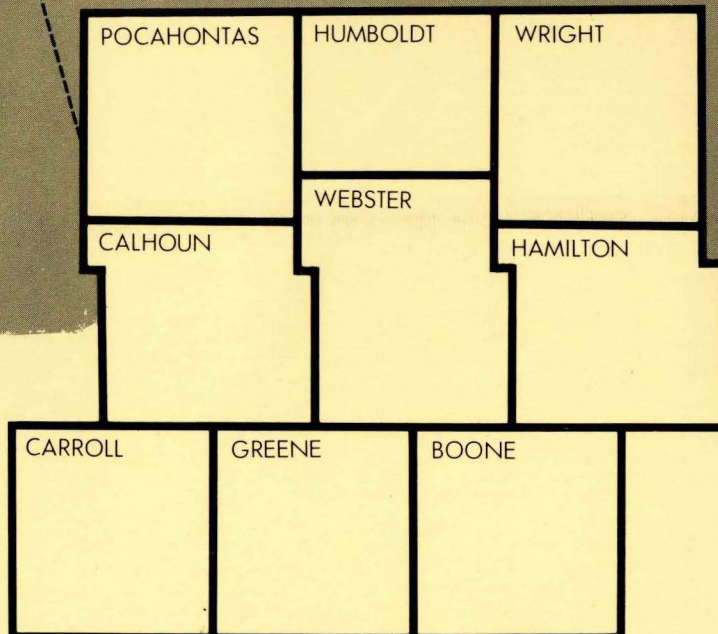
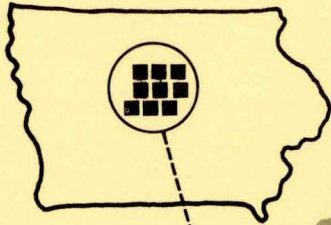


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The Economic Base of the Fort Dodge Area



INTRODUCTION

This is a report of the economic activity in a nine-county area of North-Central Iowa. A large part of this area centers around Fort Dodge, a city of about 30,000 people. Fort Dodge is the farthest west of the large cities (25,000 population or over) of interior Iowa.

The counties included in this area are Pocahontas, Humboldt, Wright, Calhoun, Webster, Hamilton, Carroll, Greene and Boone. A substantial part of Boone County and smaller parts of Hamilton and Greene counties are undoubtedly oriented more toward Des Moines and Ames than toward Fort Dodge. However, the greater availability of economic information for whole counties makes it desirable to draw the area boundaries along county lines.

The area had a total population of a little more than 196,000 in 1960 and a little less than 196,000

in 1950. An estimate of population by the Statistics Division of the Iowa State Health Department indicates that the 1965 population was slightly lower than the 1960 total.

The stability in numbers of the total population hides the fact that a large shift of population has occurred within the area. The rural areas and most small towns have declined sharply; and some larger towns, a few smaller towns, and the city of Fort Dodge have grown rapidly.

Total employment has also remained relatively unchanged over the 15-year period, but there has been a major internal shift here too. Employment in agriculture has continued a long-run decline while employment in manufacturing and some main street and service-type activities has been increasing.

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THE ECONOMIC BASE OF THE FORT DODGE AREA

EMPLOYMENT

This report regards employment as the most important measurement of economic activity. The number of available jobs determines to a large extent the size of the population that will live in the area. The population size itself and the level of family incomes are all-important in determining the quality of schools, retail services, churches, recreation facilities, communications outlets, etc., that can be supported by the people of the area for their own benefit.

For some activities and for some people, the local town population size is most important. For example, frequently-used cafes and gas stations should be within a few minutes distance; they will not be there unless the town is above the minimum size needed to support at least one of each.

However, for activities associated with hospitals, airports, television stations and daily newspapers, large department stores, specialty stores, junior colleges, trade and vocational schools, and a host of other activities, distances up to 50 miles are permissible. For these types of activities the area population size is the most important.

With modern-day transportation speed the area population size is becoming more important in determining what services can be made available for the consumers in the area. The pattern of location of the people in the area is of much less importance.

Historical changes in employment are a matter of record. We can look at the facts and then speculate concerning the reasons for the changes. But the facts stand by themselves and do not depend at all on the correctness of our speculations.

Forecasts of future changes are on a different footing. We must have in mind a set of cause and effect relationships in order to make any kind of consistent forecasts. The trustworthiness of any forecast is directly dependent on the correctness of the cause and effect relations which we select.

The Export Base

The employment forecasts in this report are built on 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.

A second class of workers, called *domestic* or *non-basic* 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 size of the total area force of employees (including their dependents), since this is the market that the domestic workers serve.

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 of the area, and the point in time at which the ratio is measured or projected.

Table 1 shows a pattern of employment by industry sectors that has existed in the past in this 9-county area and forecasts of expected employment in the future. Figures 1 and 2 show some of the important trends graphically. Total employment for 1950 and 1960 is reported in the Census of Population. It would be possible to estimate employment by sectors for a later year, say 1965, on the basis of evidence that the 1950-60 trend of change in each sector has continued approximately the same for the 1960-65 period. We do not present these estimates, because they would not be an exact record of history.

Past Employment Trends

Between 1950 and 1960, the area as a whole experienced a moderate decline of 2,787 jobs out of a total of 71,754 jobs in 1950. However, agricultural employment was down by 7,328 jobs. This represented a decline of almost 28 percent from the 1950 total. The Construction and Mining and the Transportation, Communications, and Utilities sectors each lost about 20 percent of their 1950 total employment, but the 1950 employment in these was lower than in agriculture. So the relatively high percentage declines translate into an actual job decline for the two sectors of 1,985 jobs.

The total decline among three sectors of 9,313 jobs was offset to a large extent by an increase of 3,041 jobs in Manufacturing, an increase of 2,395 jobs in Services, and small increases in three other sectors.

Total employment figures by themselves provide few clues to aid us in searching for explanations of changes in employment by sectors. In order to improve understanding of the area, we made a detailed analysis dividing 1960 employment of each sector into *export* and *domestic* categories. In addition, the domestic employment of each sector was traced through to the local demands which it filled.

Prepared by Marvin Julius, extension economist.

Table 1. Area Employment Data, 1950, 1960, Forecast to 1980.

| Industry sector | Total employment | | | | Export employment | | | | Total employment | | | |
|--|------------------|--------|--------|----------------|-------------------|--------|--------|----------------|------------------|--------|--------|----------------|
| | 1950 | 1960 | Change | Percent change | 1960 | 1980 | Change | Percent change | 1960 | 1980 | Change | Percent change |
| Agriculture | 26,374 | 19,046 | -7,328 | -27.8 | 17,491 | 8,500 | -8,991 | -51.4 | 19,046 | 9,814 | -9,232 | -48.5 |
| Construction and mining | 4,579 | 3,650 | - 929 | -20.3 | 875 | 900 | 25 | 2.9 | 3,650 | 3,176 | -474 | -13.0 |
| Manufacturing | 6,516 | 9,557 | 3,041 | 46.7 | 8,242 | 13,000 | 4,758 | 57.7 | 9,557 | 13,937 | 4,380 | 45.8 |
| Transportation, communi- cation and utilities | 5,499 | 4,443 | -1,056 | -19.2 | 1,244 | 1,200 | -44 | -3.5 | 4,443 | 4,311 | -132 | -3.0 |
| Wholesale and retail | 14,001 | 14,336 | 335 | 2.4 | 3,331 | 3,400 | 69 | 2.1 | 14,336 | 15,852 | 1,516 | 10.6 |
| Finance, insurance and real estate | 1,460 | 1,821 | 361 | 24.7 | 246 | 300 | 54 | 22.0 | 1,821 | 2,412 | 591 | 32.5 |
| Services | 13,003 | 15,398 | 2,395 | 18.4 | 1,439 | 1,500 | 61 | 4.2 | 15,398 | 17,920 | 2,522 | 16.4 |
| Out-commuters (net) | 322 | 716 | 394 | 122.4 | 716 | 1,500 | 784 | 109.5 | 716 | 1,500 | 784 | 109.5 |
| Area | 71,754 | 68,967 | -2,787 | -3.9 | 33,584 | 30,300 | -3,284 | -9.8 | 68,967 | 68,922 | -45 | -0.1 |

| | 1950 | 1960 | 1980 |
|---|---------|---------|---------|
| Total population | 195,839 | 196,449 | 200,004 |
| Total employment | 71,754 | 68,967 | 68,922 |
| Total export employment | 36,797 | 33,584 | 30,300 |
| Total non-basic employment | 34,957 | 35,383 | 38,667 |
| Non-basic workers per 100 export workers | | 95 | 105 |
| Non-workers per 100 workers | 173 | 185 | 190 |

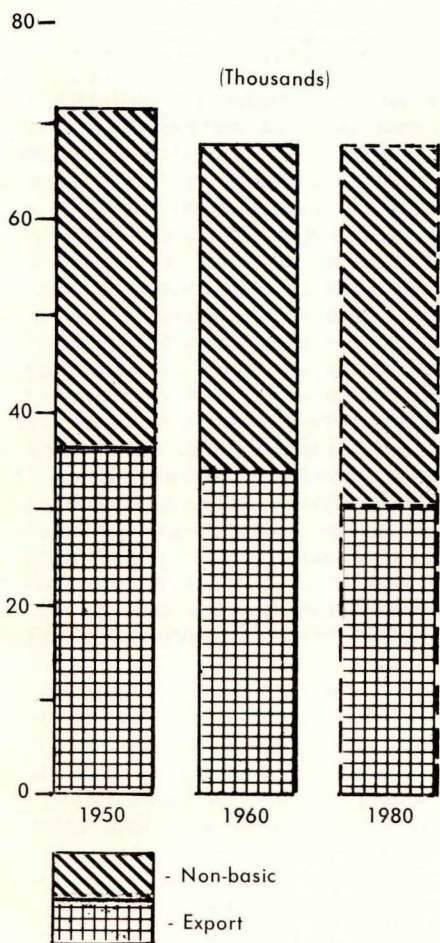


Fig. 1. Total Employment Trends.

