

# MONTHLY REVIEW

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FEDERAL RESERVE BANK OF ATLANTA

# Soybeans: America's Cinderella Crop

The United States' soybean industry is experiencing one of the most outstanding growth levels ever recorded in American agriculture. In the last fifteen years, soybeans have moved from sixth to first place\* as a source of farm cash receipts from crop sales. The 150-percent jump in acreages, the 125-percent expansion in domestic consumption, and the 850-percent gain in soybean exports all tell the same story. But why did soybean production suddenly mushroom? Why have markets expanded so rapidly? Why are soybeans one of the few major crops that have not experienced surplus problems? Why is output moving into regions previously not used for soybean production?

The answers seem to lie largely in the adaptability of soybeans to numerous uses, its record of being a cheap source of protein, growth in other industries using soybean products, and the years of research to solve both production problems and the development of new and improved products.

## The Oldest Crop

In one respect, the soybean is one of the oldest crops in the U. S. today. According to literature, it was being "adopted to Pennsylvania" in the 1800's. However, the soybean was cultivated in China long before written records were kept.

\*BASED on preliminary estimates of crop sales. In terms of the value of crop production, corn still ranks first, followed by soybeans.

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The success of the soybean on U. S. soil was not immediate. For nearly 100 years beans were grown primarily as garden plants with little or no cultivation for commercial agriculture. After the turn of the century, however, their agricultural importance was recognized. Planted acreages grew from approximately 50,000 acres in 1907 to nearly 500,000 by 1917 and nearly 2 million in 1925. The crop was used mainly for hay, grazing, and soil-enrichment. Only one-fourth of the acreages were harvested for beans each year, providing little more than the following year's seed supply.

The modern era of soybean production did not occur until the late 1930's and early 1940's. By this time, the infant commercial soybean processing industries were about a decade old, and the plant capacity for processing soybeans was beginning to grow. In the early war years, approximately 80 percent of the annual soybean production was processed commercially, compared with 25 and 65 percent in 1934 and 1937, respectively.

World War II stimulated the industry. Strong demands for food to fill the "fifth plate" caused bean prices to climb sharply from depression levels. Soybean oil meal, which evolved as a major product in the processing operation, was used increasingly as a high protein feed concentrate for livestock. War-time demands also caused the predominant use of soybean oil to shift from nonfood uses, such as paint, varnish, and soap, to human consumption. Soybean oil began to be used for vegetable shortening, margarine, cooking oil, mayonnaise, candies, and other food items.

Thus, by the end of World War II, soybeans had become the newest major cash crop. Production was concentrated in Iowa, Illinois, Indiana, and Ohio, but some output occurred in

every state north and east of Texas, excluding New England. Yields ranged from 18 to 20 bushels per acre, and total production approached the 200-million bushel mark. Over 95 percent of the total production was consumed in domestic markets with exports at very low levels.

#### Boom in 1950's and 1960's

By the 1950's and 1960's, the economic importance of this sleeping giant had been fully recognized, and all phases of the industry began expanding rapidly. From 1950 through 1966, the planted acreage of soybeans increased to 37.4 million acres, or 150 percent. New records were established every year except 1959 and 1960. Similarly, total production more than tripled, reflecting some advance in yields and the proportion of soybean acreages harvested for grain. However, larger acreages were the dominant force pushing aggregate production up.

In the processing and marketing phase of the industry, similar gains have occurred in the last 16 years. The domestic processing capacity for the 1966-67 marketing season is expected to reach 650 million bushels, more than doubling the capacity in 1950. The average capacity per plant has more than tripled, however, because the number of processing units has dropped from nearly 200 to less than 130. Meanwhile, both domestic and foreign demands for beans have advanced as fast or faster than aggregate production, causing average prices for soybeans and soybean meal to trend sharply upward in recent years. The successive years of record production and the relatively fast expansion of markets have caused one writer to state that "the paradox of new records and shortages is normal in the soybean industry."

In explaining why the industry has grown so rapidly, it is necessary to identify the major markets or users of soybeans. The market is divided into the domestic and foreign components. Within the domestic market, the heaviest demands are for soybean oil and meal, the two basic elements from the crushing process. Foreign markets demand whole beans, soybean oil, and soybean meal.

### Domestic Market

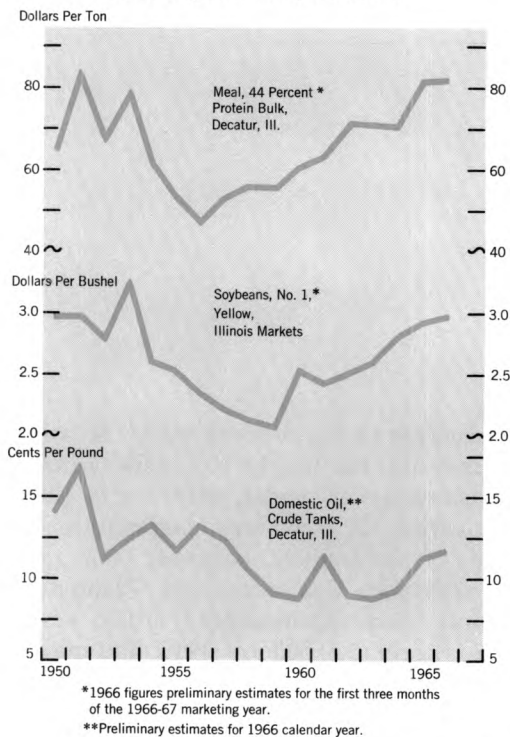
A bushel of beans, 60 pounds, usually yields about 10.8 pounds of oil and 47.5 pounds of meal. The oil typically makes up about two-fifths of the value of the products, while the meal provides three-fifths. The rapidly growing demand for meal has contributed to most of the strength in the domestic soybean market in recent years.

Soybean meal is used primarily as a high protein feed concentrate for livestock. Therefore, the demand for meal is related to growth in the livestock industry and changes in the supplies of feeds that are competitive with soybean meal.

Generally, since 1950, the production of most livestock and livestock products has increased in the U. S. For example, national broiler production gained over four-fold in this period, while dairy products and red meat output are up 4 and 44 percent, respectively. Also, the output of cottonseed meal, another major source of vegetable protein, has not advanced, so that soybean meal now claims a greater proportion of the protein concentrate in animal feed rations. Furthermore, the general recognition by livestock producers that feeding protein concentrates is profitable has stimulated soybean meal consumption. Thus, the total impact of these and other forces in the domestic market, plus growing exports of soybean meal, has caused meal prices to increase over 70 percent since the 1956-57 season, despite a similar gain in meal production.

