



THE ECONOMIC SYSTEM

Iowa State University of Science and Technology Cooperative Extension Service Soc. 9 Ames, Iowa

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BACKGROUND

This is one of four publications dealing with the effects of population decline on rural Iowa counties. The publications are summaries of reports from a 6-year study in Greene County conducted by the Department of Economics and Sociology, Iowa State University.

The Greene County study was part of a larger study done under the auspices of the North Central Region Subcommittee on Population Research. The publications were prepared under the guidance of W. Bauder, J. Doerflinger, Wm. Kenkel and R. Klietsch and were based on the working papers of R. Wakely, A. Russel and C. Mulford.

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Like many Iowa counties, Greene County is predominantly rural. It has a high level of living but little manufacturing.

Over the years, technology has reduced the need for agricultural labor, and young families in particular have been leaving the farms. Since the county offers few major employment opportunities outside agriculture, the result has been net out-migration and population decline. Thus Greene County faces the need for adjusting community institutions and services to a declining population.

Greene County is typical of counties in Iowa and other cornbelt states that have experienced heavy out-migration, have low employment in manufactur-

ing and have high farm operator level of living.

Of the 99 Iowa counties, 83.8 percent in 1950 and 76.8 percent in 1960 are characterized by high out-migration, high farm operator level of living and low manufacturing based on state averages. Most of these counties are located in the central and northern parts of the state.

Greene County farms generally concentrate on the cash grains and livestock, in that order. There is little dairy farming or poultry production.

The settlement of Greene County was slow until after the Civil War. Then population shot up, climaxing around 1900 with a total population of 17,820. During the next 10 years population dropped, but gradually gained again from 1910 to 1940. The current decline began about then as population fell from 15,544 in 1940 to 14,379 in 1960.

Jefferson, the county seat, was the only community in the county to gain population in the last 20 years. All other towns suffered losses.

THE IMPACT OF POPULATION CHANGE ON RURAL COMMUNITY LIFE

. . . The Economic System

Prepared by Ward W. Bauder

Declining population is the basic problem

Heavy out-migration since 1900 and large declines in population since 1940 have reduced the population base for economic services in many Iowa agricultural counties including Greene county (table 1). Although some of the larger towns in these counties have grown, the general trend in trade area populations has been definitely downward in the last two decades. Upward trends in income have partially masked the decline in customers. With changing standards of living and dollar volume, trade for some goods and services has increased. In general, businessmen have been aware that changes were occurring and new problems were confronting them; but solutions have not been easy.

Percent

Change

Table 1. Population trends in Greene county, 1860-1960

Net out-migration as percent of population at beginning of decade

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Year

Greene County

1860	1,374		
1870	4,627	236.75	
1880	12,727	175.05	
1890	15,797	24.12	
1900	17,820	12.81	
1910	16,023	-10.08	
1920	16,467	2.77	
1930	16,528	. 37	
1940	16,599	. 43	
1950	15,544	-6.36	17.
1960	14,294	-8.04	18.

Source: U.S. Census of Population. 1860-1960.

Two other contributing problems

Simultaneously with out-migration and population decline, two other changes have had similar effects on business. Both make it more difficult

Ward W. Bauder is Social Science Analyst, Economics Research Service, USDA.

for the average proprietor to determine accurately the cause of his problems.

These are (1) changes in transportation which have generally expanded the trade areas of the larger cities at the expense of the smaller towns by increasing the freedom of the individual customer to shop around for goods and services, and (2) changes in the kinds of goods and services offered to consumers, which are largely the product of technological improvements in processing, packaging and transportation. The latter change plus the upward trend in income has increased the demand for certain goods or services even in areas of declining population and declining purchasing power.

A further complication is that the chief cause of population decline, namely, net out-migration, began in Greene county a long time ago. People have moved in and out of the county in considerable numbers since settlement days. At first it was people moving west to new land and later the movement to cities. But, more people have moved away from Greene county than have moved in each decade since 1890. Except for the decade 1900-1910 the net out-movement was not large enough to cause a decline in total population until the 1940's. People became accustomed to seeing their neighbors, particularly the younger ones, move away before they realized that population was declining.

Awareness of problems

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Awareness of the many causes of business problems was reflected in the responses of businessmen in Jefferson, Grand Junction and Scranton to the question, "What is the most serious problem facing businessmen in your community?"

The majority in all three towns said their most serious problem was to find a way to provide more employment at pay rates that would encourage people, particularly young people, to remain in the community (table 2). A smaller proportion expressed concern with changes in trade area patterns when they said that their most important problem was obtaining adequate business cooperation to improve service facilities and attract customers to the trade area. Apparently some of the latter businessmen were thinking that if they could just make their stores and service centers attractive enough they would not lack for customers. When the number of customers living in an area is declining this is difficult, particularly in a small town where the advantages of larger volume and advertising enjoyed by competitors in the larger centers are hard to achieve.

Parallel changes in population and trade areas 1900-1960

Merchants in Greene county have had to contend with shifting trade areas throughout the county's history. Because the county was largely settled before automobiles, the location of towns was determined primarily by two factors: (1) the location of railroads and (2) the distance a man could travel to and from town with a team and wagon in a day, the so-called "team haul" principle.

