

erally true throughout the district, most of this decrease occurred in the numbers of smaller farms. In 1949, farms of fewer than 220 acres in size accounted for 36 percent of all farms and in 1959, only 28 percent. Farms of 500 acres and more increased in relative importance from 18 percent in 1949 to 26 percent in 1959. While farms in the 220 to 500 acre class diminished in number, they remained about constant in terms of their relative importance.

The shift toward larger farms as farm numbers decline also can be seen in the composition of farms when they are arranged by sales volume classes. The proportion of commercial farms (farms with product sales of \$2,500 or more) increased from 72 percent of all farms in 1949 to 78 percent in 1959. Most significant is the increasing importance of Group I commercial farms (farms with product sales of \$10,000 or more), up from 17 percent in 1949 to 32 percent in 1959. While the Group II commercial (farms with sales of \$2,500 to \$10,000) and noncommercial (farms with sales of less than \$2,500) farms were disappearing, many of these units either were combined to form larger units or consolidated into larger units, thus increasing the number of Group I farms (table 1).

TABLE 1—NUMBER OF FARMS, AREA IV

	All farms	Group I	Group II	Non-commercial
1949	27,726	4,712	15,218	7,796
1954	26,970	5,358	14,449	7,163
1959	23,494	7,425	10,794	5,275

The relationship between acreage size and sales volume is also evident in this classification scheme. The average size of all Area IV farms was 355 acres in 1954; Group I farms averaged 667 acres at that time, Group II, 332 acres, and noncommercial, 167 acres.

#### Land use and farm production

Topographical conditions have given Area IV the highest proportion of tillable land among the

various Type-of-Farming Areas in the district. In 1959, this amounted to over 83 percent of all Area IV farm land. Woodland, found mainly in the eastern part of the area, accounted for 7 percent of all farm land. Very little land, about 3 percent, was in permanent pasture. While total farm land dropped from 9,574 thousand acres in 1954 to 9,119 thousand acres in 1959, most of the decrease occurred in land other than cropland.

More than one-half of the cropland is used in producing four crops: spring wheat, barley, oats and flaxseed. Corn is produced to a limited extent, primarily for silage, and some increase has been noted in soybean acreage, although soybeans averaged less than 3 percent of the total crop acreage between 1954 and 1958. Sugar beets and potatoes are highly important crops in certain sections of the area, but they represent a relatively small proportion of the total crop acreage.

No significant difference occurred in the yields of the various crops within the area, although differences were noted among the size groups of farms. For example, yields of durum wheat averaged 27.2 bushels per acre on Group I farms compared with 16.0 bushels on Group II farms. The corresponding yields for spring wheat other than durum were 26.1 bushels and 21.0 bushels, and for barley, 31.5 bushels and 26.8 bushels, respectively.

While crop farming is the prime enterprise in Area IV, a considerable amount of livestock also is produced. The number of cattle and calves, totaling 362 thousand head in 1959, has remained fairly constant over the years, with changes due more to the influence of cyclical fluctuations than to the existence of any trend. The trend in the number of milk cows, however, is definitely down. The drop was almost one-half from 185 thousand head in 1939 to 96 thousand head in 1959. The number of hogs on farms almost tripled during that period, and sheep production also showed some upward trend from 1949 to 1959. The number of livestock per farm, with the exception of dairy cows, has shown a decided increase over

the years, as farmers have attempted to diversify their operations and to reduce their dependence on cash crops.

**TABLE 2—NUMBER OF LIVESTOCK PER FARM, AREA IV**

	(number per farm reporting)			
	Cattle & calves	Milk cows	Hogs	Sheep and lambs
1939	16	7	4	42
1944	22	8	10	59
1949	18	7	10	45
1954	22	8	16	72
1959	26	9	25	84

### Capital investment

The total investment in land, buildings, livestock and machinery averaged \$962,813,000 during the 1954-58 period. The larger Group I farms accounted for about 43 percent of the total and Group II farms, about 47 percent. Thus, the non-commercial farms, about one-fourth of the total number of farms, accounted for only 10 percent of the total investment.

Land and buildings constituted about 75 percent of the total investment on commercial farms, livestock, 5 percent and machinery 20 percent. The livestock and machinery investment for the Group II farms was relatively more important than that for Group I farms. Cattle and calves made up more than 87 percent of the total livestock investment, while hogs accounted for 8 percent. All other livestock accounted for only 5 percent.