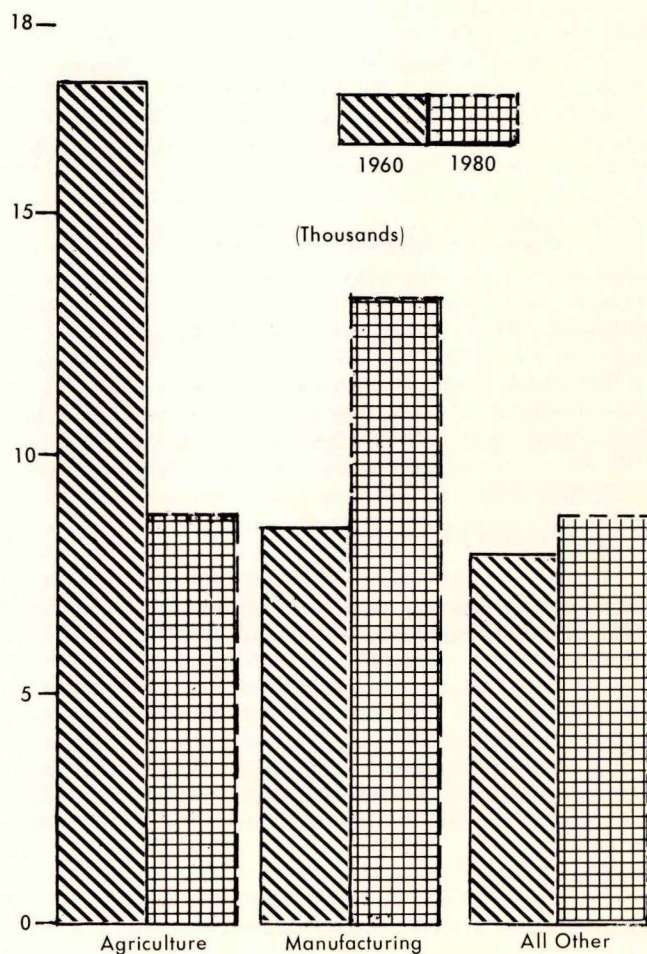


Fig. 2. Export Employment Trends.

Export Employment

Comparing 1960 export employment with 1960 total employment by sectors in table 1 shows the relative importance of export demand in each case. For example, 17,491 out of 19,046 agriculture workers were engaged in the production of agricultural products for sale outside the area. In manufacturing, 8,242 out of 9,557 workers were dependent on export sales for their jobs.

These two sectors, Agriculture and Manufacturing, have the highest proportion of their own totals engaged in export (except for the special case of net out-commuters) and are also the major contributors to over-all export employment of the area. Together they accounted for 25,733 of the 33,584 export workers.

Net out-commuters is a somewhat artificial sector set up to allow for the reduced impact of export workers who live in the area, but whose jobs are outside the area. The excess of these over the workers who live outside, but work inside, the area is defined as net out-commuters and is considered 100 percent export. All other sectors have some export employment, generally between 10 percent to 30 percent of their totals; but the bulk of their employment is domestic and, therefore, related to local demands.

The export status of the sectors for 1950 was analyzed only to the extent of determining that both Agriculture and Manufacturing were about as highly oriented toward export then as in 1960. Therefore, the large decline in total agricultural employment between 1950 and 1960 (-7,328) and the moderately large increase in total manufacturing employment (+3,041) were both to a large extent changes in export employment. These two export employment shifts, (one positive, one negative) are among the major economic forces which have affected the area in recent times.

The excess of agricultural export employment decline over manufacturing export employment gain would have caused a decline in total employment and population if the domestic export ratio had remained the same between 1950 and 1960. The shift in the ratio from 95 domestic workers per 100 export workers to 105 domestic workers per 100 export workers is a third major economic force which will be explored more fully in connection with income changes.

Employment Forecasts

Table 1 also contains a forecast of 1980 area employment. The forecast was prepared in three stages. The first stage involved an estimation of the export employment of each sector for 1980. Next, for the export part of each sector, the associated demands on the domestic part of all sectors were computed, using the sector-to-sector ratios known to exist in 1960. Finally, some of the ratios, those which have been changing steadily over time, were adjusted to correspond to the values they are expected to have in 1980.

The critical export forecasts are those for Agriculture, where a 1960-80 decline of almost 9,000 employees is predicted and Manufacturing, where a

gain of almost 5,000 is expected (see fig. 2). The thinking and analysis leading to these forecasts is discussed at a later point.

The export employment of other sectors is not expected to change much. The largest predicted change among these is a gain of 784 in net out-commuters. This reflects the likelihood that commuting to Ames, Des Moines and Mason City will increase from parts of the area located close to those centers.

Total employments for 1960 (actual) and 1980 (predicted) are compared in adjacent columns of table 1. The area total over all sectors is expected to show almost no change (note fig. 1). However, there will be noticeable shifts within the total. Agriculture will be down sharply, and Manufacturing growth will counteract about half of Agriculture's decline. Small declines will occur in Construction-Mining and in Transportation-Communication-Utilities, but these will be balanced by the increase in net out-commuters.

The growing employment of the largely domestic sectors of Wholesale-Retail, Finance-Insurance-Real Estate, and Services will be equally as important as the growth of Manufacturing in counteracting the Agricultural decline. The domestic sectors will make up a larger share of total employment by 1980, because of the expected increase in the domestic-export ratio. In 1980, the area will probably have 128 domestic workers for each 100 export workers.

INCOME

The level of family incomes and changes in this level are key indicators of economic progress of the area. The total of all family incomes reflects the earnings of the wage and salaried employees and the returns to property owners of the area. The rising total of family incomes indicates that the area is producing an increasing amount of products which are wanted by the nation's consumers. A rising level of average family income indicates that workers of the area are becoming more productive per working hour or that the average worker is becoming more fully employed or both.

Table 2 shows the income situations in total and per family for each of the counties of the area and for the area as a whole for 1949 and 1959. There are strong indications that the general trend of changes shown between these two years has continued at least through 1965. Unfortunately, there is no highly accurate data for each county for 1965; thus table 2 was not extended beyond 1959.

The income figures of table 2 have been adjusted to eliminate the effects of inflation between 1949 and 1959. Therefore, the changes shown between these two years are real changes in purchasing power.

The area as a whole had an increase of 25 percent in the total of all family incomes over the 10-year period. Each family on the average had an increase in income of 24 percent. From these two results there is strong reason to believe that the area had a large increase in the value of product produced and also an increase in the productivity of its workers.

Table 2. Total Income and Average Family Income.

| County | 1949 ¹ | 1959 | Change | Percent change | Average per family | | |
|------------|-------------------|---------------|--------------|----------------|--------------------|---------|----------------|
| | | | | | 1949 ¹ | 1959 | Percent change |
| Boone | \$ 33,225,800 | \$ 39,513,000 | \$ 6,287,200 | 18.9 | \$4,427 | \$5,583 | 26.1 |
| Calhoun | 19,392,980 | 21,961,500 | 2,568,520 | 13.2 | 4,479 | 5,194 | 16.0 |
| Carroll | 28,985,000 | 31,589,000 | 2,604,000 | 9.0 | 4,950 | 5,562 | 12.4 |
| Greene | 16,930,960 | 19,892,000 | 2,961,040 | 17.5 | 4,259 | 5,073 | 19.1 |
| Hamilton | 24,096,300 | 30,218,500 | 6,122,200 | 25.4 | 4,525 | 5,602 | 23.8 |
| Humboldt | 16,462,240 | 20,555,000 | 4,092,760 | 24.9 | 4,996 | 5,955 | 19.2 |
| Pocahontas | 18,232,960 | 18,917,500 | 684,540 | 3.8 | 4,811 | 5,113 | 6.3 |
| Webster | 52,528,260 | 80,248,500 | 27,720,240 | 52.8 | 4,747 | 6,543 | 37.8 |
| Wright | 23,698,880 | 29,854,500 | 6,155,620 | 26.0 | 4,544 | 5,753 | 26.6 |
| Area | 233,553,380 | 292,749,500 | 59,196,120 | 25.3 | 4,638 | 5,751 | 24.0 |
| State | --- | --- | --- | --- | --- | 5,069 | --- |

Source: Population census.

¹Adjusted to 1959 dollars.

Webster County produced almost half of the increase in total family income and also had by far the largest percentage increase in average family income. The heavy impact of Webster County on the area totals is largely the result of the location of the city of Fort Dodge in that county. Fort Dodge alone produced about as much total income as an entire typical rural county in 1949 and had an industrialization growth during the 1949-59 period which added about as much income as the total produced in a typical rural county in 1959. Also, much of the Fort Dodge industrial employment is of a highly skilled nature, with wage rates considerably above the average for the rest of the area.

All counties of the area contributed to the growth in total and average family income. In general, counties with the higher percentages of increase are those with the higher proportions of employment in industrial and other nonfarm export activities.

However, to some extent, the differences in incomes associated solely with farming activities may be understated. The reason for this is that 1948 was an exceptionally good crop year, and this may have resulted in 1949 farm incomes that were higher than the average year of, say, the 1947-51 period. In other words, if data had been available to provide an average income for the 1947-51 period and if that figure had been compared with an average for the 1957-61 period, the difference from farm sources may have been greater than where just the 1949 and 1959 years were compared. The change would not have been so great as to make much difference in the conclusions for the area as a whole, but it might have doubled the rates of increase for Pocahontas County, for example, and produced a somewhat better picture for other rural counties of the area.

Higher average family incomes mean families can buy more goods and services. This in turn creates a need for more workers in the domestic sector to

produce or deliver or retail these goods and services. The net result is that the domestic-export ratio changes to a higher level.

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.)

THE MANUFACTURING SECTOR

Manufacturing is a highly diversified sector of employment within the area. There is great variation in size of plants, density of employment by locations, wage rates by locations and industries, and types of products produced. A detailed description of manufacturing activity during the year 1963 is available from the latest Census of Manufacturing, and much of what follows is based on that census.

Table 3 shows a comparison of 1947 and 1963 manufacturing employment by counties. The area totals are not directly comparable with the manufacturing employment shown in table 1.

The figures of table 3 are the equivalent of full-time employment, while those of table 1 include part-time and some other categories so as to produce a higher total. Nevertheless, the trends of the two sets of measurements over time will usually be quite similar. For example, the table 3 gain of 2,945 in manufacturing employment over the 16-year span, 1947-63, represents a 55 percent increase. This is comparable to the 47 percent increase for the 10-year span, 1950-60, of table 1.

Table 3 shows the dominance of Webster County in the Manufacturing sector, but it also reveals a gradual shift of manufacturing employment to some

outlying counties of the area. In 1947, Webster County had 60 percent of the manufacturing employment. During the 1947-63 period, this county gained 42.5 percent of the area's total increase of manufacturing employment. Webster's share of all manufacturing jobs dropped to 53.5 percent by 1963, but it still is without question the center of manufacturing of the area. Hamilton County had 15.6 percent of the total in 1963. None of the other counties has as much as 10 percent.

Probably one-half of the predicted 1960-80 increase in manufacturing jobs will occur in the immediate vicinity of Fort Dodge. The other one-half of the increase will be divided among some, but not all, of the other towns of the area.