Table 2. Ranking economic problems cited by informants in Jefferson, Grand Junction and Scranton

Percent of interviewees identifying the problem in:

Problem	Jefferson	Grand Junction	Scranton
Inadequate employment oppor- tunities for all age groups of the community	96.2	86.4	94.6
Inadequate salaries to attract young people to stay in the community and keep the adults now employed	87.5	84.1	94.5
Inadequate community support of business organizations to activate improvement plans into community action	51.3	61.4	70.3

Inadequate business cooper- ation to improve service fa- cilities and attract people to trade area	51.2	72.7	81.0
Inadequate support of the community by local business firms	50.0	63.6	56.8
Inadequate marketing facili- ties and opportunities	40.0	31.8	35.0
Inadequate business services to meet community buying needs	31.3	70.5	70.3
Inadequate loan and credit service	27.5	31.8	35.1

As a consequence, outlines of the trade areas of Greene county in 1900 probably resembled closely those shown in figure 1, with each town serving its own residents and people on the surrounding farms to a distance of 6 to 10 miles. Jefferson, because it was the county seat, served the entire community for certain specialized items and likely had the largest primary trade area.

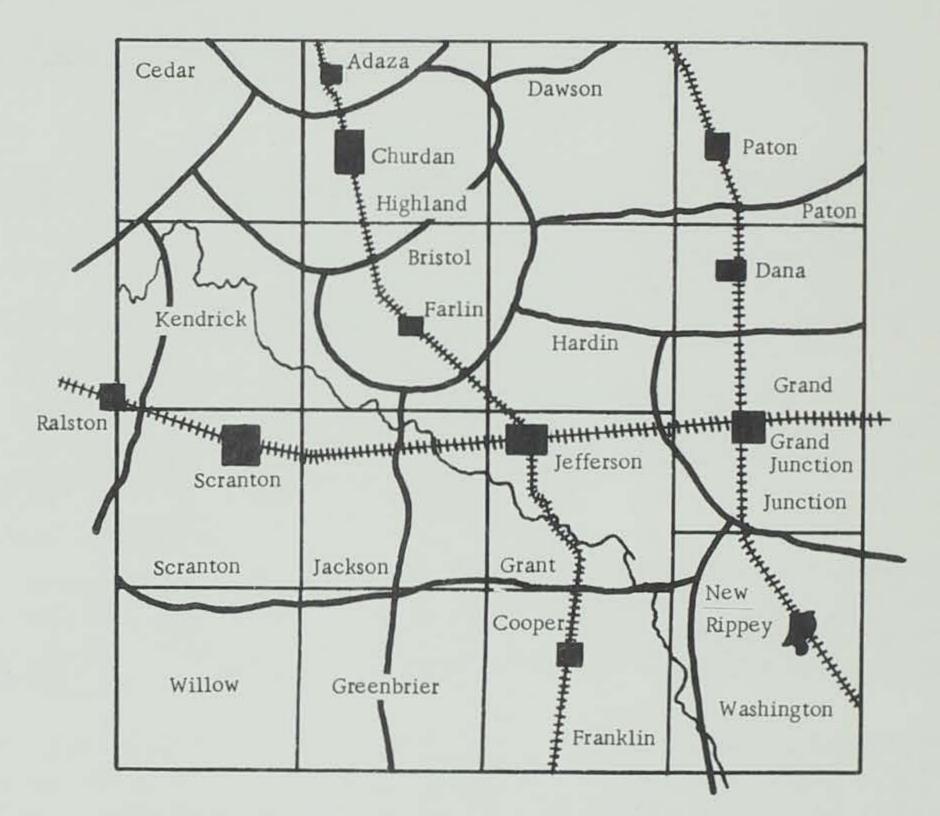
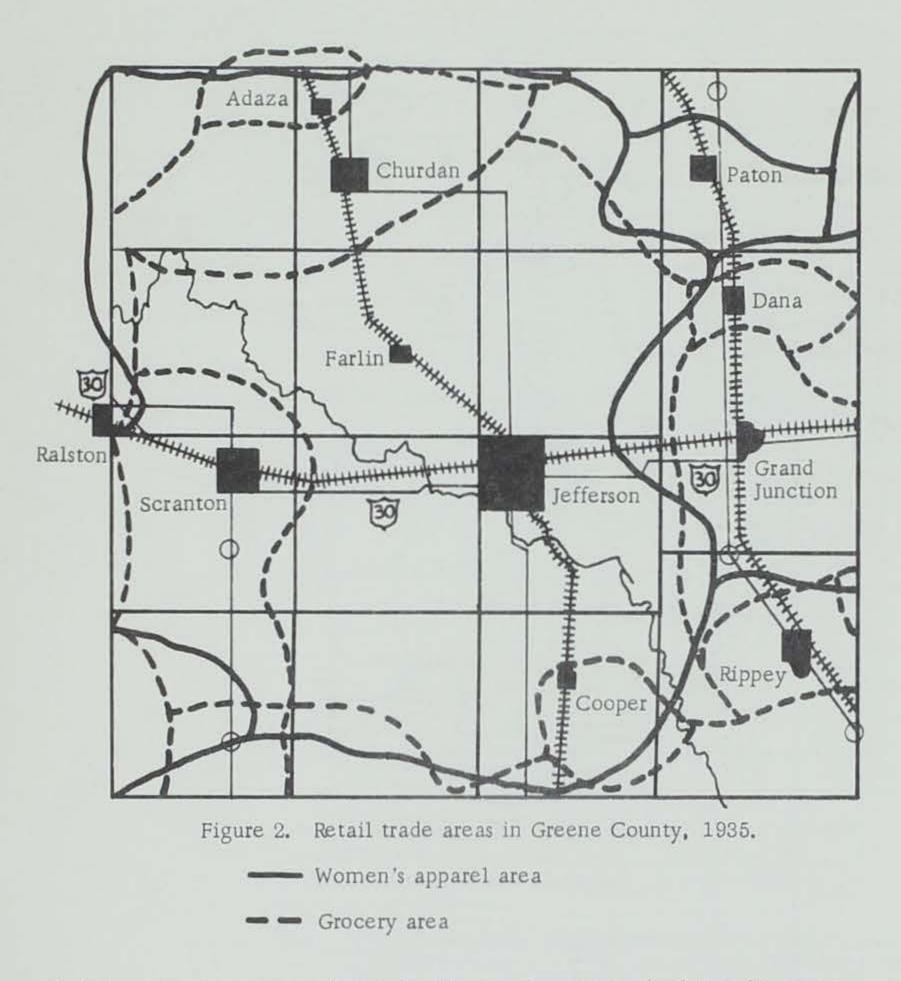


Figure 1. Retail trade area in Greene County 1900-1910. (Based on conclusions drawn from historical records and nature of transportation of that period.)