On a per farm basis, the total investment on the Group I farm amounted to \$76,910 while the Group II and the noncommercial farm investment amounted to \$31,056 and \$14,240, respectively. The average farm in North Dakota tended to have a much higher investment than it did in Minnesota. For example, the Group I farm in North Dakota represented an investment of \$82,430, while the comparable figure in Minnesota was \$71,336. Most of the difference could be accounted for by a greater land and building in-

vestment in North Dakota.

The machinery investment per crop acre averaged \$24.96 over the 1954-58 period. Noncommercial farms showed a much higher investment per acre, \$29.54, than did the commercial farms at \$24.48 per acre. The per acre machinery investment on the Group I farm was about \$1.00 less than that of the Group II farm.

### Labor utilization

In farming regions such as Area IV, where cash crop farming predominates, the available farm labor tends to appear underutilized relative to standard labor requirements for the various farm operations. This is due primarily to the seasonal nature of this type of operation. In making the estimates of labor utilization, farm labor data were adjusted for off-farm work by the operator and the seasonal use of hired and family labor. It was not possible, however, to adjust the operator's time to allow for the fact that his labor is used intensively during short periods of the year. Thus, in determining labor utilization on an annual basis, it appears that much of the operator's time is underutilized, a condition that is unavoidable because of the nature of his work.

In the case of Area IV, it was found that only 55 percent of the available labor force was effectively utilized. The performance of the Group I farm was much better than the average, reaching 71 percent utilization. On the smaller Group II farms the utilization rate was 56 percent and on noncommercial farms, only 29 percent.

While the seasonality problem explains to some extent the reason for these rather low levels, Area IV compared unfavorably in labor utilization with other cash crop areas. In Type-of-Farming Areas VI and VIII, immediately to the west of Area IV, Group I farm rates were 77 and 75 percent respectively. Group II farm utilization rates in both areas were 70 percent, compared to 56 percent in Area IV. About the same differences existed between the noncommercial farms. Thus, it would seem that much of the labor resource of Area IV

is underemployed, especially on the smaller classes of farms. This would mean that if the underutilization problem were to be corrected, further reorganization is needed.

### Cash receipts and gross income

Cash receipts from the sale of Area IV farm products averaged just a little over 8 percent of the total cash farm receipts in the district during the 1954-58 period. In 1959, cash receipts amounted to \$284 million. The main source of income is crop sales. This source has gradually increased over the years, and it accounted for over 70 percent of the total in 1959. Livestock sales contributed 17 percent, and dairy and poultry, 7 and 5 percent, respectively.

The proportion of cash receipts attributed to the various commodities during the 1954-58 period is shown in table 3. Among crops, the sale of wheat was by far the most important source of cash receipts. The receipts from sugar beet and potato sales formed a significant proportion of total receipts on the Group I farms, averaging 20 percent, while they contributed only 4 percent on the Group II farms. Livestock sales, particularly the sales of cattle and calves, produced the most income from the livestock and livestock product category, although Group II and noncommercial farms received a substantial part of their income from dairy enterprises.

The annual gross income of all farms in Area IV averaged \$284,389,000 during the 1954-58 period. This figure includes cash receipts from farm products, government payments and noncash farm income. Commercial farms received almost 94 percent of the total; the Group I farms received 52 percent and Group II, 42 percent. Thus, non-commercial farms, about 26 percent of all farms, received only 6 percent of the area's gross farm income.

The average farm received a gross income of \$10,544 per year during the 1954-58 period. A comparison of farm groups showed that the average gross income of Group I farms amounted to

TABLE 3—DISTRIBUTION OF CASH RECEIPTS AMONG COMMODITIES, AREA IV, 1954-58

	All farms	Group I	Group II	Noncom- mercial
	(percent)			
Cash receipts from marketings	100	100	100	100
All crops	73	80	66	47
Wheat	28	29	27	17
Barley	13	11	15	15
Flaxseed	8	8	8	5
Potatoes	7	11	3	0
Sugar beets	5	8	1	0
Oats	3	2	4	5
Other crops	9	11	8	5
Livestock and livestock products	27	20	34	53
Cattle and calves	10	8	11	17
Dairy products	7	3	11	18
Poultry products	5	4	6	9
Hogs	3	2	4	4
Sheep and lambs	1	1	1	3
Other livestock	1	2	1	2

\$27,486, Group II farms, \$8,199, and noncommercial farms, \$2,603. The per farm gross incomes on the North Dakota side of the valley were consistently higher than those on the Minnesota side, regardless of group.