Table 3. Manufacturing Employment.

| County | 1947 | 1963 | Change | Percent county is of area with respect to | | |
|------------|-------|-------|--------|--|-------------------|-------------------------|
| | | | | 1947 Employ- ment | 1947-63 change | 1963 Employ- ment |
| Boone | 289 | 464 | 175 | 5.4 | 5.9 | 5.6 |
| Calhoun | 75 | 102 | 27 | 1.4 | 0.9 | 1.2 |
| Carroll | 436 | 567 | 131 | 8.1 | 4.4 | 6.8 |
| Greene | 119 | 231 | 112 | 2.2 | 3.8 | 2.8 |
| Hamilton | 629 | 1,302 | 673 | 11.7 | 22.9 | 15.6 |
| Humboldt | 175 | 341 | 166 | 3.3 | 5.6 | 4.1 |
| Pocahontas | 127 | 250 | 123 | 2.4 | 4.2 | 3.0 |
| Webster | 3,210 | 4,462 | 1,252 | 59.6 | 42.6 | 53.6 |
| Wright | 320 | 606 | 286 | 5.9 | 9.7 | 7.3 |
| Area | 5,380 | 8,325 | 2,945 | | | |

Source: Manufacturing census.

Earnings and Wages

Table 4 shows that production workers' average yearly earnings and average hourly wages are about 45 percent higher in Webster County as compared to the average of the other counties.

A number of characteristics are associated with this higher earnings plateau of the Fort Dodge vicinity. Much of the labor force is organized. Some

Table 4. Earnings of Manufacturing Employees, 1963.

| | Av. yearly earnings, management, supervisory, and related employees | Av. yearly earnings, production workers | Av. hourly wage, production workers |
|---------------------------|--|--|--|
| Webster County | \$6,746 | \$5,717 | \$2.84 |
| Other counties | 5,801 | 3,970 | 1.94 |
| Highest of other counties | 6,795 | 4,762 | 2.27 |
| Lowest of other counties | 5,036 | 3,223 | 1.54 |

Source: Manufacturing census.

of the larger plants are in industries which have been among the national leaders in industry 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.

A stable, skilled labor force appears to be a prime asset which the Fort Dodge vicinity offers to the industrialist. Not all of these workers live in Fort Dodge. Many commute from nearby towns, but Fort Dodge is the hub of the commuting pattern.

The outlying parts of the area have provided a different type of opportunity to the industrialist. Since shortly after the end of World War II, the farms and small towns of the area have produced an excess of labor which has created a steady out-migration movement.

It appears that, in many parts of Iowa, persons in this out-migration stream have been willing to work for a time at a relatively low wage in an industry close to home. As these persons move on to other opportunities, 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.

For the next 10 to 15 years, most of the new plants that locate in rural parts of the Fort Dodge area will likely be those that are attracted by lower-than-average wage levels. After about 1980, it is probable that the excess low-cost labor supply will be gone.

Such a change can occur for two reasons. *First:* The higher level of manufacturing activity will be absorbing more of the supply of labor. *Second:* The number of farm families will have decreased to the point where they will be providing a much smaller number of excess workers.

The outlook, then, is for a gradual narrowing of the wage gap between Fort Dodge and the outlying towns. The normal situation by 1980 for production workers will likely be similar to the difference in earnings existing now for management, supervisory and related employees (table 4). Within this category, Webster County manufacturing is now paying about 16 percent more to the average employee than the average of other counties of the area. This amount of difference can be explained partly by the higher training and experience requirements for management personnel of some of the large Fort Dodge industries and partly by a higher cost of living associated with residence in the central city of an otherwise rural area.

There are exceptions to the general statements we have advanced about levels of earnings and sta-

bility of employment. There are some high-wage plants outside of Webster County. Some low-wage plants are located in Fort Dodge. Most of the outlying plants have some long-term employees and, conversely, labor turnover is a problem in some job classifications for nearly all plants. There are no doubt exceptions to other statements.

Nevertheless, the contrasts between Fort Dodge and the rest of the area are sufficiently strong that they cover up the exceptions when we look at the over-all picture.

Size and Types of Plants

We attempt to describe the diversity of manufacturing activity in table 5. It would be almost meaningless to picture a typical manufacturing plant. Of the 257 individual plants in the area in 1963, 184 had less than 20 employees. On the other hand, two plants each employed between 500 and 999 employees. The numbers of plants of other intermediate employment-size categories are shown in the table.

In the same table, manufacturing activity is divided into some general categories 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, frozen foods packing, animal feed production, dairy products processing, and other activities connected with food or feed. This category covers 70 plants, including the two largest, and almost half of those with employment of over 100 workers.

A second important category is "Processing of other local resources." This category is represented primarily by gypsum processing, brick and tile production, and a number of concrete products opera-

tions. Twenty-nine plants are involved, including five of more than 100 employees each.

"Production of non-feed inputs for agriculture" includes mainly farm machinery production, fertilizer production, and animal biological products. There are 19 such plants.

"Area newspapers and printing" is a special category which is manufacturing only in the sense that printing is defined as a manufacturing operation. This category includes all the newspapers of the area, and these account for a large part of the 39 small plants in the 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 include 162 plants.

The other 95 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 tire changers, conveyors, electronic components, wrecker equipment, sporting goods, detergents, castings and forgings, morticians' goods, canvass products and at least 50 other kinds of products.

Future Directions

We know little about the reasons behind the location of non-attached plants in this area. However, a tentative conclusion of local people, when discussing this group, is that almost all of these firms were started by local persons with the aid of some local financing. Some of these firms grew to substantial size over a period of years, others have stayed small, and probably many have failed.

The predicted increase in manufacturing employment by 1980 is expected to occur largely in the non-attached category. Plants in this group tend to be established in response to some advance of relatively long-term capital by local industrial development groups. 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.

A rough estimate of \$2,000 per employee applied to an estimated locally-financed increase of 4,000 employees would add up to a capital need of \$8 million. This may be the upper limit of capital raising and investing capacity for this purpose in this area.

Employment in the attached manufacturing categories is expected to remain about the same. A steady increase in volume of some of the produce and materials available for processing will be counteracted, in its employment effects, by increased automation in the manufacturing plants.

Table 5. Area Manufacturing by Size of Plant and Type of Product, 1963.

| Type manufacturing activity | Number of Plants with Employment of | | | | | | |
|---|-------------------------------------|-------|-------|---------|---------|---------|------------|
| | 1-19 | 20-49 | 50-99 | 100-249 | 250-499 | 500-999 | All Plants |
| All types | 184 | 32 | 18 | 19 | 2 | 2 | 257 |
| Processing of agricultural Produce | 45 | 10 | 5 | 8 | | 2 | 70 |
| Processing of other local resources | 19 | 3 | 2 | 4 | 1 | | 29 |
| Production of non-feed inputs for agriculture | 8 | 5 | 4 | 2 | | | 19 |
| Area newspapers and printing | 39 | 3 | 1 | 1 | | | 44 |
| Total, attached manufacturing | 111 | 21 | 12 | 15 | 1 | 2 | 162 |
| Non-attached manufacturing | 73 | 11 | 6 | 4 | 1 | 0 | 95 |

Source: Manufacturing census.

AGRICULTURE

Agriculture employees represented 24 percent of the workers in the Fort Dodge area in 1960. In addition, the export activity of agriculture created demands for domestic employment equal to 27 percent of total employment. In total, 51 percent of the area workers in 1960 were employed in agriculture or were furnishing inputs for agriculture export production, including consumption goods and services for the households of the export farmers.

By this type of reasoning, we can say that slightly over one-half of the workers of the area were associated with the production of farm produce. This does not include the large number of workers (mostly in manufacturing and wholesale trade) who process, refine and assemble farm products before final shipment from the area. These workers are reported as export employees within their own sectors, but it is almost certain that they would not be there if there were no agriculture in the area or in surrounding areas.

On the other hand, the existence of agriculture in the area does not mean that there must be packing plants, soybean mills, dairy plants, large grain elevators, and similar establishments in the area. All of agriculture's output for export could be shipped to such plants outside the area. For this reason, we do not count these employees as being tied to area agriculture in the same sense that most employees on the input side are tied in.

Nevertheless, agriculture is still the dominant sector of the area when we count both its direct and indirect effects on total employment. The combination of agriculture and manufacturing associated with agriculture is so dominant that it describes almost all the economic base that permits existence of the nine-county area.

There are many reasons for concluding that the changes taking place in farming have caused the most significant impacts on the area in recent years. Let's look at these changes in detail in order to understand some of the population and employment changes in the area in the past decade, and in order to fully comprehend possible future changes and potential impacts.

A Typical Farm

Many farms in the Fort Dodge area are "hog-beef finishing farms." The data for a typical well-organized farm for this category are shown in table 6. The changes illustrated are not an average for all farms of the area, but do represent the changes taking place on the typical hog-beef farm. In addition, the changes shown for this type of farm are similar to the changes taking place throughout the farming industry. The only difference between the type of farm shown in table 6 and some other type of farm would be a matter of degree. The major directional changes would be the same.

In the seven-year period represented in table 6, total acres per farm increased 11 percent and the livestock operation increased substantially, with only an 8 percent increase in labor input. The amount of operator and family labor actually declined some-

Table 6. Characteristics of a Typical Hog-Beef Finishing Farm.

| | 1957-59 Average | 1965 | Percent change |
|---|--------------------|-----------|-------------------|
| Acres in farm | 247 | 274 | 11 |
| Cropland harvested | 180 | 198 | 10 |
| Livestock | | | |
| Cattle (head) | 62 | 99 | 60 |
| Pigs raised | 230 | 261 | 13 |
| Labor used (hours) | 3,750 | 4,060 | 8 |
| Operator and family | 3,200 | 2,900 | -9 |
| Hired | 550 | 1,160 | 110 |
| Total farm capital | \$92,920 | \$131,440 | 41 |
| Total cash receipts | 24,472 | 43,781 | 79 |
| Total cash expenditures | 16,091 | 29,708 | 85 |
| Net farm income | 9,401 | 16,488 | 75 |
| Purchasing power (47-49 \$) | 8,014 | 13,086 | 63 |
| Production per farm (index) | 100 | 136 | 36 |
| Production per hour of labor (index) | 100 | 126 | 26 |

Source: USDA Information Bulletin 230.

what, but hired labor was more than doubled. The increase of hired labor occurring on this type of farm is not typical of cash grain farms or smaller livestock farms of the area.

One of the striking changes taking place in Fort Dodge area agriculture is the increase in capital per farm. An average of about \$131,000 total capital was invested in land, livestock, equipment and machinery on hog-beef farms in 1965. This increase of over 40 percent in seven years is a remarkable change.

With increases in size of farm and livestock operation, cash receipts (unadjusted for inflation) increased by 79 percent, while cash expenditures were increasing by 85 percent. These figures indicate the extent of the cost-price squeeze on agriculture during this period.