HHH Railroads

----- Trade areas boundaries

But the pattern shown in figure 1 did not last long. With the coming of the auto and improved roads, trade area boundaries began to change. By 1935, when the first recorded trade area survey was made, Jefferson's trade area for such a basic item as groceries had expanded to include about 45 percent of the county. Virtually all but a narrow strip along the eastern border was in the Jefferson trade area for women's clothing, a more specialized item (see figure 2).



In addition to increased trade through expanded trade areas, migration to Jefferson also increased trade volume for Jefferson firms during this period. Jefferson businessmen enjoyed the double advantage of having more customers driving in from farms and small towns and having more customers living within the city of Jefferson itself. Figure 3 shows that between 1900 and 1935 Jefferson increased considerably in population while Grand Junction, Scranton and Churdan remained nearly stationary, and the remainder of the county, which includes the other small towns and farm population, declined.

Between 1935 and the next survey in 1952, Jefferson's area of dominance over trade continued to expand at the expense of the smaller towns (see figure 4). By 1952 Jefferson's composite trade area was nearly as large as its women's apparel area in 1935, which means that it had expanded its trade in most goods and services until people were coming to Jefferson to supply nearly all their commercial needs. Although some of the smaller towns retained recognizable primary trade areas, these areas were shrinking and were increasingly penetrated by Jefferson influence.

