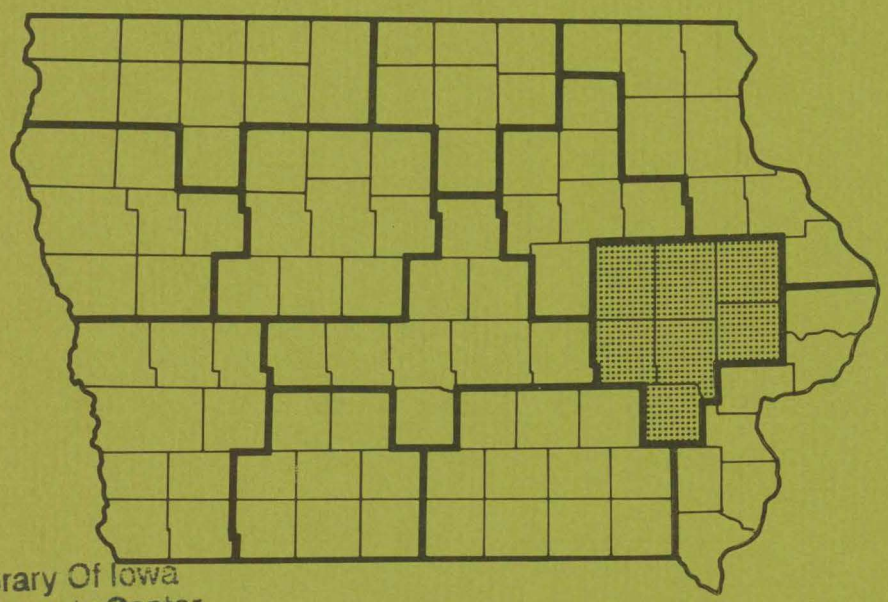
An Economic Base Study of

IOWA'S CEDAR RAPIDS AREA



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AN ECONOMIC BASE STUDY OF IOWA'S CEDAR RAPIDS AREA

Introduction

This is a report of the economic activity and associated changes in a 7 county area in east central Iowa. The counties included are Benton, Linn, Jones, Iowa, Johnson, Cedar and Washington.

Cedar Rapids, a city of over 100,000 population, is the central city of the area. Iowa City is a secondary center of 40,000 population. The eastern border of the area is one tier of counties away from Iowa's east border. Most of the area is in the Cedar Rapids trade territory except perhaps for the corners of the counties closest to Waterloo, Dubuque and Davenport and the south of Washington County. On the other hand Cedar Rapids influence reaches into some territory to the east and north of our defined area. The area has had a productive agricultural base which is not diminishing but is being overshadowed somewhat by a rapidly growing industrial base. The industrial jobs are concentrated largely at Cedar Rapids and Iowa City, but heavy commuting activity spreads the benefits throughout the area.

The area had a total population of almost 290,000 in 1960. The estimated population in 1967 was just short of 322,000. In the 10 years before 1960, the area had grown about 44,000 in population.

Total employment in the area has been increasing by almost three percent per year during the 1960's. Agriculture is continuing its long-term employment decline, while employment in all of the other sectors is growing.

Within the area the most open country is steadily declining in employment and population, but most towns and small cities show slow to moderate growth.

The Export Base

The employment analysis in this report uses the theory of the export base and its multiplier effect. An export base exists whenever an area specializes in the production of some products for which it finds markets outside the area.

Almost any populated area anywhere in the United States has an export base. The reason is that people want to use the full range of products produced by modern society, most of which are produced more inexpensively by volume production in other areas. An area earns the money to import this collection of desired products by producing and exporting a surplus of the goods with which it can best compete in state, national and world markets.

Workers who produce these exported goods are called export employees. The number of export employees that can exist in an area is determined by the area's success in selling to the "outside world".

Prepared by Marvin Julius, Extension Economist

A second class of workers, called domestic workers exists to furnish the services and the goods that can be most efficiently produced locally when demanded for local use. Examples of domestic employees are retail workers, teachers, ministers, local government officials and all of the others who produce for the local market. The number of domestic workers that can exist in an area is determined by the number of export employees in an area. The export employees create the original demand for locally produced goods and services.

In present-day Iowa areas of about 50,000 employment, the domestic workers usually make up about one-half of the total work force. Since the other half are export workers, the relationship between export and domestic workers is often described as a one-to-one ratio. Actually this ratio varies somewhat according to the employment total of the area, the industry mix and the point in time at which the ratio is measured.

Figure 1 illustrates the receipt of outside money in return for exports, the circulation of this money in the area to facilitate domestic activities and the payment of this money to the outside in return for imports.