Net farm income on the well-organized farms has increased substantially, although the farms specializing in hog-beef-finishing have experienced great variations in income over the seven-year period, with 1965 being a high income year for this type of operation. However, the 1957-59 period was also one of relatively good livestock returns. So the increase of 75 percent in net farm income per farm represents fairly accurately the situation for most efficient farms of the area. When the incomes are adjusted for inflation, the change in real purchasing power is a gain of 63 percent.

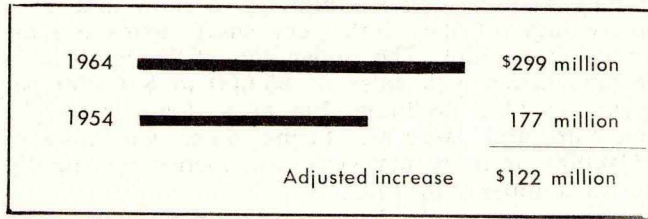
Increases of production per farm and production per hour of labor of 36 and 26 percent show the great increase in the ability of one farmer to farm more land and produce a greater output.

Agriculture—a \$300 Million Industry

Between 1954 and 1964, the value of the farm products sold in the area made a substantial (69 percent) increase (see fig. 3). When the value of farm products sold is adjusted for the change in the level of farm prices received, Fort Dodge area agriculture experienced an increase in production of over \$122 million between 1954 and 1964 on the basis of 1964 farm prices.

The total value of farm output in 1964 was somewhat greater than the total retail sales of the entire area as reported for 1963.

Fig. 3. Value* of Farm Products Sold in Area.



Source: Agriculture census.

* Adjusted for changed index of farm prices received:
1954 = 243, 1964 = 218.

The rapid increase in gross sales, the increase in local expenditures, and the increase in productivity per farm have resulted in improved farm living in the Fort Dodge area. Fig. 4 gives the level of living index of farm operators for 1950 and 1959. Not only did the area show significant increases during the period; but, in addition, the area compared favorably with any other area of Iowa in farm operator level of living.

There is only one significant element of decline

in this North Central Iowa area's agriculture—employment. We have already emphasized the significance of the farm employment decline as a cause of changes in the entire Fort Dodge area.

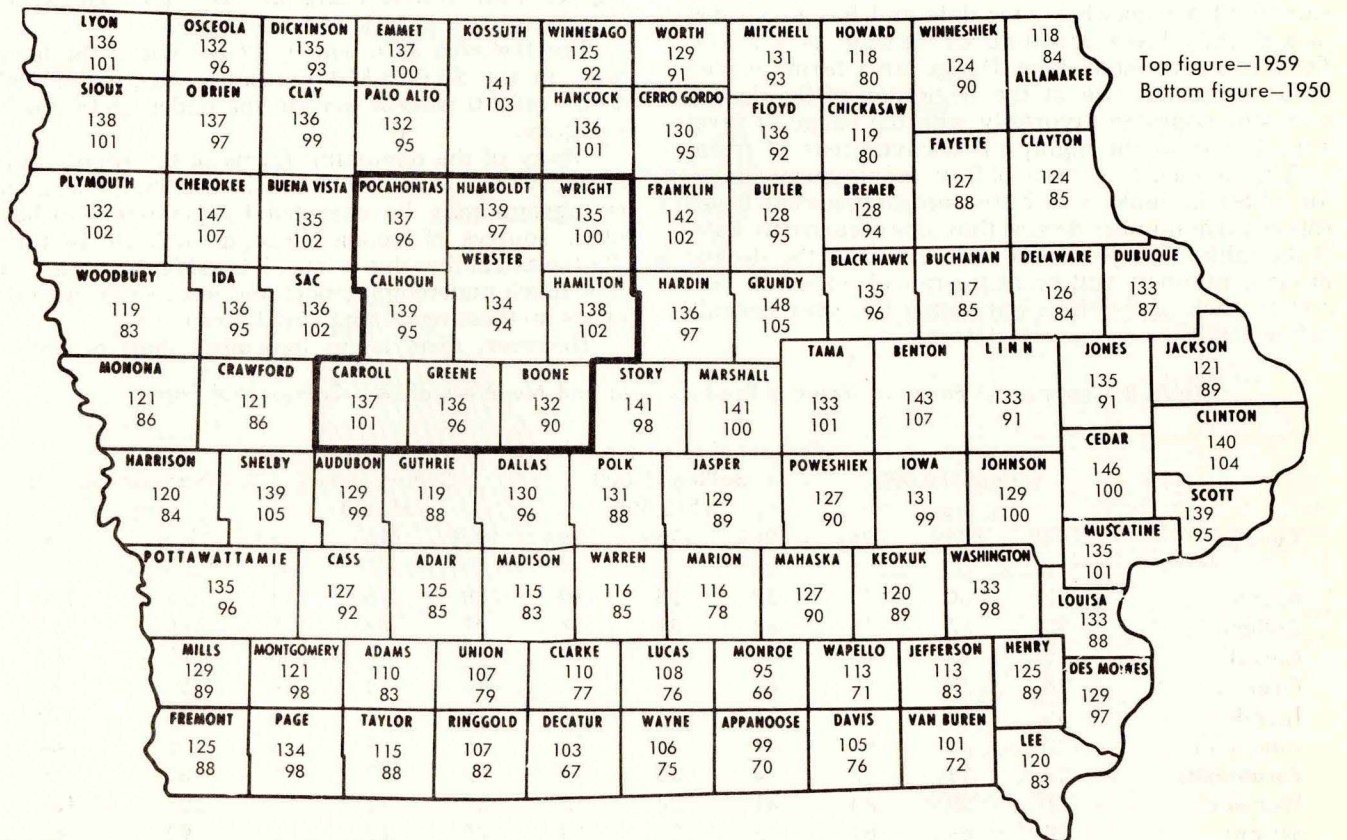
Larger Farms, Fewer Farmers

There was rapid farm consolidation in the area over the period 1949 to 1964. As farms were consolidated, farm numbers decreased. Farm employment decreased along with farm numbers. As a farmer consolidated a neighboring farm with his own, he usually farmed the additional land with little or no additional labor. Consequently, with consolidations, farm families left agriculture.

There was a decrease of nearly 4,700 farms in the Fort Dodge area between 1949 and 1964 (see table 7). When the decline for the entire area is broken down into five-year periods, it is evident that, for the area as a whole and for most counties, the period 1949-54 witnessed only the beginning of the sharp post-World-War II farm numbers decline. The area lost 5 percent of its commercial farms during these five years. Boone, Greene and Hamilton counties each had about 10 percent loss, but Carroll, Humboldt and Webster each had low losses.

During the second five-year period, 1954-59, the area as a whole lost 12 percent of its remaining 1954

FIG. 4. FARM OPERATOR LEVEL OF LIVING INDEX*, IOWA COUNTIES
U.S. county average in 1959 = 100



Source: Agriculture census.

* Index based on average value of land and buildings per farm; average value of sales per farm; percent of farms with tele-phones; percent of farms with home freezers; percent of farms with automobiles.

Table 7. Commercial Farms.

| County | Farms | | Change 1949-64 | Percent change | | |
|------------|--------|--------|-------------------|----------------|---------|---------|
| | 1949 | 1964 | | 1949-54 | 1954-59 | 1959-64 |
| Boone | 2,184 | 1,467 | -717 | -9 | -16 | -12 |
| Calhoun | 1,947 | 1,453 | -494 | -6 | -12 | -10 |
| Carroll | 2,011 | 1,683 | -328 | -1 | -8 | -8 |
| Greene | 1,938 | 1,328 | -610 | -9 | -15 | -12 |
| Hamilton | 2,043 | 1,550 | -493 | -10 | -6 | -10 |
| Humboldt | 1,401 | 1,065 | -336 | -2 | -11 | -13 |
| Pocahontas | 1,980 | 1,462 | -518 | -5 | -10 | -14 |
| Webster | 2,368 | 1,650 | -718 | 0 | -16 | -17 |
| Wright | 1,880 | 1,427 | -453 | -4 | -14 | -9 |
| Area | 17,752 | 13,085 | -4,667 | -5 | -12 | -12 |

Source: Agriculture census.

commercial farms. Highest losses in counties were in Boone, Greene, Webster and Wright, with 14 to 16 percent losses. Carroll and Hamilton had 6 to 8 percent losses in this period.

During the most recent five-year period, 1959-64, the area as a whole again declined by 12 percent of its remaining 1959 commercial farms. Webster, with a 17 percent loss, and Pocahontas County, with a 14 percent loss, showed the heaviest recent declines. Only Carroll and Wright counties had less than 10 percent declines during this period.

The decline of farm numbers in this area of Iowa started at a somewhat later date and has proceeded at a slightly lower rate than for the state as a whole. On the other hand, Fort Dodge area farms tended to be larger in size at the beginning of the decline and still compare favorably with the range of farm sizes found in the highly productive areas of Iowa.

The projected decrease of farm employment shown for 1980 in table 1 is based on a somewhat faster rate of farm number decline than has occurred to date. If the table 1 projection is to be realized, the decline in farm numbers will be at the rate of about 15 percent in each of the three remaining five-year periods before 1980.

Family Farms Thriving

The decrease of farm numbers is often assumed to be general over all types of farms and is associated with comments such as, "What is happening to the family farm?" Table 8 and fig. 5 show that, as a percentage of the total, very small farms are decreasing rapidly. The upper end of the small farm range, farms with sales of \$5,000 to \$10,000 per year, is also declining, but at a slower rate. The medium and large size farms, those with sales of \$10,000 or more per year, are increasing rapidly in all counties of the area.

These farms of adequate or greater size have almost doubled in total numbers between 1949 and 1964. The 1949 total for the area was slightly over 5,000, and the 1964 total is just over 10,000.

The smallest size category of the commercial farms dropped from nearly 5,000 in 1949 to less than 1,000 in 1964. For the size bracket represented by sales of \$5,000 to \$10,000, the change was from over 7,000 to slightly over 2,000 farms during the 15-year period.

It is evident that farms which are large enough in total sales to be adequate family farms have doubled in actual numbers in this area between 1949 and 1964. Table 8 and fig. 5 show the even more striking fact that, by 1964, over 75 percent of the farms of the area were in the medium- to large-size category and that all counties of the area were close to this figure, with Boone being the lowest at 70 percent and Wright the highest at 82 percent.

For the area as a whole, 17 percent of the farms were in the \$5,000-\$10,000 sales category in 1964 while only 6 percent were in the under \$5,000 sales category.

