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The One-Variety Cotton-Improvement Program

FROM the multitude of conflicting views on the outlook for cotton, at least two things stand out. In the first place exports are likely to be relatively small, and growers must rely primarily upon the domestic market as an outlet for their crop. But, in the second place, cotton must be produced more efficiently if it is to compete successfully in the domestic market with synthetic fibers.

For Sixth District farmers these two points have a profound significance. Over a period of many years cotton has provided a large share of their farm income. Even with a materialization of the widely advocated shift to farming systems that center around livestock, a need for a cash crop will remain. No other widely applicable crop has yet been developed for the Southeast that fulfills this requirement as well as cotton does. Although in the coastal plains of South Georgia and Alabama peanuts have partially displaced cotton as a cash crop, little additional shifting between these two crops can be expected.

It is probable that National policy will demand more efficient cotton production. For many years various legislative devices have been used in efforts to cope with the "cotton problem." Often these measures had economic assistance to Southern farmers as their primary motive and, to that end, used a cotton-price policy as a vehicle. In some instances the result was actually to encourage inefficient production. Consideration is now being given a long-range agricultural program to take the place of the legislation now in effect when it expires in December 1948. Long-range programs for agriculture cannot afford to overlook problems related to the efficient production of food and fiber. Although the search is for a program that will be suitable for several years, the plan's nature is almost certain to be influenced in no small measure by the economic environment at the time the plan is formed. If attention centers on producing the needed food and fiber at the lowest possible cost, it is likely that the program will carefully avoid any subsidization of high-cost producers. In order to obtain maximum benefits under future agricultural programs, therefore, District cotton growers may have to demonstrate far greater efficiency than they have in the past.

During the past few decades the outstanding developments for the entire cotton belt have been a large decrease in acreage and a large increase in yields. The yield increases have come about mainly from a greater use of fertilizer, a shift to higher-yielding areas, a more careful selection of land on individual farms as well as in each area, a more widespread use of improved varieties, and the planting of larger legume-crop acreages. Since these changes have affected the various production areas differently, considerable acreage shifts have occurred among them.

District cotton-producing sections may be broadly grouped into the Piedmont; the Coastal Plains; the Delta; and the Eastern Hilly Area, which includes the Appalachian Highlands, the Black Belt, the Clay Hills, and the Brown Loam Area. Since 1928-32, the period immediately preceding the advent of the AAA programs, cotton acreage has shifted outside the District into the Delta, the High Plains, and the Irrigated Areas. Although in all the major producing sections except the Irrigated Areas it has declined, the Delta and the High Plains have increased rapidly in relative importance as cotton-producing sections. Most District cotton is produced in the Hilly Area, the Coastal Plains, and the Piedmont. Though these three still retain their relative position as producing areas, from the acreage standpoint they have lost ground as cotton producers. Except in the Brown Loam area, yields have not increased as fast as they have in either the Delta or the High Plains.

The District's decline as a cotton-producing section results partly, of course, from healthful changes in its farm economy. Economic pressure and education are two of the important forces responsible for a more-diversified farming system with less reliance on cotton as the principal source of income. It is certain that these forces will continue to exert their effects toward that end. It is equally certain, on the other hand, that cotton will remain a basic component of the District farm economy for many years longer. The relatively disadvantageous position of District cotton production, therefore, makes the need for increased efficiency even more acute than it is in some other producing areas.

During the period 1937-41 the national average cost of producing lint cotton was estimated to be about 10 cents a pound. Average costs were estimated in the same period to be 7.7 cents in the River Bottom Areas, which include the Delta; 8.9 in the Eastern Hilly Areas; 10.6 in the Piedmont; and 11.8 in the Coastal Plains. In the period 1942-44 differences between the Delta and other Southeastern areas in average production costs dwindled, but the Delta still had the decided cost advantage. That area, which has also the greatest quality advantage, yields only a small proportion of the District's cotton. Much of the production in the District, therefore, involves growing a relatively low-quality cotton at a relatively high cost.