### Production expenses

An average of \$176 million per year was required to operate the total agricultural plant during the 1954-58 period. Cash expenses averaged about 80 percent of the total and depreciation accounted for the remainder. Cash expenses, relative to depreciation, were much higher on Group I farms than on Group II farms.

Hired labor was the most important single item of expense for Group I farms. This item amounted to 14 percent of the total Group I farm expenses, compared with 5 percent of the Group II outlays. The major factor influencing this expense is the concentration of sugar beet and potato production on the large farms; these commodities rank high in labor requirements. The outlay for petroleum products required for machinery operation ranked

TABLE 4—DISTRIBUTION OF PRODUCTION EXPENSES, AREA IV, 1954-58

	All farms	Group I (percent)	Group II	Noncom- mercial
Production expenses	100	100	100	100
Cash farm expense	79	83	75	78
Petroleum products	11	10	13	9
Hired labor	9	14	5	2
Feed	6	6	7	6
Fertilizer & lime	5	6	3	9
Other cash expense	48	47	47	52
Depreciation	21	17	25	22

second in importance on Group I farms and first on Group II farms.

### Net returns

The net income to Area IV farms averaged \$109 million over the 1954-58 period. The noncommer-

cial farm operations sustained a loss averaging almost \$1 million per year over that period. On a per farm basis the net income to the Group I farm was \$11,751; Group II averaged \$3,243, and a minus \$131 went to the noncommercial farm. An income summary comparing the farm groups is shown in the chart.

The unfavorable economic position of the small commercial and noncommercial farms becomes more evident when returns to management are considered. These returns were estimated by deducting a 5 per cent capital cost charge and an alternative wage for the operator's labor, from the net income figure. In the case of Group I farms, the operators had sufficient resources under their command to obtain a return of \$5,701 on their management skills. The resources of the Group II farms were so limited that management re-

Per farm gross income, expenses and net income, 1954 - 58 average, area IV.

	All Farms	Group I	Group II	Non-Comm.
Cash receipts from farm mktgs.	9416.00	25538.00	7213.00	1800.00
Government payments	481.00	1203.00	375.00	155.00
Noncash income	648.00	745.00	612.00	647.00
Gross farm income	10545.00	27487.00	8200.00	2602.00
Cash expenses	5168.00	13096.00	3726.00	2146.00
Depreciation	1340.00	2640.00	1231.00	587.00
Production expenses	6508.00	15736.00	4957.00	2733.00
Net income	4037.00	11751.00	3243.00	-131.00
Estimated costs of capital and operator's labor	3891.00	6050.00	3720.00	2621.00
Returns to management	146.00	5701.00	-477.00	-2752.00
Net cash income	4729.00	13645.00	3862.00	-191.00

ceived a negative return.

This kind of analysis emphasizes the importance of the relationship between farm size and income. Many of the Group II farmers are simply operating inadequate-sized production units. If they are to improve their income situation and earn a return that reflects management ability, then they must expand their operations. The returns to management estimate also indicates that where these farmers are unable to expand or where they lack the ability to manage additional resources, they would be economically better off investing their money elsewhere and taking employment either on another farm or outside of agriculture.

Net cash income also provides a useful measure of the economic position of farmers. This sum, the difference between cash receipts plus government payments and cash expenses, is the income that must provide for living expenses, debt retirement and capital replacement. The living standards accepted by some farmers and the slow rate of capital depreciation often will allow many farmers to maintain for many years, through cash flows and capital depletion, what are often uneconomic units. However, at some point this process becomes unsustainable, and the farm unit must be expanded or absorbed into a more economic operation. The \$3,862 net cash income of Group II farmers hardly seems adequate to promote farm reorganization and expansion—to say nothing of the cash position of noncommercial farmers. Thus, it well could be expected that many of these farms, which accounted for almost 70 percent of all farms in 1959, would be consolidated sometime in the future.

This discussion is concerned with income derived from farm operations. Farmers in Area IV, however, have been able to supplement their incomes to some degree with off-farm employment. While the data do not allow the measurement of this income, it is possible to determine the extent to which farmers take advantage of off-farm employment opportunities. In 1954, over one-half of the noncommercial farm operators had off-farm

employment, and almost 30 percent received more income from that source than from farm operations. Of the Group II farmers, about one-third worked off the farm, but only 3 percent received income greater than farm income.