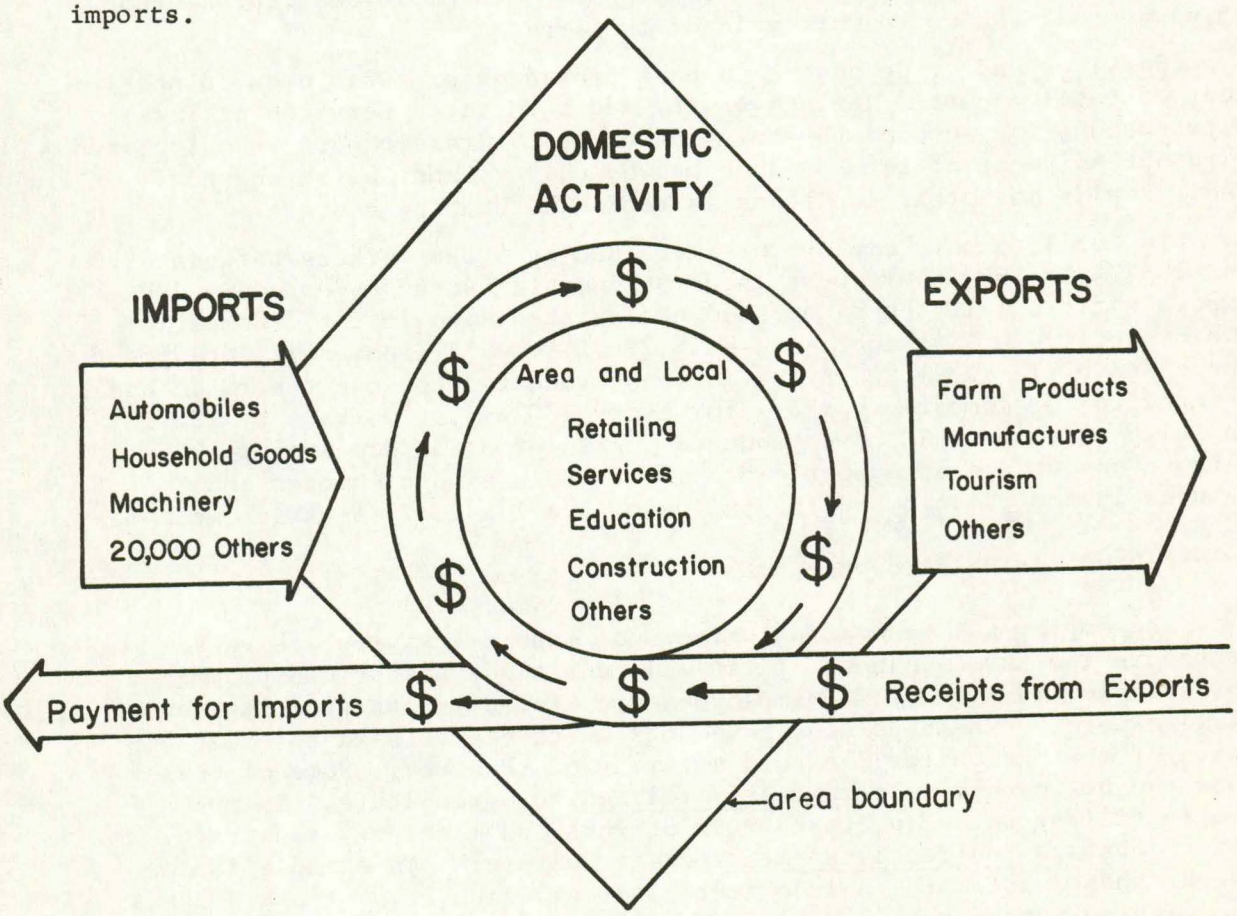


Figure 1. Export Domestic and Import Relationships.

The Changing Base

Table 1 provides employment comparison information for the Cedar Rapids area for 1960 and 1967. Employment is divided into export and domestic categories for each type of export activity. Both male and female employment is included, but is not separately identified.

Agriculture has been and still is an important export sector in this area. It provided about one-fourth of the area's export employment in 1960 and about one-fifth of the export employment in 1967. Between these years the export employment of agriculture declined by 2,961. This degree of employment decline is typical for agriculture in all areas of Iowa as labor in farming continues to be replaced by capital in the cultivation of a fixed amount of land.

Manufacturing is the largest export sector in this area. It accounted for 44 percent of total export employment in 1960 and increased to 51 percent of the total by 1967. The gain of 8,180 employees represented 95 percent of the net export gain of the area.

Services and trade have each been providing somewhat over 10 percent of total export. The university and associated services at Iowa City account for much of the services export. Trade export is associated with out-shipment of farm produce by wholesalers and the strength of Cedar Rapids and other locations as regional shopping centers.

In total, export employment increased by 8,598 workers between 1960 and 1967. In 1960 there were about 96 domestic workers for every 100 export workers. If the same ratio had existed also in 1967, domestic employment would have increased by 8,296. Actually, domestic employment increased by 12,723. The extra increase resulted because the ratio had changed to 103 domestic workers for every 100 export workers by 1967. The higher ratio would have produced a gain of 3,856 domestic workers without any change in export employment. Both export changes and changes in the ratio over time influence the level of domestic employment.

Export-Domestic Relationships

The employment generating effects of export activity are represented in the three columns of table 1, entitled "Domestic Employment." For example, in 1960, 17,399 employees are listed across from "Agricultural export." These persons have jobs which can be said to exist because of the agricultural export activity of the area. Some of these jobs can be thought of as directly related to agriculture. Examples are fertilizer salesmen, tank truck drivers and machinery repairmen. Other jobs are indirectly related to agriculture. An example is the barber whose customers include fertilizer salesmen, tank truck drivers and machinery repairmen. People who serve both farmers and non-farmers, as the barber might, can be both directly and indirectly dependent on agricultural export activity.

Table 1. Area Export and Domestic Relationships

Type of Activity	Export Employment 1960	Export Employment 1967	Export Employment Change	Domestic Employment 1960	Domestic Employment 1967	Domestic Employment Change
Agricultural export	15,286	12,325	-2,961	17,399	18,625	1,226
Construction and Mining export	689	1,642	953	550	1,532	982
Manufacturing export	25,770	33,950	8,180	22,651	30,553	7,902
Transportation, Communications and Utilities export	1,431	1,054	-377	1,224	945	-279
Wholesale and Retail export	5,928	7,817	1,889	6,554	8,850	2,296
Finance, Insurance & Real Estate export	1,203	1,315	112	1,028	1,117	89
Services export	7,857	8,659	802	6,718	7,225	507
Area	58,164	66,762	8,598	56,124	68,847	12,723

In total, 17,399 represents the number of domestic jobs of many kinds that could not have existed in the area in 1960 if agricultural export had not been operating at a level of 15,286 employees in 1960.

In some ways, the relationship between a sector's export activity and the domestic employment related to it is a unique one. No two export activities have the same export-domestic ratio for any year (except by coincidence). This is because each sector has its individual pattern for the portion of its inputs which it buys locally and that which it imports. Agriculture, for example, is a relatively heavy purchaser from local wholesale and retail outlets, while manufacturing is more likely to buy raw materials and tools in quantity lots from distant sales outlets.

In the between years comparison, agricultural export decline was partially counteracted by an increase of 1,226 in the domestic employment related to it. The ratio of 18,625 domestic workers to 12,325 export workers that existed for agriculture in 1967 is equivalent to 151 domestic workers for every 100 export workers. This is up sharply from the 114 to 100 ratio which existed in 1960.

Table 2. Total Effects of Export Activity

Type of Activity	Export Plus Domestic Employment 1960	1967	Change
Agricultural export	32,685	30,950	-1,735
Construction and Mining export	1,239	3,174	1,935
Manufacturing export	48,421	64,503	16,082
Transportation, Communications and Utilities export	2,655	1,999	-656
Wholesale and Retail export	12,482	16,667	4,185
Finance, Insurance and Real Estate export	2,231	2,432	201
Services export	14,575	15,884	1,309
Area	114,288	135,609	21,321

The domestic employment related to manufacturing showed the largest rise (7,902 employees) between 1960 and 1967. This growth can be attributed mostly to the rise of manufacturing export employment during this period.

Table 2 provides a comparison of the relative importance of the export activity of each sector to the area. In 1967, for example, manufacturing export accounted for a total of 64,503 jobs when we count both the export employment of manufacturing and the domestic employment related to it. This was 48 percent of the total employment of the area. Agriculture export was responsible for 23 percent of the total employment, and trade and services exports each provided about 12 percent of the total. In 1960 the comparable percentages were 42 percent for manufacturing export, 29 percent for agriculture, 13 percent for services and 11 percent for wholesale and retail trade.

Employment by Sectors

Table 3 shows employment identified by sectors for both 1960 and 1967 and the change in each sector during the period. The employment in each sector includes both the export and domestic employment of that sector. The domestic employment in this table is included with the sector to which it belongs and not with the sector to which it relates in an export-domestic sense.

Table 3 provides a good picture of the change of composition of the labor force, but it does not provide a cause and effect picture of employment shifts. Table 3 shows that agriculture jobs declined by 3,457 during the seven year period and that the sector slipped from 16 percent of total employment in 1960 to 11 percent in 1967. Corresponding increases were registered by manufacturing which picked up 2 percent of the total and by 3 other sectors with 1 percent jumps.

