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ABSTRACT

The 9 papers in this compilation on rural industrial development are titled as follows: (1) "U.S. Employment Shifts Through 1985" (gains, regional losses, relation to per capita income and economic activities, geographic concentration, and national basis of regional projections); (2) "Large Industry in a Rural Area: Demographic, Economic, and Social Impacts" (research findings and further needs, policy implications, and activity descriptions); (3) "Current Spatial Organization of Industrial Production and Distribution Activity" (national perspective, regional employment allocations, metro/nonmetro differentials, manufacturing activities, and alternatives); (4) "Rural Industrial Growth in the Southeast Since 1962" (economic outlook and pacesetting, patterns of nonmetro economic growth, and rural employment gains); (5) "Community Planning and Decisionmaking to Attract Industry" (current situation, choices, multiplier effects, taxes, jobs, community leadership and responsibility, and organizational roles); (6) "Industry's Viewpoint of Rural Areas: Corporate and Community Decisionmaking for Locating Industry" (representative statements); (7) "Problems in Rural Communities After Industry Arrives"; (8) "An Industrial Promotion Survey: A Guide for Your Rural Community's Development"; (9) "Rural Development Through Electronic Technology" (approaches, products, services, etc.). (JC)

93d Congress
2d Session } COMMITTEE PRINT

RURAL INDUSTRIALIZATION: PROSPECTS, PROBLEMS, IMPACTS, AND METHODS

A SERIES OF PAPERS COMPILED BY THE

SUBCOMMITTEE ON RURAL DEVELOPMENT

OF THE

COMMITTEE ON AGRICULTURE AND FORESTRY

UNITED STATES SENATE

APRIL 19, 1974

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FOREWORD

Senators Herman E. Talmadge and Hubert H. Humphrey, the principal authors of the Rural Development Act of 1972, have said repeatedly that the main thrust of the law was to create jobs in rural America.

Job creation can take many forms, but one of the foremost thrusts taken by rural developers over the past several years has been to encourage the location of manufacturing plants in the countryside. The Southern States have been most active and effective in this regard.

As its title suggests, this Committee Print is a series of papers on the prospects, problems, impacts and methods involved in the process of rural industrial development. It is hoped that the information it contains will be useful to industrial developers in both general and specific ways.

The Subcommittee does not necessarily endorse all of the conclusions reached in these papers.

DICK CLARK,
Chairman, Subcommittee on Rural Development.

RURAL INDUSTRIALIZATION: PROSPECTS, PROBLEMS, IMPACTS, AND METHODS

CONTENTS

U.S. EMPLOYMENT SHIFTS THROUGH 1985

[From the National Planning Association, Feb. 1974]

U.S. employment will continue to shift from the Nation's older industrial areas to the South and West through the coming decade. Among the eight multistate regions, the Southeast, Southwest, Far West, and Mountains States will increase their shares of total national employment with the Southeast leading the way in absolute job growth. California, Florida, Colorado, Maryland, and Arizona are expected to show the greatest gains in employment due to job shifts from other States.

For the period 1970–85, the National Planning Association projects a total increase of 22.7 million jobs nationally. Every region and State will experience a gain in employment, but in half of the regions and 27 of the States the number of net new jobs will be less than would result if employment grew at the national rate. Thus, these regions and States are expected to suffer relative job losses, ending the period with a reduced share of national employment.

In making its projections, NPA analyzes the shifts in employment among the regions and States in terms of two major factors: Competitive position or locational advantage as measured by the rates of growth of like industries in different areas, and their economic structure as measured by the industry mix or proportion of nationally fast growing activities. These two forces affecting the rate of job growth may be reinforcing or conflicting. The projections in this article do not account for effects of any sharp changes in the availability or prices of energy.

RELATIVE EMPLOYMENT GAINS

The Southeast is projected to continue its strong economic performance of the last two decades with an increase of nearly 4.9 million jobs, but with fewer than 5 percent of them at the expense of other regions.

The Southeast's growth is expected to result from a continued competitive advantage for southern industries which will overcome the negative effects of a mix of industries still weighted toward more slowly growing activities. Lying behind the competitiveness of southern industries are relatively low labor costs, a faster than average increase in per capita personal income, and the ready availability of labor displaced from agriculture. For the coming decade, the Southeast is likely to remain attractive for a broad mix of economic activity, especially for trade, services and nondurable manufacturing.

However, a look behind the regional totals reveals a mixed pattern. The Southeast's projected growth rests on stellar performances by Florida, Virginia, and Georgia and a lesser gain by Kentucky. The remaining seven States in the region are likely to experience declining shares of national employment with relatively large slippage in Alabama, Mississippi, and West Virginia.

The Far Western States, in contrast, show a uniform pattern of growing employment shares based both on strong competitiveness by industries in the region and on a favorable mix of economic activities, i.e., one weighted toward more rapidly growing endeavors. Job growth in the region through 1985 is projected at nearly 4.2 million, of which over 3 million will occur in California. Nearly a fourth of this projected growth will represent an increase in the proportion of national employment in the area—the largest job gain from shifts in employment location of any region.

The other fast growing regions—the Southwest and the Mountains States—are similar to the Southeast: The growth is rooted in superior regional competitiveness despite an infavorable mix of economic activities, and the growth of relative employment is not shared among all the constituent States. The Southwest is projected to have a job increase of over 2 million of which more than a tenth will result from the shift in employment shares from other regions. However, the relative job growth will be concentrated in Texas and Arizona while Oklahoma and New Mexico are projected to suffer a declining share of national employment. In the Mountains States, the picture is expected to be dominated by the strong performance of Colorado which will account for nearly 60 percent of the area's absolute job growth and nearly all of its increase in national employment shares. Utah is projected to show a modest relative gain in employment while declines are foreseen for Montana, Idaho, and Wyoming.

REGIONAL EMPLOYMENT LOSSES

Of the regions expected to decline in their share of national employment, only the Great Lakes States show a homogeneous pattern. Despite a projected increase of 3.7 million jobs in the region, Ohio, Indiana, Illinois, Michigan, and Wisconsin are each expected to reach 1985 with a smaller share of national employment than in 1970, with the largest number of jobs shifting out of Illinois.

While New England and the Middle Atlantic States are both projected to have losses in their regional shares of national employment, half or more of the States in each area will gain. In New England, only Massachusetts and Maine are expected to show significant relative job losses while Rhode Island, especially, and Connecticut and Vermont will show gains. Although the Middle Atlantic States are projected to have the second largest absolute job growth in the country, large shifts of employment shares out of Pennsylvania and New York are likely to result in a reduced share of national employment for the region, Indeed, Pennsylvania and New York are projected to suffer the greatest relative job losses in the Nation—gaining 495 and 366 thousand fewer jobs, respectively, than if they were to match the national employment growth rate.

All three of the older industrial regions are seen as continuing to be competitively weak vis-à-vis other areas but still strong in their industrial mix. At the same time, the other Middle Atlantic States—New Jersey, Delaware, Maryland, and the District of Columbia—are projected to gain in their employment shares. With the addition of adjoining Virginia from the Southeastern region, these States constitute a significant mode of relative employment growth.

The Plains region is beset with multiple problems that are expected to continue with lessened intensity into the 1980's, with only Minnesota and Kansas bucking the tide of decreasing employment shares. The area, enjoying neither competitive strength nor a favorable industrial mix, has been unable to absorb the large numbers of workers displaced from agriculture.

Table 1 shows the actual total increase in employment and job shifts by region for 1960–70 and projected 1970–85.

The trends of the 1970's are projected to continue during the 1970–85 period in all of the regions, but with varying changes in the rates of relative job gains and losses. The decline of the proportion of national employment in the Middle Atlantic and Plains States is likely to slow down, largely on the basis of improved performances by New York and the District of Columbia in the East and by Minnesota, Missouri and Kansas in the Plains region.

Among the regions with increasing shares of national employment, the rate of increase is expected to accelerate in the Mountains region and drop off in the Southeast and Southwest.

Tennessee, North Carolina, and Oklahoma, which scored relative gains in employment in the 1960's, can anticipate decreasing employment shares during 1970–85.

TABLE 1.—EMPLOYMENT SHIFT FOR REGIONS, 1960–70 AND 1970–85.

[In thousands of jobs]

Region	Total change	Net shift	Region	Total change	Net shift
	1960–70			1970–85	
United States	15,268	0	United States	22,716	0
New England	858	—130	New England	1,120	—314
Middle Atlantic	2,460	—1,057	Middle Atlantic	4,431	—512
Great Lakes	2,729	—443	Great Lakes	3,708	—890
Southeast	3,681	687	Southeast	4,864	221
Plains	904	—385	Plains	1,724	—88
Southwest	1,480	366	Southwest	2,017	259
Mountains	408	57	Mountains	699	162
Far West	2,748	905	Far West	4,152	1,163

RELATION OF SHIFTS IN EMPLOYMENT AND PER CAPITA INCOME

During the 1970–85 period, rapid employment growth is not expected to be accompanied by relative increases in per capita personal income in the eight multistate regions. On the contrary, among the regions projected to experience relative employment gains, only the Southeast will also gain in per capita personal income relative to the national average. That area, which in 1950 had a per capita income only 68 percent of the national level, is projected to achieve nearly 87 percent of the national average and to move out of last place among the regions by 1985. Industrialization and mechanization of agriculture accompanied by rapid increases in productivity in the Southeast have produced fast growth in personal incomes while the regional population share has declined (1950's) or is projected to remain stable (1960–85).

Substantial decreases in relative per capita income are projected for the Far West and the Mountains States, with the latter falling

into last place among the regions. The Far West, long the national leader in per capita income, has seen its position eroded as population growth has outpaced the area's increase in personal income. By the end of the 1960's, the Far West had fallen behind the Middle Atlantic region in per capita income and by 1985 is expected to fall behind New England also. In the Mountain States, the personal income share is projected to remain unchanged while population and employment will rise more rapidly than the national average, pushing per capita income to ever lower levels relative to the national average. The stagnation in the area's income share stems primarily from the region's heavy dependence on agriculture and relatively low income service activities.

The Southwest is projected to have a modest loss in relative per capita income through 1980 and a slight gain through the remainder of the projections period.

TABLE 2—REGIONAL SHARES OF NATIONAL TOTALS FOR POPULATION, LABOR FORCE, CIVILIAN EMPLOYMENT, AND PERSONAL INCOME, AND REGIONAL RELATIVES OF PER CAPITA PERSONAL INCOME, 1950–85

[In percent: U.S. equals 100]

Region	1950	1960	1970	1980	1985
New England:					
Population	6.1	5.9	5.8	5.8	5.8
Labor force	6.4	6.2	6.1	6.0	6.0
Employment	6.7	6.5	6.3	6.1	6.0
Personal income	6.6	6.4	6.3	6.2	6.2
Per capita personal income relative	107.0	109.1	108.2	106.8	106.6
Middle Atlantic:					
Population	22.2	21.4	20.9	20.4	20.2
Labor force	23.3	22.6	21.2	20.7	20.5
Employment	24.6	23.0	21.8	21.5	21.3
Personal income	26.1	24.8	23.6	23.5	23.3
Per capita personal income relative	117.3	115.7	113.2	115.1	115.2
Great Lakes:					
Population	20.1	20.2	19.8	19.6	19.7
Labor force	20.5	20.1	19.8	19.6	19.6
Employment	21.7	20.8	20.2	19.6	19.4
Personal income	22.4	21.7	20.7	20.2	20.0
Per capita personal income relative	111.3	107.7	104.2	102.5	101.3
Southeast:					
Population	22.3	21.6	21.6	21.7	21.6
Labor force	20.6	20.2	20.7	20.9	20.9
Employment	18.8	19.6	20.4	20.6	20.6
Personal income	15.2	15.7	17.6	18.5	18.8
Per capita personal income relative	68.3	72.7	81.7	85.1	86.8
Plains:					
Population	9.3	8.6	8.0	7.7	7.5
Labor force	9.1	8.4	8.0	7.6	7.5
Employment	9.3	8.4	8.0	7.9	7.9
Personal income	8.9	8.0	7.6	7.5	7.4
Per capita personal income relative	95.4	93.2	95.1	97.7	97.6
Southwest:					
Population	7.5	7.9	8.2	8.3	8.4
Labor force	7.1	7.6	7.9	8.1	8.2
Employment	6.5	7.3	7.7	7.8	8.0
Personal income	6.5	6.9	7.3	7.3	7.4
Per capita personal income relative	86.7	86.9	89.3	87.1	87.6
Mountains:					
Population	2.3	2.4	2.5	2.6	2.6
Labor force	2.3	2.3	2.4	2.5	2.5
Employment	2.2	2.3	2.4	2.5	2.5
Personal income	2.2	2.3	2.2	2.2	2.2
Per capita personal income relative	97.4	95.0	90.4	86.6	84.3
Far West:					
Population	10.1	12.0	13.3	13.9	14.2
Labor force	10.8	12.5	13.8	14.5	14.8
Employment	10.1	12.1	13.2	13.9	14.3
Personal income	12.1	14.2	14.6	14.7	14.8
Per capita personal income relative	119.8	117.7	110.2	105.5	104.4

Among the four regions where employment is projected to grow less rapidly, the Middle Atlantic and Plains States are likely to gain in relative per capita income while New England and the Great Lakes States decline. The Middle Atlantic area, with its favorable mix of economic activities and highly trained workforce, is projected to widen its lead in relative per capita income through 1985, reversing the downfrend that occurred between 1950 and 1970. In the Plains States, relative per capita personal income, which declined from 1950 to 1960, will continue a modest growth through 1980 with little change projected over the following 5 years.

In New England, a nearly parallel decline of both population and personal income shares resulted in a slight increase in the region's already high relative per capita income from 1950 through 1970. Over the 1970–85 period, the divergence between population and income is expected to reverse, resulting in a decline in relative per capita income and leaving the area's relationship to the national average in 1985 essentially what it was 25 years earlier.

Population, employment and income growth in the Great Lakes States lag only slightly behind the national average. However, the area's relative per capita personal income is expected to continue to converge toward the national average through 1985.

EMPLOYMENT IN ECONOMIC ACTIVITIES

Concurrent with shifts in the proportion of employment among regions and States are changes in the shares of employment in broad categories of economic activity and industries.

The rapid increase in employment in the services sector and in government, excluding the military, witnessed during the 1960's is projected to continue through 1985. Service workers are expected to represent 20.5 percent of total employment in 1985, compared to 17.1 in 1960. Employment in government will show an ever faster growth, from 13 percent in 1960 to 19.4 percent in 1985.

Employment in finance, insurance, and real estate, which grew significantly in the 1960's, will also increase its share in the 1970–85 period but the rate of increase is expected to fall to the average of all industries by the end of the period.

Declining shares of total employment have occurred in the past in agriculture; forestry and fisheries; mining; construction; manufacturing; transportation, communication and public utilties; and trade. In all of these except trade, the diminishing shares will continue the experience of the 1960's.

However, within the broad (SIC one-digit industries) classification of construction and maufacturing, divergent trends are expected. Heavy construction is likely to increase its employment share at the expense of general building construction. Within manufacturing, rapid employment growth is projected in durable manufacturing industries with fabricated metal products, nonelectric machinery, electric machinery, transportation equipment, and furniture and fixtures increasing their employment shares. The growing share of employment in furniture and fixtures manufacture will be a change from the prior period which reflects the growth of personal incomes and the high income elasticity of demand [1] for furnishings.

[1] That is, as income increases, product demand increases more rapidly.

On the other hand, relatively low income elasticities lie behind the continued decline in employment shares projected in nondurable manufacturing. All major categories of nondurable industries (SIC two-digit industries) will have relative employment losses except chemical and allied products and textile mill products, which are projected to retain their employment shares, and rubber and plastic products, which are expected to experience a modest increase (see table 3).

Absolute employment in U.S. manufacturing is expected to increase over the projections period from 19.7 million jobs in 1970 to 22.8 million in 1985. This 3.1 million increase represents a slower rate of job growth than in the 1960's but a faster pace than that of the 1950's. These projections are derived not from simple extrapolations of historical trends but from detailed analysis of multiple factors including output demand, productivity increases and average man-hours worked for each industry.

Most industries, including a number with declining employment shares, will increase total employment. However, absolute job losses are projected to occur in food and kindred products, tobacco manufacturing, petroleum and coal, leather and leather products, and in ordnance.

TABLE 3.—PERCENT SHARE OF 2-DIGIT MANUFACTURING INDUSTRIES IN TOTAL MANUFACTURING EMPLOYMENT, UNITED STATES, 1960–85

	1960	1965	1970	1980	1985
Total manufacturing	100.0	100.0	100.0	100.0	100.0
Durable manufacturing	56.5	57.7	58.1	60.0	61.4
Ordnance and accessories	1.3	1.2	1.3	.9	.9
Lumber and food products	4.2	3.8	3.3	3.1	2.9
Furniture and fixtures	2.4	2.4	2.4	2.8	2.9
Stone, clay, glass products	3.6	3.5	3.3	3.3	3.2
Primary metal products	7.2	7.0	6.7	6.3	6.3
Fabricated metal products	6.7	6.9	7.1	7.5	7.5
Machinery except electric	8.9	9.7	10.3	11.5	12.2
Electric equipment and supplies	8.5	9.0	9.8	10.2	10.7
Transport equipment	8.2	9.5	9.2	9.5	9.9
Instruments	3.1	2.1	2.4	2.6	2.7
Miscellaneous manufacturing	2.4	2.4	2.3	2.3	2.2
Nondurable manufacturing	43.5	42.3	42.0	39.9	38.7
Food and kindred products	10.6	9.7	9.1	7.6	7.0
Tobacco manufactures	.5	.5	.4	.3	.3
Textile mill products	5.4	5.0	5.0	5.1	5.0
Apparel, other tax	7.3	7.4	7.0	6.9	6.7
Paper and allied products	3.5	3.5	3.6	3.4	3.4
Printing and publishing	5.7	5.7	6.0	5.8	5.7
Chemical and allied products	4.9	4.9	5.4	5.3	5.4
Petroleum and coal products	1.2	1.0	1.0	.8	.7
Rubber, plastic products	2.2	2.5	2.9	3.4	3.4
Leather, leather products	2.1	1.9	1.6	1.3	1.1

GEOGRAPHIC CONCENTRATION OF EMPLOYMENT

The geographic distribution of employment in various economic activities is continuously changing—with employment in some industries becoming more concentrated in particular parts of the country while other types of work become more widely dispersed. Changes in

degree of geographic concentration reflect many factors, including cost and speed of transportation, process technology and product characteristics. Some activities, particularly services, are strongly oriented toward and tend to locate near their markets. Others are material, or resource oriented, or may base their locations largely on the availability and cost of labor.

NPA has analyzed the changing degree of concentration of employment in 44 economic activities measured in terms of "coefficients of localization," which relate a region's or State's employment in each activity to the area's share of total U.S. employment.

In terms of one-digit industries, the ranking from most dispersed to most concentrated geographically is: Trade, services, construction, government, transportation-communication-public utilities, finance-insurance-real estate, manufacturing, agriculture, and mining. A more detailed breakdown shows all the nonresource industries as relatively dispersed or located close to their ultimate consumers. All resource-based industries, except food and kindred products, are concentrated in certain areas and some are tending to become more so.

Manufacturing, on the other hand, has tended to spread itself more widely as transportation improvements and the general rise in income level have allowed plants to locate closer to their markets.

The activities projected to become significantly more concentrated during the 1960 to 1980 period are: Communication; chemicals and allied products; furniture and fixtures; agriculture; general building construction; personal and entertainment services; the Federal Government; and non-metallic mining.

Employment will be significantly more dispersed in 1980 than in 1960 in electric equipment and supplies; professional services; insurance; forestry, fishery and agriculture services; rubber and plastics; and instruments.

Table 4 shows the changing coefficients of localization for specific industries. The lower the number the greater the degree of dispersion.

NATIONAL BASIS OF REGIONAL PROJECTIONS

NPA's regional economic projections utilize a "step-down" methodology so that regional and State projections are consistent with projections for the national economy. Each area is projected with consideration of trends in other areas and national totals.

The national projections lying behind the regional totals reported herein show total civilian jobs in 1985 of 105.5 million held by 101 million workers (4.5 million projected to hold two jobs). Of the 105.4 members of the civilian work force, 4.4 million are assumed to be unemployed (4.2 percent unemployment rate).

Total national personal income, expressed in current dollars, is projected to rise from $800 billion in 1970 to $1,750 billion by 1980 and $2,554 billion by 1985. Per capita income for the same years is projected at $3,932, $7,605 and $10,400, respectively. The relatively rapid rate of growth of per capita income projected for the period is due to the assumed lower unemployment rate, a low fertility rate, and a slight increase in the percentage of potential workers who enter the labor force.

TABLE 4.—LOCALIZATION COEFFICIENTS FOR INDUSTRY EMPLOYMENT BASED ON STATES, 1960-85

[In percent]

Industry	Based on States as observation units			
	1960	1970	1980	1985
1. Retail trade	3.9	4.2	3.9	3.9
2. Special trade contractors (construction)	7.0	6.2	6.6	7.2
3. State and local government	5.3	5.4	5.6	5.8
4. Personal services, entertainment, recreation	7.9	8.0	8.3	8.6
5. Wholesale trade	8.4	7.2	7.6	7.7
6. Public utilities	9.2	9.2	8.5	8.4
7. Transportation	9.2	8.3	8.3	8.2
8. Communication	7.6	8.0	8.7	9.2
9. Food and kindred products	10.5	11.6	12.8	13.7
10. General building contractors	8.6	10.2	11.1	11.6
11. Insurance	9.7	8.8	8.0	7.7
12. Professional and related services	9.3	7.3	7.0	7.0
13. Finance	10.9	10.7	11.2	11.4
14. Business and repair services	13.0	11.7	11.1	11.0
15. Stone, clay, glass products	20.0	17.1	17.6	17.7
16. Real estate	17.7	16.1	15.7	15.1
17. Federal (civilian) Government	19.2	19.8	20.9	21.8
18. Paper and allied products	20.5	20.1	21.3	22.1
19. Heavy construction contractors	15.9	15.5	15.2	15.5
20. Chemical and allied products	21.2	23.6	26.0	27.0
21. Printing and publishing	18.2	16.2	17.3	17.9
22. Nonmetallic mining	21.0	21.8	24.6	25.7
23. Furniture and fixtures	21.3	26.1	28.9	30.5
24. Private household service	18.6	18.6	17.5	17.8
25. Forestry, fishery and agriculture services	24.7	21.7	20.2	20.3
26. Petroleum and coal products	40.6	39.1	38.0	38.0
27. Fabricated metal products	26.4	24.0	24.4	24.6
28. Electrical equipment and supplies	30.2	22.8	19.9	19.4
29. Nonelectrical machinery	30.2	26.0	25.3	24.8
30. Transportation equipment	38.5	32.3	31.8	31.5
31. Agriculture	31.5	31.7	36.8	39.9
32. Apparel, other textile products	35.1	33.5	33.6	33.6
33. Primary metal products	39.4	37.7	37.5	37.4
34. Rubber, plastics	36.4	26.8	25.8	25.7
35. Miscellaneous manufacturing	36.7	30.4	30.4	30.4
36. Instruments	40.9	34.5	34.2	34.5
37. Ordnance	51.1	44.1	43.0	43.4
38. Leather, leather products	47.7	44.8	43.7	43.0
39. Lumber and wood products	42.3	41.1	40.2	39.9
40. Coal mining	69.1	70.5	72.2	72.8
41. Textile mills	57.8	60.0	58.9	58.8
42. Crude petroleum and natural gas	68.3	69.5	68.0	67.6
43. Metal mining	71.0	73.	71.8	71.5
44. Tobacco manufacturing	69.2	72.2	73.3	73.3
1. Trade	4.1	3.8	3.6	3.6
2. Services	4.5	4.8	5.2	5.4
3. Construction	6.3	7.5	8.0	8.8
4. Government	7.3	6.5	6.3	6.2
5. Transportation, communication, public utilities	7.1	5.8	5.8	5.6
6. Finance, insurance, real estate	10.5	9.4	8.7	8.5
7. Manufacturing	13.5	12.6	13.4	13.7
8. Agriculture, forestry, fishery, agriculture services	30.5	30.1	33.4	35.1
9. Mining	46.7	46.5	45.0	45.0

LARGE INDUSTRY IN A RURAL AREA: DEMOGRAPHIC, ECONOMIC, AND SOCIAL IMPACTS

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PURPOSE OF THE RESEARCH

It is clear that one of the many national needs is a more balanced population distribution in order to achieve greater equality of life among the various regional, racial, and ethnic segments of our society. Toward this end three strategies are available to the Nation: (1) To spread the population by encouraging growth in sparsely settled rural areas, (2) to encourage an increased concentration of population in small towns in nonmetropolitan areas, and (3) create new cities.

31-864—74——2

Regardless of the strategy adopted, the success of any effort rests heavily upon the expansion of employment opportunities in nonmetropolitan regions.

One of the major contributors to the concentration of population in urban centers has been the historical tendency of industry to locate in cities. Coupled with that has been the trend of increasing mechanization of agriculture. In short, out-migration from low density rural areas to concentrated urban centers has been precipitated primarily by the distribution of employment opportunities. In order to achieve a population redistribution, policy must be forged which increases employment opportunities and manpower development in nonmetropolitan areas.

In recent years industries have been looking to rural areas and small towns for new plant locations. For a variety of reasons such as labor costs, land costs, and taxes, this trend is likely to continue. Such employment in low density areas will be favorably received by industry and the public. Thus, some industrialization of rural areas of the United States is highly probably although the pace and direction remain uncertain.

Therefore, the question arises as to how the character of rural areas and small towns is affected by industrial development. Will industrializing rural areas contribute to the solution of the twin problems of rural poverty and urban blight, or will it merely hasten the spread of urban ills? The assumption is that new economic opportunities will increase the size of the nonmetropolitan population by reversing out-migration to the point where there is a net gain of population, will stimulate business activity, will improve the quality of life in rural areas, and, in the long run, will relieve pressures on existing urban areas.

These and numerous related questions were examined in the analyses which form the basis for this report.

THE RESEARCH SITUATION AND STUDY DESIGN

In April 1965, Jones-Laughlin Steel Corp. (J. & L.), publicly announced plans for the construction of a large-scale production facility near the village of Hennepin in Putnam County, Ill. The 1960 population of the county was 4,570 with an active labor force of 1,663 persons, and had an estimated aggregated personal income of $21,671,000 from wage and salary disbursements. As part of their overall strategy, J. & L. purchased 6,000 acres of land in Putnam County with the intent of leasing portions of the acreage to steel users for fabricating plants. Presently, J. & L. uses a small portion of the acreage for their plantsite and the remainder is leased for agricultural production. Construction of the complex was started in June 1966, and was completed in December 1967, at a cost of more than $150 million. The first commercial order was shipped on February 19, 1968.

During the initial production period, J. & L. employed approximately 700 workers, most of whom held jobs that would be classified as "blue collar." The J. & L. work force in July 1972 was 1,039, and the majority of these were hourly wage union employees. The 304 salaried employees included, in addition to the four plant managers,

100 foremen and craftmen, 52 professional and technical personnel, 78 clericals and 19 operatives and service workers. There were 38 females on the payroll, all in the salaried category with most being clericals. The annual payroll was approximately $7 million. Clearly, the capital investment of J. & L. in construction and continuing work force represented a dramatic increase in labor demand in Putnam County, Ill.

With funding from the University of Illinois Graduate Research Board and later from the National Institute of Mental Health for the purpose of assessing the impact of industrial development on psychological disorder and level of social alienation we began monitoring Putnam County and parts of three adjoining counties in June 1966, at a time when construction was in the earth moving stage. For purposes of analysis, the Hennepin area was considered an "experimental" region, and a "control" region was selected and monitored in the same way as the Hennipin area. This design permits a clearer interpretation of observed changes in the Hennepin region.

The experimental area is located along the Illinois River about 100 miles west of Chicago. It is 315 square miles in size and consists of all four townships in Putnam County, four townships in Bureau County, one township in Marshall County, and the town of Oglesby in LaSalle County. The control area is located in Iroquois County, Ill., which is located along the Indiana-Illinois border approximately 100 miles south of Chicago. It is about 222 square miles in area, and is composed of six townships: Belmont, Concord, Iroquois, Crescent, Middleport, and Sheldon. The region includes the county seat of Iroquois County, the town of Watseka. The control region is approximately 100 miles from the Hennepin area.

Our monitoring took several forms which included: (1) Interviews with an area probability sample of heads of households selected in 1966 and reinterviewed in 1967 and 1971, (2) interviews with a new area probability sample of heads of households in 1971, (3) interviews with small business operators in 1967 and 1971, (4) compilation of secondary data from county, State, and Federal agencies, (5) annual censuses of all high school students each fall, 1966–70, and (6) J. & L. personnel files for their July 1972 work force. This multimethod approach to monitoring a rural area undergoing industrial development while simultaneously monitoring a control region has permitted us to assess the development impact on a large number of variables with a quasi-experimental research design. The analysis reported here is based on data from the household surveys, secondary sources, and J. & L. personnel files.

FINDINGS

Our concern in this project has been to assess the impact of the Jones-Laughlin Steel Plant siting in Putnam County, Ill., on an array of economic, demographic and social parameters of the host county and its surrounding area. The results of our analyses are summarized briefly in this section and are organized topically.

Documentary support for the summary statements will be found in the manuscripts listed in Reports Issued (section VII).

A. Jones-Laughlin work force

As indicated above the work force at J. & L. has increased from an initial 700 to slightly over 1,000 by July 1972. It will enhance one's interpretation of findings regarding the community to consider some characteristics of the July 1972 work force since this provides a post hoc description of the labor demand generated.

The work force numbered 1,039 of which 735 were hourly paid and 304 were salaried. We shall consider them separately because they are quite dissimilar in character. The 735 hourly paid employees were all male. On the average they had completed 11.8 years of education and had a mean age of 30.01 years. The average socioeconomic index value (SEI) of the hourly jobs was 22.31. It is worthy of note also that only 23.16 percent of these men were sons of farmers.

Among the 304 salaried employees 38 were women and 266 were men. Slightly over half of the women were employed in clerical positions and the remainder were distributed among several "staff" positions such as nurses, technicians, engineers, and public relations assistant. The mean age of all salaried employees was 34.29 years. Their educational attainment was 13.62 years on the average. And the jobs they held had an average SEI value of 51.64.

These characteristics of the 1972 work force at the J. & L. Hennepin Works are in contrast to the employed heads of household in the townships surrounding the plant. In July 1971, our survey revealed a resident labor force of employed heads of households in which the mean age was 44.26 years, the average years of schooling completed was 11.74 and the average SEI value of jobs was 38.32. By way of contrast the hourly paid workers are clearly much younger and hold less prestigious jobs than employed heads of household. Their educational levels were about equal. On the other hand the salaried workers were younger, better educated and in possession of much more prestigious jobs.

If one combines the salaried and hourly paid employees, one finds that the J. & L. work force is younger and better educated than the employed heads of households. However, the mean SEI value of J. & L. jobs is somewhat lower than that of employed heads of households because of the predominance of "blue collar" jobs at the plant.

The paragraphs which follow summarize our assessment of Jones-Laughlin's large and noticeably contrasting labor demand on social, demographic and economic parameters of the communities in its immediate environment. Given the size and contrasting nature of the labor demand generated one might reasonably expect substantial impacts.

B. Population

Size.—Using data from the U.S. Census of Population it is clear that in Putnam County and the communities of Bureau County which have easy highway access to the J. & L. plant there has been a sharp reversal of the population decline that had been occurring from 1930 until 1965. Putnam County showed a much more rapid growth rate from 1965 to 1970 than any of the other counties observed (14 percent), including the control area and of the State of Illinois. It is reasonable to infer that the presence of the industrial development in Putnam County has been a major source of the reversal in the population trend since the decline continued through the first half of the 1960–70 decade and was sharply reversed in the second half.

Age.—Growth in the population of Putnam County has been accompanied by a change in the age composition. Of the five counties being monitored Putnam County in 1960 had the highest median age (34.5). By 1970 it had the lowest median age (30.4). To a lesser extent the other three counties in the experimental area showed the same decline in median age while the control county remained unchanged during the decade (1960=31.8 and 1970=31.5). The same trend in age is apparent in our survey of heads of household.

Education.—With a younger population and the higher educational level of J. & L. employees one would expect an increase in the educational attainment of the population, particularly among males. Comparison of the 1960 and 1970 Censuses of Population does indicate that educational attainment (years of school completed) increased more rapidly in the experimental than in the control area, especially among males. Moreover, males in Putnam County had the largest gain, from 9 years in 1960 to 12 years in 1970. During this same decade there were gains in educational attainment among women but there were no differences observed between the experimental and control areas.

Data from our survey of household heads supports the finding of educational gains. Among employed heads of households in the experimental area the mean years of school completed increased from 11.41 in 1966 to 11.74 in 1971. This gain is statistically significant. Among employed heads of household in the control area there was a smaller but statistically nonsignificant gain (11.03 to 11.25).

Thus, industrial development has been accompanied by a more substantial increase in educational attainment among the male population than among the female population which suggests a substantial in-migration of men with more education than resident males.

Marital status.—One of the presumed consequences of rural industrial development often cited in its support is an increase in the rural area's attractiveness to its youth. Proponents of this view believe that young persons no longer will need to move away to find employment. If this presumed process actually occurs, one would expect to find an increase in the percentage of unmarried (single) adults; especially in the years immediately following the increased local labor demand.

We do find a small increase (2 or 3 percent) in the proportion of adults, male and female, who are single. However, we find an increase of the same magnitude in the control area, in all rural areas of the State of Illinois, and in the total population of the State of Illinois. Therefore, it would be inappropriate to associate this change with the presence of the Jones-Laughlin development.

Household size.—The mean number of persons per household declined from 1960 to 1970 in the counties comprising the experimental area. However, as with changes in marital status, similar changes have occurred in the control area and throughout the State. Again, it would be inappropriate to attribute the observed change to the industrial development in Putnam County.

C. Migration

Population growth in an area where geographic boundaries are constant can occur only as a result of increased birth rate, decreased death rate, increased ratio of in-migration to out-migration, or some combination of these factors. In the long run industrial development of

rural areas may affect all of these demographic factors. However, in the short run it is more likely to generate population growth by increasing in-migration and decreasing out-migration than by altering birth and death rates.

Natural increase versus net migration.—Examination of birth and death statistics clearly indicate that the growth of population in Putnam County should not be attributable to natural increase. During the 1950–60 decade the county had a 9.5 percent natural increase (births-deaths/1950 population) yet experienced a gross population decline of 3.7 percent due to a negative balance of in- and out-migration (−13.2 percent). The rate of natural increase in Putnam County during the 1960–70 decade declined to 6 percent while the county population grew by 9.6 percent as a result of a turnaround in the net migration flow. The decline in natural increase is consistent with the experience of most rural counties in the Nation during the last decade. Thus, Putnam County, unlike most rural counties, was able to show a positive growth by altering the balance of population flow in and out of the county.

Within the experimental area, Bureau County shows the same pattern as Putnam County but in less dramatic fashion. However, LaSalle and Marshall Counties, which had positive growth during the 1950–60 decade, had less than 1 percent change during the 1960–70 decade with natural increase being offset by net out-migration. The same was true of Iroquois County, our control area.

Decomposing net migration.—Ideally one would like to decompose the net migration by revealing the numbers of persons moving to and from the county of reference. Unfortunately, this straightforward count is not possible using data from published census documents. However, since the presumed reduction of out-migration is a major argument for rural industrial development we examined several data sources which permit an estimation of the in-migration and by subtraction from net migration derived an estimate of out-migration as well.

An estimate is obtained by subtracting the percent of 1970 residents of a county who lived outside that county in 1965 (in-migrants), raised by a factor of two, from the net migration figure for the decade. The remainder provides a crude estimate of out-migration. The same procedure was followed for the 1950–60 decade to provide a point of comparison. By this technique we find that in Putnam and Bureau Counties in-migration increased and out-migration decreased substantially. LaSalle County experienced no change in in-migration but had an increase in out-migration. Marshall County had a slight increase in in-migration with no change in out-migration. The control county had a pattern like Putnam and Bureau Counties but weaker. Only Putnam County had more in- than out-migration.

Some confidence in these overall trends, if not the absolute values of the estimates, is generated by examination of the Social Security Continuous Work History Sample (1 percent). For those counties and years with sufficient sample size to permit calculation of migration rates the results are consistent with the estimates from Census of Population data. Also, on the basis of the Social Security sample it would appear that the reversal of net migration from loss to gain occurred in the second half of the 1960–70 decade. This coincides with the Jones-Laughlin development.

Data from our household surveys record the same trend toward increased in-migration. We find the rates of in-migration to be higher in our sample than for county data derived from the Census of Population. Since the geographic area sampled by us is less extensive and situated closer to the plantsite this finding suggests a gradient of in-migration which diminishes as distance from the plant increases.

The finding of a substantial in-migration is collaborated further by the fact that 41.77 percent of the Jones-Laughlin hourly paid labor force (July 1972) had moved into the Putnam County or contiguous townships since employment at the Hennepin Works. Salaried workers at Jones-Laughlin were more likely to be in-migrants (55.59 percent).

It would appear that Putnam County, and to a lesser extent Bureau County, has experienced an increased in-migration during the record half of the 1960–70 decade while also having a decline in out-migration. However, the greatest change has been in the flow of persons into the county. The outflow of persons continues but in reduced volume. The crucial finding is the fact that Putnam County, and to a lesser extent Bureau County, is able now to attract replacements for those leaving.

D. Occupational structure

Creating 1,000 plus jobs in a county whose total labor force was approximately 1,700 had the potential of dramatically altering the occupational structure both directly and through multiplier effects. However, our findings reveal a situation in which most of the jobs were filled by persons living outside Putnam County (82 percent) and even beyond the boundaries of our experimental area (53 percent). Thus, the effective stimulus on occupational structure through increased labor demand was 182 jobs in Putnam County and 365 jobs in the area encompassed by our household survey. Commuting clearly reduced the potential for "first round effects" on the communities nearest the Jones-Laughlin plant. In point of fact, the average trip to work distance for Jones-Laughlin employees was 19.1 miles with at least one person driving 57 miles one-way. Given the extent to which workers commute and the size of the commuter field it is not surprising that changes in the structure of occupations were less than the juxtaposition of Putnam County labor force size and added labor demand might suggest. Yet, we do observe significant changes.

The number of employed persons living in Putnam County increased by 10.58 percent from 1960 to 1970. Bureau County had an increase of 7.58 percent. All other counties, including the control county, experienced enlarged labor forces but with a growth rate under 5 percent. Over the same period the State of Illinois labor force grew by 14.29 percent.

There have been important changes in the occupational structure of the experimental region from 1966 to 1971 based on our observations of employed heads of households and their spouses. First, there were moderate increases in the proportion of the actively employed in the managerial, clerical and sales and service worker occupational categories. These increases are consistent with changes expected in a developing area—growth in managerial and service related occupations. Similarly consistent is the observed decline in agricultural occupations. Therefore, one may conclude that there has been a

significant sectoral relocation in the occupational structure of the experimental area.

Second, the experimental region has experienced an occupational upgrading. There has been a growth, from 36.77 percent to 45.37 percent, in the proportion of the active labor force employed in "white collar" occupations between 1966 and 1971. No such change occurred in the control region. The upgrading also is indicated by the increased mean value of the socioeconomic index of occupations.

Third, there has been an increase in the proportion of the active labor force employed for salaries and wages in the experimental region, from 86.05 percent to 88.54 percent. This trend was reversed in the control region. This shift signals an increased bureaucratization of the occupational structure.