Many of the remaining farms of the smallest size category and some of those in the \$5,000-\$10,000 size group may be operated by persons who have other sources of income through work off the farm. To the extent that this is true, it is difficult to measure how much underemployment and low income actually exists on these remaining small farms.

However, there is an indication that the area is

Table 8. Commercial Farms by Value of Products Sold and Numbers of Non-Commercial Farms.

| County | Percent of commercial farms | | | | | | | | | Non-commercial farms | |
|------------|-----------------------------|------|------|-----------------------------|------|------|-----------------------|------|------|----------------------|------|
| | Selling \$10,000 or more | | | Selling \$5,000 to \$10,000 | | | Selling under \$5,000 | | | | |
| | 1949 | 1959 | 1964 | 1949 | 1959 | 1964 | 1949 | 1959 | 1964 | 1959 | 1964 |
| Boone | 22 | 60 | 70 | 38 | 25 | 19 | 40 | 15 | 11 | 276 | 180 |
| Calhoun | 30 | 57 | 78 | 43 | 31 | 17 | 27 | 12 | 5 | 160 | 65 |
| Carroll | 30 | 57 | 75 | 43 | 26 | 19 | 27 | 17 | 6 | 75 | 84 |
| Greene | 26 | 57 | 80 | 44 | 33 | 14 | 30 | 10 | 6 | 150 | 73 |
| Hamilton | 36 | 65 | 77 | 38 | 27 | 17 | 26 | 8 | 6 | 140 | 110 |
| Humboldt | 37 | 65 | 81 | 41 | 26 | 14 | 22 | 9 | 5 | 65 | 44 |
| Pocahontas | 32 | 58 | 78 | 44 | 30 | 17 | 24 | 12 | 5 | 80 | 49 |
| Webster | 27 | 59 | 74 | 41 | 28 | 18 | 32 | 13 | 8 | 205 | 137 |
| Wright | 38 | 64 | 82 | 42 | 224 | 13 | 20 | 12 | 5 | 90 | 62 |
| Area | 30 | 60 | 77 | 42 | 28 | 17 | 28 | 12 | 6 | 1,241 | 804 |

Source: Agriculture census.

not progressing toward a sideline farming economy in which many workers would hold industrial or other city jobs and farm during evening and weekend hours. The last two columns of table 8 show the numbers of non-commercial farms for both 1959 and 1964. These are farms that produce sales of less than \$2,500 per year and also are operated either by a person who works more than 100 days per year off the farm or by a person 65 years of age or over.

If sideline, retirement and hobby farming were increasing along with industrial employment in the area, we would expect to see a gain in the number of these types of farms. The gain should be especially evident around Fort Dodge and in parts of Boone County. However, there are declines in non-commercial farms in both Webster and Boone counties and in all other counties of the area, except for a negligible increase in Carroll County. For the area as a whole, the non-commercial farms in both years were about equally divided between retirement and sideline categories. It appears that neither type of operation is gaining in popularity.

On the other hand, commercial farmers who work 100 days or more off the farm are increasing gradually as a percentage of all commercial farmers. By 1964, 14 percent of Webster County commercial farmers and 12 percent of Boone County commercial farmers had 100 or more days of off-the-farm work

per year. Carroll County was at the low extreme, with only 6 percent of its commercial farmers in this category, while the remaining counties of the area were all in the 8 to 10 percent range.

POPULATION CHANGES

The Fort Dodge area population has been essentially stationary since 1930 (see table 9). While United States population was increasing 18.5 percent between 1950 and 1960, Iowa population increased 5.2 percent; and Fort Dodge area population increased less than 1 percent. In 1960, the area contained 7.1 percent of Iowa's 2,757,000 people.

Among the counties of the area there is a contrasting picture. Webster County has had continuous moderate growth since 1900. Carroll County has shown continuous, though slow, growth during that time. Calhoun and Greene Counties have had almost continuous declines since 1900. The other counties have varied somewhere between these extremes. All counties have had declines in rural farm population.

The picture for the towns is again variable, as shown by table 10. All towns or cities which were over 2,500 in population in 1960 gained in population during the 1950-60 decade. The towns of the 1,000-2,500 size as of 1960 were about evenly divided between those that gained and those that lost population in the previous decade. Of the towns of less

Fig. 5. Commercial Farms by Value of Products Sold.

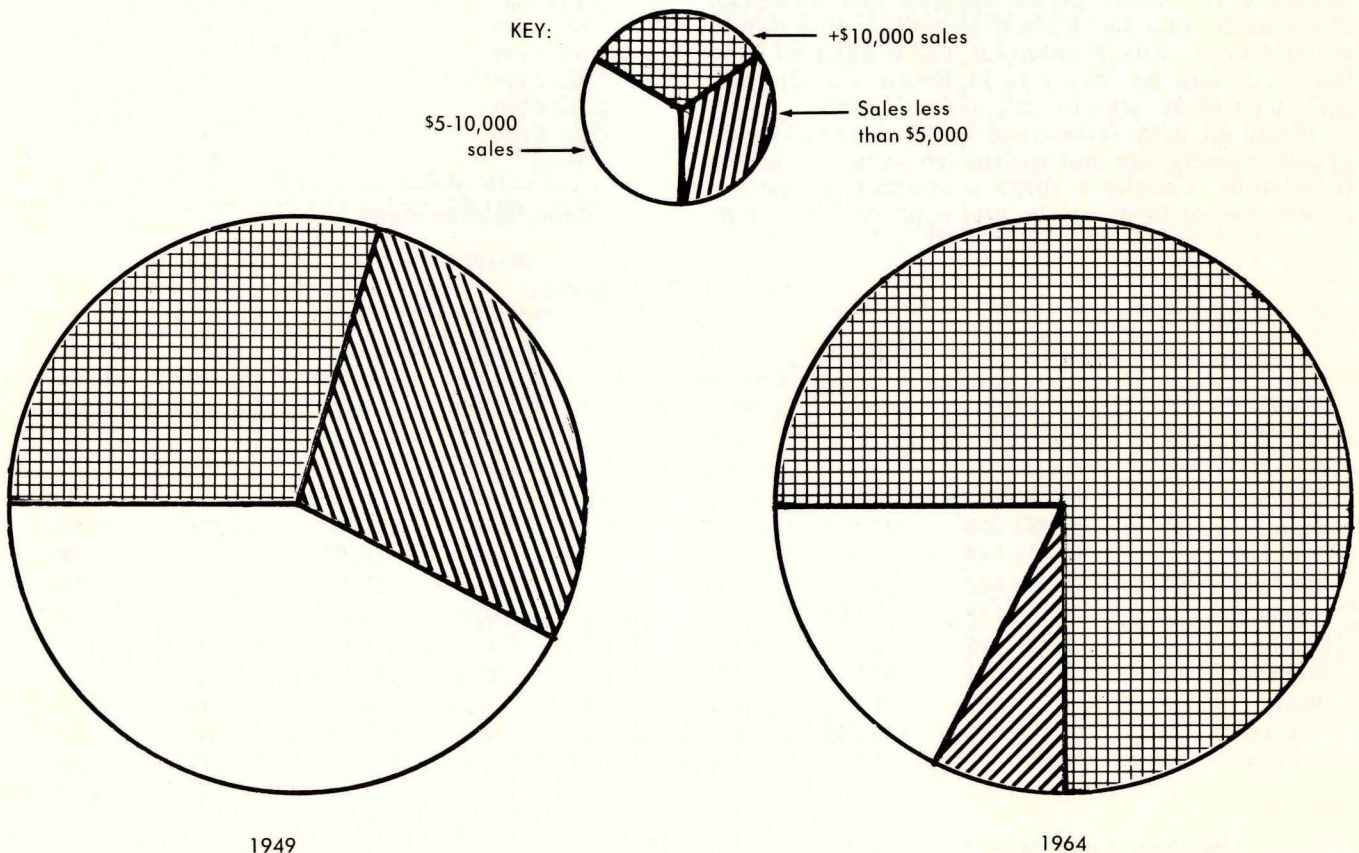


Table 9. Population Change.

| County | 1880 | 1900 | 1920 | 1930 | 1940 | 1950 | 1960 |
|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Boone | 20,838 | 28,200 | 29,892 | 29,271 | 29,782 | 28,139 | 28,037 |
| Calhoun | 5,595 | 18,569 | 17,783 | 17,605 | 17,584 | 16,925 | 15,923 |
| Carroll | 12,351 | 20,319 | 21,549 | 22,326 | 22,770 | 23,065 | 23,431 |
| Greene | 12,727 | 17,820 | 16,467 | 16,528 | 16,599 | 15,544 | 14,379 |
| Hamilton | 11,252 | 19,514 | 19,531 | 20,978 | 19,922 | 19,660 | 20,032 |
| Humboldt | 5,341 | 12,667 | 12,951 | 13,202 | 13,459 | 13,117 | 13,156 |
| Pocahontas | 3,713 | 15,339 | 15,602 | 15,687 | 16,266 | 15,496 | 14,234 |
| Webster | 15,951 | 31,757 | 37,611 | 40,425 | 41,521 | 44,241 | 47,810 |
| Wright | 5,062 | 18,227 | 20,348 | 20,216 | 20,038 | 19,652 | 19,447 |
| Area | 92,830 | 182,412 | 191,734 | 196,238 | 197,941 | 195,839 | 196,449 |
| State total | 1,620,615 | 2,231,853 | 2,404,021 | 2,470,939 | 2,538,268 | 2,621,073 | 2,757,537 |
| Percent state total | 5.7 | 8.2 | 8.0 | 7.9 | 7.8 | 7.5 | 7.1 |

Source: Population census.

than 1,000 population in 1960, the majority decreased in size between 1950 and 1960.

Migration helps determine the population of an area. Migration for the Fort Dodge area for the 1950-60 period can be determined by taking the 1950 population, adding the births, subtracting the deaths, and comparing the resulting figure with the actual population in 1960. This process tells us the amount of net out-migration or in-migration for the area during the 10-year period.

All of the counties of the area experienced out-migration during the period 1950-60 (see table 11). The county with the highest percentage loss due to out-migration was Pocahontas (22.6 percent). The lowest percentage loss was in Boone County (8.5 percent), with Webster County slightly higher.

When an area experiences out-migration, the migrants usually are not distributed evenly over the population. Usually a large proportion of the migrants are of farm origin and a particularly large

number of them are between the ages of 20 and 40. A total of 26,072 people left the area between 1950 and 1960, a 13.3 percent loss. This compared with an 8.7 percent loss for the state of Iowa during the same period.

Table 10. Area Population Change by Size of Town.

| Size of town 1960 | Increased 1950-60 | Decreased 1950-60 |
|----------------------|----------------------|----------------------|
| Under 500 | 17 | 37 |
| 500- 999 | 6 | 10 |
| 1,000-1,499 | 2 | 1 |
| 1,500-2,499 | 5 | 4 |
| 2,500-4,999 | 5 | 0 |
| Over 5,000 | 4 | 0 |
| Area | 39 | 52 |

Source: Population census.

