council. Both students and faculty at UTSI are directly associated with work at Arnold, but virtually every one of the 50 faculty members has research projects supported by outside funds as well. The Institute has provided Coffee County with international access via formal student and faculty exchange agreements with Belgium and West Germany, and there are students from several other foreign countries as well.

Like most other space related research programs, Arnold's employment peaked in 1967. At about the same time, however, the momentum generated by Arnold's internal research, the interaction of Arnold and the private sector academic community, along with the on-going interest of private industry began to spawn an impressive array of technologically related small companies. An aerospace instruments firm was established in 1967 by a St. Louis company, but most of the technical growth has been from former UTSI and Arnold employees. Many of these new firms have generated their own spinoffs or vertically integrated subsidiaries. Laser electronics, particle measurement, distance measuring devices, and heart monitors have been part of this activity. Eight of Tullahoma's nine tool and die shops also began in this period. Many of these firms are still comparatively small, but some have steadily expanded and some are now owned by national or international corporations. Arnold still provides its own in-house capabilities and the market of most of these firms is comprised of the military and civilian aerospace companies located across the United States.

In addition to this high-technology employment, Tullahoma added a large number of jobs in other new sectors. Several business printers, and a large plant for the manufacture of garden hose were among them. Manchester added more than 600 jobs in the apparel sector and many of these firms were established by local people. The only branch plant of a mid-western casket company began operations in Manchester and has consistently employed more than 500 people, while a local lumber company employed approximately 100 as a large regional supplier of wooden crates and cable spools. Today highway 41 has been replaced by I-24 and sales taxes on motels, restaurants and service stations provide Manchester's main source of government revenue.

In addition to the new establishments in manufacturing, the older ones have remained viable. Production of wooden and aluminum bats, wooden and metal golf clubs, and sports gloves and balls of several kinds have continued to increase, and Tullahoma considers itself one of the nation's primary centers of sports equipment manufacturing. According to available records only two of the county's many manufacturing concerns begun after the turn of the century had ceased operations--both after more than 50 years of business. With the addition of nearly 3,000 jobs in manufacturing since 1950, and an equal amount in the professions and services, Coffee County appears to exemplify Thompson's picture of a region going through its industrial and post-industrial revolution at once.

The Spatial Network, Entrepreneurs, and Local Choice

Integration in the Spatial Network

Links to the early network. Though Tennessee's role in the national spatial network had not been a strong one by 1930, there is evidence to support the belief that Coffee County was relatively fortunate in its connections to the intra-state network, especially with Nashville, and thus indirectly to the tangible and intangible goods of the larger network.

The physical location of Coffee County, half-way between Nashville and Chattanooga, brought the railroad to the county in 1850.

The first train in 1854 established Coffee County's literal links with Nashville, and within the county, Tullahoma, which had its beginnings as the railroad construction camp in 1850, quickly replaced the older town of Manchester as the principal urban area. Although the railroad provided the obvious benefit of transport for the products of Tullahoma's developing industries, it was another economic and cultural "import" that was of primary significance in the long run.

In the rural South, with its high incidence of disease, Coffee and its surrounding counties enjoyed a reputation as an area relatively free of epidemics and illness. Coffee County was endowed with mineral springs, cool summer weather and pleasant scenery; Tullahoma itself was known as the highest elevation on the rail line between Nashville and Chattanooga. Consequently from approximately 1870 to 1910, its reputation was firmly established as a health resort and summer haven, especially for visitors from Nashville. The daily influx of travelers enriched the area's many resort hotels but more importantly repeatedly exposed the town and county to the customs, ideas and business interests of the state's government and financial center.

Then, as now, the power residing in a state political capital lay not only in its decision-making role with respect to state programs but also in its inevitable association with the expenditure of federal programs. Federal highway construction, which accounted for the major part of federal expenditures in local areas in the early part of this century, did, generally, "lead to Rome." Highway expenditures led to Rome in a figurative sense too: those who held the power in state capitals could guide state highway funds to their local areas.[3] Either because of its proximity to Nashville in the physical sense, or in the power sense, Coffee County fared well in its network of roads compared to many other counties, and especially so when the proportion of local expenditures is considered.[4]

Pred (1977) notes in his study of the early paths of the dissemination of information that the usual sources of information for the newspapers in lower levels of the urban hierarchy were the newspapers from larger urban areas which reached them. With direct contact between Nashville and Chattanooga via train, Tullahoma would have had news faster than many rural Tennessee counties. Tullahoma had its first newspaper within six years of the inception of the railroad camp. A newspaper has been in continuous operation since 1868

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[3]Allred comments that "the highways constructed and maintained by the state compose a relatively large percentage of the county road system in the poorer counties. . . . Many of those counties necessarily would have had a disconnected and inferior highway system had they been left to their own resources" (Allred, 1939:230).

[4]In 1930 although Coffee ranked 51st among Tennessee Counties in land area, 54th in size of population and 47th in number of registered motor vehicles, it ranked 31st in total road mileage. The county had 3 State highways, one of which connected Nashville to Chattanooga, and one connecting with the major U.S. 70 just outside the county. (Only a small part of this highway system was paved, the rest was gravel.) Coffee apparently was the recipient of a disproportionate amount of intergovernmental benefits since its level of public debt relative to other counties was extremely low and among the counties it ranks much lower with respect to county highway expenditures than it ranks for either state or federal highway expenditures. Its rank in federal highway expenditures was 29th and it was 22nd in state highway expenditures. Since, by contrast, its ranking for general expenditures by the State and federal government is quite low, one possible conclusion is that Coffee's physical place in the Tennessee spatial network--its proximity to the state capital along with its location between two urban nodes--was a major factor in its favorable transport access.

and at that time Tullahoma was one of two counties, outside the four largest cities which had a semi-weekly newspaper. The second newspaper based in Manchester has been in continuous operation since 1881.

At least one other advantage in access to information accrued to Coffee County from its proximity to Nashville. In 1923 Nashville's radio station WSM was one of the first in Tennessee. By 1935 there were two stations in Nashville and they were 10 and 100 times more powerful, respectively, than any other Tennessee station. Nor did the Depression prevent the rapid increase in radio sets. By 1938 in the Southeast only Virginia and Florida had more sets than Tennessee (Allred, 1938).

In Chapter 2 the importance of social and cultural characteristics to participation in the spatial network was emphasized; Chapter 3 examined the severe disadvantage under which the Southeast labored in that respect. Coffee County, perhaps only by the accident of physiography, was more fortunate. Its poor agricultural endowment along with a lack of navigable rivers precluded its commitment to the cotton and mercantile network which fed into the Northeast. Without cotton agriculture there were no large land holdings farmed by large numbers of slaves. Many of the black families in the county arrived after the Civil War and a few became relatively well off. The proportion of Blacks has decreased steadily to a level of 4 percent in 1970. There is no reason to suppose that as individuals or as a group the Blacks of Coffee County were offered more economic and social opportunities than they were elsewhere, but from the point of view of economic growth, their small numbers meant that there was no large group of the population which was unable to participate in economic and cultural life.[5]

The lack of large land holdings, slave ownership, and old established social systems is in contrast to a number of counties surrounding Coffee. Several persons commented, sometimes wishfully, on the lack of historic old homes and "southern traditions" in Coffee County, yet it has undoubtedly been one important source of the flexibility which characterized Tullahoma's entrepreneurs, and of the county's economic diversity.

In addition to a lack of inhibiting Southern insitutions, Coffee County had committed itself early to a strong effort toward education. The early TVA Survey notes that while some of the county's teachers were inadequately prepared, and political considerations sometimes affected their selection, many of the teachers were unusually well educated (Whitehead, 1934a). Allred (1935) reports Coffee County's high ranking with respect to value of school property per child. In both Tullahoma and Coffee County, the 1935 salary of teachers was exceeded by only four other school systems in the State (S. Johnson, 1938). School enrollment figures for

[5]The issue of abolition was apparently not devisive to Coffee, nor were the actual events of the War. During the winter of 1863, Tullahoma was the headquarters for General Bragg's Army of Tennessee and later the town was held by Federal troops. Although business was completely disrupted and "every able bodied man was in the War," the recovery was smooth both economically and emotionally. It left no legacies of ambush and bloodshed like the celebrated feuds of Pope County, Arkansas, nor the seeds of long-lived conflict and political difficulties as it did in McMinn County, Tennessee.

every age group in 1930 exceeded not only the State averages, but United States averages as well.

Among the rural and poor counties which were typical of Tennessee in the early part of the century it appears Coffee had a number of historic advantages. Its proximity to Nashville and an absence of the inhibiting legacies of an earlier plantation economy gave it an enhanced access to the early spatial network, such as it was in Tennessee; however its favorable economic status in the present period owes much to its direct links with a very different national network.

New links and the public sector. In 1964 a Congressional committee investigating the effects of government research and development activities on host communities noted the large changes in Tullahoma as a result of the presence of Arnold Engineering, and with passing reference to items of physical infra-structure provided by the military during the War, contrasted these two periods by saying "as far as can be determined, there was no notable upgrading of the school system, no significant increase in per capita income, no establishment of additional industries. . .Camp Forrest left no permanent distinctive marks on the landscape and way of life of Coffee County" (Select Committee, 1964:12). This assessment was somewhat shortsighted even in terms of the "visible" items cited here by the Committee.

The permanently increased level of public services has already been noted, as have the new dairy and leather company. Much of the large population increase during the decade can be attributed to the military base, and in particular, so can the dramatic increase in the urban population. Almost all of the 40's population growth in Tullahoma shown in Table 2 had occurred by 1946, according to local sources.[6] Nor was the permanent addition to the population the only noteworthy residual of the thousands of troops who passed through the county. They brought new customs and ideas with them and one of the most common observations of residents about the military period is of lasting friendships which were formed with soldiers from every part of the country. In a 1976 commemorative edition, the local newspaper expressed a point that is essential to participation to the national spatial network when it observed that "the influx of soldiers from throughout the United States meant that both they and the residents here got to know how other Americans lived" (The Manchester Times, July 8, 1976:7-F).

It is the establishment of these and other new channels of information to the outside that was the critical contribution of the military operation in Coffee County, and it was this factor that the Congressional committee did not perceive. The newspaper publisher who personally and through his newspaper was the entrepreneur of a dozen important social projects in the county during the 60's and

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[6] Generalizing from the wartime experience everywhere in the U.S., and from the local accounts of the door-to-door search for civilian employees, many of the military jobs were filled by secondary members of the labor force who retired from the job market when the military installation was closed. It is clear though, that new primary workers were able to find permanent jobs after the war. Either for reasons of threshold size, increased incomes, changed tastes, or a larger regional market, or a combination of these, 1,000 permanent jobs were added in the non-manufacturing, locally oriented sectors. The local recollection that things settled down "just about like they were before" is not accurate.

70's lived in Knoxville, Tennessee but had never heard of Tullahoma before the War. The access to military purchasing has provided an increasing source of income up to 1979 for General Shoe Company, Wilson Cheese, Tennessee Overall Company and others. The location of Camp Forrest was part of the information held by Military decision makers and set the stage for the location of Arnold Engineering, as we note below; and in turn Arnold provided Coffee County with its initial links to the specialized spatial network that provided the propulsive force in Southern economic development for the next three decades.

In that wholly new set of defense and space activities Arnold Engineering was a modest element in terms of size, but its designated role as the leader in aeronautical research gave it major national connections to the military and commercial aviation industry, as well as to space research. The research at Arnold and the Space Institute has included close ties with the private sector. A distinguished industry advisory panel has visited the Institute twice yearly to discuss industry needs, and no doubt has served as an important two-way channel for the transmission of technology and market information to the numerous spinoff industries which have been established since the late 60's.

The direct impacts of Arnold in its host county have also served to enhance the probability of participation in the spatial newtork by altering its human resources. In 1960, the Census of Population showed that almost 25 percent of the County's residents had been living elsewhere in 1955. The Congressional hearings note the relatively quick impact of Arnold on the local school systems. Tullahoma High School was accredited for the first time in 1958 and the county high school shortly thereafter. The only foreign language available previously had been Latin. By the 60's there were five choices. One-third of Tullahoma's teachers were Arnold employee family members. According to local citizens there has been an enormous increase in college attendance from both high schools. In 1970 the median number of years of schooling completed by the population 25 years and older was among the highest in the state. The percent of adults who have completed college is likewise quite high compared to Tennessee state averages.

Although Arnold Engineering has been the proximate cause of the high level of income and the diverse economic structure of Coffee County in the present, the changes were actually part of a larger set of public sector influences in the county. The presence of these public sector activities was not accidental but was assiduously developed by the county's entrepreneurs.

Entrepreneurs

The local political entrepreneur associated with the location of Camp Forrest and then Arnold Engineering was also an entrepreneur in the more traditional sense, and the tradition of that kind of entrepreneurship was present in the county from its founding in 1836. Coffee county's topography, with gradually increasing elevation, and abundant waterways provided an obvious asset for the operation of mills and the county's early industrial activities were sawmills, grist mills, and a paper mill which by 1870 was supplying newsprint to Chattanooga, Atlanta, and Nashville. The spring water of the county provided a resource to small distillers and the first recorded settler, in 1812, operated both a grist mill and a still. By the turn of the century, there were two large distillers, one still in operating in the 70's.

M. R. Campbell, one of the most influential of early entrepreneurs, urged the area to industrialize because of its agricultural disadvantage. He is described as the leader of a group of men who "obsessed with faith in the future of the town, began a campaign of education and publicity as to its possibilities of becoming a manufacturing city--and proved his faith by his works" (Tullahoma News and Guardian, July 2, 1952:13-B). The Campbell's sawmill expanded to become a spoke and hub factory in 1867, and in 1898 Mr. Campbell opened a second company to produce the first bent and turned wood products in the United States. Mr. Campbell became financier and advisor to several other local businesses and helped form and became president of a national bank. He was an ardent supporter of a public school system. His example as a businessman and booster was followed by his two sons. One son was Mayor of Tullahoma during the 20's and was organizer and president of the first Chamber of Commerce.

By 1930 Mr. Campbell's example had been followed by at least 13 industries, all started by local people. They included wood products, leather gloves and baseballs, bedspreads, boxes, overall manufacture, and dairies. The continuation of these privately owned industries through the 70's is remarkable in view of the trend toward mergers and acquisitions. The retailing tradition in the county is, if anything more marked. Many of Tullahoma's home furnishings and apparel stores, food markets and car dealerships have remained in the same families over several generations.

While multi-generation business are often a source of rigidity for a community, as they most definitely were in McMinn County, the notable fact about the economic actors in Coffee County has been their flexibility and their ability to exploit whatever opportunities were available. From hubs and spokes, the Campbell family turned to baseball bats; from bent woods and carriage parts to wooden automobile parts, and from that to furniture parts and window and door arches for residential construction. The Tullahoma harness tannery became a vertically integrated factory for producing baseballs in 1912 using home sewers for the finishing operation. By 1979 there were several branches in South America and the tannery supplies other factories in the eastern United States. The Tennessee Overall factory began in 1903 and expanded several times, their business of course oriented to the agricultural trade. In the 1950's they began producing trousers under a military contract. In 1979 under the name Tennessee Apparel, their more than 400 employees are among the country's largest producers of military clothing.

One of the county's most unusual entrepreneurial efforts was a determined campaign conducted by the Manchester newspaper to promote the dairy industry. The newspaper established its own dairy farm in 1928 including the county's first Grade A dairy barn; it advocated disease control and conducted a cow census which was instrumental in bring a Carnation Company plant to Manchester in 1934 (Tullahoma News and Guardian, July 2, 1952:5-c). During the same period the Manchester Chamber of Commerce and several local civic groups sought and obtained the Star Union Underwear plant in 1935. The New York company employed 100 in 1935 and in 1978, under another name, employed more than 300 people.

The establishment of the Star Union Company in Manchester and a branch of Nashville's General Shoe Company in Tullahoma, both in 1935 were an important part of the economic growth Coffee County enjoyed during the Depression. Like the underwear company, the shoe company has survived and has expanded several times, but its significance lies in its association with one of the most important of Coffee County's entrepreneurs. J. W. Harton was serving the third of his intermittent terms as mayor of Tullahoma in 1935 when he was instrumental in obtaining the shoe plant. In his first tenure (as the city's youngest mayor) he had instigated a number of capital improvement projects. In 1915 he convinced the Governor to put the State Girl's School in the town, and persuaded the North Carolina and St. Louis Railroad to donate the land for it. He himself had donated land to the federal government in 1912 for a National Guard Camp, and the site later became part of Camp Forrest and then Arnold Engineering. He donated the land for the Shoe Company. In 1938 he successfully managed the state election campaign for the slate of Governor Cooper, Senator Tom Stewart and a public service commissioner and subsequently became State Treasurer for six years, developing extensive political connections on both the

State and Federal levels. He managed the campaign of Memphis' Senator Kenneth McKellar who was for 10 years the acting Chairman of the Senate Appropriations Committee. In his various political capacities Harton apparently explored every opportunity for local advantage and "it was largely through his efforts and influence in Washington that the War Department expanded the National Guard camp into the World War II Camp Forrest" (Tullahoma News and Guardian, July 2, 1952:3-B).

Local records do not suggest the particular connections by which Harton was able to influence the location of Camp Forrest, but the circumstances surrounding the selection of Coffee County as the site for Arnold Engineering serve as an apparent example of the critical role played by political entrepreneurship once the essential requirements of a program are satisfied. The original choice for Arnold Engineering, in Washington State, had been rejected by the Air Force for its vulnerability to coastal attack. Camp Forrest, Huntsville, Alabama, and a site in Arizona were the three choices then considered by a specially chosen committee of private sector scientists. Before the report of the committee had been submitted however, the Secretary of the Air Force announced the Tennessee site. A recent Air Force publication observes: "Such a selection was not in accord with the Committee's preliminary conclusion. However, other factors not available to the Committee for consideration undoubtedly influenced the Secretary's decision to locate the Center in the beautiful Tennessee Valley, the site of old Camp Forrest" (Arnold Center, 1976:1).

Harton was an astute and farsighted personal businessman as well although he was considered "land poor" at first. He had increased his real estate holdings by purchases of delinquent tax lands during the 30's. In 1941 with the beginning of Camp Forrest, he built a shopping arcade of 26 stores and opened two hotels. After the War when the city declined to purchase the military airfield, Harton bought it. He was the chief residential developer during Arnold's influx in the 50's. Unquestionably Harton's political connections provided inside information and financial resources which enhanced his personal position immeasurably. Yet it is clear that his energy and aggressiveness brought enormous benefits to the town and county. The local newspaper concluded that his "leading role in practically every movement for the advancement of Tullahoma," has earned him the distinction of being the single greatest contributor to the growth and development of the city since the early part of the century.

Coffee County offers still another example of imaginative entrepreneurship. The newspaper publisher who came to Tullahoma immediately following the War has exhibited a tireless enthusiasm for local development projects. Through extensive newspaper publicity and personal participation he has been intimately involved with local projects of social infrastructure from the hospital to the UTSI Support Council, and he is sometimes cited as the single most important person in the establishment of the community college just across the county border. Over the years he acquired ownership of the newspapers in surrounding counties and has successfully engaged regional support for the orderly development of recreational facilities at the region's new Normandy and Tim's Ford reservoirs. Thompson (1965) speaks of the need for social entrepreneurship--public leaders who can persuade their constituents of the desirability of social goods. The newspaper publisher represents just such a social entrepreneur. His decision to exercise his personal convictions through the public forum of his newspapers has undoubtedly been one important factor in the conscious support the county has given to its economic development.

Local Choice

The kind of successful social and political entrepreneurship found in Coffee County does not occur without strong community support. That support, or choice, by the community is conversely the essence of Thompson's social entrepreneurship, and, of course, the *quid pro quo* of community support at the ballot box and perceived political entrepreneurship is also an essential relationship. This relationship has already provided a number of references to the local support of developmental changes in the discussion of the county's entrepreneurs, above. That local support is also evident in the explicity expressed admiration for the county's past and present entrepreneurs. Several additional instances can be cited, however, of broad-based support which was instrumental in achieving specific developmental objectives. The UTSI Support Council was a group which included the Director of Engineering at Arnold, the newspaper publisher, a state senator from the adjoining county and a number of businessmen. The result of that group's initial effort was

Governor Clement's campaign promise to establish the Institute. The support council remained active and in 1978 was successful in obtaining line item status for the Institute in the state budget, as well as obtaining major new physical facilities to further its primary field of research. When the space program showed signs of decline in the late 60's, community leaders formed the Tullahoma Industrial Development Board which has broadened to become a general development agency. Both the county and the city of Tullahoma have developed industrial parks. During the 70's when local planners provided evidence that the commercial tax base was less than half of normal for towns of Tullahoma's size, a concerted effort was made to attract outside commercial development and the result was a large mall centered around a Nashville department store.

Such positive moves toward economic development have been enhanced by a tradition of town and county government that has apparently been comparatively free of personal aggrandizement and political factionalism. A number of Tullahoma's mayors were industrial entrepreneurs who were interested in the town's long run development. Campbell's son, mayor during the expansive days of Camp Forrest, was a Vanderbilt University civil engineer. Mr. Campbell instituted a city accounting system which "would take three men working in collusion to get a dime" (Tullahoma News and Guardian, July 2, 1952:2-A). His next two successors were physicians, and the mayor in 1979 was a native of Coffee County with a graduate degree in banking.

The town and county have not been without some of the typical traits of rural politics. When asked to characterize earlier political behavior in the County, one interviewee replied, "To the victor belong the spoils." It was a statement of admiration. In Tullahoma, the political impact of the new Arnold Engineering families on levels of public service was quickly felt, and those changes were dramatically resisted by the incumbent mayor and older political establishment.

Some degree of civic jealousy is common in every county in the present study. Early disputes surrounding the location of the county seats, and the shifting of population centers from established towns to new railroad towns provides an historical basis, but present rivalries, may be evidenced by such things as athletic contests or strong resistance to school consolidation and refusal to cooperate on public services. The ramifications of such disputes vary greatly; in Coffee County they have been minor and are being reconciled. In McMinn County, as part of a general pattern of conflict, they have been more serious.

The flexibility that has been characteristic of the county's entrepreneurs has also been characteristic of public attitude. Along with diversified expansion in industry, the local governments have been ambitious and imaginative in using the planning and development approach to further their objectives. As it became possible, and possibly essential, to pursue a route of federally financed development, the county's governmental bodies have organized to do so. There are, in addition, several regional development and planning agencies, headed by trained professionals. The county and its citizens have been heavily involved in the planning and support of the two nearby TVA reservoirs and their subsequent shoreline development.

The past Executive Director for the South Central Development District, who, in 1978, was Executive Director for the Tullahoma Industrial Development Board, perceived the integrating role of broad community support in economic development. He noted that coordination was not then as smooth as it could be among Elk River Development Association, Upper Duck River Development Association, and local development boards, but "loose and uncoordinated as the process may be, it still serves to focus the energies of those people in the community who are involved and concerned with particular problems. We see a planning process related to the decision making process. This is not the case in many communities."

Summary

Coffee County developed relatively favorable connections with the Tennessee economic network thanks to its physical proximity to the state capital and its early reputation as a health resort for urban residents. In addition to the personal contacts and cultural influence of Nashville visitors, Coffee County's location between Chattanooga and Nashville accounts for its early main-line railroad (and the city of Tullahoma), and later for an advantage in communications via an above average road and highway system largely supported by state and federal funds, and from Nashville's early and powerful radio stations.