The domestic demand for soybean oil has also grown in recent years, but not nearly so strongly as for soybean meal. Since the early 1950's, the use or disappearance of major food fats has expanded from 7 to 9 billion pounds, and soybean oil has gained steadily from less than one-third to 55 percent of the total food fat supply. These trends reflect the decline in consumption of butter and lard and the expanding use of vegetable oils in the production of margarine, shortening, mayonnaise, salad dressings, potato chips, frozen french fries, mellorine, baking products, and other prepared foods.

Prices for Soybean Meal, Soybeans, and Soybean Oil, 1950-66



However, despite this increase in domestic utilization of soybean oil, total private demands have failed to use the annual supply of oil. Thus, the government has diverted large amounts of oil into the export market under various surplus disposal-foreign aid programs. This relatively slow growth in domestic consumption, combined with the lack of a strong foreign market, has caused the wholesale price for soybean oil to trend irregularly downward since 1950.

### Export Markets

Total exports of whole soybeans in 1966 have rocketed to a level over nine times higher than in 1950, with exports almost equalling the volume of beans processed domestically. This tremendous increase largely reflects the rising incomes, populations, and livestock industries in postwar Europe, Japan, Canada, and other prosperous nations. Currently, European countries purchase about 55 percent of all soybeans exported by the U. S. Just as in the U. S., these countries need relatively more soybean meal than oil. Thus, many buy for processing in their own mills enough whole beans to satisfy their domestic soybean oil requirements. To round out their soybean meal needs, they then obtain additional quantities of meal from U. S. processors.

Continued rising personal incomes in European countries are expected to stimulate further demands for preferred foods, such as meat and livestock products, resulting in even larger markets for U. S. soybeans for years to come.

Japan is now the largest single foreign purchaser of soybeans. Unlike the U. S. and Europe, however, processors in Japan and other oriental countries make the whole bean into highly nutritious foods for human consumption. The Japanese probably will purchase even more soybeans to supplement further existing food supplies.

Since 1950, exports of soybean oil have trended irregularly upward, with a large percent of the annual volume being donated or sold for soft currencies mainly under the provisions of Public Law 480. A larger number of the countries importing U. S. soybean oil could be classed as developing nations, which use the oil to supplement food supplies. Government support of soybean oil exports will probably continue unless new or wider uses for this product are developed, causing dollar purchases to turn upward.

### The Southeast—A Major Producing Region

Since the national soybean industry is an amazing success story in itself, some significant trends within producing regions might be overlooked. In the first three decades of the twentieth century, a relatively high proportion of the nation's bean acreages was grown in the South as hay and green manure crops. However, as more beans were harvested for grain, the midwestern states became the major producers.

Possible reasons for the migration of production into the Midwest include the development of varieties adaptable to many soil and climate conditions. But perhaps of equal importance was the type of agricultural production and the marketing structure existing in the Midwest at that time.

By the mid-1930's, midwestern agriculture was rapidly becoming mechanized. Soybeans could be planted and cultivated with conventional row crop equipment. Also, the new crop could be harvested with relatively small field combines that were replacing the stationary thrashing machines formerly required to harvest small grains. Thus, most farmers needed no additional equipment to grow soybeans.

Similarly, existing storage facilities were adaptable to soybean production. Any type of grainery or bin that held small grains could be used to

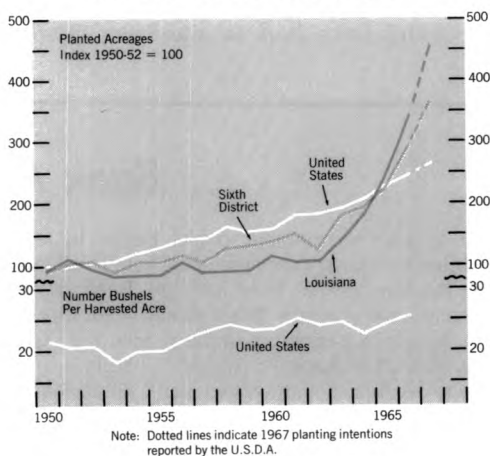
store soybeans. This allowed farmers to store their annual seed supply, plus hold the balance of the crop until the best prices were offered.

Perhaps the most important factor attracting soybean production to the Midwest was the marketing facilities available for soybean sales. A majority of the small towns had grain elevators located primarily along railroads for storing and marketing small grains. When soybean processing plants were built and demand grew, the channels for purchasing beans from farmers and shipping them to processors were already in existence.

In the South, however, agriculture in the mid-1930's could be characterized as a single crop, or cotton, economy. Horses and mules were the main source of power. Corn, grown mainly to feed working stock, was harvested by hand, and the acreage of small grain crops requiring combines was very small. Cotton gins were nearly as numerous as local elevators in the Midwest, but the market structure for cotton was not adaptable to the handling and sale of soybeans. Thus, the general lack of harvesting, storage, and marketing facilities slowed the expansion of soybean production in the South.

Today, however, southern agriculture is changing dramatically. Cotton and corn acreages have declined almost continuously since the 1930's. Large acreages have been abandoned or planted in trees and pasture. Livestock production is becoming important in many areas, as the output of broilers, eggs, and beef cattle advance. And many farmers are now seeking alternative sources of income. These and other important factors are contributing to expanded soybean production in the South.

From 1950 to 1966, soybean acreages in the Soybeans: Planted Acreages and Number of Bushels Per Harvested Acre



U. S. advanced nearly 150 percent; however, in Alabama, Florida, Georgia, Louisiana, Mississippi, and Tennessee, total acreages approached a 220-percent gain. Similarly, total production more than tripled in the U. S., but jumped nearly seven times in the six District states.

Perhaps more significant, however, is the change in the last five years. Since 1962, U. S. acreages have jumped one-third, while planted acreages in the six states have more than doubled. Louisiana farmers are planting over three times the acreage seeded in 1962.

Perhaps the best example of farmers utilizing existing production equipment and marketing facilities is in the rice producing regions of Louisiana. These farmers use a three-year rotation, leaving the land idle for two years after one crop of rice. This rotation lets air back into the soil after being flooded. Significant acreages of land are available for soybeans, because this crop can be grown on idle acreage and still achieve the objectives of soil aeration. The farmers use their rice combines to harvest the crop, and the beans are sold at the rice marketing facilities. Elsewhere in the state, newly cleared lands, pasture, and other croplands are being planted in soybeans. Thus, factors nearly identical to the ones that encouraged the movement of soybeans into the Midwest in the 1930's are now contributing to unequalled production gains in Louisiana.

Somewhat different factors are causing sharp gains in soybean acreages and production north of Mobile, Alabama. Farmers in this area truck their soybeans to a large export elevator in Mobile. This facility has been enlarged and is one of the many exporting points for various grain crops located along the Gulf Coast. The availability of a relatively close market allows south central Alabama farmers to grow soybeans, even though many have had to purchase harvesting

equipment. Generally, large acreages of land are available in this region, because cotton and corn acreages have been declining for many years.