One employment shift that is not revealed by tables 1, 2, or 3 is the increasing proportion of females in the labor force. The gains in the trade and services sectors may have been 50 percent female while the loss in counted employment in agriculture was probably more than 85 percent male. It is probable that, while total employment gained between 1960 and 1967, male employment increased more slowly. The number of families in the area undoubtedly increased, but the increased employment was accomplished also by a shift to more workers per family.

Table 3. Employment by Sectors 1960-1967

Sector	Employment			Percent of Total		
	1960	1967	Change	1960	1967	Change
Agriculture	18,481	15,024	-3,457	16	11	-5
Construction & Mining	5,952	7,756	1,804	5	6	1
Manufacturing	28,423	37,141	8,718	25	27	2
Transportation, Communications, & Utilities	5,910	6,158	248	5	5	0
Wholesale & Retail	21,235	26,769	5,534	19	20	1
Finance, Insurance & Real Estate	3,678	4,682	1,004	3	3	0
Services	30,609	38,079	7,470	27	28	1
Area	114,288	135,609	21,321	100	100	0

Income

The incomes of individuals and families and changes in these incomes are very important in measuring the economic progress of an area. It can be preferable to have a declining employment and population situation if the decline is associated with fuller employment and higher incomes for the remaining people. This type of decline is occurring in much of rural America, including some rural parts of the Cedar Rapids Iowa area. Income per farmer is generally rising as farm consolidation continues, but an associated result is fewer farmers and fewer merchants to serve remaining farm households. The alternative of a constant number of farmers with declining incomes would probably be even less desirable for both farmers and merchants.

The most recent overall measurement of the income levels in the Cedar Rapids area was made with the population census of 1960. We will not have a later one for comparison purposes until after 1970. As a substitute for the overall income picture for recent years, a comparison of average annual earnings of private wage and salary workers for 1959 and 1967 for each county is presented in table 4 with the Iowa average as a comparison base.

The earnings information on self-employed persons and government employed persons is not included in table 4. Also missing is any information on income from property ownership and from transfer payments such as social security allotments.

Table 4 is, thus, only an indicator of the income situation in the counties of the area, particularly for non-agricultural employment. It indicates that, except for Linn County, incomes were not as high as the Iowa average in either 1960 or 1967. On the other hand the increase in several counties was comparable to the Iowa average per worker increase. The apparent leader in income level within the area is Linn County. Cedar County has been in the lowest position, and in 1967 the remaining counties were about equal in earnings level per worker. Linn and Jones had the greatest gains although Johnson County had large gains in categories not reported here.

Higher average family incomes allow families to buy more goods and services. This in turn creates a need for more domestic workers to produce or deliver or retail these goods and services.

Table 4. Average Annual Earnings, Private Wage & Salary Workers

County	1959 *	1967	Change
Benton	$3,184	$3,960	$ 776
Cedar	3,112	3,580	468
Iowa	3,480	4,240	760
Johnson	3,692	4,100	408
Jones	3,120	4,060	940
Linn	4,924	6,032	1,108
Washington	3,476	4,216	740
Iowa Average	4,280	5,028	748

Source: County Business Patterns

* Adjusted to 1967 dollars

The average family income increase is probably the most important factor of those which tend to increase the domestic-export ratio. However, it is supplemented in the agriculture sector by the tendency of farmers to purchase increasing amounts of production services (feed processing, fertilizer spreading, etc.) and locally sold production inputs (fertilizer, chemicals, feed supplements, etc.)

Agriculture

The structure of agriculture in the Cedar Rapids area was last described in detail by the 1964 Census of Agriculture. Selected information from this census is presented in the following paragraphs.

The total number of operations classified as farms in 1964 was 12,770. Of these, 89 percent or 11,419 were classified as commercial farms. Generally, under Iowa conditions, a commercial farm is one which has sales of $2,500 or more per year. Non-commercial farms have less than $2,500 of sales per year and usually are operated by persons with other employment or by partially retired persons over 65 years of age. However, these same types of people are also found on some commercial farms.

Table 5 gives some information on the commercial farms of the area in regard to certain characteristics. In 1964, 500 of them were 500 acres or over in size. This was 4 percent of all the commercial farms in the area. The comparable percentage for all of Iowa was 6 percent. Hiring of a substantial amount of labor occurred on 11 percent of the area farms as compared to 10 percent for Iowa. Looking at the numbers in a different way, it can be said that about 90 percent of the commercial farms had less than the equivalent of a full-time hired-man.

The practice of working off the farm by the operator appears to be more prevalent in this area than for the state as a whole. Probably this is due to a relative abundance of non-farm jobs in the cities and some towns of the area.

Farming at a commercial level by operators 65 years of age or over is about the same here as for the state as a whole. Generally, the percentages associated with this characteristic are higher in Southern Iowa and lower in Northern Iowa.

Table 5. Commercial Farms with Selected Characteristics, 1964

Characteristic	Area Number	Area Percent	Iowa Percent
500 acres or over in size	500	4	6
Hiring 150 days of labor or more	1,272	11	10
Operator working off farm 100 days or more	1,518	13	12
Operator 65 years of age or older	938	8	8

Source: Agriculture Census
Analysis by H. B. Howell, Extension Economist

Farm Size and Sales

Table 6 presents the distribution of farms (commercial and non-commercial) of the area according to size in total acres. Farms smaller than 140 acres accounted for 35 percent of all farms, but only 13 percent of the total farmland was included in farms of this size group. At the other extreme, 24 percent of the farms were 260 acres or over and 49 percent of the farmland was in farms of this group. By 1970 it is likely that at least 50 percent of the land will be in farms of 320 acres or larger. This statistic seems to illustrate the march of farm technology and resulting consolidation more dramatically than does the average farm size measure, which is often pulled down by a large number of small part-time and retirement farming units.

Table 6. Farms by Size in Acres, 1964

Size Class	Percent of Farms	Percent of Land in Farms
0-139 acres	35	13
140-179 acres	18	14
180-259 acres	23	24
260 acres and over	24	49

Source: Agriculture Census

Analysis by H. B. Howell, Extension Economist

Table 7 also shows a size distribution of farms by product sales volume in dollars. Since both livestock and crop production may be reflected in sales volume, it is usually a better indicator of farm income than is size in acres alone. Most of the farms with sales over $30,000 (16 percent of all the farms) were probably producing adequate returns for the labor and capital and management time involved. Most of the farms with sales under $10,000 were probably producing quite low returns for the labor and management time involved, except for those farmers who used a substantial amount of their time in off-farm employment.

The 48 percent of the farms with sales of $10,000 to $29,999 includes most of the typical family farm situations of the middle 1960's. Incomes are not as high as the farmers and their families might wish, but neither are they so poor as to cause large-scale desertion from farming.

Table 7. Farms by Product Sales Volume, 1964

Sales Class	Percent of Farms	Percent of Total Sales
$30,000 and over	16	43
$10,000 to $29,999	48	45
Less than $10,000	36	12

Source: Agriculture Census

Analysis by H. B. Howell, Extension Economist

Growing Output

Table 8 is presented in order to show that farming is not a declining industry in terms of output. Between the two time periods shown, a 7 year span of time on the average, some dramatic increases occurred. Corn production was up almost 21 million bushels for a 33 percent increase. Soybean production was up 223 percent, fed cattle up 11 percent, beef cow numbers up 38 percent and swine up 3 percent. Lamb feeding and raising were both down, but these are minor enterprises for this area. The decline in milk cows of 28 percent is the only decline in a major farm enterprise. If an index of overall farm output for Iowa areas were available, it seems likely that total output of Cedar Rapids area would show an increase of more than 20 percent for the 7 year period.