Though Tennessee was not strongly tied to the Coffee County's national spatial network of 1929, favorable situation in the state gave it an advantage relative to many other local areas of the

Southeast: Coffee County had no emotional or economic committment to the agricultural patterns of the past and no large residual Black population which has been economically impotent. It had good physical connections and high personal contact with a growing urban area that was gaining financial and political power; because of its contact with urban visitors, its relatively high commitment to education, and a history of private sector entrepreneurs who encouraged and exemplified flexibility, the social and cultural disparity was probably less severe.

The key factor which transformed the county's potential for economic development to significant participation in the nation's transactions has been the entrepreneurs of the present era who believed development to be beneficial and who recognized that they were in a position to affect it through the public sector. The location of the World War II training base, and later of Arnold Engineering, was closely tied to a single individual who was an extraordinary private and public entrepreneur. The military installation is commonly believed to have had little permanent effect, but like Arnold, it was instrumental in establishing new links to the economic and political decision-makers outside the region. "Putting it on the map" is in fact a graphic description of what has occurred when local areas exhibit high rates of economic and social change.

Social entrepreneurship has been in evidence in Coffee County too. In the present era it has been present in a newspaper publisher who successfully used his personal example and his local and regional newspapers to gain support for improvements in the social infra-structure.

The community's choice to pursue change and economic development in the county has evidenced itself in town and county governments relatively free of conflict and personal interests, and by the number of groups which are designated to address local and regional development. The base of community support is of course closely tied to the presence of social entrepreneurs. In Coffee County the private and public decision makers have apparently been able to agree on a common set of objectives. It is difficult to see how economic development can be maintained without this functional integration of power, and its absence is a characteristic of the two slow growth counties of the study.

CHAPTER 5

ECONOMIC DEVELOPMENT IN McMINN COUNTY

An Overview of the Change

The Status in 1929

McMinn County lies in southeastern Tennessee approximately halfway between Knoxville and Chattanooga. Figure 2 shows its locations and the orientation of its streams and ridges, railroads and highways are northeast to southwest along the sweep of the Tennessee Valley. It's southern border is formed by the Hiwasee River. After McMinn County territory was ceded by the Cherokees in 1819, the availability of land grants and purchases for nominal sums quickly attracted settlers to the area. Almost every family that was to play a dominant role in the twentieth century arrived during this initial period. These prominent families pursued farming, but they were also the mill owners, and the operators of general stores and their common economic interests were reinforced by occassional marriages among them.

By the 1930's McMinn was less dependent on agriculture than Coffee County, in terms of employment shares, although its total acreage and income from farming were greater. The dairy industry was established as the leading source of farm income by 1930, with livestock products second. Its exports of 20,000 gallons of milk per day went to the cities of Knoxville and Chattanooga. In spite of McMinn's smaller dependency on agriculture for employment and its concentration on the relatively prosperous dairy sector there

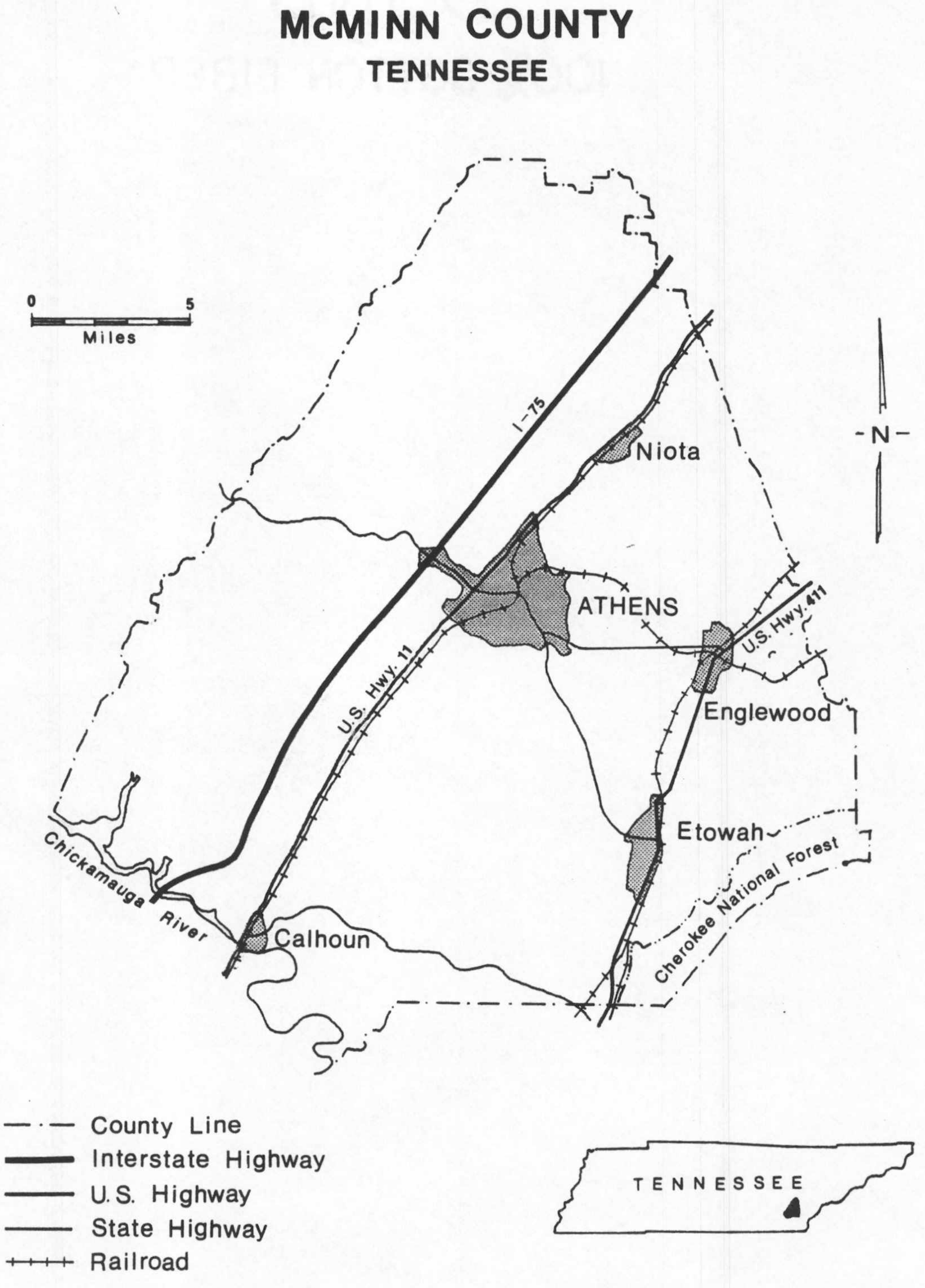

Figure 2. McMinn County, Tennessee.

is little to choose between Coffee and McMinn in terms of net income per acre farmed (Allred, 1935). Like most of the region's agriculture, its potential was limited by its human resources. The 1933 TVA report noted that the county's greatest farming needs were intelligent leadership and planning, and more personal effort.

Like Coffee County, McMinn's other natural resources were negligible. In 1933, the TVA agent reported that there was no marketable timber worth mentioning although nearly 30 percent of the county's farmland was wooded. Barite, a substance with several industrial uses, was the only mineral economically attractive to mine in the County.

The most marked difference between the two county economies in 1930 was McMinn's manufacturing strength. Although the share of income from manufacturing was only a little higher than in Coffee, the total income provided by manufacturing was much higher, and approximately three and one-half times as many manufacturing jobs were available. Because the level of manufacturing activity was high and because a stove factory and plow factory provided the town of Athens with "heavy" manufacturing uncommon to Tennessee rural counties, McMinn was among the leading counties in value added by manufacturing (outside the state's four large urban areas).

Until the twentieth century, Athens enjoyed the position of being geographically and figuratively at the center of the county's activities. When the first railroad came to McMinn County in 1905, however, it's route was along the eastern edge of the county and, as in so many other places, its construction workers and suppliers generated a new town. Following the construction period, Etowah continued as a prosperous railroad town with as many as 2,000 people employed by the district shops and yards of the Louisville and Nashville Railroad. In 1930 Etowah was only a little smaller than Athens, but in that year a bitter strike of the local workers was followed by the reorganization of the railroad and the district headquarters were moved to Knoxville. Economically Etowah was devastated, and by 1933 the TVA survey reported virtually no employment in the town other than a few people engaged in retail trade.

Despite the loss of several hundred well-paid jobs, McMinn's larger and more urban population, as well as the larger populations of its adjacent counties, gave it commercial advantage over Coffee County during the early years of the study. Allred's (1935) rankings for per capita retail sales show McMinn to be higher, as do the rankings for net wholesale sales and service receipts. Its merchant's privilege taxes for 1929 are considerably higher than those of Coffee County.

In the area of education, McMinn County would seem to have had a head start. In 1902 its new public high school was only the second to be established in the state. By 1930 McMinn, like Coffee, had school enrollments above the state average, but its proportion of illiterate population was less than that of both Tennessee and Coffee County. Since 1857 Athens has housed the present Tennessee Wesleyan College under various names and forms of organization.

With respect to the initial economic parameters, the only area in which McMinn appears to be deficient compared to Coffee County is its roads. Although Coffee and McMinn are almost identical in land area, and both lie directly between two metropolitan areas, McMinn did not share Coffee's early advantage. The TVA survey noted that McMinn County roads were not as good as those in any of the adjacent counties and the inter-county connections were very poor. Coffee County, by comparison, had 200 more miles of roads and the total of local, state, and federal expenditures on highway construction was 68 percent higher in Coffee County than in McMinn.

Statistical Overview

Table 6 shows that the increase in per capita income since 1929 has been greater in McMinn County than for Tennessee as a whole and that its decade-by-decade growth rates have not been far below the average for the state. Being nearly average, or much better, in every decade except one has not served to maintain McMinn's high ranking among Tennessee counties in per capita income, however. Among the four counties studied, this growth pattern has resulted in its drop from highest per capita income to third of the four. Table 7 indicates modest population increases each decade but much smaller than Tennessee's, until the 70's Coffee County's rates of population growth were two to four times as high as those of McMinn. Comparing rates of reproduction to population increase suggests that heavy net out-migration was essential to the attainment of average rates growth in per capita income.[1]

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[1]Bogue and Beale's (1957) State Economic Area figures are the only migration data from the decade of 1940 for small areas. In

TABLE 6

PER CAPITA PERSONAL INCOME AND PERCENTAGE CHANGE BY PERIODS,
McMINN COUNTY AND TENNESSEE, 1929 - 1978

	1929	1940	1950	1959	1970	1978	1929-1978
McMinn	$260	$228	$664	$1,396	$2,817	$5,503	
Percentage Change		-12.3	191.2	110.2	101.8	95.3	2,016.5
Tennessee	$375	$334	$994	$1,555	$3,079	$6,561	
Percentage Change		-10.9	197.6	56.4	98.0	113.1	1,649.0

Source: Department of Commerce, Bureau of Economic Analysis, Regional Economics Information System, April 1980. Percentages computed by the author.

TABLE 7

POPULATION, RATES OF CHANGE, AND PERCENTAGE URBAN BY PERIOD, McMINN COUNTY, ATHENS, AND ETOWAH, 1930 - 1977

	1930	1940	1950	1960	1970	1977
McMinn County						
Population	29,019	30,781	32,024	33,662	35,462	39,571
Percentage Change from Previous Decade		6.1	4.0	5.1	5.3	11.6
Percentage Urban Population	33.1	33.4	37.1	45.5	43.8	40.9
Athens						
Population	5,385	6,930	8,618	12,103	11,790	12,587
Percentage Change From Previous Decade		28.7	24.4	40.4	-2.6	6.8
Etowah						
Population	4,209	3,362	3,261	3,223	3,736	3,600
Percentage Change from Previous Decade		-20.1	-3.0	-1.2	15.9	-3.6

Source: Department of Commerce, Bureau of the Census, Census of Population and Housing, 1930, 1940, 1950, 1960, and 1970; Current Population Reports, Series P-25, No. 855.

With the exception of the period between 1950 and 1959, Tables 8, 9, and 10 exhibit an economic structure with gradual changes which were typical of those in the region's and nation's economy between 1929 and the 70's. In spite of a strong dairy industry, agriculture has declined in importance as it has nearly everywhere in the region. By the late 70's wood products and the apparel and hosiery mills, which together accounted for two-thirds of the county's manufacturing jobs in 1930, had decreased in importance. The service, and retail and wholesale sectors increased their proportions of employment but not of earnings. Manufacturing and government have been the only sectors which have increased their share of total income over the 50 year period. As in Coffee County, however, McMinn County's noteworthy structural changes are clearly discernable in time, and just as in Coffee County, they are primarily due to a single large event rather than a series of small ones. During the 50's a large British paper company located its first American paper mill in McMinn County, beside the Hiwasee River. The 650 new jobs in the unionized, capital-intensive plant dramatically affected the manufacturing structure as well as the personal income and property tax revenues in the county. Unlike Arnold Engineering in Coffee County, however, the new plant

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McMinn's Economic Area the rate of change by reproduction is among the highest in the state at 22.5 percent. Migration rates are also high at -17 percent, but the net change is a positive increase in population of 6.2 percent. If McMinn's rate of reproduction is assumed to be the same as the Area's average, then its four percent population increase implies even greater net out-migration than for the rest of the Area. The greater net out-migration of McMinn County than for the state in all years, worsens the county's per capita income rates of increase vis a vis the state.

TABLE 8

PERCENTAGE DISTRIBUTION OF TOTAL PERSONAL INCOME BY MAJOR SOURCE, McMINN COUNTY, 1929 - 1978

	1929	1940	1950	1959	1970	1978
Farming	21.84	22.64	14.76	7.19	3.89	0.65
Mining	0.31	0.90	0.40	0.39	(D)	(D)
Construction	4.42	4.34	4.57	4.01	2.67	3.92
Manufacturing	13.24	14.82	16.02	39.82	43.48	43.66
Transportation, Communications, and Public Utilities	23.87	11.99	10.12	4.94	3.81	3.98
Wholesale and Retail	12.58	12.12	16.07	10.90	8.26	8.44
Finance, Insurance, and Real Estate	0.60	0.38	0.48	1.37	1.66	2.11
Services	9.01	8.19	8.47	9.38	7.56	5.49
Government						
Federal	1.46	8.26	1.91	1.55	1.64	1.39
State and Local	3.39	3.85	6.82	4.74	5.78	5.62
Other	0.20	0.23	0.22	0.19	(D)	(D)
Transfer Payments	2.91	5.62	12.53	8.53	10.82	13.38
Property Income	6.35	7.51	9.22	6.89	10.06	9.88
(Residence Adjustment)	n.a.	n.a.	n.a.	(-5.24)	(-4.76)	(-10.31)

Note: Base for percentage computation is total personal income by place of work. Estimates for 1978 based on 1972 Standard Industrial Code (SIC).

(D) Raw data undisclosed for reasons of confidentiality.
n.a. not available.

Source: Percentage computations for 1929 through 1959 provided by Center for Business and Economic Research, The University of Tennessee; percentages for 1970 and 1978 computed by the author from Department of Commerce, Bureau of Economic Analysis, Regional Economics Information System, "Personal Income by Major Sources," April 1979 and April 1980.

TABLE 9

PERCENTAGE DISTRIBUTION OF EMPLOYMENT BY MAJOR SOURCE,
McMINN COUNTY, 1930 - 1978

	Series I					Series II	
	1930[1]	1940	1950	1960	1970	1970	1978
Agriculture	42.51	35.80	25.56	12.32	4.73	13.29	9.33
Mining	0.31	0.75	0.30	0.17	0.43	0.16	(D)
Construction	3.03	5.27	5.39	6.00	6.32	1.94	3.28
Manufacturing	20.18	25.74	29.65	38.43	45.29	44.02	44.05
Transportation, Communications, and Public Utilities	11.29	6.50	8.49	6.36	5.79	2.78	2.64
Wholesale and Retail Trade	6.14	10.37	14.56	15.77	15.96	9.51	13.23
Finance, Insurance and Real Estate	0.83	0.79	1.01	1.73	2.07	1.66	2.01
Services	10.67	13.13	12.86	17.19	16.80	9.36	7.60
Government	2.43	1.65	2.19	2.02	2.65	10.24	10.29
Total Employment	9,211	9,343	10,522	11,658	13,735	15,765	19,680
Percent Change from Previous Period		1.43	12.62	10.80	17.82		24.83

Note: Consistent data are not available for the whole span of years. Series I is based on employment as reported in the decennial Censuses of Population and Housing and thus is on a place of residence basis. In 1930 government employment was distributed by function and its share cannot be computed.

Series II is based primarily on ES-202 covered wage data and thus is on a place of work basis. It is not possible to assign non-farm proprietors to particular categories so non-farm employment shares are understated in Series II. Non-farm proprietors represented 6.8 percent of non-farm employment in 1978, and 6.8 percent in 1970. 1978 employment is based on 1972 SIC.

(D) Raw data undisclosed for reasons of confidentiality.

Source: Department of Commerce, Bureau of the Census, Population, 1930, Vol. III, Pt. 2, Table 20; Bureau of Economic Analysis, Regional Employment by Industry, 1940 - 1970; Bureau of Economic Analysis, Regional Economic Information System, "Employment by Type and Broad Industrial Sources," April 1980. Percentage distributions were computed by the author.

TABLE 10

PERCENTAGE DISTRIBUTION OF MANUFACTURING EMPLOYMENT,
McMINN COUNTY, 1930 - 1970

	1930	1940	1950	1960	1970
Food and Kindred Products	3.42	3.49	2.53	5.22	4.44
Textile and Apparel	45.21	57.92	53.17	40.96	36.56
Lumber and Wood Products	17.12	12.31	19.10	17.48	12.07
Printing and Allied Industries	1.05	1.04	1.15	2.12	1.13
Paper and Allied Products		--	1.19	14.17	12.06
Chemicals and Allied Products	0.47	0.08	1.03	2.01	11.85
Primary Metals		--	4.90	1.85	1.78
Fabricated and Other Metals	25.18	--	9.94	6.79	1.82
Machinery, Except Electrical		3.75	4.78	3.55	3.55
Machinery, Electrical		--	0.10	3.28	10.21
Other	5.27	21.01	2.12	2.57	4.45
Total Manufacturing Employment	1,898	2,405	3,120	4,480	6,220
Percent Change from Previous Decade		26.71	29.73	43.59	38.84

Note: Manufacturing employment data are not strictly comparable between 1930 and the later decades. Data from the 1930 Census of Population have been aggregated as nearly as possible to classifications of later years.

Source: Department of Commerce, Bureau of the Census, Population, 1930, Vol. III, Part 2, Table 20; Bureau of Economic Analysis, Regional Employment by Industry, 1940 - 1970.

did not have far-reaching social ramifications. Most of its employees were from McMinn or its contiguous counties, and there were no significant population increases. The associated stimulus to urbanization indicated by Table 10, was short-lived and the proportion of urban population in McMinn County has declined since 1960.

Chronological Overview

1930 - 1940. The Depression affected McMinn County in a very uneven fashion. We have already been referred tothe devastating effect on Etowah of the closed L & N shops. Etowah's role as an agricultural trade center had been affected earlier by declining farm prices, and the Etowah bank was forced to close during the decade. The town had no new employers until 1939.

A variety of manufacturing concerns saw the town of Athens through the Depression fairly well, with one family firm offsetting the slack period of another. The 1933 TVA survey reported employment of approximately 300 at the stove plant, 140 at the table factory, and nearly 500 in the hosiery industry. In 1937 and 1938, three new hosiery mills opened. Without the industries of the small group of associated families, the county's economic fortunes during the Depression would have been much worse than is indicated by the 12 percent decline in per capita income which actually occurred.

While the underwear and hosiery mills in the community of Englewood had reduced their employment by more than one-half, the hosiery mill in another community was operating at its full capacity employing 150, and according to the TVA agent could have marketed twice as much. It expanded in 1934. During the Depression a number of families immigrated to McMinn from TVA dislocations in East Tennessee. Many of these were established dairy farmers and were additions to the growing dairy industry which the Mayfield family led.

1940 - 1950. Despite vigorous local industrial activity and out-migration, both the rate of growth and level of per capita income in McMinn was below the State's average at the end of the 40's. In Athens a chair company and a bed company opened and both later became a part of the earlier table company. A rug company and upholstered furniture shop, as well as a fire alarm company followed. A second plow company started, setting total employment in that industry at 140. One bit of structural innovation was the establishment of a tobacco warehouse. In 1938 one of the three Athens banks had been bought by a banker from the tobacco growing area of Hamblen County. He had made some of Athens' first Reconstruction Finance Company loans and it was he who initiated the effort to get the tobacco warehouse.

In Etowah, Morgan Manufacturing began its successful production of clothing under local leadership. In Etowah and Englewood at least a dozen other hosiery mills and apparel operations began during the 40's and 50's. It is difficult to trace the history of these enterprises because name and location changes occurred frequently. Between 1940 and 1950 however, employment in hosiery and apparel increased from approximately 1,400 to 1,700 people. Furniture employment increased from 300 to 600. Thus nearly all of the county's 715 new manufacturing jobs were in low wage, low skill industries which replicated the technology and economic linkages already established by the county.

1950 - 1960. Although the local hosiery industry reached its peak employment during the 50's, the clothing industry began to pick up a momentum that continued to accelerate during the 60's and 70's. The furniture industry substantially increased its employment as well, and McMinn's first exogenous firm was a small Indiana company which manufactured filling for upholstered furniture. In 1952 one of Athens' latter day entrepreneurs developed the use of plastic molded components for furniture construction, and he is considered the pioneer of that process. But the big structural changes shown in Tables 8, 9, and 10 are all related to the establishment of the British paper mill. It was, and still is, by far the largest single employer. Although half of its initial workforce of 637 were moved to McMinn County in order to expedite full scale production, at the end of the decade the vast majority of its 1,200 employees were from the local labor pool. For the county's economic base the most notable change effected by Bowaters' arrival was not its provision of new industrial jobs but the wages which changed the relationship between manufacturing employment and manufacturing earnings. In 1950 manufacturing's share of earnings was only about one-half of its share of employment. By the end of the decade manufacturing's share of income had more than doubled, as had per capita income. The increased income is reflected in increases in trade employment, and especially in the service sector. Bank time deposits doubled in this decade, and property tax revenues increased substantially.

1960 and after. Between 1960 and 1979 the county saw seven new furniture factories open; most were quite small, but one employed more than 100 persons. Five new apparel factories began business in the 70's, most of them large. These new apparel producers accounted for the addition of some 800 new jobs and most older apparel firms have expanded as well. In 1979, hosiery and apparel production still accounted for more than one-third of all manufacturing employment, and all of these had been started by local people.

The firm producing plastic furniture components continued to grow. By the late 60's its two local plants employed approximately 250 people and a third plant had been located in Mississippi. Two small ancillary operations in the 70's were also directly related to the presence of the plastics company. During the 60's McMinn County became Tennessee's leading producer of Grade A milk, and the innovative leadership of the Mayfield family has played a large part in the county's dairying prominence.

Although the county's barite production succumbed to competition from lower priced foreign imports delivered to Gulf ports, timber had regained some commercial importance during the 70's. The ability to use southern pulpwood in paper making was the original reason for Bowater's southern plant and the management practices demonstrated by Bowaters' land subsidiary, along with TVA demonstration farms and the small part of Cherokee National Forest in the county's southeastern corner, enabled McMinn County forests to provide between three and four percent of Bowaters' pulpwood by the late 70's. In 1979, after several expansions, Bowaters' was the world's third largest newsprint mill.