In most areas of the South, however, farmers desiring to grow soybeans are not as fortunate as producers in Louisiana's Rice Belt or the farmers near Mobile and other cities with existing markets. If soybean production is to expand into all parts of the South, further development of marketing facilities near producing areas is essential. Local markets would allow farmers in the region to grow beans and take them to market in farm trucks or wagons. The beans would then be shipped by barge, rail, or semitrailer truck to processing plants, terminal markets, or export markets like Mobile. Such a local buying station was constructed in 1965 near Demopolis, Alabama, on the Tombigbee River. Beans can be shipped from this elevator to Mobile by barge. A similar station has been built at Milton, Florida.

As marketing points become more numerous in the Southeast, more farmers will find it profitable to grow soybeans on land now idle or planted in trees, corn, pasture or other crops. Farmers who own large farms will purchase their own harvesting equipment, while several producers with small acreages may buy the equipment jointly. Some dealers may lease combines to farmers planting beans.

Generally, the long-range outlook for the southern soybean industry is good. Unless the relatively profitable production conditions are changed by fluctuating prices and/or production costs, soybean acreages can be expected to expand in the Southeast. And the rate of expansion may remain above that of the U. S. Anticipated soybean acreages are expected to increase 3.2 million acres during the present crop year. Over one-third of the gain will occur in District states.

ROBERT E. SWEENEY

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## Bank Announcements

On May 1, four nonmember banks began to remit at par for checks drawn on them when received from the Federal Reserve Bank. They are the **Bank of Heflin**, Heflin, Alabama; **Fayette State Bank**, Peachtree City, Georgia; **Moultrie Banking Company**, Moultrie, Georgia; and **The Patterson Bank**, Patterson, Georgia.

A newly organized nonmember bank, **Sugarland State**

**Bank**, Jeanerette, Louisiana, opened for business on May 27 and began to remit at par. Officers include Wade Breaux, president; R. J. Bouterie, executive vice president and cashier; and Harold Junca, Sr., vice president. Capital is \$250,000; surplus and other capital funds, \$250,000.

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# Diversification of District Employment

Views on promoting the diversification of a region's economy have changed through the years. During the age of mercantilism, public officials stressed diversification in order to make their area more self-sufficient. Concurrent with the publication of Adam Smith's *The Wealth of Nations* in 1776 was the switch in emphasis to economic specialization. The worldwide depression of the 1930's led many areas which were especially hard-hit by the economic decline to seek ways to diversify their economies. Industrial diversification received particular emphasis throughout the Southeast, and several of the states passed legislation to encourage it as a means of decreasing dependence on agriculture.

## Measures

Diversification is generally equated with the presence of many different industries in an area or a "balance" among different industries. The critical elements are the number of industries and their relative importance. The concept of "balance" requires a norm for comparison. In measures of diversification in local areas, the distribution of economic activity in the nation is the norm. If a local area has the same percentage of total employment in each sector as the nation, it receives a score of 100. The greater the deviations, the smaller the index. This index tells how close the structure of an area's economy is to that of the nation.

Economic activity could have been measured by other variables, such as payrolls, value added, or output. Employment was chosen because of the greater availability of employment data and the widespread interest attached to it. Other variables would give somewhat different measures of diversification.

Of the three different diversification indexes used in this study, the first is based upon the percentage distribution of total employment among the nine divisions in the economy. The other two are based upon total manufacturing employment, with one index relating to employment in 20 major groups and the other to 142 industries.\*

The diversification measure of total employment is the most comprehensive, but the least detailed. This index would be more

\*A description and listing of industry groups are given in the appendix.



important in measuring diversification changes in areas dominated by a major sector such as agriculture. In more industrialized areas, on the other hand, a measure of the diversification of manufacturing would be more important because of its key role in the growth and economic fluctuations of an area.

The area statistics in *Census of Manufacturers* permitted the calculation of diversification indices on the basis of the major groups after an estimation of employment in a few of the smaller major groups. Lack of employment data for all major groups in nonmanufacturing prevented the calculation of a similar index for total employment. Because disclosure rules led to significant gaps in the detailed industry statistics for manufacturing, the Federal Reserve Bank of Atlanta contracted with the Bureau of the Census to calculate the indices of diversification of manufacturing employment for 1963 on the basis of unpublished data. The Business and Defense Services Administration published similar indices for 1947 and 1963.

The greater detail of the industry figures provides a somewhat better index of diversification than does the measure based upon major groups. For example, in comparing two areas with a concentration of jobs in a major group like transportation equipment, fluctuations in the area would likely be greater if all the jobs were in one industry, say automobiles, rather than several, like aircraft, railroad equipment, automobiles, and ship building. Each of these industries is affected by different sources of demand.

The size of the index depends upon the number of sectors into which the total is divided and the definition of the area. The more sectors in the total, the smaller the index. The manufacturing diversification index based on 20 major groups is larger than the corresponding index based on 142 industries for each state, as can be seen in the table. Generally, the smaller the definition of the area, the smaller the diversification index. A state will usually have a lower diversification index than the group of states of which it is a part, because different specialties in various states offset each other. However, there are exceptions: In the diversification of total employment, Georgia had a higher index than the six District states in 1963.

#### DIVERSIFICATION INDICES FOR SIXTH DISTRICT STATES' EMPLOYMENT

State	Total Employment-a 9 Divisions			Manufacturing 20 Major Groups			Manufacturing 142 Industries		
	1947	1954	1963	1947	1954	1963	1947 <sup>b</sup>	1954 <sup>b</sup>	1963 <sup>c</sup>
Alabama	83.8	88.5	91.3	58.1	63.4	68.2	45.8	51.5	58.3
Florida	78.7	81.3	85.9	50.1	55.9	72.3	35.8	43.8	57.8
Georgia	88.2	92.9	94.3	55.5	59.2	62.8	46.1	52.4	56.6
Louisiana	85.8	86.3	85.4	50.0	55.6	59.1	39.4	43.0	46.4
Mississippi	55.5	63.9	76.6	54.8	57.7	65.4	34.8	41.3	47.8
Tennessee	83.2	88.7	89.1	73.5	72.1	72.7	56.1	57.8	63.4
Six States	84.3	89.2	91.8	68.5	70.0	74.8	—	—	—
Mean, 48 States	—	—	—	—	—	—	45.3	48.3	—

a—Nonfarm payroll plus agricultural employment.

b—U.S. Department of Commerce, Office of Area Development, "Diversification of Manufacturing Employment for State and Metropolitan Areas" (Washington: U.S. Government Printing Office) June 1960.

c—Calculations by Bureau of the Census.