We also found an 8 percent increase in labor market participation. However, the control region experienced a similar increase. Thus, one should not attribute this change to the rural industrial development.

Contrary to our expectations we did not find evidence of increased work specialization; i.e., number of different occupational titles present in the active labor force.

E. Occupational mobility

One must note that occupational mobility is not the same as changing jobs. An occupational category such as "Clerical and Sales" or "Manager, Owner, Proprietor" includes many job titles. Occupational mobility indicates a change in occupational category. Thus, all workers who are occupationally mobile have changed jobs but not all who change jobs will be occupationally mobile.

While there have been important changes in the occupational structure of the experimental region from 1966 to 1971 and a substantial increase in the labor force size, there has been no more occupational mobility among those who lived in the area and were in the labor force before development of the Jones-Laughlin Hennepin Works than among such workers in the control region. In both regions approximately 25 percent of the workers changed occupational classification over the 5-year period.

There are regional differences, however, if a comparison is made of the number of different occupation or industry categories into which workers moved during the research period. In the experimental region, those workers who changed occupation or industry class tended to enter a greater number of different categories than the mobile workers in the control region. This suggests that development has had the effect of increasing the openness of the occupational structure in the experimental region over the period 1966 to 1971.

In the experimental region there was a tendency for those leaving any of the "white collar" types of occupations to enter the managerial category while the "blue collar" movers tended to enter the craftsmen group. In regard to movement among categories of industry there was a tendency for workers to enter the manufacturing classification regardless of the industry category from which they came. None of these patterns of mobility were found in the control region. In neither region was movement between wage or salary and self-employed categories of employment very large. However, the probability of a worker moving from the wage-salary category to self-employment, or of remaining self-employed, was less in the experimental than in the control region.

As mentioned in an earlier section this mobility pattern is an indication of the increased bureaucratization of the occupational structure.

The greatest disruption in the mobility patterns in the experimental region occurred during the construction phase of the Jones-Laughlin facility while the least disruption occurred during Jones-Laughlin's first full year of production.

In the experimental region those workers who were not employed in 1966 tended to become active in the labor force in 1971. This was not the case in the control region where those not active in 1966 tended to remain inactive during the research period. This regional difference suggests that the industrial development contributed to the expansion of a localized opportunity structure.

By converting occupational titles to prestige ratings we were able to examine socioeconomic status mobility. The amount of upward mobility was slightly greater in the experimental than in the control region. It is also the case that the proportion of workers who were nonmobile was slightly higher in the experimental region. The most significant differences between regions is in the percentage of downwardly mobile workers. In the experimental region 12 percent moved down while in the control region 20 percent did so. Thus, while the industrial development was accompanied by some upward mobility the greatest impact was to inhibit the amount of downward mobility.

F. Concentration

Industrialization and urbanization have been parallel processes historically. Yet they are conceptually and analytically separate phenomena. Industrialization refers to a process of change in the economic character of an area from one dominated by agriculture to one dominated by nonagricultural economic activities. Urbanization is a process of alteration in the people—land relationship wherein the proportion of a population concentrated in high density areas increases.

In spite of the historical association of these two processes we have believed that industrial development in rural areas and small towns need not result in urbanization of the area. Specifically, it need not occur in rural areas with well developed transportation, educational, and power conversion-transmission systems and which have a surplus of labor. Since these conditions characterize the rural area in which the Jones-Laughlin Hennepin Works was constructed we did not expect to observe an increase in urbanization proportional to the increase in industrial development.

We found that the percent of the population in the experimental area which was classified as urban increased from 45.2 to 53.8 percent from 1960 to 1970. During the same 10 years the urban population of the control region declined slightly; 49.1 to 48.2 percent. The percentage increase in the experimental area would indicate nearly 4,000 more persons were living in urban places which implies that urban places have received that many persons into their city limits. That is not the case. Between 1960 and 1970 one town, by adding 332 persons, became qualified as an "urban place." Thus, 2,610 persons were added to the urban sector in 1970 by merely adding 332 persons to the population of one town.

Evidence of less urbanization is observed by examining the population growth of places (1960–70) grouped according to their rural-urban status in 1960. Towns large enough to be called urban (2,500 or more

people) in 1960 grew by 8.1 percent. Places between 1,000 and 2,500 grew 9 percent. Those incorporated places under 1,000 grew 11.5 percent while the open country population grew 13.2 percent.

A major reason for the limited urbanization is the commuting of Jones-Laughlin employees. Over 80 percent of them, as of July 1972, live outside Putnam County. The commuter field has a radius of 42 air miles or 57 highway-miles with a mean trip to work distance of 19 highway miles. Workers come from 68 communities within this commuter field of approximately 3,500 square miles.

There is a very slight tendency for older, better educated, higher status employees to commute shorter distances. Also we observe a very weak tendency for employees with higher incomes and greater length of service to travel longer distances. However, all five of these variables together account for less than 1 percent of the observed variation in commuting distance.

There is some evidence that the commuter field is shrinking. That is, the commuter field described above was even larger in the first year of operation at the Hennepin Works. Of those persons employed at the Hennepin Works in July 1972, who had changed residence since applying for employment most had moved closer to the plant-site. We also observed that from 1969 to 1972 the proportion of plant employees driving 30 or more miles to work decreased. Finally, the number of communities represented in the work force declined from 79 to 68 between 1969 and 1972. Most of the reduction involved communities over 30 miles from the plantsite.

G. Farming

The movement of large scale industry to rural areas raises some concern for its effects on the organization of agriculture. Will the competition for land and labor force the small operators to leave farming in the hands of large enterprises which can benefit from economies of scale? Or will the presence of off-farm employment allow smaller operators to remain in farming by altering the type of operation and supplement their farm income with off-farm work or perhaps supplement full-time nonfarm work by farming? These and related issues were examined by using questionnaire responses of farm operators in our household surveys and secondary source data such as the U.S. Census of Agriculture.

The decline in numbers of arms that has characterized rural social change during the last several decades continued in both the experimental and control regions as well as throughout the State of Illinois. However, the rate of decline from 1964–69 was somewhat faster in Putnam, Marshall, and Bureau Counties of the experimental region (17.1, 12.6 and 9.2 respectively) than in the control county or the State (3.8 and 6.4 respectively). Since there was no reduction in the proportion of land devoted to farming one may infer that the average farm size has been increasing. Census of Agriculture statistics confirm this.

From the fact that average farm size is increasing while number of farms is declining, it would be reasonable to presume that small farms are being consolidated into larger farm enterprises. But that is only partially true. It is the case that the fastest growing category is farms of 500 or more acres. However, the second fastest growing category is farms under 10 acres. This is true throughout the State of

Illinois and in the counties of Putnam, Bureau, and LaSalle in the experimental region. In Marshall County only the very large farms increased in numbers while in Iroquois County all had a positive growth rate except those between 100 and 500 acres. In the latter case the pattern is basically that of the State with the size of small farms being somewhat larger perhaps due to local land use patterns.

Without question there has been an increase in the proportion of farm operators who work 100 or more days off the farm. It is true in all areas we examined. Moreover, the change rate is approximately 10 percent, regardless of the level of off-farm work in 1964. By 1969 the level was in the range of 24 to 37 percent for the areas studied. This statistic (100 or more days off-farm work) generally is taken as an indication of part-time farming. Our household survey data support this because there we found a substantial portion of farm operators who report an occupation other than farming as their primary job.

Capitalization of agriculture increased markedly between 1964 and 1969. Again, this is a continuation of experience in recent decades. In 1969 the average value of land and buildings per farm ranged from $118,507 for the State of Illinois to $164,414 in Putnam County where the Jones-Laughlin facility is located. Also the greatest percent increase in average capitalization between 1964 and 1969 occurred in Putnam County (72.4) while the lowest increase (37 percent) was in Iroquois County, the control area.

These, and other findings, indicate that the impact of the industrial development on the farm enterprise and on the agricultural labor force has been minimal. Trends of several decades duration have continued and where impact is measureable it appears to hasten the rate of the existing trend.

H. Leadership structure

One of the potential indirect effects of rural industrial development is the disruption of established structures of local leadership. There are numerous forms which change may take, if it occurs. We have examined four potential forms of change: (1) The geographic base, (2) degree of concentration, (3) extent of centralization, and (4) stability. The findings are based upon analyses of nominations of local leaders in the areas of government, business, and education made by heads of households in our 1966 and 1971 surveys and by leaders themselves in a 1972 mail survey. Only communities and townships in the experimental region were included in these analyses.

If industrial development generates changes in where people work, where they shop, where they live or patterns of neighboring, it is reasonable to expect that the geographic bases of local leaders reputations may shift. Specifically, one might expect to find an expanding geographic base of local leadership. We found the predominant pattern is that leaders do not overlap township boundaries. Although there is some overlap between townships, county lines are virtually impermeable. In 1966 and 1971 business, education and government leaders overlap township boundaries in Putnam County. The general form of the overlap is that several persons are leaders in all four townships in the county. Thus, it appears that a county level leadership structure may be meaningful in Putnam County. We found little change meaningful in the patterns of geographic basis of leadership between 1966 and 1971. Therefore, it appears that the introduction of

the Jones-Laughlin plant has had little effect on the geographic base of leadership.

Concentration refers to the extent that leadership is dispersed among many people or limited to a very few. An index of concentration was computed for each community (township) in 1966 and 1971 for government, business and education spheres. Only two townships recorded evidence of substantial change: Senachwine in Putnam County and Selby in Bureau County. The increased concentration in Senachwine Township is attributable to the growing popularity of county level leaders in the Township. Selby Township underwent substantial deconcentration in all three spheres of leadership examined. This probably is attributable to the closing of the New Jersey Zinc Corp. plant at DePue which appears to have seriously disrupted the leadership structure of Selby Township in all respects.

Centralization refers to the extent to which persons are nominated as leaders in more than one sphere of decisionmaking. In this instance the spheres are business, education, and government.

Centralization was found to vary widely among townships in both 1966 and 1971. However, there generally was a closer correspondence between business and government than between either of them and education. Educational leaders tended to have limited reputations as business or government leaders. In 1966 business and government overlap was highest in Princeton Township followed by Selby Township (both in Bureau County) and Hennepin Township which includes the village of Hennepin and the Jones-Laughlin plantsite. By 1971, however, the order became Hennepin, Princeton, and Hall (Bureau County). Hennepin Township had a substantial increase in centralization while Selby Township (where New Jersey Zinc closed) experienced a substantial decrease in centralization during the same time period. It would appear that major shifts in economic activity have an effect on centralization of leadership in the immediate locality, at least in the short run.

Stability refers to the extent to which persons who were nominated as leaders in 1966 retained their popularity in 1971. Stability coefficients were calculated for business, education, and government leaders in 1966 and 1971 for all townships. Across the several communities business leaders had the most stable structure followed by education and then government leaders. Yet, substantial variation in stability was found among communities.

Among the three spheres of leadership, business tended to be the most stable. Princeton Township (Bureau County) had the most stable business leadership structure followed by Granville Township (Putnam County). These two townships also had the most stable government leadership structures. Also Granville Township had the most stable educational leadership structure.

In summary, Putnam County had a concentrated and centralized leadership structure in 1966, prior to the industrial development. It remained quite stable through 1971 and increased in concentration and centralization. During the same time, the closing of the New Jersey Zinc plant at DePue in Selby Township (Bureau County) generated substantial instability in the leadership structure which became less concentrated and less centralized. It would appear that major shifts in economic activity have an effect on the centralization,

concentration, and stability of leadership structures in the immediate locality, at least in the short run, but have little effect on the geographic base of leadership.

I. Income

While income certainly is not the only means of gauging the impact of industrial development it is extremely important. Therefore, we have given considerable attention to changes in income levels and its distributional qualities. Income data were obtained from numerous sources and predictably the exact dollar amounts for a given county and year vary because of differences in the methods by which the information was collected. Therefore, we have searched the data for patterns of change and attached minimal importance to the specific dollar values in the vary data sources.

The overall assessment is that the level of income increased faster in the experimental area than in the control area, the increment in rate presumably an effect of the industrial development. However, it should be noted that the increment is not dramatic. In some data sources the difference in growth rates was not significant statistically. Yet, the general thrust of the various indicators does reflect an added income growth in the experimental area.

There is also an indication that the industrial development has contributed to a reduction in the inequality of income. Both the variance and the coefficient of skewness were reduced in the experimental region during the same time they were increasing in the control area. Thus, if raising the level of income and reducing income inequality are goals of rural development, it would appear that the Jones-Laughlin development has contributed to their achievement.

However, aggregate statistics often conceal important information about segments of the population. Just because industrial development benefits the area as a whole, one cannot conclude that everyone has benefited equally. Industrial development introduces an increased labor demand and flow of capital. It is reasonable to assume that individuals will differ in their ability to participate in the expanded economic activity; among them would be persons over 65 years of age, persons with less than high school education, women, and persons not active in the labor market.

We find that these four categories of weak competitors have not fared as well as the community as a whole. On each of these dimensions of competitive ability we found that the income gap between strong and weak competitors increased between 1966 and 1971. However, we found this to be true in both regions. Thus, one must not attribute the increasing disparity to industrial development. It would be appropriate to conclude that industrial development did not halt, or even lessen, the continuing disparity between strong and weak competitors in the economic system.

In further analysis of the relation of these four variables to income we found that the two most potent causal factors are sex and labor force status. While both serve to mediate substantial portions of the total effect of age, they also have a significant direct effect on income.

J. Trade patterns and economic dominance

Within any geographic region communities may be ordered hierarchically in terms of their relative importance as trade centers

for the population within the region. Under conditions of economic growth it is reasonable to expect that the business sector of each community will attempt to maximize its share of the increase in consumer activity. Clearly, the Jones-Laughlin development stimulated the economy of the experimental region. Assuming an arousal of intercommunity competition for consumer purchases it seems important to determine its impact on the dominance hierarchy of trade centers within the region.

In 1966 heads of households were asked where they obtained a variety of goods and services. Their responses identified 68 communities. However, 10 trade centers accounted for 94 percent of all reported purchases. These 10 communities were ranked according to the proportion of all choices each received. This same procedure was repeated in 1971.

There is, of course, a very close correspondence between economic dominance and community size in both years, larger towns being more dominant. We found that among the 10 most prominent trade centers there was virtually no change from 1966 to 1971 in the hierarchy of dominance. Princeton was the leading trade center for the region in both years followed by La Salle-Peru, again in both years, etc. However, we did find that some towns increased their share of the total reported choices while others declined. Those increasing in popularity as trade centers generally were the more dominant places in 1966 and those weaker in 1966 tended to receive a smaller proportion of the consumer activity in 1971. This has been the plight of small towns and villages as trade centers for several decades of course and should not be attributed to the local industrial development. The important point is that the economic development brought to the region by industry has not arrested this long-term trend.

In a related analysis we found a rather weak relationship between place of residence and where goods and services are secured. As one would expect, the smaller the place of residence, the weaker the relationship. Does this mean that one's sense of belonging to a community (community identification) is eroded when economic activities often are transacted outside one's community of residence? The evidence overwhelmingly indicates that is not the case. Over 96 percent of the heads of households chose their community of residence as their community of identification. Where one secures consumer goods and services appears to have very little influence on choice of community to which one has a sense of belonging.

K. Public services and community satisfaction

It is reasonable to expect industrial development to increase the demand for public services directly to the industrial facility and indirectly to serve the needs and desires of an expanded and somewhat altered population. The plant will require road construction, sewerage and water extended to the site, and police and fire protection as minimal public services. The demands of a growing and changing population can take many forms too numerous to be listed here. However, they surely include street and road repair and construction, sewerage, water, police and fire protection, recreation, health care, education, and welfare.

Ideally one would hope to assess public demand for services in a way that is independent of one's measurement of the public (govern-

mental) response to that demand. Yet, in practice it is usually difficult and often impossible to objectively measure public demand. From the information available to us we have taken note of the increased population within various political units and weighed this against governmental expenditures on various types of public services and statements of satisfaction with these same services by heads of household. This does not measure demand directly. However it does allow one to observe changes in governmental response and to assess changes in the degree of satisfaction with that response.

We observe that local and county governments are spending more money and employing more people in the delivery of public services. We also note that the per capita cost of delivery of services generally has increased from 1966 to 1971. However, much of this is due to national inflationary trends during those years. We are unable to discern any clear expenditure trends which discriminate between the political units of the experimental area and those of the control area.

We find little evidence that population growth is associated with the increased expenditures. Putnam County increased its population by nearly 10 percent while no other county increased by more than 2 percent. Yet increases in public service expenditures in Putnam County are similar to those of other counties except in police and fire protection where it is somewhat higher. The relationship between changes in these two variables is no clearer if one considers local governments. Obviously, sustained population growth must result in increased public service expenditures as attested to by the experience of metropolitan governments. Yet it appears that the volume of population growth associated with this industrial development has not resulted in any clear pattern of increased governmental expenditures for public services.

A word of caution is necessary. We are aware from field observation that some political units in the experimental area have extended services in response to population growth. But county and town governments obviously have considered factors in addition to population changes in their development of budgets. In this matrix of factors the increased demands resulting from population growth are not sufficiently overriding that one can observe a pattern in expenditures clearly attributable to population growth.

Although we observe no clear, direct effect of population change on governmental expenditures it is reasonable to examine the level of public satisfaction with public services. A younger, better educated population may be less satisfied with existing services than an older, less educated one whose experiences predispose them to different expectations. Similarly, an influx of persons from urban communities and other parts of the Nation may bring with them expectations which existing services do not meet.

Whether for these reasons or others we do observe that younger persons are less satisfied with community services than older persons. Similarly, persons who are residentially mobile are less satisfied. We find also that persons who lived in the experimental area throughout the development (1966–71) were more stable in their level of satisfaction than the community as a whole which had a slightly lower level of satisfaction in 1971 than in 1966. We also found that people living in larger towns were more satisfied than village and open country residents.

There are predictable changes in satisfaction with community services traceable to population changes accompanying the industrial development. Perhaps, it is through raising the level of dissatisfaction that population changes generate a response from the various political units to substantially expand public services and/or improve their quality. One note in this connection that we also observed assessed valuation, both in total dollar value and per capita, rose more rapidly in the experimental than in the control area. Thus, it would appear that the tax support base has been strengthened by industrial development and therefore governmental units may be capable of responding to the rising dissatisfaction with community services.

L. Economic activities

The impact of Jones & Laughlin on the economic system of the experimental region can be viewed from the perspective of two kinds of secondary data: That revealing changes in productive capacity and that concerning changes in resources controlled by the population in the region.

The manufacturing sector.—Very significant changes can be observed in this sector of the economy of the experimental region! Manufacturing now accounts for approximately 70 percent of the number of employees and 80 percent of the wages covered by Illinois Unemployment Compensation in Putnam County. This is obviously a dramatic new resource in a county which had no manufacturing a decade ago (tables A, B). The growth is in marked contrast to the pattern of surrounding counties in which the number of employees in manufacturing has remained almost constant or has declined slightly since 1966 and wages have increased by only a third to a half.

Above average, but relatively small increases in wages and number of employees in manufacturing can also be observed in the control region.

However, there is not a great deal of evidence that the growth in manufacturing has stimulated comparable growth in other sectors of the economy. An "industrial complex" has not, thus far, been the consequence of industrialization, even though two or three other small plants have located in Putnam County since J. & L.'s arrival.

Nonmanufacturing sectors.—The picture of what has happened in the other economic sectors varies somewhat according to the source of data. For example, County Business Patterns data reveals that the sectors in order by degree of growth from 1966–70 would be: (1) Services, (2) transportation and public utilities, (3) finance, real estate, and insurance, (4) wholesale trade, and (5) retail trade. Putnam County, according to this data, experienced exceptional growth in both number of employees and payrolls in comparison to the surrounding counties, the control region, and the state, particularly in services and transportation and public utilities.

However, when Illinois Unemployment Compensation data are used, the ranking in growth in the various sectors in Putnam County from 1967–72 would be: (1) Contract constructions, (2) wholesale and retail trade, (3) finance, real estate, and insurance, (4) transportation, communication, and public utilities, and (5) service.

Although both sources of data leave something to be desired in completeness of coverage, the Illinois State data probably gives a more accurate assessment of growth patterns.

Two observations on the growth pattern are necessary. First, the growth in all nonmanufacturing sectors of the economy are very small in comparison to the growth in the manufacturing sector.

Second, the growth has not been steady across the years for all sectors. That is, the contract construction and finance, real estate, and insurance sectors have shown some tendency to exhibit a sharp rise in response to the initial industrial location and building, but slowed down significantly in their growth after that. The trade, transportation, utilities, and communication sectors have shown a more steady growth across the years. The service sector shows growth, but it is not exceptional in comparison to other countries or the State where it has been the leading growth sector for the last few years. The likelihood that growth in this sector was stimulated in Putnam County by industrial growth is not high since this sector has a strong growth pattern throughout the State.

Thus, the introduction of a primary metals kind of industry into a region may follow the pattern of producing short-run growth in the sectors of the economy most directly needed in initial building—contract construction and financing—but that growth cannot be sustained without the emergence of a full industrial complex. Consistent growth may be produced, however, in the transportation and trade sectors of the economy which are needed for the operations of a viable industrial plant.

Trade sector in more retail.—The State of Illinois Retailer's Occupation Tax Reports furnish some further insight into the impact of industrial development on the economy. The primary advantage of the data is that it is reported on a community basis as well as county. The overall impression gained from the data is that the impact of J. & L. on retail trade has been quite localized to the towns less than 10 miles from the plantsite (Granville, Hennepin, and Bureau Junction). Communities further from J. & L. but on rather direct commuting lines (Mark, Standard, McNabb, Magnolia in Putnam County and De Pue, Seatonville, and Dalzell in Bureau County) do not demonstrate any consistent positive growth in retail trade that would be accounted for by the industrial development. Any effects it may have on larger communities in the regions, which supply personal and other resources for the Hennepin Works are thoroughly hidden by the internal economic system of those communities.

In particular, then, Hennepin has demonstrated significant growth in those areas of trade which were well established in the community—general merchandise and miscellaneous retail. Granville, on the other hand, has exhibited a tendency to expand its trade operations. Furniture, home, radio, drinking and eating places, miscellaneous retail and general merchandise outlets have been the most active growth areas in the Granville trade structure. All are relatively new. The most important (largest) and more traditional trade operations—auto services, filling stations, food, lumber, building and hardwood supplies—have also done well in the last four years.

However, we should reiterate that beyond these two communities; the impact of Jones & Laughlin on trade operations has not been dramatic.

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POLICY IMPLICATIONS

Given that the objectives of the Economic Development Administration are: (1) To create employment opportunities, (2) to raise income levels, and (3) to improve the quality of life in those economically lagging regions of the Nation, nearly all of which are rural, the findings of this research project suggest several policy implications.

Clearly, Federal intervention to stimulate and encourage the flow of capital to rural areas in the form of industrial development is defensible as a means for achieving the policy goals established for EDA by Congress. Industrial development does result in more jobs and higher incomes for some rural citizens. It serves as a stabilizing influence on the population by arresting the long standing trend of decline. It also appears to have a stabilizing influence on the local economy. Moreover, the extensive industrial development which we have examined does not lead to major disruptions in social and economic systems of the host region, at least in the short run. Similarly, extensive urbanization does not inevitably follow industrial development.

Defensible though it is, rural industrial development is not a panacea for all ills of rural areas. The introduction of large industry into small towns and rural areas does not benefit equally all segments of the host population. Some presumed benefits were not observed at all. And perhaps most importantly, processes of change are set in motion which have the potential of generating long-term local adjustment demands which existing EDA and other Federal programs probably are unprepared and ill-equipped to support.

The eligibility criteria of areas for EDA support are such that industrial development may render a region, or an area, ineligible precisely when support is needed to expand infrastructures, in the narrow sense, as an outgrowth of the development. Therefore, a provident use of public funds for development would provide for the short-run social overhead costs of industrial development after the fact of development. This is in contradistinction to building streets, sewers, houses, schools, and similar local infrastructures with the hope of attracting industrial development.

Nevertheless, it is also provident use of public funds to invest in the development of infrastructures in the broadest sense. Development of human resources, such as education does help attract industry to a region. For example, this was a factor in the Jones-Laughlin Corp. decision. Moreover, the presence of labor with marketable skill levels no doubt was an important factor in reducing out-migration when industry located in the region.

Similarly, the presence of well developed intercommunity all-weather highways and roads permitted the absorption of an increased labor force without significantly affecting the level of urbanization. We are aware, of course, that a policy of developing the transportation infrastructure within rural regions is inconsistent with the growth center policy of EDA. If one wishes to encourage growth only in growth centers, it is undesirable to have a good highway system linking villages and dispersed farmsteads with the growth center. Only growth centers should be so linked, thus encouraging residential development within or very near to the growth centers.

The present EDA policy of requiring multicounty development planning is a wise and necessary one in view of the evidence that impacts of plant location are diffused over a large geographic area. While the impacts appear to affect the host county more noticeably in some respects, the overall impact is a dispersed one. Industrial development is a multicounty regional rather than a community phenomenon. Hence, planning and program efforts should be executed in a manner consistent with this reality.

The diffusions of impact calls into question the wisdom of the combined "worst first" and "growth center" policies of EDA. In the region studied there are no towns large enough to qualify as growth centers. Similarly, the economic conditions of the region prior to industrial development would disqualify it under the "worst first" policy. Yet, the region clearly has benefited from industrial development. Both its economic and population situations have been moved in a direction consistent with stated goals of EDA, rural development, and the balanced growth policy. Therefore, from the standpoint of national welfare, one must ask whether it would not be a more provident use of public funds to invest in those rural areas of the Nation which have existing resources—human, economic, or physical—that can be developed to a level of self-sustained growth with a minimum of public investment. The "worst first" policy may be in the long run a "cost most" policy. No doubt the "worst first" policy has considerable political marketability. But the resulting political benefits to certain members of Congress may come at considerable cost to the Nation.

It is clear that one of the many national needs is a more balanced population distribution in order to achieve greater equality of life among the various regional, racial, and ethnic segments of our society. Toward this end, the National Goals Research Staff suggested three strategies that are available to the Nation: (1) To spread the population by encouraging growth in sparsely settled rural areas, (2) to encourage an increased concentration of population in small cities in nonmetropolitan areas, i.e., growth centers, and (3) create new towns. Although some effort has been devoted to the creation of new towns, such as Reston, Va., the overwhelming commitment has been to growth centers.

Encouragement of growth in sparsely settled rural areas has been dismissed as being too costly. Growth centers are favored on the argument that they take advantage of the economies of scale and of agglomeration. The cost of providing public services and urban amenities to sparsely settled rural populations would be prohibitive it is maintained. No doubt that is true if one has in mind rural areas such as those of western Kansas and Nebraska or the high plains of Wyoming and Montana. But it is certainly less valid for those rural areas where extensive transportation education and other basic infrastructures already exist. And there are rather large segments of rural America where that is the case. With the exception of Appalachia, it is true of virtually all rural areas east of the Mississippi River.

The analysis we report here describes the consequences of industrial development in a sparsely settled rural area with extensive infrastructure development. The results of our analysis indicate that public service delivery requires no greater per capita expenditure

than exists in growth centers. While the quality of services and their accessibility may be somewhat less than in many urban places, one must also note that public satisfaction with services was quite high. Therefore, the dismissal of "sparsely settled rural areas" as a strategy for balanced growth seems premature. On the basis of our analysis, we believe that rural areas with developed infrastructures are viable sites for industrial development and would maintain that they should be incorporated into development programs along with growth centers and new towns.

Both our data analysis and field observations suggest the need for training programs designed for local leaders of communities and counties where industry has located. Ideally, this should occur prior to the actual construction of facilities. Further, the knowledge imparted by such programs for leaders needs to be disseminated to the local populus. We believe the local leadership has greater credibility as communicators than State or Federal Government agents. Therefore, our recommendation is to focus such informational efforts initially on local leaders who then may act as informational sources in a two-step process of communication. Our experience suggests the following topics should be incorporated in such programs: Delivery of public services, residential development, local sources of financing, zoning, land control, environmental control, employment, multiplier effects on local business and investment, public expectations, population changes, and community satisfaction.

Finally, our analysis points out the need for systematic efforts to protect those members of the community who are weak economic competitors, specifically, persons over 65 years of age, females, and persons not in the labor force. While industrial development increased the overall level of income and reduced income inequality in the aggregate, we found that the income gap between strong and weak competitors continued to widen in spite of the aggregate improvement in income.

Our analysis revealed that sex and labor force status were the two most potent causal factors in income inequality among the rural populations we studied. Both serve to mediate substantial portions of the overall effect of age. In addition, they also have a significant direct effect on income. The observed effects of sex are largely independent of age, education, and labor force status. The most plausible explanation for this fact is discriminatory wage and salary policies and the continuation of traditional sex role categorizations in hiring practices. Efforts to reduce the influence of sex on income inequality should be directed toward the elimination of such discriminatory practices. From a public cost standpoint, this is fortunate since minimal expenditure of public monies is needed. Rather, stricter enforcement of existing employment and wage and salary regulations is in order as a first step in reducing the effect of sex on income.

Reducing the effect of labor force status on income inequality undoubtedly will be more costly to the public and more difficult to achieve. There persists the value position that one's right to consume (income) is legitimated by one's work. Thus, there is much public resistence to programs which would achieve quality of income by increasing payments to persons not in the labor force even though there are numerous reasons why persons are unemployed including lack of marketable skills, ill health (physical and mental) and retirement. The public may be more willing to relinquish the legitimation principle for

some reasons of unemployment than for others. Thus, a partial reduction in the effect of labor force status may be achieved by programs designed to aid specific groups of persons not in the labor force, a strategy already being pursued.

Yet, such a piecemeal approach is a difficulty in itself. The range of efforts required are as numerous as the reasons for persons not being in the labor force. A monumental input of effort and money would be necessary to achieve adjustments such that inequality of income would be eliminated or significantly reduced. Coordination and enforcement of such a multifaceted programmatic effort would be extremely costly. Thus, public cost may be minimized in the long run by a unified programmatic effort such as the negative income tax or the guaranteed annual income.

The comments in this section of the report are intended as a statement of policy implications which we believe flow from our analysis of industrial development in one rural area of the Nation. The establishment of public policy goals and programs to achieve such goals is a political decision which is not ours alone to determine. Yet, we hope that these statements will serve as an input to that political process.

FURTHER RESEARCH NEEDS

Our 5 year "case-study" of the construction of a steel mill in rural Illinois and our review of similar case studies has convinced us that a macro-perspective and a more inclusive data set are needed to develop a better understanding of the impacts of industrial development in rural areas.

Such an effort would begin with the selection of a sample of States stratified by region. Within each State included in the sample, appropriate State agencies for business and economic development would be contacted in order to identify all plant sitings in the State over a specified number of years, perhaps since 1960. For each siting thus identified, one would construct an array of data including characteristics of the industry which located and demographic, economic, and social parameters of the host county and contiguous counties. Pertinent industry data should be available through the State agency for development or from the industry directly. County level demographic, economic, and social data are available from Federal, State, and county published records.

From such a matrix which incorporates industry and community (county) data, it would be possible to derive a much needed description of the functional relations between type and size of industry and community parameters which emerge under conditions of industrial development. While case studies benefit our understanding in several respects, a comparative analysis is essential to our fuller understanding of industrial development. A research effort such as described here is essential and feasible within the limits of a modest research budget since the necessary data are available through published sources and from State agencies.

DESCRIPTION OF ACTIVITIES

The activities of personnel involved in this research project have been almost exclusively data analysis and report writing. Virtually all data essential to the proposed analyses were collected previously under

the sponsorship of grants from the University of Illinois Graduate Research Board and the National Institute of Mental Health.

During July 1972, data were collected from the personnel files of the Jones-Laughlin Corp. Hennepin Works. The data obtained were not identified with the names of individual employees. Rather, they were aggregated to permit analyses of plant work force characteristics and commuter patterns. Throughout the period of this grant we have continued assembling data from published local, State, and Federal statistical reports which provided the basis for much of the analysis summarized in this final report.

Finally, both Profs. Gene F. Summers and Frank Clemente presented selected aspects of our analysis to professional association meetings and conferences attended by citizens involved in rural industrial development.

Even though support from the Office of Economic Research, Economic Development Administration terminated August 31, 1973, the preparation of manuscripts reporting the results of analysis will continue. Several manuscripts are presented under review by professional journals and other manuscripts are in the final drafting stages, including two monograph-length manuscripts (see section VII).

The proposed review and synthesis of case studies of rural industrial development impacts 1945–70 was not completed. Fortunately, that effort is continuing with the financial support of the Department of Rural Sociology, College of Agricultural and Life Sciences, The University of Wisconsin-Madison. A final report on that aspect of our research effort is expected by June 30, 1974.

CURRENT SPATIAL ORGANIZATION OF INDUSTRIAL PRODUCTION AND DISTRIBUTION ACTIVITY[1]

[By Claude C. Haren, Economist, Economic Development Division]

The U.S. economy is rapidly shifting from its historical dominance by manufacturing, agriculture and other goods-producing industries to an increasing ascendency of service-performing activities. Nevertheless, manufacturing continues to supply about 25 percent of the Nation's total jobs, an equivalent share of income, and measured by the final value of sales, nearly 50 percent of GNP.

In keeping with the rural industrialization theme of the conference, two maps were specially prepared to identify the hundreds of small city, small town, and entirely rural communities that not only have sizable industrial bases but in which new plant locations and expansions added sorely needed employment and income in recent years. The two maps also show an almost equally large number of localities that have very little in the way of present day industrial activity and limited prospects for industrialization.

As a prelude to the evaluation of the contributions of rural industrialization to community or small-area development and economic well-being, a brief exploration is first made of the respective roles of manufacturing, relative to farming, service, and other industries in national, regional, and metro-nonmetro area economies.

In the concluding section of the paper the emphasis is twofold: First, an appraisal is made of the factors contributing to or detracting from increases in the production of food, apparel, and other items in industrial growth counties. Second, a brief examination is made of the possibilities for enlarging outdoor recreation and related uses, together with other alternatives for rural development in the many other countries with few opportunities for industrialization.

Highlights

For the United States as a whole, nearly 3 million more workers had manufacturing jobs in March 1970 than in 1960. More than 14 million nonfarm wage and salary jobs, exclusive of manufacturing, were added in the 1960's. Farm employment declined by 1.4 million, and mining jobs by nearly 100,000.

The South contributed better than 50 percent of the additions nationally in manufacturing employment in the 1960–70 period, with the North Central region accounting for more than another 25 percent. The South also led in the formation of new nonmanufacturing jobs.

Rural and partly rural counties gained manufacturing jobs at a

[1] An enlargement and revision of an oral presentation of maps and supporting tables at the Conference on Problems and Potentials of Rural Industrialization, Purdue University, West Lafayette, Ind., July 11–13, 1972.

rate of 4.6 percent annually between 1959 and 1969, or more than double the ratio in the metro units. Nearly 900,000 manufacturing workers were added, together with almost another 500,000 in the remaining nonmetro counties. This brought the nonmetro share of total U.S. manufacturing employment up from 21 percent in 1959 to 23 percent 10 years later.

About 800,000 of the 900,000 increase between 1959 and 1969 in manufacturing workers in rural-oriented units was concentrated in partly rural (small city and town) counties. The entirely rural counties contained three-fourths of the nonmetro units with fewer than 100 manufacturing workers in 1969, along with a high proportion of the counties in which there was either little increase or a loss in manufacturing employment from 1959 to 1969.

The nonmetropolitan counties that not only had sizable industrial bases in 1969, but gained substantial numbers of manufacturing jobs, in the 1960's were concentrated in and along the Great Lakes Industrial Belt and the Upper Southeast, and in scattered growth nodes in the Northeast, Lower Southeast, Midsouth, and the Far West.

The nonmetro counties that have very little present-day industrial activity and that added little, or actually lost, manufacturing employment in the past decade or so occupied extensive areas in the Great Plains and Intermountain regions, and highly rural and out-of-the-way localities in Upper New England, the Upper Lakes States, Central Appalachia, the Lower Southeast, Midsouth, and the Far West.

TABLE 1.—EMPLOYMENT MIX: MANUFACTURING AND OTHER SOURCES, UNITED STATES, MARCH 1960 AND 1970[1]

Sector and industry	Employment (thousands)		1960–70 increase		Share (percent)		
	1970	1960	10-year number (thousands)	Annual rate (percent)	1970	Gain	1960
All	81,670	66,010	15,660	2.4	100	100	100
Manufacturing	19,811	16,899	2,912	1.7	24	19	26
Nonmanufacturing	61,859	49,111	12,748	2.6	76	81	74
Nonfarm wage and salary	70,395	53,110	17,285	3.3	86	110	81
Exclusive of manufacturing	50,584	36,211	14,373	4.0	62	91	55
Other goods-producing	7,030	7,773	−743	−1.0	9	−5	12
Nonfarm[2]	3,778	3,120	658	2.1	5	4	5
Construction	3,173	2,429	744	3.1	4	5	4
Mining	605	691	−86	−1.2	1	−1	1
Farm	3,252	4,653	−1,401	−3.0	4	−9	7
Service-performing	50,375	37,328	13,047	3.5	62	83	56
Wage and salary	42,352	29,081	13,271	4.6	52	84	44
Private industries	29,536	20,693	8,843	4.3	36	56	31
Trade	14,680	11,029	3,651	3.3	18	23	16
Service groups	11,260	7,068	4,192	5.9	14	27	11
FIRE[3]	3,596	2,596	1,000	3.9	4	6	4
Government	12,816	8,388	4,428	5.3	16	28	13
Other nonfarm[4]	8,023	8,247	−224	−.3	10	−1	12
TCU[5]	4,454	4,010	444	1.1	5	3	6

[1] Adapted from State employment security agency estimates.
[2] Private wage and salary only (other nonfarm component included with services).
[3] Finance, insurance, and real estate industries.
[4] Self-employed, private household workers, and unpaid family help.
[5] Transportation, communication, and utilities industries.

TABLE 2.—EMPLOYMENT MIX: MANUFACTURING AND OTHER SOURCES, MAJOR GEOGRAPHIC SESSIONS, MARCH 1970 [1]

[Numbers other than "Percent" are in thousands]

Sector and industry	1970 employment							
	Northeast		North-central		South		West	
	Number	U.S. share (percent)	Number	U.S. share (percent)	Number	U.S. share (percent)	Number	U.S. share (percent)
All	20,566	25	22,994	28	24,437	30	13,673	17
Manufacturing	5,785	29	6,444	33	5,175	26	2,407	12
Nonmanufacturing	14,781	24	16,550	27	19,262	31	11,266	18
Nonfarm wage and salary	18,578	26	19,926	28	20,174	29	11,717	17
Exclusive of manufacturing	12,793	25	13,482	27	14,999	30	9,310	18
Other goods-producing	972	14	2,006	29	2,842	40	1,210	17
Nonfarm [2]	741	20	885	23	1,481	39	671	18
Construction	694	22	781	25	1,151	36	547	17
Mining	47	8	104	17	330	55	124	20
Farm	231	7	1,121	34	1,361	42	539	17
Service-performing	12,642	25	13,331	27	15,132	30	9,270	18
Wage and salary	10,885	26	11,384	27	12,230	29	7,853	18
Private industries	8,035	27	8,062	27	8,169	28	5,270	18
Trade	3,674	25	4,210	29	4,231	29	2,565	17
Service groups	3,217	28	2,950	26	2,999	27	2,094	19
Fires [3]	1,144	32	902	25	939	26	611	17
Government	2,850	22	3,322	26	4,061	32	2,583	20
Other nonfarm [4]	1,757	22	1,947	24	2,902	36	1,417	18
TCU [5]	1,167	26	1,213	27	1,288	29	786	18

[1] Adapted from State employment security agency estimates.
[2] Private wage and salary only (other nonfarm component included with services).
[3] Finance, insurance, and real estate industries.
[4] Self-employed, private household workers, and unpaid family help.
[5] Transportation, communications, and utilities industries.