**TABLE 5—OFF-FARM EMPLOYMENT BY FARM OPERATORS, AREA IV, 1954**

	working off-farm	working off-farm 100 days or more (percent of operators)	with off-farm income greater than farm income
All farms	36	12	10
Group I	25	6	2
Group II	33	7	3
Noncommercial	52	27	30

### Interfarm comparisons

One of the most significant findings arising from this study is the difference between Group I and Group II farms in terms of their income producing abilities. An analysis of the data shows that, while the larger farms spend 2.5 times more on inputs per year than the smaller, they produce 3.3 times the amount of gross income. The net income generated by Group I farms is 3.6 times greater than that of Group II. Thus, it can easily be seen that the greater resource base of the larger farm creates the environment for proportionately larger returns per dollar of expenditure.

Another measure of the advantage held by the larger unit as an income producer is found in the investment and returns to each man equivalent employed on the farm. As shown in table 6, the large farm expended \$1.88 per man for each \$1.00 spent on the smaller farm. The Group I farm, however, received a \$2.20 return per man to each \$1.00 on the Group II farm. In terms of cash receipts, each man equivalent employed on the large farm generated cash receipts of \$12,820, which was more than twice the \$5,515 cash receipts generated per man employed on the Group II farm.



**TABLE 6—ANNUAL AVERAGE TOTAL INPUTS, GROSS INCOME AND NET INCOME PER MAN EQUIVALENT, AREA IV, 1954-58**

	Group I	Group II	Ratio of Group I to Group II
Total inputs*	\$ 8,713	\$4,801	1.82
Gross income	13,798	6,268	2.20
Net income	5,899	2,478	2.42

\*Total inputs include production expenses less hired labor plus capital charges.

### Summary

Area IV is chiefly a grain producing region dominated by the highly productive Red River Valley. The major crops are spring wheat and barley, with potatoes and sugar beets highly important in certain parts of the valley. The most important livestock enterprise is the production of cattle and calves. Cash receipts from the area in 1959, amounted to \$284 million.

Farm numbers have been decreasing, numbering 23,494 in 1959. The decline, however, has occurred in the number of smaller farms, while the number of large farms, in terms of acreage size or economic classification, has steadily increased. Thus, much adjustment toward larger units already has taken place. That there is still

room for further adjustment in farm numbers and size can be seen in the proportion of small farms that remain (68 percent of all farms).

The driving force toward further adjustments can be readily found in comparisons of the various groups of farms. The larger farms are at a distinct advantage in terms of production and income. While size alone is important, significant, too, is the fact that these farms have the ability to command greater resources, especially financial, and to manage them more efficiently. Thus, the route to greater returns is found in expanding and reorganizing farm operations. At the same time, many of the smaller farms are in economically nonsustainable positions; for many of these farms the chances of expanding are very dim. For various reasons—the age of the operator, his inability to carry financial risk, or his lack of managerial skills—many of these farms will disappear from the scene.

While the changes may not appear desirable to all concerned, they present nothing new. The processes of farm adjustment have been in operation for some time. The problem lies in recognizing the changes and in adapting to them, so that in the final analysis the adjustments benefit the area rather than creating hardships for the unaware.

## Current conditions . . .

In the latter part of the summer, the national economy appeared to continue the halting, hesitating expansion begun in February 1961. In July there appeared some indication of a pickup in the pace of expansion with a corresponding lessening of the threat of recession. July marked a point in

the trend of economic activity where, for the first time this year, a majority of the statistical indicators signaled expansion. Between June and July, rises were noted in industrial production, total nonagricultural employment, personal income, new orders for durables, unfilled orders, building

permits and retail sales; at the same time, the seasonally adjusted rate of unemployment declined from 5.5 percent of the civilian labor force to 5.3 percent.

The promise of an expansion implied by the June to July surge of many of the indicators was not realized in August. Between July and August industrial production was constant at the July level. At the same time, nonagricultural employment declined, while the seasonally adjusted rate of civilian unemployment rose from 5.3 to 5.8 percent. Residential construction also declined between July and August, while the total value of new construction was unchanged from the July rate. In August, both F. H. A. and V. A. mortgage applications (indicators of future rates of residential construction) fell significantly, with F. H. A. applications dropping to the lowest level since July 1957.