Tourism has had a minor role to play in McMinn County's economy. The initial impetus was the declaration in 1947 of the highway along the eastern edge of the county as a Federal Scenic Highway, and the subsequent provision of motel and eating services in the Etowah area. This highway to the Smoky Mountains still provides such revenues but the completion of interstate 75 through the county in 1974 now supplements that traffic with a heavy flow from the Mid-West states to Florida. The revenue from these interstate travelers has increased considerably since its opening in 1975, though the development in McMinn County is not as great as it has been around Manchester in Coffee County.

Though consistent employment data are not available for the period spanning 1970, Series I and II of Table 8 indicate a strong increase in manufacturing employment in the county. Since 1960 approximately 4,000 new manufacturing jobs have been added. This is the notable aspect of the recent economic changes in McMinn County for two reasons: the jobs were aggressively sought by a group of local people, the Committee of 100, who recognized that the attitudes of the prevailing power structure had prevented earlier economic development; and the new manufacturing jobs, though they are still predominantly operative, low-skill jobs, are linked to new economic sectors. In 1965 a manufacturer of electrical switch boxes located in Athens; by 1979 the company had doubled its capacity twice, employed more than 500 people, and had relocated its regional distribution center to the Athens plant. In 1970 a plant was built for the production of refrigerator motors and in 1979 after several expansions, it employed more than 700 people.

In 1965, the Committee of 100 helped the Etowah Chamber of Commerce recruit a large firm to produce synthetic tire cord. Its product was already obsolete, however, and an unsuccessful switch to carpet production was attempted. In the eyes of Athens people a strike at the Etowah plant was the straw that broke the camel's back, and the firm closed in 1978. In 1979 the tire cord plant was being renovated for the production of fiberglass insulation. In 1977 plants were opened for the production of petroleum and dry bulk transport trailers; for auto seat frames with employment of more than 400; and in 1978 for the production of structural foam parts for business machines was begun. In 1979 the Executive Director of the Committee of 100 stated that virtually every important employer in the county was undergoing or had announced plans for expansion.

In spite of the large number of new jobs added over the past two decades McMinn County's per capita income was far below the state average in 1978. Although these new industries tended to pay wages significantly higher than those in the earlier apparel and textile industries, their capital investment and skill requirements are modest. Furthermore as has been the case in other rural areas throughout the southeast, the local labor pool has grown as the number of jobs has increased. McMinn County's population showed an estimated increase of nearly 12 percent between

1970 and 1977, and as the residence adjustment in Table 7 indicates, an increasing proportion of the county's jobs are held by non-residents.

The Spatial Network, Entrepreneurs, and Local Choice

A Consistent Paucity of Links to the Spatial Network

In spite of the relatively early concentration of manufacturing jobs, and the presence of the atypical stove and plow factories since the early part of the twentieth century, the county's economic structure has been poorly suited to play a role in the mainstream spatial network. Both the stove and plow factory used few inputs and uncomplicated processing techniques; and they produced products of sufficient bulk and weight to prohibit extensive transport and the development of larger markets. The local furniture operations served a limited market as well.

Perhaps the most significant shortcoming of the manufacturing structure was the low probability of tapping the developmental stimuli of the spatial network. The hosiery mills, apparel factories and furniture production required little capital investment and little skilled or educated labor, and many of them have operated on a very small scale. Technological changes in these industries have been modest and in McMinn County their forward and backward linkages with other manufacturing sectors have been nonexistent outside the purchase of yarn or textiles. Though a few of the early hosiery mills had markets outside the Southeast, and several of the large firms of the 70's produced for national chain store distribution, the markets served have also not been a stimulus to the adoption of more sophisticated technology or product.

Paradoxically, the proliferation of hosiery and apparel factories in McMinn County, operated by local people, is an example of the essential role of information in economic development. Schumpter (1936, 1939) speaks of clusters of entrepreneurs: the appearance of an entrepreneur and his innovation facilitates the appearance of others since the first is a role model both socially and technologically. What such a role model provides is information; furthermore, access to information is an important local economy which leads to the replication of established activities. In McMinn County long acquaintance with the machinery, work organization, and marketing channels of the hosiery and apparel industry made it easy for ambitious local people to enter the industry and lowered the risk for conservative local banks making loans.

Unlike Coffee County, McMinn did not offset its weak links to the traditional spatial networks with strong links to the new network of defense and space activities fostered by the public sector. There was no direct exposure to military activities during the War or afterward and only one of the county's factories has produced for military contract. The county's physical access to Nashville was hampered by its road network, determined by its northeast to southwest ridges. Major rail and highway connections to Nashville, which lies to the northwest, are indirect. Its relationship with the State Capital has no doubt been more seriously hampered by its political allegiances. As a county which is located between east and middle Tennessee. McMinn has been historically, and painfully, split by the Republican sentiments typical of the eastern minority of the state and the Democratic sentiments of the rest of the state. The achievement of political power for Republicans in Tennessee has been difficult at best, but in McMinn County the divisive local politics has apparently precluded state or federal political power.

McMinn County can offer no parallel to the influx of people and ideas to Coffee County first as a health resort, later as a military base, and then from the permanent settlement of several hundred new and highly educated families. Out-migration, which tends to select the younger and more educated from local populations, has been essential in McMinn in every decade since the 20's. The release of workers from agriculture, coupled with the lack of diversity, and slow growth of employment necessitated the outflow and in spite of that there has been a vast supply of unemployed and underemployed labor. Athens and McMinn County serve as a labor area for five surrounding counties. In 1952 the Etowah Chamber of Commerce conducted a labor survey and found 10,000 people interested in obtaining employment. Ten years later TVA found 25,000 applications on file with area firms (TVA, 1963). The head of Mayfield Dairies estimated that in the 60's his average dairy worker had a year of college education; he believes that underemployment and underpaid conditions were the general rule. Although Bowaters brought in more than 300 management and operations personnel in 1954, neither their numbers nor their training approached the massive impact on local human resources that Arnold Engineering was for Coffee County. Furthermore several people noted that Bowaters made no effort to wield political influence or effect changes in the area. The single notable evidence of interest in changing the status quo came with the return of the county's servicemen after the War. Then, in the elections of 1946, a determined group of veterans proposed a clean slate of county and Athens officials, and a reorganization of county government. It was a successful effort which encountered dramatic resistance; the climax was a spectacular shootout between the two sides at the jailhouse where the incumbents had barricaded themselves with critical ballot boxes. But the determined beginning brought no permanent change in either the power structure or in local attitudes.

The educational characteristics which were relatively good at the beginning of the period of study did not remain so. By 1970 the county's adult population had fallen far behind Tennessee's 10.6 median years of school completed. In McMinn the median was 8.4 years. Five percent of the adult population had completed college compared to 10.8 percent in the state.

Although Tennessee Wesleyan College is an attractive physical asset to the town of Athens, and a fund raising drive in the town contributes more than $100,000 to its support annually, the College's role in the community has been minimal. Its student enrollment has never exceeded 800, and has recently been half that. With small student bodies its ability to provide the cultural leadership one often associates with such insitutions has been limited, and until

1979 it had made no attempt to utilize the trend of adult college attendance through offering evening classes or courses oriented to the business interests of the community.

The McMinn County area has developed one internally integrated set of economic activities during the 50 year period, but that group--centered around the Bowater's paper mill--exhibits the desirable characteristics of a spatial network in microcosm: technological change which provides new possibilities for economic development; the recognition and development of related resources as ancillaries to the main activity; the spinoff of tertiary activities made possible by the combination of the primary and secondary activities. The initial stimulus to this local development was the invention of a process to manufacture paper from southern pulpwood. The first two mills using this process were in Texas and Alabama, built in the late 40's. Bowaters, through its Canadian subsidiaries, sought a place in the South to serve its southern market. A central location with respect to wood supply and access to large amounts of water were primary requirements. Once Bowaters was established, its use of chemicals in the manufacturing process and the presence of copper mining operations in adjacent Polk County, formed the basis for the growth of a chemical complex in the early 1960's, including Huber, Olin, and Diamond Salt. Only Huber is actually located in McMinn County, but the physical distance separating the four plants is small. In 1978 this complex provided nearly 16 percent of the total employment in McMinn County, and average annual wages were significantly higher than those of any other sector (Tennessee Department of Employment Security, 1979).

The Lack of Entrepreneurship

The families who began the Athens Hosiery Mill, the Athens Table Company, and the Athens Stove Company frequently served on each others' boards. They provided the capital and founded the town's first two banks in 1872 and 1908, and later they were the nucleus of the Chamber of Commerce. These manufacturing firms of the 1930's were largely headed by the families who had come to the county soon after its establishment in 1819, but they represented the second era of remarkable industrial entrepreneurship for those families. By 1875, there were some 39 grist mills, 30 saw mills and five cotton gins, as well as two cotton spinning factories propelled by water power. In the 1880's a furniture works, and the first textile mill, followed by two other textile mills. These activities were the predecessors and inspiration for the ambitious plans of the Athens Mineral and Manufacturing Company which was to continue the development of the nascent town of Athens. Widely advertised to potential investors in the North, the plans included a woolen mill, cotton mill, flour mill, water works, school and hotel. The project shortly ran into financial difficulties and was finished by the general depression of 1893, but in the meantime it had built the street railroad tracks, and a furniture company.

Early in the twentieth century several of these same entrepreneurs pursued their original plans. The first of many hosiery mills, a woolen mill, a flour mill, and a table company were established by 1907. Both the small communities of Englewood and Niota had spinning mills by this time as well. After several other spinning mills, Athens Plow broke the pattern in 1923, and in 1924 the Stove Works began, with several of the familiar names among the founders. In 1923 the Mayfields purchased a small local ice cream plant and expanded their previous business of milk delivery.

Once the ill-fated Athens Mining and Manufacturing venture had passed, however, the energies of this remarkable group of men were apparently devoted to the industrial realm entirely. There have been no forays into the overt political arena and there has apparently been little social entrepreneurship on their part with respect to schools and education, or local government, and especially no attempt to seek outside investment.

If entrepreneurship is considered to be the introduction of innovative activities as Schumpeter suggests, and as seems appropriate in the context of economic development, there was also little traditional entrepreneurship after the 20's. Although the county's individuals were energetic and enterprising, the new economic activity was essentially a replication of past patterns. The essential, innovative, aspect of entrepreneurship was not present.

The most significant innovation of the 50 year period, the paper mill, was a decision made by company officials on the basis of geographic location and resources, and it was made without the knowledge of local people. The land purchase was a direct transaction between the company and the individual owner. One small group of local people were supportive in paving the way once the decision was announced, and formed a corporation to make rental housing available for advance personnel; but there is a prevalent belief that the older industrial/banking families actively tried to prevent Bowater's location in McMinn County.

A part of Tennessee Wesleyan's small impact in the county is also related to a lack of entrepreneurship. As a college of the Methodist Church, its presidents have come from the ranks of ministers of the Church, and as such need not have educational, administrative or aggressive fund raising abilities. It has, of course, been affected by the pressures of declining enrollment and rising costs, but its failure to identify and concentrate on a few areas of strength, or to initiate non-traditional programs are cited as evidence of poor leadership.

The Manifestations of Local Choice

In McMinn County feelings run deep and are not quickly put aside. A series of painful episodes from the Civil War, through the elections of 1946, to the exercise of community chauvinism over a long period have been important influences on McMinn's economic development, and in 1979 it was apparent that these influences had not yet disappeared.

Though slave ownership was apparently no more significant that in Coffee County, the political dichotomy in McMinn made the Civil War a bitter local issue. The area was the scene of many skirmishes and Athens changed hands several times. There were a number of instances where, under fear of destruction of property, Union sympathizers felt it necessary to sell their business interests to their Confederate partners. The forced changes in ownership sometimes were not transfered back to the original partners and, along with payment of obligations in Confederate money, reversed the fortunes of a number of families and contributed to the intensity of local feelings. One interviewee stated that the Civil War still is not a safe topic of conversation.

It was the Civil War which assured the Republican Party a virtually unassailable majority in county politics, but the single Democrat regime hardened the partisan rift. In 1938 a prominent Democratic Etowah banker initiated a concerted and successful party effort for a group of county offices. The newly elected Sheriff proved to be a scoundrel; for that reason and others of their own, the Republican County Court refused to release funds for the conduct of county government. Extortion, threats, and physical violence were common throughout this period. In an attempt to clear his name, the banker himself ran for Sheriff in the election that coincided with the Veterans' interest in cleaning up county government--with the results already described above. From the present perspective there seems little to choose between the behavior of Republicans and Democrats, but for many in the county this distinction is another source of dissension. Certainly the prevailing county politics have been an impediment to effective identification and achievement of area-wide goals.

The County Manager-Council form of government which was instituted at considerable cost in 1946 has conducted the public business on the same basis of power and patronage as before. The county managers have been local people whose tenures lasted as long as their cohorts held a council majority. Between 1974 and 1979 there were five managers. One participant in the early pyric victory aimed at cleaning up county government recently refused a request to run for the County Council and spoke bitterly of dealing with "trouble making, ill-informed people only one-third step better than illiterate."

The mere physical existence of two towns (and there are three other incorporated communities ranging in size from 650 to 1,850) strains the financial support and dilutes the impact of infrastructure projects. The attitude is one of competition for federal and state dollars rather than one of mutual assistance. One Athens person reported that Etowah people, after having received their own hospital with Athens' support, lobbied in the State Legislature against a nursing home for Athens. This intense chauvinism is not limited to the two largest towns. Calhoun, with an estimated 1977 population of 655, has its own elementary and high schools. In 1979 the county school board felt compelled to close the two schools. The reaction included law suits, boycotts, a personal vendetta against the Superintendent, and physical obstruction of school property. Neither the towns nor the county have availed themselves of the regional planning and development mechanisms to any great extent and their lack of cooperation has been a serious obstacle to achieving ends which would be mutually beneficial.

There have been a number of manifestations of the conflict which exists between the towns of Etowah and Athens but one interviewee summed it up by stating:

> It's often said the creek between Athens and Etowah is the widest river in the world. Well it is; going to Etowah is like going to another state. I don't know what it is, but I don't think it'll ever change until we've grown so much that it's one continuous town."

The rivalry between the towns may date from the sudden growth of Etowah, but for Athens the presence of the predominantly railroad town represented a greater threat than that of size. From its earliest days the railroad workers of Etowah were unionized while the industrial families of Athens were united in their opposition to unions. The collapse of Etowah's economy following the long strike and reorganization of the railroad served as vindication of their anti-union stance--and it is a view which is still widely held by the people of Athens. In 1980, only two of 19 industrial employers in Athens are unionized.

The one apparent point of unanimity in a county marked by disagreements is that these industrial leaders saw their interests best protected by maintaining the status quo. Presumably out of concern for an acquiescent labor force and low wage levels they were intent on keeping large new industries out of the county and were adamantly opposed to unions. Their role of furthering town interests is in sharp contrast to the entrepreneurs of Tullahoma in Coffee County. The original two banks established by these families, and no doubt the third one begun in 1924, followed an extremely conservative lending policy, weathering the Depression but providing few funds or leadership for the agricultural needs of the majority of the population. The industrial families banked and provided for their own needs without borrowing and as late as the 50's these banks maintained two-thirds of their assets as bonds and cash reserves.

As the influential members of the Chamber of Commerce they conducted the business of the Chamber in a perfunctory manner--or worse. Not until the middle 60's when the younger members of the business community, chiefly retail and real estate businessmen, along with one or two "maverick" relations of the old families, established a mechanism completely outside the old system of control was there a concerted effort to seek economic change. One hundred merchants and county industry leaders were asked to support the new Committee of 100 financially. The old family industries in Athens were not solicited nor did they request membership, and each group regarded the other with distrust and dislike. The present executive director of the now joint Committee of 100 and Chamber of Commerce emphasizes tangible evidence of their earlier resistance and states that the Chamber files show company after company in the 50's and early 60's which wanted to come to Athens but were "cut off."

By the 70's the county had begun to remedy some of its problems. The Stove Works, Furniture Company, Athens Plow and Athens Hosiery Mill were sold to national corporations. Only Mayfield's Dairy and the plastics company remained in family control by 1980. For the first time in 1979 a professional county manager was hired with some specific agreements about freedom from interference. Yet the orientation of the county economic structure is overwhelmingly toward low- and semi-skilled jobs and there has been no endogenous or exogenous stimulus to a restructuring of the human resources. Athens is a town which is still somewhat ambivalent about change. Some of the present leaders have kinship or long standing personal ties with the old families. While they concede the time has come and are fairly optimistic about present growth, they express regret for what has been left behind.

Summary

By most of the usual economic parameters, McMinn would appear to have had every resource that Coffee County had in 1929--but in greater measure. Its per capita income was somewhat higher. It depended less on agriculture and much more on manufacturing. It had a larger, more urban, more educated population and like Coffee, it was located between two metropolitan areas. Like Coffee County, it had a river on its southern border and McMinn had not one but two main line railroads. Furthermore it had a richer tradition of industrial development and traditional entrepreneurship. Yet this apparent advantage failed to generate substantial changes in structure and scale over the 50 year period.

The advantage reflected in a static comparison with Coffee County in 1930 is not so clear when the comparison is extended to the dynamic relationships which define the spatial network. The manufacturing structure to which McMinn County had committed itself was largely limited to industrial activities which had single inputs and outputs of final goods without national markets. McMinn's access to the intra-state and national spatial network via connections to its urban nodes was to the smaller, later developed cities of Knoxville and Chattanooga and was materially different from the access available to Coffee County through Nashville. The two urban areas afforded no extensive intercourse such as the early visitors to the health resorts afforded Coffee County, and effective physical and political access to the state capital was notably absent in McMinn.

McMinn County's early entrepreneurs not only ceased to be effective leaders in economic development, they actively discouraged development from outside. Between the mid-30's and the mid-60's the only significant structural change was the establishment of the paper mill, an entirely fortuitous event, from the viewpoint of local effort. The proliferation of hosiery and apparel firms during the 40's and 50's were evidence of energy and initiative on the part of McMinn County residents, but they serve as a striking illustration of the fact that even where personal enterprise exists, economic growth and development will be limited by reasonable access to information. Exposure to information about the administration, technology and marketing channels of the hosiery and apparel industries represented a local economy which was exploited, but it is not evidence of entrepreneurship defined as the introduction of innovative practices.

Entrepreneurship in the public sector, which brought large changes to the economic structure and human resources of Coffee County, was not a part of McMinn County's past or present experience. Its Republican majority was a genuine political disadvantage in the competition for power within a Democratic state, but McMinn's political clout was also seriously weakened by its flamboyant conflicts of every kind. The tendency to keep past differences alive, the suspicion with which the communities regard each other and the rest of the county, and especially the failure of "those in a position to do it"--whether old families or elected officials--was an implicit and effective choice by the residents of McMinn County not to pursue economic and social change.

Considering the large number of underemployed people, and of those who sought work, in McMinn's multi-county employment area, it seems likely that no policy on the part of local leaders could have been effective on the scale that was needed, but the decision to restrict the development of jobs in traditional sectors, along with the lack of connections to the developing high-technology network of the recent era, insured that the selective process of out-migration would play its role in limiting the county's human resource base. The depletion of the young and more educated population was one more factor reducing the probability of development from endogenous sources.

CHAPTER 6

ECONOMIC DEVELOPMENT IN POPE COUNTY

An Overview of the Change

The Status in 1929

Like McMinn County, Pope was formed from land ceded by the Cherokee Indians, but 10 years later in 1829. Its first settlers came to establish a mission school for the Indians. They traveled the natural corridor along the valley of the Arkansas River which forms Pope County's southern boundary. That corridor is a primary rail and highway route today, for Pope, like McMinn and Coffee Counties, lies approximately halfway between two metropolitan areas--Little Rock and Fort Smith.

The land along the Arkansas is fertile and relatively flat, but Pope County, on the northern side of the river, has little bottomland and the elevation rises quickly to 2,000 feet at the southern edge of the Ozark Mountains. Figure 3 indicates the concentration of transportation routes and population in the narrow river valley. The steeper upland area in the county has been a National Forest since 1908, but until the population exodus in the late 30's and 40's, the upland residents of Pope County followed the stereotypical pattern of burning off timber, and self-sufficient farming.

To participate in the only regional economic network that existed in the early twentieth century, Pope county devoted its agricultural efforts to growing cotton. In 1930 more than 70 percent of its 3,246

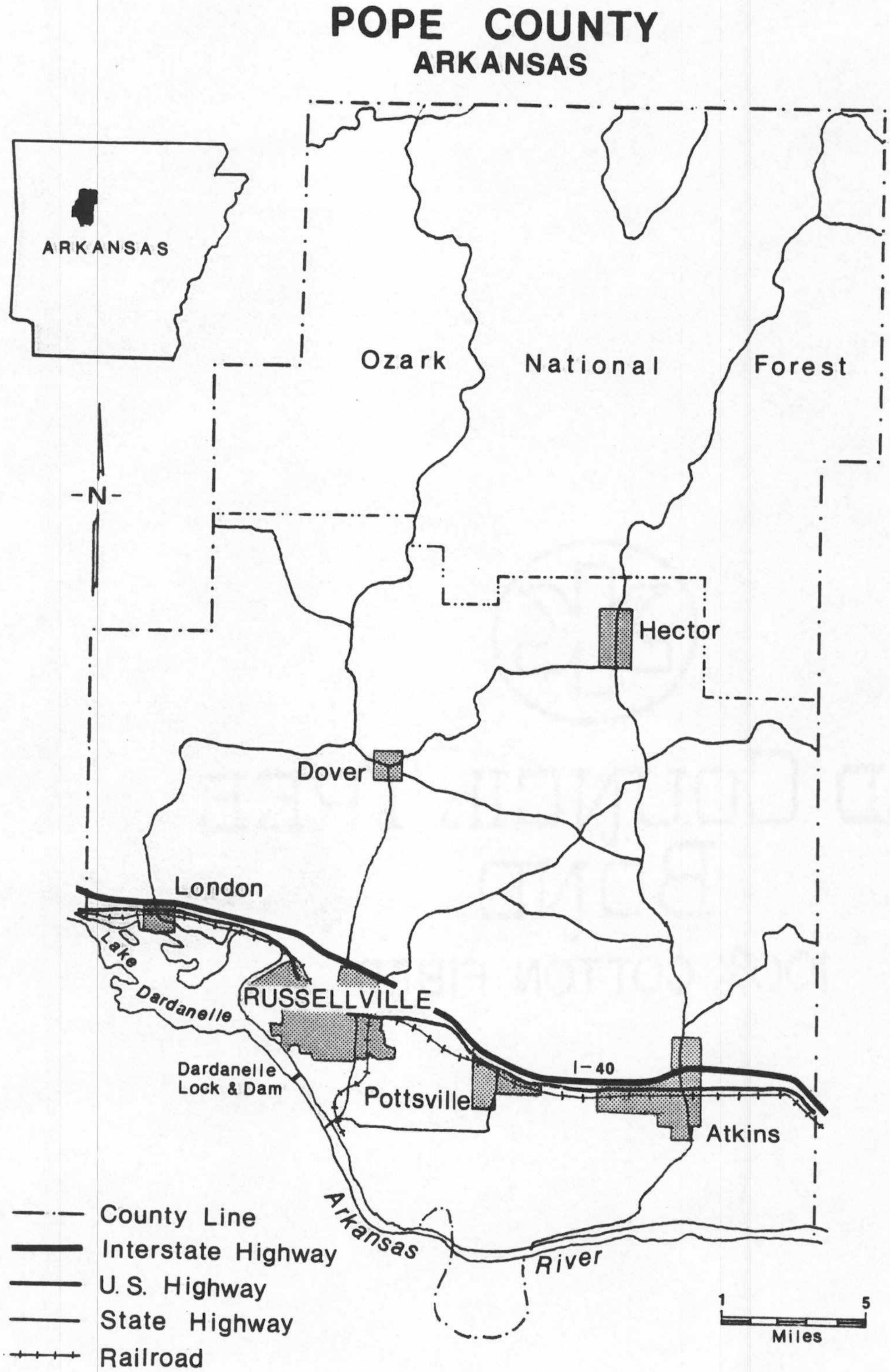

Figure 3. Pope County, Arkansas.

small farms specialized in cotton that was sent to the nearby gins and the Russellville compress. Although there were a few large and productive farms in the narrow river valley, most of the lucrative cotton farming fell to Yell County on the south side of the river.