The percentage changes for each enterprise of the area can be compared to comparable changes for Iowa. It appears that Cedar Rapids area has been concentrating particularly on row crop yield increases as an expansion possibility. Beef cow numbers are increasing as rapidly as in the state, but dairy cow numbers are decreasing more rapidly. The failure to increase beef feeding as rapidly as the state may be caused at least partially by growing income opportunities in crop farming and off-farm work.

Table 8. Agricultural Output

Enterprize	Unit	1958-60	1965-67	Change	Percent Change Area	Percent Change Iowa
Corn	1000 bu	62,312	82,894	20,582	33.0	23.9
Soybeans	1000 bu	2,253	7,279	5,026	223.1	100.2
Fed cattle	1000 head	271	300	29	10.7	44.9
Beef cows	1000 head	91	126	35	38.5	39.2
Pigs born	1000 head	2,379	2,457	78	3.3	2.4
Fed lambs	1000 head	116	93	-23	-19.8	-27.4
Lambs born	1000 head	81	63	-18	-22.2	-27.7
Milk cows	1000 head	79	57	-22	-27.8	-23.8

Source: Iowa Assessors Annual Farm Census, Adjusted

Analysis by Gene Futrell, Marvin Skadberg, Allan Rahn, Extension Economists

Manufacturing

Manufacturing is a sector of major and growing importance in the area. The largest export and related employment increase of the 1960-1967 period was the 16,000 additional employment in manufacturing export plus related employment. Manufacturing export activity has been the primary force responsible for the emergence of this area as a metropolitan community. The heavy manufacturing employment has emerged from the typical pattern of a large industrial city with a number of satellite centers. The large city has some very large plants and a multitude of plants of medium and small size. The satellite towns generally have smaller plants. This pattern seems likely to continue in the Cedar Rapids area.

The amount of manufacturing growth that has occurred has eased considerably the strains of agricultural adjustment. The small cities and most large towns of the area have been helped to maintain or moderately increase their populations. A number of smaller towns have benefited similarly, either from the location of small manufacturing plants in the towns or by serving as residence locations for commuters working in plants in nearby towns or cities.

Table 9. Manufacturing Employment

County	1960	1967	Change	Percent County is of area with respect to 1960 Employment	1960-67 Change	1967 Employment
Benton	676	800	124	2	1	2
Cedar	206	263	57	1	1	1
Iowa	1,114	1,664	550	4	6	4
Johnson	1,310	2,259	949	5	11	6
Jones	1,082	1,239	157	4	2	3
Linn	23,425	30,306	6,881	82	79	82
Washington	610	610	0	2	0	2
Area	28,423	37,141	8,718			

Employment

Table 9 shows the employment in manufacturing for each of the counties of the area for 1960 and 1967 and the change during the period. A noticeable characteristic is the concentration of manufacturing activity in Linn County. Over 80 percent of the manufacturing jobs of the area have been located in Linn County, and almost 80 percent of the 1960-67 manufacturing employment growth occurred there. The other counties, however, have sufficient manufacturing to make it an important employment source in each. Only Cedar County had less than 500 manufacturing jobs during the 1960's. Johnson County has had the most rapid recent growth in comparison to the 1960 level. The area increase of 8,718 jobs represents a 31 percent increase in a seven year period.

Kinds of Manufacturing

The diversity of manufacturing activity is illustrated in Table 10. It would be difficult to describe a typical manufacturing plant. Of the 364 individual plants in the area in 1963, 261 had less than 20 employees. On the other hand nine plants had 500 or more employees, and two of these were well over 1,000.

Manufacturing activity is divided into some general categories in Table 10 in order to provide some understanding of the reasons for manufacturing in the area. "Processing of agricultural produce" is the category that includes meat packing, animal feed production, dairy products processing, and other activities connected with food or feed. This category covered 100 plants including three of the nine largest plants and one-fourth of the plants with more than 100 workers.

A second category is "Processing of other local resources." This category included 49 plants, but 42 of these were in the smallest size category with less than 20 employees each. Almost all of the plants in this category in the Cedar Rapids area were engaged in concrete mixing or forming, or saw mill operations. The Cedar Rapids area generally lacks sizable concentrations of gypsum or clay needed to support large-scale manufacturing in this category.

"Production of non-feed inputs for agriculture" includes mainly farm machinery production, fertilizer production and animal biological products. There were 15 such plants in 1963 with only 3 having more than 50 employees each. Undoubtedly the number of small fertilizer plants has increased since 1963.

"Area newspapers and printing" is a manufacturing category because printing is defined as a manufacturing operation. This category includes all of the newspapers of the area, and these accounted for a large part of the 48 smallest plants in this category.

The four categories described so far have the common characteristic of being, to some degree, attached to the area. The plants of the first three categories fit in with the agricultural and natural resources of the area. The newspapers and printers of the fourth category exist to serve the residents and advertisers of the area. In total, the four categories included 222 plants in 1963.

The other 142 plants have been categorized as non-attached manufacturing -- non-attached in the sense that neither the raw materials used, the products produced, nor the markets served would indicate that plants like these would be expected to exist in the area. Products of this group include heating equipment, foundry products, plastic materials, communications equipment, artificial flowers, conveyors, railroad cars, electronic components and at least 80 other kinds of products.

Much of the increase of manufacturing employment since 1960 appears to have been in the non-attached category. Many of the "non-attached" firms were probably started by local persons with the aid of some local financing. Many may have started and failed over the years, but a few have grown to moderate size and many others have stayed small but profitable. A very few have grown to very large size, including an electronics firm that is the largest employer in the area.

Table 10. Area Manufacturing by Size of Plant and Type of Product - 1963

	Number of Plants with Employment of --						
Type of Mfg. Activity	1-19	20-49	50-99	100-249	250-499	over 499	All Plants
All Types	261	48	19	20	7	9	364
Processing of Ag. Products	70	16	5	5	1	3	100
Processing of other local Resources	42	6	1	0	0	0	49
Production of non-feed inputs for Ag.	10	2	3	0	0	0	15
Area Newspapers and Printing	48	3	3	2	2	0	58
Total attached Mfg.	170	27	12	7	3	3	222
Non-attached Mfg.	91	21	7	13	4	6	142

Source: Manufacturing Census

Non-attached plants owned and operated by outside interests have usually been established in order to use an underemployed supply of labor. Frequently, this is female labor from families where men are not fully employed or highly paid.

In most cases the non-attached type of plant will be established, or expansion occur, in a community that provides some long-term capital to the firm. The capital may be an outright gift or subsidy, but usually it is recoverable through some sort of rental or lease-purchase arrangement. In either case, an initial investment of local capital is required. The amount may be as little as $500 or as much as $5,000 per additional employee.