THE NATIONAL PERSPECTIVE

With nearly 20 million workers in March 1970 (table 1) manufacturing supplied more than 5 million greater employment opportunities than the second largest employer—wholesale and retail trade. Almost 3 million more workers had manufacturing jobs than in March 1960. Even so, at a rate of gain of only 1.7 percent per year, manufacturing's share of total U.S. employment fell from 26 to 24 percent in the 10-year period.

At an increment annually of 4 percent, more than 14 million nonfarm wage and salary jobs exclusive of those in manufacturing were added in the 1960's. Expressed as a ratio of total employment, the increase was from 55 percent in 1960 to 62 percent 10 years later.

Because the construction industry added employment at a considerably higher annual rate—3.1 percent—than manufacturing, construction jobs expanded by approximately three-quarters of a million, a gain equivalent to about 25 percent of the increase in manufacturing employment. The farm work force declined by 1.4 million, and there were losses of nearly 100,000 mining and more than 200,000 other nonfarm jobs between 1960 and 1970. Less than a half-million jobs were added in the TCU industries.[2]

Within the service sector, employment for wages and salaries in private nonfarm industries enlarged by nearly 9 million—an increment sufficing to increase the component's share of U.S. employment from 31 to 36 percent. For the government component, additions aggregated well over 2 million, accompanied by an expansion in the ratio of total employment from 13 percent in 1960 to 16 percent in 1970.

[2] Transportation, communications, and utilities groups.

TABLE 3.—CHANGE IN EMPLOYMENT MIX: MANUFACTURING AND OTHER SOURCES, MAJOR GEOGRAPHIC REGIONS MARCH 1960–71[1]

Sector and industry	1960–70 increase							
	Northeast		North-central		South		West	
	10-yr number (thousand)	Annual rate (percent)	10-yr number (thousand)	Annual rate (percent)	10-yr number (thousand)	Annual rate (percent)	10-yr number (thousand)	Annual rate (percent)
All	2,800	.1	3,658	1.9	5,587	3.0	3,615	3.6
Manufacturing	136		824	1.5	1,490	4.0	462	2.4
Nonmanufacturing	2,664	2	2,834	2.1	4,097	2.7	3,153	3.9
Nonfarm wage and salary	3,200	2.1	4,346	2.8	6,165	4.4	3,574	4.4
Exclusive of manufacturing	3,064	3.1	3,522	3.5	4,675	4.5	3,112	5.0
Other goods-producing	−38	−.4	−385	−1.6	−270	−.9	−50	−.4
Nonfarm[2]	102	1.6	168	2.3	335	2.9	53	.9
Construction	127	2.2	186	3.1	380	4.9	51	1.0
Mining	−25	−3.5	−18	−1.5	−45	−1.2	2	.2
Farm	−140	−3.8	−553	−3.3	−605	−3.1	−103	−1.6
Service-performing	2,661	2.7	3,177	3.1	4,153	3.8	3,056	4.9
Wage and salary	2,921	3.7	3,312	4.1	4,126	5.1	2,912	5.9
Private industries	2,034	3.4	2,195	3.7	2,683	4.9	1,931	5.8
Trade	731	2.5	366	3.0	1,174	3.8	780	4.4
Service groups	1,052	4.9	1,010	5.2	1,203	6.7	927	7.9
Fire[3]	251	2.8	219	3.2	306	4.8	224	5.8
Government	887	4.5	1,117	5.1	1,443	5.5	981	6.1
Other nonfarm[4]	−260	−1.3	−135	−.6	27	.1	144	1.1
TCU[5]	41	.4	42	.4	214	2.0	147	2.3

[1] Adapted from State employment security agency estimates.
[2] Private wage and salary only (other nonfarm component included with services).
[3] Finance, insurance, and real estate industries.
[4] Self-employed, private household workers, and unpaid family help.
[5] Transportation, communications, and utilities industries.

REGIONAL EMPLOYMENT ALLOCATIONS

The North Central region accounted for 33 percent of U.S. manufacturing employment in 1970 (table 2), or somewhat more than the 29 percent in the Northeast. The South had 26 percent and the West the remaining 12 percent.

Nonmanufacturing activities were considerably more important than manufacturing in the economies of the South and West than in the other two major geographic regions.

Contrasted with 26 percent of 1970 manufacturing employment, the South had 36 percent of U.S. construction jobs, 55 percent of mining employment, 42 percent of the farm work force, 32 percent of government workers, and 36 percent of other nonfarm employment. With 12 percent of 1970 manufacturing employment, the West's share of job opportunities in nonmanufacturing ranged from 17 percent of U.S. employment in construction, farming, trade, and the FIRE industries to 20 percent in mining and government.[3]

Regional shifts in employment patterns in the 1960's

The rate of gain in manufacturing employment in the 10-year period ending March 1970 ranged from 4 percent per year in the South to 0.2 percent annually in the Northeast (table 3). The addition of nearly 1.5 million manufacturing jobs in the South made up slightly better than one-half of the national increase. The North Central region accounted for another 800,000-plus employment opportunities in manufacturing, or more than an additional one-fourth of the total U.S. gain.

[3] The FIRE industries consist of the finance, insurance, and real estate groups.

At 4.9 percent per year, the gain in construction employment in the South stood out from annual increments, including the 3.1 percent yearly increase in the North Central region. Although the West added construction workers at a slow pace (1 percent annually), the percentage decline, particularly, in farm employment was under reductions in the other three regions, and a small increase took place in mining jobs.

In the service-performing industries, additions to wage and salary employment in the private sector ranged from 5.8 percent in the West to 3.4 percent in the Northeast. The annual rate of gain in government jobs ranged from 6.1 to 4.5 percent, again in the same regional order—West, South, North Central, and Northeast—as the overall shifts in employment depicted by table 3.

All in all, regional differences in job growth in the 1960's were reflected in modest increases in the South's and West's contributions to U.S. employment, paralleled by offsetting reductions in the Northeast and North Central regions.

METRO NONMETRO AREA DIFFERENTIALS

An annual rate of gain of 3.4 percent in the 1960's in manufacturing employment in the Nation's rural and other nonmetropolitan counties (table 4) was reflected in an increase of about 1¼ million manufacturing jobs, and an expansion from 22 to 25 percent in the nonmetro share of the U.S. total.

At a yearly rate of gain of 4.8 percent, the nonmetro South added approximately three-quarters of a million manufacturing jobs in the 1960's. This represented more than half the regional gain, and about one-fourth of the expansion in manufacturing employment nationally. The nonmetro counties of the North Central region contributed another 400,000 manufacturing workers or an additional one-eighth of the U.S. increase.

A nonmetro rate of increase of 4.4 percent annually in construction jobs was translated into an addition of about 200,000 construction workers and an expansion from 19 to 21 percent in the nonmetro share of total U.S. employment in the construction industry between 1960 and 1970.

The pace of the buildup of wage and salary jobs in the service-performing industries was particularly rapid in the metro areas—a reflection of the tremendous increases occurring in employment in business, health, education, and other fast-growing services, particularly in the South and West. Nonetheless, an expansion of service-oriented wage and salary employment at a rate of 4 percent annually in nonmetro counties was indicative of the substantial progress being made in upgrading services and facilities in many small cities, small towns, and entirely rural communities throughout the United States.

The concentration of most of the reduction in farming and mining jobs in nonmetro areas was a key factor in the spread between metro-nonmetro increases in total employment shown by table 4.

MANUFACTURING ACTIVITY IN RURAL AND OTHER METRO-NONMETRO COUNTIES

The 2,613 nonmetro counties (table 5) added manufacturing jobs at a rate of 4 percent annually between 1959 and 1969—an

increment about double an increase of 2.1 percent per year in the 486 metro units representing a net addition of nearly 1.4 million manufacturing workers, or 34 percent of the U.S. increase, the nonmetro share of total manufacturing employment rose from 21 percent in 1959 to 23 percent 10 years later.

The 261 lesser urban counties, that is, nonmetro units having a multicenter or composite urban population of 25,000 or more in 1970, gained manufacturing jobs at an annual pace (3.3 percent) sufficient merely to maintain the subgroup's share of U.S. manufacturing employment at 9 percent.

In contrast, the 2,352 rural and partly rural counties, at a yearly rate of gain of 4.6 percent, added nearly 900,000 manufacturing jobs in the 10-year period, enough to make up 22 percent of the total increase of approximately 4 million manufacturing workers nationally, and to expand the subgroup's share from 12 to 14 percent.

TABLE 4.—EMPLOYMENT MIX: MANUFACTURING AND OTHER SOURCES, NONMETRO RELATIVE TO METRO AREAS, UNITED STATES, MARCH 1960 AND 1970 [1]

Area, sector and industry	Employment		1960–70 increase		Share	
	1970 (thousand)	1960 (thousand)	10-yr number (thousand)	Annual rate (percent)	1970 (percent)	1960 (percent)
Nonmetro	21,202	18,450	2,752	1.5	26	28
Manufacturing	4,904	3,650	1,254	3.4	25	22
Nonmanufacturing	16,298	14,800	1,498	1.0	26	30
Nonfarm wage and salary	16,188	12,130	4,058	3.3	23	23
Exclusive of manufacturing	11,284	8,480	2,804	3.3	22	23
Other goods-producing	3,487	4,473	−986	−2.2	50	58
Nonfarm [2]	1,055	922	133	1.4	28	30
Construction	679	473	206	4.4	21	19
Mining	376	449	−73	−1.6	62	65
Farm	2,432	3,551	−1,119	−3.2	75	76
Service-performing	11,942	9,474	2,468	2.6	24	25
Wage and salary	9,360	6,705	2,655	4.0	22	23
Private industries	5,701	4,198	1,503	3.6	19	20
Trade	3,095	2,443	652	2.7	21	22
Service groups	2,118	1,397	721	5.2	19	20
Fire [3]	488	358	130	3.6	14	14
Government	3,659	2,507	1,152	4.6	29	30
Other nonfarm [4]	2,582	2,769	−187	−.7	32	34
TCU [5]	869	853	16	.2	20	21
Metro [6]	60,468	47,560	12,908	2.7	74	72
Manufacturing	14,907	13,249	1,658	1.3	75	78
Nonmanufacturing	45,561	34,311	11,250	3.3	74	70
Nonfarm wage and salary	54,207	40,980	13,227	3.2	77	77
Exclusive of manufacturing	39,300	27,731	11,569	4.2	78	77
Other goods—producing	3,543	3,300	243	.7	50	42
Nonfarm [2]	2,723	2,198	525	2.4	72	70
Construction	2,494	1,956	538	2.8	79	81
Mining	229	242	−13	−.5	38	35
Farm	820	1,102	−282	−2.6	25	24
Service-performing	38,433	27,854	10,579	3.8	76	75
Wage and salary	32,992	22,376	10,616	4.7	78	77
Private industries	23,835	16,495	7,340	4.4	81	80
Trade	11,585	8,586	2,999	3.5	79	78
Service groups	9,142	5,671	3,471	6.1	81	80
Fire [3]	3,108	2,238	870	3.9	86	86
Government	9,157	5,881	3,276	5.6	71	70
Other nonfarm [4]	5,441	5,478	−37	−.1	68	66
TCU [5]	3,585	3,157	428	1.4	80	79

[1] Adapted from State employment security agency estimates.
[2] Private wage and salary only (other nonfarm component included with services).
[3] Finance, insurance, and real estate industries.
[4] Self-employed, private household workers, and unpaid family help.
[5] Transportation, communications, and utilities industries.
[6] Metro areas consist essentially of standard metropolitan statistical area designations Jan. 7, 1972.

TABLE 5.—MANUFACTURING EMPLOYMENT: RURAL AND OTHER METRO-NONMETRO COUNTIES, UNITED STATES 1959–69 [1]

Class and subclass	Counties (number)	Employment (thousands)		1959–69 increase			U.S. share (percent)		
		1969	1959	10-yr number (thousands)	Annual rate (percent)	10-yr gain per county (number)	1969	Gain	1959
All manufacturing	3,009	20,177	16,173	4,004	2.5	1,290	100	100	100
Nonmetro	2,613	4,742	3,381	1,361	4.0	520	23	34	21
Lesser urban [2]	261	1,917	1,441	476	3.3	1,875	9	12	9
Rural-partly rural	2,352	2,825	1,940	885	4.6	375	14	22	12
Small city [3]	459	1,444	1,009	435	4.3	950	7	11	6
Small town	996	1,091	747	344	4.6	345	6	8	5
Entirely rural	897	290	184	106	5.8	120	1	3	1
Metro [4]	486	15,435	12,792	2,643	2.1	5,440	77	66	79
Single county [5]	135	3,880	2,988	892	3.0	6,605	19	22	18
Multicounty	351	11,555	9,804	1,751	1.8	4,990	58	44	61
Core [6]	148	9,015	7,965	1,050	1.3	7,095	45	26	
Ring	78	2,075	1,518	557	3.7	7,140	11	14	
Transition	42	227	167	60	3.6	1,430	1	2	1
Fringe [7]	83	238	154	84	5.5	1,010	1	2	1
Small city	57	196	129	67	5.2	1,175	1	2	1
Small town	21	38	21	17	8.1	810	(8)	(8)	(8)
Entirely rural	5	4	4				(8)		(8)

[1] Adapted from 1959 and 1969 county business patterns reports.
[2] Mostly nonmetro counties (210) with 25,000 to 49,999 urban population in 1970, but includes another 51 units with 50,000 or more 1970 urban population
[3] Small city, small town, and entirely rural subclasses consist of nonmetro counties with 1970 urban population, respectively, of 10,000 to 24,999, 2,500 to 9,999, and under 2,500.
[4] Metro counties consists of standard metropolitan statistical area designations of Jan. 7, 1972, modified chiefly to adjust delineations by towns in New England to county equivalents.
[5] SMSA's consisting of a single county.
[6] Counties containing the SMSA central city or cities; ring units represent metro counties with respective multicenter or composite urban population in 1970 of 50,000 or more, and transition counties, 25,000 to 49,999
[7] Fringe units represent counterparts of rural and partly rural counties in terms of respective sizes of 1970 urban population.
[8] Less than 0.5 percent.

The annual rate of increase (5.8 percent) in the nearly 900 entirely rural counties, that is, nonmetro units lacking a 1970 population center of at least 2,500, was considerably above ratios for the small city and small town subclasses. In comparison, the two partly rural subgroups accounted for almost 800,000 of the nearly 900,000 manufacturing jobs added in the 1959–69 period in the rural and partly rural counties as a whole.

A rate of gain of 3 percent per year in manufacturing employment in the 135 single-county metro units closely approximated the annual increment of 3.3 percent shown by table 5 for the 261 lesser urban counties. The main distinction was in the much larger number of manufacturing jobs added per county over the 10-year span in the single-county metro units.

The average number of manufacturing workers added in the single-county metro units was almost as great as in the 148 core counties—a subgroup containing such major industrial centers as New York City, Chicago, and Detroit. Reflected thereby was the inclusion in the subclass of a fairly large number of former satellite and other outlying centers that had attracted manufacturing facilities moving outward and beyond the suburbs of many of the older industrial districts of the Northeast, the Great Lakes Industrial Belt, and the Southern Industrial Crescent.

Even so, there was considerable movement of industry to the fairly immediate suburbs—a form of decentralization underscored by the comparatively high rates of increase in manufacturing employment

indicated for the 78 metro ring counties. In part, the about equally favorable gain in manufacturing jobs shown for the 42 transition, counties reflected a similar migration, particularly of light industry, to close-in locations. Also in evidence, as in a great many nonmetro as well as other metro units, was a relocation process that sought out industrial sites in more outlying or even comparatively remote communities, especially those readily accessible to an Interstate Highway, and having adequate water supplies, hospitals, schools, and other services and facilities.

The 83 metro fringe counties include a strong representation of essentially rural and partly rural units that were added in the past few years to the Indianapolis, Columbus, and other SMSA's, primarily on the strength of having specified percentages of their work forces commuting to the core counties in which these and other SMSA central cities are located.[4]

The main reason the fringe units stood out rather conspicuously from their 2,352 rural and partly rural counterparts arose from the fact that, as a small and fairly select subgroup, the 83 counties contained a fairly sizeable percentage of units with prime locational and other advantages for industrialization.

Distribution of 1969 manufacturing employment

A total of 71 of the 261 leser urban counties, or more than one-fourth, included 10,000 or more manufacturing jobs in 1969 (table 6). More than double that number—166 units—had a minimum of 1,000 manufacturing workers, another 18 had at least 500, and only six were the source of 100–499 employment opportunities in manufacturing.

Although only 14 of the 2,352 rural and partly rural counties contained as many as 10,000 manufacturing workers in 1969, 819 units, or more than a third, supplied 1,000 or more manufacturing jobs. Another 381 counties, or 16 percent, had manufacturing employment of at least 500. The remaining 1,152 units, or nearly half of the 2,352 rural and partly rural counties, were about evenly divided between the 579 units having 100–499 manufacturing workers, and the 573 counties with less than 100, or quite frequently, no manufacturing jobs whatsoever in 1969.

Illustrative of the importance of size—and the adequacy of inadequacy of community services and facilities—on the distribution of manufacturing activity was the concentration of 432 of the 573 counties with less than 100 manufacturing workers in 1960, or three-fourths, in the entirely rural subclass.

Expressed another way, the units containing fewer than 500 manufacturing workers included about 10 percent of the 459 small-city counties, 40 percent of the 996 small-town entities, and more than 75 percent of the 897 entirely rural communities.

[4] Excluded from the fringe group are many similarly located counties that have not been added to SMSA coverage on the basis of commuter linkages or related criteria.

TABLE 6.—MANUFACTURING EMPLOYMENT: DISTRIBUTION BY SIZE GROUPS, RURAL AND OTHER METRO-NONMETRO COUNTIES, 1969[1]

Class and subclass	Counties	Size group: 50,000–over	25,000–49,999	10,000–24,999	5,000–9,999	2,500–4,999	1,000–2,499	500–999	100–499	Under 100
Nonmetro	2,613		6	79	170	272	529	399	585	573
Lesser urban[2]	261		6	65	70	52	44	18	6	
Rural—partly rural[3]	2,352			14	100	220	485	381	579	573
Small city	459			14	83	121	128	64	47	2
Small town	996				16	90	297	194	260	139
Entirely rural	897				1	9	60	123	272	432
Metro[4]	486	76	65	118	75	69	48	22	11	2
Single county[5]	135	14	20	48	31	13	7	2		
Multicounty	351	62	45	70	44	56	41	20	11	2
Core[6]	148	50	31	38	12	10	4	1	2	
Ring	78	12	14	24	11	9	5	3		
Transition	42			6	12	10	13		1	
Fringe[7]	83			2	9	27	19	16	8	2
Small city	57			2	8	22	15	4	5	1
Small town	21				1	5	3	10	2	
Entirely rural	5						1	2	1	1

[1] Adapted from 1959 and 1969 county business patterns reports
[2] Mostly nonmetro counties [210] with 25,000–49,999 urban population in 1970, but includes another 51 units with 50,000 or more 1970 urban population.
[3] Small city, small town, and entirely rural subclasses consist of nonmetro counties with 1970 urban population, respectively, of 10,000–24,999, 2,500–9,999, and under 2,500
[4] Metro counties consist of standard metropolitan statistical area designations of Jan 7, 1972, modified chiefly to adjust delineations by towns in New England to county equivalents.
[5] SMSA's consisting of a single county
[6] Counties containing the SMSA central city or cities; ring units represent metro counties with respective multicenter or composite urban population in 1970 of 50,000 or more, and transition counties, 25,000–49,999
[7] Fringe units represent counterparts of rural and partly rural counties in terms of respective sizes of 1970 urban population.

TABLE 7.—MANUFACTURING EMPLOYMENT: DISTRIBUTION BY GROWTH GROUPS, RURAL AND OTHER METRO-NONMETRO COUNTIES, 1969

Class and subclass	Counties	Growth group: 10,000–over	5,000–9,999	2,500–4,999	1,000–2,499	500–999	250–499	100–249	0–99	Decrease
Nonmetro	2,613	4	27	89	323	314	355	312	615	574
Lesser urban[2]	261	3	18	51	79	28	25	15	10	32
Rural—partly rural[3]	2,352	1	9	38	244	286	330	297	605	542
Small city	459	1	9	32	122	78	74	44	34	65
Small town	996			6	103	165	168	128	200	226
Entirely rural	897				19	43	88	125	371	251
Metro[4]	486	82	64	85	82	41	27	18	10	77
Single county[5]	135	21	20	33	20	10	5	6		20
Multicounty	351	61	44	52	62	31	22	12	10	57
Core[6]	148	41	25	23	17	4	6	2	1	29
Ring	78	19	15	14	12	5	3		1	9
Transition	42		2	9	11	6	4	1	1	8
Fringe[7]	83	1	2	6	22	16	9	9	7	11
Small city	57	1	2	4	17	15	4	4	3	7
Small town	21			2	5	1	3	4	3	3
Entirely	5						2	1	1	1

[1] Adapted from 1959 and 1969 county business patterns reports.
[2] Mostly nonmetro counties [210] with 25,000–49,999 urban population in 1970, but includes another 51 units with 50,000 or more 1970 urban population.
[3] Small city, small town, and entirely rural subclasses consist of nonmetro counties with 1970 urban population, respectively, of 10,000–24,999, 2,500–9,999, and under 2,500
[4] Metro counties consist of standard metropolitan statistical area designations of Jan. 7, 1972, modified chiefly to adjust delineations by towns in New England to county equivalents.
[5] SMSA's consisting of a single county.
[6] Counties containing the SMSA central city or cities, ring units represent metro counties with respective multicenter or composite urban population in 1970 of 50,000 or more, and transition counties, 25,000–49,999.
[7] Fringe units represent counterparts of rural and partly rural counties in terms of respective sizes of 1970 urban population.

Ranging downward from the industrial concentrations included in New York City, Cook County (Chicago), and Wayne County (Detroit), 76 metro counties, chiefly core units, contained at least 50,000 manufacturing jobs in 1969. Typically, the remaining single-county, core, and ring units had much greater employment outlets in manufacturing than either the 42 transition and 83 fringe counties, or their numerous nonmetropolitan area counterparts. Even so, there were eight units in the three subclasses that had fewer than 1,000 manufacturing jobs in 1969.

Geographic dispersion of 1969 manufacturing employment

The distribution of 1969 manufacturing employment in the major urban, rural and partly rural counties of the Northeastern United States (fig. 1) reflecting successive extensions outward of industrial activity from the major concentrations centered in Megalopolis, the Hudson-Mohawk Valleys, along Lake Ontario, and from Pittsburgh and lesser metro centers in Northern Appalachia.

Relatively large present-day concentrations of manufacturing jobs in the nonmetro communities in and along the margins of the Great Lakes Industrial Belt represent the decentralization of industrial activity, once largely centered in the Cleveland, Detroit, Chicago, and other major complexes, into localities, such as the communities paralleling the Ohio and Indiana Turnpikes, that, until recently, had relatively small industrial bases.

A somewhat comparable filling in process is exhibited by the distribution of 1969 manufacturing employment outside the metro areas of the Southern Industrial Crescent. In the Carolina Coastal Plain and the Tennessee Valley-Southern Appalachia segments of the Upper Southeast, however, the process appears more one of widespread diffusion, rather than a spill over of industry into nearby satellite or fringe communities.

In the lower Southeast and the Midsouth, manufacturing employment remains strongly oriented to the larger local population and employment centers. There also is evidence of an identification with such major highway-railway transportation corridors as that between Savannah and Valdosta, Ga., and with the transshipment points for bauxite ore and other imports along the Lower Mississippi River in Louisiana.

Similarly reflected by the small sizes shown by figure 1 for 1969 manufacturing employment in such comparatively large local centers as Bismark, N. Dak., Cheyenne, Wyo., Roswell, N. Mex., and Flagstaff, Ariz., is the reduced reliance on industrialization, extending westward from parts of the Midsouth, particularly in eastern Texas, and the Great Plains transition zone of western Minnesota, Iowa, and Missouri.

In the Great Plains and Intermountain region, where most towns are small and counties preponderantly rural, limited dependence on industry is further evidence by the large number of units with little if any manufacturing employment in 1969. A comparable but less widespread paucity of manufacturing jobs shows up in Upper New England, the Upper Lakes States, Central Appalachia, and the more rural and isolated localities in the Lower Southeast and the Midsouth.

A total of 21 of the 261 lesser urban units not only added 5,000 or more manufacturing jobs in the 1959–69 period, but 151 counties,

or about 60 percent, gained a minimum of 1,000 manufacturing workers (table 7). Another 68 units, or about a fourth, added from 100 to 999 manufacturing workers, with most (32) of the remaining units losing manufacturing employment in the 10-year interval.

Only 10 of the 2,352 rural and partly rural counties gained 5,000 or more manufacturing jobs between 1959 and 1969, but 292 units, or 12 percent, added at least 1,000 manufacturing workers over the 10-year span. A total of 913 counties, or approximately two-fifths, were about evenly divided between units adding 500–999, 250–499, and 100–249 employment opportunities in manufacturing. Altogether, more than one-fourth (605 units) gained fewer than 100 manufacturing jobs, and nearly another fourth (542 units) lost manufacturing employment in the 1959–69 period.

Again the correlation between size and growth is very apparent. About 20 percent of the 459 small-city type units, more than 40 percent of the 996 small-town counties, and nearly 70 percent of the entirely rural entities either experienced little increase or sustained losses in manufacturing employment between 1959 and 1969.

A total of 41 of the 148 metro core units, or 28 percent, added 10,000 or more manufacturing jobs in the 10-year period. For the 78 ring counties, the proportion—24 percent—was about equally high, but the ratio was considerably lower—16 percent—among the 135 single-county units.

The 78 ring counties not only included a relatively high proportion (77 percent) of the units gaining at least 1,000 manufacturing workers, but a comparatively small number of entities—nine—lost manufacturing employment between 1959 and 1969.

With relatively few units, growth patterns characterizing the 42 transition and 83 fringe counties were not clear cut. Nevertheless, as with the distribution of 1969 manufacturing employment, there were strong resemblances to the dispersals indicated by table 7 for their 261 lesser urban and 2,352 rural and partly rural equivalents among nonmetropolitan counties.

Geographic shifts in 1959–69 manufacturing employment

New plant locations and expansions in the 1960's contributed to substantial gains in manufacturing employment (fig. 2) in many of the same rural and other nonmetro counties, particularly in the Great Lakes Industrial Belt, the Southern Industrial Crescent, and the Carolina Coastal Plain, in which figure 1 showed much of present-day manufacturing activity outside the metro areas to be concentrated. Additions to manufacturing jobs were comparatively small in outlying nonmetro communities in the Northeast and along the Great Lake Industrial Belt. Increases were especially pronounced in the parts of Tennessee Valley-Southern Appalachia that had experienced tremendous outmigration and population losses in the 1950's.

Also denoted by figure 2 is the relatively widespread distribution of rural and other nonmetro counties with little or no gain if not losses in manufacturing employment in the 1959–69 period.

Particularly in the strongly rural counties of the Great Plains, the Intermountain region, and Alaska, increases and decreases typically reflected minor additions or declines in the few manufacturing jobs available to begin with.

In the Eastern United States and the Pacific Northwest, much the same pattern of minor gains and losses prevailed in a great many rural partly rural communities. Otherwise, statistics for a fairly large

31-864—74——4

number of other counties revealed declines that could only have resulted from losses of one or more plants with sizable numbers of workers.

Especially vulnerable to close-downs in the past decade or two were old sawmill and other basic woodworking establishments, and textile and apparel mills, together with farm-support, mining-auxiliary, and similar facilities.

INDUSTRIALIZATION AND OTHER RURAL DEVELOPMENT ALTERNATIVES

Contrasted with a fairly pronounced downturn in manufacturing employment in metro areas in the past 2 or 3 years, manufacturing job levels in rural and other nonmetro communities remained remarkably stable and may well have expanded. Nevertheless, there has been a definite slowdown, beginning about 1967, in the rate of manufacturing job formation in the many nonmetro counties, mostly in the Eastern United States, in which 1959–69 gains, as was brought out in the preceding section, were particularly impressive.

As was also emphasized previously, industrialization has contributed few if any additional nonfarm jobs in an equally large or larger number of rural and other nonmetro counties, particularly in the Great Plains, the Intermountain region, and Alaska. For most of these counties, it cannot realistically be expected to do so in the future. Accordingly, an equally brief exploration is added on the directions rural development might conceivably take in such communities, with stress not only on economic advantages, but the ecological and related challenges that would have to be surmounted.

TABLE 8.—MANUFACTURING EMPLOYMENT FLUCTUATIONS IN DURABLE AND NONDURABLE GOODS INDUSTRIES AND INDIVIDUAL COMPONENTS IN RESPONSE TO CYCLICAL SWINGS IN ECONOMIC ACTIVITY, UNITED STATES, MARCH 1957 TO APRIL 1972 [1]

[In thousands]

Industry group	March 1957 peak	May 1958 trough	Febru- ary 1960 peak	Febru- ary 1961 trough	Janu- ary 1967 peak	July 1967 trough	Sep- tember 1969 peak	August 1971 trough	April 1972 current
All manufacturing	17,411	15,652	17,153	16,076	19,606	19,335	20,252	18,457	18,855
Durable goods	10,032	8,598	9,776	8,872	11,556	11,381	11,968	10,485	10,743
Ordnance	144	151	214	239	294	318	306	191	185
Lumber-wood	672	597	653	574	604	593	606	583	593
Furniture-fixtures	374	352	390	359	463	448	483	456	483
Stone-clay-glass	605	547	618	567	636	624	657	627	650
Primary metals	1,386	1,140	1,332	1,088	1,373	1,302	1,381	1,156	1,218
Fabricated metals	1,177	1,042	1,172	1,060	1,376	1,362	1,452	1,331	1,364
Machinery (Nelec)	1,628	1,347	1,512	1,411	1,983	1,971	2,041	1,775	1,803
Electrical equipment	1,35	1,114	1,490	1,447	1,589	1,935	2,049	1,772	1,830
Transportation equipment	1,964	1,555	1,642	1,410	1,955	1,951	2,078	1,754	1,753
Instruments	344	321	360	342	447	451	477	430	440
Miscellaneous	387	368	393	375	436	426	438	410	424
Nondurable goods	7,379	7,054	7,377	7,204	8,050	7,954	8,284	7,972	8,112
Food-kindred	1,822	1,771	1,793	1,777	1,791	1,790	1,799	1,748	1,761
Tobacco	99	94	96	92	90	87	83	70	74
Textiles	999	903	942	883	966	947	992	959	990
Apparel	1,217	1,163	1,244	1,200	1,425	1,390	1,409	1,351	1,375
Paper-allied	573	558	601	596	676	682	715	681	696
Printing-publishing	872	871	906	914	1,039	1,049	1,100	1,080	1,095
Chemical-allied	809	789	826	820	992	1,000	1,064	1,004	1,001
Petroleum-coal	234	223	216	204	182	182	189	188	189
Rubber-plastics	378	330	387	359	530	482	596	582	619
Leather	376	352	366	359	359	345	337	309	312

[1] Statistics adapted from seasonally adjusted series summarized in "Employment and Earnings, United States, 1909–70"; individual months and years represent high and low points of manufacturing employment identified with the 1957–58 and 1960–61 recessions, and the 1966–67 and 1969–71 economic slowdowns.

Rural industrialization

Manufacturing jobs in April 1972 remained about 1.4 million under the September 1969 peak (table 8). The same as with 1957–58 and 1960–61 reductions in manufacturing employment, decreases were primarily in the durable goods industries, and except for a few ordnance and similar facilities, had an almost exclusive impact on metro areas, extending from New England to the Pacific coast.

Whether in durable or nondurable goods industries, or in metro or nonmetro areas, most of the gain in manufacturing employment between the low point of February 1961 and the September 1969 peak was concentrated in the 1961–67 period.

The ups and downs in manufacturing jobs that have occured in the past decade and more in metro areas were so identified with major shifts in demand for steel and other primary metals, heavy machinery and transportation equipment, and communications and related electrical equipment as to be readily identified with (1) initial buildups and subsequent cutbacks in Department of Defense and National Aeronautics and Space Administration procurement, (2) the ebbs and flows of the capital investment boom, and (3) the combined impact of obsolescence and plant relocation on the closeout of long-established facilities, especially in the older industrial districts of the Northeast and the Great Lakes Industrial Belt.

Because rural and other nonmetro areas contain a mixture of durable and nondurable goods industries, it has been necessary to resort exclusively to case studies of counties either gaining or losing comparatively large numbers of manufacturing jobs to develop information on the expansions and contractions taking place in employment levels prior to and after the January 1967 peak. Even so, fairly positive identification has been possible of individual or specific items, in the production of which rates of job growth during the 1961–67 economic upturn have been maintained and in some instances stepped-up further in the past few years. Similarly identified were other items, for which demand and production had fallen off sufficiently since 1967 to reflect a reduced momentum of job growth, if not fewer employment opportunities than 5 years ago.

Demand has continued to expand for the many items—mobile homes, campers, pleasure boats, garden and power tools, and so on—production of which has increasingly shifted to small cities, towns, and even entirely rural communities in recent years.

The current boom in home building has been accompanied by greatly enlarged demand, compared with 1967 or earlier, for building materials, furniture and fixtures, and household appliances—items for which today's consumers also have been turning more and more to rural America.

Food processing, partially concentrated in nonmetro communities, and pulp and paper production, more exclusively located outside metro areas, are illustrative of industries for which output is not only relatively unaffected by ups and downs in economic conditions, but for which employment has progressively expanded throughout the past 10 or 12 years.

There were also fairly sharp increases, especially in the 1961–67 period, in employment in apparel and other low-technology industries as plants were opened or production expanded in many rural and partly rural communities, particularly in Appalachia and the Ozarks. Con-

cern over the low-wages paid and the "footloose" nature of many undertakings was reduced by the realization that a large number of jobs were being opened for women, for many of whom previous employment opportunities, if any, were limited to farm work and other poor-paying occupations.

Particularly in the TVA region, there was a more or less simultaneous addition or expansion of plants in many communities that, while infrequently identifiable with high-technology industries, paid relatively high wages and mainly employed men. Emerging, accordingly, seemed to be a balanced form of industrial growth that, by adding a second regular paycheck, could enable many low-income families to move out of poverty.

Since 1967, however, an increasing flood of imports of wearing apparel, radios, tape recorders, TV receivers, shoes, and a host of similar items appears to have exerted a brake on further expansion in these and other localities in which output had rapidly increased during the 1961–67 economic upturn. Older mills had to be closed, and pending the recovery now seemingly in prospect, many textile, apparel, and other plants had to resort to short shifts if not protracted layoffs.

Table 8 establishes that a great many other individual plants are forced to close their doors each year because of obsolescence, financial difficulties, market losses, and related causes. Even so, there is no evidence, except possibly for an increase in the paper mills, smelters, and other factories having to shut down because of inability to meet pollution abatement requirements, of any appreciable expansion in the number of plant closures in the past 5 or 6 years.

Other rural development alternatives

Much of the Great Plains, the Intermountain region, Alaska, and fairly extensive areas elsewhere not only have little or no industry at this time, but prospects for future industrialization are exceedingly limited. Similarly, timber, grazing, irrigation and dry-land farming, and mining copper, uranium, and other minerals have, with few exceptions, already attained maximum development and utilization. Thus, outdoor recreation and other expanding activities, arising from increases in leisure time, undoubtedly afford the best possibilities, directly and indirectly, for creating additional nonfarm employment and income.

Exploitation of coal and petroleum and natural gas resources has become a reality in such broadly separated localities as the Dakotas, the North Slope, and the Four-Corners area of southwestern Colorado, southeastern Utah, northwestern New Mexico, and northeastern Arizona. With increased development, however, problems of despoiled landscapes, air pollution, and destruction of wildlife habitats have come under immediate challenge by ecologists and environmentalists.

Another development that has made exceptionally rapid growth in the past few years has stemmed from the attraction of local water meccas, natural and man-made, initially for second homes, and more recently, for year-round residences, including places acquired for retirement purposes. In creating these and other new homes in the country, a relatively large number of local jobs were opened up in construction, utilities, communications, and in trade and other service-performing industries.

An added advantage of development of this sort arises from the boosting of tax revenues, without contributing to comparable increases in the costs of local government. Although serious water supply, sewage and waste disposal, urban-like clutter and sprawl, and similar problems have emerged, resolution is or can be brought about through improvements in rural zoning laws, and the enactment of building, sanitation, and other codes specifically applicable to rural areas.

The Great Plains and the Intermountain region have long had a major share of the Nation's prime tourist and recreation attractions: The Rockies, Yosemite, the Grand Canyon, Black Hills, and the Badlands, to mention only a few of the better known. As construction on Interstates 40, 70, 80, 90 and other linkages of the Interstate Highway System has neared completion, accessibility to these and other resort and pleasure centers not only has been improved, but transcontinental travel greatly facilitated.

As a result, there has been a notable pickup en route in service station, motel, and similar jobs. There also is some evidence of relocation of population from more remote or out-of-the-way localities, and of the centering of hospitals, clinics, shopping centers, and similar facilities in close-by cities or towns.

The decentralization of food processing, distribution, and related facilities that has taken place in the past decade or so has added nonfarm jobs in a broad cross-section of farming communities. The West's dude ranch not only antedated the East's vacation farm as a supplemental source of income, but both appear to have maintained a largely over-looked but steady growth.

RURAL INDUSTRIAL GROWTH IN THE SOUTHEAST SINCE 1962*

[By Claude C. Haren and Nandor J. Cheplo[1]]

The Southeast's rural and other nonmetro areas added more than 600,000 manufacturing jobs between 1962 and 1972.[2] This was nearly double the increase in the region's metro areas, and accounted for one-third of the entire U.S. expansion over the 10-year period.

The region's nonmetro communities gained a million other nonfarm wage and salary jobs, or some 1½ times more than were opened up in manufacturing. Approximately 3 million mostly service and other nonmanufacturing jobs were added in the metro Southeast.

Because of the relatively widespread distribution throughout the region of both metro and larger nonmetro centers, many of the newly created employment opportunities were filled by displaced farmers, teenagers, and other jobseekers from small towns and entirely rural communities. Frequently, individuals commuted to and from work on a daily or weekly basis. For others, new jobs involved moving back and forth to construction and other seasonal or short-run employment. For still others, they meant relocating permanently.

The recent history of Tifton, our host city, illustrates the tremendous impact that location on an interstate highway can have on employment and income growth; in Kentucky, we have seen the same thing with a parkway system [*6, 10*].[3] As in scores of the Southeast's other nonmetropolitan centers, economic development here in Tifton has not only encompassed a wide range or diversity of job opportunities, in and outside manufacturing, but it also has seemingly attained the momentum required for growth to constantly beget new or additional growth.

In many of the Southeast's smaller nonmetro communities, new plant locations or enlargement of established facilities have greatly improved household incomes, stimulated construction of new housing or modernization of existing structures, contributed to the upgrading of schools, hospitals, and other community services and facilities, and created new suburban shopping centers or resulted in the refurbishing of old, in-town business districts.

In the region's other smaller but economically disadvantaged or depressed communities, too few manufacturing or other nonfarm

*An enlargement and revision of an oral presentation of maps and supporting tables at the Southeastern Regional Rural Industrialization Conference, Rural Development Center, Tifton, Ga., May 8–10, 1973.

[1] Economist and regional economist, Research Division.