Between 1924 and 1929 Arkansas cotton prices had decreased from 23 cents per pound to 17 cents and by 1931 they had decreased to 5.5 cents (Gray, 1977). The 1927 flood caused an estimated $3,800,000 worth of damages in Pope County (Hurley, 1931), and was followed by the worst drought of Arkansas history in 1930. The Depression led to an increase in the number of farms between 1930 and 1935, but the decline in cotton prices forced the upland farmers to turn from cotton to small scale livestock, poultry and food production.

As it did elsewhere in remote, rugged territory, the arrival of the railroads permitted the development of a local timber industry. In Pope County, wood processing was the only manufacturing activity before 1940.[1] Along with small sawmills which provided raw lumber, the county developed the production of staves for white oak whiskey barrels.[2] In 1930 some 300 Pope County people were employed by stave making along with 100 more in various other lumber operations, but this relatively abundant employment was already on the decline.

[1]The early era of industrial capitalism with its entrepreneurs and innovative economic effects all but passed Arkansas by. In 1930 nearly 60 percent of the state's employment was in agriculture and only 11 percent in manufacturing. More than one-third of that manufacturing employment was in the lumber and wood processing industries. The apparel and textile factories that furnished more than 18 percent of Tennessee's manufacturing employment accounted for only three percent in Arkansas. The state's first "heavy" industries were the munitions plants of World War II.

[2]Artificial demand was created for this mountain industry by federal legislation which permitted barrels to be used only once.

The county's exclusively natural resource economy included coal mining. The production, which began after the establishment of the railroad in 1875, was used mostly as a local fuel and for steam locomotives; the switch to diesel engines, labor problems, and transport costs lead to continually decreasing employment in mining after 1930. By 1940, faced with a confluence of decline in its local market for coal, the removal of the supporting legislation for barrel staves, and the precipitous fall in cotton prices, Pope County faced the truly impossible task of providing alternative employment not only for farm laborers but for its coal miners and stave makers as well.

Even with its relatively limited development, Pope County had advantages relative to many Arkansas counties. Though road improvements in the early days tended to favor certain counties in the delta region, the highway from Little Rock through Russellville to Fort Smith was a primary federal highway and the highway north to the Missouri border was a secondary federal aid road. In this mountainous area of the state, poorly served by road and railway networks, Russellville served as a trade center for the areas to the north by virtue of this highway.

Pope County residents appear to have been among the early adopters of social innovations as well, although the Depression brought a setback in this respect. In 1925 a telephone company survey reported that in comparison to other states in the Southwestern Bell System, the number of telephones per 100 population in Arkansas was "conspicuously low." On the average 4 percent of Arkansas farms had telephones, but more than 18 percent of Pope

County farms had telephones. In 1930 a greater proportion of Pope County farms had electricity than the wealthier Jackson County.

The levels of education of Pope County's population have been high for a rural county. In 1930 its proportion of illiterate population was much smaller than was the case for the state as a whole, and school enrollment was above or very close to state averages at all ages. In 1940 the median years of school completed by Pope County's adult population was equal to the state average, but in every decade since, it has been higher than the average for the state. In the view of local people, although there have been too few dollars available to spend on the public school system the county has had a stronger than average committment to education. One reason is the presence of Arkansas Tech University. As one of four such state schools, Tech was established in 1909 to provide high school level courses. In 1929 its curriculum was changed to the college level. The early college curriculum was oriented toward agriculture, and was cited as a positive influence in the county's transition from cotton to poultry farming during the Depression.

Statistical Overview

The steady increases in per capita income exhibited in Table 11 suggest a smooth pattern of growth in Pope County over the 50 year period. In fact, however, the levels of per capita income for the county depend as much on population patterns as on changes in total income. Between 1930 and 1960 the increases were made possible by a loss in total population, as Table 12 shows, and by heavy

TABLE 11

PER CAPITA PERSONAL INCOME AND PERCENTAGE CHANGE BY PERIODS,
POPE COUNTY AND ARKANSAS, 1929 - 1978

	1929	1940	1950	1959	1970	1978	1929-1978
Pope	$202	$172	$594	$1,190	$2,443	$5,595	
Percentage Change		-14.8	245.3	100.3	105.3	122.1	2,669.8
Arkansas	306	254	825	1,363	2,878	6,121	
Percentage Change		-17.0	224.8	65.2	111.2	112.7	1,900.3

Source: Department of Commerce, Bureau of Economic Analysis, _Survey of Current Business_, April 1980; _Local Area Personal Income, 1970 - 1975_; Regional Economics Information System, direct correspondence. Percentages computed by the author.

TABLE 12

POPULATION, RATES OF CHANGE, AND PERCENTAGE URBAN BY PERIOD, POPE COUNTY AND RUSSELLVILLE, 1930 - 1977

	1930	1940	1950	1960	1970	1977
Pope County						
Population	26,547	25,682	23,291	21,177	28,607	34,832
Percentage Change from Previous Decade		-3.3	-9.3	-9.1	35.1	21.8
Percentage Urban	21.2	23.1	35.1	42.1	41.1	41.4
Russellville						
Population	5,628	5,927	8,166	8,921	11,750	14,421
Percentage Change From Previous Decade		5.3	37.8	9.2	31.7	22.7

Source: Department of Commerce, Bureau of the Census, Census of Population and Housing, 1930, 1940, 1950, 1960, and 1970; Current Population Reports, Series P-25, No. 817.

out-migration.[3] Conversely the apparently average increase during the 60's and 70's represents a large increase in total income masked by large population increases in those decades. In spite of its above average growth rates of per capita income, Pope remained below the Arkansas state average in 1978, and not until the 60's was the county able to provide employment at pre-Depression levels. It is the growth of the 60's and 70's that placed Pope among the fast growth counties of Arkansas, although as Tables 13, 14, and 15 reveal, significant structural changes occurred during the 50's as well.

The county provides a classic example of an agricultural economy's transition through resource oriented processing to the introduction of more varied but low-skill production jobs brought in from outside, along with the expansion of urban services. Table 15 reveals an increase in food processing jobs during the 40's, enhanced by the highly integrated poultry industry in the next decade. Yet this expansion in manufacturing jobs, large relative to the past, was insufficient to absorb the labor leaving farms and the lumber industry. The large out-migration was an economic necessity. Although the development of the poultry industry was critical in maintaining the economic viability of the county during its transition

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[3]Arkansas too has experienced an absolute decline in its population which was greatest during the 50's. In that decade a net out-migration of nearly 431,000 people occurred; with the exception of those above 65, the migration rate was negative for every age, sex, and race group. In Pope County the rate of net out-migration during the 50's was approximately 20 percent for both Blacks and Whites.

TABLE 13

PERCENTAGE DISTRIBUTION OF TOTAL PERSONAL INCOME BY MAJOR SOURCE, POPE COUNTY, 1929 - 1978

	1929	1940	1950	1959	1970	1978
Farming	43.7	28.6	19.4	5.9	1.9	4.2
Mining	(D)	(D)	(D)	(D)	(D)	(D)
Construction	1.5	--	3.0	4.7	10.3	15.1
Manufacturing	6.8	4.5	12.8	18.8	20.4	19.7
Transportation, Communications, and Public Utilities	3.8	3.4	3.7	6.0	4.8	7.8
Wholesale and Retail	16.9	14.8	16.4	18.4	11.4	10.5
Finance, Insurance, and Real Estate	1.1	--	1.2	2.6	2.5	1.9
Services	5.4	5.3	8.6	8.7	9.9	8.7
Government						
Federal	2.3	19.2	3.8	4.6	3.6	3.1
State and Local	4.6	6.2	5.6	6.8	7.7	6.9
Other	(D)	(D)	(D)	(D)	(D)	(D)
Transfer Payments	4.3	6.8	16.4	12.5	14.2	15.5
Property Income	6.4	6.9	7.9	9.5	12.2	10.9
(Residence Adjustment)	n.a.	n.a.	0.3	(-0.1)	(-4.4)	(-6.5)

Note: Base for percentage computation is total personal income by place of work. Estimates for 1978 based on 1972 Standard Industrial Code (SIC).

(D) Raw data undisclosed for reasons of confidentiality.
n.a. not available. -- zero or less than $50,000.

Source: Department of Commerce, Bureau of Economic Analysis, Regional Economics Information System, "Personal Income by Major Source," direct correspondence including revisions as of April, 1980. Percentages computed by the author.

TABLE 14

PERCENTAGE DISTRIBUTION OF EMPLOYMENT BY MAJOR SOURCE,
POPE COUNTY, 1930 - 1978

	Series I					Series II	
	1930	1940	1950	1960	1970	1970	1978
Agriculture	62.7	52.7	32.0	13.3	10.0	13.3	9.3
Mining	3.1	1.2	1.2	0.9	0.1	(D)	(D)
Construction	2.0	3.4	6.4	9.8	9.0	6.9	7.5
Manufacturing	6.8	8.2	20.0	25.8	26.5	23.5	21.4
Transportation, Communications, and Public Utilities	2.8	3.5	4.6	4.5	6.6	4.5	6.2
Wholesale and Retail Trade	6.6	12.4	15.3	17.7	17.2	13.0	17.0
Finance, Insurance and Real Estate	0.9	1.1	1.5	2.5	2.6	2.2	2.0
Services	11.0	14.7	16.1	21.9	24.96	10.9	12.4
Government		3.3	2.9	3.4	2.86	14.9	15.0
Total Employment	8,613	6,293	6,876	7,101	10,602	11,526	15,904
Percent Change from Previous Period	n.a.	-26.9	9.26	3.27	49.3		38.0

Note: Consistent data are not available for the whole span of years. Series I is based on employment as reported in the decennial Censuses of Population and Housing and thus is on a place of residence basis. In 1930 government employment was distributed by function and its share cannot be computed.

Series II is based primarily on ES-202 covered wage data and thus is on a place of work basis. It is not possible to assign non-farm proprietors to particular categories so non-farm employment shares are understated in Series II. Non-farm proprietors represented 6.8 percent of non-farm employment in 1978, and 6.8 percent in 1970. 1978 employment is based on 1972 Standard Industrial Code (SIC).

Source: Department of Commerce, Bureau of the Census, Population, 1930, Vol. III, Pt. 2, Table 20; Bureau of Economic Analysis, Regional Employment by Industry, 1940 - 1970; Bureau of Economic Analysis, Regional Economic Information System, "Employment by Type and Broad Industrial Sources," April 1980, data supplied by direct correspondence. Percentage distributions computed by the author.

TABLE 15

PERCENTAGE DISTRIBUTION OF MANUFACTURING EMPLOYMENT,
POPE COUNTY, 1930 - 1970

	1930	1940	1950	1960	1970
Food and Kindred Products	3.2	7.4	18.0	41.4	55.0
Textile and Apparel	0.8	2.5	3.3	3.5	3.4
Lumber and Wood Products	65.4	79.5	41.3	27.8	9.3
Printing and Allied Industries	3.7	6.2	3.0	1.8	2.8
Paper and Allied Products		n.a.	0.0	9.9	9.2
Chemicals	1.4	0.4	0.6	1.1	0.8
Primary Metals	2.2	n.a.	0.1	0.0	0.0
Fabricated and Other Metals		n.a.	0.7	0.4	1.0
Machinery, Except Electrical	n.a.	n.a.	1.9	0.2	1.1
Machinery, Electrical	n.a.	n.a.	0.1	0.6	0.0
Other	23.2	3.3	30.7	23.1	26.3
Total Manufacturing Employment	590	517	1,376	1,834	2,814
Percent Change from Previous Decade		-12.4	166.2	33.9	53.4

Note: Manufacturing employment data are not strictly comparable between 1930 and the following years. Data from the 1930 Census of Population have been aggregated as nearly as possible to classifications of later years.

n.a. not available.

Source: Department of Commerce, Bureau of the Census, Population, 1930, Vol. III, Part 2, Table 20; Bureau of Economic Analysis, Regional Employment by Industry, 1940 - 1970.

from agriculture, and is still a major source of jobs and income in 1979, the large increases in population, employment, and income of the past two decades were a consequence of public sector and quasi-public sector, investment.

The Arkansas River navigation system, modeled after TVA, was begun in the late 50's, its first component a reservoir on the stretch of the river bordering Pope County. The development of the dam, the locks, and Lake Dardanelle, virtually on the doorstep of the town of Russellville, has provided the stimulus for the introduction of a number of new industries including Arkansas' first two nuclear plants. The levels of construction employment and income exhibited in 1960 in Tables 13 and 14 were maintained in 1970 through 1978 by the concurrent construction of the interstate highway through the county, and subsequently by the construction of the nuclear plants. The possible loss of the households and income provided by these construction activities has stimulated an imaginative and innovative effort on the part of local leaders to attract another large-scale, long-run public sector project, but some kind of adjustments will be necessary before that can be accomplished.

Chronological Overview

1930 - 1940. Pope County's economy was of course hard hit by the ill fortunes of the cotton market and the drought of 1930. Although some cotton production continued, especially on the bottom lands, and a few gins operated until the 50's, the total value of Pope County's output dropped by 75 percent between 1929 and 1939.

Every other product except hay and forage crops also showed sharp declines in value during the Depression.

In contrast to the increase in the number of farms during this whole decade in the two Tennessee counties, Pope and Jackson County showed an initial increase followed in the last half of the decade by a 20 percent decline in the number of farms and an increase in farm size. The increase in the proportion of owners suggests that many former tenant farmers were dislocated. Cooperage and coal mining activities continued for one last decade at approximately previous levels and there was some strengthening in trade and service employment, but no new processing activity occurred to support the families released by the decline in agriculture. The loss of more than 2,000 jobs during the decade and the forced shift in agricultural practices, in a county already very poor, produced conditions which long-time residents describe as "extremely grim."

1940 - 1950. Although Pope County remained outside the economic mainstream, the county's first food processing jobs provided a small source of income for many families, and no doubt kept the efflux of people from being even larger than it was. A creamery, two small hatcheries, a rendering plant, and meat packing plant were established by outside companies. A spinach packing and a canning operation were locally founded but lasted less than a decade. One exception to the abortive local efforts was the pickle factory which began during this decade in the small community of Atkins. In 1979 it employed more than 300 people during its peak season. The county's only other structural change, also typical of rural counties in transition, was a shoe factory. It's opening in 1947 provided 300 new jobs and was a major stimulus in the population shift from rural areas of the county to Russellville. The interest of the shoe company in a Pope County location stimulated the formation of the Russellville Industries, a group of individuals who raised money for land and constructed the building used by the shoe factory. It was the first such community effort, and that organization was succeeded permanently by the Russellville Industrial Development Corporation.

1950 - 1960. Between 1949 and 1959 farm income in Pope County tripled.[4] Virtually all of the increase was in livestock and its products, and poultry sales accounted for most of that; sales of poultry and poultry products increased from $119,550 to $3,549,220. The development and integration of the local poultry industry is detailed below, and it is clear that the farm sales, along with the 300 new jobs in hatcheries, poultry dressing, and rendering, accounts for much of the large increase in per capita income between 1950 and 1959. The rapid growth in the poultry industry[5] accompanied by

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[4]According to the 1959 Census of Agriculture the value of farm products sold was $6,114,976, although the BEA estimate for farm income that year is only $1,490,000. Some of the farm income reported in the Census of Agriculture may have been attributed by BEA to the manufacturing sector because of the contract arrangements of the poultry industry, but even so the total of manufacturing and farming income in "Personal Income by Source" does not appear to be large enough to account for farm income as reported in 1959 Census of Agriculture.

[5]The timeliness of this development is indicated by the 30 percent increase in nationwide poultry consumption which occurred during the decade.

the jobs in pickle processing and the shoe factory provided an opportunity for Pope County households to combine income from farm and off-farm sources. Singer (1971) in a study of Ozark families showed that such households generally fared better than either all farm or all non-farm income households.

The coal mines, cooperage works, and cotton gins all ceased operations between 1950 and 1960. By 1959, however, three new ventures were underway. A captive furniture plant was established by a Fort Smith company to provide components for assembly plants elsewhere. Its employment of approximately 125 was equaled by a firm which manufactured gas meters and, subsequently, parking meters. The first of the county's extraordinary construction projects was underway by 1960. The legislative effort for the navigation system had begun in 1945; the formal groundbreaking for the dam was in 1957, and work was not completed on the nine foot channel, lock, and dam until 1969.

<u>1960 and after</u>. In 1964 Firestone brought a large innertube plant to Russellville. The manufacture of electrolytic cells, aluminum extrusions, metal pipe fittings, and a motor assembly firm, all added since 1970, underscore the evolution of the county's economy from one entirely dependent on the agricultural sector to a more diverse, higher wage, higher skill economy. In the past 10 years Russellville has added more manufacturing jobs than any of the other 37 cities on the Arkansas river navigation system, excepting the three metropolitan areas. Of those only Pine Bluff had a greater dollar investment in new plants and expansions

(<u>Russellville Courier-Democrat</u>, April 6, 1979). During the period of high construction employment Pope County's average wage was among the highest of Arkansas' 75 counties. The trend is of course enhanced by more than 200 permanent employees at Arkansas Power and Light's Nuclear One and Two.

The poultry industry has continued to flourish and has extended its already strong local linkages. In 1965 Morton Foods established a large plant to process frozen poultry products. Its employment quickly grew to approximately 1,000 and in 1979 it was still the county's largest employer. In 1973 a concern was established which supplies its total output of aluminum pans to Morton's. The poultry industry is also a consumer of the corrugated boxes produced in the county since 1976. By contrast, in 1979 most of the county's earliest firms were either out of business or were in difficulty. The children's shoe company, under pressure of import competition, ceased operations in 1978. In 1979 the parent company of the furniture plant phased out its assembly operations and the local trim plant was closed. The declining demand for parking meters had reduced the work force there to around 40.

In addition to the diversification of the manufacturing sector and the continuing strength of the poultry industry, the growing role of Russellville as a small regional node is reflected in the large proportions of trade and service employment indicated by Table 14. The headquarters of the Ozarks-St. Francis National Forest is in Russellville; and the presence of Arkansas Tech University, with a staff of more than 300, accounts for some of the service employment. Russellville's growing role as a health center includes an expanded hospital, a new mental health center, and a notable influx of doctors and their clinics. The headquarters of the Health Systems Agency of Western Arkansas is located in Russellville, as is the only branch office of the Planning District. The town serves as an employment center for the surrounding area, especially for Yell County just across the river. Of the 10 counties in the West Central Arkansas Planning and Development District, Pope is the only one to employ more of its population "at home" in 1970 than it did in 1960.

Even more important than the employment provided by the two nuclear power plants are the fiscal impacts. In 1979 Nuclear One and Two contributed approximately 73 percent of Pope County's $173 million property assessments.[6] Arkansas school districts are independent taxing jurisdictions, and the fiscal impacts are most visible in Russellville's educational facilities. In 1969 Russellville's school district had been forced to conduct its second door-to-door campaign for private donations in order to finance the last month of its academic year. At that time, like the other four Pope County school districts, it's financial condition was among the poorest in the state. In 1979, however, its expenditure per pupil in average daily attendance was $1,776--70 percent higher than the

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[6] Only the counties including Little Rock, Fort Smith and Pine Bluff had higher total assessments.

state average and nearly double that of any other Pope County district. Russellville has a new high school and a new gymnasium; every school has been air-conditioned and carpeted.[7]

The Spatial Network, Entrepreneurs, and Local Choice

The Absence of Local and State Links to the Private Sector Network

Like Arkansas, and much of the area West of the Mississippi, Pope County played only a minor role in the transactions of the agricultural network which characterized the Southeast in its early years, and it had literally no connections to the industrial growth and technological change that had propelled much of the nation's economy since before the twentieth century. When the falling price of cotton effectively truncated the marginal farm lands of Pope County from the agricultural network, its only products of exchange were coal and lumber. Their markets had been limited primarily to a small region and they provided no access to other industrial sectors, to technology, or to cultural or educational change.

Yet, as in Coffee County, a retrospective assessment identifies these deficiencies as a partial advantage for the present era. Pope County had no comparative advantage that impelled it toward the retention of an agricultural economy, as did Jackson County. In contrast to its neighbor on the south side of the river, Yell County, and to Jackson County, it had no power structure or social structure committed to the status quo.

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[7]That windfall is a source of resentment not only for the other Pope county districts but throughout the state. The Legislature is presently considering measures to allocate utility revenue by formula and it appears to be only a matter of time until this step is taken.

As an economic and educational resource Arkansas Tech University has been important to the county. In contrast to Tennessee Wesleyan in McMinn County, its student body has increased from approximately 600 in 1930 to 2,800 by 1979 and about one-third of its students have been from Pope County high schools. Undoubtedly under the austere economic conditions which existed for much of the past 50 years there, the presence of the local college provided the only possibility of continuing education for many of the County's students. By 1970, 7.5 percent of Pope County adults had completed four years of college compared to Arkansas' 4.2 percent, and much of this educational achievement can be attributed to the local college.

Although its educational role has been significant, the nature of Arkansas Tech University's original mission and its largely regional student body have not made it a cultural or political stimulus to the community and like most rural areas in the Southeast, Pope County had not experienced the stimulus for cultural change that accompanied significant immigration of population during the first half of the century. After its initial settlement neither foreign nor domestic migration streams traversed this section of Arkansas. The inability of the local economy, before 1960, to absorb the displaced workers of agriculture, coal mining, and the lumber industry induced a large out-migration of the indigenous population. The physical proximity of Pope County to Little Rock is similar to that of McMinn to Chattanooga and Knoxville, and Coffee to Nashville but its spatial connections and the metropolitan influence have been qualitatively and quantitatively weak--at least until recently.

The structure of Arkansas development was different from that of Tennessee, in kind as well as degree, and the location and economic development of the state limited the developmental possibilities of its local economies. There was no independent regional economy west of the Mississippi and the Indian territory, and later Reservations, were on Arkansas' western border. The only role the state played in the eastern economy was as a satellite in the agricultural network. Along the alluvial valley of the Mississippi the timber was cleared and the vast flat lands supported the plantation economy and its patterns of land ownership, cotton marketing and race relations. Cotton was grown throughout the state and the paddle boats traversed not only the Mississippi, but the Arkansas River to Fort Smith on the Oklahoma border--at least when water levels allowed. The writers of the 1941 Federal Writers Project book on Arkansas noted that New Orleans set the fortunes of the state economy. The population and settlement patterms further precluded a large role for Arkansas in the spatial network. In 1850 the census enumerated five towns in Tennessee with populations greater than 1,000 people. Arkansas had none. By 1930, Tennessee had four cities of more than 100,000 population. Little Rock, Arkansas' biggest city, had 81,000.