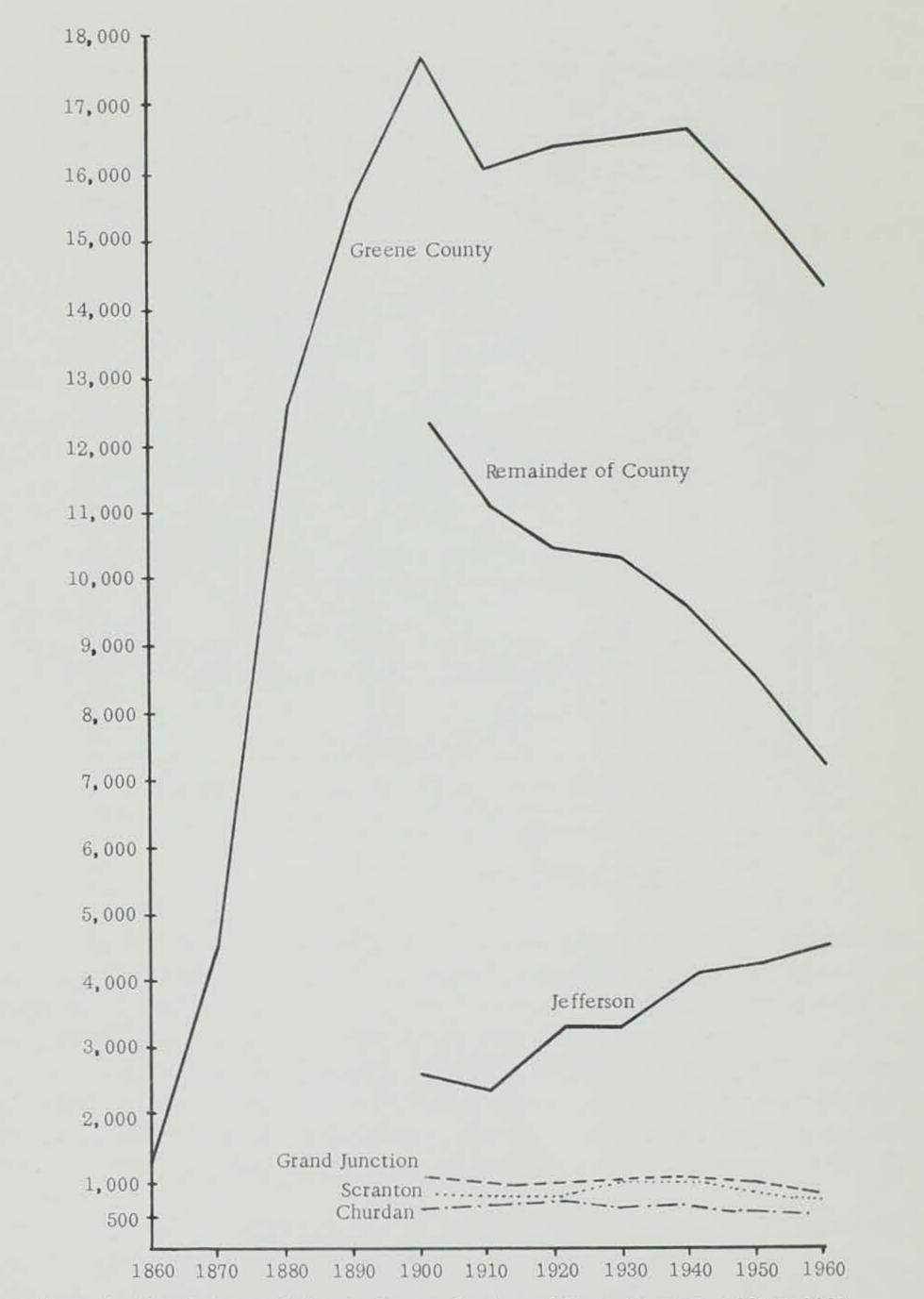
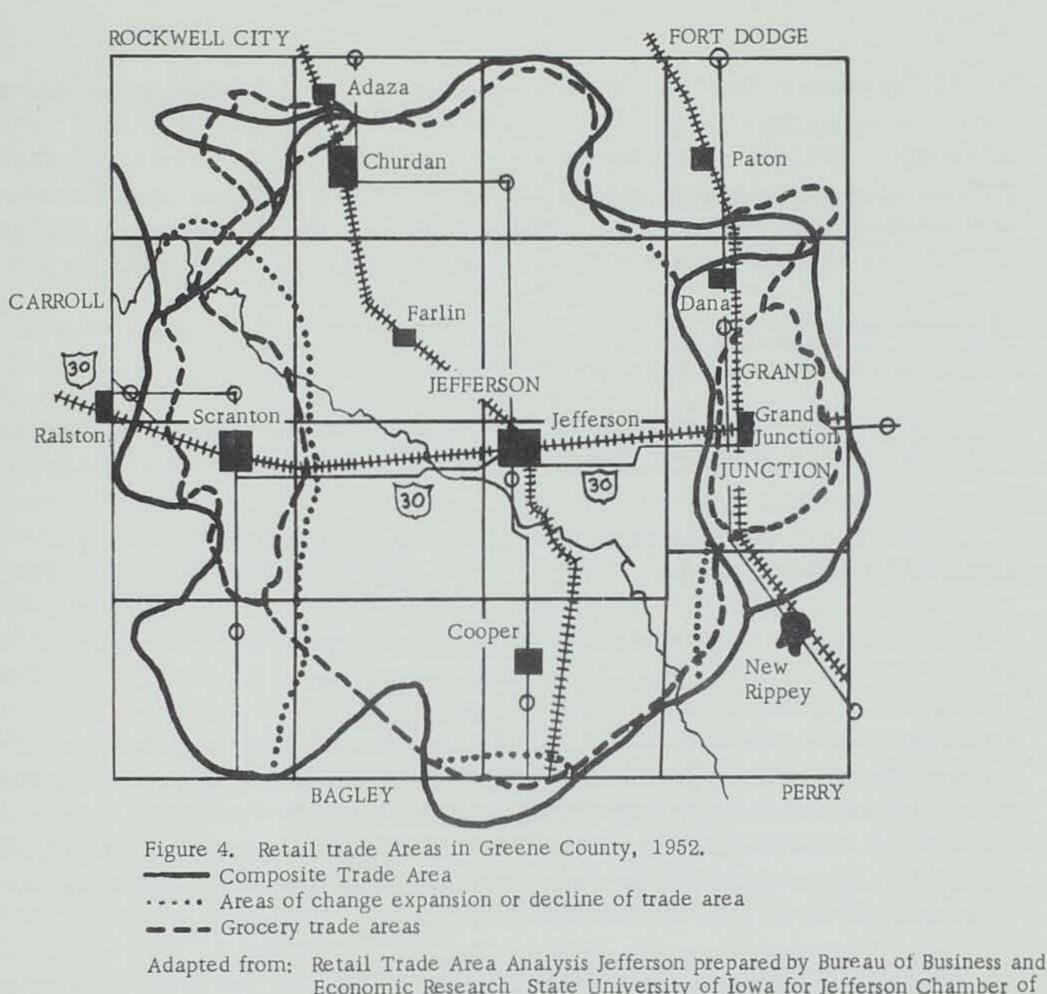


Figure 3. Trends in population in Greene County and its major parts, 1860 to 1960.

However the same factors--ease of transportation and changes in demands for goods and services--which helped Jefferson businessmen extend their trade area were also working in neighboring counties. Jefferson's businessmen began to experience more competition from larger centers in adjoining counties. Trade, particularly for specialized items, in border sections of the county was lost to the trade areas of such places as Fort Dodge, Rockwell City, Carroll, Bagley and Perry.



Commerce, Jefferson, Iowa. January 1952.

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Again a part of the Jefferson business expansion came from customers moving to Jefferson, but the rate of increase from this source was declining because Jefferson was growing at a slow rate. Furthermore, because the population of the small towns remained stable or declined and the farm population dropped sharply, Jefferson's gain in trade area through geographic expansion of trade area boundaries was partially offset by a population decline in the added territory.

Although a comprehensive survey of trade areas was not made in 1958, a limited survey of source of goods and services for a county wide sample of population indicated that the trends observed between 1935 and 1952 had continued.

Adjustments to declining population and changing trade areas

What has been the response of business services to these changes in population and trade area boundaries? Because the changes have not affected all parts of the county equally, responses have varied. If business firms are to maintain volume at a profitable level, an obvious adjustment to decline in population base is a reduction in their numbers. But this is an aggregate adjustment. For the individual proprietor the alternatives appear to be, (1) to try to capture a larger share of the declining trade in order to maintain volume of business, (2) adjust operations to a declining volume of business or (3) quit.

Gradual retirement of firms

Some have quit, and the number of firms has declined. A few have succeeded in capturing a larger share of the shrinking customer pie.