Production practices that result in lower costs in relation to the value of the product fall into two main classes. In one class are the practices that effect labor savings, and in the other are those that increase yields per acre or the quality

of the product or both. Of all the cost-reduction means, mechanization continues to receive the most attention. Undoubtedly it will result in labor savings that will materially reduce cotton-production costs. In most District areas, however, the topography and the small size of the farms will prevent any appreciable use of the type of mechanized equipment now being developed. Since mechanization appears most likely in the relatively level areas of large farms, such as the Delta, it probably will have the effect of lowering most District cotton growers' level of production efficiency. Of course, equipment adapted for small upland farms may be developed, but, if the mechanization of cotton evolves as that of other staple crops has, the small widely adapted machines will be the last to be to put to general use. For increasing their efficiency the District cotton growers' best opportunities seem to lie in improved quality and higher yields to the acre. Their progress toward these two objectives is being hastened by their increasing participation in the one-variety cotton-improvement program under sponsorship of the state agricultural extension services and the Department of Agriculture.

Origins and Growth

This plan attempts to solve problems that are an outgrowth of historical influences on cotton production. Relatively few varieties made up the early commercial plantings. Under the plantation system, with only one variety to a plantation as a rule, they could be kept reasonably pure. In many instances each plantation had its own gin, which arrangement tended to prevent the mixing of seed. The varieties grown were late-maturing highly productive types and were famous for their good quality. During the havoc caused by the spread of the boll weevil in the early 1900's, however, the growers found that a different type of variety was needed. The newer cotton strains developed to withstand this menace, and which partially succeeded in doing so, were early-maturing short-staple types that yielded lint inferior in quality to that of the older late-maturing types. In a short time almost all the better types of medium-staple cotton were lost.

Since also the special markets for the better cottons of pre-boll-weevil days were lost, a keen interest in cotton breeding developed. In general, breeders tried to produce strains with fruiting habits that would combat the boll weevil and of a quality that would meet the manufacturers' specifications. Extensive work by private breeders, experiment stations, and the Department of Agriculture resulted in many superior strains.

Unfortunately the benefits of these new varieties were often lost through a failure to keep good varieties separate from inferior ones. Different varieties or strains grown near one another crossbred readily, with the result that planting-seed in the following year was impure. The mixing of different varieties at the gin had the same effect.

Cotton growing had become largely a small-farm enterprise, and ginning had developed on a commercial basis. With the large number of varieties that had been introduced, seed could be kept pure only with the greatest difficulty. In fact many farmers could be certain of getting pure seed only by buying it from the breeder each year. Since this method was relatively expensive, most farmers continued to obtain their seed from local sources. Cotton breeders developed many superior strains, only to see them degenerate after they reached the grower's hands.

In an effort to overcome this serious hindrance to cotton improvement, a plan was proposed in 1909 for work on a community basis. In 1912 the first one-variety-cotton improvement community was established in Arizona. Although a few years afterward several state experiment stations began a plan of cotton improvement on a community basis, it was not until 1931 that the program in the Southeast got under way on an extensive scale.

As it is now practiced, the program is built around the local maintenance of pure seed in quantities sufficient for planting large acreages to a single variety. Farmers, usually in a community served by a single gin, form an association and select a variety best suited to local conditions. In making their selection they take into account not only the money value of the lint and seed but the spinning quality of the cotton. They use a seed-renewal-and-distribution plan under which certain farmers are appointed to multiply breeder seed each year. To prevent mixture with other varieties they make special arrangements with the ginner to gin only the one-variety cotton on certain days. Though the plan hinges on keeping planting seed at the highest level of purity and efficiency, it includes all the practices necessary to the production of larger yields of high-quality cotton. It furthers crop diversification by encouraging farmers to plant cotton only on land capable of producing good yields. It also includes educational efforts to improve ginning and promote soil building, good cultural practices, proper fertilization, and efficient insect-and-disease control.

Since the program's inauguration District farmers have steadily progressed in standardizing cotton production. Last year approximately 44 percent of the Six States' cotton acreage was planted to locally adopted varieties. About 175,000 growers participated in the program. Their average production ranged from six bales in Louisiana to about 11 bales in Tennessee. The Six States' production of more than 1.5 million bales in locally adopted varieties was about 48 percent of their total production.

In one-variety areas co-operation has not, however, reached the stage at which the maximum benefits can be derived. Benefits accrue in proportion to the percentage of total acreage planted to the adopted variety. To be fully effective, therefore, variety-standardization programs should enlist all the cotton growers and all of the cotton acreage in an area. In communities and wider areas in which there are large numbers of cotton farmers, usually a few of the farmers will plant varieties other than the one adopted by the association. Even so these communities are designated as one-variety-production areas.