## Diversification of Total Employment

The structure of the region's total employment and manufacturing jobs have become more nearly like the nation's since 1947. The most pronounced change in total employment structure occurred in Mississippi. In 1947, an estimated 63.6 percent of Mississippi jobs were in agriculture, compared with 19.1 in the nation, for a difference of 43.5 percentage points. By 1963, the percentage point difference in agriculture dropped to 23.3 and caused nearly all of the rise in Mississippi's diversification index for total employment.

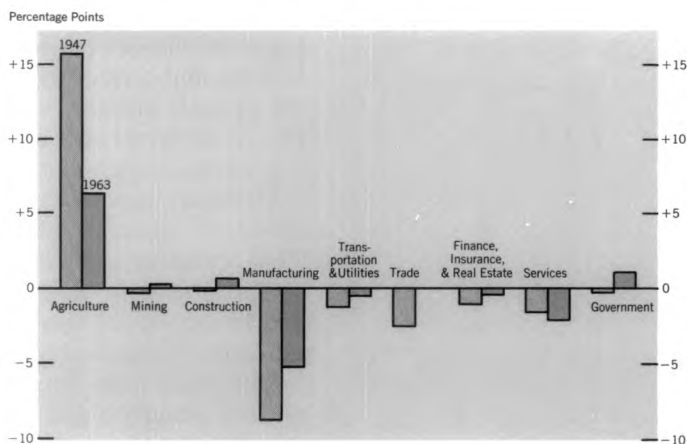
Louisiana, on the other hand, registered practically no change in her diversification index. Although the percentage point deviation between the Pelican state and the U. S. dropped 5.4 points for agriculture, the deviations increased in mining, manufacturing, government, and trade. The growth of the petroleum-gas industry increased the state's specialization in mining, and the decline in manufacturing jobs in Louisiana widened the gap in this sector.

Florida, with the best employment growth during the period, had only a moderate gain in her total diversification index because the deviation between U. S. and Florida percentage of employment in agriculture was the smallest of District states in 1947. Consequently, opportunity to reduce the deviation in subsequent years was less.

## Manufacturing Diversification

Tennessee had the most diversified structure of manufacturing jobs on the basis of major groups and industries. Florida, with a 140-percent growth in manufacturing jobs, recorded the largest increase in diversification of manufacturing. In 1947 and 1954,

Chart I: Differences in Sixth District and U.S. Percentages of Total Employment in Major Divisions



The distribution of employment in the District became more like that in the nation between 1947 and 1963.

Alabama, Georgia, and Tennessee had more diversified manufacturing industries than the average state, according to the Census. Although the mean diversification index for all states has not been calculated for 1963, the large increase in Florida's index makes it likely that four of the six District states were more diversified in manufacturing industries than the average state.

The shifts in manufacturing jobs in the six states have generally been toward higher wage industries. The deviation between workers in the textile and lumber groups in the six states and the nation between 1947 and 1963 decreased 6 and 8 percentage points, respectively. The District's percent of employment in the high-wage transportation equipment and machinery groups became more like the nation's. In the textile group the percentage point deviation decreased, even though the District's textile jobs declined only about half as fast as the nation's. In the two machinery groups, jobs grew in the District about ten times as fast as in the nation.

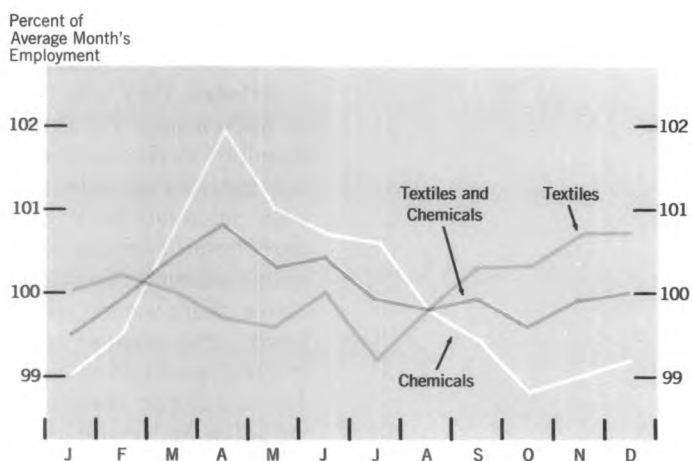
### Diversification Arguments

With the aid of these measures, we can better assess some of the arguments for diversification. For areas with marked seasonal and/or cyclical variation in economic activity, it is claimed the introduction of new industries would level out these fluctuations. In the District states, for example, seasonal patterns in the chemical and textile industries complement each other (see Chart II). If the area were small enough, the transfer of workers might be possible. However, the two sectors would have to require workers with the same skills for the transfer to be feasible. But even if the transfer were limited, fluctuations in the total level of activity would be reduced. Less volatile fluctuations in total activity would level out fluctuations in sales of local merchants and the demand for public and private services. However, an area specializing in sectors with stable seasonal and cyclical patterns might decrease its stability by diversifying.

Diversification can also lead to better utilization of the labor force insofar as diversification results in demands for different types of characteristics. For example, some industries, such as coal mining, primarily employ men, while other industries, like the apparel industry, employ a large proportion of women. Employees differ in age, education, and certain physical characteristics among some industries.

Diversification proponents also see variation in the economy as insurance against possible declines in a major existing sector. This reason accords with the proverbial maxim of "not carrying all one's eggs in the same basket." The more evenly jobs are spread among different sectors, the less chance the area will be uprooted by the decline of one sector. A deterioration of a sector locally could stem from a decline nationally; exhaustion of local natural resources; and changes in techniques of production, transportation rates, service costs; or the allocation of public contracts. In areas which specialize in industries with slow growth, diversification would likely mean attracting faster growing industries, for slower growing ones seldom expand to new areas since this in-

Chart II: Seasonal Activity of Sample Industries  
Sixth District States



The presence of industries with different seasonal patterns can level out fluctuations in an area. The patterns for seasonal activity for the chemical and textile industries are both greater than would be the pattern of the two industries combined. Balancing the seasonal pattern with other industries might reduce the fluctuations further.

volves building new plants. However, diversification could also increase when total employment declines because of a cutback in a region's major industry. The movement of textile firms to the South increased diversification in some parts of New England because of the loss of these jobs.

In areas with a high percentage of jobs in agriculture, such as the Southeast, diversification of total employment and industrialization are closely related. Even if the new plants have lower pay-scales than the average manufacturing plant in the nation, the wages will likely be higher than those received by most farm workers. And if rapid mechanization is occurring in agriculture, attracting these plants is necessary to replace the jobs eliminated by new farm machinery. Although the new plants may not increase the diversification of manufacturing jobs, they will increase the diversification of total employment. The economic structure probably improves because of the lessened dependence upon agriculture—a sector with large seasonal and cyclical fluctuations.