But a considerable number of firms, particularly in the smaller towns, have followed the second alternative of adjusting the firm organization to a declining volume. This form of adjustment may be described as "gradual retirement." Typically, hired employees and hired services have been reduced or eliminated and labor requirements gradually reduced to the level supplied by the proprietor and perhaps members of his family. In some cases this has required reducing the variety of goods and services offered by the firm. Frequently it has involved dissipation of capital by reduction of stock or failure to replace or repair worn out or out-moded equipment or failure to keep pace with modern developments in retailing. When the present proprietors die or retire it is unlikely in most cases that their firm will be continued.

Typically the proprietors of the gradually retiring firms were them-

selves at or near retirement age. For them reduced business activity corresponds to the reduction in energy and activity in their personal lives.

Group counterpart of gradual retirement of firms

A group counterpart of the "gradual retirement" process among firms has been the reduction in membership and activities of certain formal associations. As the gradual retirement process has extended to more and more firms the functions of such organizations as the Chamber of Commerce and various service clubs have changed. Some in the smaller towns have been disbanded. For example, the Chamber of Commerce in Scranton was disbanded, and some of its functions taken over by the Lions Club. In Grand Junction, the chamber has continued and an Industrial Development Committee was formed, but there was evidence of difficulty in maintaining a high level of activities among service organizations generally.

Total population aging

Not only do the businessmen of Greene county tend to be older than the average for the state or nation, but the whole population of the county and particularly of the towns has been aging more rapidly than the state or the nation as a whole.

Because migration tends to be heavier among the young adults and young families (see figure 5), the age distributions of areas of net outmigration undergo some important changes. In figure 6, the top graph represents Greene county's age distribution in 1960. Reduced numbers of young adults through out-migration has produced an hourglass shape in place of the normal pyramid shape. This means that the numbers of persons in the middle age groups--the ages of employment and productive work--have declined in proportion to the numbers of persons in the dependent groups, the very young and the aged. Such selective outmigration is certain to have a depressing effect on levels of living of the entire population.

The bottom graph of figure 6 shows that even though Jefferson has enjoyed moderate population growth, its population distribution has also become abnormal. Selective migration has reduced the proportion of youth and young adults in the population so severely that it has produced a column-shaped distribution with more people in the 75 and older age group than in any other 5-year age group above the 10 to 14 group. Much of the gain in population in Jefferson in recent years has been composed of older persons. The smaller towns have experienced even greater concentrations of population in the older age groups.

Detailed documentation of the effects on economic activities of changes in age composition of the population was not attempted in this study. But the concentration of population in the older age groups in Greene county towns would tend to reduce the per capita volume of trade generally as well as to influence the demand for various goods and services. The increasing predominance of older persons in the population has also affected attitudes and has very likely increased the concern for conserving resources rather than risking resources to expand business activities. To the extent that this has occurred, the effect on business activities of the concentration of older persons in the population parallels and very likely compounds the effect of population decline.