In order that they may be accurately and uniformly listed for the protection of the cotton trade as well as that of the participating growers, therefore, standard descriptive terms are used to designate the degree of one-variety development. Communities with 10 to 50 percent of their cotton acreage in an adopted variety are considered in the initial stage, those reporting 50 to 75 percent are classified in the intermediate stage, and those reporting more than 75 percent but less than 100 percent are classified as being in the advanced stage. A community is considered to be well standardized when more than 90 percent of its cotton acreage is planted to an adopted variety and all other requirements of the program, such as pure planting seed, good culture, and clean

ginning, are complied with. Relatively few of the District one-variety communities have reached the well-standardized stage.

Financial Returns

The monetary returns to the District's participating growers, however, have been large. Last year in Georgia and Alabama, where 82 percent of the District's cotton crop was produced, the combined additional income to farmers growing locally adopted varieties was estimated to be more than 20 million dollars. This additional income was made possible by quality premiums and higher yields of lint and seed.

SIXTH DISTRICT COTTON PRODUCTION - 1946

Area	State Production (Bales)	District Production (Bales)	Percent of State Production in the District Area	Percent of District Production in State
Alabama.....	803,545	803,545	100.0	48.5
Florida.....	3,761	3,761	100.0	0.2
Georgia.....	553,322	553,322	100.0	33.4
Louisiana.....	246,722	73,250	29.7	4.4
Mississippi...	1,034,652	171,120	16.5	10.3
Tennessee....	509,943	53,908	10.6	3.2
Total.....	3,151,945	1,658,906	...	...

For the 38,000 Georgia growers who were members of one-variety cotton-improvement associations last year the gain was estimated at more than 15 million dollars, almost $400 each. On an average, the individual farmer grew about 15 acres of cotton, which means that his increased income from one-variety cotton amounted to about 25 dollars an acre. In earlier years when the farmers did not get the exceptionally high prices they sold their cotton and cottonseed for last season their average gain from one-variety production was much less. In 1939, for instance, Georgia's 26,000 one-variety producers received an increase from the program estimated to be approximately $6.50 an acre, or about 80 dollars for the average producer. Last year the program's estimated financial benefits to Alabama cotton growers averaged about $8.50 an acre. One-variety improvement associations in that state had about 39,000 members, who received average additional returns from cotton estimated at 135 dollars each. The differences between these averages and the averages for Georgia indicates that the Alabama yield was even more conservatively estimated than the Georgia yield.

These figures are only rough approximations, but they do indicate that the growers have received good returns on their efforts to improve cotton production under the one-variety community plan. Actually the financial rewards under the program may be even greater than they are generally claimed to be. For one thing, the amount of the extra yield from adopted varieties in organized communities is very conservatively estimated at 10 percent of the state average yield. In most places it undoubtedly exceeds that amount.

Although the yield increases that farmers have obtained by standardizing their cotton production cannot be measured accurately, they may be estimated by several methods. The acreage and the number of bales produced by grower members are estimated and reported for each one-variety community, whereas total cotton acreage and production are reported for counties. The differences between these two sets of totals for given areas of comparable size are rough estimates of cotton acreage and production outside the one-variety program. Another method is to compare the average cotton yields in groups of counties that are not standardized with the average yields in groups of counties that are well standardized. A comparison of yield trends in groups of well-standardized counties with those in groups of counties not standardized provides still another means of estimating yield increases in the first group.

In Georgia, a comparison of total acreage and production figures with adopted-variety acreage and production estimates shows, 1946 cotton yields on the adopted-variety acreage were about a third higher than those on the other acreage. This increase amounted to about 40 percent of the state's average yield per acre in that year. The yields on Alabama one-variety cotton acreage in 1946, calculated on the same basis, equaled about 30 percent of that state's average. Of course, comparisons of this sort are subject to considerable error, particularly if the two types of acreages are not fairly evenly distributed with respect to growing conditions, soil fertility and similar factors over the state.

In comparisons made on the basis of smaller, more uniform areas some possibility of this error is avoided. When the acreage and production data from the 1944 census for counties in Georgia's Piedmont region are compared with one-variety production and acreage figures for the same counties, a yield advantage for the latter amounting to about 15 percent of the state's yield per acre is obtained. A similar comparison based on 1946 census data on ginnings in the Clay Hill Area of Mississippi gives one-variety production a yield advantage approximating 40 percent of this state's yield per acre for that year. The apparent yield advantage for one-variety acreage in the Mississippi Coastal Plains, on the other hand, was so small as to be almost insignificant.