Thus, although Pope County was in some respects less disadvantaged than many other Arkansas counties, its dearth of linkages to the larger spatial network and its economic and cultural traditions suggest little likelihood of endogenous structural change. The building of the local poultry industry by the area's entrepreneurs, detailed below, was, however, probably a maximization of the county's resources at the time, and it serves as an example of the pivotal role of individuals in small area economic development.

The Public Sector and its Contributions

The public sector involvement in Pope County did not include the defense and space contracts that are typical of the present era yet the federal benefits which fell to Pope County in the 60's as part of the system of the Kerr-McClellan Arkansas River Navigation System, and subsequently from the interstate highway, have combined to significantly change both local and outside perceptions of Pope County resources. In a reversal of the usual order of events, the public projects have led to the development of political entrepreneurship among the local leaders as well.

The nearly 20 years of large-scale construction projects provided a direct, immediate boost to the local economy in terms of employment and wages. As Tables 13 and 14 show, construction employment has increased throughout the period, as has its level and share of income. A 1978 labor survey showed the 1,594 Russellville area construction workers to have average wages 57 percent greater than their counterparts in the rest of the state, and an even greater differential compared to other local sectors. Average manufacturing wages in the county were only slightly greater than the state average while all other wage categories were well below state averages. (West Central Arkansas Planning and Development District, 1978).

In contrast to the usual mobility of construction crews, most of these construction workers have made a permanent home in the county and are part of the large population increase since 1960.

In Coffee County too the impact on population and levels of income was direct and important, but in Coffee the public sector involvement clearly provided direct links to fast growth, high technology sectors of the spatial network, along with a restructuring of the county's human resources. In Pope the restructuring of economic resources through the provision of the reservoir and interstate highway established important "permissive" conditions for further public or private sector connections, but did not provide the connections.

Yet it seems likely that the investment in new plant and the job creation of the late 60's and the 70's in Pope County may in fact be largely a result of the publicly supplied infra-structure and--again--of "putting it on the map." The interstate highway significantly altered physical connections to the spatial network, and especially to Little Rock. The competitive position of the area was enhanced by the interstate and the year-round navigation channel. Steel and some poultry feed are brought in by barge as well as raw materials for innertube production and Dow's clorine cells are shipped out by barge. The percentage of freight transported by river is small but the availability of the channel brought a decrease in railroad tariffs and it offers future options for local firms. The reservoir, as a source of cooling water, was a primary consideration in the location of Arkansas Nuclear One and

Two, and local officials suggest that the nuclear platns give an "aura" of ample energy which is an attraction to the area. The emphasis of the State on the Arkansas River navigation system as a focus of development may have influenced other specific plant locations in Pope County.

The impetus provided by the public sector may have been a temporary bonanza which cannot be sustained. The large scale employment in the construction industry finally came to end in late 1978 with the completion of Nuclear One and Two, and by March 1979, Pope County's unemployment rate was 9.7 percent relative to 6.2 percent for the state. However there is evidence that the conditions which have been identified in this study as critical to sustained development are being established in Russellville and Pope County.

One change, of course, is the nearly doubled population of the past two decades including an estimated in-migration of 10,000 people (Pollard, 1974). The growth of services and trade since 1960 has expanded the ability of the local economy to respond to business and consumer needs. Arkansas Tech University has gradually altered its curriculum to that of a liberal arts school, and offers one advanced degree. In addition to night classes, which have been available for many years, the new Division of Continuing Education has initiated a program to provide seminars and short courses for the local industrial community. Its new coliseum will also serve as an area convention center. In 1979 Tech was designated as the location of Arkansas' new Mining and Minerals Institute.

The county's new industries have brought new sectoral linkages and important national corporate ties--they are sometimes referred to locally as "our blue chip industries"--and the state economic development officials see Russellville as one of the most important industrial growth areas of the state. Because of these local changes, as well as the increasing economic importance of northwest Arkansas generally, Pope County's political strengths have changed greatly in the past 15 years. The most powerful agency in state government is the 12 member Legislative Council. Three of its most influential members are from Pope and its neighboring Yell county. Among other things their influence has been important in the impovements in Arkansas Tech University.

Perhaps the most interesting and innovative portent of sustained development is the local effort to establish an international, intermodal transshipment center in Pope County over the next 20 years. This "Arkansas 2000" project, detailed below, was a response to the possibility of losing the important construction component of the local economy and it serves as proof of the local entrepreneurship and community support which must be present for successful development.

Entrepreneurship

Compared to the two Tennessee counties, Pope has a very limited history of entrepreneurship. The gins of its cotton agriculture may well have served as an outlet for enterprising individuals as did the water-powered mills of the Tennessee counties, but its lack of physical and functional proximity to established industrial concerns deprived it of information about processes and markets essential to traditional entrepreneurship. Its few early local entrepreneurs, the owners of the stave mill and coal mines, apparently did not extend their efforts to social entrepreneurship and general community development. They, along with the handful of early food processors, did not display the successful flexibility of the Coffee County entrepreneurs who shifted from hubs and spokes to auto parts to housing components; or from harnesses to baseballs to golf clubs. The Atkins Pickle Factory is the only survivor of the first attempts at industrialism in the 40's, and the local poultry industry is a noteworthy case, but the only one, of innovative traditional entrepreneurship which significantly affected the pattern of local development.

The importance of the local poultry industry lies not only in its scale, but in the fact that, similary to the chemical and paper complex centered in McMinn County, it is a self-contained set of functional linkages. Poultry raising activities were particularly appropriate to the limited physical and human resources of Pope County in the 40's and 50's.

The development of poultry as a cash crop was influenced during the Depression by the Extension Service and by Arkansas Tech University. In the 1940's two small hatcheries were started in Pope County and a Chicago company opened a rendering plant for poultry wastes from the first poultry processing plant just across the river in Yell County. In 1947 a small group of local businessmen began purchasing poultry on a contract basis from area farm families. In 1955 they opened a feed mill. Additional processing facilities, hatcheries, and feed capacity were quickly added. In the present-day, tightly organized industry several hundred Pope County poultry farmers supply the inputs of land and building, along with their labor, while the poultry company supplies the chicks, feed, medication, and precise instructions. The mature chickens are processed and sold while by-products go largely to the production of feed for future cycles. The local lumber industry supplies its waste chips for litter in the barns.

The returns to poultry farmers were the principal source of the per capita income increase in the 50's. Demand for poultry continued to increase during the following twenty years and in 1979 75 percent of the County's gross farm income was derived from the poultry industry. The non-financial aspects may have been even more important in the initial period, however. As row-crop competitiveness in this mountainous county grew more difficult the viability of an agricultural population was even more problematic than elsewhere. Contract farming for poultry provided access to technology, marketing channels, and most of all it provided certainty. For these poultry farmers there were no large vicissitudes as with weather-dependent crops, or the volatile prices of the livestock market. Although it was a low profit operation, the capital requirements were relatively small. Its labor requirements could not stem the exodus of Pope County's rural families but for those who remained it offered a dependable income, and very importantly was a mode of farming which was to allow family members to hold non-farm jobs as they became available.

As in many other state political systems, many of Arkansas' decisions about expenditure for highways or other projects have been heavily influenced by individuals interested in guiding benefits to their home areas. For most of the 50 year period Pope County had not developed its own political entrepreneurs--either state or federal--that were so effective in Coffee County. Although the final location of the dam and reservoir in the county are no doubt the result of geographic factors rather than political ones, Pope County did participate in the process of getting Congressional approval for the Arkansas River System development. Though legislation was passed in the 40's there were no appropriations made until a decade later. Russellville, and its neighbor across the river, Dardanelle, contributed money each year to send a lobbyist to Washington on behalf of the project. The persistence of his constituents and especially the cooperation of Senior Senator Kerr of Oklahoma enabled Arkansas' Junior Senator McClellan to get funds appropriated. In part because of these earlier public sector investment decisions, Pope and Yell counties are now well represented in the influential decision making bodies at the state level, as was noted above. Local leaders have expanded on the earlier precedent of pressuring the federal decision making apparatus, and at the same time are learning to supply the technical and economic arguments that are the concomitants to federal location decisions today, as they work toward the accomplishment of Arkasas 2000.

Community groups, as is noted below, have responded to well defined development-related needs from time to time, but individuals who played leading roles over a period of time have apparently not been as numerous as they have been in Coffee County. Undoubtedly part of the reason has been the circumstances which apply to development in general--there was little economic diversity in the state until the post-war period, along with largely rural governments of limited financial resources. Thus opportunities for social entrepreneurs were few and successful role models--that is to say, information about the techniques and rewards of social entrepreneurs--were even fewer. Once the competitive position and spatial linkages of the river system and interstate were in place, how an energetic lead was taken by the president of a local bank in seeking to attract outside industries to the county. During the 60's and until his death in the mid-seventies, he was personally involved in initial contacts as well as ongoing arrangements for the firms who began operations during that period.

Another kind of innovative entrepreneurship is underway at the present. Grateful for the 15 year expansion of the economy and aware of the possible implications of the end of the extraordinary local construction activity, a group of local businessmen, whose forum was their daily coffee break at a restaurant, confronted the impending unemployment several years ahead of its actual occurrence. At a time when neither the county nor the city had a coherent planning program or even an industrial park, their discussions resulted in an imaginative scheme for an international, intermodal distribution center based on the central location of Arkansas, and Pope County's waterway, interstate highway, pipeline and railroad connections. Arkansas 2000, was set up as a non-profit development body. Its originators are the first to laugh at their initial naievte; yet

Senator McClellan was sufficiently impressed with their first visit to Washington in 1976 to set up a meeting with high level Department of Transporation officials. They in turn outlined a number of steps to be taken in the development of such a proposal. In pursuing the project staff members have become politically astute and have of necessity learned to operate in a mileau of economic, demographic, environmental and regulatory concerns.

Local Choice

In contrast to an early, documented tradition of social entrepreneurship and community involvement in Coffee County, or to the effective obstacle presented to development in McMinn County by myriad, long-lived conflicts, Pope County's attitude toward development is not easily characterized. It seems accurate to say that during the early part of the study period the majority of the county's residents were understandably unaware of development alternatives, while later they possessed the caution of those who are aware that change brings both goods and bads. Until recently the pursuit of economic development has depended on the efforts of a few individuals. The town and county as a whole have not been aggressive about shaping the course of economic events, but neither have they opposed it.

One probable reason for the lack of strong feelings is the county's late and modest agricultural development. The difficult topography and the dense forests which covered most of the area until well after the Civil War precluded the accumulation of wealth from plantation ownership, as well as the lopsided distribution of land ownership found in the delta region. Perhaps the total absence of early industrial ventures and the kind of vested interests that existed in McMinn County is also a contributing factor. Russellville did have its "old families" but they have been described as conservative rather than obstructive.

Although there was no significant amount of slave ownership in Pope County the Civil War was as bitterly divisive a local event as it was in McMinn. It is difficult to imagine that an actual local history so closely parallels the stereotypical image of the Civil War and its aftermath in the mountains, but the written accounts of Pope County's ambushes and feuds, arbitrary justice, and small scale anarchy are indeed vivid. Yet in Pope County where the post-War conflict was sometimes measured in lives, the memories have not been passed down to the present.

Neither has the county experienced the overt or covert political conflicts of McMinn and Jackson County. While individual politicians in Pope County have undoubtedly been no more sophisticated than elsewhere, the consistently Democrat tradition has been free of cliques and organized pressures. County employees have never been subject to frequent replacement. The County Judge in 1979, a poultry farmer serving his first term, is a native of the county whose boyhood ambition was to be County Judge. He believes that local politics have been clean longer than he can remember.

Organized support by the county and town of Russellville for economic development has been apparent but subject to inertia from time to time. Periods of successful change have been more often associated with the ad hoc efforts, or of energetic individuals than with the consistent practices of officially designated groups. Russellville Industries which formed in 1947 to aid the location of the shoe company was not continued. Its successor, Russellville Industrial Development Corporation, was initially active and acquired scattered tracts of land with access to utilities services, but as tracts have been sold new land has not been acquired, nor have new members become involved in the operation of the corporation. The industrial developments of the late 60's and early 70's were apparently due to the activities of the local bank president as noted above, albeit under the guise of the Development Corporation. One such unofficial effort insured the location of the nuclear plants when a group of local people bought out the final landowner whose price was higher than Arkansas Power and Light was willing to pay. Evidence of broad community support and a knowledgeable approach to development can be seen in the coordinated efforts to staff and fund the Arkansas 2000 project. In addition to the continued backing of the business community, the county provided funding through its anti-recession grants, and a CETA position. One of the full-time staff members is provided by the Industrial Research and Extension Center of the State University, and the University's School of Architecture will provide design work. The local Planning and Development District, the Ozarks Regional Commission, and the State Development Office are actively supporting the effort. Arkansas 2000 has received a grant from the State and a federal agreement which provides for a consultant to study the project's feasibility.

Admittedly the probability of its achievement as presently conceived seems small. As the Arkansas 2000 Report observed in a staggering understatement, "The technical problems encountered can probably be solved by reasonable planning, but the many and varied institutional problems may require amending existing statutes, rules and regulations" (Century Twenty One Committee, 1978:6). However, the test of this well organized and broad-based effort toward economic development is not necessarily in the achievement of its original objective, but in whether the leadership and local support it generated can be transferred to other avenues of development as well. The staff of Arkansas 2000 believe that the community has already realized benefits by signaling to industrial prospects and to outsiders generally that Pope County is an economically and socially desirable place to be.

Summary

Pope County's fast growth and major structural changes have occurred since 1960. Its private sector economic evolution serves as classic example of a rural community moving from commodity production to food processing and small assembly plants to higher skill, higher wage jobs in a diverse number of industrial sectors, although the importance of the construction sector, maintained over a 20 year period is not typical of rural development.

Many of the county's attributes were conducive to economic development--the higher than average levels of education, the presence of a state college, the lack of vested agricultural or industrial interests, political behavior that apparently avoided personal aggrandizement or factions. Yet at the beginning of the period of study the county had a number of historical disadvantages. The low levels of economic activity during the first half of the century and its reliance of lumber, cotton, and coal were the result of its location in an area of late settlement, in an agriculturally oriented state and region with virtually no connections to the technology or marketing channels of industrial capitalism. The system of cities in Arkansas was undeveloped, and in 1930 the state's largest urban node, Little Rock, was smaller than Tennessee's four largest urban areas. Nor was Little Rock connected in important ways to the cultural and economic flows of the national spatial network. Russellville and Pope County had insufficient knowledge of development alternatives, and private sector decision makers outside the region had no reason to seek out Pope County. As sources of income from cotton, then coal and lumber production declined after the 20's, it seems likely that Pope County's ability to maintain greater than average increases in per capita income owed much to net out-migration.

The three things which account for the present economic structure in Pope County are the poultry industry, the large, well-paid construction force along with the reservoir and interstate highway it provided, and the establishment of several new private sector employers which appear to be indirectly related to the public sector investment. The local poultry industry is the single example of traditional entrepreneurship with significant economic impacts and it was admirably suited to the rural, hilly country with its small capital requirements and the contract system which provided access to the markets and technology needed by local farmers. Barring exogenous help, the highly integrated poultry industry probably maximized the county's economic resources during the late 40's and 50's.

The public sector activities in Pope County no doubt owed something to lobbying efforts of the county, but they were not a result of the kind of local political entrepreneurship which has contributed to specific location decisions in other southern rural areas, and which was critical in Coffee County. There was some fortuitous element to the natural corridor and the Arkansas River in the location of the dam. The series of construction projects, including the quasi-public nuclear power plants not only provided important economic infra-structure but served to put the area on the map but the recent industrial developments are in part attributable to an energetic social entrepreneur who recognized the advantages of the public sector investments.

It appears that the momentum generated by the private and public sector decisions to date have stimulated a change in local participation in economic development from passive to active, that will assure continued economic development in the near future. The staffing, funding, and newly acquired political acumen of the Arkansas 2000 project represents a local committment to development which will be valuable in stimulating development activities of many kinds.

CHAPTER 7

ECONOMIC GROWTH IN JACKSON COUNTY

An Overview of the Change

The Status in 1929

Jackson County, like Pope, was formed in 1829 while Arkansas was still a territory. At the western edge of the Arkansas delta region it lies in the bottom lands of three rivers. The confluence of the White and Black Rivers was the site of the county's first community. Dense forests and its location away from westward migration streams contributed to its slow settlement until the railroad connecting St. Louis and Little Rock got underway in 1874, at what was to become the town of Newport. In 1980 the town of Newport is the county's only urban place, and as Figure 4 indicates, the highway and rail link between St. Louis and Little Rock provide its only major transport routes.

Valuable timber resources drew one group of people to the county while merchants came specifically to establish the new town which was stimulated by the railroad and the steamboat traffic on the White River. This area of Arkansas was more heavily populated by Missouri migrants than migrants from Tennessee and, no doubt because information about the commercial opportunities of new "western" railroad towns was widely dispersed by 1875, many of Newport's developers came from the more urban northeast. In contrast to Pope, McMinn, and Coffee counties, there were a number of European Jewish families who operated the first commercial establishments of Newport.

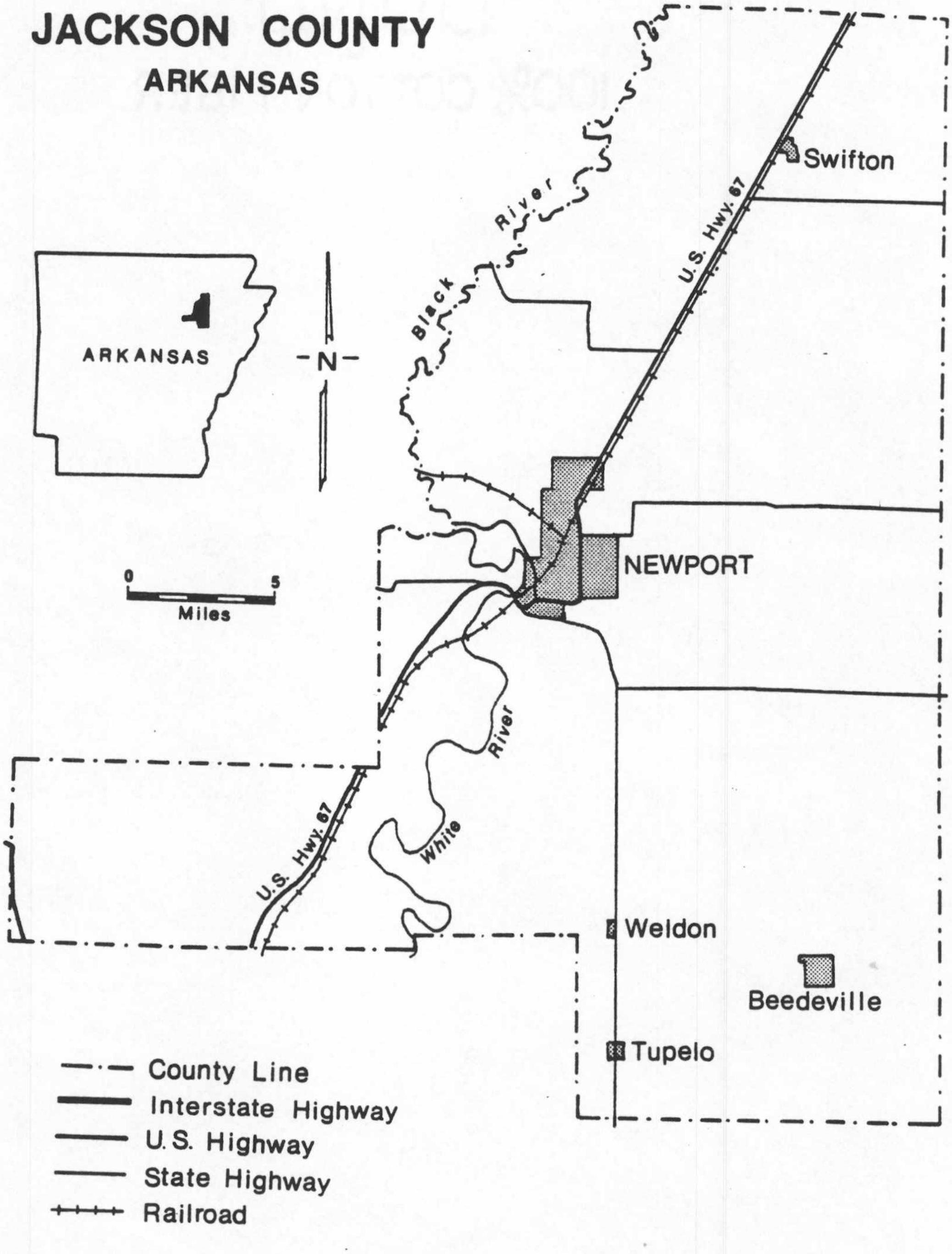

Figure 4. Jackson County, Arkansas.

The town's early settlers were enthusiastic builders and the usual variety of services, two local newspapers, and freight elevators to transfer commodities from riverboat to train were quickly provided. In 1892, after three hotly contested battles, and after many Jacksonport families had moved their homes and business to Newport, Newport replaced Jacksonport as the county seat.

The area was challenging. Floods were a frequent problem and much of the wooded bottom lands was swamp until well into the present century. Virtually no one escaped acute or chronic malaria. The first cotton farmer came to the county from Mississippi in 1882 and his 3,000 acre tract was a forerunner of things to come. With the exception of its western panhandle, which is an abrupt entry to the foothills of the Ozarks, Jackson County is a vast flat territory. As lumbering cleared the land, cotton quickly became the leading income producer, and although New Orleans, Memphis, and St. Louis enjoyed the major economic benefits of the Mississippi River System, the counties of the Arkansas delta had an advantage over the rest of the state for the first half of the twentieth century. In 1929 two-thirds of the county's employment was in agriculture and cotton was virtually the only product; only eight counties in Arkansas had a higher per capita income than Jackson County.

The adjuncts of the cotton economy came along as well. The gins--at one time more than 20 and often combined with general stores--the compresses, and the warehouses filled the functions of marketing, short term credit, and social center, and were the route which enterprising farm or commercial families took to expand their financial interests. The town's first processing industry outside the sawmills was a cotton oil mill organized in 1882 by outsiders, but partly financed by Jackson County families still prominent in 1979.

Cotton was farmed without the aid of mechanization, primarily by tenant farmers. In 1930 only 640 of the county's 3,768 farms were operated by their owners. Unlike most of its delta neighbors, Jackson County did not base its cotton economy principally on the labor of Blacks. Compared to many of the East and Central Arkansas counties where the Black population was more than half of total population, in Jackson County in 1930 only 19 percent of the population was Black.

The significant growth of the county's population followed the formation of Newport after the Civil War and Reconstruction period, and emotions resulting from the destruction of vested interests or former slave and owner relationships were not a factor in the county's early development. A number of Blacks were among Newport's early businessmen, notably as barbers and grocers. After the turn of the century there were a number of Black physicians, dentists, and restauranteurs along with the barbers and retail merchants. Between 1914 and 1925 the Black community published its own newspaper. By 1930, however, the professional sector of the Black community was no longer in evidence although the service trades continued to provide some employment. For 60 percent of the Blacks employed, both males and females, agriculture was the largest employer. For males the railroad provided nearly 300 jobs while domestic service was the only alternative for Black females.

The rivers of Jackson County provided another aspect of the natural resource economy. In addition to some commercial fishing after the turn of the century, families dredged freshwater mussels for pearls and later for the mussel shells themselves as a source of pearly button blanks which were exported to the east for finishing. The mussel fishing and several button businesses provided a small income for many families until zippers and plastic buttons began to compete in the 30's, but the income was meager indeed. One notoriously poor section of Newport in the 1930's was known as Buttoncutter's Row.