Earnings and Wages

In most Iowa areas with a large central city, the county which encloses the central city will have the highest average yearly earnings and hourly wage for production workers. This county will also be one of the highest in average yearly earnings of management, supervisory and related personnel.

Several characteristics are usually associated with the higher earnings levels of the central city. Usually, much of the labor force is organized. Some of the larger plants are of industries which have been among the national leaders in wage levels. Large segments of the labor force consist of stable long-term employees who are highly skilled and experienced. The high productivity of the workers has been supplemented by large capital investments which, from the manager's standpoint, reduce the labor cost per unit of output; while, also, from the worker's standpoint, making a higher wage possible.

All of these characteristics are present in Cedar Rapids and vicinity in the Cedar Rapids area. Linn County has thus been the leading county in all earnings level aspects. The latest detailed statistics available are from the Manufacturing Census of 1963. Table 11 gives some of these statistics.

In all three measures of earnings and wage levels, the Cedar Rapids area was about at the state average. The Linn County levels were each slightly above the comparable state average levels. Each was a little below the high county level for the state. The state highs are all in heavily industrialized counties, which typically offer a large, stable, skilled labor supply to the industrialist.

The less industrialized parts of the state, including parts of the Cedar Rapids area, have provided a different type of opportunity. Since shortly after the end of World War II, the farms and towns of the area have produced an excess of labor which has created a steady out-migration pressure.

Many of the persons who would have to migrate out if no jobs were available will stay if a job with a moderate pay rate is available. The pay rate does not have to be as high as the rate in distant cities, because the person will trade off some pay differential for the opportunity to stay in his rural community. Some of these persons will eventually migrate, but they are easily replaced by others of the about-to-migrate group.

There is little reason for the plant management to raise wages substantially so long as the excess labor supply with desirable work habits continues to appear. The advantages of low labor cost outweigh the disadvantages of labor turnover for many of the plants that have located in rural areas. Many of these plants have competitors located in similar low-wage rural areas elsewhere in the nation. None of them can raise wages substantially until the low-cost labor supply has disappeared for all of them.

Table 11. Earnings of Manufacturing Employees, 1963

	Av. yearly earnings, management, supervisory, and related personnel	Av. yearly earnings, production workers	Av. hourly wage, production workers
Area Average	$7,143	$5,439	$2.63
Iowa Average	7,008	5,415	2.68
Linn County	7,200	5,626	2.70
Highest of Other Area Counties	6,703	4,518	2.27
Lowest of Area Counties	5,443	3,478	1.86
Highest of Iowa Counties	8,114	6,680	3.25
Lowest of Iowa Counties	3,000	2,738	1.41

Source: Manufacturing Census

Wholesale—Retail Trade

Wholesale and retail trade firms are heavily oriented toward domestic activity. A characteristic of domestic employment is its relative dispersion over the area which it serves. The main street businesses of all the numerous uniformly spaced small towns are operated primarily by domestic employees. A second and contradictory characteristic is the tendency for some parts of domestic activity to migrate to larger population centers. A result is the relatively faster growth of trade and services in larger cities. A third characteristic is the tendency of some farm input suppliers and farm produce buyers to avoid the congestion of large central cities.

Two sets of information on wholesale and retail trade are presented to illustrate the magnitude of the activity and the changes within the area. An analysis of retail "recurring type" sales by county for the years 1954 and 1963 is presented in Table 12. Table 13 presents employment in trade by county for the years 1960 and 1967.

The retail recurring type sales do not include lumber, building materials, farm equipment, and hardware sales. The sales that are left are primarily for household use, but some farm inputs purchased regularly (primarily petroleum and feed) are also included. The recurring type sales totals are believed to provide a measure of market potential with less year to year variability than a measure which includes sales of major investment items.

From Table 12 we can gain some feeling of market coverage and volume through the 1950's and early 1960's. In 1954 the area's recurring type sales were about $301 million in 1963 prices. By 1963 the sales had increased to $381 million for a 27 percent gain. This was a period of major percentage gain for all counties with Johnson, Linn and Iowa counties leading the way. Washington County had the least percentage gain, but was still a strong retailing county during 1954-63.

The measure of recurring type retail sales per capita gives a general indication of centralization of shopping patterns. This measure tends to be high when residents of a county do most of their shopping within its borders and, in addition, one or more towns of the county serve a trade territory larger than the county. In the Cedar Rapids area in 1963, Linn County had high sales per capita, indicating that Cedar Rapids was serving as an area shopping center for many items. The high per capita sales for Washington County reflect its independence because of distance from larger centers and its strength in farm inputs retailing.

A comparison between 1963 and a later year is not available in sales terms like those given in Table 12. It is necessary to switch to employment changes in wholesale and retail trade to bring the picture up to 1967. Table 13 presents this information by county for 1960 and 1967. The major gains in employment were made in Linn and Johnson counties. Apparently both Cedar Rapids and Iowa City are gaining strength as area shopping centers. All of the other counties had growth in trade employment, but none increased their share of the area total.

Table 12. Recurring Type Retail Sales

County	1954*	1963	Change	Percent Change	Per Capita 1963
	Thousands of dollars				
Benton	20,123	23,949	3,826	19.0	$1,023
Cedar	18,574	21,573	2,999	16.1	1,213
Iowa	16,527	21,767	5,240	31.7	1,328
Johnson	47,864	65,131	17,267	36.1	1,214
Jones	18,834	21,658	2,824	15.0	1,047
Linn	153,569	198,699	45,130	29.4	1,451
Washington	25,284	28,556	3,272	12.9	1,472
Total Area	300,775	381,333	80,558	26.8	1,323
Area less Linn	147,206	182,634	35,428	24.1	1,206
Iowa	2,964,168	3,245,793	281,625	9.5	1,177

Source: Census of Business
* 1954 sales adjusted to 1963 prices; inflator = 1.14

Table 13. Wholesale and Retail Employment

County	1960	1967	Change	Percent County is of area with respect to 1960 Employment	1960-67 Change	1967 Employment
Benton	1,382	1,547	165	7	3	6
Cedar	1,328	1,506	178	6	3	6
Iowa	1,117	1,332	215	5	4	5
Johnson	3,612	5,329	1,717	17	31	20
Jones	1,063	1,414	351	5	6	5
Linn	11,254	13,827	2,573	53	47	51
Washington	1,479	1,814	335	7	6	7
Area	21,235	26,769	5,534			

Population Changes

The population of the Cedar Rapids area has increased steadily since before 1880. Table 14 gives information on population for counties and the area for several points in time between 1880 and 1967. Linn and Johnson counties have had almost continual population growth. Washington County has shown slow but steady decline since 1900. The other four counties have not varied appreciably since 1940, and each of the four was at its population high at about 1900.

Other changes in the area are best analyzed by separating the metropolitan core from the rest of the area. In 1920 the total population of the territories represented by the Cedar Rapids-Marion-Hiawatha complex and the Iowa City and suburbs combination was about 61,000. By 1967 these same cities and suburbs had a combined population of almost 165,000. The 104,000 population gain in these metropolitan centers represented 85 percent of the total area population gain between 1920 and 1967.