Average cotton yields in counties with proportions of less than 10 percent of their acreage planted to locally adopted varieties were compared with those in counties that had proportions of more than 75 percent. For the period 1944-46, average yields were significantly greater in the groups with the higher proportions. In the Georgia Piedmont counties the advantages averaged slightly more than 10 percent. There were marked differences from year to year within the period. The advantage in 1946, for example, was about 20 percent of the state's yield per acre.

When groups of those counties where production is fairly well standardized under the one-variety plan are compared with groups of counties in which there is no appreciable standardization only insignificant differences in yield trends are apparent. Such comparisons show that total cotton acreage, however, has declined less rapidly in those counties where the greatest progress toward standardization has been made. The more rapid rate of decline in the other counties suggests that their cotton acreage is now confined to the very best land. In comparative cotton-yield figures for two groups of counties, the results of greater land selectivity in the unstandardized-cotton planting of one would obscure the effects of the one-variety production of the other where cotton was planted on poorer land as well.

Although the various methods of comparison give varying impressions of the effect that variety standardization has on cotton yields, there is little doubt that the estimates used in computing the financial returns to growers understate the actual yield increase. Probably farmers outside the association also have benefited, because the larger quantities of pure seed made available by the one-variety organizations have no doubt improved their cotton.

Effect on Quality

Since 1931, when one-variety improvement work was begun in the District, cotton quality has improved markedly. In all the District's important cotton states the more valuable staple

lengths now make up a greater percentatge of total crops. Of more importance than staple length from the quality standpoint, however, is the relationship of variety to such fiber properties as tensile strength, fineness, length uniformity, and degree of maturity.

Grade and staple length are the traditional quality measurements used by manufacturers as well as marketing agencies. The first provides an indication of probable manufacturing waste and fiber deterioration. Staple length is an indication of yarn strength and other qualities. Moreover, it has long been recognized, there are other fiber properties that also affect spinning performance. In commercial practice they are designated by the term "character."

Recently, laboratory methods and devices for measuring the principal properties that make up character have been developed. The relationships these factors bear to processing performance and to the quality of the end product have been determined within usable limits of accuracy. It has also been demonstrated that the various fiber characteristics are inherent qualities of specific varieties and growths of cotton. Variety has emerged as the single most important determinant of the spinning quality of cotton. In one study Government fiber and spinning laboratories tested samples of 16 varieties grown at 14 locations widely scattered over the Cotton Belt. The staple lengths of the samples varied from seven-eighths of an inch to longer than 1⅛ inches. Despite the variations in areas of growth and in staple length, the spinning quality of the samples in any one variety was practically the same. Through their own research departments mills also are studying the effect of variety on spinning quality. As a result of their studies they are buying more cotton each year on a variety basis.

These developments have far-reaching implications for the future. As manufacturers learn more about the adaptability of certain varieties for specific uses, there will probably be increases in the amount of cotton bought for its variety as well as its grade and staple. The mills, according to a recent survey, use variety designations in addition to commercial quality designations for about 12 percent of their purchases. If future demands for large lots of cotton grown from unmixed seed are to be met, production must be standardized in a manner that will prevent the mixing of varieties.

Because of the work that cotton breeders are doing, the manufacturers do not have to be content with the fiber characteristics typical of the present cotton varieties. Breeders are concentrating their efforts on only a few of the best varieties to effect changes in fiber characteristics that will meet the manufacturers' specifications.

Since individual plants, even within the same variety, have outstanding character differences, the breeder has a wide choice of qualities without resorting to new varieties. As an aid to his work Government laboratories make complete fiber analyses for him at cost. By using the data resulting from these analyses he can select and breed for certain fiber qualities just as he would for any other plant characteristic. The seed from one plant can be multiplied so rapidly that only a few years are required for putting a new strain into commercial use. By the time the new strain is ready for introduction, the breeder has several years' results from the fiber analyses and spinning tests. He can assure the grower, therefore, that the new strain will meet the manufacturers' requirements. The grower, of course, must keep the seed pure and follow the other practices necessary to produce a high quality cotton. Most breeders regard the one-variety program as the most efficient plan yet devised for carrying advances in breeding on to the manufacturer.