[2] For the present paper, the Southeast consists of the 12 States, together with the District of Columbia, extending from Delaware to Mississippi, and coinciding with the South Atlantic and East South Central geographic divisions of the Bureau of the Census.

[3] Italic numbers in brackets refer to items in literature cited, pp. 65, 66.

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jobs were added to offset further declines in the farmwork force or reduce chronic unemployment and underemployment in the nonfarm sector.

THE ECONOMIC OUTLOOK FOR THE NEXT FEW YEARS

The energy-environmental crisis and the increasing unpredictability regarding imports and exports, together with growing uncertainty concerning the size and composition of the labor force available in the 1980's and 1990's, becloud the future economic outlook, especially 10, 20, or more years hence.

All in all, however, there is every reason to believe that the Southeast will continue to set the pace for the U.S. economy throughout the remainder of the 1970's [*2, 4, 9, 23*].

The nonmetro Southeast could not only retain but increase its share of all nonfarm wage and salary employment, nonmanufacturing as well as manufacturing, in the next 10 years.

For manufacturing, prospects for the future are brightened by the ability of the food processing, pulp and paper, building materials, home furnishings and appliances, and other industries located in rural and other nonmetro communities to grow more or less, independently of upswings and downturns in economic activity [*3, 9, 27*]. The complete turnaround in textiles in recent months [*19*] should continue to bolster employment for some time.

Construction of new industrial plants and modernization of existing facilities may have reached a plateau in the nonmetro Southeast. Nonetheless, it is a plateau pegged to the high level of construction activity attained by 1967. It also is a level that could well move upward as demand increase, and not necessarily because plants and equipment are obsolete or inefficient [*17, 30*].

Internationally, rising popular aspirations and increasing dissatisfaction of many of the developing nations with wage and other conditions resulting from previous contracts with multinational corporations [*20*] could well result in fairly drastic alterations in export and import balances in forthcoming years. In the Southeast, this could contribute to an acceleration in the expansion of today's high-technology industry into rural and other nonmetro communities, especially in the Piedmont Industrial Crescent [*1, 4, 5*].

Cutbacks in personnel and operations and, in some instances, outright closure of military installations have adversely affected the economies of a number of local communities. If, however, as in the phasing out of Stewart Air Force Base at Murfreesboro, Tenn., vacated warehouse and other facilities are made available promptly to prospective manufacturers, the adverse impact can be highly transitory.

With enrollments apparently already leveling off at institutions of higher education, and especially as many smaller private schools run into increasing financial difficulties, there can be little question that widespread cutbacks, if not complete closeouts, are in the fairly immediate offing throughout the Southeast. However, considering the need for advanced technological training for adults as well as

teenagers, to meet future manpower development needs within the region, this again could well be a short-run problem.

Otherwise, there's much facelifting or civic renewal yet to be undertaken in many of the Southeast's nonmetro centers. The main challenge lies in whether local people want the added growth that recent experience would indicate may well occur.

THE SOUTHEAST: THE NATION'S ECONOMIC PACESETTER

The Southeast has consistently set the pace for the U.S. economy throughout the 1960's and extending into the 1970's [*2, 4, 9*]. Rates of nonfarm job formation and income expansion have continued above the national averages. New housing has been started at a faster clip, retail sales and bank deposits have moved upward more briskly, unemployment rates have been scaled down more sharply, and the Southeast's financial institutions have become increasingly capable of meeting internal capital needs.

Changing birth and death rates, the continued influx of retirees into the Southeast, the accelerating exodus of former suburbanites to rural and other outlying locations, cutbacks in trainee programs at Fort Benning and other military installations, and return of Vietnam-era veterans to civilian life have already made many of the statistics from the 1970 Census of Population increasingly out-of-date and no longer descriptive of the situation in a large number of localities.

In this and succeeding sections of the paper, accordingly, brief mention will be made of the main instances where these and similar changes have modified age and other population characteristics, either as reported in 1970 or as reflected in 1960–70 trends.

Comparative shifts in employment and unemployment

The Southeast added manufacturing jobs between 1962 and 1972 at a yearly rate of 3.4 percent—triple the U.S. average and giving the region more than half of the overall gain in manufacturing employment in the 10-year period (table 1).

For nonfarm wage and salary employment other than in manufacturing, an annual gain of 5 percent in the Southeast, against a U.S. increase of 4 percent, was translated into the addition of 3.6 million nonmanufacturing jobs, compared with the 1 million opened up in the region's industrial plants.

The tempo of the job pickup in the Southeast's construction and TCU[4] industries exceeded the U.S. pace by approximately 2-to-1. Increased demand in the late 1960's and early 1970's for bituminous coal for the generation of electricity gave the Southeast a small boost in mining jobs, compared with an equally minor decline nationally.

In the Southeast's service-performing industries, wage and salary jobs in the private sector expanded by 5.3 percent annually, compared with 4.2 percent nationwide. For workers in government, the respective rates of increase were 5.5 and 5 percent.

[4] Transportation, communications, and utilities industries.

TABLE 1.—EMPLOYMENT AND UNEMPLOYMENT, SOUTHEAST AND UNITED STATES, 1962-72[1]

[In thousands]

Area and designation	Number		1962-72 increase	
	1972	1962	10-year number	Annual percentage rate
SOUTHEAST				
Employment	17,769	13,469	4,300	3.2
Manufacturing	3,936	2,933	1,003	3.4
All other	13,833	10,536	3,297	3.1
Nonfarm wage and salary	14,859	10,203	4,656	4.6
Nonmanufacturing	10,923	7,270	3,653	5.0
Other goods-producing	1,842	1,958	—116	—.6
Nonfarm [2]	982	694	288	4.1
Construction	836	554	282	5.1
Mining	146	140	6	.4
Farm	860	1,264	—404	—3.2
Service-performing	11,111	7,904	3,207	4.1
Wage and salary	9,061	5,902	3,159	5.4
Private industries	5,973	3,912	2,061	5.3
Trade	3,049	2,088	961	4.6
Service groups [3]	2,227	1,358	869	6.4
Fire [4]	697	466	231	5.0
Government	3,088	1,990	1,098	5.5
Other nonfarm [5]	2,050	2,002	48	.2
TCU [6]	880	674	206	3.1
Unemployment	737	880	—143	—1.6
Rate	4.0	6.1		
UNITED STATES				
Employment	82,339	67,199	15,140	2.3
Manufacturing	18,514	16,622	1,892	1.1
All other	63,825	50,577	13,248	2.6
Nonfarm wage and salary	70,932	54,192	16,740	3.1
Nonmanufacturing	52,418	37,570	14,848	4.0
Other goods-producing	7,018	7,620	—602	—.8
Nonfarm [2]	3,788	3,136	652	2.1
Construction	3,180	2,495	685	2.7
Mining	608	641	—33	—.5
Farm	3,230	4,484	—1,254	—2.8
Service-performing	52,389	39,095	13,294	3.4
Wage and salary	44,212	30,592	13,640	4.5
Private industries	30,674	21,572	9,102	4.2
Trade	15,171	11,215	3,956	3.5
Service groups [3]	11,745	7,603	4,142	5.4
Fire [4]	3,758	2,754	1,004	3.6
Government	13,538	9,000	4,538	5.0
Other nonfarm [5]	8,177	8,523	—346	—.4
TCU [6]	4,418	3,862	556	1.4
Unemployment	4,956	4,570	386	.8
Rate	5.7	6.4		

[1] Adapted from State employment security agency estimates for mid-March.
[2] Private wage and salary only (other nonfarm component included with services).
[3] Includes miscellaneous.
[4] Finance, insurance, and real estate industries.
[5] Self-employed, private household workers, and unpaid family help.
[6] Transportation, communications, and utilities industries.

TABLE 2.—NONFARM WAGE AND SALARY EMPLOYMENT AND UNEMPLOYMENT, SOUTHEAST AND UNITED STATES, JANUARY 1972-73 [1]

[In thousands]

Area and designation	Number		1972-73 increase	
	1973	1972	Number	Percentage, rate
SOUTHEAST				
Nonfarm wage and salary employment	15,353	14,750	603	4.1
Manufacturing	4,069	3,911	158	4.0
Nonmanufacturing	11,284	10,839	445	4.1
Construction	866	827	39	4.7
Mining	142	144	−2	−1.4
Trade	3,233	3,081	152	4.9
Service [2]	2,325	2,225	100	4.5
Fire [3]	730	694	36	5.2
Government	3,078	2,994	84	2.8
TCU [4]	910	874	36	4.1
Unemployment	711	789	−78	−9.9
UNITED STATES				
Nonfarm wage and salary employment	73,308	70,577	2,731	3.9
Manufacturing	19,211	18,354	857	4.7
Nonmanufacturing	54,097	52,223	1,874	3.6
Construction	3,335	3,158	177	5.6
Mining	617	612	5	.8
Trade	15,898	15,273	625	4.1
Service [2]	12,210	11,725	485	4.1
Fire [3]	3,904	3,750	154	4.1
Government	13,629	13,331	298	2.2
TCU [4]	4,504	4,374	130	3.0
Unemployment	4,354	4,937	−583	−11.8

[1] Adapted from State employment security agency estimates for mid-January.
[2] Includes miscellaneous.
[3] Finance, insurance, and real estate industries.
[4] Transportation, communications, and utilities industries.

TABLE 3.—POPULATION, BY MAJOR AGE GROUPS, SOUTHEAST AND UNITED STATES, APR. 1, 1960, TO APR. 1, 1970 [1]

[In thousands]

Area and component	Population		1960-70 increase	
	1970 [2]	1960	10-year number	Annual percentage rate
Southeast	43,486	38,022	5,464	1.4
Under 18	14,960	14,316	644	.4
18 to 64	24,318	20,554	3,764	1.8
65 and over	4,208	3,152	1,056	3.4
United States	203,283	179,323	23,960	1.3
Under 18	69,668	64,202	5,466	.9
18 to 64	113,543	98,562	14,981	1.5
65 and over	20,072	16,559	3,513	2.1

[1] Adapted from appropriate reports of PC(1)-A and PC(1)-B series, 1970 Census of Population, supplemented as requisite by corresponding reports of the 1960 census.
[2] Statistics are adjusted to reflect corrections in 1970 official population counts listed in individual State reports.

Not only was the cutback in the Southeast's unemployment rate—from 6.1 percent in 1962 to 4 percent in 1972—more pronounced than the reduction in the U.S. rate, but also, fewer workers were unemployed in mid-March 1972 than 10 years earlier.

Comparative response to continued economic upturn in 1972

The Southeast added manufacturing jobs in 1972 at a slower pace—4 percent versus 4.7 percent—than the entire United States (table 2), a reflection mainly of the belated but relatively sharp recovery staged in autos and the heavy-goods industries in recent months [*11, 17, 22, 27*].

The main impetus behind the Southeast's higher rate of gain in nonmanufacturing employment—4.1 percent versus 3.6 percent nationwide—was the continuation of favorable differentials in job formation, particularly in the private sector of the service-performing and TCU industries. Construction activity in the Southeast was somewhat off both the 1962–72 pace within the region and the January 1972–73 increase nationally. A minor reduction in mining jobs also occurred in the Southeast, apparently as concern over strip mining and air pollution led to some cutbacks in the use of coal for the generation of electrical energy.

Comparative changes in age composition of the population

The overall annual rate of the 1960–70 population increase in the Southeast was only fractionally higher than the U.S. average, but there were marked differences in gains in the three major age groups (table 3).

The mass movement of the elderly to retirement havens, particularly in the "Sunshine Belt" of southern and central Florida, led to an increase by 1970 of approximately a third in the Southeast's population 65 years of age and older, in contrast to one-fifth nationally.

The 1960–70 rate of increase in the population of working age (18–64) was somewhat higher in the Southeast than in the United States—1.8 percent, compared with 1.5 percent. On the other hand, the population under 18 years of age grew much more slowly in the Southeast than nationally, thereby probably affording some immediate respite for certain hard-pressed local school systems, but opening the specter, if continued into the 1970's, of future manpower shortages.

Comparative changes in manpower utilization

Possibly as a reflection of the heavy concentration in 1970 in trainees at U.S. Army, Marine, and other military installations in the Southeast, the male population 14 years of age and older appears to have increased somewhat more rapidly in the region than throughout the United States as a whole in 1960–70 (table 4).[5] Male employment expanded at a moderately higher rate than nationally, and the ratio of employed to total male population was not reduced quite as much as nationally.

For women 14 years of age and older, the rate of employment expansion was somewhat above the U.S. increase, and a slightly higher proportion—38 percent versus 37 percent—held jobs in 1970. Even so, females accounted for only 59 percent of the employment gains within the Southeast, contrasted with a U.S. ratio of 63 percent.

[5] Employment data represent numbers reported by the 1960 and 1970 censuses, not State employment security agency estimates; 1970 data have been adjusted to include persons 14 and 15 years of age to assure comparability with 14-and-over age distribution reported in 1960.

Comparative changes in personal income

As with employment gains, the 1962–72 rate of expansion of total or aggregate income in the Southeast clearly outdistanced the U.S. increase (table 5). Similarly, a higher rate of gain in per capita income served to appreciably narrow the historical gap in income per capita between the Southeast and the Nation as a whole.

TABLE 4.—EMPLOYMENT RELATIVE TO POPULATION 14 YEARS OF AGE AND OLDER, BY SEX, SOUTHEAST AND UNITED STATES, APR. 1, 1960 TO APR. 1, 1970 [1]

Area and component	1970			1960			1960–70 increase employment	
	Population (thousands)	Employment (thousands)	Ratio (percent)	Population (thousands)	Employment (thousands)	Ratio (percent)	10-year number (thousands)	Annual rate (percent)
Southeast	31,904	16,051	50	26,303	12,938	49	3,113	2.4
Male	15,259	9,799	64	12,752	8,534	67	1,265	1.5
Female	16,645	6,252	38	13,551	4,404	32	1,848	4.2
United States	149,398	77,309	52	126,276	64,639	51	12,670	2.0
Male	71,482	48,139	67	61,315	43,467	71	4,672	1.1
Female	77,916	29,170	37	64,961	21,172	33	7,998	3.8

[1] Adapted from appropriate reports of PC(1)–B and PC(1)–C series, 1970 census of population, supplemented as requisite by corresponding reports of the 1960 census, includes civilian employment only.

TABLE 5.—PERSONAL INCOME, TOTAL AND PER CAPITA, SOUTHEAST AND UNITED STATES, ANNUAL 1962 AND 1972 [1]

Area and component	Income (millions)		1962–72 increase		Ratio (percent)		
	1972	1962	10-year (millions)	Annual rate (percent)	1972	Gain	1962
Southeast (total)	$176,423	$73,964	$102,459	13.9	19	21	17
United States (total)	932,420	440,189	492,231	11.2	100	100	100
Southeast (per capita)	3,931	1,873	2,058	11.0	88	98	79
United States (per capita)	4,478	2,370	2,108	8.9	100	100	100

[1] 1972 statistics adapted from tables 1 and 2, Survey of Current Business, vol. 53, No. 4, 1962 data are from August 1972 issue.

PATTERNS OF ECONOMIC GROWTH IN THE NONMETRO SOUTHEAST

Greatly enlarged manufacturing and other nonfarm job opportunities contributed to major improvements in income as well as in employment in the rural and other nonmetropolitan communities of the Southeast during 1962–72. Many localities also experienced gains in population, often in reversal of long-persisting downward trends. Others, however, continued to lose farm and other people, as outflows of population continued, both to destinations outside the Southeast and to Washington, D.C., Richmond, Atlanta, and the region's other metro areas.

Shifts in employment and unemployment

Manufacturing employment in the nonmetro Southeast expanded by more than 600,000 between 1962 and 1972, compared with less than 400,000 in the region's metro units (table 6).

Because of an attrition of more than 340,000 in the farm work force, employment in the goods-producing industries other than manufacturing was reduced by a quarter million in nonmetro units. Otherwise, the annual rate of job gain in the construction industry exceeded that in the metro units—5.4 percent contrasted with 3.9 percent—and nonmetro mining employment showed a small gain.

Because the nonmetro Southeast simply doesn't have the concentrations of education, health, business, and other fast-growing services found in the region's metro communities, rates of gain in the service-performing industries were considerably lower. Nevertheless, referring to table 1, the rate of increase in service-performing jobs in the private sector in the nonmetro Southeast slightly exceeded the U.S. rate. The rate for government jobs was under the national average.

Sensitivity to economic ups and downs

Manufacturing jobs in the rural and other nonmetro communities of the Southeast increased 5.8 percent annually during the 1962-67 economic upturn (table 7). Possibly as a result of increased competition from textile, apparel, and a flood of other imports, the rate fell to 4.4 percent per year in the period following the 1967 economic slowdown and extending to the 1969 peak in economic activity.

Despite fairly widespread layoffs and some complete plant shutdowns, particularly in textiles and apparel [*12*, *19*], manufacturing employment registered a slight gain during the 1969–71 contraction in the economy. Then, after a much sharper 1971–72 recovery than in either the metro Southeast or nationally, the January 1972–73 rate of gain was not only up somewhat, but also trailed the greatly expanded U.S. increase [*11*, *17*, *22*, *27*] only slightly.

Construction Activity: Lead Indicator of Area Economic Growth

Construction employment in the nonmetro Southeast increased by 8.7 percent per year during the 1962–67 upturn (table 7). This increase apparently was a carryover of the expansion set in motion as the U.S. economy emerged from the 1960 recession, and it had a vital part in the sharp increase in manufacturing employment following the 1962 upturn.

The Southeast's nonmetro areas did not share overly much in the building boom in high rise apartments and offices and suburban shopping malls that dominated 1967–69 construction activity in many metro areas, in and outside the region. As shown by table 8, January 1972–73 declines in construction jobs in nonmetro areas apparently erased March 1971–72 gains.

TABLE 6.—EMPLOYMENT AND UNEMPLOYMENT, RURAL AND OTHER NONMETRO AREAS, SOUTHEAST, 1962-72 [1]

Area and designation	Number		1962–72 increase		Regional share	
	1972 (thousand)	1962 (thousand)	10-yr number (thousand)	Annual rate (percent)	1972 (percent)	1962 (percent)
ALL NONMETRO [2]						
Employment	7,056	5,766	1,290	2.2	40	43
Manufacturing	2,016	1,382	634	4.6	51	47
All other	5,040	4,384	656	1.5	36	42
Nonfarm wage and salary	5,431	3,782	1,649	4.4	37	37
Nonmanufacturing	3,415	2,400	1,015	4.2	31	33
Other goods—producing	1,089	1,333	−244	−1.8	59	68
Nonfarm [3]	387	287	100	3.5	39	41
Construction	265	172	93	5.4	32	31
Mining	122	115	7	.6	84	82
Farm	702	1,046	−344	−3.3	82	83
Service-performing	2,704	2,854	850	3.0	33	36
Wage and salary	2,781	1,916	865	4.5	31	32
Private industries	1,708	1,192	516	4.3	29	30
Trade	926	666	260	3.9	30	32
Service groups [4]	630	416	214	5.1	28	31
Fire [5]	152	110	42	3.8	22	24
Government	1,073	724	349	4.8	35	36
Other nonfarm [6]	923	938	−15	−.2	45	47
TCU [7]	247	197	50	2.5	28	29
Unemployment	329	462	−133	−2.9	45	53
Rate	4.5	7.4				
METRO						
Employment	10,713	7,703	3,010	3.9	60	57
Manufacturing	1,920	1,551	369	2.4	49	53
All other	8,793	6,152	2,641	4.3	64	58
Nonfarm wage and salary	9,428	6,421	3,007	4.7	63	63
Nonfacturing	7,508	4,870	2,638	5.4	69	67
Other goods-producing	753	625	128	2.0	41	32
Nonfarm [3]	595	407	188	4.6	61	59
Construction	571	382	189	4.9	68	69
Mining	24	25	−1	−.4	16	18
Farm	158	218	−60	−2.8	18	17
Service-performing	7,407	5,050	2,357	4.7	67	64
Wage and salary	6,280	3,986	2,294	5.8	69	68
Private industries	4,265	2,720	1,545	5.7	71	70
Trade	2,123	1,422	701	4.9	70	68
Service groups [4]	1,597	942	655	7.0	72	69
Fire [5]	545	356	189	5.3	78	76
Government	2,015	1,266	749	5.9	65	64
Other nonfarm [6]	1,127	1,064	63	.6	55	53
TCU [7]	633	477	156	3.3	72	71
Unemployment	408	418	−10	−.2	55	47
Rate	3.6	5.1				

[1] Adapted from State employment security agency estimates for mid-March.
[2] Areas essentially outside standard metropolitan statistical area delineations Jan. 7, 1972.
[3] Private wage and salary only (other nonfarm component included with services).
[4] Includes miscellaneous.
[5] Finance, insurance, and real estate industries
[6] Self-employed, private household workers, and unpaid family help.
[7] Transportation, communications, and utilities industries.

TABLE 7.—EMPLOYMENT AND UNEMPLOYMENT SHIFTS, RURAL AND OTHER NONMETRO AREAS, SOUTHEAST, 1962–72[1]

Area and designation	Annual gain									
	Overall 1962–72		Expansion				Contraction 1969–71		Recovery 1971–72	
			1962–67		1967–69					
	Number (thousands)	Rate (percent)	Number (thousands)	Rate (percent)	Number (thousands)	Rate (percent)	Number (thousands)	Rate (percent)	Number (thousands)	Rate (percent)
ALL NONMETRO[2]										
Nonfarm wage and salary employment	165	4.4	185	4.9	166	3.5	92	1.8	207	4.0
Manufacturing	63	4.6	80	5.8	78	4.4	4	0.2	69	3.5
Nonmanufacturing[3]	102	4.2	105	4.4	88	3.0	88	2.9	138	4.2
Construction	9	5.4	15	8.7	2	0.6	2	0.8	11	4.3
Trade	26	3.9	29	4.3	20	2.4	20	2.4	37	4.2
Service[4]	21	5.1	22	5.2	12	2.4	29	5.3	23	3.8
Government	35	4.8	33	4.6	44	4.9	24	2.4	47	4.6
Unemployment	−13	−2.9	−32	−7.0	−12	−4.0	54	19.7	−57	−14.8
METRO										
Nonfarm wage and salary employment	301	4.7	330	5.1	362	4.5	188	2.1	255	2.8
Manufacturing	37	2.4	67	4.4	52	2.8	48	−2.4	22	1.2
Nonmanufacturing[3]	264	5.4	263	5.4	310	5.0	236	3.5	233	3.2
Construction	19	4.9	13	4.7	31	6.6	5	0.9	27	5.0
Trade	70	4.9	69	4.8	83	4.7	62	3.2	68	3.3
Service[4]	66	7.0	63	6.7	83	6.6	62	4.4	48	3.1
Government	75	5.9	81	6.4	72	4.3	68	3.7	83	3.2
Unemployment	−1	−0.2	−30	−7.3	−4	−1.5	90	34.7	−29	−6.6

[1] Adapted from State employment security agency estimates.
[2] Areas essentially outside Standard Metropolitan Statistical Area delineations Jan. 7, 1972.
[3] Includes mining, FIRE, and TCU industries.
[4] Includes miscellaneous.

TABLE 8.—EMPLOYMENT AND UNEMPLOYMENT SHIFTS, RURAL AND OTHER NONMETRO AREAS, SOUTHEAST, JANUARY 1972–73[1]

[In thousands]

Area and designation	Number		1972–73 increase	
	1973	1972	Number	Percentage rate
ALL NONMETRO[2]				
Nonfarm wage and salary employment	5,500	5,291	209	4.0
Manufacturing	2,081	2,003	78	3.9
Nonmanufacturing[3]	3,419	3,288	131	4.0
Construction	238	250	−12	−4.8
Trade	987	922	65	7.0
Service[4]	635	609	26	4.3
Government	1,028	990	38	3.8
Unemployment	403	415	−12	−2.9
METRO				
Nonfarm wage and salary employment	9,853	9,459	394	4.2
Manufacturing	1,988	1,908	80	4.2
Nonmanufacturing[3]	7,865	7,551	314	4.2
Construction	628	577	51	8.8
Trade	2,246	2,159	87	4.0
Service[4]	1,690	1,616	74	4.6
Government	2,050	2,004	46	2.3
Unemployment	308	374	−66	−17.6

[1] Adapted from State employment security agency estimates.
[2] Areas essentially outside Standard Metropolitan Statistical Area delineations Jan. 7, 1972.
[3] Includes mining, FIRE, and TCU industries.
[4] Includes miscellaneous.

Much more of the 1971–72 increase than is indicated by table 7 seems to have stemmed from the rapid buildup—notably in metro Florida [*21*] but also in the Washington, Atlanta, and other suburbs [*28*]—of numerous condominium, shopping center, and other building starts. Moreover, instead of a lull, succeeded by the present boom in expenditures for manufacturing plants and equipment [*30*], evidence

points to a steady flow of new plants and expansions under construction along the Ohio [29] and in many other prime industrial sites throughout the nonmetro Southeast. Contributing further to holding construction employment at the comparatively high level attained by 1967 were the many local homebuilding starts, and the highway, civic renewal, and other public works projects launched in these and other localities in recent years.

Uniqueness of Job Trends in Service-Performing Industries

Although there was some spurt in job formation in trade, government, and related industries in the nonmetro Southeast during the 1962–67 economic upturn (table 7), rates of gain were considerably lower than in the region's metro communities. Rates of increase not only continued to trail metro rates of employment growth during the 1967–69 period, but, particularly in trade and the service groups, also tapered off appreciably. Then, conceivably stimulated by a delayed multiplier, or simply because metro job growth lost momentum, the resurgence since 1969 generally boosted rates to or above corresponding metro averages.

For government, a high percentage of the job increase may well have resulted from additions, especially in economically distressed communities, of enrollees in work experience and training programs [25].

In the private sector, the strength of job gains suggests that many of the Southeast's rural and other nonmetro communities are benefiting from long-sought improvements in local business, hospital, and similar services. Because the gains have persisted under conditions of economic adversity as well as recovery, an increasingly widespread achievement of the employment mix and economic viability required for more or less continuous and self-sustaining growth is also apparent.

Persistent Pockets of Joblessness

Referring again to tables 7 and 8, unemployment in the region's nonmetro areas not only was reduced more sharply than in the metro Southeast in prosperous times, but also increased less during an economic downswing, and then again declined more promptly and deeply as the economy recovered. Turning attention back to table 6, however, it can be seen that the 1972 nonmetro rate of unemployment of 4.5 percent remained almost a full percent higher than the 3.6 percent in the metro Southeast.

In part, the persistence of high rates of unemployment results from the seasonal or uncertain nature of the farm work and other local work available, particularly in the region's more rural communities. In general, jobseekers are persevering and are not easily discouraged. Hence, local unemployment rolls also rise and fall, often from month to month, as workers, especially unattached individuals and couples without children, return to their homes, when laid off in the metro or nonmetro center where they found jobs, only to depart as soon as prospects for new employment brighten elsewhere.

Although, more than 200 nonmetro counties in the Southeast were listed by the Manpower Administration, U.S. Department of Labor,[6]

[6] Area Trends in Employment and Unemployment, February 1973. Included are some units combined in multicounty labor market areas.

as having either sustained or persistent unemployment as of March 1, 1973. Some had appeared on similar listings throughout the 1960's and extending into the 1970's. Many others, however, reappeared in one or the other classification only as layoffs, both locally and elsewhere, left workers temporarily out of jobs.

TABLE 9.—POPULATION, BY MAJOR AGE GROUPS, RURAL AND OTHER NONMETRO AREAS, SOUTHEAST, APR. 1, 1960–APR. 1, 1970[1]

Area and component	Population		1960–70 increase	
	1970 (thousands)	1960 (thousands)	10-yr number (thousands)	Annual rate (percent)
Nonmetro[2]	19,009	18,112	897	0.5
Under 18	6,692	7,141	−449	−.6
18 to 64	10,355	9,378	977	1.0
65 and over	1,962	1,593	369	2.3
Metro	24,477	19,910	4,567	2.3
Under 18	8,268	7,175	1,093	1.5
18 to 64	13,963	11,176	2,787	2.5
65 and over	2,246	1,559	687	4.4

[1] Adapted from appropriate reports of PC(1)–A, B, and C series, 1970 census of population, supplemented as requisite by corresponding reports of the 1960 census.
[2] Areas essentially outside standard metropolitan statistical area delineations, Jan. 7, 1972.

TABLE 10.—EMPLOYMENT RELATIVE TO POPULATION 14 YR OF AGE AND OLDER, BY SEX, RURAL AND OTHER NONMETRO AREAS, SOUTHEAST, APR. 1, 1960–APR 1, 1970[1]

[Population and employment in thousands]

Area and component	1970			1960			1960–70 increase employment	
	Population	Employment	Ratio (percent)	Population	Employment	Ratio (percent)	10-yr number	Annual rate (percent)
All nonmetro[2]	14,420	6,664	46	12,550	5,792	46	872	1.5
Male	6,638	4,149	63	6,127	3,941	64	208	.5
Female	7,782	2,515	32	6,423	1,851	29	664	3.6
Metro	17,484	9,387	54	13,753	7,146	52	2,241	3.1
Male	8,621	5,650	66	6,625	4,593	69	1,057	2.3
Female	8,863	3,737	42	7,128	2,553	36	1,184	4.6

[1] Adapted from appropriate reports of PC(1)-A, B and C series, 1970 census of population, supplemented as requisite by corresponding reports of the 1960 census; includes civilian employment only, population, institutional residents as well as military personnel
[2] Areas essentially outside standard metropolitan statistical area delineations, Jan 7, 1972.

TABLE 11.—PERSONAL INCOME TOTAL AND PER CAPITA, RURAL AND OTHER NONMETRO AREAS, SOUTHEAST, ANNUAL 1962 AND 1970[1]

Area and component	Income		1962–70 increase		Share or ratio (percent)		
	1970	1962	10-yr	Annual rate (percent)	1970	Gain	1962
Total (millions of dollars):							
All nonmetro[2]	$52,412	$26,422	$25,990	12.3	35	35	36
Metro	95,525	47,542	47,984	12.6	65	65	64
Per capita:							
All nonmetro[2]	2,757	1,442	1,315	11.4	71	79	64
Metro	3,904	2,245	1,659	9.2	100	100	100

[1] Adapted from "Survey of Current Business," May 1972, vol. 52, No. 5, supplemented by May 1971 issue.
[2] Areas essentially outside standard metropolitan statistical area delineations, Jan. 7, 1972.

Implications for population change

The 1960–70 rate of increase in the population 65 years of age and older in the nonmetro Southeast was only about half as high as in the region's metro units (table 9). Even so, there were marked additions in many communities, particularly in the nonmetro areas of southern and central Florida, in parts of Appalachia, and alongside many of the manmade lakes added in recent times throughout other sections of the Southeast [*9*].

In response mainly to persistent declines in the farm population, and in the population of some old mining, saw milling, and textile centers [*12*], the population in the 18–64 age bracket grew more slowly during 1960–70 than in the metro units. The nonmetro population under 18 years of age had declined by 1970.

The continued influx in the past 3 years of people seeking retirement homes undoubtedly has contributed to further expansion of the elderly population in the region's nonmetro areas [*13*]. In all likelihood, the immigration of plant managers, foremen, technicians, and workers to nonmetro growth centers has continued, if not at a faster pace, at least at the same or only a slightly diminished rate. Under the impact of increasing moratoriums on new sewer and other utilities connections, pyramiding real estate values, and similar constraints on further metropolitan growth [*18*, *21*, *26*, *28*], the flight of former suburbanites to rural and other outlying communities appears to be rapidly accelerating.

Changing patterns of manpower utilization

At least until 1970, gains in employment among men 14 years of age and older in the nonmetro Southeast were minimal (table 10). This was attributable chiefly to reductions in the farm work force, including both operators and hired labor. Also factors—in certain metro as well as nonmetro areas—were the presence of large numbers of (1) Military personnel, counted with the local population but excluded from the civilian work force, together with (2) male students, enrolled at institutions of higher education but frequently attending classes full-time or otherwise not working.

Employment of women expanded somewhat less rapidly than in the metro units, and the nonmetro proportion of employed females 14 years of age and older remained at approximately one-third, compared with a metro ratio of two-fifths, and, reexamining table 4, 37 percent nationally.

Gains, nonetheless, were impressive, if only because the new jobs so often represented the addition of a much-needed extra paycheck in a low-income household [*9*]. Then, too, if formerly employed at all in the early 1960's, many women engaged in unpaid family labor, or were employed as private household workers. In all probability, moreover, a higher proportion of 1970 nonmetro jobs were full-time than in either the metro Southeast or the United States as a whole [*24*].

Changes in personal income

The 1962–70 rate of gain in total or aggregate income in the nonmetro Southeast differed very little from that in the region's metro units (table 11). The essential difference was in the higher rate of increase in per capita values.

The greatly reduced spread in incomes per capita was due in large part to the widespread replacement of farm and other low-paid jobs by better wage manufacturing and other nonfarm employment. Another factor was the continued inflow of personnel to new factories and businesses springing up in the nonmetro Southeast, coupled with the further outmigration of large numbers of poorly skilled or untrained individuals.

EMPLOYMENT GAINS IN ENTIRELY RURAL AND OTHER NONMETRO AREAS

The 1962–71 rate of annual gain—4.7 percent—was the same for both manufacturing and nonmanufacturing employment in the Southeast's nonmetro areas as a whole (table 12).[7] But while the rate of increase in nonmanufacturing jobs declined moving from the lesser urban to the entirely rural subgroups, the opposite was true of manufacturing.

As is brought out by the data on 1962–71 increases in individual areas, both manufacturing and nonmanufacturing job additions were closely linked to the size of the population (and employment) centers represented in the various nonmetro subclasses. Insofar as the lesser urban and small city subgroups contained a relatively high proportion of wage and salary workers in education, health, business, and related services, nonmanufacturing employment additions in these areas were about twice as great as comparable gains in manufacturing. The entirely rural areas—often with limited service and related employment to begin with—gained an average of only some 300 nonmanufacturing jobs per area, against 200 or so additional manufacturing jobs.

Distribution of job gains by nonmetro area subclasses

All 12 of the nonmetro areas adding 5,000 or more manufacturing jobs in the 1962–71 period (table 13) were in the lesser urban and small city subclasses—in other words, those identified with larger nonmetro population and employment centers. Of the 72 lesser urban areas, all but 12 gained 500 or more manufacturing jobs. Of the 124 small city units, however, 15 either added few or lost manufacturing jobs, while another 24 gained less than 500 employment opportunities in manufacturing.

Although only seven of the 304 small town areas added as many as 2,500 manufacturing jobs in the 9-year period, 129 benefited from additions of at least 1,000 jobs in local industrial plants. With another 110 gaining 100 to 500 manufacturing employees, only 58—or less than 20 percent—had gains of fewer than 100 or sustained losses in manufacturing employment.

[7] Because so few rural and other essentially nonmetro counties had been appended prior to the present time to Standard Metropolitan Statistical Areas in the Southeast, no effort was made to stratify SMSA's into ring, fringe, and other appropriate subclasses. With the recent addition of a large number of counties to SMSA delineations, however, either subclassification or a complete redesign of the existing classification is essential if adequate data are to be brought together for charting rural development and identifying emerg[illegible] land use and similar problems.

None of the 288 entirely rural units gained 2,500 or more manufacturing jobs, but 39 added at least 500, and another 124 had increases of 100 or more. Still, 125 areas, or more than 40 percent, added comparatively few or actually lost manufacturing jobs between 1962 and 1971.

As with increases in manufacturing employment, all 28 areas gaining 5,000 or more nonmanufacturing jobs were in the lesser urban and small city subclasses. In contrast to their shifts in manufacturing employment, however, none of the 72 lesser urban and only six of the 124 small city units added fewer than 500 nonmanufacturing jobs.

TABLE 12.—MANUFACTURING AND NONMANUFACTURING EMPLOYMENT AND UNEMPLOYMENT CHANGE, RURAL AND OTHER NONMETRO AREAS, SOUTHEAST, 1962–71 [1]

Area and designation	Number of areas [2]	Employment (thousands)		1962–71 increase			Distribution (percent)	
		1971	1962	Total (thousands)	Number per area	Annual rate (percent)	1971	1962
NONMETRO [3]								
Manufacturing	788	1,965.5	1,384.6	580.9	740	4.7	39	39
Nonmanufacturing [4]	788	3,108.4	2,185.4	923.0	1,170	4.7	61	61
Unemployment	788	383.3	475.8	−92.5	−120	−2.2		
Rate (percent)		5.4	7.8					
LESSER URBAN [5]								
Manufacturing	72	603.5	451.4	152.1	2,110	3.7	37	39
Nonmanufacturing [4]	72	1,043.6	706.9	336.7	4,680	5.3	63	61
Unemployment	72	89.7	99.9	−10.2	−140	−1.1		
Rate (percent)		4.3	6.1					
SMALL CITY								
Manufacturing	124	604.5	433.2	171.3	1,380	4.4	42	42
Nonmanufacturing [4]	124	849.8	589.9	259.9	2,100	4.9	58	58
Unemployment	124	98.8	123.5	−24.7	−200	−2.2		
Rate (percent)		5.0	7.4					
SMALL TOWN								
Manufacturing	304	569.4	378.9	190.5	630	5.0	40	37
Nonmanufacturing	304	865.9	635.5	230.4	760	4.0	60	63
Unemployment	304	128.7	169.4	−40.7	−130	−2.7		
Rate (percent)		6.1	8.8					
ENTIRELY RURAL								
Manufacturing	288	188.1	121.1	67.0	230	6.1	35	32
Nonmanufacturing	288	349.1	253.1	96.0	330	4.2	65	68
Unemployment	288	66.1	83.0	−16.9	−60	−2.3		
Rate (percent)		7.3	9.8					

[1] Adapted from State employment security agency estimates; data for Alabama, Florida, and Virginia are for mid-March; those for the remaining 10 States represent annual averages.

[2] Mostly individual counties, but including a small number of multicounty labor market areas in West Virginia and Tennessee.

[3] Areas essentially outside standard metropolitan statistical area delineations, Jan. 7, 1972.

[4] Nonfarm wage and salary employment exclusive of manufacturing.

[5] Lesser urban areas had multicenter or composite 1970 urban population of 25,000 or greater, small city, 10,000–24,999; small town, 2,500–9,999; and entirely rural units lacked a 1970 center of at least 2,500.

TABLE 13.—GAINS IN MANUFACTURING AND NONMANUFACTURING EMPLOYMENT, BY GROWTH GROUPS, RURAL AND OTHER NONMETRO AREAS, SOUTHEAST, 1962–71 [1]

Area and designation	Areas [2]	Employment growth group						
		5,000–over	2,500–4,999	1,000–2,499	500–999	100–499	Under 100	Decrease
ALL NONMETRO [3]								
Manufacturing	788	12	43	135	130	262	112	94
Nonmanufacturing [4]	788	28	85	152	182	256	53	32
LESSER URBAN [5]								
Manufacturing	72	7	17	25	11	4	2	
Nonmanufacturing [4]	72	26	39	7				
SMALL CITY								
Manufacturing	124	5	19	37	24	24	4	11
Nonmanufacturing [4]	124	2	36	64	16	6		
SMALL TOWN								
Manufacturing	304		7	60	69	110	34	24
Nonmanufacturing [4]	304		9	64	118	92	12	9
ENTIRELY RURAL								
Manufacturing	288			13	26	124	72	53
Nonmanufacturing	288		1	17	48	158	41	23

[1] Adopted from State employment security agency estimates, data for Alabama, Florida and Virginia are for mid-March; those for the remaining 10 States represent annual averages.
[2] Mostly individual counties, but including a small number of multicounty labor market areas in West Virginia and Tennessee.
[3] Areas essentially outside standard metropolitan statistical area delineations, Jan. 7, 1972.
[4] Nonfarm wage and salary employment exclusive of manufacturing.
[5] Lesser urban areas had multicenter or composite 1970 urban population of 25,000 or greater, small city, 10,000–24,999; small town, 2,500–9,999; and entirely rural units lacked a 1970 center of at least 2,500.