The ten largest non-metropolitan towns of the area in 1920 had a combined population of 25,000. The smallest of these towns was just over 1,000 population, and the largest was under 5,000. By 1967 these same ten towns had a combined population of about 32,000. Eight of them had gained, and two had lost population during this period. Population growth of the non-metropolitan towns of the Cedar Rapids area has not been as rapid as the growth in many similar towns in other parts of the state. Most of the non-metropolitan towns of this area still are primarily rural service centers with enough manufacturing to induce slow, but not spectacular, growth.

On the other hand, only a few of the smaller towns of the area have been declining in population. The availabilitiy of jobs within commuting distance has enabled most of the existing towns and hamlets to have a constant or slightly growing population. The increasing numbers of old people who are staying in the area have also helped to maintain the size of small towns over the years. A town that is just holding its own because of an increase of retired persons is, of course, declining in working age population.

The open-country population is declining in almost every rural township of the area as farming continues to decrease its requirement for labor. Both small towns and open-country areas have a smaller proportion of people under 15 years of age because of the sharp decline in births since about 1962. The reduction of birth rates has even dampened somewhat the population growth of the large metropolitan parts of the area.

Table 14. Population Change

County	1880	1900	1920	1940	1950	1960	1967
Benton	24,888	25,177	24,080	22,879	22,656	23,422	22,948
Cedar	18,936	19,371	17,560	16,884	16,910	17,791	17,522
Iowa	19,221	19,544	18,600	17,016	15,835	16,396	16,932
Johnson	25,429	24,817	26,462	33,191	45,756	53,663	63,406
Jones	21,052	21,954	18,607	19,950	19,401	20,693	20,819
Linn	37,237	55,390	74,004	89,142	104,274	136,899	160,939
Washington	20,374	20,718	20,421	20,055	19,557	19,406	18,832
Area	167,137	186,971	199,734	219,117	244,389	288,270	321,398
State Total	1,624,615	2,231,853	2,404,021	2,538,268	2,621,073	2,757,537	2,875,994
Percent State Total	10.3	8.4	8.3	8.6	9.3	10.5	11.2

Meaning of Changes

A warning is called for concerning the use of the population level and increases or decreases in this level as a sole measure of progress or growth. A rural area may almost maintain its population because many young people choose to become under-employed farmers and small-town businessmen, rather than migrate to better opportunities elsewhere. The resulting community can become overly burdened with low-income people. A higher migration rate would have allowed a higher average income for the remaining population. Note that Washington County had the largest population loss in percentage terms between 1960-1967 and simultaneously (see table 4) had a gain equal to the state average in average annual earnings of private wage and salary workers. It might be said that considering the alternatives available, Washington County had good progress during the 1960-1967 period. This is progress measured in terms of increased income per person, a frequently used measure of national progress.

Unlimited population decline, however, is not generally acceptable for all parts of a multi-county area. One reason is that increased income per person cannot be easily translated into increased purchasing power per person. The amount and variety of goods and services available within easy driving distance (generally not more than 50 miles) will shrink if there are no growing population centers within that distance. Washington County, and other rural communities, can accept or encourage population loss with resulting higher incomes and have an improved situation so long as shopping facilities and community institutions are growing at Iowa City or Cedar Rapids, or some other location within one hour's driving distance. The situation will not be nearly so improved if all nearby cities are also declining in population and in services and goods offered.

The number and type of public and semi-public institutions which can be supported in an area at acceptable levels of cost and performance are closely related to the size and characteristics of the population. The changing geographical distribution of the population with an increasing concentration in the larger towns and cities has already been described. This concentration encourages the development of new church, school, medical, legal and other service facilities in the cities and the shrinkage of the services in the smaller towns and rural areas. The relocation process is even further encouraged by the willingness of many rural people to travel a considerable distance to patronize the more specialized city-located services.

Age Mix - Young and Old

Another important characterisitic of the population is the age mix at a point in time. School boards and administrators, for example, are not nearly so concerned with the total population as with the numbers of young people. On the other hand, persons concerned with hospital and convalescent care are especially involved with the numbers of old people. Churches are involved with both extremes of the age range, but the two groups make very different demands on church facilities and services.

Table 15 presents a picture for each county of changes by selected 5 year age groups since 1940 and including an estimate for 1970. Some very substantial shifts are revealed for most counties. Except for Johnson and Linn the counties reached a peak in numbers of 0-4 age children in 1960. These are the children who, upon entering school between 1960 and 1965, substantially outnumbered the high school graduating classes in rural school districts. By 1970, the expected 0-4 years of age population will be lower than it was in 1950 for every county except Johnson and Linn. Grade school population will be dropping sharply in rural counties in the early 1970's.

Children ages 5-9 will also be fewer in number in the rural counties in 1970 as compared to 1960. These children were born during the decline from Iowa's 1947-1962 "baby boom". Their numbers are of concern to people planning junior high school programs for the early 1970's.

The 10-14 age group will be larger than at any previous time in history for all counties of the Cedar Rapids area in 1970. High schools may therefore be quite crowded during the early 1970's unless adequate building programs have been completed.

School planners and planning committees should, of course, take a detailed look at the present and potential age distribution of their particular territories. In rural districts the numbers are likely to be dropping even faster than indicated by the overall county numbers. A number of already small (in enrollment terms) school districts will become much smaller.

The large city school districts in Linn and Johnson counties will face extreme pressure from the high school enrollment increases. As population continues to increase the still younger age groups also increase rapidly in spite of the lower birth rate. Population of young parents is increasing at a rate greater than the decline in the birth rate.

Table 15. The Young and the Old - Cedar Rapids Area

County	Age Range					
	Young			Old		
Year	Age 0-4	Age 5-9	Age 10-14	Age 65-69	Age 70-74	Age 74+
Benton						
1940	1898	1795	2020	859	635	680
1950	2455	2045	1886	893	703	882
1960	2560	2591	2327	1029	826	1068
1970	1811	2240	2552	956	803	1262
Cedar						
1940	1255	1214	1371	638	485	581
1950	1772	1501	1264	718	582	685
1960	1918	1860	1786	756	654	859
1970	1266	1560	1927	718	658	932
Iowa						
1940	1413	1376	1489	647	550	543
1950	1659	1402	1289	655	523	689
1960	1781	1716	1630	713	522	797
1970	1310	1673	1936	680	547	846
Johnson						
1940	2508	2371	2456	1171	897	975
1950	4876	2905	2374	1240	954	1357
1960	6406	4768	3776	1584	1255	1596
1970	7544	9249	8589	1833	1402	2078
Jones						
1940	1599	1444	1683	665	536	653
1950	2117	1689	1586	741	536	726
1960	2217	2292	2063	821	648	906
1970	1713	2123	2296	811	640	1057

Table 15 - Cont'd.