An additional argument involves the desire for social balance. There is a tendency for the dominating sectors of the economy to determine the area's outlook. On the other hand, as an area becomes increasingly specialized, it becomes more dependent upon other areas for items not produced locally. Consequently, its ties with other regions become stronger.

### Measures and Arguments

In 1947, the District states with the highest diversification of manufacturing industries also had the smallest seasonal fluctuations. Between 1947 and 1963, the marked change in the diversification of Florida's economy brought a sharp reduction in the state's

seasonal fluctuations. An increase in seasonal fluctuations accompanied the decrease in the diversification of Tennessee's major manufacturing groups. In Mississippi, on the other hand, the increase in manufacturing diversification brought little change in the seasonal fluctuations in manufacturing jobs.

Between 1947 and 1963, Florida had the most stable growth in manufacturing (measured by the coefficient of variation—the standard deviation divided by the mean—of the annual percentage changes in manufacturing jobs) and the largest change in both manufacturing diversification indices. Louisiana had the most volatile manufacturing growth and the smallest change in manufacturing diversification. However, among the other District states, there was no relation between the two variables. More than likely, the greater specialization of the Pelican state in the cyclical petro-chemicals and lumber accounts for the contrast. No significant correlation was found between the coefficient of variation and manufacturing indices for the six states.

No consistent relation was evident between diversification and job growth or between changes in these factors. Similarly, no correlation existed between one of the major creators of new manufacturing jobs, plant and equipment spending, and diversification. The key was not diversification, per se, but the particular industries involved.

Growth in Louisiana was spurred by large investments in the petro-chemical industry, and the state became more specialized in this area. Florida, on the other hand, gained many of its investments in industries which were previously of less importance to the Sunshine state. Consequently, her diversification index increased sharply. For the 1947-1963 period, Tennessee ranked third in employment gains, but was the only District state with a lower diversification index for manufacturing groups in 1963 than in 1947.

Georgia had the highest diversification index for total jobs and the largest increase in per capita personal income between 1947 and 1963. Mississippi, which ranked second in per capita personal income growth, registered the largest change in total diversification. Apparently, both the level and the change in diversification affect income growth.

### Diversification in the Future

In our comparisons, some relationships between the level and changes in diversification with other economic variables were found. However, no strong correlation existed for the group of six states. Does diversification not matter? Such a conclusion would not be warranted. First, it is more difficult to find significant relationships with only a few observations. More importantly, diversification can influence a number of economic goals, depending upon the initial economic structure of the area and the way in which the increased diversification is achieved. In Mississippi, increased diversification figured prominently in rising per capita income, as many workers moved from the farm to the factory. In Florida, diversification helped to reduce seasonal fluctuations and maintain a stable growth pattern. In Louisiana, on

the other hand, the special locational advantages of large oil deposits made specialization, not diversification, the key to economic growth. Economic structure, not diversification per se, should guide the development plans of an area. Diversification for areas with a concentration of low-wage industries carries a higher priority than for areas specializing in high paying industries. The South's attempts to reach national per capita income levels call for a further narrowing of the differences between the distribution of jobs in the nation and the South.

C. RICHARD LONG

## APPENDIX

The **Standard Industrial Classification Manual** is the guide for classifying establishments by type of economic activity. The **Manual** divides the economy into nine major divisions. Each division in turn is divided into major groups, which are broken down into industries. The names of the nine divisions are given in Chart I. Below are listed the 21 major groups in manufacturing. One diversification index was based upon the "divisions," one on manufacturing "major groups," and one on manufacturing "industries." The manufacturing diversification index, based on major groups, has only 20 groups because statistics on ordnance and miscellaneous manufacturing were combined.

### MAJOR GROUPS IN MANUFACTURING

Ordnance and Accessories	Petroleum and Coal Products
Food and Kindred Products	Rubber and Plastics Products
Tobacco Manufactures	Leather and Leather Products
Textile Mill Products	Stone, Clay, and Glass Products
Apparel and other Textile Products	Primary Metal Industries
Lumber and Wood Products	Fabricated Metal Products
Furniture and Fixtures	Machinery, except Electrical
Paper and Allied Products	Electrical Equipment and Supplies
Printing and Publishing	Transportation Equipment
Chemicals and Allied Products	Instruments and Related Products
Miscellaneous Manufacturing Industries	

Steps used in computing the index:

- (1) Compute the percentage of total employment in each sector of the U. S. economy.
- (2) Compute the percentage of the total area's employment in each sector.
- (3) For each sector, subtract the percent of employment in the sector in the U. S. (step 1) from the percent of area employment in the sector (step 2).
- (4) Since the sum of the positive difference equals the total of the negative deviations, either set of differences may be used.
- (5) The sum of the absolute values of the positive or negative differences is called the specialization index.
- (6) To obtain the diversification index, subtract the specialization index from 100.

## ECONOMIC CHARACTERISTICS

of the Sixth Federal Reserve District

This statistical booklet has been revised to include 1964 and 1965 farming data. Copies are available upon request to the Research Department, Federal Reserve Bank of Atlanta, Atlanta, Georgia 30303.

# Sixth District Statistics

## Seasonally Adjusted

(All data are indexes, 1957-59 = 100, unless indicated otherwise.)