Geographic distribution of nonfarm job gains

Borne out by the map at the end of the report is direct relationship between increases in manufacturing and nonmanufacturing employment and increases in size of the population and employment centers to which individual area economies are oriented.

Among the lesser urban and small city areas (units related to larger economic and demographic centers) four—Hickory-Newton, N.C., Florence-Lake City, S.C., Johnson City, Tenn., and Pascagoula, Miss.—gained 5,000 or more manufacturing jobs in the 1962–71 period, together with comparable increases in nonmanufacturing employment.

Eight others added that many or more manufacturing jobs, combined with at least 2,500 additions to nonmanufacturing employment. They were the Reidsville-Eden, Salisbury-Kannapolis, Morganton, and Shelby-Kings Mountain areas, all four in the North Carolina Piedmont; Lumberton, in the Coastal Plain section of the State; the Dalton, Ga., and Cleveland, Tenn., areas, both in the vicinity of Chattanooga; and the Humboldt-Milan area, site of the Holston U.S. Army Ammo Depot, in northwestern Tennessee.

Patterns of Parallel and Pervasive Job Growth

Large scale and widespread gains in both manufacturing and nonmanufacturing employment are especially evident in the Piedmont Industrial Crescent of the Carolinas and adjoining sections of Virginia (see map). Forces radiating out from the University of North Carolina,

North Carolina State, Duke University, and the North Carolina Research Triangle are rapidly transforming an old textile-dominated economy into a sophisticated industrial economy [1, 5, 9]. Cities formerly satellite to Raleigh, Greensboro, Charlotte, Greenville, and Spartanburg have become increasingly important in their own right as sites of branch universities and colleges, and as centers of business, health, transportation, and communications services.

On an equally pervasive but lesser scale, mainly because of the smaller size of the individual centers, much the same parallel expansion of manufacturing and nonmanufacturing employment is taking place throughout the southern Appalachia-Tennessee Valley region of Tennessee and parts of adjoining States, extending from southwestern Virginia to northeastern Mississippi.

In the Coastal Plain section of the Carolinas, nonmanufacturing jobs have increased more than in the Piedmont. Nevertheless, greatly increased nonfarm wage and salary employment as a whole has characterized all but such outlying areas as those bordering Albemarle and Pamlico Sounds.

Concentrations of Nonmanufacturing Activity

In addition to the four nonmetro areas adding 5,000 or more manufacturing jobs plus equal numbers of nonmanufacturing jobs between 1962 and 1971, another 24 gained at least 5,000 in nonmanufacturing but added fewer than that number of manufacturing workers. Six areas stand out as units in which manufacturing jobs expanded by a minimum of 2,500: Dover, Del.; Burlington, Greenville, and Goldsboro, N.C.; Glasgow, Ky.; and Athens, Ga., site of the University of Georgia.

Expansion of facilities and administrative staffs at the University of Virginia, Virginia Polytechnic Institute, and West Virginia University contributed to gains of 5,000 or more government and related jobs in the Charlottesville, Radford-Blacksburg, and Morgantown areas. The rapid growth in recent years of such resort centers as Rehoboth Beach, Del., Sevierville, Tenn., and Myrtle Beach, S.C., was reflected in comparable increases in service and other nonmanufacturing employment in those areas.

Major gains in other nonfarm wage and salary employment were identified with the Vietnam-era expansion of training and other facilities at Camp Lejune, Fort Knox, Fort Campbell, Parris Island, and Fort Rucker. The emergence of Frederick, Hagerstown, Salisbury, and Cumberland, Md.; Valdosta, Ga.; and Jackson and Briston, Tenn., as regional trade and service centers was at the root of equally substantial additions to nonmanufacturing employment. A large share of increased service and other nonfarm wage and salary employment in Florida's Panama City, Naples, Bradenton, Ocala, and Fort Walton Beach areas stemmed from the increasing overflow of retirees into these and other nonmetro centers from the metro complexes of southern and central Florida.

Direct Multiplier Effects Exerted

For a decade or more after the Kaiser Aluminum complex began operations at Ravenswood, W. Va., little or no multiplier effect ap-

pears to have been exerted on local service or residentiary employment [7]. Thus, the addition of a community hospital in recent years, plus increased employment in restaurants, service stations, and the like, seems to have resulted in the completion of I–77 between Parkersburg and Charleston, rather than from a belated impact of the aluminum plant and its largely nonresident work force on the immediate community.

The history so far [29] of another major aluminum complex, emerging since the mid-1960's in the Lewisport-Hawesville area, along the Ohio and in Hancock County, between Louisville and Owensboro, Ky., parallels that at Ravenswood in the very limited enlargement of local service and related jobs that has occurred in recent years. However, it differs not only in the marked degree to which employment has been increased through successive additions of aluminum smelting, casting, rolling, and prefab facilities, but also in the further job build-up resulting from the addition of a ceramic tile plant and a pulp and paper board mill.

Traditionally, an increased student or military population has contributed to at least temporary job gains in local trade and service establishments. Regardless of whether the immediate increase has been in manufacturing, at a Federal or State facility, or simply in local services, such increases in the Southeast's major nonmetro growth centers have been an integral part of a process, the cumulative effect of which has been to generate further expansion.

Area Economic Renaissance

In all likelihood, manufacturing employment in Cumberland, Md., Fairmont and Clarksburg, W. Va., and other areas of northern Appalachia has fully recovered from the low-point to which it had fallen in 1970 and 1971. This reflects further progress in the replacement or modernization of older or obsolescent industrial facilities underway since the 1960's.

But even 1962–71 shifts in other nonfarm wage and salary employment pretty well establish the dimensions of the extraordinary economic renaissance effected by local people, assisted by Federal and State officials, in recent years. New shopping centers and housing developments were added in the suburbs. Also, downtown renewal has extended to old central business and industrial districts as well as to older residential neighborhoods.

This rebuilding of cities and their older suburbs has not been limited to northern Appalachia. A glance through dozens of reports on community betterment projects confirms its extension to a great many larger and smaller nonmetro centers throughout this region.

Economically Disadvantaged or Depressed Areas

As with the upsurge since 1971 in industrial activity in Northern Appalachia, the complete turnaround staged by the textile industry in recent months [19] has erased many of the 1962–71 decreases in manufacturing employment indicated by table 13 and the map.

A few of the larger centers have not fully recovered from the economic setbacks resulting from earlier shutdowns of major textile, sawmill, and metal working facilities or local defense installations.

But the bulk of the areas whose economies remain at a standstill, if they haven't declined further since 1971, are strongly rural, and remain highly dependent on farming or other low-paid and uncertain employment. Through lack of access highways [*16*], and inadequate local services and facilities, few industrial enterprises are attracted, and those that do locate in individual communities are often ones with financial, technological, or labor problems, and similar difficulties.

All too frequently, workers in depressed areas completing job experience and training programs must seek employment elsewhere. In times of economic adversity, unemployment rolls in many localities are swollen by workers laid off from jobs in either metro or larger nonmetro centers. As a rule, school and other local government services in depressed areas are substandard Also, government workers, along with farmers and farmworkers, casual laborers, and private household workers and unpaid family laborers, make up a very high proportion of typically small local work forces.

By stressing the development of agricultural, minera scenic, and other previously overlooked or underutilized resources, local leaders often can induce certain types of industries and businesses to locate in or enlarge existing facilities in their communities. In other areas, both community leaders and the local people themselves are becoming increasingly convinced that their best interest lies in stressing training and retraining programs and the road and related improvements that will enable job-seekers to find job opportunities outside the immediate area.

Literature Cited

1. Beman, Lewis. 1972. How to Tell Where the United States Is Competitive. Fortune 86(1): 54–59, 98, 102, Chicago, July.
2. Brandt, Harry. 1973. The Southeast in 1972: Matches Fast U.S. Pace. Monthly Rev., Fed. Reserve Bank of Atlanta, vol. 58, No. 1, January.
3. Brown, Terry P. 1972. No Place Like Home—Housing Starts Seen Staying High in 1973—Causing Many Problems. Wall Street Journal. 180(121): 1, 10, December 22
4. Business Week. 1972. The New Rich South: Frontier for Growth. (Sept. 2): 30–37.
5. ———. 1972. Making U.S. Technology More Competitive. 2211(Jan. 15): 44–49.
6. Cameron, Juan. 1971. How the Interstate Changed the Face of the Nation. Fortune 84(4): 112–115, 133–134, Chicago, October.
7. Gray, Irwin. 1969. Employment Effect of a New Industry in a Rural Area. Monthly Labor Rev. 92(6): 28–30, Washington, June.
8. Haren, Claude C. 1972. Employment, Population and Income Growth in the South's Metro-Nonmetro Areas, 1960–70. Paper presented at Annual Meeting Southern Regional Sci. Assoc., Williamsburg, Va., April 13.
9. ———. 1972. Current Spatial Organization of Industrial Production and Distribution Activity. Paper presented at the Conference on Problems and Potentials of Rural Industrialization, Purdue Univ., West Lafayette, Ind., July 11–13, 1972.
10. Holsendolph, Ernest. 1973. As the Trucks Roar On, the Dollars Roll In. New York Times 122(42,092): 7, March 22.
11. Jensen, Michael C. 1972. Industrial America Booms Again—Plants Hum as Workers Return and Orders Grow. New York Times 121(41,959): Sec. 3, 1, 2, December 31.
12. Jenkins, Ray. 1971. Twilight of a Textile Town. New York Times 120(41, 336): 1, 5, April 28.
13. Kovach, Bill. 1971. New Industry: Building That Home Away from Home. New York Times 120(41, 345): 23, April 6.
16. Lindsey, Robert. 1973. Transportation Cutbacks in Rural United States Mean Hardship and Decline. New York Times 122(43. 024): 39. 74. February 13.

17. McCracken, Paul W. 1[illegible] The Economy: Just Short of Boiling. Wall Street Journal 181(74):24, [illegible] 17.
18. Malcolm, Andrew H. 1973. Freeways Leaving Mark on Cities. New York Time 122(42, 102):41, 77, May 2.
19. Mayer, Allan J. 1973. Textile Turnaround—Spurt in Business is Boon to Fiber Firms But Traps Fabric Makers in a Squeeze. Wall Street Journal 181(79):48, April 24.
20. Morgenthaler, Eric. 1973. Yankee Go Home—Mexico Takes Hard Look at Foreign Plants, Discouraging Investment by U.S. Concerns. Wall Street Journal 181(55):40, March 21.
21. Nordheimer, Jon. 1973. Development Boom in Southeast Florida Megalopolis Creates a Host of Urban Ills. New York Times 122(42, 092):44, April 22.
22. Pepson, Robert P. 1973. Job Vacancies, Hires, Quits, and Layoffs in Manufacturing, 1972. Monthly Labor Rev. 96(4):66–67, Washington, April.
23. Price, Woodrow. 1973. Tar Heel Service Industries Growth Projected for 1970's. News and Observer 215(98):1v–9, Raleigh, April 12.
24. Rosenthal, Jack. 1973. Two-Thirds of Job Gains in 1960's Made by Women. New York Times 122(42, 023):1, 32, February 12.
25. Smith, Ralph E. 1973. Manpower Programs and Unemployment Statistics. Monthly Labor Rev. 96(4):63–65, Washington, April.
26. Smith, William D. 1973. Energy Crisis: Shortages Amid Plenty. New York Times 122(42, 087):1, 26, April 17.
27. Stinson, John F., Jr. 1972. Employment in Manufacturing During the 1969–1971 Downturn. Monthly Labor Rev. 95(6):34–40, Washington, June.
28. Sumner, Gary. 1973. Boom Keeps De Kalb Officials Scrambling. Atlanta Journal 91(56):14, April 30.
29. Walker, Don. 1973. $100 Million Zinc Plant Proposed Along the Ohio. Courier-Journal 236(94):B-1, Louisville, April 4.
30. [illegible]er, Ralph E. 1973. Bouncing Back—Capital Goods Producers Enjoy Resurgence; Most Expect Upturn to Last Several Years. Wall Street Journal 181(19):28, January 29.

COMMUNITY PLANNING AND DECISIONMAKING TO ATTRACT INDUSTRY

[By H. A. Wadsworth, professor of agricultural economics, Purdue University]

Substantial professional effort is expended in examining industrial location decisions. Professionals associated with development divisions of utilities, railroads, chambers of commerce, state government, universities, and consulting firms develop most of their analyses from the firm's point of view. Yet communities are not simply disinterested observers or beneficiaries of individual decisions that create employment in their particular locale. The community is an active participant in the decision by the firm, and the ultimate choice frequently depends on what the community does or does not do. We should discard the oversimplistic view that forces involved in actual location decisions are exogenous to the community.

CURRENT SITUATION

Significant trends that affect the relative desirability of rural areas for industrial location have already been recounted in some detail. These include: (1) Out-migration from rural areas, so severe that actual declines in population were experienced in some places; (2) a rather limited range of "desirable" jobs where opportunities exist for advancement; and (3) difficulty in obtaining comparable access to types and qualities of public and private services that are available in more urban areas.

Experiences of rural communities have been extreme. Rural counties adjacent to urban centers have been overpowered by forces so strong that local considerations were of little consequence. Rapid growth in these counties is in direct contrast with the experience of more remote rural counties where decline in opportunity has been persistent in spite of local desires to the contrary.

Current conditions in such areas are the direct consequences of past decisions. These consequences, particularly the second-generation effects, have not been well anticipated. For instance, continual introduction of high levels of technology into agriculture, mining lumbering, and fishing has largely replaced the need for labor in these industries. This reduction in employment opportunities has pushed families out of the rural areas.

In general, returns to scale from the development of an extensive public infrastructure have been much greater than originally thought and have made urbanization attractive for most business firms. No national policy has been adopted to replace jobs at the locations where technical innovations took place. The implicit policy that emerged encouraged people to move to jobs. As a consequence, families have spread out geographically as each member sought to reach his or her

needs for satisfactory employment. The strength of the family as a key component of the society has been reduced.

Communities have been slow to adopt technological innovations to improve their comparative advantage in contrast to industry. This should not be surprising, because benefits to the community from such innovations are not as visible as for a firm. Rural communities have been further disadvantaged by high cost resulting from small-scale operations. Much of this dilemma stems from an inability to establish definable goals and working relationships on a sufficiently broad basis to compete effectively in the provision of facilities and services.

CHOICES FOR RURAL AREAS

Rural are face some very difficult choices in planning for their future. Many of their choices are tempered by considerations of common good for society as a whole. But within these constraints there are still decisions to be made. Although oversimplified, the choice may be considered as either accommodating a community to powerful, exogenous forces with the likely consequence that most rural areas would face a continuing depletion of their human resources, or for rural areas to utilize available technology and organizational techniques in developing themselves to meet the competition as places in which to live and work.

Other chapters in this book document the thorough analysis of industries in screening communities to determine an optimum location for their firm. If this is a reasonable procedure for industry, should not communities also evaluate prospective industries as to whether the location of that industry in their community is in their own best interest? Whether an industry is an appropriate new member of a community will depend upon what the community expects from a new firm through job creation, income generation, and participation in community projects.

MULTIPLIER EFFECTS

Economists have long recognized the existence of a multiplier. Under today's complex economic system, the multiplier refers to the total impact of a particular activity on the entire system. Such aggregate multipliers have been used in impressing an individual community with the benefits which it can expect from industrial development. Expectations for an individual community based on an aggregate multiplier misrepresent the facts.

There are many reasons why the impact upon an individual community is likely to be less than that projected by the multiplier. Such multipliers assume that all workers are local residents. In rural areas, the fact are that commuting is an accepted way of life. Further, potential benefits from a new firm will be reduced by commuters who suddenly quit jobs outside the community to accept those at home or by in-commuters who earn a local paycheck but return to a home community to spend it. Second, most multipliers are developed assuming relatively full employment. In rural areas, unemployment and underemployment are greatly disguised because of labor force definitional problems that exclude enumeration of many persons. When new jobs become available these persons subsequently apply, thereby

reducing the need for new workers to move into that community. Thus the local economy may experience little increase in housing development and retail and wholesale trade that result when new jobs must be filled by new residents. While potential benefits are reduced, some community expenditures also become unnecessary. To the extent that new jobs are filled by local residents, the need for public investments in schools, water, sewer, and other public facilities will be reduced. To the extent that additional income increases the desire for public services and facilities, community investment would also be increased.

TAXES

A very practical consideration underlies most communities interest for further industrialization, a desire to increase their tax base. Most communities view the cost of public services as a fixed overhead. Thus an increase in industrial assessment permits this public overhead to be carried by a larger base at a lower per unit cost. Whether or not such gains are real or imaginary depends on whether additional public costs are incurred in obtaining industry to offset the added revenue.

The concern about tax base is derived from the fact that most local units of government are heavily dependent on property tax as a source of revenue. The issue of property tax, although real, compounds the location problem when more than one community is involved. For instance, the tax base created by a new industry may be located in one taxing unit while the major local input, that is, employees, reside in other taxing units. Thus the firm will make little if any direct tax contribution to the service area from which it draws its employees.

Although the property tax is a well-established source of local revenue, other means are available by which a firm's contribution could be more equitably distributed in relation to costs imposed and benefits received from communities that provide its labor force.

For a particular community, the tax base problem can be aggravated by special inducements that are offered industry to encourage location in a particular place. By this procedure, communities assume some costs that are of benefit only to the firm. These become community costs which should be compared to the benefits gained from an increased tax base.

JOBS

Jobs are the primary benefit to be gained from location of new employment centers. New jobs provide additional disposable income in a community and generate expanded retail and wholesale trade activity. For this reason, owners of retail establishments are generally in favor of expanded industrial activity in their community.

The question faced by the overall community relative to a firm's desirability in providing jobs is much more complex. The outcomes are quite different if the firm under consideration intends to employ mostly local labor vis-a-vis depending primarily on commuters or others whom they move into a community to staff the new positions. If the firm intends to depend on local labor, will the jobs fit the skills and aspirations of available employees or create direct competition for those already employed, thereby bypassing those currently unem-

ployed or underemployed? On the other hand, should the firm depend primarily on people who will be moving into the community, what kind of people are likely to be attracted to such jobs, and what contribution are they likely to make to the total development of that community? It is also important to evaluate the nature of the jobs being created in terms of advancement opportunities that permit employees to improve their skills, their income, and their social position.

COMMUNITY LEADERSHIP

Many rural communities suffer from a lack of leadership and initiative to take on projects of benefit to the entire community. New industries can contribute their brainpower in developing plans and executing programs that help communities become better places in which to live and work. Such possibilities are enhanced if management and supervisory employees are residents of the community in which they work.

While enumerable possibilities exist, some firms subtly intend to exploit a particular local situation. For instance, does the firm view the community as a place in which to bypass environmental standards or will it actively contribute time and money to achieve environmental standards for land, air, and water as well as quality housing and public services?

New employers often play a key role in encouraging the development of private services that complement their business operations while improving living conditions in the community. This is particularly true if the firm purchases the bulk of its inputs, both materials and services, within the local community. Direct efforts and contributions to the development of medical care, restaurants, motels, and related commercial businesses also enhance the community's ability to fulfill a broad range of individual needs.

It is in the best interest of both the industry concerned and the community that a decision about a possible location of the firm be based on as complete knowledge as possible of their individual characteristics. Both the firm and the community have and should exercise the right to reject, accept, or accept conditionally the community as a place in which to locate or the firm as a member of the community. This imposes a definitive responsibility on the people in the area to determine whether it is in their best interest for a particular industry to locate in their community. This carries with it an implicit assumption that such a decision can be reached only after thorough analysis of the firm, an analysis comparable in detail to that performed by the firm on the community.

COMMUNITY RESPONSIBILITY

For rural areas, it is important to recognize that ability to attract industry depends in large part on how well a community has maintained its competitive position as a place in which to live and work compared to urban communities. Rural communities currently find themselves at a disadvantage because of decisions made in the past. It is time to recognize that the needs of people are comparable, whether they reside in a rural or urban setting.

The community must continually analyze what public services and facilities it should provide and how these can be provided at an acceptable level of quality and cost. To do this, continual analysis of the business of providing public facilities and services must be conducted by those responsible for the community's future. In many respects, this analysis is comparable to that employed by profit businesses that continually examine available technology and operational practices to determine whether improvements can be employed to their advantage with consumers. Communities need to assess available technology and alternative institutional arrangements to determine whether changes are in the best interest of the people they serve.

Local control is a highly valued concept by both individuals and communities. For many, local control has meant autonomy and thereby has limited the community to its own resources. However, local control implies local responsibility to needs of people. If the needs of communities in rural areas are to be met, we must depend on an expanded concept of local control to make technical and institutional innovations that can provide opportunities for comparable qualities of services and facilities.

ORGANIZATIONAL ROLES

Interorganization or intraorganization conflicts have arisen as to who should have the primary role in helping communities plan for their future. Many Federal Government agencies, local chambers of commerce, industrial consultants, State planning agencies, etc., have vied for advantageous positions. The fundamental choice must be made by the community, and it is more important that the community take a positive role in developing such a plan than it is for any particular organization to achieve a dominant position. So much needs to be done to help rural communities become more competitive as places in which to live and work that there is more than enough work for everyone concerned.

I see a particularly complementary role to be played by the chamber of commerce and the cooperative extension service of the land-grant universities. Chambers of commerce do an excellent job in developing and maintaining contacts with leaders in industry. They continually evaluate local and State situations affecting business opportunities and are in excellent position to appraise alternatives that would make expanded business development possible. They also serve a vital function of communicating these concerns to political leaders when appropriate.

On the other hand, the cooperative extension service has accepted an informal educational responsibility that encompasses concerns for the entire community. In exercising this responsibility, it can provide facts on particular community characteristics of importance to industry or vice versa. In addition, it can conduct analyses of alternative structural changes that might be made at the local or State level to improve the competitive position of rural communities. Furthermore, it is dedicated to educational programs to help local people understand and assess the value of changes. These programs reflect a belief that an informed people can make decisions as to what is best for their communities. Combining the competencies of the

chamber of commerce with business, and extension with the general public, a local plan could be developed with goals and pragmatic approaches to problems that reflects the desires and values of the people concerned.

Responsible involvement requires a continual education effort so that a community will understand the plan and will confront the limiting conditions which now preclude its reaching desired goals. It is relatively easy for outside authorities, that is, chamber personnel, those with State industrial development divisions, industrial developers employed by utilities and railroads as well as extension personnel, to enumerate community disadvantages. However, a thorough understanding requires both recognizing a situation and then doing something about it. This means that the rural community, and those who would help it, must face reality and use every means at their disposal to reestablish and regain a competitive position.

INDUSTRY'S VIEWPOINT OF RURAL AREAS

[By Maurice Fulton, president, The Fantus Co., Chicago, Ill.]

When we talk about industry's viewpoint as it concerns rural areas, what types of industries are we talking about? Which companies within a particular industry are we talking about? And, within a specific company, whose viewpoint are we talking about? Who makes the decisions for that company and is it really an economic rather than a personal decision?

If we are trying to arrive at scientifically supportable conclusions, we may be in for trouble. For example, it is a very easy matter to find establishments within a given industry located in large metropolitan areas as well as in small rural areas. In some cases a company may have one plant situated in a large city with other plants in smaller towns. Finally, depending upon the person you talk to within a company, you find a variety of viewpoints among the individuals involved depending upon what their own prior experience may have been, what their personal lives are like, and what their individual points of view may be.

Much depends upon timing. When is industry's viewpoint established? Some of the attitudes that existed two decades ago have changed. Companies that shunned rural decentralization 25 years ago may be among the foremost advocates today. And the reverse may be true. Companies whose attitudes about size and nature of community were firmly established in the past have changed their viewpoints in recent years. Nevertheless, I suppose it is possible to talk about industry's viewpoint recognizing that any conclusions we might reach are subject to exception and qualification.

Since the end of World War II, the understanding, preparing for, and shaping of industrial development have achieved a high level of sophistication. The generalities of a generation ago are certainly known to all of you and there is no point in mentioning the cliches of yesteryear's development emphasis such as hunting and fishing.

Still, many of the circumstances that fostered the decentralization of industry 25 years ago exist today and bear repeating. They certainly have been shaped by events of recent years and by expectations for future years, but the basic principles continue. It is not just that the rural setting is more profitable or more attractive, but also that, in many respects, the urban center is forbidding, unprofitable, and unattractive.

While nearly three out of every four of today's manufacturing jobs continue to be located in the 193 largest labor markets of the United States, more than a third of the new openings in the 1962–69 period were in the Nation's small or essentially nonmetropolitan areas. According to the Association of State Planning and Development Agencies, in the period 1954–59 inclusive, 59 percent of the new manu-

31-864—74——6

facturing plants located in the nonmetropolitan areas vis-à-vis 41 percent in larger areas. In terms of employment and investment dollars, the nonmetropolitan areas were favored, 67 percent and 69 percent, respectively.

The trend is continuing and likely to continue, particularly away from the largest cities. Many employers are growing disenchanted with big-city conditions. Some of these are executives who a decade ago swore that they could not or would not consider operation in a small town.

The combination of journey-to-work frustrations, fear of physical attack, air pollution, and overpowering noise levels, coupled with high living costs and economic anxiety, is adversely affecting attitudes, work habits, and productivity.

"Getting to work is hell," says a big-city commuter. Overreaction? Probably not, when you figure he may be riding mostly in equipment over 30 years old, is experiencing cancellations and delays en route, and is traveling farther than ever before. In 1963, for example, most commuters in New York traveled less than 15 miles to work. By 1980, half of all commuters will be traveling 15 to 25 miles to and from work.

But an average of only 17 miles can be covered by rail in 1 hour. Private automobile drivers average only 16 miles in 1 hour in the larger, more congested cities where mass transit facilities are unavailable. Distance per hour is only 7 miles by subway and 5 miles by commercial bus. A 3-hour average round trip is not unusual in many congested areas.

Many big-city workers arrive at their job "mad" before their day starts. After a while they do not even care if they are late or never arrive at all. Throughout an average big-city year, there are many "phantom work weeks" where millions of man-hours disappear in a maelstrom of delay and confusion.

On the average, three times as many violent crimes—murder, rape, robbery, and aggravated assault—are committed in big cities as in smaller communities. Cities like San Francisco, Detroit, Baltimore, Washington, and New York are even worse. Residents there are four times as liable to attack as those in smaller towns.

Noise is now recognized as a threat to emotional stability. Eighty decibels is about as loud as sound can get without creating discomfort, and any rating above that is assumed to produce severe physiological effects. Heavy traffic creates 80 to 90 decibels of sound. Exposure at 100 decibels threatens permanent hearing impairment. Subway trains create 100 decibels of sound.

City noise is a constant day and night irritant, deadening the ability to concentrate, distracting factory worker, secretary, and executive alike. Studies conducted at Montefiore Hospital prove that noise creates a sudden rise in blood pressure, tenses muscles, and causes stress and severe headache. Research at NASA indicates that people become less tolerant rather than more tolerant to continued noise exposure.

Pollutants affect clothing and homes and are hazardous to health. To live reasonably long and stay reasonably healthy is becoming more and more of a problem in our cities. Medical care costs are 20 percent more than in nonmetropolitan areas, which brings up the entire problem of the living-cost anxiety syndrome in our cities.

A 1968 Fantus study indicated that the cost of living for middle-income executives in New York was a shocking 50 percent more than in communities of 50,000 population or less. Updated studies reveal that this has increased to 56 percent.

In 1968 an executive earning $16,000 had $133 of spendable income left after essential living costs and tax payments. In 1972 he could probably not get by without borrowing from the bank. Cost-of-living anxiety, transportation frustration, nerve-wracking noise levels, and personal security problems, including bomb scares, have had a direct impact on work habits and productivity at all economic levels.

Inconveniences compound themselves within the complicated infrastructure of a city—a garbage collection stoppage, a brown-out, a building services strike—any of these also can have a major impact. Tardiness, lateness, absenteeism, and disillusionment have become a way of life in most metropolitan areas today. In Detroit, for example, turnover in office personnel is 36 percent annually. This is more than four times the turnover in a city of less than 100,000, like Charleston, W. Va.

Some manufacturers have sought a solution in a move to the suburbs. In this they have been following population; since 1960 the suburban population has jumped by more than 25 percent while the population of central cities has increased only 10 percent. Ten years ago 67 percent of the population lived in the 230 metropolitan areas of the United States. In 1970 the census is expected to show this proportion has increased to roughly 71 percent, with most of the increase in the suburbs. Suburban location is not providing the answers for many industries, however. In the megalopolis, problems spill over into the suburbs. Expanding urbanization brings areawide pollution, blight, wasteful land use, transportation difficulties, and intergovernmental conflict. Suburban land costs are rising rapidly as industrial use competes with other uses. In most major cities, the agglomeration of industry in the suburban fringe has caused labor shortages. The labor force resident in the central city is unable to reach the jobs offered for want of transportation and cannot move to the suburbs for want of housing. A surprisingly large segment of the work we do today involves companies situated in attractive one-story suburban locations, well landscaped, pretty to look at, but noncompetitive because of costs or conditions.

The smaller city, on the other hand, remains attractive. The Bureau of Labor Statistics estimates the budget for a family of four in a long list of areas divided into geographic regions. In every case, the cost of living "moderately" in nonmetropolitan areas is significantly below the cost of metropolitan existence. The average differential in the Northeast is 4 percent, in the Midwest 6 percent, in the South 9 percent, and in the West 5 percent.

Such differences are frequently, though not always, reflected in lower labor costs, a major reason for consideration of the smaller city location. Continued successful operation in such cities has been even further encouraged by the interstate highway system, past growth of feeder airlines, sophisticated financing methods which may place the small city on a par with the big city, training programs, improvements in utility availability, and the gradual disappearance of provincialism. Recognizing, then, that industry is continuing to move in a direction of rural location, how are the decisions made? What is the process?

Essentially, I suppose, what industry really does, stated in its simplest terms, is decide what a plant requires and then look for a community that is strategically located and can best supply those requirements. When this matching process involves selection of a smaller community for the location, a series of analyses relating to the location and its suitability for the purposes intended inevitably results.

In terms of community analysis, it seems that the process can be divided into three major categories. First would be a determination of the characteristics of small communities as a group. This would mean looking at the people, the resources, and the facilities of small communities. Recognizing that services are going to be fewer, skills less available, transportation less varied, etc., the question is whether the people, resources, and facilities of the small community will be of a nature and magnitude to satify the plant's requirements.

Second in the analytical process, but not necessarily second in chronology or importance, is the geography of the area. Location, transportation facilities and networks, population trends, markets, raw material sources, and everything that has to do with location within the country come into play.

Finally, in the entire community analysis stage is the analysis of the specific community itself. Having established that it is possible to operate in a small town and that the geography is acceptable, is this the particular small town best suited for the purpose? Having established that one can do without the pleasures and excitements of the big city and without the total environment and support of the big city, the question is whether this particular small town goes far enough in meeting essential requirements. Is it conceivably too rural, too primitive, too lacking in needed facilities to permit operating there?

The answer to these question depends upon what kind of industry we are talking about. As a counterpart to the several statements just made, in looking at the industry's needs, I suppose one should consider first what it is that industry looks for in general. This would include the abstract and elementary concepts of an adequate labor force; acceptable wage levels; reliable and well-priced utilities; reasonable land costs; good transportation, housing, and education for transferred personnel; happy labor-management relationships; and so on, all stated in the general sense.

Against thi must be considered the ability of small towns, generically, to supply the needs of industry in general and this specific plant in particular. And, of course, there is the question of the ability of the particular community to meet the needs of the specific company.

I have already suggested many reasons why the smaller community is frequently so much more appealing than the big city. Now let us look a little more closely at the specifics—the specific pros and cons. Let us start with advantages—first, labor.

The small-town boy outdistances the big-city every time. This is not necessarily a matter of union versus nonunion plants, but more a matter of attitude toward work in big cities versus that in smaller towns where people are used to tackling a day's work for a day's pay.

We have one client with a plant in a big city and a new one in a small community. Both plants have the same machinery and make the same product. All employees are on a piecework basis. But the plant in the country outproduces the one in the city by one-third. Why? The answer is that in the city you have a built-in attitude of

job protection—do not produce too much, because it might hurt Joe who is a slow worker.

Parenthetically, let me mention that U.S. Government studies repeatedly point out the differences in labor rates between small and large cities for identical jobs. Industries in smaller cities tend to experience lower costs—and that is not a North-South phenomenon, but a large-small function, ragardless of the sector of the country. Nor is it necessarily a function of cost of living, either, which may come as a surprise to you. Lowest labor rates do not always follow lowest living costs, and vice versa.

As the freeway network had been expanded, additional communities have been brought to closer proximity, timewise, to their markets than was formerly possible. For a community 20 miles away from the core of a metropolis to be closer in time to the city center than sections of the larger city located some distance away from a freeway is not unusual. It can be generalized then, that the marketing areas for many producers have been expanded in recent years. This has been particularly true in the case of those who have a perishable commodity. Not only has transit time been reduced but more dependable railroad refrigeration equipment and better handling methods have made what might formerly be considered a remote location not nearly so remote.

The expansion of air freight, both from an availability and frequency basis and the subsequent reduction in rates, has made many former rural sections of the country able to compete in the major markets.

Utility services, which were not formerly available in many small towns, are now obtainable in many if not all cases in the same quantity and quality as in larger communities. Such services as sewers, dependable water supplies, electricity, telephone and natural gas (if available, at all) are generally available today to potential users in smaller communities as they have been for many years in larger communities.

Many smaller communities have recognized the personal considerations of plant executives. Both the physical plants and the teaching standards in schools have been upgraded. In addition, recreational facilities are located in even the smallest community. Cooperation among civic leaders has led to community swimming pools, golf courses, public parks with tennis courts, badminton courts, and equipment for juvenile play.

Recognizing that a business is only, in essence, a group of people assembled together in a physical facility, communities that are actively seeking new industry recognize that making the family of the employee contented makes for happier employees and higher productivity. The personal amenities, then, are more and more considered vital by small communities.

Business expenses in small communities often can be less than in larger cities. In many smaller towns commercially zoned land with all utilities to the edge of the property can be obtained within the city limits for under $1,000 per acre. This is level ground that needs a minimum of preparation prior to building. Certainly, such prices are unheard of in larger communities. While no generality can be true in all cases, nonetheless the property tax rate in many smaller communities can be substantially less than in larger cities. This can be a consideration to some site seekers.

Perhaps the most important factor is that property for unusual developments may not be available in larger communities. Examples are plants that might require large acreages for waste disposal or have smoke or noise problems that can be best handled in wide-open areas. These, of course, are more readily available in or near smaller communities. I am not advocating pollution for smaller cities, but we find that solving the problem can frequently be easier in the smaller town.

Many who have located in smaller cities feel strongly that the labor relationship has a high attraction. People recognize the value of a business to a smaller community and, therefore, are ready to expend extra energy to assist in making the business succeed. In addition, the majority of the employees will live only a few minutes from the plant. This should mean fewer problems with punctuality, delays due to weather, and transportation breakdowns and congestion.

Because of the short travel time and the fact that residential sections of small towns are sometimes relatively close to business facilities, businessmen have discovered that there is an availability of housewives on short notice for seasonal assistance. In general, then, it is conceded by those who have both small-town and large-city plants that many factors of the labor market are highly favorable for a small-town operation.

Last, a positive consideration is the fact that small communities fully recognize the value of every business. They cannot afford to make a firm unhappy and thus risk the loss of that company to some other community. Jobs are precious to them and minor problems with water supply, sewage disposal, zoning, street maintenance, and adequate fire and police protection are generally handled rapidly and satisfactorily by the city fathers so that the facility can be retained. Plant security is probably easier to accomplish in the small town, also.

Of course, it is not all rosy. Some obstacles to operating manufacturing plants in small cities and towns do exist. The difficulties might be considered to be these: Lack of management and executive personnel, reluctance of some company executives or their wives to take assignments in small communities, lack of trained mechanical workers, inadequate utilities, poor housing supply, lack of construction work forces.

Being the main industry in a town has many advantages but also I suppose has the disadvantage of being constantly in the spotlight. An industry that deals fairly with its neighbors and employees, however, has lots of friends. This can be important during critical periods.

Small towns cannot compete with large centers for cultural activities—the theater, museums, concerts, lectures, etc.—but I do not think this is a critical matter. Available to them are fast airplane services, national magazines, national newspapers, and national radio and television, and most of all, the fast and frequent means that permit those who live in small places to visit large cities with great ease and at low travel cost. And, I suppose, the advantages of communing with nature might be a cultural advantage favoring the small town.

Obviously, every business does not belong in the small community. It happens that an enormous segment of the business complex cannot be disassociated from the greater population of the metropolitan centers. I refer to the service industry which includes retailing, wholesaling, utilities, transportation, construction, entertainment, banking.

insurance, and all the other types of services that are necessarily indigenous to the population. They must be located where they are needed. Too, the service part of our economy is our fastest-growing portion and now exceeds in employment the manufacturing part. The metropolitan areas will have their hands full adjusting to the growth in the service industries without further massive manufacturing plant loads.

Just what types of industries are most likely to be attracted to rural communities? Let us take one of the major criticisms of the smaller town, its so-called cultural vacuum or lack of amenities and ask ourselves whether these absences will jeopardize the chances of attracting industry to the community. It depends partly on whom you ask, because different executives have different viewpoints and prejudices. But it also depends on which industry and which part of it you ask, as well as when you ask.

The major computer mainframe manufacturer employing a large number of engineers would find an intolerable cultural vacuum in many small communities. Of course, he would also find that some of his other basic operating needs cannot be satisfied except in the larger cities. But in selecting a location for a satellite plant employing perhaps 100 bench workers and one or two engineers he can afford to be less critical of the existing amenities, less demanding of the housing supply. This would not have been true a few years ago because the then existing technology and production techniques were not well developed enough to simplify operations to the subassembly of highly sophisticated microelectronic components.

Yes, computer mainframes will continue to be made in sizable metropolitan areas, such as Minneapolis and Phoenix. But computer parts and subassemblies can be made and are being made on the eastern plains of South Dakota, in seemingly remote parts of Utah and Wyoming, to mention but a few of our smaller areas.

Obviously no neat and compact set of specifications which tells what kinds of industry can satisfy the locational needs in the small town is available. Timing is one factor; economic geography another. And little or no evidence has been found to prove that certain industries or even particular companies shun regions, States, or even communities below a certain size. Since 1965, General Electric has extended its network of facilities to eight new States: Arizona, Florida, Iowa, Kansas, Louisiana, Missouri, Oklahoma, and South Carolina and Puerto Rico as well. In several of these areas, smaller communities have been prominent locational choices. The company has also expanded its facilities in virtually every area where it previously had operations. But noteworthy are these States in which it significantly increased the number of its facilities: Maryland, North Carolina, Pennsylvania, Tennessee, Texas, and Virginia. Here again small cities and towns have been beneficiaries.

I think we are all familiar with the phenomenon of a plant locating from out of the blue, selecting a community which never thought of itself as suitable for the purpose but nevertheless accommodating a very successful operation. Examples would be the plumbing supply manufacturer producing products in a small town in southern Colorado for national distribution. What about the automobile muffler manufacturer in another small town in Nebraska shipping for miles in every direction?