Statistical Overview

For the forty years preceeding the 70's, Jackson County was unable to match the increases in per capita income that were typical of Arkansas as a whole. During that period the county experienced a continuous decline in population. With the single exception of the 50's when manufacturing jobs doubled, Tables 16 through 20 reflect an economy with few changes in its economic or human resources, and with no endogenous or exogenous events which significantly altered its relationship to the spatial network.

As Table 19 shows, Jackson County provided fewer jobs for its population in 1978 than it provided in 1930. The inability to reallocate the workers released from agriculture, first by the Depression and then by rapid mechanization, resulted in massive out-migration from Jackson and its surrounding counties. From 1950 to 1960 the migration rate for most delta counties was -34 percent, although Jackson's is slightly less (Heffelfinger, 1975). From 1960 to 1970, when many counties had reversed that trend, Jackson County, along with her delta neighbors of Mississippi, Poinsett, St. Francis, Lee, and Phillips counties had by far the highest out-migration rates in

TABLE 16

PER CAPITA PERSONAL INCOME AND PERCENTAGE CHANGE BY PERIODS, JACKSON COUNTY AND ARKANSAS, 1929 - 1978

	1929	1940	1950	1959	1970	1978	1929-1978
Jackson	$317	$236	$749	$1,220	$2,586	$6,058	
Percentage Change		-25.6	217.4	62.9	112.0	134.3	1,811.0
Arkansas	306	254	825	1,394	2,791	6,121	
Percentage Change		-13.7	224.8	69.0	100.2	119.3	1,923.2

Source: Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, April 1980; Local Area Personal Income, 1970 - 1975; Regional Economics Information System, direct correspondence. Percentages computed by the author.

TABLE 17

POPULATION, RATES OF CHANGE, AND PERCENTAGE URBAN BY PERIOD, JACKSON COUNTY AND NEWPORT, 1930 - 1977

	1930	1940	1950	1960	1970	1977
Jackson County						
Population	27,943	26,427	25,915	22,843	20,452	21,548
Percentage Change from Previous Decade		-5.4	-1.9	-11.9	-10.5	5.4
Percentage Urban	16.3	16.4	24.1	30.7	37.8	36.5
Newport						
Population	4,547	4,321	6,254	7,007	7,725	7,871
Percentage Change From Previous Decade		-5.0	44.7	12.0	10.2	1.9

Source: Department of Commerce, Bureau of the Census, Census of Population and Housing, 1930, 1940, 1950, 1960, and 1970; Current Population Reports, Series P-25, No. 817.

TABLE 18

PERCENTAGE DISTRIBUTION OF TOTAL PERSONAL INCOME BY MAJOR SOURCE, JACKSON COUNTY, 1929 - 1978

	1929	1940	1950	1959	1970	1978
Farming	49.4	49.2	38.6	31.5	20.2	19.8
Mining	(D)	(D)	(D)	0.4	n.a.	n.a.
Construction	2.2	0.8	2.7	3.1	5.1	4.3
Manufacturing	3.3	2.9	5.7	14.2	14.5	17.5
Transportation, Communications, and Public Utilities	14.8	5.8	6.4	6.2	5.0	3.9
Whilesale and Retail	10.3	8.9	13.4	12.7	11.7	6.8*
Finance, Insurance, and Real Estate	1.3	1.2	1.2	2.2	2.3	2.7
Services	6.3	5.7	7.2	7.1	8.3	8.4
Government						
Federal	1.2	7.7	2.1	1.7	1.3	1.0
State and Local	2.9	4.8	3.9	5.3	5.4	4.6
Other	(D)	(D)	(D)	0.5	0.5	(D)
Transfer Payments	2.9	4.3	10.5	9.4	14.6	17.1
Property Income	3.9	6.2	7.3	5.5	11.1	10.6
(Residence Adjustment)	n.a.	n.a.	(-0.7)	(-1.9)	(-2.9)	(-3.0)

Note: Base for percentage computation is total personal income by place of work. Estimates for 1978 based on 1972 Standard Industrial Code (SIC).

(D) Raw data undisclosed for reasons of confidentiality. n.a. not available.

*Retail trade only; income from wholesale trade was not disclosed in 1978. Disclosed figures for 1975, 1976, and 1977 indicate that the sum of wholesale and retail would be approximately 9.6 percent of total personal income.

Source: Department of Commerce, Bureau of Economic Analysis, Regional Economics Information System, "Personal Income by Major Source," direct correspondence including revisions as of April 1980. Percentages computed by the author.

TABLE 19

PERCENTAGE DISTRIBUTION OF EMPLOYMENT BY MAJOR SOURCE, JACKSON COUNTY, 1930 - 1978

	Series I					Series II	
	1930[1]	1940	1950	1960	1970	1970	1978
Agriculture	66.7	65.2	47.7	33.2	18.0	28.8	20.2
Mining	0.0	0.2	0.1	0.2	0.4	0	0
Construction	1.5	2.4	5.0	5.2	6.7	3.7	3.9
Manufacturing	4.4	4.7	10.5	13.2	19.3	14.8	16.7
Transportation, Communications, and Public Utilities	6.9	3.7	5.0	4.8	5.9	4.0	3.1
Wholesale and Retail	4.9	9.4	15.2	20.3	21.0	14.2	11.9*
Finance, Insurance and Real Estate	0.6	0.8	1.2	2.0	2.7	2.0	2.8
Services	10.0	12.3	13.6	18.4	23.6	12.6	14.7
Government	n.a.	1.2	1.8	2.5	2.5	11.1	11.5
Total Employment	9,783	7,643	8,312	7,262	6,518	8,399	9,262
Percent Change from Previous Decade		-21.9	8.8	-12.6	-10.2		10.3

Note: Consistent data are not available for the whole span of years. Series I is based on employment as reported in the decennial Censuses of Population and Housing on a place of residence basis. In 1930 government employment was distributed by function and its share cannot be computed.

Series II is based primarily on ES-202 covered wage data and thus is on a place of work basis. It is not possible to assign non-farm proprietors to particular categories so non-farm employment shares are understated in Series II. Non-farm proprietors represented 12.1 percent of non-farm employment in 1978, and 14.1 percent in 1970. 1978 employment is based on 1972 SIC.

*Retail trade only. Disclosed figures for 1975, 1976, and 1977 indicate total wholesale and retail employment would be approximately 14.9 percent of total employment.

Source: Department of Commerce, Bureau of the Census, Population, 1930, Vol. III, Pt. 2, Table 20; Bureau of Economic Analysis, Regional Employment by Industry, 1940 - 1970; Bureau of Economic Analysis, Regional Economic Information System, "Employment by Type and Broad Industrial Sources," April 1980, by direct correspondence. Percentage distributions computed by the author.

TABLE 20

PERCENTAGE DISTRIBUTION OF MANUFACTURING EMPLOYMENT,
JACKSON COUNTY, 1930 - 1970

	1930	1940	1950	1960	1970
Food and Kindred Products	3.1	14.2	9.4	16.9	8.0
Textile and Apparel Products	1.2	0	0.7	0.8	5.6
Lumber and Wood Products	32.4	51.0	18.0	13.2	17.1
Printing, and Allied Industries	1.8	7.5	4.0	5.9	1.4
Paper and Allied Products		n.a.	9.3	0.0	0.0
Chemicals and Allied Products	2.0	18.1	11.5	0.9	2.5
Primary Metals		n.a.	1.4	4.8	12.7
Fabricated Metals		n.a.	17.0	45.8	32.0
Machinery, All		2.8	3.8	2.6	8.2
Machinery, Except Electrical	6.2	n.a.	1.7	1.2	3.2
Electrical Machinery and Equipment		n.a.	2.1	1.4	5.0
Other	48.15	5.8	24.8	8.9	12.3
Total Manufacturing Employment	732	359	870	964	1,256
Percent Change from Previous Decade		-16.9	142.3	10.8	30.3

Note: Manufacturing employment data are not strictly comparable between 1930 and the following years. Data from the 1930 Census of Population have been aggregated as nearly as possible to classifications of later years.

n.a. not available.

Source: Department of Commerce, Bureau of the Census, Population, 1930, Vol. III, Part 2, Table 20; Bureau of Economic Analysis, Regional Employment by Industry, 1940 - 1970.

Arkansas--well over 20 percent. In Jackson County the rates of out-migration have been similar for both races though the proportion of Black population has decreased from 19 percent in 1930 to 15 percent in 1970. It seems likely that in Jackson County even the relatively small increase in its per capita income has depended less on its endogenous economic strength and flexibility, than on the fact of heavy out-migration.

In McMinn and Pope Counties the proportion of the population that was urban increased considerably despite declines in total population. Newport is Jackson County's only urban place and in every decade except the 40's the increase in urban population has been small. The urban proportion of the county total has been much less than was average for Arkansas and the disparity has increased over time. Even more than in Pope County, Jackson County's rural population has been distributed among small communities which have maintained separate identities. The number of these incorporated towns has increased. In 1940 there were five incorporated towns, including Newport; in 1970 there were 11. Excluding Newport the largest had a population of 1,731 in 1970, while eight of the towns had fewer than 500 inhabitants.

The rural nature of the county is maintained both in its community patterns and in its economic structure. In 1978 one-fifth of its employment and income were contributed by farming. Cotton, no longer an important crop, has been surpassed by soybeans, rice, wheat, and grain sorghum, and the county's farms are extremely capital and energy intensive, relying on irrigation pumps for rice farming, heavy equipment, application of pesticides and fertilizers by air and large amounts of crop storage space. From a land use point of view the county's farming has become much more extensive. It is the only one of the four counties which has increased its agricultural land use over the period of study. In 1978 Jackson County had 92 percent of its land in farms.

Relative to our other three counties the growth of the non-agricultural sectors has been small over the 50 years. From the end of World War II to the middle of the next decade, an important group of metal working industries were introduced, the employers linked by corporate ownership but apparently not by functional integration or other externalities. This development of manufacturing employment, shown in Table 20, and its subsequent expansion has been the major source of new employment in the county. The proportions of service and trade employment have remained well below those in the other counties of the study. Both in Table 19 and 20 the numbers involved are small and the general decline relatively important so that apparently significant sector changes are in fact spurious. The apparent increase of the wholesale and retail sectors' relative share of employment between 1960 and 1970 represents an actual decline in numbers employment. In general the direction of sectoral changes exhibited in the employment tables is accurate but the numbers involved are quite small.

Chronological Overview

1930 - 1940. In 1930 Jackson County had its small lumber, handle, and cooperage business, the requisite creamery, bakery, and ice plant, and, of course, the ubiquitous bottling company. Together these enterprises probably accounted for the employment of fewer than 100 people. By the middle 30's employment in button production had also declined to fewer than 100. The railroad and agriculture provided the only sizable employment. Employment in agriculture included not only workers on farms, but work in the gins, compress, and oil plant in Newport. Employment there was seasonal, but even after the 1932 peak in cotton production seasonal employment provided 300 to 400 jobs, with about half as much during the remainder of the year.

The drop in cotton prices and the agricultural adjustment programs which followed decreased the county's production of cotton, but the primary effect in Jackson County during the 30's was not to shift to other commodities, but simply to decrease output. Approximately 1,200 tenant families were dislocated, and Blacks disproportionately so. At the end of the decade more than half of the Black farm operators had left their farms. The attrition continued into the next decade and by 1950 Jackson County had almost no farms operated by Blacks.

The six banks in the county were organized and financed by farming families and unlike the banks of McMinn and Coffee County, dealt largely with agricultural credit by necessity. Only one, conceded to be the most development minded, succumbed during the Depression. By the end of the decade the local banks were supplemented by the Production Credit Associated which would prove to be essential to the increasingly large farms in the county. In the last three years of the decade the Farmers Electric Cooperative brought the proportion of rural homes with electricity from a little more than one percent to 15 percent--proportionally and absolutely far ahead of Pope and Coffee County in 1940.

Though rice had been successfully grown in the county in 1908 by a German farmer who moved on to Missouri, the economic incentive to shift crops was absent with a strong cotton market. The first rice farming by Jackson County's established farmers began during the 30's, despite the need for expensive pumps and threshers, and the relatively undeveloped marketing channels. The Chamber of Commerce, reorganized in 1935, encouraged a shift in the county's agriculture away from its one-crop vulnerability and made the promotion of rice a major program.

1940 - 1950. Railroad employment, button production and the handle mill continued in Jackson County for one last decade and a new rice mill and rice dryer offered a few more jobs in the processing sector. During the War when imports to the United States were disrupted, the rapidly increasing price of rice became one source of wealth for the county's established families, who had made it a significant part of their crops. This advantage was considerably enhanced by the rice allotments which went to those first rice farmers and was maintained until restrictions were lifted in 1974.

Though the mechanization of agriculture would become economically imperative, its adoption was accelerated in Arkansas and Jackson County by the advent of the War. The attraction of construction work at the local air base and the departure of servicemen, as well as of families who went west and north to work in defense factories, depleted the county of much of its farm labor for these years. Out-migration made mechanization necessary and once embarked on the path of mechanization, continued out-migration became necessary.

For a time the transition, and particularly seasonal peaks, was assisted by migrant farm workers. As equipment became increasingly sophisticated and costly, the risks of depending on temporary and possibly careless help appeared less economical. As still more jobs were replaced by mechanization, for those essential farm workers who were able to operate farms at the necessary level of responsibility and care, owners found it necessary to provide year round employment as well as much improved housing and pay.

It is, however, the growth in manufacturing jobs which marks the decade as a distinctive one in the 50 year period and, as in Coffee and Pope Counties, the local changes in economic structure owe much to prior public sector investment.

During the War a pilot training base was constructed in Jackson County--part of a coordinated system of airfields in the eastern section of Arkansas. It is difficult to explain the nearly total absence of recollections or documentation about the military base, but it was self-contained and small, and perhaps it was used only briefly. It seems likely that the air base accounts in part for the decade's large increase in trade employment. What the other effects may have been during its occupation is unclear, but afterward the airfield and its adjacent village were given to the town of Newport with the stipulation that it be used for industrial development. This impetus along with a desire to provide jobs for the county's returning servicemen stimulated the formation of a planning commission and an industrial development commission. As part of the same wave of public aspirations the Merchant's and Planter's Bank was founded in 1946 with an expressed desire to contribute to community development efforts in contrast to Newport's two original banks, which were viewed as ultra-conservative in such matters.

As in Pope County the first outside firm to locate was a shoe factory, though it proved to be short-lived. The second industry, originally attracted by the airfield site, remains an important employer; Victor Metals, a Michigan company began the manufacture of aluminum tubes for toothpaste in 1946 and in 1948 added a plant for the manufacture of plastic caps. By 1949 aluminum slugs for the tubes were produced locally by a subsidiary of another corporation in which the aluminum tube company held ownership shares. These integrated operations employed only about 200 people by the end of the decade but the corporate connections continued to prove important in the next decade.

1950 - 1960. The role of the airbase as a focus of industrial development did not prove to be successful. Although a mobile home factory, employing about 90 people, was begun there in 1953, the original aluminum tube factory chose to move to the main highway when it added rolling mill operations. By the early 50's the company producing aluminum slugs opened a small firm for the manufacture of aluminum chair frames and in 1959 a third local plant under the same ownership began producing residential lighting. Outside these expansions in the metal fabricating sector, and the strength of wholesale and retail trade employment, Jackson County was unable to attract or develop new jobs, or even to maintain them at earlier levels. The Chamber of Commerce prepared a report designed to call attention to Newport as a favorable site for a post-War defense plant but with no effective state industrial development program, and no strong state or federal political connections, Newport had little access to the forums where such decisions were made. In terms of economic growth Jackson County suffered not only a relative but an absolute decline. In 1960 there were 1,000 fewer jobs in the county than there had been in 1950.

1960 and after. Other than some employment growth in the metal group, there was little industrial or economic growth during the 60's and by 1970 total employment fell to its lowest mark for the 50 year period. The employment gains made during the 40's had been lost twice over although the manufacturing sector continued to add jobs. A second shoe factory was the decade's only venture of any size, employing approximately 200. Its fortunes were no better than the first, however, and it too closed its doors only to be followed by a third which, without warning, literally vanished in the night.

Since 1970 the employment and economic environment have improved somewhat along with the first population increase in 50 years, though the county's growth rates in such areas as assessments, value added, employment, covered payrolls and retail sales still fall below the state averages. In addition to small tool and die companies there are a number of locally owned businesses in light metal working--the mobile home factory, horse trailers and portable metal buildings--an electric wire and cable company employed 200 and planned to double capacity in 1980. But the county's additional employment has not been in fast growth or even stable industries. By 1979 the mobile home plant had closed and reopened several times, although in 1979 it employed about 200. The forging steel plant which opened in 1971 employed 400 people and seemed to promise diversification and a significant employment nucleus, yet its position is tenuous. The plant closed, attributing its difficulties to competition from Japanese steel, and its reopening in 1979 was possible only under the federal bankruptcy acts allowing aid to employers adversely affected by imports.

The Spatial Network, Entrepreneurs, and Local Choice

An Increasing Isolation from the Spatial Network

The approximately 23,000 people who lived in Jackson County's rural areas in 1930 had very little access to urban, not to mention metropolitan, influences and exchange of information. The county's processing activities in lumber and button stamping provided only the most rudimentary exposure to manufacturing processes. The predominant economic activities, agriculture, the railroads, or service and trade employment, provided it with no direct links to outside manufacturing activities or to diverse cultural experiences. Cotton, its main physical export, was transported on the slow and seasonally unavailable river system.

Jackson County had a lower percentage of its population in its single urban place than any of the other four counties, and fewer of its rural farms were served by electricity or telephones than the other counties. Jackson County, most distant of the four from the metropolitan area radio stations had fewer families with radio sets than any of the others.

Like every rural county in 1930, Jackson relied on unimproved dirt roads in its rural areas, but it fared worse than many of its delta neighbors, and worse than Pope County with respect to miles of paved road. The county's single federal highway, from St. Louis to Texas was its only direct link to Little Rock. Though the highway was one of three major traffic arteries in the state in a 1934 survey, the highway had crossed the White River at Newport by ferry until 1929, and sections of the highway in Newport were not paved until the late 30's.

Unlike the other three counties, Jackson does not lie midway between two metropolitan areas, and the state capital lay 90 miles away--a trip not frequently taken. Not only was Jackson County far removed from the state's only metropolitan area, Newport did not develop a role for itself as a regional node. The poor road system of Arkansas rural areas in the early days tended to preclude the growth of strong area trade centers and no doubt contributed to the numerous small communities in both the Arkansas counties. Although there are no indexes for Arkansas similar to those Allred constructed for Tennessee, by measures of retail workers per dollar of per capita income, or by shares of employment or retail sales per capita, Jackson

County fell below the other three counties as an early trade center. There are three state roads which link Jackson with its eastern neighbors, but only one state road to the county on the west. In 1950 that single curving and hilly road from Newport to the county seat of its adjacent western neighbor was still unpaved. The traffic which traveled through Newport and Jackson County on the federal highway, like the daily freight trains, found no local demand or resources to make the county an intermediate stop.

The dearth of physical linkages between rural areas and the transactions of the national spatial network bears a direct relationship to the divergence between attitudes and cultural norms of a local area and the world outside, as Chapter 2 emphasized. The strength of the local educational effort may be an internal stimulus to change and development, but it appears that in Arkansas and in Jackson County that stimulus was weak. Illiteracy rates in 1930, especially for Blacks, were lower than average in the state, although school enrollments were below state averages. A 1930 report on education in Jackson County noted that 46 percent of the school children were educated in one or two room schools. In that report the state Department of Education pointed out that the many smaller schools of Jackson County placed their students at a disadvantage relative to the students of larger schools: in small schools twice as many pupils were over-age for their grade; larger schools had much higher enrollment rates for students above elementary level. The county's enrollment rates diverged farther from state averages with increasing age, and by the ages of 16 and 17 fewer than half the county's children remained enrolled compared to a state average of 60 percent and

Pope County's 67 percent. More than half the county's school children had school terms shorter than the state's minimum requirement and some school terms were only two or three months long.

By the end of the 70's there was still a notable difference in the traits and attitudes typical of Jackson County and those of the other more urban, more economically diversified areas of this study. The section below on local choice considers the manifestations of these differences, but the local approach to education is one important difference between Jackson County and Pope, or Coffee County. In every decade over the study period for every age, most markedly above 15 years, enrollment ratios in the county are below those of the state of Arkansas. Median years of school completed by the adult population has been consistently below the state average and the lowest of the four counties. Until 1970 the percent of adults completing college was only a little more than half of Arkansas' low proportion. Although the county no longer has 44 school districts, before integration in 1966 there were seven high schools, and in 1979 with a population of about 22,000, there were still five high schools. Only the Newport city schools are certified. Although there are three private colleges in the counties adjacent to Jackson in 1979 only 36 students from Jackson attended these three. Of the county's past four high school graduating classes only 38 percent were in college in 1979 compared to 51 percent for Arkansas as a whole. (Newport Daily Independent, April 15, 1979).

In Jackson County, as in Arkansas generally, considerable emphasis has been placed on vocational or agricultural education in recent years, presumably as an alternative for non-college bound students. Its benefits, however, can only be realized in areas where such jobs are already available and one native Jackson Countian, returning after a 25 year residence out of the state, expressed a sentiment directed at the educational system in general but clearly relevant to the development history of Jackson County, by saying

> The whole thing depends on the people. Everybody is proud of their vocational training in high school. It is the general education level of a community that is ultimately going to count and it just kills me to see the time that is spent during the education process of these kids in high school taking shop training and learning to do mechanical things when the thing the educational institution ought to be after is the development of people who are educated to the extent that they can think lucidly about matters; so they'll be good parents; good voters--on the right side of issues when they arise. You, the educators, have got precious few years of this individual's life that you can transform him into at least a semi-educated person and you're throwing that away to teach him some damn pots and pans thing he could learn after he gets out of school.

The essential linkages of Jackson County to the spatial network over this 50 year period do not appear to have strengthened nor have they changed much in character. The trip to Little Rock or Memphis is somewhat easier but Jackson County's people are occassional visitors to rather than participants in the economic and cultural activities of the metropolitan areas. Amid the efflux of human resources and the decline in jobs, the single significant influx--and the only local association with the federally sponsored activities that have been so important elsewhere--was the World War II Airbase. Following a severe agricultural depression and a loss of 2,000 jobs, it would seem that such an event would have been a significant one. Yet there was no information available on the numbers of people involved, their length of stay, or any transitory or permanent effect on the county. Neither commemorative publications, natives, nor officials of the county could more than acknowledge its presence. There were no statements of friendships formed or returning military retirees as there was in Coffee County, and there are no indications of the long term information access which manifested itself in Tullahoma by military contracts for local plants. There were after all no manufacturing concerns in Jackson County at that time.

The single significant example of participation in the changed national spatial network is the complex of aluminum fabricating companies. Their juxtaposition in Jackson County is not the result of functional linkages nor external economies, but appears to be a manifestation of location decisions based on information available through the channels of corporate ownership--a relationship Pred, (1977) has cited as significant in development patterns during the present era. The original aluminum tube company was a stockholder in the parent company of its aluminum producer, and that parent company produced both aluminum chairs and residential lighting elsewhere, before locating additional plants in Jackson County.