	Latest Month (1967)	One Month Ago	Two Months Ago	One Year Ago		Latest Month (1967)	One Month Ago	Two Months Ago	One Year Ago
<b>SIXTH DISTRICT</b>					<b>Nonmanufacturing . . . . . Apr.</b>				
<b>INCOME AND SPENDING</b>					<b>Construction . . . . . Apr.</b>				
Personal Income, (Mil. \$ Ann. Rate)	Mar. 56,812	56,340r	54,846r	52,428	Farm Employment . . . . . Apr.	83	88	96	90
Manufacturing Payrolls . . . . . Mar.	195	195	196	181	Unemployment Rate (Percent of Work Force) . . . . . Apr.	2.6	2.6	2.7	2.5
Farm Cash Receipts . . . . . Mar.	139	137	131	150	Avg. Weekly Hrs. in Mfg., (Hrs.) . . . . Apr.	42.8	42.4r	41.6	42.1
Crops . . . . . Mar.	137	125	116	158	<b>FINANCE AND BANKING</b>				
Livestock . . . . . Mar.	145	146	148	152	Member Bank Loans . . . . . Apr.	256	256	252	232
Instalment Credit at Banks, *(Mil. \$)					Member Bank Deposits . . . . . Apr.	194	189	184	174
New Loans . . . . . Apr.	261	295r	289	287	Bank Debits** . . . . . Apr.	172	185	184	184
Repayments . . . . . Apr.	265	254	258	249	<b>PRODUCTION AND EMPLOYMENT</b>				
<b>Nonfarm Employment . . . . . Apr.</b>					<b>GEORGIA</b>				
Manufacturing . . . . . Apr.	135	136	136	131	<b>INCOME AND SPENDING</b>				
Apparel . . . . . Mar.	165	167r	169r	162r	Personal Income, (Mil. \$ Ann. Rate)	Mar. 10,923	10,883r	10,649	10,156
Chemicals . . . . . Mar.	130r	130r	131r	126r	Manufacturing Payrolls . . . . . Apr.	191	194r	195	186
Fabricated Metals . . . . . Mar.	153r	153r	152r	148r	Farm Cash Receipts . . . . . Mar.	135	137	141	150
Food . . . . . Mar.	116	115	114r	111r	<b>PRODUCTION AND EMPLOYMENT</b>				
Lbr., Wood Prod., Furn. & Fix. . . . Mar.	105	106	107r	106r	Nonfarm Employment . . . . . Apr.	134	134	134	131
Paper . . . . . Mar.	117	116r	115r	111	Manufacturing . . . . . Apr.	129	129	129	129
Primary Metals . . . . . Mar.	125r	127r	128r	124r	Nonmanufacturing . . . . . Apr.	136	137	137	132
Textiles . . . . . Mar.	105r	105r	106r	104r	Construction . . . . . Apr.	132	133	132	142
Transportation Equipment . . . . Mar.	174	177	177r	170r	Farm Employment . . . . . Apr.	51	55	59	52
Nonmanufacturing . . . . . Apr.	136	136	136	130r	Unemployment Rate (Percent of Work Force) . . . . . Apr.	3.3	3.4	3.2	3.2
Construction . . . . . Mar.	130r	133r	131r	139r	Avg. Weekly Hrs. in Mfg., (Hrs.) . . . . Apr.	40.1	40.4	40.6	41.8
Farm Employment . . . . . Apr.	61	68	70	66	<b>FINANCE AND BANKING</b>				
Unemployment Rate (Percent of Work Force) . . . . . Apr.	3.7	3.5r	3.4	3.3	Member Bank Loans . . . . . Apr.	258	258	257	247
Insured Unemployment (Percent of Cov. Emp.) . . . . . Mar.	2.1	2.1	2.2	1.8	Member Bank Deposits . . . . . Apr.	206	204	204	191
Avg. Weekly Hrs. in Mfg., (Hrs.) . . . Mar.	40.9	40.9	41.4	41.8	Bank Debits** . . . . . Apr.	186	215	207	204
Construction Contracts* . . . . . Apr.	154	140	142	152	<b>LOUISIANA</b>				
Residential . . . . . Apr.	138	159	121	164	<b>INCOME AND SPENDING</b>				
All Other . . . . . Apr.	168	124	159	143	Personal Income, (Mil. \$ Ann. Rate)	Mar. 8,553	8,566r	8,312	7,772
Electric Power Production** . . . . Mar.	143	141	146	134	Manufacturing Payrolls . . . . . Apr.	175	177	178	165
Cotton Consumption** . . . . . Apr.	120	118	117	119	Farm Cash Receipts . . . . . Mar.	138	147	133	137
Petrol. Prod. in Coastal La. and Miss.** Apr.	208	217	220	198	<b>PRODUCTION AND EMPLOYMENT</b>				
<b>FINANCE AND BANKING</b>					<b>Nonfarm Employment . . . . . Apr.</b>				
Member Bank Loans* . . . . . Apr.	248	247	245	230	Manufacturing . . . . . Apr.	121	121	120	112
All Banks . . . . . Apr.	248	222	223	210	Nonmanufacturing . . . . . Apr.	129	129	129	121
Leading Cities . . . . . May	228	222	223	210	Construction . . . . . Apr.	154	150	155	135
Member Bank Deposits* . . . . . Apr.	187	185	183	174	Farm Employment . . . . . Apr.	58	60	64	63
All Banks . . . . . Apr.	187	185	183	174	Unemployment Rate (Percent of Work Force) . . . . . Apr.	4.5	4.1r	4.2	4.5
Leading Cities . . . . . May	173	170	167	159	Avg. Weekly Hrs. in Mfg., (Hrs.) . . . . Apr.	41.8	42.5r	42.6	42.4
Bank Debits*/** . . . . . Apr.	178	193	190	190	<b>FINANCE AND BANKING</b>				
<b>ALABAMA</b>					<b>Member Bank Loans* . . . . . Apr.</b>				
<b>INCOME AND SPENDING</b>					<b>Member Bank Deposits* . . . . . Apr.</b>				
Personal Income, (Mil. \$ Ann. Rate)	Mar. 7,455	7,411r	7,259r	7,009	Bank Debits*/** . . . . . Apr.	156	163	161	167
Manufacturing Payrolls . . . . . Apr.	172	175	177	168	<b>MISSISSIPPI</b>				
Farm Cash Receipts . . . . . Mar.	146	148	140	153	<b>INCOME AND SPENDING</b>				
<b>PRODUCTION AND EMPLOYMENT</b>					<b>Personal Income, (Mil. \$ Ann. Rate)</b>				
Nonfarm Employment . . . . . Apr.	124	125	125	123	Mar. 4,388	4,362r	4,123r	4,060	
Manufacturing . . . . . Apr.	121	122	124	122	Manufacturing Payrolls . . . . . Apr.	212	211	212	202
Nonmanufacturing . . . . . Apr.	125	126	126	123	Farm Cash Receipts . . . . . Mar.	144	145	140	155
Construction . . . . . Apr.	120	121r	125	128	<b>PRODUCTION AND EMPLOYMENT</b>				
Farm Employment . . . . . Apr.	68	75	80	72	Nonfarm Employment . . . . . Apr.	138	139	139	134
Unemployment Rate (Percent of Work Force) . . . . . Apr.	4.3	4.1	3.9	4.0	Manufacturing . . . . . Apr.	145	146	148	145
Avg. Weekly Hrs. in Mfg., (Hrs.) . . . Apr.	40.5	41.2	41.1	42.0	Nonmanufacturing . . . . . Apr.	134	136	136	130
<b>FINANCE AND BANKING</b>					<b>Construction . . . . . Apr.</b>				
Member Bank Loans . . . . . Apr.	232	234	231	213	Farm Employment . . . . . Apr.	51	61	62	59
Member Bank Deposits . . . . . Apr.	184	184	181	173	Unemployment Rate (Percent of Work Force) . . . . . Apr.	4.6	4.2r	4.1	3.6
Bank Debits** . . . . . Apr.	171	183	186	192	Avg. Weekly Hrs. in Mfg., (Hrs.) . . . . Apr.	40.2	40.6	40.7	41.7
<b>FLORIDA</b>					<b>FINANCE AND BANKING</b>				
<b>INCOME AND SPENDING</b>					<b>Member Bank Loans* . . . . . Apr.</b>				
Personal Income, (Mil. \$ Ann. Rate)	Mar. 16,390	16,084r	15,698r	15,064	Member Bank Deposits* . . . . . Apr.	220	224	222	209
Manufacturing Payrolls . . . . . Apr.	239	241	235	206	Bank Debits*/** . . . . . Apr.	190	207	209	201
Farm Cash Receipts . . . . . Mar.	141	126	116	161	<b>MISSISSIPPI</b>				
<b>PRODUCTION AND EMPLOYMENT</b>					<b>INCOME AND SPENDING</b>				
Nonfarm Employment . . . . . Apr.	148	147	146	141	Personal Income, (Mil. \$ Ann. Rate)	Mar. 4,388	4,362r	4,123r	4,060
Manufacturing . . . . . Apr.	155	155	154	146	Manufacturing Payrolls . . . . . Apr.	212	211	212	202