The observed pattern of small-town industrial location is such as to make it very difficult if at all possible to draw meaningful conclusions in terms of the type of industry most likely to locate. For example, in the Northern Plains States it used to be traditional for many local people to think in terms of agribusiness and pursue it almost to the point of diminishing returns and to the exclusion of other efforts. Likewise in the Appalachian region, wood utilization is still the most frequently mentioned target industry, even though it is unfortunately a catchall for some of the more marginal development proposals. The "management intensive" industries that could be particularly attractive to small towns are sometimes ignored in favor of the more obvious but more elusive extractive, resource-oriented, capital intensive or labor intensive industry.

It should be obvious from some of the things that I have said that I view with suspicion any attempt to categorize different industrial classifications by whether they are small-town or large-town oriented. Because of such a huge multiplicity of circumstance and of opinion, broad conclusions are impossible. Furthermore, even if they were possible, the exceptions would riddle the position. I suppose that if one attempted, nevertheless, to list some of the characteristics of firms that can flourish in the smaller town it might be possible. Remember that each characteristic is independent and that rarely would one firm possess all of those mentioned. Generally, however, firms that can best profit by location in the nonmetropolitan area look like this:

1. Require fewer skills at the outset.
2. Are willing to train a large part of their work force.
3. Are more oriented to the assembly of purchased parts than to the fabrication of those parts.
4. Are faced by necessity with low profit margins in their industry and hence must keep out-of-pocket labor costs down.
5. Use mostly catalogue-ordered or standard raw materials.
6. Are able to keep inventories on hand for production runs rather than relying upon hand-to-mouth purchasing.
7. Deliver to customers largely at either end of the one or two main rail, truck, water, or air routes which serve the town.
8. Have customers who do not normally visit the plant.
9. Have utility requirements which are not unusual in any way.
10. Do not find it necessary to have professional men such as engineers, physicists, and mathematicians attached closely to the manufacturing facilities (major exception: a university town).
11. Recognize the benefits of hiring employees who live closer to their work and who have more free time than can be provided in the large city.

Let me add to that list the most probable type of prospect: The big city company whose competition has successfully located in a small town and is now a threat. If there is anything to the "follow the leader" theory, there is a good prospect.

Now that I have generalized about the type of industry, let me stick my neck out even farther and generalize about the type of town. I do believe that the trend to smaller communities that we have witnessed in the past two decades is likely to continue. I believe that the communities that participate to the highest degree in this growth pattern will probably possess some if not all of the following characteristics:

1. A good highway system, preferably oriented to the national interstate system.

2. Strong community leadership, intelligent and well informed in terms of various programs available from different levels of government. It seems to me that any development group, any chamber of commerce, would be well advised to have one member informed of the various aids and benefits available from government. The numbers are amazing and they are growing.

3. A community which is not dominated by a single large industry whose influence is felt not only in normal day-to-day social intercourse but in the labor market as well.

4. Some demonstrable evidence of labor availability in quantities necessary to selectively staff new facilities.

5. Not so remote from a large city as to prohibit easy access to the facilities and services of the large city. A distance of 50 miles approaches the outer limits of desirability in this connection.

6. A terrain which is not forbidding and which permits easy development of suitable industrial sites at moderate costs.

At Fantus we prepare our report, and we present it to our client. The people in the client company use it as a guide for their own visits. They visit the recommended communities. They ask some of the same questions that we asked. If we were agreed on the locational requirements, if we have used this to define the area of search, if we have screened our communities properly, and if we have made some careful forecasts, the odds are that we will recommend the towns that are superbly suited for our client.

How does our client finally select a city? One metalworking firm was asked to choose between Russellville, Ky., and another Kentucky community. We rated Russellville a little higher. Labor was a little more available at the other community, but we felt that Russellville was a better location for our client. It was closer to Nashville, and thus closer to better air service. Russellville had an excellent record of not trying to attract new plants until the previous companies had pretty well digested their need for labor.

On the other hand, some people in the client company were pushing for the other community. Finally, they said, "We will let you know." Three months later I met a vice president of the company and I asked, "What did you fellows finally decide?" He answered, "When the chips were down, we felt that you knew something that we didn't know, so we took Russellville."

At the Fantus Co., we have conducted close to 5,000 location studies over our 50-year history. Our clients cover the spectrum of industry in size, category, and sophistication. We are privy to some of their innermost planning secrets.

Yet, frequently I will read in the *Wall Street Journal*, *Business Week*, or other business publication of a location decision defying all logic. At such times I say to myself, and I believe it: "They must know something we don't know." I suspect it will ever be thus, for all of us.

CORPORATE AND COMMUNITY DECISIONMAKING FOR LOCATING INDUSTRY

STATEMENT OF JERRY D. GINTHNER, EXECUTIVE VICE PRESIDENT, MICHIGAN CITY AREA CHAMBER OF COMMERCE, MICHIGAN CITY, IND.

(EDITOR'S NOTE: This chapter consists of four separate statements made during a conference panel discussion.)

I would like to approach the subject of decisionmaking pertaining to industrial expansion as if a given community had absolutely no existing program. In other words, we are cranking up a new effort, a fresh start. Let us call this community Mid-City, USA.

For a variety of reasons, the civic leaders of Mid-City have suddenly become very enthusiastic and are rallying around the slogan, "We've got to get some new industry." Fortunately for Mid-City, these leaders are very cognizant of the tough road ahead, of the odds against them, and are desirous of using good businesslike tactics. As they put it, "If we're going to do it, let's do it right."

The following is some advice I would give the leaders of Mid-City.

First, assuming that you really do want to further your economic base through industrial expansion, what kinds of industries do you want? No, that question is wrong. The real question is, What kinds of industries can Mid-City support? A fact too often ignored by community groups is that industries expand for one simple basic reason, to make a profit. I feel that in our local efforts we frequently overlook this principle. We are selling what a great town Mid-City is, the excellence of our schools, recreation, parks, and shopping areas, along with the friendliness of the people; we then proceed to develop promotional campaigns around, and likewise solicit, industries with this appeal. Now all the amenities of Mid-City are important and do play a part in a firm's decisionmaking process in site selection, but I doubt if that is where the industry assigns its first investigative priorities. What I am saying is that Mid-City should develop a program to identify which particular types of industries will gain economic advantages by locating there and base the promotion on these economic facts. This is not a simple assignment.

What about the organization? Although many people will want to be and should be involved in Mid-City's industrial program, the group heading up the project should be kept to a reasonable, workable size—perhaps 8 to 10 of the most dedicated, influential, and willing workers available. Everybody does not have to be on the board. There is much room for participation on the committee level, working on site promotion and other important research-oriented and promotional activities.

A near must in the leadership of this organization is the active and sincere participation by the mayor of Mid-City. You have to have

him. I am aware that in certain communities this may not be possible, but at least get his support if not his active participation. For the mayor of the city, besides using his natural role of leadership, can enlist several of the resource people you must have.

Let me explain this by setting one of the goals for Mid-City's program. You will want to develop a total team effort. Not only will the leaders of our industrial development group have the enthusiasm and expertise to react favorably at a moment's notice to skillfully serve a prospect, but another segment will be able to do so, too. Our team will include not just the mayor, bankers, utility men, and other prime movers, but also those representing our city's planning department, sanitation board, water department, and pollution and health control agencies, to name a few.

A third piece of advice for our Mid-City friends is to make a long-term commitment to the development program. Call it continuity of effort. This is equally true when preparing the promotional and financial phases of the project. To me, a minimum commitment to plan and finance a strong program would be 3 years, better let it be for 5 years.

To keep Mid-City's program rolling over the long haul, management of the everyday routine is vital. Mid-City has a chamber of commerce, so I would suggest that the development group talk with the chamber's directors about staff availability. If the chamber of commerce will give Mid-City's new economic development plans the highest of priorities and if the staff is competent, then we have cleared one big financial hurdle. It may be that the chamber of commerce will have to do some restructuring internally, perhaps even dropping an existing activity or two of less priority. Sometimes it can be a mistake to divide civic leadership into too many portions.

A fourth suggestion, "Know thyself." Know the strengths of Mid-City and know its shortcomings. By some method, take a look at Mid-City through the eyes of an outsider. Face up to your problems and develop a plan for solving them. No community is perfect, and every industrial prospect is aware of this. What impresses the prospect is the fact that you are doing something to correct your problem areas. A strong industrial development program must be accompanied by a strong community improvement program. Call it quality control, and Mid-City is your product.

The Mid-City development organization should establish a knowledge of and develop a close working relationship with many outside sources. These include, but are not limited to, representatives of the State industrial development agency, State utility and railroad industrial departments, area colleges and universities, and professional plant location companies. Also, the development organization should research a wide variety of local, State, and Federal programs that might be geared to a community's economic growth efforts. The ability to properly use these tools will become an important aspect to Mid-City's successes.

I have presented some fairly basic concepts of community organization. Mid-City will design a program to meet the needs and size of the community. Much of what I have advocated entails local initiative. Actually, industrial development has three prongs. Determining who your best potential audience is, how to professionally approach them, and then being ready when those prospects come to look you over.

I mentioned community support. Let us examine this in one example of what takes that total team cooperation. Assume Mid-City has researched and found the types of firms that could economically profit by a Mid-City location. The Mid-City economic action group has developed a long-range, direct-mail campaign, backed up, when needed, by telephone calls and prospect visitations by competent personnel. But it has also discovered that one of the major problems in Mid-City is the lack of adequate industrial sites that are fully developed, ready to go, and competitively priced.

This is a major problem. I will not dwell on the importance of fully developed sites—sites to which municipal sewer and water lines can be extended, adequate gas and electricity can be provided, streets can be properly planned, and areas can be properly zoned. To me, this is a big plus and a great advantage for those communities that have them and against which Mid-City may be competing.

The problem to Mid-City in developing such a facility is, of course, money. Someone or a group has to buy the land. Expertise is needed to plan what is to be a first-class industrial park. Municipal services and utilities? Remember our mayor? Here he comes along with the council and others in his administration family. They also have a problem. From a short-range view, it is often far more advantageous politically to invest tax moneys in taking care of the constituents and their immediate needs. To start investing some of those same monies in "futures" is not always very logical to the politicians. This is a prime reason why our Mid-Citians must do an outstanding job of continually selling the potential of the economic program to the local residents.

And last, Mid-City fathers should take good care of their existing industry. Do not offer any concessions that you would not provide to your present industrial family.

In summary, base your marketing program on an economic appeal that says, "You, Mr. Manufacturer, should consider Mid-City because you can make a profit here and we have the facts to prove it."

Organizationally, make it a community team effort. Involve your mayor. Have those important resource people primed.

Develop your whole program on a long-range basis, 3 to 5 years, and plan your financial support accordingly.

You are ahead if you can find an adequate full-time staff to manage the program.

Always be selling your economic action program to the citizens of Mid-City.

Know the problem areas in your community and develop a plan for solution.

Use all the tools available such as governmental programs and outside industrial specialists.

Take care of your present industry. Keep the local companies satisfied. They can be your very best advertisement.

It will take money, fantastic volunteer dedication, time, a capable staff, an unusual degree of "stick-to-it-iveness," never-ending research, and positive community support.

It is a huge task. But as they say in Mid-City, "If we're going to do it, let's do it right."

STATEMENT OF HOWARD E. LINDOW, MANAGER, REAL ESTATE AND PROPERTIES, MINNESOTA MINING AND MANUFACTURING, ST. PAUL, MINN.

We seem to agree that a redistribution of population will preserve the viability of rural America and ease the pressures on metropolitan centers.

The ultimate purpose of such redistribution is to improve the quality of life for everyone and to expand the individual's freedom of choice, that is, for everyone to have the option of developing one's self in an environment arrived at by choice and not by circumstances.

The 3M Co., out of enlightened self-interest, has become an old hand at rural industrialization. In fact, we were practicing it as a matter of corporate policy before it had a name, and long before the out-migration from rural America was seen as a social concern of national scope.

Please do not misunderstand. I make no claims of being better than others. In fact, a principal underlying message of the action plan I will advocate is simply this: strong economic incentives must be part of any effective policy of population dispersal.

A second principal underlying message is that after all the study, research, discussion, and agonizing are accomplished—and these are necessary before action—nothing really happens until the shakers, doers, and movers in each locality are there to make it happen. Let us just call them movers—individuals who can match up human desires and material things to achieve results for the good of all—not especially gifted or holy individuals, just smart people. They are not the type to remain in a static, unstimulating environment. They tend to take off for the challenge and opportunity offered by metropolitan centers, which have an insatiable appetite for smart people.

How ya gonna keep'em down on the farm?

By making it attractive esthetically, economically, socially. One's livelihood is really the base from which he operates, the base on which he can build solutions to various problems.

Today's young, and particularly the best young people in rural communities, are intensely concerned about the environment, problems in education, transportation, health care, and a host of other social concerns. If it is possible for them to involve themselves actively in the solution of those problems—if it is possible for them to develop themselves right in their own home towns, where many would prefer to live—if understanding and desirable economic opportunities exist where they truly want to live, then big cities would not look quite so green to them. Those opportunities will exist in communities that develop their potential in terms of labor supply, good sites, utilities, and above all, movers.

It seems to me that there is no shortage of communities with the potential for some combination of developments that will ensure them a balanced economic base. They are there; they possess the potential. But too few have "put it all together." Not enough of these communities have coordinated plans to really make themselves attractive to the kinds of developments they hope to attract. This is not simply a matter of selling harder; it is a matter of arranging the right thing to sell, such as attractive sites on stable soils close to railroad tracks and good utilities, a quality labor supply in a pleasant

place to live, good schools, and so on. Interpreted properly, the right thing to sell means attractive sites, not rolling hills. It means construction sites on stable soils, not river bottoms. It means sites close to railroad tracks, not across a U.S. highway. It means sites close to sizable lines and water towers.

A firm idea of what the other fellow really needs and what the community wants is basic. But needs and wants do not always coincide, and I should mention something about the community attitude and the separation of desire from reality.

Every community has a character all its own. What is right for one is not right for all communities with similar potential. Local governments and development groups have every obligation to know the pulse of the community, to make certain they are not going after something the community does not want.

STATEMENT OF G. A. HORNBERGER, DIRECTOR OF INDUSTRIAL ENGINEERING, GENERAL FOODS CORP., WHITE PLAINS, N.Y.

Decisionmaking for the location of manufacturing plants follows a fairly standardized pattern, or sequence of events, regardless of the industry or product to be produced. Factors within the pattern reflect a greater degree of significance among industries or products. It is important to note that the basic principles involved, or the approach used, do not differentiate between rural and urban locations.

The procedural process has two parts. The first is called an area location study. Its purpose is to determine the approximate geographical areas to be considered. The second is referred to as site selection—the site on which a manufacturing plant will be constructed.

Site selection is a task group effort. No individual can be expected to have expertise in all of the disciplines required for proper evaluation. If adequate planning is done initially, and if the scope of work and specifications are well documented, determining the best possible location is almost assured.

A new manufacturing plant is considered for the production of a new product, or products, or for increased volume requirements on existing products. The search for a new site takes place when existing plants, or sites, cannot accommodate expansion or when they do not represent an optimum geographical location.

In developing the specifications for area location and site selection, a geographical market projection is needed. If this will be the first plant to produce a new product for national distribution, economics usually dictate that it should be located in the Midwest or mid-Atlantic.

The area location study takes into consideration how many plants might ultimately produce the products. Will there be two, three, four, or more? What other compatible products might be produced at the same location? What area will be serviced from this location if additional plants will produce the same products? Economics and transportation service determine the geographic areas to be considered.

When the general area has been identified, it usually represents a radius of 150 to 250 miles.

The next step is the site selection process. Available sites within the area are identified and evaluated.

The following factors are what I believe to be significant for selecting industrial sites:

Community Aspects:

- Does the community want industry?
- Maturity of citizens—do civic leaders have a progressive attitude toward industry?
- Are people active in politics and community activities?
- Does the community have a good progressive development program that meets the immediate and long-term needs of the community and its industry? Some of the important considerations are planning and zoning; water and air pollution programs; construction planning, maintenance of streets, and traffic control systems; residential housing; hotels, motels, and restaurants; shopping facilities; and sufficient schools.
- College facilities within a commuting distance.
- Health and welfare (hospitals, doctors, nurses).
- Disaster plan.
- Public health program.
- Sanitary laws.
- Culture and recreation (outdoor attractions, parks, playgrounds, churches, libraries, civic attractions).
- Police protection.
- Fire protection.
- Trash and garbage handling.

Utilities:

- Potable water supply.
- Sewage collection, treatment, and disposition.
- Solid waste disposal.
- Adequate supply of electric power at competitive prices.
- Adequate fuel supply of coal, oil, and gas at competitve prices.
- Storm drainage system.

Labor:

- Population with a 35-mile radius. (This is recognized as the normal commuting distance; however, with good highway access this can be extended to a 50-mile radius.)
- My rule-of-thumb indicates 25 percent of the population represents the labor supply.
- A single industry should not employ more than 5 percent of the labor supply initially and 10 percent ultimately for the financial protection of the community.
- What is the availability of labor and the distribution of population among skilled, semiskilled, unskilled, scientific and technical, and managerial workers?
- Is there a history of growth in the work group segment of population?
- What is the competition for the work group among industries?
- Availability of construction crafts.

Transportation:

- Railroads (main lines, switching service, transportation time and cost to customers, distribution centers, and availability of necessary equipment).

Trucking (common carriers, access roads, main highways, equipment availability, transportation time and cost to customers, distribution centers, and road maintenance programs).
Air (air freight, passenger service).

Raw Materials:
What raw materials are required?
What is the source?
Are they available at this location at a competitive price?
Is there adequate transportation service on inbound materials without paying a penalty?

Taxes:
Local.
County.
State.
Special.
Are taxes competitive with other communities?
How well are taxes balanced among residential, industrial, and commercial?
Are taxes in line with services?

Communications:
Telephone.
Telegraph.
Radio.

Services:
Banking.
Electrical.
Sheet metal.
Hardware.
Other.

Obviously, other factors that must be considered are climate, topography, soil-bearing characteristics, construction costs, etc. The subjects previously mentioned are pertinent, from my point of view, to rural development.

Industry encourages employees to participate in the development of communities. Industry expects, and is willing to pay, its fair share in the development of the necessary factors I have described. On the other hand, it must be assured that the requirements can be fulfilled when needed.

Rural location incentives can assist a community in attracting business and industry; however, incentives are of little value unless the significant services are available when needed.

When an industry searches for a manufacturing site, it usually wants the plant to be operational within 24 to 48 months. Area location and site selection require between 6 and 12 months of this time. This means that unless water and waste disposal systems are available the plant cannot be funded, designed, constructed, and guaranteed to be operational within this time span. It is more economical to have such services supplied centrally for the entire community than to have each industry provide its own.

The logical investigation of all factors described, plus the economic evaluation, determines the location of a manufacturing plant. In competitive industries cost, quality, and consumer service are of utmost importance.

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STATEMENT OF ROBERT W. SHIVELY, INDUSTRIAL DEVELOPMENT MANAGER, NEBRASKA PUBLIC POWER DISTRICT, COLUMBUS, NEBR.

Rural industrialization is just beginning to receive the attention it needs, and there is a lack of experience to guide both corporations and communities in the plant location process in rural areas.

In Nebraska we are trying to accumulate information, catalogue experience, and assemble it in usable form so our communities may base their industrial development programs on facts rather than suppositions. Earlier this year we conducted a survey of industries in Nebraska to determine what were the most important factors that led to the selection of their present location. Of 1,900 industrial plants listed in the Nebraska Manufacturers Directory, we selected a sample of 451 to whom a questionnaire was submitted. Three hundred thirty usable questionnaires were returned, a response of 73.2 percent. The 330 responses represented 61 percent of the manufacturing employment in Nebraska.

The tabulated questionnaires gave us some interesting data. We found, for example, that slightly over 70 percent of the manufacturing plants in the State were what we call home-grown industries; that is, they were there because that was where the founder of the company lived. Yet we have been spending most of our time and money promoting the other 30 percent of the market—national corporations that might put a branch plant in Nebraska. As a result of this survey, I hope we will come up with some exciting new programs to develop home-grown industries.

We asked the question, "At the time the decision was made, how important were the following factors in selecting your present location?" Forty-three factors were listed, and industries were asked to rate their importance. Awarding three points for every time an item was checked very important, two points for important, one point for minor importance, and no points for not important at all, the factors were then listed in order of importance on a point scale. The results are shown in table 7.1. Note that the economic factors were rated most important—labor, transportation, utilities, taxes, and sites.

I was somewhat surprised at the low rating given what we might call livability or community factors. For example, attractiveness of the community was ranked 17th. Quality of local schools, housing, recreation, medical services, and other community facilities ranked even lower. I was also surprised at the low importance accorded financial factors because Nebraska, along with most States, has developed numerous financial packages to attract industries.

Now that we know what factors are most important to industries that have located in Nebraska, we can use this information in the decisionmaking process at the State and local level. Nebraska and its communities can initiate action to improve their competitive position in those factors industries tell us are most important. For example, one of the weak points in many communities in Nebraska is their inability or unwillingness to develop an industrial site. This survey showed that the availability of a suitable industrial site was the fourth

TABLE 7-1. *Ranking of location factors, all industries*

	Rank and factor	Points		Rank and factor	Points
1	Labor quality	645	26	Construction costs	401
2	Highway transportation	640	27	Housing for plant workers	385
3	Labor availability	637	28	Housing for executives	372
4	Available site	604	29	Caliber of local ID group	347
5	Reliability of electric service	585	30	Local financial institutions	327
6	Wage rates	582	31–32	Recreational opportunities	298
7	Proximity to market	562	31–32	Vocational training programs	298
8	People who started plant lived here	537	33	Air freight transportation	293
9	Natural gas availability	529	34	Nearness to colleges and universities	288
10	Right-to-work law	520	35	Hotel, motel, and meeting facilities	271
11	Taxes	519	36	Air passenger transportation	267
12	Electric rates	514	37	Supporting industries	264
13	Rail transportation	511	38	Local investors	230
14	Community attitude toward industry	505	39	LIDC financing	166
15	Friendliness of people	490	40	Local subsidies	159
16	Natural gas rates	480	41	SBA financing	153
17	Attractiveness of community	474	42	Industrial revenue bonds	126
18	City water at site	473	43	Recommendation of consultant	120
19–20	Health facilities and services	465			
19–20	City sewer at site	465			
21	Available building	435			
22	Quality of local schools	428			
23	Groundwater supply	420			
24	Amount of unionization	417			
25	Proximity to raw materials	416			

most important factor in considering a plant location. Having documented this rather obvious fact, I hope we can be more successful in encouraging our communities to acquire and develop industrial sites.

Another benefit of this study is that we can direct our national advertising toward those most important factors—labor, transportation, utilities, etc. getting better results for our advertising dollars.

We also asked the industries, "Now that you have had some experience in Nebraska, what likes and dislikes do you have about manufacturing here?" Overall, we were pleased with the results. Except for taxes and air passenger service, all the factors were liked by over 70 percent of those responding.

In table 7.2 are shown the percentages of "like" responses for each item according to community size. This was done to see if there are some differences in small towns as opposed to Omaha and Lincoln, the two SMSA's (Standard Metropolitan Statistical Areas). It is obvious that community facilities, such as medical, housing, hotel, motel, and meeting facilities, are less available in smaller communities. While no one expects a community under 2,500 population to have the community facilities that are available in larger cities, we think the survey points out some weaknesses about which something can be done through areawide planning and local initiative.

TABLE 7.2—LIKES AND DISLIKES OF NEBRASKA MANUFACTURERS, BY SIZE OF COMMUNITY

Factor	Percent of "like" responses			
	Total	10,000 to 35,000	2,500 to 9,999	Under 2,500
Right-to-work law	98.4	98 3	98.0	100.0
Electric service	95 7	95.5	96.4	95.8
Quality of local schools	93.3	95.3	88.2	90.9
Health facilities and services	91.9	91.8	84.9	80.4
Natural gas service	91.2	94.0	90.9	83.3
Labor supply (unskilled)	91.2	92.5	91.5	92.5
Truck service	89.6	89.6	84.6	86.1
Labor productivity	89.5	91.1	92.7	85.0
Labor attitudes	88.6	89.4	92.9	86.1
Short-term financing	87.2	88.9	86.1	88.2
Community attitude toward industry	85.8	91.4	79.3	71.1
Housing for executives	85.0	91.2	63.6	58.5
Long-term financing	84.8	75.0	82.4	83.3
Nebraska highways	83.2	71.9	80.0	80.4
Housing for workers	81.9	84.9	71.1	60.5
Opportunities for vocational training	81.3	90.9	79.1	70.6
Hotel, motel, and meeting facilities	80.3	81.0	60.0	56.4
Recreational opportunities	79 7	89.8	77.1	82.1
Cultural life	79 2	79.6	72.5	61.5
Barge service	77.3	85.7	40.0	71.4
Rail service	76.0	80.9	62.5	55.6
Air freight service	72.7	58.0	66.7	62.5
Labor supply (skilled)	71.7	65.0	61.5	56.8
Free port exemption	65.8	70.0	76.9	50.0
Air passenger service	63 1	45 5	54.8	58.6
Sales and use tax	62.5	68.6	79.0	56.3
Corporate income tax	51.9	55.1	52.6	61.3
Personal income tax	51.8	54.0	52.6	61.1
Corporate occupation tax	49 0	51 4	37.2	48.0
Real estate tax	40.0	36 5	40.5	54.8
Personal property tax	19.8	16 7	25 0	35.1

Note: "No opinion" responses were eliminated from these tabulations

One thing that disturbs me is the question on community attitude toward industry. You will note that the smaller the community, the lower the percentage of "like" responses received. I am afraid new industries in smaller communities are sometimes greeted with suspicion, distrust, and outright hostility. Rather than assuming everyone in town wants a new industry, community leaders should find out what the people think and, where necessary, initiate educational programs explaining why industry is needed and what it will do for a town.

Another significant item is the lower rating received on the supply of skilled labor in the smaller towns. This is an area in which a great deal of work is now being done in Nebraska through a new statewide system of area community technical colleges. This is one way in which communities can improve their position if they have the desire.

Finally we asked the question, "If you had to do it over again, would you locate in Nebraska and in the same community?" Again the results were generally gratifying. Over 94 percent of the respondents said they would again locate in Nebraska (table 7.3) News Front magazine recently asked the real estate managers of the 700 largest industrial corporations what percentage of plant locations turned out to be happy moves. The average response was 79 percent, considerably lower than the response given by Nebraska industries to a similar question. When we tabulated answers to this question by community size, we found very little difference in the percentage of those who said they would again locate in Nebraska, but found a much lower percentage who would again locate in a community under 2,500 population—only 72 percent.

Definitive information can help communities develop more effective industrial development programs. In the words of a song from the Music Man, "Ya gotta know the territory." Community leaders need to know what factors are most important in causing companies to locate industrial plants in their area. They need to know how existing manufacturers rate their community on these factors. When they know these things, they are then in position to develop programs to correct weaknesses and take advantage of their strengths.

Although the economic development problems of rural America are nationwide in scope, they are essentially local problems and will ultimately be solved by local people. Decisionmaking at the community level is the key to community progress. Community decisions have a better chance of being good decisions if they are based on fact rather than on supposition.

TABLE 7.3.—INDUSTRIES THAT WOULD OR WOULD NOT LOCATE IN NEBRASKA OR THE SAME COMMUNITY AGAIN, BY SIZE OF COMMUNITY

	Nebraska			Same community		
	Yes	No	Percent yes	Yes	No	Percent yes
Omaha	95	5	95.0	76	13	85.4
Lincoln	39	3	92.9	32	6	84.2
10,000 to 35,000	60	2	96.8	54	5	91.5
2,500 to 9,999	49	5	90.7	40	7	85.1
Under 2,500	44	2	95.7	31	12	72.1
Total responses	297	17	94.4	233	43	84.4

PROBLEMS IN RURAL COMMUNITIES AFTER INDUSTRY ARRIVES

[John T. Scott, Jr., Professor of Agricultural Economics, University of Illinois, and Gene F. Summers, Associate Professor of Rural Sociology, University of Wisconsin]

When we consider the problems encountered with industrial expansion and with working in rural communities, we want to keep certain important things in our focus. Some of these things are so obvious that they are frequently overlooked when experts begin to consider the ramifications of what they, the experts, think are the salient problems.

First, contrary to what the urban tourist thinks as he speeds along an interstate highway, all small towns and rural communities are not alike—they have their own peculiarities with respect to location, transportation network, economic resources available, social overhead capital, private businesses and services, education, population composition, and many more.

Second, when there are problems, they are problems of people, not places or things. People have problems! Towns, cities, and places do not! All too frequently we lose our focus on this important fact. A problem becomes a community problem only when it is common to a group of people in the community, and it is a problem which usually can be solved only by concerted public action of one kind or another. Most successful politicians are the first to recognize, for example, that it is people—mothers, fathers, farmers, plumbers—that vote, not things—schools, highways, or hospitals. When a thing is built, the crucial questions for social scientists are (1) who will be affected by it, (2) how many will it affect, (3) in what ways will it affect them, and (4) how will they react to the thing?

The group that defines a situation as a problem may be the majority of the persons in the community; it also may be a minority group with substantial influence and power to solve its problems as if they were community problems; or it may be a less powerful minority which is allowed by the majority to solve its problem, because the bad effects of the solution are not great enough to substantially affect the welfare of the majority. We are assuming that the solutions to most problems have both good and bad effects. Not only should the benefits outweigh the costs in the aggregate when a problem is solved, but it is also important how these "goods" and "bads" are distributed among the people. Are the "bads" as well as the "goods" equitably distributed?

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Most incoming companies view site acquisition as an important problem because it relates to all the locational questions in the local community such as land available, zoning, pollution regulations, and access to railroads, the interstate system, airports, and utilities and their volume.

For example, when Jones and Laughlin Steel Corp., recently located a large steel galvanizing and rolling mill near Hennepin, Ill., the site which provided optimum access to railroads and water transport was 10 miles from the nearest interstate highway and across the Illinois River. How did the company handle this transportation problem? Before committing itself to the Hennepin location, the company obtained a commitment from the Illinois governor that the State of Illinois would reroute and/or develop highways in the area to permit convenient shipment of steel via the interstate system. This was done. A 10-mile interstate connection (I–180) was constructed from the plant entrance to Interstate 80. The highway, including a bridge across the Illinois River, cost Illinois and U.S. taxpayers at least $20 million. It is doubtful whether any kind of cost benefit analysis was done by the State before the governor made this commitment.

But how does site acquisition affect people in the community? If an incoming company does not find a site, all the economic advantage that would have occurred in the community by having the company there evaporates. This will have its effect on people looking for employment and on all businessmen located there. A recent study by Shaffer [3] has shown, for example, that each permanent job directly provided by an incoming industry is worth $38,000, on the average, to the community over a period of time. A wide variation would be found in this figure however, depending on the average level of income per worker in the industry involved and the multiplier effect of that particular industry. This means that theoretically, at least, a community could afford to subsidize an incoming industry up to $38,000 for each permanent job provided by the industry. However, the economic advantage of a new industry to the local economy of the host community must be considered cautiously. The danger of considerable leakage of the economic advantages has been demonstrated by Wadsworth and Conrad. [5] They identify at least four sources of leakage. The first major leakage is payroll carried out of the host community by nonresident, commuting workers and spent in nearby towns and cities. A second leakage, though Wadsworth and Conrad choose not to call it that, is due to the incidence of local residents previously working in nearby towns and cities who quit those jobs to accept work in the new industry. Thus little net increase results from this shift. Another leakage is the amount of savings and/or delayed spending. And finally there is leakage due to paying off old debts before incurring new ones. The extent of these leakages clearly depends on two factors: (1) The delimitation of boundaries for the local economy and (2) the nature of the work force of the new industry. Thus the dollar value of each new permanent job provided by incoming industry is elusive at best and it is highly probable that many reported values of new jobs or investment multipliers are overestimated. The smaller the region or economic area, the lower the multiplier, because the greater is the leakage. Seven is the investment multiplier

often used for the United States as a whole. Some studies have shown state multipliers between three and four. In an ill-defined small area, with no political borders and no trade, communication, or transportation barriers, leakage is much greater.

These facts, while frequently not recognized by local community leaders trying to bring industry to their community, lend very strong support to the practice of several adjacent communities pooling their efforts to develop new economic activity in their region. Such regional efforts probably should be centered on a larger growth center and its surrounding satellite communities, otherwise it becomes fairly obvious that a good share of the expenditure and effort made by a small individual community in securing new industry becomes only a charitable effort for surrounding communities.

In our study of the Jones-Laughlin Hennepin Works, we have not yet attempted to determine the specific net payroll input to the local economy. Yet we noted that 83 percent of the plant work force lives outside the county in which the plant is located. Therefore, it seems reasonable that the exportation of payroll has substantially reduced the direct dollar value of new jobs in the local community.

When a site is acquired, the acquisition itself affects different people in the community in different ways. If it is known beforehand that an industry is coming into the community, whatever site is obtained will be at a price above its previous value. This means that usually the landowners who sell to the new industry are amply rewarded. In our study the Jones-Laughlin Steel Corp. acquired 6,000 contiguous acres of land for industrial development on the edge of Hennepin. Almost no one in the area knew the industry was planning to locate there until after the land purchases has been completed. Jones-Laughlin had the New York Central Railroad act as agent in the land purchase. All owners were known before any land purchase contacts were made. Then a battery of land buyers was sent into the area, and all the land was purchased or optioned in less than a week. Most prices paid were less than one and one-half times agricultural prices. So, even though this method of land buying kept communication and knowledge of what was happening at a minimum among landowners and thus controlled price inflation, they still received substantially more than agricultural value, but of course, less than had they known what was going on and had organized to get a higher return. One immediate impact on surrounding areas was that the landowners who sold to the incoming company began trying to reinvest their money in other farmland. They naturally tried to buy land in the same general region of the state where they knew land quality best. This had an upward effect on the values of other surrounding agricultural land.

In the past we have frequently concerned ourselves with proper compensation to the land seller—how he can get the most for his property, how he can reinvest the sale proceeds to minimize taxes, and so on. These are, of course, proper concerns for any economic man, but often we have had little concern for other people involved and affected by this transfer of landownership to new use. The immediate others affected are usually tenants of the property involved.

If the site is in an incorporated area it may be tenanted by small businesses or residents. Sites which become industrial on the edge of small communities often are tenanted by older residents with low

incomes who may have real difficulty in obtaining other economically comparable housing, and also it may be physically, emotionally, and socially difficult for them to move.

Small towns in rural areas have long functioned as "retirement villages" because of their advantages in living costs. Because of fixed income, many such retired people constitute a segment of the community most vulnerable to negative effects of a rise in cost of living. If industrial development increases the demand for housing and services, it is reasonable to expect a resultant rise in the cost of living. Thus it is possible that industrial development will erode the relative advantages of small towns as retirement places.

TABLE 8.1.—MEAN INCOME OF SMALLTOWN HEADS OF HOUSEHOLDS BY AGE IN 1966 AND 1971

Age	1966		1971		Change	
	Mean income	Number	Mean income	Number	Mean	Percent
65 and older	$3,077	200	$4,417	200	+$1,340	43.55
41 to 64	7,615	480	9,250	370	+1,635	21.47
40 and younger	7,611	267	8,827	276	+1,217	15.99
Total	6,655	947	7,969	846	+1,314	19.74

To obtain a preliminary examination of this possibility, we examined the mean income of heads of households living in small towns in 1966 and compared these results with comparable figures for 1971. For each year residents were categorized by age: 40 and younger, 41 through 64, and 65 and older. The results of this analysis are shown in table 8.1.

The evidence does not support the notion that industrial development has an erosion effect on the relative economic advantages of small-town living for persons 65 or older. In point of fact, the data suggest that older persons have increased their relative advantage if we assume that cost of living changes affect all age levels equally. The older persons report a 43.55 percent gain in income between 1966 and 1971 whereas the 14–64 age category shows a 21.47 percent gain and the 40 or younger group reports a 15.99 percent gain for the same time period.

To further examine this bit of evidence we divided the small-town residents according to proximity to the Jones-Laughlin plant. Zone 1 consists of 6 towns in Putnam County where the plant is located and Zone 2 consists of 10 towns in counties adjacent to Putnam County.

The results are presented in table 8.2. As is evident, the relative gains of older persons are dramatically greater closer to Hennepin: 82.34 percent in Zone 1 as compared with 37.90 percent in Zone 2. Moreover, the effect of zone of residence on the relation of age to income gains over time is apparent in all three categories of age. The middle age category in Zone 1 gained 43.31 percent while the same age category in Zone 2 gained 18.66 percent. And the 40 or younger group had a negative gain (−1.34 percent) while in Zone 2 members of this younger group gained 18.26 percent.

Two possible explanations can be suggested for these results. First, for the older persons it is reasonable that increased gains result from their ability to capitalize on the economic growth. This could come from increased business activity if the person owned a local business,

from ability to participate in an expanding money market, or from increased sales and/or rentals of property. Second, for the 40 or younger group the negative gain in Zone 1 probably is a result of additions of very young heads of households to the population who have little time in the labor force and therefore lower incomes. This phenomenon is marked by the range of ages included in our youngest age category but the explanation is plausible since we know from other data analyses that a disproportionate number of young heads of households has been added to the population of Putnam County.

TABLE 8 2 MEAN INCOME OF SMALLTOWN HEADS OF HOUSEHOLDS BY AGE AND RESIDENTIAL ZONE FOR 1966 AND 1971

Residential zone [1] and age	1966		1971		Change	
	Mean income	Number	Mean income	Number	Mean	Percent
Zone 1						
65 or older	$2,979	35	$5,432	25	$2,453	82.34
41 to 64	6,791	67	9,732	38	2,941	43.31
40 or younger	7,975	30	7,868	30	−107	−1.34
Subtotal	6,049	132	7,975	93	1,926	31.84
Zone 2						
65 or older	3,098	165	4,272	175	1,174	37.90
41 to 64	7,749	413	9,195	332	1,446	18.66
40 or younger	7,563	237	8,944	246	1,381	18.26
Subtotal	6,753	815	7,969	753	1,216	18.01
Total	6,655	947	7,969	846	1,314	19.74

[1] Zone 1 consists of 6 towns in Putnam County. Zone 2 consists of 10 other towns in the survey area surrounding Putnam County.

Several words of caution should be noted in considering these data. First, we have not introduced a direct measure of cost of living. We are assuming that any change in cost of living affects all age levels equally. Second, the income is for heads of households only and does not consider the effect of secondary wage earners. Third, we have made no adjustment for size of household. And finally, we have not considered sources of income. Thus, it is still possible that for older persons whose sole source of income is retirement benefits, the industrial development may have had the erosion effect we postulated. This possibility will be examined in future analyses.

If the land is agricultural and covers many acres, as in the Jones-Laughlin example, a number of farm tenants will be displaced. Where the demand for agricultural land is high, displaced tenants often have to sell out, being unable to find other land to farm; and given their age and training, they frequently cannot find work which will give earnings comparable to their return in agriculture. In the example cited, one retired small landowner, a widow, refused to sell until she was given life tenancy of her home. Fortunately for the company, her property was near the periphery of the area it was buying and so was able to make this concession.

Of course, many other side effects to a change in land use from agricultural or perhaps timber or residential to industrial are possible. For example, such a simple thing frequently overlooked is that a larger proportion of the site will undoubtedly be under roof and

parking lot, multiplying the amount of water runoff, taxing the ability of sewers or storm systems. This in turn could result in flooded basements, soil erosion, and other types of damage.

While handling water runoff may be a relatively simple problem, the furnishing of water for industrial use and disposal of used industrial waste water may not be. This may mean substantial investment in new water sources, water treatment plants, new pumps and mains, and sewage treatment and handling facilities.