In the expansionary column, August witnessed a slight rise in personal income, as well as in department store sales. Total retail sales, however, were slightly below the July peak, representing primarily a decline in automobile sales. An additional strengthening of the expansion occurred in August with a rise in steel production. The rise reflects the fact that the excessive steel inventories gathered in the spring, which operated as a depressant upon the economy, have been run off and that, accordingly, steel production might be expected to rise somewhat in the coming months. August also saw further advances in the stock market.

The movement of the national economy in this period may be most accurately described as "sideways." The economy, as a consequence, continued to operate at a less than full capacity level. Moreover, the economic indicators failed to suggest the development of any strong forces which would increase the speed of the expansion in the second half of 1962, significantly beyond that realized in the first half of the year.

Even this sideways movement, however, may indicate something of the underlying strengths in

the U. S. economy. It suggests a certain basic buoyancy, inasmuch as the system succeeded in weathering a set of circumstances in May and June which easily could have led to a complete reversal of the expansion. These adverse circumstances include: the precipitous stock market decline, an unseasonal slowdown in government ordering and the liquidation of steel inventories which built up in anticipation of the never materialized steel strike.

The trend of economic activity in the Ninth district permits of greater optimism about the future, as well as the rate of the expansion. Currently available measures indicate a July to August rise in nonagricultural employment, especially in manufacturing, mining and construction, a continuing rise in personal income and an apparent fall in the rate of unemployment. The favorable agricultural situation also continues to be an important source of strength for the economy of the Ninth district.

*The following selected topics describe particular aspects of the district's current economic scene:*

## **DISTRICT BANKING DEVELOPMENTS**

After falling in July for the first time since January, city bank loans in August and early September resumed an upward trend. In the month of August city bank loans rose \$16 million.

This was a larger August gain than any since the recovery year of 1955. Further strength was displayed in the first half of September, when city loans rose an additional \$21 million. Only twice since 1950, have the city banks reported a gain for the entire month of September in excess of this.

At the country banks in the Ninth district loans fell \$16 million in August; although a decline of \$29 million was registered in August of 1961, small changes—up and down—were registered in August of most previous years. In the first half



of September country bank loans rose \$4 million, in keeping with the September pattern of other recent years.

In the week ended September 12, the total deposits of district member banks averaged 3.3 percent higher than four weeks earlier; in the same period one year earlier, a gain of 1.3 percent was registered. In the year ended September 12, total deposits were up 7.7 percent with time and demand deposits up 20 percent and 1 percent, respectively.

Through the twelfth of September no reserve city bank had borrowed at the Federal Reserve Bank, and country bank borrowing had averaged little more than a third of the \$2.3 million average borrowed by such banks in August.

## NONFARM EMPLOYMENT SHOWS EXPANSION

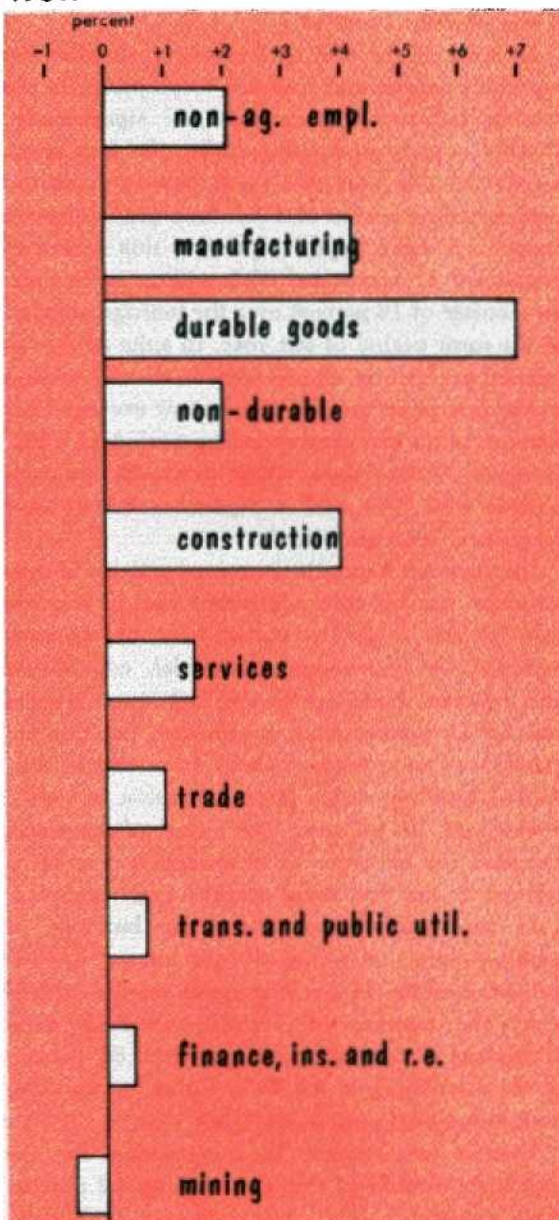
Employment in Ninth district nonfarm establishments expanded more in the first three quarters of this year than in the comparable period of 1961. Whereas such employment last year rose only by the usual seasonal increase, this year some expansion has occurred beyond the usual rise. The seasonally adjusted index on district nonfarm employment (1957-1959 equals 100) stood at 105.3 percent for January 1962, and in subsequent months, rising by a fraction at a time, it achieved the level of 106.6 percent in August.