	Latest Month (1967)	One Month Ago	Two Months Ago	One Year Ago		Latest Month (1967)	One Month Ago	Two Months Ago	One Year Ago
<b>TENNESSEE</b>									
<b>INCOME AND SPENDING</b>									
Personal Income, (Mil. \$ Ann. Rate)	Mar. 9,103	9,034r	8,805r	8,367	Nonmanufacturing	Apr. 133	134	135	128
Manufacturing Payrolls	Mar. 192	191	193	178	Construction	Mar. 160	169	169	159
Farm Cash Receipts	Mar. 133	127	120	136	Farm Employment	Mar. 65	77	70	73
					Unemployment Rate				
					(Percent of Work Force)	Apr. 4.0	3.3	3.2	3.0
					Avg. Weekly Hrs. in Mfg., (Hrs.)	Mar. 40.0	39.9	40.6	41.5
<b>PRODUCTION AND EMPLOYMENT</b>									
Nonfarm Employment	Apr. 136	138	139	132	<b>FINANCE AND BANKING</b>				
Manufacturing	Apr. 143	145	146	140	Member Bank Loans*	Apr. 243	240	238	228
					Member Bank Deposits*	Apr. 178	173	173	171
					Bank Debits**	Apr. 209	215	208	202

\*For Sixth District area only. Other totals for entire six states. \*\*Daily average basis. r-Revised.  
 Sources: Personal income estimated by this Bank; nonfarm, mfg. and nonmfg. emp., mfg. payrolls and hours, and unemp., U. S. Dept. of Labor and cooperating state agencies; cotton consumption, U. S. Bureau of Census; construction contracts, F. W. Dodge Corp.; petrol. prod., U. S. Bureau of Mines; industrial use of elec. power, Fed. Power Comm.; farm cash receipts and farm emp., U.S.D.A. Other indexes based on data collected by this Bank. All indexes calculated by this Bank.