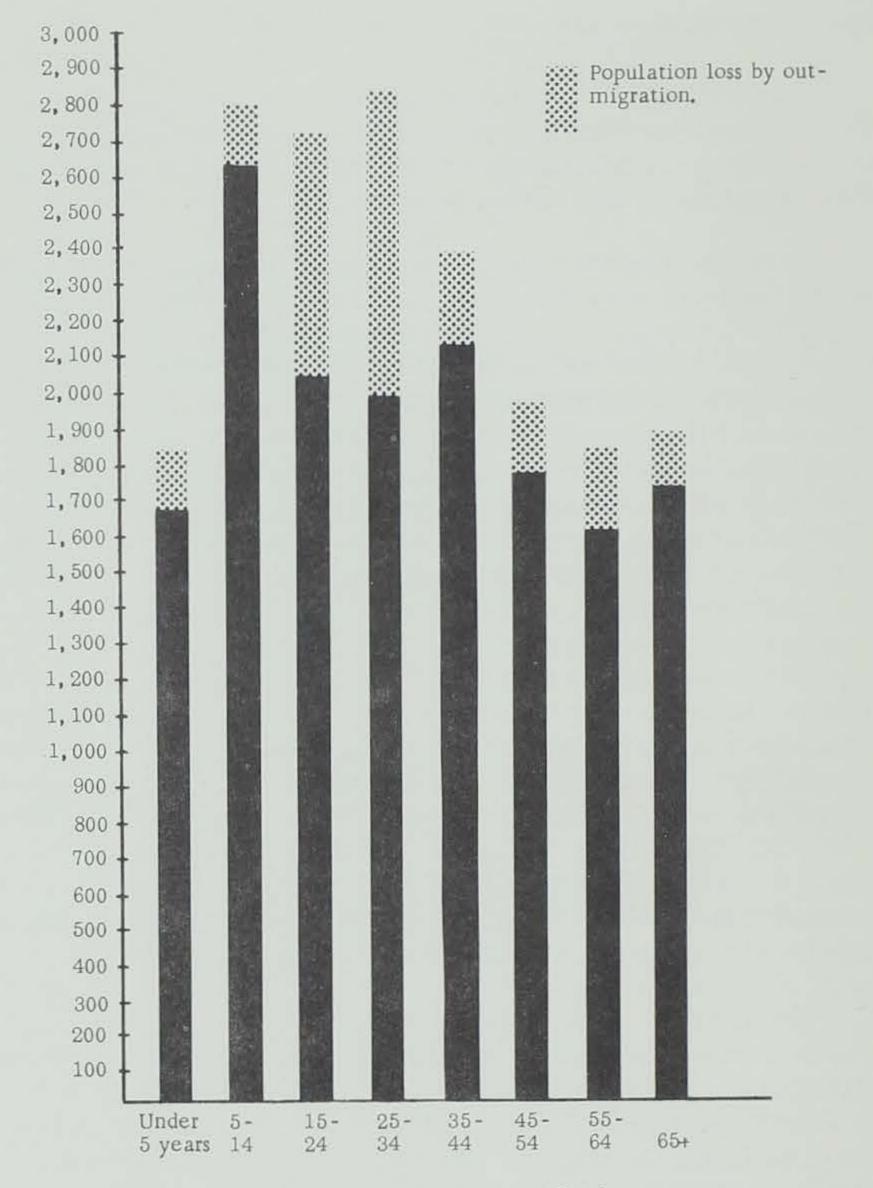
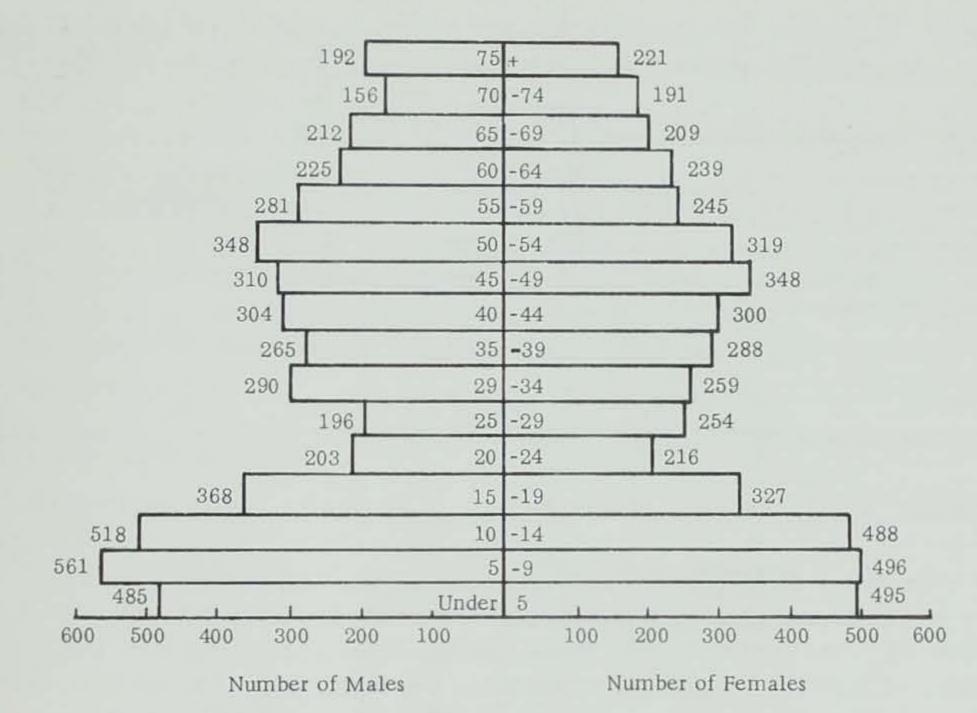


Figure 5. Potential and actual population 1950 by age group, Greene County.

Trends in volume of sales of goods and services

Changes in processing, packaging and merchandizing increased greatly the volume of sales per firm in the nation from 1939-1958 (table 3). This was accompanied by a small reduction (3 percent) in total number of retail firms and a 31 percent increase in population per firm.



Greene County 1960

132	75	+	196
106	70	-74	160
111	65	-69	149

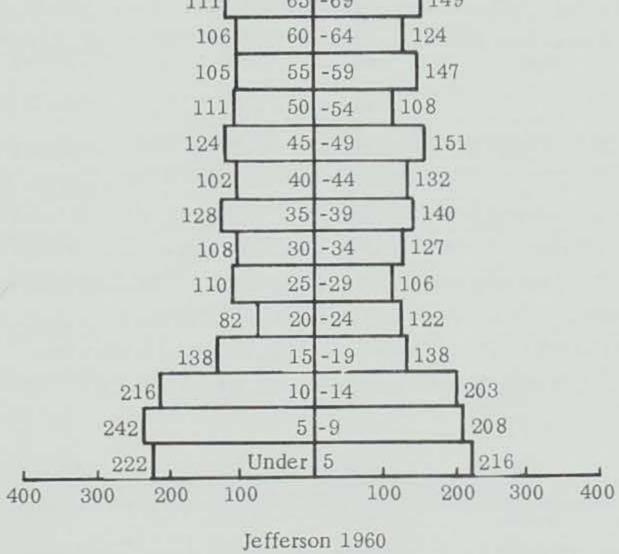


Figure 6. Population pyramids for Greene County and for Jefferson, 1960.

Table 3. Dollar volume of sales per retail firm in the United States, Iowa and Greene county 1939, 1948 and 1958

(Thousands of dollars)

	1939	1948	1954	1958
United States	23.7	73.8	98.7	111.6
Iowa	21.1	75.8	87.6	100.5
Greene	15.5	61.9	79.0	86.1

Source: U.S. Census of Business. 1939, 1948, 1954 and 1958.

It is clear from table 3 that Greene county has not participated fully in the trend toward higher volume of sales. Even though the number of firms has declined more rapidly than in the state or the nation, volume of sales and population per store has generally increased more slowly. The advantages that accompany increased size of firm are not as easy to achieve in areas of stable or declining populations as in areas of stable or declining populations as in areas of growing population. Where population is increasing, firms can often expand without consolidating existing units because the numbers of customers are increasing. But where the population is declining, existing firms must consolidate or find some other way to reduce their numbers and maintain the prevailing firm-customer ratio.