County	Age Range					
	Young			Old		
Year	Age 0-4	Age 5-9	Age 10-14	Age 65-69	Age 70-74	Age 74+
Linn						
1940	6575	6065	6557	3085	2291	2505
1950	10848	8212	6941	4118	2949	3551
1960	16713	14598	11823	4729	3718	5048
1970	17598	21921	21812	4996	4005	6284
Washington						
1940	1739	1618	1659	818	669	749
1950	2127	1742	1577	855	706	954
1960	2064	2060	1899	869	760	1176
1970	1651	1855	2028	819	770	1262

Source: Population Census
"Employment Estimates and Population Shifts" Marvin Julius unpublished manuscript, May, 1969.

Figure 2 shows the territories covered by high school districts of the Cedar Rapids area in 1967. The districts are also shaded to indicate enrollment levels. Two districts in the area had less than 300 pupils in kindergarten through 12th grade. Eleven districts had an enrollment between 300 and 500 pupils, six between 500 and 700 pupils and 26 each had enrollment of more than 700 pupils. Some of the districts in these counts are only partially in the area.

The too-small school district can be questioned from the standpoints of cost of operation per student and adequacy of performance, particularly at the high school level. If the teaching staff is specialized enough to raise performance levels, the cost of operation per student becomes very high. If cost of operation is to be held down, the number of subjects taught per teacher must be increased and performance will usually decline.

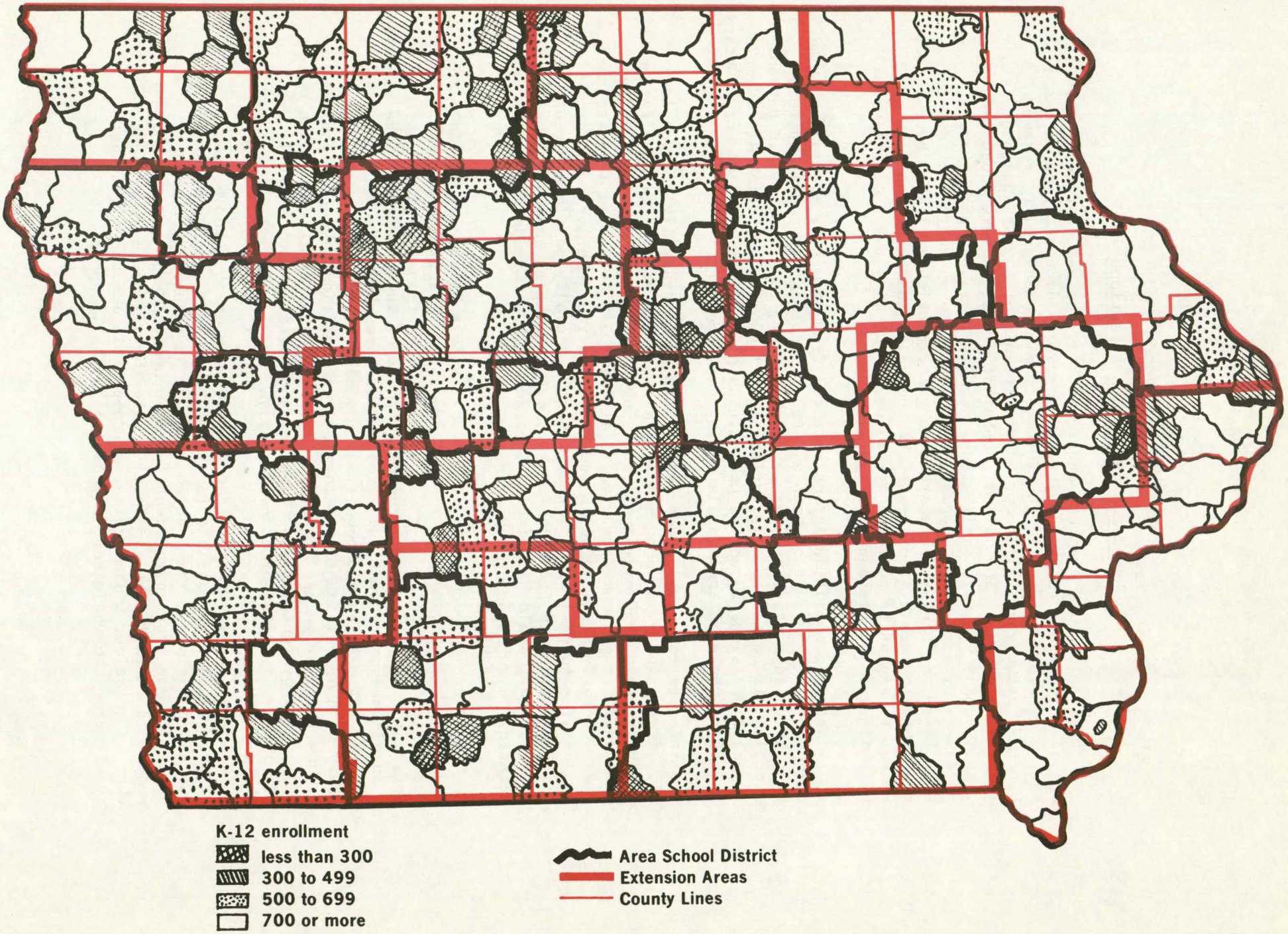
As people of the Cedar Rapids area observe and study these patterns of cost and performance and the declining numbers of students in the rural areas, they are likely to have to consider additional school consolidations. It is likely, also, that the school districts which had over 700 pupils in 1967 will be the focal points of most of the reconsolidations.

Table 15 also gives information on the numbers of older people who were in each county at census years and the estimated numbers for 1970. Two 5 year age groups are provided and an open-end group for 75 years of age and over. This latter group is a fast growing one in all counties of the area. In 1970 each county is expected to have more people 75 years of age and over than at any time in history. For the ages between 65 and 75 years, the picture varies by counties, but generally there will be about as many or more people in these ages as there were in 1960, which was the high year up to that time for each county.

This build-up of the aging population indicates an increasing need for hospital, convalescent and nursing home facilities. Special recreational and housing programs for the aged may also need more attention.

Information and estimation of numbers by 5 year groups for the 15-64 age population is not presented. It is felt that the available 1970 estimates for this group of people might be unreliable because of unpredictable migration movements. In addition, no particular age group of the working age population creates any special demand on community institutions. Therefore, precise knowledge about changes in age distribution of this group is not as necessary as it is for the young and old population.

FIGURE 2. Iowa High School District Map



Decisions and Future Directions

The Cedar Rapids area has undergone many changes in recent years. Most of this report to this point has served to document some of these changes. Before looking to the future it may be helpful to remember that the past changes all occurred as a result of a continual process of decision making. The largest number of decisions were those made by individuals and very small groups such as families, partnerships, and boards of directors. Decisions by young men on whether or not to try to farm, by bankers on whether to grant particular loans, by families on whether to remain in or leave the community and by businessmen on whether to expand or contract are a few of the many types of individual and small group decisions that were made.

A second group of decisions resulted from community actions or from actions by large groups of people. Decisions to annex territory to a town, to build a new church or school building, to elect certain persons to public office and to allow or prohibit liquor by the drink are examples of public decisions by entire communities or counties or groups of counties or large numbers of individuals acting as a group.