Table 11. Out-Migration.

| County | Population | | Change 1950-60 | Percent change 1950-60 | Natural increase 1950-60 | Potential population 1960 | Net change migration | Percent net migration 1950-60 |
|------------|------------|-----------|-------------------|------------------------------|--------------------------------|---------------------------------|----------------------------|-------------------------------------|
| | 1950 | 1960 | | | | | | |
| Boone | 28,139 | 28,037 | -102 | -0.4 | 2,284 | 30,423 | -2,386 | -8.5 |
| Calhoun | 16,925 | 15,923 | -1,002 | -5.9 | 1,874 | 18,799 | -2,876 | -17.0 |
| Carroll | 23,065 | 23,431 | 366 | -1.6 | 4,356 | 27,421 | -3,990 | -17.3 |
| Greene | 15,544 | 14,379 | -1,165 | -7.5 | 1,628 | 17,172 | -2,793 | -18.0 |
| Hamilton | 19,660 | 20,032 | 372 | 1.9 | 2,462 | 22,122 | -2,090 | -10.6 |
| Humboldt | 13,117 | 13,156 | 39 | 0.3 | 1,853 | 14,970 | -1,814 | -13.8 |
| Pocahontas | 15,496 | 14,234 | -1,262 | -8.1 | 2,243 | 17,739 | -3,505 | -22.6 |
| Webster | 44,241 | 47,810 | 3,569 | 8.1 | 7,394 | 51,635 | -3,825 | -8.6 |
| Wright | 19,652 | 19,447 | -205 | -1.0 | 2,588 | 22,240 | -2,793 | -14.2 |
| Area | 195,839 | 196,449 | 610 | +0.3 | 26,682 | 222,521 | -26,072 | -13.3 |
| State | 2,621,073 | 2,757,537 | 136,464 | +5.2 | 365,071 | 2,986,144 | -228,607 | -8.7 |

Source: Migration and Changes of Population in Iowa 1960, Agr. and Home Ec. Expr. Sta. Project Number 1497.

GROSS AREA PRODUCT

Gross national product is the dollar value of all goods and services produced in the nation during a year. A comparable "gross area product" for the nine-county area was computed and is shown in table 12.

The gross area product is further divided to show the relative importance of the various producing sectors. The data indicate that the service industries are the largest contributors to the gross area product. This may at first seem surprising in an area that is often thought of as largely agricultural and manufacturing in its basic employment. What is often forgotten is that as an area improves its technology, it is usually able to carry on its primary producing activities with a constantly smaller share of its total labor and other resources. The area then has a constantly growing share of its labor available for service and other activities that contribute to a higher level of living for the area as a whole.

Table 12. Estimation of Gross Area Product, 1960

| Production sectors | Employees | Product per employee | Gross product (Millions of dollars) |
|--|-----------|----------------------|-------------------------------------|
| Livestock | 9,523 | \$ 5,205 | 50 |
| Crops and other agriculture | 9,523 | 8,535 | 81 |
| Manufacturing | 9,557 | 6,770 | 65 |
| Transportation, communication, and other utilities | 4,443 | 10,250 | 46 |
| Other services | 35,921 | 5,590 | 201 |
| Area | 68,967 | ----- | 443 |

WEALTH

The Fort Dodge area is particularly noted for its agricultural wealth, especially when national comparisons are made. The area also compares well on a national basis in "wealth per capita." Webster County, because of its greater wealth in urban property, has the largest grand total wealth (see table 13).

Table 13. Agricultural and Urban Wealth.

| County | Agriculture ¹ | Urban ² | Miscellaneous ³ | Total |
|------------|--------------------------|--------------------|----------------------------|---------|
| | (Million dollars) | | | |
| Boone | 128.8 | 69.4 | 57.3 | 255.5 |
| Calhoun | 145.0 | 43.9 | 44.6 | 233.5 |
| Carroll | 130.8 | 68.7 | 64.5 | 264.0 |
| Greene | 134.4 | 35.9 | 45.0 | 215.3 |
| Hamilton | 140.3 | 64.6 | 50.8 | 255.7 |
| Humboldt | 112.5 | 35.5 | 34.0 | 182.0 |
| Pocahontas | 135.5 | 33.4 | 35.9 | 204.8 |
| Webster | 166.5 | 171.4 | 106.9 | 444.8 |
| Wright | 140.8 | 58.5 | 52.6 | 251.9 |
| Area | 1,234.6 | 581.3 | 491.6 | 2,307.5 |

Source: "Private Wealth of Iowans by Counties," William G. Murray, *Iowa Farm Science*, March 1964.

¹Real estate, livestock, grain and machinery less real and non-real estate debt.

²Real estate and personal property.

³Bank deposits, bonds, monies and credits and life insurance cash values.

RETAIL SALES

Retail sales for the area have been compared for the years 1954 and 1963. Table 14 shows a comparison of estimates of retail "consumption" sales. The intention is to analyze consumer goods sales separately from production inputs sales and construction materials sales.

Table 14 data, corrected for inflation, show an increase of 10 percent in retail consumption sales for the area. This is slightly higher than the increase for Iowa. Webster County had the highest percentage increase; but there is no indication that much, if any, of this growth was at the expense of nearby counties. Calhoun and Humboldt counties both had sales growth rates above the average for the outside counties, while Hamilton County's growth rate was just below this level.

Pocahontas and Greene counties, both highly rural and some distance from Webster, had the lowest sales growth rates. Pocahontas gained only 1 percent and Greene declined by 5 percent.

Carroll County, which is largely outside the Fort Dodge orbit, had an 11 percent gain in retail consumption sales. The relative independence of Carroll County from other big city influence is indicated by the high level of retail consumption sales per capita (\$1,397) shown in the last column of table 14. 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. Webster County also has a high per capita sales level due to Fort Dodge retailing activities.

Comparing the total income increases of table 2 with the retail consumption sales increases of table 14, we see that the area had a 1950-60 income increase of 25 percent and a 1954-63 retail consumption sales increase of 10 percent. This might permit the crude approximation that about one-third to one-

Table 14. Retail Consumption Sales Estimates.

| County | 1954 ¹ | | | | Per capita 1963 |
|----------------------|-------------------|-----------|----------|----------------|-----------------|
| | 1954 ¹ | 1963 | Change | Percent change | |
| Thousands of dollars | | | | | |
| Boone | 26,431 | 28,845 | +2,414 | +9 | \$1,029 |
| Calhoun | 13,363 | 15,662 | +2,299 | +17 | 984 |
| Carroll | 29,586 | 32,726 | +3,140 | +11 | 1,397 |
| Greene | 15,676 | 14,955 | -721 | -5 | 1,040 |
| Hamilton | 23,785 | 25,187 | +1,402 | +6 | 1,257 |
| Humboldt | 13,758 | 15,205 | +1,447 | +11 | 1,156 |
| Pocahontas | 13,575 | 13,738 | +163 | +1 | 965 |
| Webster | 58,412 | 68,867 | +10,455 | +18 | 1,440 |
| Wright | 19,684 | 20,805 | +1,121 | +6 | 1,070 |
| Area | 214,270 | 235,990 | +21,720 | +10 | 1,201 |
| Area, less | | | | | |
| Webster | 155,855 | 167,123 | +11,268 | +7 | |
| Iowa | 2,964,168 | 3,245,793 | +281,625 | +9.5 | 1,177 |

Source: Census of business.

¹1954 sales adjusted to 1963 prices; inflator = 1.14.

half of an income increase for an area of this type is translated into a retail consumption sales increase. The approximation is crude because the time periods are not exactly the same, and because similar comparisons for individual counties show wide variation.

There has been a sharp decline in the number of family- and partnership-operated retail establishments, but only a 5 percent decline in the number of outlets which were large enough to employ other workers. Most of the counties lost about 50 firms of the small type and 10 to 20 of the larger type. Humboldt and Wright counties each gained 10 firms of the large type during the 1954-63 period.

INSTITUTIONAL CHANGES

The changing economic base in the Fort Dodge area is resulting in population shifts from rural areas to larger towns and cities. These shifts produce pressures for adjustments of both public and private institutions, including schools, churches, governments, social and service organizations and main street businesses.

Some school statistics are presented in tables 15 and 16 as an example of rapidly moving adjustments. In the school year 1959-60, there were 55 high school districts in the area. By 1963-64, the number had been reduced to 44 as a result of a continuing sequence of consolidations. During this period, total enrollment had increased by more than 2,000 pupils, but most of this increase was in the larger schools. Fourteen schools, all in declining communities, had less enrollment in 1963-64 than four years earlier.

On a cost per student basis, there is a tendency for schools with larger enrollments (lower size rank numbers in table 16) to have lower average costs. This tendency produces a pressure toward consolidation. However, on a valuation per child basis, the rural districts generally have a distinct advantage, so that the average cost per local taxpayer may be lower than in the cities. This produces a resistance to consolidation and is an illustration of the often-encountered condition that costs and benefits differ according to the viewpoint of the person making the judgment.