The attendant difficulties can be easily visualized in the dilemma facing any group of proprietors in the same business from an area of declining population who meet to consider solutions to their common problem of declining customers. Out-migration of some of them, though an apparent answer, is not always acceptable because the resources of the business, particularly the real estate, can not be readily moved or have little value if moved. Also such resources often represent all or most of the life savings of the proprietor.

Changes in relative importance of different goods and services

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The data on trends in numbers of firms and volume of sales in different kinds of retail trade illustrate the combined effects of changes in population, changes in trade areas and changes in kinds of goods and services available. They also provide the single bright spot in an otherwise rather gloomy picture. Nationally, the number of firms in 6 of the 10 categories listed in table 4 increased while the remaining four declined between 1939 and 1958. Number of food stores declined most (36 percent) and, at the other end of the scale, furniture and household equipment firm numbers increased the most (96 percent). In general, numbers of firms in Greene county declined more rapidly than they did in the nation in the six areas of decline. They also declined in one category of national increase and increased at slower than national rates in two of the categories of national increase. Only in the apparel category was the Greene county rate of increase higher than the national rate.

Table 4,	 Number of retail stores classified by type of goods in Greene County, I 1948, 1954 and 1958 	owa and the U. S., 1939,

Type of	Store	1939	1948 Y	(ear 1954	1958	Percent Change 1939-1958
Food	Greene County	46	34	32	30	-34.8
	Iowa	8,737	6,578	5,494	4, 633	-47.0
	U. S. (1000)	560.5	504.4	384.6	355. 5	-36.6
Eating and Drinking	Greene County Iowa U. S. (1000)	39 6,480 305,4	32 6,390 346,5	38 6,459 319,7	33 6,429 344.7	-15.4 8 12.9
General merchandise	Greene County Iowa U. S. (1000)	1,532 90.0	7 1,270 74.1	9 1,320 76.2	5 1,360 86.6	-58.3 -11.2 - 3.8
Appare1	Greene County	15	12	14	18	20.0
	Iowa	1,953	1,681	1,840	1,819	- 6.9
	U. S. (1000)	107.0	115,2	119.7	118.7	9.0
Automotive	Greene County Iowa U. S. (1000)	2,025 60.1	22 2, 275 86, 2	15 1,988 86.0	15 1,803 93.6	-25.0 -11.0 55.7
Gasoline	Greene County	67	36	32	40	-40.3
	Iowa	6,967	4,557	4,493	4, 447	-36.2
	U. S. (1000)	241.9	188.2	181.7	206, 3	-14.7
Furniture	Greene County	7	11	18	8	14.3
and house -	Iowa	1,341	1,784	1,976	2,051	52.9
hold equip.	U. S. (1000)	52.8	86.6	91,8	103.4	95.8
Drugs	Greene County	10	10	5	8	-20.0
	Iowa	1,327	1,092	1,094	976	-26.4
	U. S. (1000)	57,9	55.8	56.0	56.2	- 2.9
Lumber and	Greene County	33	43	39	38	15.2
building	Iowa	3,915	4,596	4,315	4,111	5.0
materials	U. S. (1000)	79.3	98,9	100.5	108.2	36.4
Other	Greene County	34	24	25	24	-29.4
	Iowa	4,747	3,502	4,213	4,441	- 6.4
	U. S. (1000)	215.5	214.4	206.9	240.1	11.4
Total	Greene County Iowa U. S. (1000)		33,725	*227 *33,192 *1,643.1	*219 *32,070 *1,713.6	-22.6 -17.8 - 3.2

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Source: U. S. Censuses of Business, 1939, 1948, 1954 and 1958.

Excludes nonstore retailers.

Volume of sales increased in all categories and at all levels-local (Greene county), state and national (table 5). In four categories the rate of increase was less in Greene county than in the nation while in six it was greater. However, in all but two categories, "lumber and building material" and "other" the volume of sales per unit remained lower in Greene county than in the nation as a whole. In other words, while stores of some types in Greene county have been growing at a rate faster than the national average, they still generally lag behind the national average in size.

United States, 1939 to 1958	
1939 1948 19	Year Percent Chang 954 1958 1939-1958 000)

Table 5.	Trends in size of retail store	s (sales per store)	by type of	store in Greene	County, Iowa and the
	United States, 1939 to 1958				

				(000)		
Food	Greene County	17.7	76.7	92.1	108.4	512.4
	Iowa	18.7	72.3	106.8	152.4	714.9
	U. S.	18.1	61.4	103.4	137.9	661.8
Eating and Drinking	Greene County Iowa U.S.	9.5 9.6 11.6	18,9 25,9 30,8	24.4 29.1 41.0	23.8 31.6 44.1	150.5 229.2 280.2
General stores	Greene County	28.5	111.9	91.6	76.0	166.6
and general	Iowa	67.0	206.5	204.2	216.0	222.3
merchandise	U. S.	72.0	231.2	234.5	252.6	250.9
Apparel	Greene County	14.1	47.1	78.0	65.5	364.5
	Iowa	24.4	81.8	78.3	94.3	286.5
	U. S.	30.5	85.1	92.5	105.5	245.9
Automotive	Greene County	40.0	139.1	230.9	193.3	383.2
	Iowa	60.8	186.8	275.0	302.9	398.2
	U. S.	92.3	233.2	347.8	339.8	268.1
Gasoline service	Greene County Iowa U . S.	7.3 10.3 11.7	28. 9 33. 6 34. 4	47.8 49.4 59.1	59.0 61.2 68.7	708.2 494.2 487.2
Furniture	Greene County	12.6	29.7	32.9	63.1	400.8
and	Iowa	22.1	64.7	69.3	73.3	231.7
household	U. S.	32.8	80.8	93.9	96.8	195.1
Lumber and	Greene County	23.6	88.1	121.5	146.4	520.3
building	Iowa	28.9	101.2	110:6	123.9	328.7
material	U. S.	34.4	112.7	130.6	132.2	284.3
Drugs	Greene County Iowa U. S.	14.0 21.8 27.0	33.1 60.5 71.9	42.8 75.6 93.8	$\begin{array}{c} 38.9\\101.7\\120.6\end{array}$	177.8 366.5 346.7
Other	Greene County	11.4	49.5	83.1	93.0	715.8
	Iowa	16.8	83.3	90.0	84.6	403.6
	U.S.	19.6	61.9	70.4	76.9	292.3
Total	Greene County	15.6	61.9	79.0	86.1	451.9
	Iowa	21.1	75.8	87.6	100.5	376.3
	U. S.	23.7	73.8	98.7	111.6	370.9