In the Jones-Laughlin development where the plant would be using several times as much water as the village of Hennepin, and where facilities of the town were just adequate for the town itself, the company cooperated with the residents of Hennepin to develop a water district that benefited both the community and the company. They were able to influence the town to establish a municipal water district. Long-term municipal bonds were sold to build the facilities, and the company pays for the water it consumes along with residents in order to pay for operation, interest on the bonds, and bond principal. Jones-Laughlin bought the bonds. The interest income is tax-free and the water cost is tax deductible as an ordinary expense to the company. Obviously this is a satisfactory symbiotic relationship for both Hennepin and Jones-Laughlin.

Another similar situation occurred when Continental Can Co. recently built in a small town in Mississippi and the town floated municipal bonds to build the plant for Continental Can. All those interested in this type of tax-privileged situation should take advantage of it shortly, because there appears to be active legislation in Congress which would eliminate much of this tax-privileged income.

After announcement of a large plant in a small town, there will be considerable speculation—both the street-corner variety and speculation backed up by financial means. In the case of Jones-Laughlin at Hennepin, our 1966 survey of household heads showed that speculation as to the number of permanent employees ranged from 500 to 5,000 when the actual number turned out to be approximately 1,000. Several parcels of land were sold at selected strategic locations for amounts approximating three to four times normal agricultural prices. Most were relatively small and purchased by local speculators. One, however, was purchased by an urban-housing speculator and developer from Chicago, and his tract consisted of more than 160 acres at the edge of a nearby larger town, not Hennepin itself. In the last 5 years some housing has been developed there, but probably not more than 10 acres with perhaps 60 to 65 homes in the $20,000 to $30,000 range. Moderate development of 2 other smaller parcels for housing has occurred nearer Hennepin. There was one attempt and subsequent failure to develop a parcel for an industrial park. Except for a small parking lot used by a new trucking firm, it is now being farmed again. So there was briefly a boom atmosphere, followed by a sliding back and leveling out to a continuing existence only a little different from before.

If the industry is large relative to the town, substantial labor problems can develop during both construction and later when the industry begins operation. With a large plant, including complex machinery installations, a general contractor who has experience in this particular industry will be brought in to handle construction. He will bring his own experienced foremen and as many experienced

construction laborers as he can recruit from his own area and the remaining laborers from wherever they can be obtained—be it in the community where the plant is being constructed or elsewhere. Many specilized construction workers are normally itinerant workers who are on the job only while their skill is needed.

Several factors connected with the presence of an itinerant construction labor force encourage misguided expectations and consequent frustrations for the local community. Large-scale construction implies a greatly expanded market in housing, consumable items, and personal services. But the expectations of market expansion often are exaggerated.

Many such workers may live close enough to commute daily. This pattern was well documented by Andrews and Bauder [1] in their study of Monroe County, Ohio, where they found that approximately 80 percent of the nearly 3,000 construction jobs were filled by persons living outside Monroe County. A similar experience was noted by Jordan [2] when a shirt plant located in Gassville, Ark. Thus the leakage of payroll benefits apparently occurs even during the construction phase.

However, some will live in the community at least during the week, perhaps commuting home on weekends. This will result in a short-run demand for sleeping quarters; usually from local householders or low-priced motels. Local low-priced restaurant business will increase, which may put a real strain on local restaurant facilities. Yet local restaurant owners really cannot afford to expand their facilities for this one-time short-run boom in business. There will be some increase in other local entertainment business—movie theaters, bowling alleys, and taverns. Thus the positive economic impact of plant construction itself is often minimal on the local community.

In some instances the construction phase may actually produce a long-term economic burden on local residents. This is most probable when the construction labor force is large relative to the local labor supply and the construction covers an extended period. Under these circumstances the construction labor force is likely to settle temporarily in the area and bring families with children. They can precipitate demands which severely strain local, municipal, and educational services while creating a short-term expansion. The construction of three dams near Sweet Home, Oreg., is a prime example.

In 1963 Sweet Home (not a pseudonym) was a small town of 4,000 in the Oregon Cascades when construction began on an $80 million water resource development project. "To determine the effects of the construction period on the people of Sweet Home, the pattern of the cost and the level of school and municipal services were correlated with the construction work" [4]. Construction began in the spring of 1963 and was completed in late 1966, reaching a peak during the 1965–66 fiscal year when the work force reached approximately 1,300, most of whom settled in Sweet Home with their families. The effect was to increase school enrollments by several hundred children and increase substantially the demands on municipal services. Apparently believing the projections of continued postconstruction economic growth, the voting residents of Sweet Home and their elected officials made a series of decisions which expanded the delivery capabilities of the schools and municipal facilities. The construction workers left

and the expected economic growth did not occur. "Now Sweet Home residents are beneficiaries of improved services, but they are the beneficiaries as well. They had to accept increased tax burdens rather than having costs absorbed by a growing community" [4].

WHEN THE PLANT BEGINS OPERATION

When industry begins operation, one of the most important inputs is permanent labor for plant operation. Who these workers are, where they come from, where they live, their wage level, sex, age, family composition, and ethnic and color background will have potential social and economic effects upon the community. The extent to which a plant work force alters the character of the host community will depend upon the size of the work force compared to the size of the community. Also, an industry hiring mostly women will have quite different effects than an industry hiring mostly men. An industry where the wage rate and training level are high will have different effects than one where they are low. In all these cases, the hiring and training policies of the company will have considerable impact on the labor force and the consequent impact on the community.

When an industry hiring mostly women comes into the community, the effect on population size of the community may be minimal, depending on the relative size of the industry and the current employment situation for women in the community. Most rural communities have a very high elasticity of supply of women for the work force; that is, a very small increase in wage will attract a large supply of female labor. This is true simply because the opportunity for women to do remunerative work outside the home is quite limited in small towns. Our surveys in the Jones-Laughlin study indicate women are willing to accept from 57 cents to 87 cents per hour less than men in order to obtain similar employment and that actual wage differentials for men and women in the same job categories differed from $1 to $2 per hour. We also found that in some small towns before industrialization only 38 percent of the women of working age were employed outside the home. Nationally, in 1970, 43.4 percent of all women aged 16 and over were employed outside the home.

Therefore a factory hiring mostly women will have the following effects and noneffects upon the community: Increased income for many households in the community, and this in turn will be reflected in higher consumption—a higher level of living—and higher savings; more things, such as more cars and higher-priced cars; more convenience food purchases; more household services performed outside the household; more laundry and dry-cleaning business; more outside rug, curtain, and drapery cleaning; more eating out, increasing the restaurant business; and both higher quantity and quality of women's clothing sold. There will be little increase in the number of houses, although there may be some remodeling or moving up in the world to a new house and some increase in furniture sales to "upgrade," but not the kind of increase in furniture sales that would go with an expanding population and a spate of new houses. In this case we have what we might call development without growth—at least in population. One definition of development used by economists is an increase in per capita income. This kind of industrialization, where most of the labor

force in a new industry is female, will result in this special kind of development of rural community where per capita income is increased with little or no change in the population base.

Another consequence of attracting an industry which employs mostly women is to risk increased unemployment—an outcome probably not anticipated by most community leaders. Two sources of explanation can be given for this phenomenon. First, the contribution of females to the unemployment rolls results from the number of women (formerly not in the labor force) who, after a period of plant employment leave their jobs and become classified as unemployed. Second, there is an increase in the number of unemployed and intermittently employed men who remain in the area because women in their families work at the plant. Thus the slowdown of male outmigration increases the need for more jobs for employable males at attractive wage levels.

This pattern is documented by Jordan's study of Marion and Baxter counties in Arkansas [2]. A shirt factory opened in 1961 and created approximately 750 new jobs, mostly for women. Unemployment in 1961 was one-third higher than before the plant opened in 1960. In 1963 there was 60 percent more unemployment reported than in 1960. During this time period the increase for Arkansas was only 1.2 percent.

A factory which hires mostly men will have quite different effects. The aggregate income added to the community will be more (for the same number of workers) because men are usually paid more. However, the per capita income may not rise much because adding male employment usually means adding more households. Therefore, with this kind of employment one can expect an increase in population and aggregate income, an increase in required housing, furniture sales, lower-cost food sales, lower-cost car sales, little increase in restaurant business, increases in tavern and bowling alley business, increases in the number of students in the schools, increases in the demand for various public services such as water, sewers, streets, and fire and police protection. At least much greater potential exists for the expected kind of expansion of social and economic activity usually associated with increasing population and income in a community where industrial development increases male employment as opposed to female employment.

Whether this type of expansion in fact does occur depends, too, on the policies of the company involved. Some companies may move a large proportion of supervisory and salaried personnel to a new plant from other plants located elsewhere. The company may exert strong influence on where these employees live in the new location. For example, the Jones-Laughlin Hennepin Works, with male employment of 600 to 800 and female employment of 200 to 300, near a town of 350, encouraged as many initial employees as possible to live outside the immediate area. In this particular case there were larger towns 12 to 15 miles away and outside the county where the plant is located that were highly recommended by the company. The Jones-Laughlin Co. held a special invitational meeting for real estate dealers to describe the housing needs of the employees, especially the needs of the employees that were being transferred from other locations to the Hennepin Works. No real estate dealers from Putnam County were

invited. In fairness to Jones-Laughlin it should be noted that this policy was consistent with their promise to the local residents that they would do all possible to lessen their immediate impact on Hennepin and Putnam County.

Obviously, if property taxes had to be increased to support additional public services, including expanded schools, such property tax increases would not be assessed on the company property if the population growth were in adjoining counties. Also, a high proportion of employees were hired who commute from as far as 40 miles from the plant site. Of course, this was necessary since a town of 350 could not furnish 1,000 employees. Most new laborers also were less than 30 years old, many were unmarried and living with their parents so that there was no immediate effect of new households being added to the community. With most of the employees in this age range, the population increase and all the associated economic effects on housing, schools, and public services will occur in a lagged and gradual way so there will be little immediate economic boom. The speculators and developers will be disappointed. But in time, some of those who are now commuting may move closer to the plant, as they build up job seniority and a feeling of job security. This would result in a gradual change in geographic location of employees.

The lagging of economic effects is apparent in the data from our study of the Jones-Laughlin plant. In 1966 the mean income of male heads of households in the area surrounding the plant was $7,299. By 1971 it had risen to $8,053. In our control region where no industrial development had occurred, the mean income rose from $7,606 in 1966 to $8,765 in 1971. Thus the industrial development appears to have constrained the mean income of male heads of households to a level below which it might have been with "normal" inflationary effects. This anomaly can be understood by noting the mean age of male heads of households and bearing in mind that new jobs are likely to be taken by younger men. The mean age for the heads in the developing region dropped from 49.40 years in 1966 to 47.16 in 1971, while in the control area they increased from 45.8 to 48.9. Thus the Jones-Laughlin plant appears to have altered the age distribution of male heads of households by adding more younger than older men and younger men would be expected to have lower incomes.

SOME JOBS NOT GO BEGGING

It has been the experience of some specialists in rural development that while most local businessmen publicly support efforts to bring in new plants, privately they oppose such efforts and try to thwart the location of new industry in their communities. The main reason for this is that these local employers are afraid that new industry will cause a tight labor market with higher wage rates and will reduce the general influence of the older local employers.

Studies have shown that when a new plant goes into operation in a community total employment in the community does not rise as much as expected. One reason already discussed is the commuting of labor from outside the community to the plant—"employment leakage."

But a more important reason, especially in the smaller rural communities, is the reduction of disguised unemployment. People who

would be among the unemployed in an urban setting are frequently employed in rural communities at jobs which could go undone without affecting the real product or reducing significantly the level of services in the community. Public service jobs—county and municipal as well as janitorial, salesworkers, and others in private employment—fall in this category. Many in agriculture who are counted as self-employed are certainly not fully employed. Many small-farming operations, while occupying the time of the farm operators, could easily be absorbed by larger, well-equipped, well-capitalized farmers with the same labor they already have. The same holds true for many other small businesses. The mamma-papa grocery stores, dry-goods, and other retail stores all fall in this category, as well as many small farm equipment and automotive sales outlets. This disguised unemployment is often an integral part of the slower economic climate in small towns and rural areas and has become part of the institutionalized pattern of local social fabric. Local employers are often only dimly aware of this situation.

When new industry comes into the community there is often a trickle up to the new jobs. Those who are the disguised unemployed seldom move directly into the new jobs. Rather those who are in the better jobs—the necessary jobs—move into new jobs, and the disguised unemployed move into the old vacated but required jobs at the existing wage rates. And many of the old, really unnecessary and redundant jobs now go begging.

Thus some of the fears of old employers toward new industry are now realized. They will not or cannot pay more for the employees they really must have, so they hire less qualified persons, sometimes older persons, to fill their jobs and let some jobs which might have fallen in the disguised unemployment category go unfilled. Thus a community can experience the trickle-up effect or upward job mobility, a reduction of disguised unemployment, and a tightening of the labor market without much visible change in total employment.

NOT ALWAYS A PANACEA

It has been our experience that rural industrial development is often viewed as a panacea for the economic ills of small towns and rural areas. Thousands of small towns have formed committees to seek industry for their community. Industrial parks have materialized with the aim of attracting industry. Much has been said and written to persuade local residents and industrial management of the benefits of locating industry in small towns. Clearly, gains are to be realized by encouraging the decentralization of industrial activities.

But there are problems to be confronted when the economic base of a small town or rural area is diversified and expanded. In addition to those we have discussed, these are the problems of financing and taxing for new public services, of the schools, of integrating newcomers into the community, of financing and developing tertiary private businesses, of changes in local power structures, and many others.

The evidence is clear that local communities that finance industrial development on their own are likely to be the benefactors to their neighbors. Expectations of benefits are likely to be exaggerated with consequent frustration and disillusionment. But this evidence should not dissuade efforts for rural industrial development.

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Industrial development in small towns and rural areas should be encouraged. But the process should be embraced gently with a full realization that it involves negative as well as positive gains. It is our conclusion that negative aspects of rural industrial development can be minimized if local communities combine their efforts to attract industry by forming multicounty or regional development bodies and plans. Ideally, this should be done voluntarily. Yet, such a policy could be implemented by State and Federal agencies which assist local communities in their industrial development efforts if they were to support only multicounty and regional plans.

FOOTNOTES

(1) Andrews, W. ...d Bauder, Ward W. 1968. The effects of industrialization on a rura... : Comparison of social change in Monroe and Noble Counties of Ohio. Wooster: Ohio Agricultural Research and Development Center, Department Series 407, May.

(2) Jordan, Max. 1967. Rural industrialization in the Ozarks: Case study of a new shirt factory at Gassville, Ark. Washington. D.C.: U.S. Department of Agriculture, Economic Research Service, Agricultural Economic Report No. 123

(3) Shaffer, Ronald E. 1972. The net economic impact of new industry on rural communities in eastern Oklahoma. Unpublished Ph. D. dissertation. Stillwater: Oklahoma State University.

(4) Smith, Courtland L.; Hogg, Thomas C.; and Reagan, Michael J. 1971. Economic development: Panacea or perplexity for rural areas? *Rural Sociology* 36 (June): 173-86.

(5) Wadsworth, Henry A., and Conrad, J. M. 1966. Impact of new industry on a rural community. Lafayette: Indiana Agricultural Experiment Station, Research Bulletin No. 811, July.

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An Industrial Promotion Survey:

A GUIDE FOR YOUR RURAL COMMUNITY'S DEVELOPMENT

COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF DELAWARE
NEWARK, DELAWARE 19711

Daniel S. Kuennen

AN INDUSTRIAL PROMOTION SURVEY: A GUIDE FOR YOUR RURAL COMMUNITY'S DEVELOPMENT

Daniel S Kuennen*

With the passage of the Rural Development Act of 1972 increased resources have been matched to the already present community interest for attracting industry Both the rural enterprise real estate and rural enterprise operating loans contribute to renewing the chances of adding to your community's growth plans.

This publication has two sections. The first presents a brief review of facts concerning rural industrial expansion and your community The second section tells you how to research, compile and publish an attractive industrial promotion portfolio.

Preface

Almost every rural community dreams of attracting that one ideal industry which will add revenue, jobs and vitality to their community and yet not disturb the traditional patterns of life to which they are accustomed Unfortunately this dream never materializes With the acceptance of new industry a town will never be the same Industry brings with it change Communities shouldn't be repelled by that fact, instead they should be aware of the change which will occur and be ready to control it according to their plans

To carry out a controlled policy of industrial and community growth a community needs to advertize for and attract a desirable industry For that reason this publication has been compiled A community must know what it has to offer and what resources are at its disposal before it can promote industrialization. Let's face it, many rural communities are in competition for industry, so it is your job to show why your community, above all others, is that **right one** for industry Your case has to be factual and to the point. Industry will assess your town in terms of their needs Therefore, you must be frank about your strengths as well as your weaknesses.

This guide will help you prepare a well-rounded objective inventory of your community. Its comprehensiveness may overwhelm you at first glance but its intent is simple, namely, to describe factually, what your community offers that is advantageous to a given industry, nothing more

The industry you are inviting to your area is being asked to invest their time, energy and money in an "unknown" The more you can help them feel secure about the benefits of such a location the more you have alleviated their anxiety They will want to predict as precisely as possible what the net results will be in dollars and cents for establishing in your community Your community survey will provide them facts and figures so that a reasonable prediction of feasibility can be made. It also indicates your community's spirit and readiness to accept them Your aggressiveness in going after industry, will be a factor in your favor If you are willing to work to attract industry you will also work to keep it As will be mentioned later, this does not mean you are "selling the town out" You are not looking for a company town so to speak You do, however, want new industry, so let's look at some considerations

Industrial Trends

Information supplied by the United States Department of Agriculture shows that farm labor in the United States will decline by 45 percent This trend has caused an exodus of manpower from rural Delaware to urban centers. You should not conclude from this that the poor and minorities are the only groups which are leaving.

Middle class farm boys must also face the question of whether or not to farm or remain in rural America knowing that it is estimated that only one "adequate" farming opportunity is available for every 10 farm boys. The immediate question a community must ask itself is, "Where will the other nine find employment?".

Urban areas have attracted rural manpower simply because most of the industrial activity has centered there During a 20-year period, manufacturing plants in rural counties increased their employment 450,000 for a total of 1.1 million employees In metropolitan areas for the same 20-year span the increase has been 3.4 million, for a total of 8 5 million employees!

This has resulted in a loss of growth for rural counties The imbalance, moreover, has caused overcrowding on 5 percent of the land Five percent of the counties experienced an increase in employment seven times greater than sixty percent of America!

It is clear that rural communities wishing to attract industry are fighting a trend, at least for the past 20 years, of industry locating in metropolitan areas There is, however, some reason to believe that this process is reversing as industry becomes interested in rural sites

*Kuennen is Area Agent, Community Resource Development, for Kent and Sussex Counties

Your community can profit by informing itself about the site selection criteria used by ndustry Here are some factors for your review

Positive site selection factors:

Community Life: Your community will not only be a place of employment, it will also offer a prospective ndustry, a place where its employees, both management and workers, will live The community must offer the type of surroundings which will be conducive for a "happy" work force

One assurance of a healthy, vigorous community is a leadership which desires and will work for new industry The location of a plant represents a long-term investment which the company will want to protect An alert community leadership reflects, in many cases, the attitude of the community toward industry A broad based support is, of course, helpful so that all sectors of the town are represented Some favorable indications often mentioned are good zoning laws, stable land prices and community involvement in attracting industry

Other community life factors are education, recreation and cultural activities The quality and diversity of education is a key factor for employees and employers The company employees naturally want good schools for their children and the company wants a place to train workers in new techniques.

Many of the management staff will be concerned about moving to a rural community, wondering whether or not their new home will offer some sort of recreation, such as a golf course, or cultural programs, such as adult education classes. Moving from a metropolitan area, as many will be, they will experience a readjustment period as will the traditional townspeople It's good to remember that two "ways of life" will be mixing in your community, possibly for the first time This isn't a seasonal or temporary encounter as the town may have known it previously The change is permanent for all involved, so thinking and attitudes will have to adjust to new community environment

Labor factors: Plants can't operate without the people to man them There must be an available labor pool which meets the needs of the plant's operations Technical schools are an asset for industry, they offer a place to train new employees

Secondly, many industries prefer for their work force to live within a 10 to 20 mile radius from the plant.

Facilities and Service Factors: Few workers can relocate or move to an area without a housing capacity to draw upon Workers must live somewhere Likewise utilities, such as sewer, water, electric, etc must be in sufficient supply for the plant's operations.

Zoning is almost unknown in rural areas but for urban dwellers zoning represents a protection of their investment for their employees and plant A well planned industrial park or zone close to utilities will offer a real attraction to industry Residential zoning will insure a homeowner that his investment in a home will be protected from property-value depreciation.

Police enforcement also protects a person's home and family Many rural communities will want to demonstrate their capability to provide a safe community A fair tax structure contributes to the maintenance of community services In planning for industrial expansion you may want to review your tax base and code Check out the tax structure in adjoining communities with industry

Other facilities of importance are hospitals, motels, hotels, clinics, commercial facilities, and fire protection How does your community "measure-up" in these areas and others?

Transportation factors: Rail, air, waterway and highway transportation outlets from your community can all be listed as assets, although highway transportation has been given more emphasis in recent years Your survey will want to document your proximity to transportation arteries Remember the goods that are produced require raw materials and finished products to be transported to and from the plant location.

Economic factors: Added to these factors already mentioned are the cost/benefit factors of location Appraisals are based upon freight costs, raw material availability, quality of raw materials, markets in the area, current economic conditions, growth patterns in the region, population and migration trends, occurance of natural disasters, complementary industries, and storage facilities.

Negative Factors:

Rural communities are not conducive for relocation by urban management types Secondly, the demands on the community -- that is political, social and cultural -- may create problems Thirdly, the increase of population places a new financial burden on facilities intended for a smaller population (schools, parks, churches) These are at least three major deterents for industry thinking about rural relocation.

Of Industry

Until now we have been speaking about industry as if all industry were alike Certainly in some respects all industry needs some labor, utilities, housing and other necessities but industrial needs will differ with industrial types

For the sake of clarity and because of space limitations these general differences will be noted

Urban types:

--large in size (over 1,000)
--requires skilled labor
--varied shipment needs
--uses a concentrated supply of technicians
--needs close markets
--needs skilled repairmen
--short term lease
--large scale financing

Rural types:

--semi-skilled labor
--smaller plant size
--willing to train employees
--low profit margin
--catalogue ordering outlet
--high inventory retention
--low utility requirements
--low level of technicians needed
--long term lease (new construction)

Industry to Avoid: A few words of caution are in order Many, quote, "rural type" industries have not measured up to the expectations of communities You will want to avoid an "obsolescent" industry which is fleeing urban competition to find what they believe to be a "cheap labor" supply Their employment needs are usually not varied Consequently, your community will not upgrade its manpower from unskilled to semi-skilled Secondly, the industry may be dying Surely your community doesn't want to be left with an industry living past its productive years You want a growth industry.

Don't be too hasty to place all your "economic eggs" in one basket. Diversify! Look for several small industries rather than one large one. A drop in the economy will more often than not affect a "one industry town" first Protect your citizens by trying to attract a wide array of opportunities for balanced community growth Complementary industries may make this diversity feasible Avoid becoming tied to one industry.

It's not necessary for you to "bend over backwards" to entice industry You're not about to sell yourself short for industry's sake Most surveys of industry indicate that they aren't looking for special tax deductions or concessions so don't be bothered with unproductive gimmicks

Your Community's Future

Whatever decision you make in terms of industry for your town the fact remains that changes will occur It is your job to anticipate and know what changes you want to see take place For this reason study the full impact of industry in general and particular on your environment What will this growth do for citizens, facilities, resources and surrounding natural life? Get a regional view of the implications, talk with industrialists, environmentalists, bankers, educators and your community Involve citizens in the planning process to insure their commitment to the decision reached

A Word About The Survey

The survey is a revised version of a guide distributed by the Central Illinois Public Service Company for use in the State of Illinois It has been successfully used by the Community Development Services of Southern Illinois University I appreciated their making a copy available to me

The survey is revised to meet the needs of Delaware communities With that objective in mind some materials have been added and others deleted A listing of Federal, Regional and State agencies has been compiled for your reference Footnotes were omitted but I am indebted to the material listed under **Selected Sources.**

Lastly, I have tried to combine their insight to complement the survey guide for a better community understanding of an industrial promotion portfolio

Selected Sources

Freund, James L "Regional Growth The Whys and Wherefores," *Business Review*, Federal Reserve Bank of Philadelphia, Oct , 1972 pp 18-26

Garvin, Wilfred "Rural Economic Development with Emphasis on the Role of Small Concerns," *National Growth. The Rural Component*, (USDA, 1971) pp 24-27

Gray, Irwin "Employment Effect of a New Industry in a Rural Area," *Monthly Labor Review*, (June, 1969).

Kuehn, John A et al "Impact of Job Development on Poverty in Four Developing Areas," (USDA, Agr Econ Rpt 225, (June, 1972).

Minority Ownership of Small Businesses Thirty Case Studies (Dept HEW, 1972)

Rural Development Problems and Advantages of Rural Locations for Industrial Plants (Agricultural Policy Institute, School of Life Sciences, North Carolina State University, Raleigh, North Carolina, 1970)

Agencies to Contact

Federal Agencies:

1) Department of Agriculture

Farmers' Home Administration (FmHA)
Kent County - 2319 S Dual Hw., Dover
Sussex County Rt 113 N Georgetown

2) Department of Commerce

Economic Development Administration (EDA)
Regional Office
320 Walnut St Philadelphia, Pa. 19106
(215) 5 7 4603

Delmarva Advisory Council (DAC)
Industrial Promotion
One Plaza East, Salisbury, Md 21801
(301) 742-9271

3) Department of Labor

Bureau of Labor Statistics (Region 3)
Rm 406 Penn Sq Bldg., 1317 Filbert St
Philadelphia, Pa 19107
(215) 597-7816

Manpower Administration
P O Box 8796, Philadelphia, Pa 19101
(215) 438-5200

Employment Standards Administration
Rm 704C Penn Sq Bldg., 1317 Filbert St
Philadelphia, Pa 19107
(215) 597-9633

4) Environmental Protection Agency (EPA)

Curtis Bldg 6th and Walnut Sts.
Philadelphia Pa 19106
(215) 597-9800

5) Office of Economic Opportunity (OEO)

State Office
506 West 10th St
Wilmington Delaware 19801
(302) 658 9251 Ext 252

6) Small Business Administration (SBA)

901 Market St., Rm 818, Market Tower Bldg.
Wilmington, Delaware 19801
(302) 658 6518

State Agencies:

1) Department of Community Affairs & Economic Development

Division of Economic Development
45 The Green
Dover, Delaware 19901
(302) 678-4254

Council on Industrial Financing
(302) 678 4254

2) Department of Labor

Division of Industrial Affairs
618 N Union St
Wilmington, Delaware 19801
(302) 658-4331

3) Department of Natural Resources and Environmental Control

Division of Environmental Control
Natural Resources Building
Dover, Delaware 19901
(302) 678 4771

4) Department of State

Division of Corporations
Townsend Building
Dover, Delaware 19901
(302) 678-4221

5) State Planning Office

Thomas Collins Building
Dover, Delaware 19901
(302) 678-4271

6) Delaware Opportunities Industrialization Center, Inc (DOIC)

813 West Street
Wilmington, Delaware
(302) 654 6205

INDUSTRIAL PROMOTION SURVEY

The Key to Your Community's Future

Each year, a rapidly growing number of communities -- communities very much like your own -- are taking a careful look at what they really have to offer to America's industry

Once such a frank self-appraisal is down in black and white (and it's really not such a difficult task!), this collection of facts may well become the key to your community's future.

Industry: Diversification and Decentralization

There's a marked trend in industrial expansion today Industry, both large and small, is beginning to diversify its output to make broader use of existing marketing and distribution facilities And, even more important, expanding industry is moving away from established metropolitan centers

Let's face it No community, large or small, can offer everything an industrial prospect desires there just is no "ideal" community

So, the prospect -- on his own, or through one or more outside agencies -- screens all available facts and, by a process of elimination, settles on the one community which comes closest to his specific requirements

How to Get Down to Brass Tacks

With the proper amount of enthusiasm and leadership, you can assemble a collection of pertinent and meaty facts from which an industry can decide whether your community is able to fit into its plans

Organization of a Development Committee

It would be quite a chore for one man to assemble all these necessary facts If you do not already have an organization to do this job, you may want to organize a local Development Committee.

For this, you'll want a representative group of business and professional people, such as a banker, representatives of existing local industries, labor utility services, and the local government, a leading realtor, and a newspaperman You may also desire to enlist the services of a member of the local ministerial association, a physician or hospital director and someone connected with the schools. It's important that everyone on the Committee is respected locally, and knows how to get people to work together

Your Development Committee should be divided into teams with each of your team chairmen picking their own assistants This type of selection will assure success of the project, since the choice will include only people who get along well together

Once the Development Committee has been organized into a working group, you'll be able to conduct a survey of the community and the surrounding area which will result in the kind of solid information required by industrial prospects

The spaces following are provided in the event you want to note all team assignments

Historical Team

Chairman _____

Phone _____

Members _____

_____

_____

_____

_____

_____

_____

_____

_____

General Facts Team

Chairman _____

Phone _____

Members _____

Civic and Recreational Team

Chairman _____

Phone _____

Members _____

Educational, Health and Welfare Team

Chairman _____

Phone _____

Members _____

Industry and Resources Team

Chairman _____

Phone _____

Members _____

Industrial Sites and Buildings Team

Chairman _____

Phone _____

Members _____

Labor Market Team

Chairman _____

Phone _____

Members _____

Housing Team

Chairman _____
Phone _____
Members _____

Transportation Facilities Team

Chairman _____
Phone _____
Members _____

Utility Facilities Team

Chairman _____
Phone _____
Members _____

Financial Facilities Team

Chairman _____
Phone _____
Members _____

Photography Team

Chairman _____
Phone _____
Members _____

Maps and Charts Team

Members of this team will provide the pictures needed to support the work of other teams. Snapshots with good contrast will do.

Chairman _____
Phone _____
Members _____

Your County Engineer can provide you with sources for topographical and other maps such as the U S Geological Survey Of course, drawn charts or sketches will do

The Community Survey

Each of your team chairmen should get the appropriate section of the enclosed questionaire, together with the page of suggestions preceding some of the sections To obtain facts that are current and correct, you may want to contact such organizations and individuals as

County Planning Board
Local Government
Chamber of Commerce
State Employment Service Office
Tax Assessor
Banks
Civic Organizations
Local Industries
Superintendent of Schools
Area Agent, Cooperative Extension Service
Community Resource Development
Rail, Bus and Truck Line Agencies
Local Utilities
Airport Manager
Realtors
County Agents
State Industrial Planning and Development Division
Postmaster
U S Weather Bureau
Newspaper and Radio Stations
Television Stations
U S Department of Commerce
State Department of Public Works
Local Doctors and Dentists
Ministerial Association

If additional pages become necessary it is suggested that you alphabetize the extras such as 7A, 7B, and so on

The Presentation

Later on your community may wish to prepare a more elaborate or colorful type of presentation for wide distribution to plant location agencies and industrial prospects
Right now, however a neatly completed copy of this community survey with its basic enclosures, will enable you to make a presentation to individual industrial prospects who have your community under consideration

Right now however a neatly completed copy of this community survey, with its basic enclosures, will enable you to make a presentation to individual industrial prospects who have your community under consideration

> Please be sure to send the state two copies of the complete survey one for State Planning and the other for the files of the Div of Economic Development Industrial prospects often contact them in confidence for up to date information which will enable them to determine whether there are towns which will meet their specific requirements

Some Added Thoughts

Even after your Community Survey has been completed keep your Committee on a permanent basis Valuable experience will have been gained from compiling the survey and Committee members will therefore be able to provide a great deal of assistance to industrial prospects

> According to a recent survey by the U S Chamber of Commerce 100 new industrial plant workers result in the following growth for the area
>
> 296 more people
> 112 more households
> 51 more school children
> $590,000 more personal income per year in area
> $270,000 more bank deposits
> 107 more passenger cars registered
> 174 more workers employed
> 4 more retail establishments and
> $360,000 more retail sales per year
>
> You can easily see how even a small new industry can mean a great deal to your community's progress

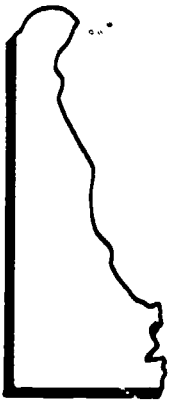
Suggestions for Preparation of the "Title" Page

Be sure to type the name of your town on the introductory page, centering it beside the dot At the bottom of the page, type in the name of your local Community Development Committee The last line should include the word "Chairman" and can be signed by the chairman of your committee since he will be the one interested industrial prospects would want to contact for additional information

Suggestions for Preparation of the "Index" Page

After all the material for your Community Development Survey has been compiled, be sure to type in the name of your community and draw an arrow to its approximate location on the map of Delaware

INDEX



Suggestions for the Preparation of the "General Facts" Section

Population:

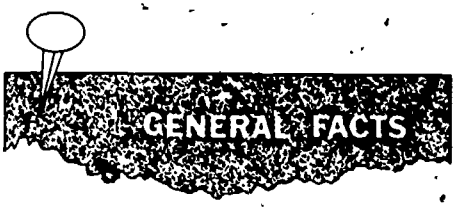
If the figure for "Retail Trade Zone" should exceed population for "County," be sure to indicate extent of Retail Trade Zone

Location:

Your Maps and Charts Team should prepare a suitable map for enclosure If desired, you may work with the enclosed State of Delaware map

Fire Department:

Give only an outline of your community's Fire Insurance Rate Structure, but have the complete story available for industrial prospects



Population (Latest Census):

City _____ County _____ Retail Trade Zone (estimated) _____

Located:

On U S Highway Number _____ On Delaware highways Number _____

Number of road miles to market centers north, south east and west of community _____

North_____, South_____, East_____, West_____

Form of Government:

Type _____ Number of elected officials _____ Term _____

How elected _____, _____ Number appointees _____ Other _____

Fire Department:

Paid or volunteer _____ Number of members _____ Pieces of apparatus _____

GPM of pumpers _____ Number installed hydrants _____ Are hydrants installed per Underwriters specifications? _____ Number of calls last year within community _____ outside of community _____ Fire insurance rates _____

Police Department:

Paid or volunteer _____ Number of members _____ Is there around the-clock protection? _____ Is a prowl car operated? _____ Is there two-way radio or other communication equipment? _____ Special officers are stationed at school crossings _____ Is there a local deputy sheriff? _____ State police unit _____

Local Taxes:

Property assessed from _____% to _____% of value Total tax rate per $100 of valuation within corporate limits, $ _____ outside corporate limits $ _____ Multiplier last year _____

How do tax rate and multiplier compare to other townships in county? _____

	Community	County	School	Other
Bonded Indebtedness	_____	_____	_____	_____

Climate:

Mean temperature last January _____ last July _____ Mean humidity last January _____ last July _____ Average annual precipitation _____ inches Number of degree days _____

Last year's number of days clear _____ partly cloudy _____ cloudy _____

31-868 O - 74 - 9

Insurance Classification:

The community's classification under the code structure is _____

(Detailed rate schedules are available for inspection)

Newspaper:

Name of local newspaper(s) _____ Daily or Weekly _____

Days of publication _____ Daily newspapers are received from the following cities

_____

Radio and Television:

Call letters of local radio station(s) _____ Daytime or full time _____

_____ AM or FM _____ Operating power _____

Network or independent _____ Call letters of local television station _____

Hours on the air daily _____ VHF or UHF _____ Operating power _____

Network or independent _____ Cities from which clear radio programs are received _____

_____ Number of television channels received in area _____

Civic Organizations:

Chamber of Commerce or similar organization (name) _____

Junior Chamber of Commerce _____ Rotary _____ Kiwanis Club _____

Lions Club _____ Optimists Club _____ Exchange Club _____ American

Business Club _____ Fraternal organizations include _____

Women's Club _____ Garden Club _____ P.T.A. unit _____

Youth organization(s) _____

Other _____

Churches:

Number of churches Methodist _____ Presbyterian _____ Lutheran _____ Episcop _____ Roman Catholic

_____ Baptist _____ Christian Science _____ Church of Christ _____ Nazarene _____ Mormon _____

Synagogues _____ Other _____

Recreational Facilities:

Game hunted in area includes _____

Fish in area includes _____

Number of lakes _____ ponds _____ streams _____ Is there a local park? _____

Facilities offered include _____

Is there a supervised summer playground program? _____ Number of public golf courses _____

Number of bowling alleys _____ swimming pools _____ indoor theatres _____ drive-in theatres _____

Drive-in season extends from _____ to _____ Name of local library _____

Number of volumes _____ Does it lend films? _____ Does it lend phonograph records? _____

Number of local or nearby baseball teams or leagues _____ Other recreational facilities include _____

_____

Private Club Facilities:

Is there a country club? _____ Golf course _____ Number of holes _____ Swimming pool _____ Other facilities

_____

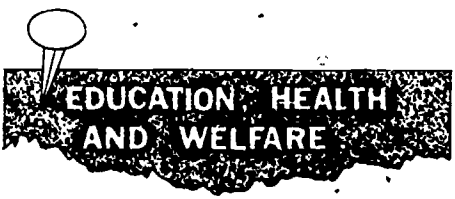
Other private club facilities in vicinity _____

Suggestions for the Preparation of the "Education, Health and Welfare" Section

High School:

Since standards of secondary education have become exceedingly important during the last few years, be specific in describing the curriculum. For instance, under 'Mathematics,' don't just say "four years" but list the course as

Algebra, 1 year
Intermediate Algebra, 1 year
Geometry, 1 year
Trigonometry, 1/2 year
Solid Geometry, 1/2 year etc.



Education

Name of school system _____

Date of opening in fall _____ Buildings by _____

Type	Number Classrooms	Condition

Grade School:

Total number of students _____ Average number of students per class _____ Average number graduated annually into junior high school or high school _____ Total Number of faculty members _____ The curriculum includes _____

Is there a kindergarten? _____ Number of children fed daily in cafeteria _____ Number of buses operated daily _____ Number of volumes in school library _____ Are gym and auditorium combined? _____ The seating capacity of each or combined unit is _____ Are audio-visual aids used? _____ Is there a central communications system? _____ Is a school nurse on duty? _____

High School:

Is there a junior high school in your system? _____ Total number of students enrolled in high junior and senior high school _____ Average number of students per class _____ Average number graduated annually _____ Total number of faculty members _____ Are teachers required to take a Master's degree? _____ The curriculum includes the following courses in English _____

Mathematics _____

Science _____

History _____

Foreign Languages _____

Other _____

Is the school system accredited by Middle States Association of Colleges and Secondary Schools? _____ Does school offer courses in Distributive Education? _____ Does school offer vocational training courses? _____ Number of students fed daily in cafeteria _____ Number of volumes in school library _____ Are gym and auditorium combined? _____ The seating capacity of each or combined unit is _____ Are audio-visual aids used? _____ Is there a central communications system? _____ Is there a home-room guidance program? _____ If so, how is it conducted? _____

Does the senior class visit various cities annually? _____ Are businessmen and specialists invited to talk to home room groups or the general assembly? _____ Is there an athletic stadium? _____ Is it lighted for night games _____ Are practice fields nearby? _____ What class of football is played? _____ Extracurricular activities of the school include _____

Parochial Schools:

Total number parochial schools in community_____ Operated by what denomination(s)_____

_____ What grades are covered?_____ Total enrollment _____

Average number of students per class _____ Average number graduated annually_____ Are facilities and curriculum generally the same as for public schools?_____ If not, explain _____

_____

College or University:

What are the nearest colleges, junior colleges or universities

College	State Independent Denominational	Enrollment	Distance

Is there a night adult education program available from any of the above?_____

_____ Do any of the above institutions have ROTC units?_____

If so, what branch or branches of service_____

Military Reserves:

Is there a military reserve unit in the community?_____ If not, what distance to nearest unit in

Army _____ Navy_____ Air Force _____ Marines_____

National Guard_____

Health and Welfare

Physicians and Dentists:

Number of local physicians in General Practice_____ Surgery_____ Specialists_____ Number of dentists in community_____

Clinics:

Number of clinics in community_____ Staff and facilities consist of_____

_____

_____

Hospitals:

Name of hospital(s)_____ Number of

staff doctors_____ registered (graduate) nurses_____ licensed practical nurses _____ laboratory

technicians _____ other hospital employees _____ Internes _____ or residents _____ are employed.
A nursing school is offered _____ Number of rooms _____ wards _____ beds available _____
Facilities include operating room _____ delivery room _____ nursery _____ (rooming-in is permitted _____)
laboratory _____ X-ray _____ electrocardiograph _____ physiotherapy _____ Hospital(s) approved by
the American Hospital Association _____ Other memberships _____

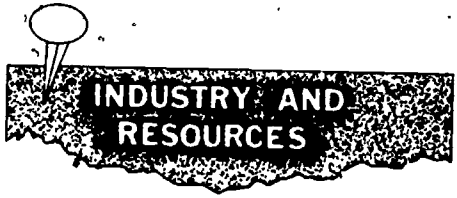
Miscellaneous:

Ambulance service is available _____ There is a local county health unit? _____ If so, what clinics does it conduct _____
Does it provide nursing service? _____ Is there a local nursing home? _____ Other facilities for the aged or retired include _____

Suggestions for the Preparation of the "Industry and Resources" Section

Existing Industry:

Both your Photography and your Maps and Charts teams can be of great help in dressing up your survey. The location of existing local and area industry can be indicated on a map, and pictures of plants can be enclosed.