Outside the various light metalworking companies, the county's only ties to a regional or national economy is through the agricultural sector. In 1978 it was still the single largest source of income and employment. In the absence of strong and continuous growth in other sectors, the interests of the agriculture sector have directly guided the development of Jackson County, as is noted below in the discussion of local choice. Yet the indirect effects of a dominant agricultural sector have been very important too. The linkages of the agriculture sector are not conducive to extensive contacts with the rest of the nation, and they are relatively limited regionally as well. The county's rice, soybeans, and grain sorghum go to one or two very large cooperatives whose headquarters, purchasing, marketing and processing activities are carried on elsewhere. Though the technological innovations in the agriculture sector have been notable over the past 50 years, the income-inelastic nature of agriculture has not led to the expansion in jobs, or to spinoff activities which often accompany innovations in other sectors.

Both locally and nationally in the agriculture sector there has been an increased concentration of assets, if not always in income, for those who have remained. Though one-fourth of Jackson county's population was considered below the poverty level in 1969, there were a number of extremely wealthy families. The land ownership map of Jackson County makes the source of that wealth awesomely clear. After World War II Jackson County farm land sold for $50 to $75 per acre. In 1980 the flat, relatively fertile land is worth $1,000 to $1,400 an acre. The borrowing power represented by many thousands of such acres offers its owners almost unlimited opportunities while the agricultural use of the land offers the town and county very little in the way of economic development--or even revenues. In 1979 92 percent of the county's land that was in farms was assessed on the average at 5.4 percent of its true market value, while urban property was approximately 10 percent of market value--both of course well below the Consitutionally required 20 percent

(Newport Daily Independent, June 12, 1979). It is noteworthy that the largest continguous blocks of agricultural land held by these families are on the northern and northeastern edge of Newport. The town's expansion is constrained in any other direction by the levees that protect it from the White River.

Many argue that the federal tax structure has operated against the turnover of agricultural land but capital gains taxes aside, the scale and capital intensity on which such farming is efficiently conducted effectively precludes the entry of new farming interests except at the corporate level, or by foreign investors. The latter is a prospect Jackson County people would find very unappealing.

Entrepreneurship

Having remained outside the main flow of ideas and economic activity, both directly through physical contacts and indirectly through the perspective of an educated and cosmopolitan population, it is not surprising that indigenous entrepreneurial activities of an innovative kind have been few. The manufacturing sector of Jackson County's economy owes little to entrepreneurship of the traditional kind, and the entrepreneural efforts of local individuals and families have gone either to the small businesses of retail trade or to the agricultural sector. Following the initial development of Newport and the clearing and conversion of land to agricultural use the early families established the gins, the compress, and the first cotton oil company. Many of these early families have continued to oversee farms and the most prominent have participated in the local economy through real estate acquisition and sales, and the farm equipment trade. In this sense they have displayed a personal flexibility just as they were among the first families to undertake the now important rice farming in the county. Yet these activities have neither contributed significantly to the growth of jobs nor the diversification of the economic structure; thus the entrepreneurship that existed has had very limited developmental impacts.

Until recently the county has not been able to or has not chosen to exercise any sort of political entrepreneurship. This generally Democratic county supported Winthrop Rockefeller for Governor, the first time it had supported a Republican candidate. That support was urged by the local newspaper and was based in part on the argument that long support of Faubus and earlier Democratic administrations had achieved very little for the county. Community leaders connect that support of Rockefeller directly with the appointment of local representatives on the State Board of Education, the Arkansas Industrial Development Commisson and the Chairmanship of the State Parks Commission and the State Highway Commission. The local representation has succeeded in bringing Jackson County to the attention of the state's decision makers. There is now a Vocational-Technical school in Newport, and Jacksonport, the site of the county's first community and riverport, has been designated as a state park.

This new political entrepreneurship has been backed by the active exercise of social entrepreneurship within the town of Newport and the county. For several years a small group of interested professional people have had a weekly luncheon meeting to discuss the needs of Newport. There has not been a formal organization with dues and public notice, but the group has been instrumental in initiating and establishing momentum behind a number of projects, some noted in the paragraph above, which have subsequently been taken on as "official" projects by the government or Chamber of Commerce. For 20 years the Army Corps of Engineers had plans to deepen the channel to Newport from its present 4.5 feet to 9 feet. The "Wednesday Noon Group" was responsible for getting the project back on active status. This small group began the effort that resulted in the construction of a new bridge across the White River which, for the first time, is not subject to flooding. Plans are now approved to extend the four-lane, interstate-standard highway from Little Rock the additional 25 miles necessary to reach Newport. In 1975 that group was also instrumental in carrying through an Economic Development Administration financed plan to provide the airfield industrial site with a railroad spur and improvements to the water system. Most recently the group has headed a drive to establish a local community college, though in 1979 the State Board of Higher Education had not conceded the need.

Social entrepreneurship, as Wilber Thompson described it, lies in persuading the community to support the provision of needed public services and infrastructure. The success of the small private group lay not only in their personal efforts but in their success in getting the support of the "official" decision makers as well as in making use of the political entrepreneurs of the past decade who were in a position to facilitate the projects. As in Coffee County the newspaper played an important role in gathering community support. As a member of the "Wednesday Noon Group" the publisher used the persuasive power of his editorials along with extensive news coverage to inform and gain backing for every project.

It would seem to be a reasonable assumption that the most difficult part of obtaining the kind of public sector projects cited is the commitment of state and federal government expenditures, and that the community, apparently having little to loose, would be eager for such public projects. In Jackson County however, the community has not chosen to commit itself to economic or cultural change.

Local Choice

Though the social infrastructure and the economic structure have continued to diverge from the trends in much of the region and nation, if not from its delta neighbors, the people of Jackson County regard their circumstances with complacency. They seem confident that their five small county high schools produce students equal to the best and further school consolidation has never been seriously considered. Yet as part of a wide region where five successive decades of out-migration have removed the young and best educated, the labor pool is no longer a strong resource. In a 1971 survey, 26 percent of Jackson County population older than 15 years had an eighth grade education or less. Among the half of that population not presently in the workforce 40 percent had an eighth grade education or less. Of the county's 11 incorporated towns only three had sewerage systems and several have no water systems. They frequently expressed the opinion that Newport has everything they need--and should anyone want to attend a play or have access to more extensive or specialized shopping, the four hour round trip to Little Rock or Memphis was cited as an acceptable solution.

Their insularity and their own satisfaction with the present lifestyle leads to an unrealistic assessment of the county's resources in many respects--they tend to see potential assets as actual ones. One example of this is their perception of the transportation resources as important assets to the county. A main line of the Missouri-Pacific does indeed furnish the possibility of rail freight service but apparently no local use is made of it at present. The rivers of the county are pointed out as a means of transportation for bulk shipments down to the Arkansas and eventually the Mississippi, but in fact the shallow channel and the vicissitudes of floods make the rivers unsuitable even for the county's present needs. Most of the local soybean farmers either truck their crop to a port in the adjoining county or undergo the risk and expense of storing the crop until high water permits shipment. Certainly widening of the highway through Newport in 1974 from two lanes to four lanes was a considerable improvement, but even so the presence of trucks and other through traffic on what is the town's main thoroughfare is still a problem, and as a transportation resource it competes poorly with many counties having access to interstate highways.

Perhaps the clearest example of an unrealized local asset, yet one pointed to with local pride, is the airfield _cum_ industrial site.

The $8,500,000 airfield and associated housing was turned over to the city with the stipulation that it be used for industrial development. For a short time it was the nucleus of a successful effort to attract industry with the intention of providing jobs for returning servicemen. The original aluminum tube factory shortly chose to relocate along the main highway as did all of the later firms which comprised that metalworking complex. The area's population is too small to support commercial aviation flights, and even the extensively used agriculture flying service is located elsewhere in the county since it is able to operate without runways. The airfield is in physical limbo, given to the town of Newport but located in the county several miles away from the city limits. The water system for the houses and industrial sites has not been properly maintained and its water has been on the "boiling list" of the State Health Department since 1963. A general aura of desolation prevails with poorly maintained streets, weeds erupting around and through runway seams, and structures entirely devoid of aesthetic appeal. Though there are nearly 2,000 acres available for industrial development, the site is a poor competitor to the more accessible, curbed, lighted and landscaped industrial areas being laid out in many southern towns.

The present circumstances in Jackson county are in part the result of an unrealistic self-perception and general acceptance of the present lifestyle as noted, but it is also the result of some explicit feelings that growth is undesirable--and as in McMinn County inimical to vested interests. It seems safe to say that there are mixed feelings toward growth in every community and that the pursuit of growth is an issue rarely explicity debated or resolved. Instead the preferences of those in the community with effective power, usually comprised of financial and social standing, will prevail whether or not those people choose to play the public decision making roles. The separation of public decision-making from the possession of effective power has been a major factor in the county's lack of diversification and growth. The large land owners on Newport's periphery are in a direct position to develop land for commercial or residential use. They have developed two residential subdivisions and in 1974 a shopping mall was built along the major highway. Such development however is solely at their behest. Furthermore several generations of families can play a variety of roles within a community and in Jackson County agricultural families are represented by important commercial and legal connections as well as by virtue of extensive land ownership. In such a situation it may not be necessary to publically state a conservative position or resolve personnally ambivalent feelings about community growth--it is sufficient to be passive--to abstain from doing what one is in a position to do.

The effectiveness of that passive posture is immensely enhanced by the way Newport goes about its affairs. There is hardly an area where petty concerns and emotional exchanges have not played a big part. "Selfish" was a word applied frequently by townspeople themselves.

Newport has two private hospitals as a result of a personal feud between the two doctors who set out originally to establish a single hospital. Their enduring personal enmity has been passed on to the second generation of families and their respective supporters. In order to meet Medicare and Medicaid standards one hospital applied for a certificate of need for new physical plant and the other has fought bitterly against two succeeding certificates which were granted, and even brought suit to prevent rebuilding. A state committee appointed to study the situation agreed that consolidation was an impossible solution, and the affair brought several years of unfavorable state-wide publicity.

The development efforts of a recently incorporated small town contiguous to Newport has been another arena of contention. When a county bank presented its statement of need for a branch bank in that adjacent town, arguments before the Comptroller of Currency in Memphis by the representatives of the county bank and the two established Newport banks were said to be the most personal and viscious ever conducted. The town and its officials have adamantly refused to consider consolidation with Newport and the boards of the two cities, along with their legal retainers, have been engaged for the better part of a year in dealing with 300 acres of land which were simultaneously annexed by the two towns.

Newport has had a city manager-board form of government since 1963 but its move toward professional administration has been halting. At best it is difficult for small towns to attract and keep well qualified city managers, but the problem has been compounded by the town and its elected officials. Newport's first manager was fired peremptorily by an irate board member whose colleagues chose not to challenge him. The second was assisted in finding another job within a few months of his arrival when it became apparent that his qualifications had been misrepresented. Newport has had some able administrators, one of whom stayed four years, but the general conduct of government is not conducive to the orderly execution of public matters or public accountability. A newspaper editorial in 1975 was a plea for public attention to the meetings of the board and the

> haphazard and totally confusing manner in which [it] deliberated on and passes and defeats proposals. . .irrelevant and impertinent ramblings. . .the bizarre manner in which bills or measures manage to be brought up. . .the repeated practice of invoking emergency clauses to hurriedly pass bills. . .the unnecessary use or abuse of "executive session" (Newport Daily Independent, August 6, 1975).

The staff of the White River Planning and Development District summed it up by saying that it is harder to put together a project in Jackson County than anywhere else. There are so many competing interests that decisions painfully arrived at are often reversed without warning. The only projects which are successfully executed are generally guided by individuals acting in an unofficial capacity rather than through the official bodies. Jackson County and McMinn County appear to share many similar community characteristics. Those characteristics have served as an effective, if not explicit, choice against economic change: contentious relationships between communities, factions within the community, official leadership which is ineffective against, or perhaps coopted by, the wishes of those who hold the preponderence of power in the area.

Summary

The migrants who settled in Jackson County and established Newport because of the railroad, and in contrast to the other counties of the study, represented more geographic diversity and included a more independent and better educated Black population. However, once the land was cleared, Jackson County's flat, fertile terrain drew it into the southern pattern of commercial cotton growing. It large family farms were worked by tenant farmers without the aid of mechanization and in 1929, even after the initial fall in cotton prices, it was among the counties in Arkansas with the highest per capita incomes.

Beyond the activities of lumbering and mussel fishing for button blanks Jackson County had no acquaintance with the processes and skills of manufacturing. The county was poorly connected to the growing sectors of the spatial network in every other way as well. Its nearest urban neighbors, Little Rock and Memphis, were nearly 100 miles distant and both cities were oriented toward an agriculture economy as well. Thus when it became essential to reallocate jobs to other commodities and away from agriculture altogether the county was unable to do so. Except for the establishment of approximately 500 jobs in metal fabrication from the late 40's through the decade of the 50's, total employment and population decreased continuously between 1930 and 1976. The increasing pace of farm mechanization and the failure to develop jobs in other sectors brought a decrease of more than 1,000 jobs between 1950 and 1960, and the county's heaviest out-migration occurred in that decade.

In most ways Jackson County and Newport have diverged increasingly from the trends that have brought economic and social changes to much of the Southeast during the period of study. That divergence is due to the failure to develop links to the spatial network of the present era. The metal fabricating companies have not been a source of significant functional linkages to other sectors or other geographic regions. In an era of manufacturing growth followed by service and trade growth Jackson County has remained oriented to agriculture.

The concomitants of older rural economies are also present in Jackson County in the present. Its population is distributed among many small communities and its only urban-sized town has attracted a smaller share of the population than the other counties in the study, and smaller than average for Arkansas or the Southeast. Its levels of education compare less favorably with Arkansas and with the nation in the present than they did 50 years ago.

There has been no tradition of political or social entrepreneurship in the county until the past decade, but these accomplishments of the 70's, important as they are, have been items of physical infrastructure provided by federal and state expenditures. It is clear that over the years when local projects or long range goals have required a substantial nucleus of community support, that support has been lacking. In Jackson County the "opposition" to development goals and activities has generally not been explicit, but has manifested itself in the volatile, unbusinesslike, and selfish conduct of public affairs by the factions within the town of Newport, and in the competitive attitudes of numerous small communities.

Perhaps the major factor in the county's continued isolation from the transactions of the present day spatial network is its commitment to the agricultural sector. In 1978 approximately 20 percent of its income and 20 percent of its employment, the largest single source of either, came from the soybean and rice fields of the county. These activities have not provided significant spatial or economic linkages nor have they been a growing source of jobs and income. The scale on which the county's farming is conducted is very large, both in terms of land and capital equipment; in 1978, 92 percent of the county's land was in farms. To some extent the location of farming activities in the Arkansas delta and the large scale of the farming is dictated by comparative competitive economic considerations, but only to some extent. The relatively fertile, relatively flat land of America's Mid-west has also hosted the major part of its manufacturing activity over the past 50 years, and comparative advantage for the manufacturing and service activities of the present era is more often than not an institutional advantage, as this study has attempted to show. In Jackson County the institutional aspects of the agricultural sector have been the critical ones: the accretion of even larger landholdings through inheritance and purchases within the same families and the financial leverage it entails; the strategic location of large tracts on Newport's borders; the participation by members of these same families of various adjunct activities in commerce, real estate, and the legal profession. These aspects of the agriculture economy have served to vest a great deal of power in one sector and in a relatively few people. Though they have been in a position to do so they have chosen not to pursue aggressively the diversification and growth of the local economy.

CHAPTER 8

A REVIEW OF THE EVIDENCE AND WHAT IT SUGGESTS

This study has examined four county economies in an attempt to understand why two of them prospered and grew over the past 50 years, while two others, having similar characteristics at the beginning of that period, have fared much less well. Because wide disparities among small areas are masked by aggregate analyses, and because aggregate statistical analysis cannot explain why growth associated variables are present in some economies but not in others, the study was based on primary data from the local economies along with secondary statistical data. While the theories of regional economics provided a guide for the investigation of the county economies, no area of influence was precluded from consideration, whether cultural, political, social or economic. Furthermore an "economy" is the result of explicit or implicit decisions made by individuals or small groups. It may be an impossible task to identify the decisions and actors at the national or regional level, but it is probable that the influence of important decisions and economic actors can be identified at the local level.

Since the premise of this methodology is that individual situations differ from each other and from aggregated models it involves an inherent limitation. No selected set of local economies can explain the experience of all such areas. In that sense the four counties of the present study cannot claim to be representative; no certain claims can be made about the validity of the conclusions beyond these four situations. In another sense however, it seems likely that they are representative of many small economies in the Southeast. It was the task of Chapter 3 to describe the shared characteristics which deliniate the Southeast as a region. The relatively homogeneous nature of the 12 Southeastern states was illustrated there in a number of ways: the economic homogeneity of the region was the result of a nearly complete dependence on agriculture and especially on cotton; the farming of cotton was shown to be a pervasive influence on everything from the region's social institutions to its urban system; the cultural homogeneity of the region was illustrated by its relative isolation from other regions with regard to information, transportation, and personal contact. Pred's historical evidence of delayed information to Southeastern interior areas was cited as was the lack of major rail routes and interregional urban exchange. The striking absence of European in-migration was another factor that differentiated the Southeast from other regions of the nation and contributed to its cultural insularity.

The evidence from these four counties over the 50 year period does not indicate that differential rates of economic development and structural change rest upon physical features unique or fixed in the areas, such as natural resources or navigable waterways; nor does it appear to be a random process or a matter of luck. Instead greater rates of growth and development were related to historical and present human institutions and certain kinds of human behavior, while the slower rates of growth and development were related to low levels of involvement with those institutions and to a different kind of behavior. Specifically the investigation supports the hypothesis that differential growth and development in these four local economies of the Southeast over the past 50 years can largely be explained by 1) the larger regional setting, especially the relationship of the local economy to the established transaction network of the nation; 2) the presence of entrepreneurs including political and social entrepreneurs; and 3) the local choice to pursue or not to pursue the path of economic development and change. The dependence of economic development on the latter two factors--both aspects of human behavior--perhaps makes the best argument for the generalizability of the study's findings.

The Regional Setting and the Spatial Network

The circumstances in the Southeast at the beginning of the period of study were compared to those in other regions of the United States in Chapter 3. With the exception of the Southwest, which shared the disadvantages of the Southeast, every other region showed higher levels of income, higher levels of education, better health and greater economic and cultural diversity. The disadvantaged position in which the region found itself in the 30's was the result of cumulative historical patterns--its own and those in other regions. While the Southeast had developed an extensive and intensive dependence on a cotton-based agricultural economy with its concomitant rural, dispersed population and racially divided social structure, the economic activities elsewhere grew more diverse, and complex intra- and interregional exchanges were developed. Those economic and cultural interdependencies were manifested through an urban centered, spatially polarized network of goods and information flows to which the Southeast was only weakly linked.

The Southeastern region had developed few of the functional linkages to the outside which formed the core of spatial exchanges. With the exception of cotton exports economic activities served regional markets. Coal mining and timber, which accounted for most other activity, could not compete in the northern and eastern industrial markets which had supplies closer to home; nor of course were there inputs to these industries which could serve as a source of outside linkages. Of the manufacturing firms in the Southeast by 1930 more than one-half were wood processing and the rest were food processing, apparels and textiles; all shared the characteristic of few vertical linkages, simple capital requirements, and largely regional markets.

Every aspect of the Southeastern economy was inimical to development stimulus from economic innovations. The dearth of vertical linkages to outside activity precluded access to innovations developed by suppliers, or purchasers in the industrial chain or by members of the same industry. The low levels of education and the nature of the tasks performed by the labor force in Southeastern manufacturing made indigenous innovation unlikely. Furthermore, as Thompson suggested by his "trickle down" concept and as Thorgren implied in discussing information needs, the types of industry found in rural, remote areas is predicated on routine, standardized, if not technically obsolete, operation. The scope for internal generation of innovation was limited in agriculture as well--originally by plantations worked by slaves and later by the practice of tenant farming where tenure was uncertain and rewards from improvements were more likely to accrue to owners than tenant farmers.

The lack of diversity and complexity in the Southeastern economy, along with the low levels of income, weakened the internal network and possible links to the external network in yet another way--by the weak demand for urban services and the underdeveloped urban hierarchy. Once the demand for cotton declined and the railroads were providing alternative means of transportation, the formerly thriving port cities played a smaller role in national exchange. The urban areas in the Southeastern interior were smaller and more widely spaced than in other regions and the poor road system and rugged terrain in much of the Southeast made access to those urban areas more difficult than elsewhere. From every point of view the Southeastern region was poorly suited for economic development from endogenous sources and had little access to development from exogenous sources.

Nevertheless, between 1930 and 1980 the pervasive influence of historical economic patterns has been ameliorated. Not only have levels of income increased relatively faster in the Southeast than in many other regions, the economy has diversified to include a large proportion of the nation's manufacturing and some of its most technologically advanced research and production activities.

Population has increasingly concentrated in urban areas as heavy out-migration helped compensate for the decline in agricultural jobs. By the decade of the 70's the growth of the region's metropolitan areas and the influx of new residents outpaced that in most of the country. These changes are evidence of strong Southeastern links to an altered national spatial network. To some extent the nature of the flows has changed; there are new physical goods and new modes of transport; the amount and speed with which technological and cultural innovations are transmitted has increased greatly. One critical aspect of the network has not changed however--it is still spatially biased, polarized. Among the four counties studied, the two faster growth counties developed relatively advantageous spatial network characteristics within their states and increased regional/national network linkages during the 50 years of study, while the two other counties exhibited weaker links.

Network Characteristics of the Fast Growth Counties

Those areas which were less committed to the declining extractive economy and its social institutions stood in a better position to participate in the economic alternatives which appeared with the war and subsequent industrial development. Coffee County and Pope County were not tied to the cotton network. Though Pope County had indeed made cotton farming the major source of employment until the precipitous decline in prices, neither county had advantages of soil or terrain which gave it a comparative advantage in agriculture, neither had a social or power structure based on a dualistic economy and neither had a large Black population effectively barred from participating in its economic life.

Along with a lack of "Southern traditions" both counties show evidence of receptivity to new ideas and a willingness to adopt social and economic innovations. In a state with a "conspicuously low" number of residential telephones in the 20's, Pope County had a much higher proportion of residences served than did most other Arkansas counties, and it was among the early rural users of residential electricity service. In Coffee County an early propensity to cultural innovation and change was fostered by frequent contact with visitors from Nashville, and was furthered by the close relationships which were necessary when thousands of troops of the Second Army were housed there. Later the highly educated professional and technical group that was brought in to staff Arnold Engineering provided further change in the local milieu. One-quarter of the 1960 population had lived elsewhere five years earlier. Pope County too has enjoyed a significant population influx during the past 20 years of greatest economic growth.

Both fast growth counties have shown a commitment to education: Coffee County's early leaders extolled the virtues of public education and its educational expenditures were among the highest in Tennessee at the beginning of the study period. The presence of Arnold Engineering provided a significant boost to the educational system and a permanent increase in the levels of educational attainment of the adult population. Pope County had one of four state technical high schools established in the early part of the twentieth century. At the beginning of the period of study it's illiteracy rates were among the lowest in Arkansas. When the high school program was converted to a college curriculum, Pope County continued to send its students. About one-third of the student body has been from Pope County and the proportion of college educated population has consistently been above state averages.