Attempts to carry out decisions were not necessarily all successful. A decision by a young man with a family to start a farm operation on 120 acres in 1950 may have proved unwise. The growth of technology had pushed the optimum farm size to at least 240 acres and adequate incomes were only possible, with few exceptions, on the larger farms. The decision to be a small farmer was not generally possible because of a national trend in technology. Many other examples could be given of decisions that would have failed because national trends and forces were operating in an opposing direction.

Other decisions may not have been possible because of special local conditions. The absence of mineral deposits prevents any successful attempt at large mining operations. The lack of even mildly mountainous terrain for skiing inhibits the development of the Coralville Lake vicinity as an all-season recreational area. These are obvious physical deficiencies, but more subtle conditions may also be important. A strong and widely-held opposition to any form of regimentation may delay zoning actions for many years. Historical jealousies or enmities between communities may prevent serious cooperation efforts, at least until some individuals have died or become inactive.

Between the extremes of the decisions impossible for national reasons and those impossible for local reasons is a wide range of possible decisions. The problem in charting future directions is two-fold. One part is to identify the proposed decisions which are impossible to implement and to eliminate them from consideration. The other is to select a limited set of compatible actions of highest pay-off from the whole set of decisions which are possible.

Decision making can usually be kept within the bounds of possible success if sufficient information is available and is used. Much of the information presented in this report was selected because it could provide general background for many types of decisions. For any particular decision there may be specialized information available from other sources.

Goals for the Area

Table 16 presents a number of group goals which might be favored by either some community or area leaders or some sub-groups of community or area populations. In various ways, decisions will be made to try for, or to abandon, each of these goals. The right hand side of the table presents the first impression judgment of the author regarding the possibility situation during the early 1970's for each goal. Other observers including knowledgeable people of the area, might change the list of goals and some of the possibility ratings. The table therefore should not be interpreted as a carefully researched guide to action. Its purpose rather is to illustrate the kinds of goals that people may suggest for acceptance or rejection and some thinking about these goals in terms of possibility of success.

Several pages could be written about each of the goals of Table 16 if the background of each were to be explored in detail. Such detailed discussion of specific projects must be left for follow-up educational efforts which may involve special meetings and special studies.

Functional Economic Area

The one topic of general concern that properly belongs in this study is the attitude of the area's communities to a functional economic area pattern. The Cedar Rapids area of Iowa, which we have been describing, has, thus far, developed along the typical functional area pattern that characterizes most of Midwestern United States except that the satellite towns may not have fully explored all opportunities.

A typical functional economic area in rural Midwestern United States has a central city of at least 25,000 population. The area extends to about a fifty mile radius (by road distance) in all directions from the central city. The activities which require a very large population or labor base are located there. Among these are large department stores, factories with 500 or more employees, a junior college or community college, a regional hospital and clinic, wholesale warehouses, a multi-purpose airport, a daily newspaper and radio and television broadcasting. Because of the concentration of population and labor supply and community services already present, the central city can act as a growth center in attracting additional export activities to the area.

As the central city grows, the satellite cities and towns also tend to grow. This is partly because it is relatively easy to drive to big-city services from any place in the area. Also, many employers--particularly small firms--will choose small city and town locations if a central city is nearby.

Table 16. Illustrative Set of Goals for Consideration

Goals	Difficult for national reasons	Within possibility range	Difficult for local reasons
Merger of city and suburbs			*
Recruitment of only high wage industries	*		
Stop the agriculture employment decline	*		
Have no school district below 3,500 enrollment			*
Have no school district below 1,000 enrollment		*	
Make tourism as large as agr. and mfg. export	*		
Use recreational facilities as an industry inducement		*	
Consolidate all churches in each town			*
Keep all young people in the area	*		
Put a doctor in each town	*		
Establish centralized multi-town medical facilities		*	
Establish regional planning activities with public funding		*	
Reorganize churches to have none below 350 members		*	
Consolidate all counties into an area govt.			*
Stop all shopping center development	*		
Establish more multi-govt. joint programs		*	
Form a heavily funded area industry promotion group			*
Start interlocking memberships among local industry promotion groups		*	
Make representation on area committees proportional to population			*

A central metropolitan complex as large as Cedar Rapids and Iowa City in combination tends to dominate its area in financial and business matters and, to some extent, in political matters. Resentment of this concentration of power tends to emerge in satellite cities and towns. Many area residents may favor scattering some of the activities so that all of the major transportation, education, health and other regional services do not tend to concentrate at one or two locations.

Some residents of the rapidly growing centers may, at certain times, support this view, because they are disturbed by the continuing need to expand the facilities of their city. There are areas (the Northwest Iowa-Southwest Minnesota territory is one) where a scattering of activities has occurred among a number of cities of less than 10,000 population.

It should be recognized, however, that areas without central cities of 25,000 or more population are not growing substantially in population and employment. The small central city will usually be growing at a good rate in relation to its previous size, but this growth is far short of the amount needed to counter the agricultural employment decline of the whole area. Many towns in such an area will, therefore, be declining in working age population.

The larger central city can support the high-capacity, multi-purpose airport needed for access to many of the markets of the future. It can attract the prospective employer who wants the major regional services all available for his employees at one place. It is not likely that any outside employer will favor a situation where the community college, the vocational school, the major hospital facility, the largest airport and the regional government service center are all located in different cities.

In many ways, therefore, the entire area has an interest in the continued growth of Cedar Rapids and Iowa City. Consideration will likely be given in the future to proposals for area-wide financial support of some facilities and activities such as is now possible with the area school system.

Some kind of study may also be needed concerning the degree to which the outlying parts of the area can tap the growth of the central city. More small plants might be encouraged to move to the outlying towns. In some cases an improved line of credit may be needed, along with management help, for undercapitalized firms already located in the towns.

To some extent, the people of east central Iowa can change direction in regard to central city size versus more development of the outlying towns. The decision is not likely to be made by any one committee or group working with this problem alone. Rather, the final result will emerge from the accumulation of many location decisions by business firms, financial institutions, area school boards, a regional airport authority, regional planning commissions, area health committees, a council of governments, municipal and county governments and other institutions and individuals.

Each group of people responsible for making a location decision should remember that this decision also has an effect on the overall settlement pattern of the future. In many cases, the choice between any two or more places for a specific activity might be influenced by the relative effect of each location upon the overall settlement pattern.

Some Final Thoughts

This report may not have a uniformly optimistic tone. It tends toward a "realistic" look at the area, and it deals with both problems and success stories. This is in keeping with its purpose as a background document for leaders who are considering changes that they hope will better the area.

Likewise, the report is not meant to be a promotional piece for the area. On the other hand, there is no intent to downgrade promotional activities. Effective community leaders need to believe that their community and area are among the best of all communities and areas in which to live and work. If they have had failures, they will feel it was because they picked impossible projects or made mistakes in the education or action processes. They will not believe that there are basic faults in the community or area that prevent possible changes that most of the people are willing to support.

Constructive attitudes toward change and a good understanding of the facts of past and present situations are both essential for area progress. This report provides some of the necessary facts and interpretations. People of the area have provided and will provide the constructive and optimistic leadership.