Table 15. High School District Enrollment Trends.

| County District | 1959-60 | | | 1963-64 | | |
|----------------------------------|------------|-------------|-------|------------|-------------|-------|
| | Elementary | High school | Total | Elementary | High school | Total |
| Boone | | | | | | |
| Boone Community | 2,031 | 718 | 2,749 | 2,032 | 915 | 2,947 |
| Madrid Independent | 501 | 130 | 631 | 536 | 212 | 748 |
| Ogden Community | 507 | 213 | 720 | 495 | 234 | 729 |
| United Community | 475 | 146 | 621 | 415 | 185 | 600 |
| Grand Community | 239 | 92 | 331 | 232 | 106 | 338 |
| Calhoun | | | | | | |
| Lake City Community | 742 | 272 | 1,014 | 669 | 277 | 946 |
| Lohrville Community | 327 | 106 | 433 | 316 | 129 | 445 |
| Lytton Community | 265 | 99 | 364 | 244 | 105 | 349 |
| Manson Community | 656 | 238 | 894 | 726 | 252 | 978 |
| Pomeroy Community | 245 | 118 | 363 | 240 | 125 | 365 |
| Rockwell City Community | 520 | 227 | 747 | 526 | 291 | 817 |
| Cedar Valley Community | 379 | 129 | 508 | 327 | 143 | 470 |
| Carroll | | | | | | |
| Carroll Independent | 450 | 201 | 651 | 567 | 256 | 823 |
| Coon Rapids Community | 448 | 176 | 624 | 417 | 197 | 614 |
| Glidden-Ralston Community | 469 | 196 | 665 | 398 | 190 | 588 |
| Manning Community | 581 | 214 | 795 | 568 | 209 | 777 |
| Greene | | | | | | |
| Churdan Consolidated | 268 | 87 | 355 | 255 | 162 | 417 |
| Jefferson Community | 1,225 | 345 | 1,570 | 1,143 | 497 | 1,640 |
| Paton Consolidated | 184 | 77 | 261 | | | |
| Scranton Consolidated | 372 | 134 | 506 | 319 | 113 | 432 |
| Washington Township Consolidated | 187 | 53 | 240 | | | |
| East Greene County Community | 340 | 129 | 469 | 501 | 213 | 714 |

(continued)

Table 15. (continued)

| County District | 1959-60 | | | 1963-64 | | |
|---------------------------------|------------|-------------|--------|------------|-------------|--------|
| | Elementary | High school | Total | Elementary | High School | Total |
| Hamilton | | | | | | |
| Blairsburg Consolidated | 206 | 66 | 272 | | | |
| Kamrar Independent | 132 | 30 | 162 | | | |
| Stratford Community | 287 | 103 | 390 | 294 | 107 | 401 |
| Webster City Community | 1,917 | 681 | 2,598 | 1,874 | 875 | 2,749 |
| Williams Independent | 179 | 60 | 239 | | | |
| South Hamilton Community | 897 | 334 | 1,231 | 879 | 360 | 1,239 |
| Northeast Hamilton Community | | | | 528 | 192 | 720 |
| Humboldt | | | | | | |
| Humboldt Community | 1,266 | 418 | 1,684 | 1,285 | 509 | 1,794 |
| Twin Rivers Community | 433 | 154 | 587 | 389 | 161 | 550 |
| Boone Valley Community | 303 | 118 | 421 | 306 | 111 | 417 |
| Gilmore City-Bradgate Community | 323 | 149 | 472 | 335 | 144 | 479 |
| Pocahontas | | | | | | |
| Fonda Community | 223 | 59 | 282 | 189 | 78 | 267 |
| Laurens Community | 520 | 227 | 747 | 558 | 241 | 799 |
| Palmer Consolidated | 168 | 74 | 242 | 151 | 67 | 218 |
| Pocahontas Community | 427 | 127 | 554 | 430 | 198 | 628 |
| Rolfe Community | 293 | 143 | 436 | 326 | 133 | 459 |
| Havelock-Plover Community | 243 | 89 | 332 | 238 | 106 | 344 |
| Webster | | | | | | |
| Callender Community | 220 | 107 | 327 | | | |
| Dayton Community | 283 | 97 | 380 | 275 | 102 | 377 |
| Fort Dodge Community | 4,303 | 1,521 | 5,824 | 5,053 | 1,961 | 7,014 |
| Harcourt Consolidated | 95 | 40 | 135 | | | |
| Johnston Township Consolidated | 131 | 80 | 211 | | | |
| Otho Township | 208 | 64 | 272 | | | |
| Prairie View Community | 352 | 136 | 488 | 829 | 248 | 1,077 |
| East Central Webster | 344 | 109 | 453 | | | |
| Central Webster Community | | | | 445 | 184 | 629 |
| Northwest Webster | | | | 256 | 99 | 355 |
| Wright | | | | | | |
| Belmond Community | 815 | 286 | 1,101 | 927 | 392 | 1,319 |
| Clarion Independent | 761 | 319 | 1,080 | 861 | 406 | 1,267 |
| Dows Community | 408 | 152 | 560 | 360 | 155 | 515 |
| Eagle Grove Community | 1,319 | 411 | 1,730 | 1,287 | 583 | 1,870 |
| Goldfield Community | 244 | 110 | 354 | 223 | 97 | 320 |
| Rowan Consolidated | 102 | 43 | 145 | | | |
| Area total | 28,813 | 10,407 | 39,220 | 29,224 | 12,320 | 41,544 |

Source: State Department of Public Instruction.

Table 16. Selected High School Data, 1962.

| County District | Valuation per child | Size rank ¹ | Teaching positions | Cost per student |
|-----------------------|---------------------|------------------------|--------------------|------------------|
| Boone | | | | |
| Boone | \$ 5,901 | 25 | 44 | \$401 |
| Madrid | 3,844 | 206 | 13 | 330 |
| Ogden | 16,302 | 199 | 13 | 425 |
| United | 14,081 | 263 | 14 | 488 |
| Grand | 14,900 | 405 | 8 | 456 |
| Calhoun | | | | |
| Lake City | \$ 9,923 | 137 | 20 | \$385 |
| Lohrville | 14,386 | 365 | 11 | 448 |
| Lytton | 15,655 | 411 | 10 | 513 |
| Manson | 9,937 | 148 | 19 | 373 |
| Pomeroy | 15,941 | 408 | 10 | 463 |
| Rockwell City | 13,127 | 179 | 18 | 430 |
| Cedar Valley | 12,866 | 343 | 12 | 482 |
| Carroll | | | | |
| Carroll | \$18,162 | 175 | 18 | \$483 |
| Coon Rapids | 10,606 | 235 | 17 | 497 |
| Glidden-Ralston | 13,970 | 269 | 17 | 458 |
| Manning | 10,206 | 181 | 15 | 394 |
| Greene | | | | |
| Churdan | \$14,107 | 370 | 10 | \$481 |
| Jefferson | 9,408 | 83 | 23 | 364 |
| Paton | 14,681 | ---- | 10 | 544 |
| Scranton | 12,456 | 356 | 13 | 433 |
| Washington Township | 16,799 | ---- | 7 | 604 |
| East Greene County | 12,917 | 210 | 13 | 507 |
| Hamilton | | | | |
| Blairsburg | \$13,900 | ---- | 8 | \$456 |
| Stratford | 12,464 | 381 | 10 | 409 |
| Webster City | 9,171 | 27 | 44 | 350 |
| Williams | 9,518 | ---- | 8 | 474 |
| South Hamilton | 13,354 | 98 | 37 | 459 |
| Humboldt | | | | |
| Humboldt | \$12,104 | 58 | 26 | \$404 |
| Twin Rivers | 13,021 | 294 | 15 | 470 |
| Boone Valley | 15,669 | 372 | 13 | 455 |
| Gilmore City-Bradgate | 13,571 | 317 | 12 | 445 |
| Pocahontas | | | | |
| Fonda | \$20,513 | 450 | 8 | \$538 |
| Laurens | 9,437 | 188 | 14 | 325 |
| Palmer | 20,424 | 467 | 8 | 608 |
| Pocahontas | 15,354 | 267 | 12 | 350 |
| Rolfe | 13,127 | 341 | 12 | 466 |
| Havelock-Plover | 13,272 | 423 | 10 | 533 |
| Webster | | | | |
| Callender | \$15,016 | ---- | 9 | \$469 |
| Dayton | 11,655 | 400 | 8 | 371 |
| Fort Dodge | 7,541 | 10 | 84 | 385 |
| Prairie View | 13,052 | 119 | 13 | 463 |
| Central Webster | 9,818 | 262 | 12 | 441 |
| Northwest Webster | 21,029 | 404 | 10 | 416 |

| County District | Valuation per child | Size rank | Teaching positions | Cost per student |
|-----------------|---------------------|-----------|--------------------|------------------|
| Wright | | | | |
| Belmond | \$10,225 | 95 | 17 | \$359 |
| Clarion | 7,935 | 101 | 28 | 366 |
| Dows | 13,229 | 287 | 11 | 454 |
| Eagle Grove | 10,150 | 55 | 28 | 416 |
| Goldfield | 12,268 | 430 | 9 | 418 |

Source: State Department of Public Instruction

¹ State rank, by total enrollment. There were 469 districts.

FUTURE PROSPECTS

People in the area who are in positions permitting them to influence future events may not all have the same area goals in mind. In some cases, individuals may be undecided within themselves concerning the choice between conflicting community goals. Much study of the situation by individuals and groups, followed by interaction within and among communities is often needed if people are ever to approach a common set of goals.

This report is not intended to state what aspirations Fort Dodge area people *should* have for their area. Neither are the employment projections of table 1 intended to indicate what the area *will* be like in 1980. To some extent, people's desires of what *should* be can influence what *will* be. The employment projections for 1980 are probably about half-way between the lower level that will exist if many people resist change and the higher level that can be attained if most people support progressive changes.

It is probably true that employment and population declines can be slowed temporarily by resisting technological and community changes. However, backward-looking communities have few chances to bring in new industries or to attract many commuting residents. The postponed declines of local employment and population eventually occur anyway, sometimes in a sudden, painfully short time. The long-run results then are usually lower levels of employment, population and per family income than would have been the case with an original acceptance of change.

Even if change is accepted as inevitable, though perhaps not always pleasant, there is still a problem of estimating what the nature of this change will be. No short summary can adequately describe the vast number of technological and human inter-relationships that must be balanced as the people of an area move through a changing pattern of producing and living. The following discussion is, in a sense, a frame of reference for thinking about the problem rather than a set of solutions. In the early pages of this report, the export base theory was presented as an over-all explanation for the existence of a populated area and for the size of its employment and population. When facing the problem of internal organization of an area, the concept of import dependence may be the key element.

Depend on Imports?

The dependence on imports concept may be stated as follows: The production of almost every good and service used by a modern society requires one or more previously manufactured inputs. For any individual area, almost all these inputs are imported from outside the area. The producers of an area are limited in their selection to the range of inputs being produced elsewhere. They, therefore, have limited freedom in choosing the design of the plant, the technical methods to be used, the level of production, and the mix of inputs needed to produce at or near lowest average cost per unit of output. If the available inputs and technology are such as to give a high output operation a substantial cost advantage over a low output operation, the result will tend toward fewer plants or outlets producing for or serving the area. We will see a consolidation of services and activities into the larger towns or entirely into one location. Electric power generation is an example of the relative economy of high output per plant.

In some cases, a part of an operation will become more costly as plant size increases, and there is then a tendency to spin off this part into a separate operation.

A possible example of this is the long-term recuperative or convalescent care part of a hospital unit where only simple treatment is needed. At the present time, it appears that a 5,000 population town and its trade territory can support a unit of this type at a per patient cost as low or lower than if it were part of a general hospital. However, the cost of the expensive equipment associated with up-to-date general hospital operation must be averaged out over a much larger population base before these parts of the operation can reach lowest average per patient cost.

Technology is constantly changing. Much of the change leads to indivisible inputs of higher cost and much higher capacity and, therefore, encourages consolidation of plants and outlets. However, the spin-off effect and technology changes which reduce the size and cost of needed inputs produce the opposite effect.