Uniformity of fiber quality has a surprisingly important effect on processing costs. One mill representative estimates that almost two fifths of merely the labor costs in spinning result from a lack of uniformity in raw cotton. Since wage costs constitute a large proportion of spinning costs, labor savings resulting from improvements in cotton quality offer possibilities for a significant lowering of production costs. If these gains were passed along to the consumer in the form of lower prices, the cotton grower would, in turn, benefit from any ensuing expansion of consumption.

Marketing

For an extensive application of the efficiency improvements presented by the one-variety plan, cotton marketing should be modified. In most instances the one-variety communities are too small for mill buyers to obtain large even-running lots of one-variety cotton under present marketing procedures. One possibility, therefore, is to standardize varieties over larger areas. Under the program, some areas have been organized on a county basis, but there is still a real need for larger standardized-variety areas. Another proposal calls for some agency to make, during the cotton-harvest season, fiber-quality tests that could be used by mills when they are buying cotton. To be of maximum efficiency the tests would have to be more rapid than the laboratory tests now used.

For the past several years the Government laboratories have made fiber and spinning tests on samples from selected areas that produce more than 25,000 bales of one-variety cotton. That only a few of its individual areas produce one-variety cotton in such an amount limits the value of this service for the District. Its growers are faced with more difficult marketing problems, therefore, than are the growers in regions where production is more concentrated.

A development in marketing that promises to make possible a more effective use of the most recent information on cotton quality and, at the same time, aid the farmer who produces superior cotton is the lint-certification program. This plan was started in 1946 under the sponsorship of the Mississippi Seed Improvement Association. Essentially it is a means of providing mill buyers with reliable information on the variety of cotton in a bale and the locality in which it is grown. To be eligible for certification, cotton must have been ginned in a one-variety gin and produced from seed that has been certified for variety and purity. Fields are officially inspected for varietal purity. Gins, storage bins, and processing plants are also inspected before approval is given. Last year the association certified the lint from 50,000 acres of cotton and this year will certify that from approximately 90,000 acres. It is expected that lint from 150,000 acres will be certified next year, with a gradual increase from then on.

Adequate quantities of pure seed, readily available, are essential to the success of this program also. Because the one-variety-production plan centers about the multiplication of pure seed, it is vitally important to the lint-identification program.

For ready identification of the cotton as it moves through marketing channels, a tag is affixed to each bale at the gin. This tag shows the variety, the year grown, and the name and location of the grower. Mills are keenly interested in the program since it promises to facilitate their obtaining cotton that meets specific requirements.

If the tagging system is to be successful, its integrity also must be maintained at the highest level possible. In view of the mills' growing interest in cotton on a variety basis, serious consideration should be given to measures that will make the purchase of cotton by varieties, as well as by grade and staple, practicable and dependable. Past experience has shown that tags not only might become accidentally detached but might be switched by unscrupulous handlers. Under the circumstances buyers were afraid to trust the bale markings. It has been suggested that durable tags be attached to the bales in a manner that would prevent accidental loss in handling and that legislation be passed to make removal of a tag before the bale is opened unlawful.

So far lint identification has progressed most rapidly among the Delta growers who plant comparatively large acreages. The need for reliable lint identification is probably greatest, however, in the hill sections typical of the Sixth District, where the widely scattered production by many small producers particularly limits local accumulations of large even-running lots of one-variety cotton.

Like most marketing services, lint identification involves additional costs. These costs must be weighed against the probable benefits. The Mississippi association is not asking cash premiums for the certified lint. Instead it assumes that competition among the mills to obtain the quality cotton will result in the growers' receiving price increases in excess of the additional costs. Some mill representatives, in fact, take the stand that it is the grower's responsibility to properly label and identify his product. To support their view, these representatives have only to point to the synthetic-raw-material suppliers, who deliver accurately labeled packages.

Large crops greatly in excess of domestic needs offer the maximum opportunity for mills to select cotton in the quantities they want with the characteristics they want. The remainder of the crop, of course, must be exported to avoid a burdensome carryover. If exports are to be relatively small, however, it will be necessary to adjust production to domestic market needs. This adjustment primarily would require not only that total production be geared to consumption but that various kinds of cotton be produced in appropriate amounts. In order to determine what adjustments should be made a research project has been set up under the Research and Marketing Act of 1946 to collect and compare information on the types of cotton now being used and the types best suited for making various cotton products.