Just as the larger Southeastern region sets development probabilities for the states within it, circumstances which prevail within the state set probabilities for local development. Since Tennessee had more and larger urban areas, Coffee County's advantage of proximity to Nashville far outweighed that of Pope County's similar proximity to Little Rock, and it is here that the advantages of functional and power linkages to urban areas are most clearly illustrated. The flow of information, financial capital, and political support between Nashville and Coffee County predates the twentieth century, but it culminated in developing the political linkages which led first to the establishment of Camp Forrest and later to the establishment of Arnold Engineering. The nodality that is central to the spatial network played a role in both counties in the sense that each was a trade area for parts of surrounding counties, thus adding to local incomes, but perhaps more important acting as a small center for information exchange. Pope County in particular has strengthened its role as a provider of area trade, health, and government services.

Both Coffee and Pope Counties significantly enhanced the volume and diversity of their functional linkages with the national spatial network. As federal expenditures became an increasing share of the nation's and region's capital investment, both Pope and Coffee County were able to share in them. In Coffee County the temporary presence of Camp Forrest established a permanent link between the county's producers and the military procurement market. More importantly Arnold Engineering, and especially The University of Tennessee Space Institute, have guaranteed access to the high wage, high productivity aviation and electronics industries which have been propulsive industries for most of the past two decades. In Pope County the new functional linkages were later in developing and are in more traditional industries; but, there too, the expenditures of the federal government enhanced the competitive position of the economy by providing an interstate highway, a navigable waterway and a reservoir. This, coupled with local and state promotion, put Pope County on the economic map and led to more expenditures on new and expanded manufacturing capacity than any other area of the state with the exception of Pine Bluff.

Network Characteristics of the Slow Growth Counties

Unlike the other three counties of the study Jackson County and its Eastern Arkansas neighbors held a relatively advantageous position in the economic network which prevailed in the region before the period of the study. The county's delta farmland was well suited to cotton growing and its location on a Mississippi tributary assured physical connections with the major market route. This early advantage was reflected in Jackson County's 1929 rank of ninth in per capita income among Arkansas' 75 counties. Though McMinn County did not participate significantly in the earlier agricultural economy it would appear to have had a secure economic foothold with an unusually large and diverse proportion of manufacturing employment. Both these counties could cite low illiteracy rates; in McMinn County evidence of early access to education and in Jackson County greater early cultural diversity than was typical, including especially a more literate Black population with some professionals, are other pieces of evidence that the two counties may have enjoyed greater than average exposure to regional economic and cultural exchanges. Despite their apparently advantageous position with respect to the regional spatial network which existed prior to 1930, it is clear that both counties failed to establish strong connections to the network as it evolved after that time.

Neither county experienced the cultural "injections" which Coffee County experienced in the 40's and on a smaller but more permanent scale, in the 50's; or which Pope County experienced by virtue of large scale construction projects and the general, large in-migration during the 60's and 70's. The lack of evidence concerning short or long term impacts of the air base and the massive out-migration of population in Jackson County suggest that there has been comparatively little stimulus to development and change from outside influences. In McMinn County, the single sizable influx--those 300 workers who began operations at the paper company--were an exception to the trend of out-migration, as well as to the tacit policy of the county's industrial leaders, who discouraged outside economic influences. Educational attainment has been different in the slow and fast growth counties. In contrast to the levels of education in Coffee and Pope Counties, which have consistently remained above their state's average, Jackson and McMinn have fallen further below state averages during the 50 year period.

Neither slow growth county has had access to the disproportionate exchange of goods and information which accrue to small nodes which serve as sub-regional trade centers. Nor has either had high access to the metropolitan areas which play important roles in the spatial network. McMinn County, lying between Chattanooga and Knoxville, has not formed strong connections with either city. Traditionally neither has had a strong role in the national spatial network, nor did either metropolitan area provide the access to political power that Nashville did. Jackson County has been at a disadvantage both with respect to the quality and number of its highways and to the fact that its two closest metropolitan neighbors are each nearly 100 miles distant. Clearly the opportunities for contact between this rural county and its nearest metropolitan nodes are considerably fewer than for the other three counties. Though the spatial power which may be exercised through the state capital does not necessarily require physical proximity neither Jackson nor McMinn County has provided itself with political access to the spatial network. Jackson County has consciously altered its access to state government decision making in the past decade, but McMinn County does not appear to have done so. Similarly the expenditure of federal dollars on large scale public projects which has brought radical changes in the economy of Pope and Coffee County--and of many more local economies throughout the South--has not been a source of significant growth and change in either slow growth county.

Finally, the functional linkages which provide the core for the transactions of the spatial network have been limited in both McMinn and Jackson County; particularly in terms of those economic activities which have been most dynamic in the past 50 years. Jackson County continues to rely on agriculture as it major source of income but it has not acquired any of the transport, processing or distributive functions which characterize profitable agri-business in the present era. The light metal-working which constitutes its only other industrial activity of any size produces simple finished products--aluminum chair frames, residential lighting, aluminum tubes, rolled foil--which provide virtually no vertical links with sectors from which technological innovations, rapidly expanding markets, or product diversification can be expected.

Though manufacturing in McMinn County has increased considerably over the 50 years, measured both by employment and income distribution, it has replicated rather than diversified. The paper mill and its associated chemical industries have been the only industrial additions until the 70's. Although the paper mill has expanded twice, in 1970 nearly half of McMinn County's manufacturing employment was still in textiles, apparel, or furniture and wood products. Like the economic activity in Jackson County, these traditional industries typical of Southeastern rural counties provided little access to innovation, to income-elastic markets or to other dynamic stimuli.

Entrepreneurs

The entrepreneurial individuals who undertake economic activities which are innovative in the temporal or spatial sense are undoubtedly guided in large part by expectations of personal gain. Both the political entrepreneurs and the social entrepreneurs who promoted increased levels of local public services and marshalled a consensus of support have been responsible for significant increases in development in the two fast growth counties, while the incidence of such innovative leadership, whether traditional, political, or social, has been notably less frequent in the slow growth counties. The critical role of such entrepreneurs in local economies is underscored by the fact that the accelerating changes of the past decade in the two slow growth counties are directly connected to the appearance of leadership directed toward community development.

Entrepreneurs in the Fast Growth Counties

In Coffee County the early tradition of business entrepreneurship is represented by families who proved flexible and innovative in their business practices. Some of these business entrepreneurs also acted as social entrepreneurs, urging community support of public education, serving as mayors, and initiating new governmental practices or projects. In a clear instance of non-pecuniary remuneration, the Manchester newspaper brought about better practices in dairy farming through its articles, by establishing an exemplary dairy, and by bringing in an outside company to operate a creamery. The role played by the publisher of the Tullahoma newspaper was a primary factor in the achievement of numerous regional and local projects over the past 20 years. The location of the two federal projects, Camp Forrest and Arnold Engineering was directly related to a local businessman who developed important state and federal political connections and used them assidiously in behalf of the county.

In Pope County, the lack of physical and information access to a diverse economy and the dependence on lumbering, coal, and cotton did not provide many opportunities or role models for establishing a tradition of entrepreneurship. The increase of poultry production during the 30's and 40's did present the opportunity and the large increase in per capita income during the 40's and 50's is due in large part to the highly integrated and timely establishment of the poultry complex, organized by a local businessman. The development of the diverse manufacturing activities in the late 60's and early 70's is related indirectly to the development of the reservoir and the interstate highway, but their location in Pope County came, in large part, as the result of the efforts of a local bank president who was personally committed to the development of jobs and income for the local economy. At the present time, having seen the benefits of employment in the large scale public projects of the 60's and 70's, the local business community has organized an ambitious and long term effort to develop an international transshipment center in the county.

Entrepreneurs in the Slow Growth Counties

Like Coffee County, McMinn displayed vigorous early entrepreneurship in business accompanied by a vision of broad community development; like Pope County, Jackson County had no urban or industrial entrepreneurial examples to draw from and few opportunities for entrepreneurship in its cotton economy. After establishing thriving industries in the early part of the twentieth century, McMinn's business leaders concentrated on the prosperity of their enterprises and far from seeking additional private and public development as had been done in Coffee County, they directly and indirectly discouraged outside investment in the local area. Little change and a lack of constructive leadership has been apparent in the conduct of local politics and the county has not developed effective state or federal political connections. The passive administration of the small private college beset with problems has been another area where innovative leadership was lacking.

In Jackson County the donation of the airfield as an industrial development area initially spurred a successful search for industry and the aluminum tube factory and original mobile home factory were located there. Concerted effort at industrial development was short-lived however. Again, those who, by reason of long local residence and relative financial and social stature, were in a position to exercise social entrepreneurship chose to direct their energies only toward developing their personal business affairs. As was typical of such small, rural towns and counties, effective changes in government structure or levels of service have been slow and, for most of the present era, Jackson County has not provided itself with state or federal political links. That situation has changed since the county chose to support Winthrop Rockerfeller; and, in the state political arena at least, a handful of Jackson County professionals has parlayed that political support into membership on several state commissions. There have been results to this new found political entrepreneurship in the form of highway reconstruction and a local state park. Community support, mustered by the same political entrepreneurs, has put a long-standing Corps of Engineers river channel project back on active status. Similarly when a group of young, local business people in McMinn County decided to counteract the weight of the earlier business leaders by forming a private development group, and actively sought outside industry, the social entrepreneurship brought results. Since the late 60's McMinn County has obtained a number of new firms outside the traditional employment sectors. Nearly all have paid higher wages than the original industries and nearly all have expanded their operations in the short time they have been there.

Local Choice

Though the pursuit of economic entrepreneurship is generally undertaken only by a small percentage of people in any community, the concommitant of a successful group of entrepreneurs is acceptance and support by the community. The concommitant of a lack of entrepreneurship is a community which directly and/or indirectly chooses to thwart whatever opportunities may arise. Both slow and fast growth counties provide evidence of community choice but in very contrasting ways.

Local Choice in the Fast Growth Counties

In Coffee County the evidence of community involvement has been positive. From the adaptations to Camp Forrest to the enhancement of Arnold Engineering via the establishment and continued operation of the UTSI support council, the county has worked to support its exogenously derived activities. When employment in Arnold Engineering decreased after cutbacks in the space program during the late 60's, the response was to form an Industrial Development Council with a professional, full-time director. As development opportunities have presented themselves through federal grants and programs, the town and county have organized to obtain such benefits and have been successful in obtaining them. In similar fashion the possibility of two new TVA reservoirs in two adjacent counties generated local support for the accomplishment of the projects and later for the pursuit of rational shoreline development. In both monetary and manpower terms Coffee County, Manchester, and Tullahoma have supported change and growth without undue conflict or indecision.

In Pope County, with the dearth of development opportunities noted above, the community had few occasions to either support or oppose developmental changes. The character of the county people has been described as cautious but willing to be shown the benefits of new industry and population; in a similar vein the families who have played prominent roles in county history have been conservative but not opposed to economic changes. With exposure to the higher incomes and diverse activities introduced first by the public construction and then by the location of several large manufacturing employers, the community has demonstrated its desire to continue the momentum of development by supporting the Arkansas 2000 project--the international transshipment center. Monetary and moral support for the project has been received from county and town governments, as well as local private business and support has been obtained from a number of organizations outside the local community.

Local Choice in the Slow Growth Counties

By itself the record of either of the experiences of community support in Coffee and Pope Counties for development change does not appear to be remarkable. However, that essential supporting role cannot be taken for granted as the negative behavior found in McMinn and Jackson Counties illustrates. Compared to many small, non-metropolitan counties of the Southeast, changes in infrastructure, human resources, and development aspirations have all lagged in Jackson County and complacent acceptance of the status-quo has been made easier by the fact that perceptions of community members about these local attributes are unrealistic.

In both counties there has been a pattern of conflict which is counter-productive to the achievement of specific objectives and long run goals. In McMinn County vestiges of Civil War divisions linger and strong political partisanship has been one apparent legacy. County government has experienced rapid changes in leadership and neither town nor county has availed itself of the developmental opportunities available through the kind of formal planning organizations found in Coffee County. In both counties contentious relationships among communities have consumed the energies of public officials and precluded the possibility of beneficial cooperation. In Jackson County the flagrantly unprofessional conduct of public affairs, often oriented to personal interests, has been the object of attention by the local newspaper, the multi-county planning and development district, and, in one recent episode, in the newspapers across the state.

No doubt one important source of negative local choice in both counties has been that the established economic structure has been vested in a few families with broad powers in their local economies. The industrial families of McMinn County were astute in pursuing their business interests and they perceived that course to lie in excluding outside industries from competition for their labor force. Their power was extended by family ties and by control of several local banks. In Jackson County the increasing land assets of the agricultural families enabled them to compete in the commercial, large-scale agriculture of the present era but did not lead them to view alternative economic development as an object for their personal financial energies. Like McMinn's families, they too have diversified their personal activities and in these several roles as "unofficial" decision-makers they have been in a position to influence the pattern of community growth.

While it may be entirely possible for a community to provide the permissive conditions for endogenous development and actively to seek exogenous investment, and still fail to realize substantial growth or structural change, it seems clear that McMinn County and Jackson County have made few efforts to identify and seek such change during most of the 50 year period, and have nurtured a set of attitudes and political behavior antipathetic to development from outside.

Some Implications of the Study

Additional Concerns for Regional Economics

If the factors of spatial flows, entrepreneurship, and local choice found to be important in these four examples of small economies are valid for many local areas, it suggests both that communities that wish to bring about economic change must approach it in a broader manner than has been traditional, and it suggests that the study of regional economic growth and the research agenda of regional economists must address questions that have received scant attention in the past.

An expanded emphasis in regional economics on the spatial network should pursue, in particular, two aspects which are fundamental to regional development: the city system, and innovation diffusion. Weiher (1978) suggested that the early development of cities in the South was closely related to the production processes required for cotton. Are there similar predominant vertical relationships that link particular cities now? Chinitz's (1969) study on economic structure and infrastructure in Pittsburg and Detroit illuminated developmental influences in those cities, but could also lead to identifying the role each played in the interregional and intraregional system.

These studies suggest that city systems and metropolitan characteristics are not only the result of past economic activity, they are also a significant influence on future activity. Despite the important implications of Chinitz's study for urban and regional development, and the fact that it is considered an important piece of the regional literature, it has not been replicated or extended.

Similarly, Perroux's concept of propulsive industries as the source of economic growth has strong intuitive appeal. In other countries it has supported strategic political decisions aimed at initiating economic growth in specific regions, usually with disappointing results. Those results undoubtedly rest in part on the fact that regional science has not chosen to carry the concept from a provocative idea through a well developed program of research. The fundamental role of innovation in economic growth and development is a widely accepted tenet, but one that has had little empirical demonstration by economists. The integration of studies in innovation diffusion, industrial dispersion, and economic change in regions would appear to be a fruitful approach to an explication of propulsive forces in economic growth and their spatial distribution.

A Better Understanding of Long-run Effects of Public Projects

One aspect of the changing character of the Southeast has been federal investment in infrastructure and research activities and this study has demonstrated that such investments are likely to have radical and long lasting effects in the local areas where they occur. The direct impacts have been supplemented by subsequent development in the private sector. A more rigorous analysis of completed and ongoing public sector investments is needed to assure better allocation of public sector resources and to maximize associated economic growth. Such analyses should evaluate specific local projects with respect to the stated intent of the program, with respect to their incidental or unanticipated accomplishments, and especially with the intent of explaining the reasons for their success or failure.

Whether, in the future, the federal government wishes to practice differential spatial investment or avoid it, it is necessary to understand the likely developmental ramifications of federal investments. Large scale public projects do, in fact, have significant, long-run developmental effects. The program for the development of synthetic fuels is one imminent federal research and development program where similar effects can be expected. Ideally it should be executed with an eye to maximizing total economic benefits, nationally and in the host areas.

A Broader Concept of Economic Development by Local Leaders

Fostering development through effective entrepreneurship and community support is ultimately up to the communities themselves. Among the highest priorities of those seeking to promote local economic development should be the identification of problems, persons, institutions, and local conditions which act as obstacles to development. Part of this identification process is the realization that almost any aspect of the community's "personality," from educational aspirations to the presence of long prominent families can affect the possibilities of economic development.

An organized effort to "see ourselves as other see us" is an essential part of the process of identifying problems. Reflecting the image of the communities held by development district officials, state agencies and other outside bodies may be a painful but necessary step. Making comparisons will also be a valuable part of illuminating local shortcomings. The status of industrial parks, development organizations, levels of funding and other relevant matters from other, reasonably comparable places should be publicized and compared to local efforts--and especially when direct connections can be shown between efforts elsewhere and returns in terms of increased employment or income. A large part of this prescription must be aimed at informing the community as well as its leaders, since their eventual support is essential for development changes. For this objective, the most important "developer" in a small community may well be the local newspaper.

The problem of generating entrepreneurship in local communities has no obvious solution. It does seem likely that a public campaign to identify problems and set goals by some leaders may lead others to recognize the personal rewards of community problem solving, and of course existing leaders can adopt the enlistment of others as one of their goals. There is another route to procuring social entrepreneurship as well, and that is professional public servants. In this case "entrepreneurial" rewards, especially the precuniary ones, are different in degree and kind from those to prominent business or political entrepreneurs. Nonetheless the essence of entrepreneurship is in recognizing an innovative solution to a need, and seeing to its implementation. There is an inherent opportunity to do so in the management of public services. The advocacy and implementation of innovative activities will be perceived as the professional goal of the trained city manager, planner, or department head. His ability to do so will depend on his success in mustering the appropriate support, whether it be from community groups, business leaders, or other government officials. His rewards for a successful project will of course be an increased base of support for future projects, and his salary increases and promotions-not only in his present community, but possibly in a larger one with still more scope for the exercise of his professional skills.

It seems likely that one area where professional skills are lacking in communities of every size is economic development. Acknowledgement is frequently made of the necessity of avoiding "shotgun" techniques in seeking industry, but the knowledge which would guide local areas in focusing their efforts--or even in evaluating an eager prospect--is not readily available. Ideally, rational development implies achieving a diversity of local employers in order to provide employment opportunities for various levels of skill, and also to avoid a volatile local economy. Manufacturing concerns whose product lines and markets are closely related to those already in existence may exacerbate local cyclical vulnerability. A knowledge of secular trends could lead communities to focus attention on manufacturing sectors where expansion is expected. Thompson feels that the distant headquarters of branch plants located in rural areas feel little loyalty toward those routine production activities and do not hesitate to close them when corporate economizing is necessary. The ability to inquire into corporate structure and market trends may avoid the allocation of scarce community resources to such things as the short-lived shoe companies which dot the history of southern manufacturing development.

As most regional scientists have observed, communities must consider other routes to development than seeking exogenous manufacturing activities. Fostering locally developed innovations, strengthening local linkages and expanding the service sector should be among the objectives of development leaders. Local generation of innovative ideas which could lead to a marketable product may be a matter of chance, and although in small, isolated areas they are likely to be few and far between, as we have noted, local innovation occurred in three counties of the present study. Development officials need to include among their repertoire of skills the ability to bring local entrepreneurs together with sources of financial, managerial, and marketing advice in order to increase the probability of endogenous development.

It seems probable that systematic efforts (not only at the local level but at the state level too) to create jobs and income by supplying internally intermediate goods which have been imported would be successful from time to time. Identifying possible linkages would require communication and close cooperation among the business community; the role of development officials would be to provide a forum for the exploration of such possibilities and to aid in the implementation of any substitutions identified.

Such substitutions need not be limited to physical goods in the manufacturing process--in fact the local provision of such services as machine tools, business printing, tranportation, or temporary manpower which can supply many different kinds of businesses are more likely to find the threshold required in local areas. In the United States where technological advances are commonplace and consumer incomes are increasing, any particular manufactured product is likely to become obsolete sooner rather than later; if some proportion of firms and products in the local area can inevitably be expected to be altered or closed, the area's ability to adapt may rest on the flexibility and diversity of its service sector. The ability to identify and put in place a variety of ancillary services takes on a second important role in addition to that of import substitution.

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APPENDIX

PEOPLE INTERVIEWED

Coffee County, Tennessee

Don Darden: Executive Director of Tullahoma Industrial Development Board; past Executive Director of East South Central Development District.

Frank Gilliam: Attorney; native of Coffee County.

Jack Shea: Director of Information Services, Arnold Engineering.

Morris Simon: Previous owner and Publisher of Tullahoma News and Guardian; 35 year resident of Coffee County, active in many county and regional development bodies.

James L. Taylor: Agriculture Extenson Agent; 30 year resident of Coffee County.

George Vibbert: Present Mayor of Tullahoma; President, American City Bank; native of Coffee County.

Jack D. Walker: Executive Vice-President of General Service Corporation; native of Coffee County.

McMinn County

Neal Ensminger: Publisher, Daily Post-Athenian; McMinn County native.

George Halford: Executive Director, The Committee of 100 and Athens Chamber of Commerce.

Pat T. Love: Past President of Liberty Bank; 30 year resident of McMinn County.

Tom Mayfield: President of Mayfield Dairies; native of McMinn County.

Clarence Streetman: Director of Public Relations, Bowaters Southern Paper.

Eb Wilson: President, Athens Federal Savings and Loan; native of McMinn County.

Hugh Wilson: President, Citizens National Bank; native of McMinn County.

Pope County, Arkansas

James Cartwright: Executive Director, Russellville Chamber of Commerce.

Marge Crabaugh: 50 year resident of Russellville; local booster and active in local and state promotional activities; wife of former Dean of Arkansas Tech.

Robert Darr: Staff member, Arkansas 2000, Inc.

James R. Fontaine: Assistant Executive Director, West Central Planning and Development District.

Jack Fortin: Forestry Planner, Ozark-St. Francis National Forest.

Fred Fullerton: Executive Director, Arkansas 2000, Inc.; native of Pope County.

Dr. Joseph Henry: Physician; native of Pope County.

J. C. Lawless: Agricultural Extension Agent.

Henry L. Jacobs: Manager, Industrial Relations, Morton Frozen Foods.

G. Harold Neal: President, First National Bank of Russellville; past Director of Russellville Industrial Development Committee; native of Pope County.

John Opitz: Senior Researcher, Industrial Research Extension Center, Little Rock.

Samuel Rye: County Judge; poultry farmer; native of Pope County.

Dix Stallings: Vice-President of Development, Arkansas Tech.

Harvey Young: Superintendent of Schools, Russellville.

Jackson County, Arkansas

Joe Coe: County Judge; farmer; native of Jackson County.

Oras B. Dotson: Dentist; 30 year resident of Jackson County; active in local development activities.

Robert Edwards: Executive Director, Newport Chamber of Commerce.

Paul Huenfeld: Agricultural Extension Agent.

Mr. Lewallen: Sales Manager, Victor Metals.

Ernest D. McDonald: Chief Executive Officer, Merchants and Planters Bank; native of Jackson County.

Orville Richardson: Publisher and Owner of The Newport Daily Independent; Chairman of the Arkansas State Parks Commission; active in local development activities.

Staff Members, West River Planning and Development District.

VITA

Patricia Dunigan Postma was born in Richmond, Kentucky, on October 26, 1938. She moved with her family to Oak Ridge, Tennessee, in 1943, attending school there, and was graduated from Oak Ridge High School in 1956. She received the Bachelor of Arts degree in Mathematics in 1960 from Duke University. Employment at Oak Ridge National Laboratory from 1960 to 1962 was followed by several years of family and community activities. In 1971 she returned to work at Oak Ridge National Laboratory, working in urban research, and subsequently enrolled in the Doctoral program in Economics at The University of Tennessee, Knoxville. This degree was awarded in March of 1981. Dr. Postma has been employed with the Center for Business and Economic Research at The University of Tennessee, Knoxville, since December of 1979.

The author is a member of Phi Kappa Phi and Omicron Delta Epsilon scholastic honoraries.