Source: U.S. Census of Business, 1939, 1948, 1954 and 1958.

Greene county retail firms in the "other" or "miscellaneous" category enjoyed the highest rate of increase in volume of sales, 716 percent, during the period. Feed and fertilizer stores are a major part of this category and account for a major share of the sales volume increase. Furthermore, sales volume increases were higher for firms in the rural parts of the county than in Jefferson, a situation that prevailed in only one other category, namely, lumber and building materials. Both of these categories include bulk goods which require relatively cheap storage facilities and easy access by customers. Apparently, small towns have some advantages for these kinds of retail trade.

Importance of agricultural technology in demand for certain goods and services

The category of Greene county retail firms that enjoyed the highest rate of increase included lines of trade directly serving agriculture. This indicates the reason for most of the increases in service industries.

Although the proportion of labor force employed directly in agriculture has been declining, falling from 55 percent to 38 percent between 1930 and 1960, the proportion of the labor force either in agriculture or in occupations that serve agriculture directly or indirectly has not declined very much. There has no doubt been some increase in sales to travelers on the county's two major highways. A small increase of labor force in manufacturing has produced a few additional jobs in service industries. The increase in numbers of older and retired people has likely produced some service industry employment not directly connected with agriculture. But other than these relatively minor factors it is apparent that the major increases in employment have occurred to meet the requirements of a technologically advancing agriculture.

Summary and prospects

Out-migration and population decline have confronted the economic organizations of Greene county with serious problems of adjustment. Slow reduction of the number of firms over an extended period of time and a gradual retirement of other firms appear to be the major forms of adjustment. This, plus the concentration of population in the upper age groups, strongly influences the character of economic organization in the communities of the county.

Agriculture, which still employs 37 percent of the county's labor force, continues to be relatively prosperous; and this prosperous condition has slowed the decline in population and trade. Also, agriculture's growing demand for inputs supplied by industry and professional services has largely accounted for the few instances of growth or expansion in trade. These are the principal bright spots in the otherwise rather dark picture of recent developments.

These same facts, however, are indirectly the chief source of pessimism regarding the future. Agriculture and commerce account for about 80 percent of the jobs in the county. But technological developments will likely continue to reduce their labor needs. So relatively heavy out-migration must continue in the future unless some alternative basic sources of employment are found. Some manufacturing has been introduced in recent years, but the proportion of the labor force in manufacturing was still less than 8 percent in 1960. This would have to be at least doubled before it could be expected to have a substantial effect on migration and population growth.

Among the rural counties of the state, Greene county is not one of those facing the most serious adjustments. There are other counties in which, largely because of a less prosperous agriculture, out-migration has been heavier over a longer period of time producing much more severe adjustment problems. Having a relatively prosperous agriculture, Greene county has enjoyed a period of grace in her adjustment, but this period of grace is not eternal.

APPENDIX

A word about the larger study

The 1950-1960 decade was one of unprecedented population growth for the United States, but despite this growth about half of the nation's counties lost population during this period. Such tremendous population redistribution does not occur without far-reaching social and economic consequences.

This population movement and its social and economic consequences are the subject of a larger regional study of which the Greene County, Iowa, study forms but one part. The larger study was initiated by members of the North Central Technical Committee – Number 18 (NC - 18), which is composed of population analysts from the states of the North Central Region and Kentucky. The NC – 18 committee first charted the actual population changes for the region, and the results of this analysis may be found in the first two regional publications cited in the bibliography.

The next step in the NC - 18 regional program was to initiate a series of field studies, on the county level, to determine the effects of population change upon the social institutions of the counties which had experienced various kinds and amounts of migration. The counties were selected on the basis of the direction and amount of net migration which had occurred in the 1940-1950 decade, the extent of industrialization (as measured by the percent of the labor force employed in manufacturing), and the local condition of agriculture (as measured by farm operator level-of-living index). Research was initiated in counties selected according to the above criteria. The following three combinations were investigated:

- (1) <u>High out-migration, low farm operator level of living,</u> and low industrial development (Out-lo-lo): Aitkin County, Minnesota; Price County, Wisconsin; Ontonogan County, Michigan; and Marshall County, South Dakota.
- (2) High out-migration, high farm operator level of living,

and low industrial development (Out-hi-lo): Greene County, Iowa.

(3) High in-migration, high farm operator level of living, and high industrial development (In-hi-hi): Franklin County, Ohio, and Kenosha County, Wisconsin.

A regional report is being prepared which will summarize the results of the individual county studies.

The selected bibliography which follows is presented for the benefit of those who may wish to gain a better appreciation of the regional population situation and the results of varying degrees of migration upon counties with differing industrial and agricultural conditions.



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