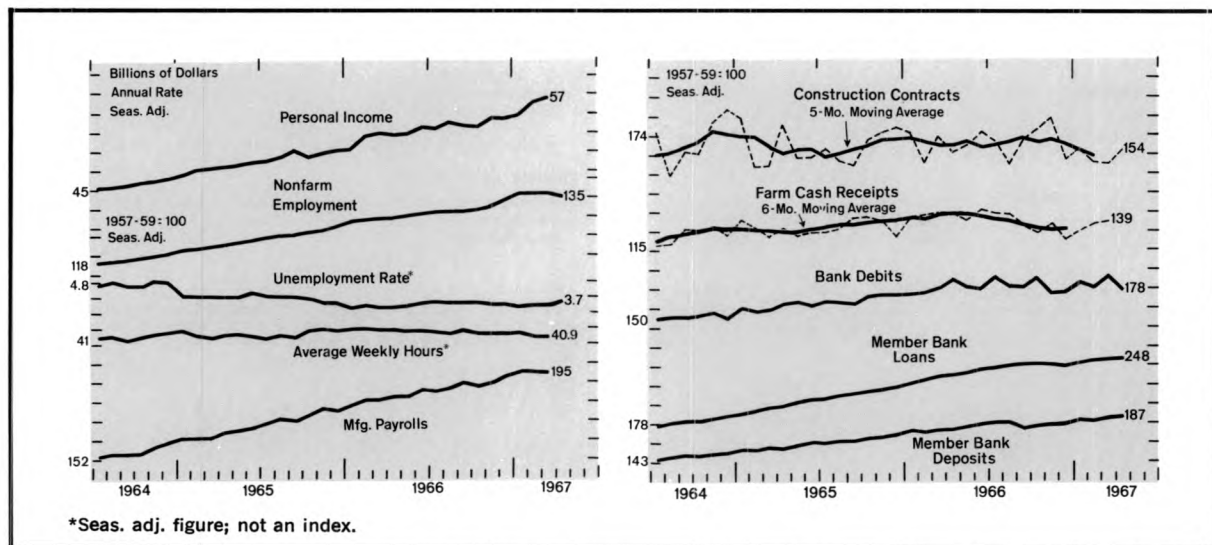
# Debits to Demand Deposit Accounts

	Percent Change					Percent Change							
	Year-to-Date 3 mos. Mar. 1967 from 1967					Year-to-Date 3 mos. Mar. 1967 from 1967							
	Mar. 1967	Feb. 1967	Mar. 1966	Feb. 1967	Mar. from 1966	Mar. 1967	Feb. 1967	Mar. 1966	Feb. 1967	Mar. from 1966			
<b>STANDARD METROPOLITAN STATISTICAL AREAS†</b>													
Birmingham	1,513,815	1,318,176	1,426,694r	+15	+6	+11	Lakeland	124,741	116,403	128,309	+7	-3	+5
Gadsden	59,370	54,090	63,519r	+10	-7	-6	Monroe County	38,706	32,058	38,202	+21	+1	+4
Huntsville	186,993	159,435	183,590r	+17	+2	+3	Ocala	56,492	57,079	59,540	-1	-5	+4
Mobile	470,016	418,819	467,271r	+12	+1	+4	St. Augustine	19,615	17,370	21,308	+13	-8	+7
Montgomery	306,223	272,077	292,771r	+13	+5	+5	St. Petersburg	361,940	302,149r	316,121	+20	+14	+5
Tuscaloosa	98,340	88,077	89,107	+17	+10	+7	Sarasota	101,679	92,631	111,596	+10	-9	-1
							Tampa	692,594	612,060	684,113	+13	+1	+6
							Winter Haven	62,688	59,228	68,684r	+6	-9	+3
<b>Ft. Lauderdale—</b>													
Hollywood	671,413	598,690	656,524r	+12	+2	+7	Athens	73,710	66,700	70,140	+11	+5	+12
Jacksonville	1,644,258	1,404,259	1,555,490r	+17	+6	+6	Brunswick	40,492	34,725	38,616	+17	+5	+5
Miami	2,417,751	2,028,491r	2,230,660	+19	+8	+9	Dalton	78,412	71,669	89,949	+9	-13	-6
Orlando	555,654	484,221	572,492r	+15	-3	+3	Elberton	18,552	11,949	13,688	+55	+36	+18
Pensacola	197,844	179,245r	185,627r	+10	+7	+11	Gainesville	71,082	65,660	56,443	+8	+26	+13
Tallahassee	128,230	138,815	120,393	-8	+7	+15	Griffin	31,530	29,157	31,449	+8	+0	+9
Tampa—St. Petersburg	1,380,371	1,212,802r	1,305,988r	+14	+6	+7	LaGrange	23,694	20,280	25,159	+17	-6	-1
W. Palm Beach	446,687	415,839	449,095r	+7	-1	+3	Newnan	21,438	22,466	25,965	-5	-17	+1
							Rome	71,564	63,650	71,196	+12	+1	+4
							Valdosta	54,475	47,419	50,823	+15	+7	+12
Albany	86,005	77,550	100,756	+11	-17	-4	Abbeville	11,659	10,015	11,111	+16	+5	+6
Atlanta	4,745,483	3,928,464	4,381,111r	+21	+8	+9	Alexandria	139,084	132,604	112,659	+5	+23	+26
Augusta	287,852	257,794	249,524r	+12	+15	+15	Bunkie	6,784	5,727	5,462	+18	+24	+22
Columbus	216,282	190,153	206,708r	+14	+5	+10	Hammond	38,171	34,608	33,121	+10	+15	+23
Macon	254,615	211,107	224,301r	+21	+14	+10	New Iberia	33,581	30,843	34,953	+9	-4	-2
Savannah	282,970	235,022	256,085r	+20	+10	+9	Plaquemine	10,634	11,634	9,776	-8	+9	+22
Baton Rouge	549,869	494,962	552,953r	+11	-1	+7	Thibodaux	22,879	19,508	22,005	+17	+4	+3
Lafayette	112,850	111,002	119,309	+2	-5	+3	Biloxi-Gulfport	108,221	90,445	89,228	+20	+21	+13
Lake Charles	141,788	131,780	121,942	+8	+16	+21	Hattiesburg	55,421	49,393	52,534	+12	+5	+5
New Orleans	2,473,333	2,035,376	2,571,256r	+22	-4	+3	Laurel	33,963	31,546	35,915	+8	-5	-1
Jackson	619,416	589,355	584,205r	+5	+6	+10	Meridian	64,132	58,616	61,385	+9	+4	+7
Chattanooga	632,411	509,581	577,089r	+24	+10	+9	Natchez	39,747	33,495	35,443	+19	+12	+13
Knoxville	451,693	411,410	426,879r	+10	+6	+10	Pascagoula—						
Nashville	1,627,292	1,444,260	1,430,014r	+13	+14	+16	Moss Point	54,014	50,177	51,031	+8	+6	+13
							Vicksburg	40,828	38,442	39,342	+6	+4	+10
							Yazoo City	26,447	23,809	24,185	+11	+9	+10
<b>OTHER CENTERS</b>													
Anniston	63,473	54,590	61,953	+16	+2	+4	Bristol	65,384	55,345	68,765	+18	-5	+9
Dothan	62,285	53,610	57,279	+16	+9	+13	Johnson City	77,289	68,611	71,520	+13	+8	+11
Selma	44,288	40,071	40,974	+11	+8	+8	Kingsport	170,164	135,172	162,646	+26	+5	+11
Bartow	38,273	36,793	38,518	+4	-1	+8	<b>SIXTH DISTRICT, Total</b> 30,720,039 26,750,194r 29,127,453r +15 +5 +8						
Bradenton	75,188	61,052	57,987	+23	+30	+27	Alabama‡	3,849,406	3,501,560	3,726,846r	+10	+3	+8
Brevard County	217,750	192,396	224,956	+13	-3	+1	Florida‡	9,619,880	8,337,548r	9,097,087	+15	+6	+9
Daytona Beach	96,394	73,901	80,088	+30	+20	+7	Georgia‡	7,690,087	6,542,131	7,131,866r	+18	+8	+6
Ft. Myers—							Louisiana††	4,086,178	3,558,006	4,127,658r	+15	-1	+6
N. Ft. Myers	82,466	70,836	78,011	+16	+6	+6	Mississippi††	1,385,980	1,265,822	1,275,543r	+9	+9	+10
Gainesville	86,679	74,508	78,109	+16	+11	+9	Tennessee††	4,088,508	3,545,127	3,768,453r	+15	+8	+11

\*Includes only banks in the Sixth District portion of the state. †Partially estimated. ‡Estimated.



# District Business Conditions



Activity in various sectors of the District's economy continues hesitant. In recent months, little or no growth in nonfarm jobs and business loans reflected the strain of inventory adjustments nationally. Retail spending was marked by caution. Lower cash incomes to farmers, mixed conditions in construction activity, and rising defense contracts contributed to the generally uneven picture.

In April, nonfarm jobs hovered around a plateau, as manufacturers cut the workweek and the number of jobs in adjusting to current demand. While the sensitive insured unemployment rate has increased in recent months, the total unemployment rate has remained stable. Nevertheless, defense contracts awarded to District firms jumped 30 percent in the first quarter.

Although passbook savings showed the first significant expansion in many months during May, certificates of deposit continue to provide most of the deposit growth at District banks. Rates on smaller denomination CD's have been lowered in some areas. Loan expansion was relatively weak at city banks, indicating that the April pick-up in business loans was short-lived. However, many large District banks are optimistic about loan demand this summer.

According to preliminary estimates, total retail sales declined from March to April. A sharp upturn in automobile sales in March, which boosted total retail sales, apparently did not persist through April. Instalment lending at commercial banks declined primarily because of a drop in automobile loans. Loans to purchase other retail consumer goods also dropped.

Planting of all major row crops except soybeans nears completion. However, cold and rainy weather in several regions has caused the cotton crop to deteriorate, forcing the replanting of some acreages. General rains have relieved drought conditions in South Georgia and parts of Florida. Through the first quarter, cash receipts from farm marketings were 8 percent less than in the same period a year earlier. Lower prices account for most of the decrease in crop and livestock sales. All District states except Tennessee shared in the decline.

Total construction contracts in the District gained somewhat in April, but not enough to reverse the downtrend prevalent since third quarter 1966. Residential contract volume was off considerably from March but remained well above that of February. Recent weakness in nonresidential contract volume was reversed, however, and this index showed a sharp rebound from the depressed level of March. Rising yields on competitive investments are being reflected in higher discounts on FHA-VA mortgages.

NOTE: Data on which statements are based have been adjusted whenever possible to eliminate seasonal influences.