Existing Local Industry:

Manufacturing and processing plants located in include

Name	Product	Established	Employees

Existing Area Industry:

Major manufacturing and processing plants located within the retail trade zone

Name	Product	Established	Employees

Area Resources:

Coal _____ Clay _____ Dolomite _____ Limestone _____ Fuller's Earth _____ Fluorspar _____
Gravel _____ Petroleum _____ Lead _____ Timber _____ Sand _____ Silica Sand _____ Molding
Sand _____ Peat _____ Sandstone _____ Tripoli _____ Zinc _____ Other _____

Agricultural Products:

Principal agricultural products produced in the area are _____

_____

Average annual market value of crops _____

Suggestions for the Preparation of the "Industrial Sites and Buildings" Section

Industrial Sites:

Your Maps and Charts Team can have a field day on this one. Unless a special map is prepared locally, industrial sites can be indicated on a topgraphical map available from the U.S. Government (your County Engineer can tell you how to obtain them). Use key number on your map and your tabulation.

Available Buildings:

You'll want to follow the samelines detailed above and put your Photography Team to work. To help identify each photograph, be sure to indicate the corresponding key number on the back the same number used on the map and your tabulation.

Industrial Sites:	Site No. 1	Site No. 2	Site No. 3
Size			
Inside or outside Corporate Limits			
Access to Railway			
Access to Highway			
Utilities Available			

Need of Additional Filling and or Drainage

Going per-acre Rate

Soil Bearing Characteristics
1
2
3

Present Ownership
1
2
3

Existing Buildings Available For Industrial Use:

	Building A	Building B	Building C
Size			
Inside or Outside Corporate Limits			
Type of Construction			
For Rent or Sale			
Rental or Sale Price			
Type of Industry Best Suited For			
Utility Facilities are Already in Building			
Access to Railway			
Access to Highway			
Office Space in Building			
Sprinkler System Installed			
Fire Insurance Classification			
Date of Construction			
Availability of Adjacent Property for Possible Future Expansion			
Zoning of Location			
Present Ownership			

THE LABOR MARKET

Area Population by Age Group and Sex:

	Male	Female	Total		Male	Female	Total
16 - 21				41 - 50			
22 - 30				51 - 60			
31 - 40				61 - 65			

Available Labor:

In Community _____ In Area _____

Total _____ Available labor force is mostly union _____ non-union _____

Wage Rates:

Average hourly wage range in area for	Male	Female
Skilled Labor	_____ to _____	_____ to _____
Semi-skilled Labor	_____ to _____	_____ to _____
Unskilled Labor	_____ to _____	_____ to _____

Division of Labor Force:

Percentage employed in Industry _____ Retailing _____ Agriculture _____ Estimated Unemployed _____

Strike History - Past Ten Years:

Date	Duration	Company	Reason

Existing Construction:

Number of homes available for purchase _____ Average home is modern and in good repair Yes____ No____ Average price bracket for existing 3 bedroom home is _____ Percent of homes owner-occupied _____

New-Home Construction:

Average number of units built annually _____ Average price bracket for new 3-bedroom home is _____ Minimum building requirements include _____

Rentals:

Number of rental units

	Available	Average Rent
Furnished Homes	_____	_____
Unfurnished Homes	_____	_____
Furnished Apartments	_____	_____
Unfurnished Apartments	_____	_____
Furnished Rooms	_____	_____

Is there a low-rent housing project considered or under construction?_____ If so, number___and type of units_____it contains

Zoning:

Describe zoning ordinances _____

Is "spot zoning" permitted?_____ Is area outside corporate limits covered by zoning ordinances?_____

Rail:

Name of railroad(s) serving community_____ Is daily passenger service furnished?_____Is daily freight service furnished?_____ If not on main line, main line connections are made where?_____ Is switching available on a 24-hour _____ or daily basis?_____ Is door delivery and pick-up provided for freight?_____ Is Railway Express handled locally?_____ If not, where?_____

Truck:

Name of truck line(s) serving community _____

Direct service to _____

Bus:

Name of bus line(s) serving community_____

How many schedules are operated daily?_____

Air:

Name of local or nearest airport _____ There are administrative _____ shop, _____ hangar _____ facilities provided There are radio _____ and beacon _____ facilities

The following types and lengths runways are available _____

Type	Length of Runway
_____	_____
_____	_____
_____	_____

Commercial airline(s) using airport include _____

If no commercial airline is using airport, nearest city having commercial air facilities is _____

Air freight service is available _____ Door delivery and pick-up is offered _____

Light plane charter service is available _____

Water:

Water transportation is available _____ Channels connect with what major seaport(s) _____

_____ inland city(s)? _____

Wharf facilities are available _____

Suggestions for the Preparation of the "Utility Facilities" Section

Water:

A copy of the latest "sample" report should be enclosed. If your local water source comes from wells, a copy of the water table formation should also be included

Electric:

Name of power supplier _____ They maintain a local office _____

What size units are installed in the substation? _____ Sizes and sources of feeder lines are _____ Voltage on the local distribution system is _____

Natural Gas:

Name of local supplier _____ They maintain a local office _____ Natural gas is available _____ (Interruptible) _____ The size of the mains is _____ The pressure maintained is _____

Water:

Name of local supplier _____ There is an abundant supply without the water

table being affected _____ The water is clear and potable _____ (Please see copy of latest sample report) The size of the mains is _____ The pressure maintained is _____ The average daily gallonage is _____ The Maximum daily gallonage is _____ The source of water supply is _____ If wells, how many are operated? _____ What is the drilled depth? _____, and what is the GPM capacity? _____

Telephone:

Name of telephone company _____ Do they maintain a local office? _____ local service department? _____ The system is dial _____ manual _____ If dial, is intercity dialing available now? _____

Telegraph:

Western Union does maintain a local office _____ Service is on a 24-hour basis _____

Streets:

Number of miles of paved and black topped streets in corporate limit _____ Are the streets wide and well drained? _____ Are streets maintained by the state or community? _____ Type of street lighting _____ Rules covering streets and sidewalks for new real estate developments within and outside the community _____

_____

_____

Sewerage and Refuse:

The community does have a modern sewerage disposal plant _____ Number of lift stations _____ System serves entire community _____ Value of sewerage plant is _____ Storm sewers are installed throughout the community _____ Rule covering sewers and storm sewers for new real estate developments within and outside the community are _____

_____

_____

How is industrial waste handled? _____

Refuse disposal service is provided with _____ or without _____ cost The pick-up schedule in residential and business zones is _____

Suggestions for the Preparation of the "Financial" Section

Banks:

If your bank(s) cannot supply you with copies of their latest statement of condition, your newspaper will probably have a few extra copies available

Building and Loan Associations:

Same as above

Banks:

Name of bank(s) serving community

(1) _____

(2) _____

(3) _____

	Bank No 1	Bank No 2	Bank No 3
Date founded			
National, state or private			
Interest on savings accounts			
Interest paid how often			
Types of loans made.			
Farm			
Home			
Business			
Consumer Installment			

Association membership(s) of bank(s) include _____

Note 1: Correspondent banks (if any) of local banks are listed on separate page in this section

Note 2: See attached condensed statement of bank conditions at back of this section

Building and Loan Associations:

Name of local Building (or Savings) and Loan Association(s) _____

(See attached condensed statement of conditions).

Federal Land Bank:

Is there a local office of the Federal Land Bank System? _____ If so, what was the aggregate of last year's loans? _____

Farm Bureau Association:

Is there a local office _____ If so, what was the aggregate of last year's loans? _____

Other Local Lending Agencies:

_____

_____

Follow-up Publicity

Once you have decided to participate in "Operation Brass Tacks," ample publicity should be given to what is being done. This will maintain the interest of the workers and the community in the project.

Here are some sugestions for publicity.

1. Announcement of General Chairman and target date for completion of project. Suggested proclamation by Mayor is attached.
2. Announcement by General Chairman of chairmen of various teams such as Education, Health and Welfare, etc.
3. Listing of workers on all teams as announced by team chairmen.
4. Comment on progress of project by General Chairman.
5. Announcement of completion of project. Perhaps a dinner or a meeting for the workers can be arranged at which this announcement can be made.
6. After completion, the local newspaper may want to take the various sections of the survey and prepare a series of articles that will inform local citizens on their local resources and facilities. The radio station may want to interview various team chairmen in regard to their team's findings.

RURAL DEVELOPMENT THROUGH ELECTRONIC TECHNOLOGY

[By Stan Wilson*]

Abstract

Rural development is viewed as a process that improves the quality of life of rural residents. Quality of life has a number of aspects but the economic is viewed as a particularly strategic one for promoting overall life quality. The economic is defined as providing jobs for rural residents. Two means for doing this, inducing firms to locate in rural areas and rural residents commuting to jobs in urban centers, contain economic disadvantages. An alternative is to have rural residents work at home and send the effort of their work to firms in urban centers via electronic communications systems. This alternative depends on the distinction between jobs and firms. It also depends on being able to view many jobs as essentially consisting of information processing. The input to and output from the rural worker flows over a national network termed the "total electronic information system."

Preface

The first version of this publication was approved as Technical Article No. 9854 of the Texas Agricultural Experiment Station and was delivered at the Third World Congress for Rural Sociology in Baton Rouge in August 1972. Special thanks are owed to Dr. Arthur Cosby, without whose help the presentation at the Third World Congress would not have been possible. This publication is particularly directed at the layman and is thus not written using the style and the technical terms of a rigorous scholarly work. It is hoped that this presentation of the total electronic information system and its implications for rural development will encourage the reader to use the bibliography as a source of continued reading in the area. Many interesting questions have arisen in the process of preparing this publication. In order not to divert the reader from the main lines of the discussion, these points have been relegated to footnotes and have been reserved for more complete treatment in later papers and publications. The illustrations were done by the Information Office of the Department of Agricultural Economics and Rural Sciology under the direction of Bob Robinson.

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INTRODUCTION

The term "rural development" is a controversial one and this controversy has two dimensions. Some prefer the term "community improvement" or "community development." Others would accept but disagree over its meaning or over the main thrust of rural development effort. For example, some would say that rural development means improving the quality of life of rural residents. Others would contend that rural development is economic development of rural areas. Finally, one could ask what is meant by the term "rural." Is rural to be defined according to the mean population density of an area or according to the attitudes of its citizens?

For purposes of this paper, rural development will be taken to mean improving the quality of life of those living in rural areas. The term "rural areas" will mean areas of comparatively low population density, although such an area might include one or more towns of several thousand people. In assigning this meaning to the term it is not intended to convey that this is the "correct" definition and the best term, but only to clarify the meaning in the context of this paper.

JOBS AND LIFE QUALITY

The term "quality of life" has a number of meanings and implications. Quality of life includes environmental quality (the ecological), economic welfare, social, cultural, and recreational opportunities, governmental services (fire, police, court, etc.) and public services (i.e., public utilities). One could include educational opportunities as a separate category or group it under cultural opportunities and/or government services. Each of these types or aspects of life quality must be paid for in some way. If a service or good (such as a beauty or barber shop or retail outlet) is provided by a business firm, then the firm must have paying customers. If it is provided by a nonprofit group (such as a local theater company), then it must have patrons. If it is provided by the local government, then it must be financed by taxes. In many rural areas the various dimensions of local life quality are declining because the number of customers, patrons or taxpayers are declining. This is due to the migration of people from rural to urban areas. This migration, in turn, is caused by the decline of jobs in rural areas.

One usually thinks of agriculture as being the primary source of rural jobs. For many decades, however, equipment and chemicals have been replacing labor and land in agriculture. This trend is unlikely to change significantly. Indeed, less than 5 percent of the U.S. labor force is engaged in agriculture and many of these are only partly employed in it. As employment declines in agriculture, towns in rural areas whose main function was serving the surrounding agricultural population also experience declines. The rural residents' response has traditionally been to move to urban areas and seek jobs in industries.

Migration to urban areas decreases the number of customers, patrons or taxpayers in rural areas. This leads to the inability to provide private and public services. Declines in services further lower the quality of rural life, inducing further out migration. Conversely, a job held by a rural resident making a product used outside his area will

generate several local jobs as he spend on local goods and services and those who provide the local goods and services also spend. This is the well-known multiplier effect and it works in both directions.

The size of the multiplier effect depends on how well integrated the economy of the community is. If it is highly integrated (i.e., if a large portion of the goods and services residents purchase are provided locally), then each additional job which produces a product sold outside the area will generate a larger number of local jobs. If the local economy is not well integrated, then a job which produces products sold outside the area will generate fewer local jobs.

One can also view this as a kind of "balance of payments" situation. No matter how well integrated the local economy is, the local residents will buy some products outside the community. To pay for these purchases they must "export" products outside the area.

Migration of rural residents to urban areas not only decreases support for local services thus lowering rural life quality but it also has an adverse effect on the life quality of urban areas. Increasing the population of an urban area usually leads to a higher population density which in turn puts a burden on urban service systems they were not designed to handle. The most obvious example is the overcrowded transportation systems of large cities. The demands on public utilities and waste disposal systems increase beyond the capacity the systems were designed to serve. The sheer concentration of large numbers in a small area produces concentrates of waste which may be beyond the capacity of the ecosystem to absorb without degrading its quality. Overcrowding is also said to contribute to mental and emotional illness and criminal behavior. Indicating the implications of rural life quality problems for urban life quality points out that both of these share a common cause: A population imbalance. For rural areas it is too sparse a population and for urban areas too crowded a population.

Rural development attempts to improve rural life quality and to reverse the decline in rural population. But no matter how good the overall life quality in an area, the residents must have jobs to continue living there. Thus assuring these jobs is an essential element in rural development. If rural development is successful enough in raising rural life quality, then these qualities might become so high that urban residents would be attracted to move to rural areas. This would decrease the population pressures in urban areas and thus relieve many of the problems of these areas. Thus rural development, if successful enough, might make a significant contribution to mitigating urban problems. But urban residents can not move to rural areas, no matter how high the life quality, if they can not find employment.

To summarize, improving the quality of life in both rural and urban areas is promoted by redistributing the population to achieve a better balance. This redistribution of people would be achieved by migration from urban to rural areas. But if people are to be redistributed, then economic opportunities must be redistributed.

APPROACHES TO RURAL DEVELOPMENT

The key to redistributing people between rural and urban areas is to redistribute economic opportunities: That is, to redistribute jobs. The key to generating a desirable multiplier effect is to have jobs for

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local residents (and which use local resources) which produce products sold outside the area. Since agriculture is decreasingly able to provide such jobs one naturally thinks of industry as the only alternative. (This assumes one is ruling out a simple income transfer from urban to rural areas.) This in turn leads one to think of inducing industrial firms to locate in rural areas. Thus rural development and inducing industry to locate in rural areas becomes synonymous in the speech (and in the thoughts) of many.

One must remember, however, that firms locate in particular areas because there are economic advantages to doing so. Urban areas, by their nature, offer several significant advantages. One is a large labor force containing a large number of diverse skills. A second is good transportation. A firm must be able to get its raw material in and to ship its products to a wide market. The cost of such transportation must be competitive with the transportation cost of other firms in its industry. This is particularly true of bulk items such as industrial raw material. A third economic advantage is the availability of a large local market for the firm's products. Simply because the firm is located in an urban area, in contrast to a rural area, there is a larger concentration of population in the vicinity of the firm and, therefore, a larger concentration of potential customers in the vicinity of the firm.

The importance of these advantages varies for different industries and, thus, in fact, some firms do locate in rural areas. When they do, the rural area has some offsetting advantages such as a local source of a particular raw material or local characteristic which is particularly attractive to the firm's executives (such as outdoor recreation opportunities or excellent schools). But a rural area seeking to attract plants must usually overcome urban advantages and it can only do by creating counter advantages in the form of direct or indirect subsidies. These may take the form of low interest loans, favorable tax treatment, or subsidizing a more extensive bulk cargo transportation system. But whatever the form, it is a subsidy and it costs local and nonlocal citizens money.

A second approach to jobs for rural residents is commuting. This solution presents no difficulty in attracting firms to rural areas. The firm continues to operate in an urban area but employees live in rural areas and commute to work.

Commuting as a solution for unemployment in rural areas is limited, however. Some people do live in rural areas and commute to a job in an urban area. But this is possible only for rural areas close to an urban center. The radius of commuting could be increased by building better freeways or by mass transit. Any transportation grid which would access all or most of the thinly populated rural areas would be very costly. A freeway system would, if successful in inducing rural residents to drive so far, substantially increase the congestion at rush hours. Public transit through a sparsely settled area would require high fares in order to be self-supporting. This would not encourage usage. Thus much increased commuting is not a practical alternative for most rural areas and not a practical alternative strategy for rural development.

To begin to get around the difficulty outlined above one must start by making a basic distinction. The distinction between the goals of rural development and the means to achieving these goals. The real goal of rural development strategy is to provide jobs for rural residents.

A firm located in a rural area could provide such jobs but this is only one source of jobs. Inducing firms to locate in rural areas is only one alternative in providing jobs for rural residents. Individuals living in rural areas and commuting to jobs in urban areas is only a second alternative in providing jobs for rural residents.

A third alternative proposed here is based on the distinction between jobs and firms. This approach suggests that an individual live and work in a rural area but for a firm located in an urban area.

The distinction between jobs and firms becomes significant if one conceives of individuals working where they live (in a rural area) and sending the results of their effort to the firm employing each individual; the firm being located in an urban area.

PRODUCTS, SERVICES, AND INFORMATION

If the results of the individual's labor are a physical item, then this third alternative is possible but hardly economical. The cost of transporting raw or semi-finished material to the worker's home and transporting the product to the firm is prohibitive. This process would also involve the losses due to not being able to apply specialization and division of labor on such an intensive scale.

But if the results of the individual's efforts were not physical products, then does it become possible for him to work at home and transport his efforts to a distant firm? How can this, in fact, be done? If an individual is not directly involved in making a product, he must of course, be producing a service. This is obvious if the firm is one whose product is a service, such as an insurance company. What about a goods-producing company? If one examines closely the total number of employees in a firm producing a product, one discovers that many, perhaps a majority, are not directly engaged in producing the product. They are occupied performing services which support or aid those who are actually reacting with raw material and capital to make the product. This service group which supports the "production" workers is engaged in such activities as accounting, personnel, payroll, advertising, public relations, finance, and data processing.

The majority of the American labor force is engaged in producing services, not goods, and many of those who work for goods-producing firms are not directly engaged in producing goods but instead produce services. In the near future a cybernated control system may be directly engaged in making a product. Those who monitor the system do not directly produce the product. They are engaged in the service of monitoring and, when necessary, of control and correction. The trend toward a service economy would seem to work against having employees fulfill their duties at home and transport the results of their efforts to their firm. It may be uneconomical to produce products this way, but they at least can be transported (i.e., it is technically possible to geographically separate the steps in the production of a product although it may not be economically feasible). But it would seem that it is not even technically possible to separate the stages of production of a service. One thinks of services as being immediately consumed on the spot by the one receiving them. This usually requires that the producer and consumer be in close proximity.

But one type of service does not require close physical proximity. One might also view it as a product which could be easily transported.

The product is information and the service is information processing. Many services, when examined closely, are discovered to be information-processing activities. All those who work in offices are basically performing information processing. In order to be able to recognize information-processing activities, one must know what the basic steps in the process are. Information processing consists, essentially, of activities arranged in the following sequence:

(1) Information is received by an individual; (2) using this information and his own experience and expertise as well as other information available to him, he forms judgments; (3) the judgments may be used to modify the received information, generate new information, select existing information or any combination of these three; (4) the judgments (which are themselves information), the modified and/or new information is transported to others.

All processes or activities which can be viewed as essentially consisting of the above four steps can be considered as information processing. Only two of these, the second and the third, are true processing. The first and fourth are transportation of information. At this point one comes to the crucial importance of one characteristic of information for rural development. Information can exist in the mind of an individual. But if it is to be transported between individuals it must be embodied in some physical medium. One type of medium is print. This medium allows for fairly inexpensive transportation and for bulk storage. But an even more efficient medium for inexpensive transportation is the electronic.

ELECTRONIC TRANSPORTATION

The electronic media transport information at close to the speed of light. This makes it possible for an individual engaged in information processing to work at home. He may receive information from some distant point, think about the information and form judgments, modify and/or generate new information and send it to some distant point. Since the transportation steps (the first and fourth) occur at a speed near that of light, the entire process could occur many times a day. The cost of electronic transportation is very low. The advantages of specialization and division of labor are not lost. The information transported can be specialized information between those performing specialized, sequential functions. In this way the labor of a given job of information processing can be divided.

The key to this rests in two aspects of electronic communications: It is, for all practical purposes, instantaneous, and a large amount of information can be sent very cheaply. Information, embodied in electromagnetic impulses, can be transported in a number of ways. These include radio, microwave, cable, and laser. The electronic impluse can be propagated in a spherical field about the source (such as in radio or broadcast TV). This is the least efficient, costs the most to transport large amounts of information (if each is receiving different information) and would soon crowd the electromagnetic spectrum. A second approach is to concentrate the impulse in a narrow beam (such as by microwave or laser). This allows more information to be carried by the electromagnetic spectrum and usually results in more capacity. The capacity of an impulse is directly proportionate to its frequency, and microwave and lasers have a higher frequency

than radio or electric current. The final approach is to send the impulse through a conduit. This might be electricity sent through a cable or a laser beam sent through an empty pipe. The conduit approach allows huge amounts of information involving conversations between many pairs of points to be carried simultaneously. The narrow beam or the conduit would be true high capacity electronic "highways" for transporting high "volume," low cost information. Along these electronic highways rural residents could "commute" (or have their information "commute") to firms in urban areas.

With a national system of such electronic "highways," a given individual could live in any community he chose and work for a firm in any city. One could probably imagine how electronic transportation systems of high capacity would be economically justifiable between large urban areas. One might even conceive of electronic "highways" between an urban center and larger towns in rural areas. But is electronic highway to every home in a sparsely settled rural area economically feasible? Two such systems already exist. These are the telephone system and the electric power system. Electricity is a form of electromagnetic energy. The connection between energy and information has already been demonstrated. The telephone system is, of course, a system for the transportation of information embodied in electromagnetic impulses. The telephone wire doesn't have the ability to carry substantial volumes of information but it would be sufficient for one individual. One can imagine a rural resident making a local call to a nearby town. In the town his information is automatically fed into a microwave system which connects the town to an urban center. The microwave line could carry simultaneously the telephone communications of several hundred or several thousand rural residents in and around the town.

A wire system with higher transmission capability is probably desirable for reasons that will be outlined later. Such a system is already being built. It consists of the wires of cable television systems. These systems are particularly prominent in rural areas. Over 5 million homes in the United States are connected to a cable system of some kind. By 1986 it is projected that 40 to 60 percent of American homes will be connected to some type of cable system. Most cable systems have 40-channel capacity. Only a few of the channels are actually utilized. The rest are for future expansion of services. These vacant channels could easily provide enough capacity to transmit vast amounts of information. It should be emphasized that all channels which are used in transmission are received in the home. Since a TV can present only one channel at a time, the viewer selects the one to be shown on the screen by the channel selector. But all channels actually transmit to the TV at the same time. A single cable could easily present a different channel on three TV's in each room of a 12-room house. Cables of higher capacity can carry 80 channels and two-way conversation and pictures, making multiperson-multireceiver conferences possible.

COMPUTER TERMINALS IN THE HOME

Once the information can be transmitted into rural homes at the speed of light, in high volume and cheaply, how can it be utilized by the employee? The answer is to have the cable attached to a computer

terminal in the home. The worker can then sit at the terminal and perform his work (i.e. process information). Computer terminals come in several types and have wide capabilities.

The simplest is an electric typewriter. The typewriter is plugged into a device (about the size of a shoe box) called an acoustic coupler. The user simply dials the number of the computer using any ordinary telephone anywhere. When the computer acknowledges the call by a high-pitched sound coming over the receiver the user places the receiver is a cradle on the acoustic coupler. The acoustic coupler translates sound into electric impulses or electric impulses into sound. Thus, a person can type in questions using the electric typewriter and they will be transmitted to the computer over the telephone line. The computer can respond over the telephone line and its answers will be typed out on the electric typewriter. Any information which is in alphabetic and/or numeric form can be transmitted to or from the computer or between terminals.

A modification of the above device consists of an acoustic coupler and keyboard combined. The user again dials the telephone number of the computer and puts the receiver on a cradle on the acoustic coupler. The keyboard is part of the coupler. Two wires go from the coupler and these are attached by clamps to the antenna leads on any ordinary TV set. Instead of typing out information on paper, the acoustic coupler causes it to be displayed on the TV screen. The user's commands or the computer's responses can be displayed. Such a device sells for under $1,000 cnd can be used to drive up to 10 TV screens at one time.

A somewhat more sophisticated version of the TV set called a cathode ray tube (CRT) allows the computer to display visual material. The CRT is basically a TV screen. On it the computer can project graphic, diagramatic or pictorial displays. The display can be in color and in three dimensions. The computer can rotate a three dimensional drawing to give the user views of different perspectives. The CRT is especially useful if it is equipped with a light pen. The light pen is the size and shape of a pocket flashlight or large pen. It has a wire which attaches it to the CRT. Using the light pen, an individual can "draw" pictures, diagrams, blueprints, drawings, charts and other visual displays on the CRT. He can also point the pen at a particular part of a display and have the computer modify it. Such uses of the light pen are already being made.

The final development is the large, flat TV screen. These are already in operation at some universities. They are 2 or 3 inches thick but are up to 16 feet by 20 feet in area. Using a light pen an individual can produce on such a screen a very complicated diagram or "blueprint" of a large, complicated system. It is obvious that with a light pen and CRT anyone whose information output is in the form of visual material could work at home. This includes draftsmen, designers, engineers, and commercial artists. A CRT can display any combination of alphabetic, numeric, and/or visual information one wishes.

THE TOTAL ELECTRONIC INFORMATION SYSTEM

The user could also have the computer transmit to his screen a particular TV program that was on video tape. In this way the individual can have access to a whole library of material which could

include not only books, journals, and other publications but video taped lectures, courses, and programs on special topics. The computer will search the library for him and assemble all the material on a particular subject or key word. If the user wishes, the computer will even present the material in ascending order of difficulty so that the user can, in effect, have his own tailormade course on a particular subject. The computer will present questions on the material to the user. If he passes, it will present new material. If not, it will recycle and present the material again with emphasis on the questions he missed. This would allow scholars to do research in their own home instead of wasting time traveling to and from libraries and searching shelves. It will also allow individuals to retrain or to expand their knowledge in the privacy and convenience of their own home. Finally, it will allow a great deal of education which is carried on in school to be carried on in the home.

One may conclude from the above that an individual might never actually leave such an educational system. The child will start out with elementary lessons via the terminal and as he gets older he will progress to more advanced material, but there is no reason why he shouldn't continue using the system all his life. Trips to school for special help from teachers will probably always be necessary, but as the information system becomes perfected and the teaching programs more sophisticated, these will be infrequent.

A significant advantage of the system would be that any time one library anywhere in the country got a piece of information (whether it be a publication, film, or pictorial display) on their system it would be instantly available to all systems. This is because the information would already be in a form such that it could be transmitted by electronic means. Thus, all they would have to do is send the information over current electronic systems (cable or microwave) to all other libraries or information centers. Similarly, if a researcher anywhere prepared a video tape or a body of instruction for his computer information system, it could be available to all other systems. A teacher ordinarily spends 2 to 3 hours preparing for a 1-hour presentation. The teacher or researcher preparing a video tape would spend days or weeks. But, it would be worth it because once the material is in the form of video tape and/or computer lessons, the presentation would be available to an audience which would consist of everyone in this country (and later in the world) and would be preserved for all time. If the researcher wanted to later modify it, the video tape could be edited and the new tape loaded into the computer information system. In making such a presentation, the researcher or teacher would need the help of those skilled in the television area (director, artist, camera man, technician, etc.). But because of the size of the audience, the effort would be worthwhile and the product would be a presentation which was far superior to the current lecture.

One can see that such a system could not only directly promote the economic development of rural areas it would also directly promote other aspects of rural development. For example, it could provide an education for the rural child equivalent to that of urban children. All would access and be instructed by the same system. Thus the quality of teaching and the diversity of subject matter would be the same for all whether they are rural or urban residents. If a student

fell behind in progress on the system, the computer would alert his parents and the local educational system. At that point a human teacher could be dispatched or he could be called in for counseling and remedial work. But a teacher would not be needed much of the time and, thus, the total cost could be less.

Such a system could also allow the provision of cultural services to rural areas. This would include a library of video tapes of cultural events, visual displays of art work and adult training in culturally enriching courses or humanistic areas. All this could be in the video tape and memory banks of the computer system and called up and displayed on TV screens in an individual's home.

AN OVERVIEW OF THE SYSTEM

These electronic "highways" are projected as connecting computer terminals in the home to firms in urban areas. The system has been sketched from the computer terminal in the home over cable TV lines to centers in small towns in rural areas. From these centers the information goes by microwave or cables to an urban area. The urban areas would be connected to each other in a national network of cables or lasers.

The last aspect of the system which must be described is the other terminus of the system, the firm in urban areas. The nature of the firm's technical setup was implied above. The firm must have or have access to a computer system. The files of the firm must be in the form of electromagnetic energy in the memory banks of the computer system. Many firms already have computer systems. Others have access to computer systems because they are part of a time sharing system. Firms which are part of a time sharing system have their own private files in the memory bank of the system. The private files of a company can only be accessed using certain code numbers and words. When an individual "left" one firm and "joined" another the system would be commanded to no longer let his number have access to the files of his former employer. But it would be commanded to let him have access to the files of the new employer.

The functioning of the system is obvious for a single worker but what about a conference or team effort? The cable system can easily allow conference communications. Each individual would have two CRT's in operation. One would display the alphanumeric and/or visual information the meeting would be considering. The other, through the use of split screens would display an image of each of the participants. One can imagine that the future office or work room would consist of a room the walls of which were covered with large flat TV screens. In the center would be a swivel chair and attached to it a keyboard. Each CRT would have a light pen and the keyboard would be detachable and light. The room would be part of the individual's house.

When an individual finished producing his information and had it in the form he wished, he would command the computer to save it in its memory bank. He could later call it up at will for further work, for presentation at a conference or have it stored so that others could call it up and make use of it.

POLICY PROPOSALS

Having described the system, the next step is to suggest directions to take in order to implement it. These directions can be classified into two groups, the technical and the organizational.

The organization involves the question of who should organize, own, and pay for the systems. The basic network between urban areas and between urban areas and rural towns is a form of public transportation. All should have access to it. The closest thing to it that now exists is the highway system. One could therefore argue that it should be a publicly built and operated system like the public roads. The cost should be borne by those who use it as the current tax on motor fuels attempts to do for our road system. The absolute size of the cost of building such a network would be very great. But it could substantially relieve the rising volume of traffic necessary to face-to-face communication and would be cheaper than any conceivable means of adding capacity to the transportation system. Because of the high volume of usage possible, the service charge per user would be very low when the system came into general use. In order to reach this state of higher usage, it would be best to charge each user a rate that would cover cost when these systems came into high usage. This would mean a net loss in operating the system for the first few years and should be borne by the government as a cost of rural development.

In the rural area the system of cable TV wires connecting each home to the center in a rural town could be operated like many similar systems now (cable TV systems, rural electric co-ops or rural telephone companies). For development purposes the system should probably be operated like a rural electric co-op. This would mean government low interest loans at first. The rural information system co-op could, in fact, be operated by the rural electric co-op and the two systems could share facilities whenever possible. One can see that models for organization of the system are easily available.

The technical dimension is also not without previous models. All of the technical hardware (and software) described have been proven technically feasible. The only exception is interfacing the large, flat TV screen to a computer and light pen. (This may have already happened without the writer knowing it.) Their needs to be government-sponsored research and development to do this. A second need is government programs to develop hardware and operating systems which are as cheap as possible. Current technical development programs, of private and government sponsorship, promise the necessary level of cheapness in the forseeable future. A strong government financed program to develop cheap CRT's is necessary to bring the system into full operation as soon as possible. One is safe in observing that the governmen programs which have not been most successful have been those which aimed at a clearly defined technical goal. Rural development will not be a simple technical process. It will have crucial social aspects. But this country is better at solving technical problems and as much of the underwriting of rural development as possible should be done by technical means. This will make the social problems easier to solve or at least less pressing and intractable.

SUMMARY AND EXTRA ADVANTAGES

It has been argued that providing jobs for rural residents is a very important part of rural development and that these jobs are provided, with difficulty and expense, by attempting to attract firms to rural areas. An alternative approach makes use of an amalgamate of various electronic technologies to bring the job to rural areas while the firm maintains its location in an urban area. This amalgamate is referred to as the total electronic information system and is viewed as an electronic transportation system for information. This alternative depends on (1) The distinction between jobs and firms, and (2) the assumption that many jobs can be viewed as consisting basically of information processing. A corollary is that information may be in letters and numbers and/or visual form.

Several points should be made in conclusion. First, one should observe that all workers in a rural area do not have to work through the total electronic information system. Some workers must be engaged in activities that are goods producing. Others will earn their living by providing local consumer services.

Second, one should observe that there is a possible disadvantage to achieving rural development by attracting a firm to move to a rural area. The population density of a rural area may be so low that its employment needs can be provided for by a few firms. Alternately, it might attract one large firm and become a one company town with the employees suffering all the disadvantages of working for a monopsonist. If either of these happens and one firm goes bankrupt or moves, then the unemployment problem is serious. A large percentage of the local labor force is unemployed. Their chances of finding other jobs locally is very slim until another firm is attracted in. But with a total electronic information system, even if all the workers do happen to work for one firm (which is highly unlikely and not necessary) and that firm goes bankrupt, they can simply apply for a job at any firm located anywhere in the country. The individual, when he obtains such a job, would not have to leave his home. It would simply be necessary for the new company to instruct its computer system to let the individual have access to its records from his terminal. A national employment service is an easy thing to add to the total electronic information system. And when a worker got his new job, he need not move. His changeover is accomplished inside the memory banks of the total electronic information system.

Third, one may object that computer technology can not provide jobs for rural residents because only the highly trained could make use of a computer and the unemployed or underemployed tend to be low skilled and with low levels of education. But even if it were true that the low skilled or low educated could not use a computer terminal, it should be pointed out that a total electronic information system would allow highly skilled individuals to live and work in rural areas and that their presence there would create demands for local products and services. These demands could in turn generate jobs for local residents who are unskilled or semiskilled. The presence of high and medium income individuals in a community does not automatically generate jobs for the unemployed and low skilled. But absence of these individuals would mean the absence of another source of job. The unskilled would have to be trained for such jobs

but without high income and medium income individuals to generate demand for local goods and services these jobs would not exist and training the low skilled for nonexistent jobs would be pointless. Thus, the export of the efforts of the highly trained could generate a multiplier effort which would benefit others.

However, it is not true that only the highly trained can use computers. Airline reservations are taken and confirmed by clerks who use computer terminals (CRT's and keyboards). High school students are using computer terminals to formulate and solve problems which are of immediate and significant interest to business firms. These problems include scheduling shipments from a variety of warehouses to a variety of retail outlets and determining the optimum mix of ingredients for a product. A variety of clerk and secretarial functions can be performed using a computer terminal. The keyboard is not unlike that of a typewriter. Once a letter is typed in on a terminal it can be sent over the total electronic information system to distant locations instead of being mailed. Commercial artists and designers can use CRT's equipped with light pens to design advertising displays, fashions and other items.

One is correct in concluding that to design and build computers requires substantial technical knowledge and expertise. Also, to design the software (programs) which control the system one must have a high level of training and experience. But to use these systems requires little or no formal training if the systems are user oriented (made to be used by the average person). An analogy is the electric power system. Considerable knowledge and experience is necessary to plan, build, and operate such a system but almost anyone can turn on a light, plug in a toaster, or control a TV set. Further advances in the design of hardware and software promise increased ease of usage. The development and spread of the computer language, APL, is a particularly hopeful development.

The chief advantage of APL is that it is much easier to learn and to use than other computer languages. Thus an individual can learn APL very easily. He doesn't need to attend classes or devote a large amount of time to learning the language before he can use it. APL can be learned as it is needed and used. This means that a person, using APL at a terminal can give instructions to the computer in the same time it would take him to communicate with a programmer. The individual would also get the results back right away instead of waiting for the program to be coded, keypunched and debugged.

A second advantage of APL is that it is so simple to use that mistakes are fewer and easier to correct. This saves a substantial amount of computer time which would be used in debugging. The simplicity of APL also makes it possible to train clerks and secretaries to enter instructions or data. Since the APL terminal keyboard is an electric typewriter keyboard, a secretary could take data or instructions directly from a questionnaire or other written source and "type" it directly into the computer's disk memory.

Fourth, one may wonder why, in a narrative concerning the economic uses of a total electronic information system, so much space was devoted to the educational uses of the system. However, education increases the skills and analytical ability of the student thus making him a better information processor. In addition, the

electronic library concept puts the sum total of the world's information (or knowledge if one prefers) at his fingertips (literally). Thus in his information processing (his job) he cannot only take in and make use of the information of his company's records, but also the information of society. Since he has a greater range and variety of input information to choose from, he has greater variety or choice in the output information he sends back to his firm.

Fifth, one may wish to know which jobs consist essentially of information processing. Scattered throughout this narration are indications of jobs which might be viewed as consisting essentially of information processing. Therefore, it might be more useful to state the conditions or aspects which make a job consist essentially of information processing. A job consists of information processing if the input to the one holding the job and the output from the one holding the job consist of information. For the purposes of this narration, information is anything which can be put in the form of letters (text), numbers, pictures, diagrams, or any combination of these. The limiting factor in implementing the system described here will not be the technological or financial. It will be the human imagination. It will be our ability or willingness to conceive of or imagine a job as consisting essentially of information processing. This in turn depends on our ability to conceive of the input and output as information.

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