Smaller cities and towns need to be alert to the possibilities of growth with the types of plants and outlets that reach top efficiency at relatively low levels of output. In many cases, the small town may help its future by eliminating its investment in the types of services that can be provided at much lower average cost by the nearby city or larger town.

The Future for the Small Town

There is a growing concern in rural areas of the United States for the future of the small town. It is true that most small towns of 1,500 population and below lost population between 1950 and 1960. Many of these small towns will also lose people between 1960 and 1980.

This trend, however, does not mean that small towns are disappearing. What is happening is that the small town's function is changing. Many of the services—drugstores, hardware stores, clothing stores—which have been located in small towns in the past, are tending to move to county seats or larger towns.

On the other hand, retail sales of lumber, feeds, fertilizer, seed, gasoline, and some other agricultural production inputs have increased more rapidly in small towns than in larger towns.

It is expected that small towns will continue to serve as vital "convenience centers" for the important agricultural industry, even though there may be a population decrease in some of the smaller towns. Some small towns will grow by attracting big city workers who prefer to live in small towns and commute to the city.

Institutional Changes

Some of the schools and churches in the larger communities will experience the pressures of increasing population. In specific localities, residential developments, mergers and consolidations will cause population pressures on the institutions. However, in many of the predominantly rural areas, schools and churches will be faced with the alternatives of (1) living with rising costs and declining clientele or (2) considering possibilities of merging activities and facilities with neighboring communities. Between 1960 and 1980, institutional mergers will be a growing concern and should be the subject of careful planning throughout the area.

Local government will receive increasing attention in predominantly rural counties. The future of county government will be discussed more frequently in the 20-year period between 1960 and 1980. The basic question emerging will be: "Can a small county which is likely to lose population in the future afford to provide all of the county government services that can be provided in a larger county without experiencing unreasonable per capita government costs?" No satisfactory answer to this question is apparent at present.

Problems or Progress?

Out-migration will continue in the Fort Dodge area. Many of the out-migrants will be young people between the ages of 20 and 40.

There will be many good farming opportunities in the Fort Dodge area in this period, but not enough to supply jobs for all farm youth. There will also be many good nonfarm jobs, but not enough to supply the demands of all the farm and nonfarm youth. Adequate training and education for the young people in the nine-county area will provide them with a solid foundation for competing successfully and making a maximum contribution to society, regardless of where they may locate. It has often been said that it is better to pay for training and education than to pay for unemployment.

The attitude of the people in the area will be one of the crucial problems in the Fort Dodge area in the next few years. Perhaps the area will be able to provide enough "good" jobs to enjoy a population increase. However, it should be recognized that an area can still be an excellent place to live—with high incomes, excellent main streets, good schools, good churches, good roads, good recreational and cultural facilities, and good education—even without an increasing population.

Income will stay high if the workers of the area continue to improve their productivity and remain competitive with workers in other areas in the production of goods and services.

It will be necessary to make some adjustments in school, church, retail and other services if high-quality services are to be offered to Fort Dodge area residents at the lowest possible cost. In order to do this, the fullest cooperation throughout the area, without regard to county lines or location of services in particular towns, will be essential. An attitude of success and progress can be achieved if citizens face the problems squarely and deal with them cooperatively.

Finally, it should be recognized that the problems in the Fort Dodge area are not unique to the area. Other areas of the United States have faced the prob-

lems of economic change and adjustment in even greater degree. This area is experiencing great change now, primarily because of the advances that have taken place in farming.

Changes and adjustments are part of economic progress. The progressive area is one that recognizes changes, faces up to them, and makes the necessary adjustments. The more effectively this is done, the more successful the community. Private enterprise has proved to be very effective in a democracy. Private enterprise, however, can work only when good information is available to the decision-makers. Fort Dodge area residents can build successful communities, enjoy greater satisfaction, and contribute to national growth by becoming fully informed and making the best decisions available to them.

APPENDIX

Area Interrelationships

Cooperative Extension Service field staff personnel stationed in the nine counties of the Fort Dodge area conducted surveys of economic activity to aid in the preparation of this report. The object of the surveys was the measurement of interrelationships among sectors of the area.

Look at the first column of table A. This column says that for every 1,000 farmers in this area, the production of eight farmers will be sold back into agriculture, and these 1,000 farmers will also buy the output of:

- 51 construction and mining workers,
- 11 manufacturing workers,
- 32 transportation, communication, and utilities workers,
- 201 wholesale and retail workers,
- 23 finance, insurance, and real estate workers,
- 203 services workers,

and in total, 1,000 farmers will be buying the production of 538 workers of the area. Any additional

purchases they make will represent the production of workers outside the area.

Table A thus describes the demands that each sector makes upon each of the other sectors. The entire table shows the situation that exists when the area is in a moving adjustment equilibrium, with employment changes occurring at about the 1960-65 rate.

Table A can be used to describe the first round of employment effects that will occur if there is a sudden increase in total employment of one sector. Suppose a new plant increased manufacturing by 1,000 jobs. If we read down the column under manufacturing, we can determine the additional workers of other sectors that can now be supported in the area.

However, this first adjustment is not the end of the adjustment. Each of the other sectors is now larger and will increase its demands on all other sectors. Table A is not well suited to tracing the second, third and succeeding rounds of adjustment.

Table B gives the final increase in total employment that is associated with an increase of 1,000

Table A. Transactions From Selling Sector per 1,000 Units of Output of Purchasing Sector.

| Selling sectors | Agriculture | Construction and mining | Manu- facturing | Transpor- tation, com- munications, public utilities | Wholesale and retail | Finance, insurance, real estate | Services | Out- commuters |
|--|-------------|-------------------------|-----------------|--|----------------------|---------------------------------|----------|----------------|
| Agriculture | 8 | 8 | 8 | 8 | 76 | 7 | 8 | 8 |
| Construction and mining | 51 | 28 | 40 | 44 | 23 | 45 | 45 | 13 |
| Manufacturing | 11 | 7 | 14 | 9 | 52 | 8 | 8 | 2 |
| Transportation, communica- tions, public utilities | 32 | 35 | 109 | 21 | 65 | 22 | 22 | 12 |
| Wholesale and retail | 201 | 148 | 136 | 130 | 158 | 129 | 131 | 140 |
| Finance, insurance, real estate | 23 | 23 | 24 | 23 | 23 | 24 | 23 | 9 |
| Services | 203 | 203 | 203 | 203 | 203 | 202 | 203 | 179 |
| Net out-commuters | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 538 | 452 | 534 | 438 | 601 | 438 | 439 | 363 |

Table B. Total Employment per 1,000 Units of Export Employment by Sectors, 1960.

| Total employment of | Agriculture | Construction and mining | Manu- facturing | Export employment of Transpor- tation, com- munications, public utilities | Wholesale and retail | Finance, insurance, real estate | Services | Out- commuters |
|--|-------------|-------------------------|-----------------|---|----------------------|---------------------------------|----------|----------------|
| Agriculture | 1,040 | 33 | 34 | 31 | 106 | 31 | 31 | 29 |
| Construction and mining | 87 | 1,058 | 76 | 74 | 64 | 74 | 74 | 37 |
| Manufacturing | 23 | 16 | 1,034 | 18 | 64 | 16 | 17 | 10 |
| Transportation, communica- tions, public utilities | 72 | 66 | 144 | 1,051 | 106 | 51 | 51 | 38 |
| Wholesale and retail | 351 | 265 | 272 | 244 | 1,315 | 243 | 244 | 236 |
| Finance, insurance, real estate | 45 | 41 | 46 | 41 | 47 | 1,042 | 41 | 24 |
| Services | 402 | 369 | 397 | 363 | 418 | 363 | 1,364 | 314 |
| Net out-commuters | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 2,020 | 1,848 | 2,003 | 1,822 | 2,120 | 1,820 | 1,822 | 1,688 |

workers in the export part of a sector. Associated with a manufacturing export increase of 1,000 workers will be an eventual increase of:

- 34 agriculture workers,
- 76 construction and mining workers,
- 1,034 manufacturing workers, including the 1000 export worker increase,
- 144 transportation, communication, and utility workers,
- 272 wholesale and retail workers,
- 46 finance, insurance, and real estate workers,
- 397 services workers,

adding to a total employment increase of 2,003 workers as a result of the original increase of 1,000 manufacturing export jobs.

Definitions for Industrial Classifications Used in Table 1

Agriculture — Commercial and noncommercial farms, farm services dealing directly with farming, i.e., custom work, corn shelling, combining.

Construction and Mining — Building contractors, road and railroad construction, sewer and water main and reservoir work, plumbing and heating, electrical work, masonry, carpentering; mining for stone, sand and gravel, clay, gypsum, peat and coal.

Manufacturing — Foods and beverages for human consumption, textile mill products, apparel and other finished products made from fabrics, lumber and wood products, furniture, fixtures, paper and allied products, printing and publishing, chemicals, petroleum products, products made from metals.

Transportation, Communication and Public Utilities — Railroads, trucking service and warehousing, taxicabs and bus service, pipelines, telephone, telegraph, radio and television, electric, gas and water supply.

Wholesale and Retail — All wholesale and all retail activity, including eating and drinking places.

Finance, Insurance and Real Estate — Includes banks, credit agencies and investment companies, insurance agents, agencies and companies, real estate and related agencies.

Services — Hotels and other lodging places; establishments providing personal, business, repair and amusement services; medical, legal, engineering and other professional services; educational institutions; non-profit membership organizations. Most government workers are in this classification.

Net Out-Commuters — The difference between the number of out-commuters and in-commuters. Out-commuters live in the area and regularly travel to jobs outside the area. In-commuters live outside the area but travel inside to work.

FURTHER READING

A more detailed discussion of population changes in the nine-county area may be found in the following Iowa State University Cooperative Extension Service publication:

The Population Change of the Fort Dodge Area, Pamphlet 335, October 1966.

Other economic base studies for different multi-county areas in Iowa published by the Extension Service include:

The Economic Base of Tenco, RAD-31, April 1964. For 10 counties in Southeast Iowa: Marion, Mahaska, Keokuk, Lucas, Monroe, Wapello, Wayne, Appanoose, Davis, Van Buren.

The Economic Base of NIAD, RAD-37, May 1964. NIAD is short for North Iowa Area Development. Area: All of seven counties—Winnebago, Worth, Mitchell, Hancock, Cerro Gordo, Floyd and Franklin—parts of Wright and Butler counties.

The Economic Base of Seven Southern Iowa Counties, RAD-52, August 1965. Area covered: Adair, Adams, Union, Clarke, Taylor, Ringgold, and Decatur counties. Both RAD-37 and RAD-52 point out benefits of the base study, including its use in forecasting future employment changes.

Single copies of all these publications are free on request to Iowa residents.

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