Nonfarm employment in Minnesota passed the million mark in August. The number of individuals at work, excluding those on farms and the self-employed in urban centers, was 1,003,986. The total is a new high; the previous high of 997,400 was set in September 1960. In the district as a whole, a significant growth in employment has taken place in the fields of construction, services and government.

The seasonally adjusted index of the industrial use of electric power, an indicator of the output of manufactured products in the district, was up 2.5 percent in July, from the January figure. All of the increase occurred in the output of dur-

able products, which includes national security outputs. As seasonally adjusted indexes on em-

District growth in employment, first eight months compared with the same period in 1961.





ployment in durable and nondurable manufacturing are not available, the growth in employment must be measured by the percent increase from a year ago. In the first eight months of this year, employment in plants producing durable products was up 7 percent, while in the nondurable plants, it was up only 2 percent.

In spite of the rise in the output of minerals, especially copper and iron ore, employment in the mining industry did not increase significantly. District copper production during the first seven months of this year was up 8 percent from the corresponding period of 1961. Iron ore shipments from U. S. Lake Superior ports in this season to September 1, aggregated 37.6 million gross tons, an increase of 18 percent over the tonnage shipped in the same period of last year. In spite of the increased production, employment in district mining in the first seven months of this year averaged 0.5 percent below the corresponding period of 1961. However, it has been rising gradually in comparison with 1961, and in September it may have reattained last year's level.

On the other hand, the increased activity in construction has led to a significant rise in employment in this field. The dollar value of contracts awarded for commercial, industrial, educational and religious buildings in the first seven months was off 14 percent from a year ago, but this decrease was more than offset by some rise in residential building and a large expansion in public works and in utilities. The value of contracts awarded for all types of construction was up 5 percent in the first seven months from last year.

In residential construction, the building of multiple units, largely apartment houses, has expanded steadily. In the first seven months of this year, the number of multiple dwelling units authorized by permit in this district, 86 percent of the total being in the Twin Cities metropolitan area, was up 45 percent from last year.

District employment in construction for the first eight months of this year was up 4.2 percent from a year ago. The construction on U. S. Gov-

ernment projects has been an important factor. In Montana, a few layoffs occurred at missile site areas and airbase projects, but the start of new projects provided a net increase in job opportunities. In South Dakota, employment on Titan Missile projects declined, but it began to rise on the Minuteman Missile projects.

The rise in retail trade led to some expansion of employment in this field. Although information is not available on total retail sales in the district, data are available on some outlets. In terms of a percentage change from 1961, department store sales in the first seven months were up 2 percent; new car registrations showed a gain of 15 percent, and the Bureau of Census sample of sales by retail stores, which excludes sales in large retail chains but is the broadest coverage available in the district, showed an 8 percent increase. Employment in trade, which includes both retail and wholesale, was up 1 percent.

In the field of transportation, employment trends have been mixed, declining on railroads and rising in trucking and in warehousing. The public utilities sector has showed a steady rise in employment. In these two broad fields, district employment in the first eight months was up only 0.7 percent from the same period of last year.

In finance, insurance and real estate, the growth in employment has also slowed down, rising only 0.5 percent during the first eight months from a year earlier.

Personal and professional services remain growth industries as consumers continue to spend a growing proportion of their income in this area. District employment here was up 1.5 percent from a year earlier.

A steady expansion has been noted in the number of instructors employed to educate the growing enrollment in public schools and in institutions of higher learning. This increase is reflected in the rising employment in the government sector; the first eight months of this year showed an employment gain of 3 percent in comparison to the same period last year.