For successful adjustment cotton growers, instead of producing "just cotton", would have to produce a raw material adapted to the manufacture of a particular end product. In a market primarily domestic a failure by cotton growers to adjust their product to the manufacturers needs would encourage the mills to turn to synthetic raw materials.

Cotton growers, on the other hand, have a less attractive choice of alternatives. A loss of their markets would entail a painful readjustment for them under even the most favorable conditions that are likely. Despite cotton's decline in importance relative to other District farm enterprises, a rapid loss of cotton markets would have more serious repercussions on the farm economy of the Sixth District than it would on that of some other cotton-growing regions. And in areas such as the Piedmont, where the number of alternative cash crops is very limited, the loss of cotton income would be particularly serious. Since most of the District farmers have relatively small farms and relatively small amounts of land and capital, they must depend on returns from their own labor for the greater part of their income. Cotton, with its high labor requirement per acre, is the major source of productive employment on many farms. Its labor requirements are poorly distributed over the year from the standpoint of steady employment, but it returns a higher rate of pay than many alternative cash crops.

Prospects for the quality premiums and the higher yields per acre that bring increased financial returns have stimulated cotton-quality improvement under the one-variety plan. The educational work of the experiment stations; the extension service; and the Bureau of Plant Industry, Soils, and Agricultural Engineering in the Department of Agriculture has been directed toward greater farmer participation in cotton-quality improvement. In standardizing their cotton production District farmers have made great progress, but they must go much further if they are to solve the problems ahead. Though there are indications that yield increases per acre under the one-variety plan are even greater than is generally claimed, the failure of the marketing system to reward farmers for producing cotton of a superior quality undoubtedly tends to retard quality improvement. In the long run the adverse effects of a failure on the part of cotton growers to provide a raw material that will meet all competition might far overshadow any temporary shortcomings in marketing. To the individual farmer, however, the immediate monetary gains seem so important that they provide almost the only incentive for improving cotton quality.

One proposal for giving farmers an additional incentive to improve cotton quality and uniformity calls for soil-conservation benefit payments to all of them who participate in one-variety-cotton improvement. Experience with similar payments for other farm practices suggests that such a program, if adopted, should be accompanied by the most vigorous efforts to educate farmers on the value that the cotton-improvement plan has irrespective of any payments involved. In the past a failure to sell the idea on which a payment was based has often been associated with the farmer's failure to continue the practices after the payment was discontinued.

Though opinions of the best means to the end may differ, it is clear that some means of more-efficient production must be adopted if cotton is to maintain an important place in the District's farm economy. The greatest possibilities for increasing efficiency seem to lie in a further expansion of the one-variety cotton-improvement plan.

To a great degree further progress depends upon developing local leadership and community co-operation. The program offers groups of businessmen who are now sponsoring more general farm-community-improvement work the opportunity for further effective efforts. In many instances one-variety cotton-improvement associations have been formed in communities where farmers had worked together little, or not at all, in an organized way. In enlisting the farmers' support, state and Federal workers have been faced with two problems. One is to convince the growers that the cotton improvement work is necessary and advantageous for them. The other is to convince them of the necessity for working together. Local business leaders can be very effective in promoting the conscious community interest necessary to attainment of the full advantages which are possible in cotton-improvement work. As the competition between cotton-growing areas intensifies, cotton farmers will need all the help that people interested in seeing cotton maintained as an important District crop can give them.

BROWN R. RAWLINGS

The Index of Cotton Consumption, an Indicator of District Industrial Activity

ALTHOUGH as a result of the war Southern industry is now producing many new lines of goods, the textile firms are still the major manufacturing employers in the Sixth Federal Reserve District. In the Six States during the first quarter of 1947, 207,000 people, about one in every five factory workers, were employed in textile mills. Approximately 68 percent of them were at work producing cotton textiles.

Since the cotton-textile industry is the largest single manufacturing activity in the District, its rate of production strongly affects the region's prosperity. One of the most widely used indicators of District business conditions, therefore, is the index of cotton consumption regularly carried in the *Monthly Review*. A measure of the amount of raw cotton used by manufacturing establishments, it is computed from the Bureau of the Census reports giving the monthly cotton consumption of mills in the principal textile states. From that data individual indexes showing the activity in each of the major producing states in the District are also calculated. They are based on the 1935-39 rate of activity and show, therefore, current figures in percentages of the average for those years. The latest figure of 136, for September 1947, for example, means that activity is now 36 percent more than it was in the period 1935-39. To improve the comparability of the data a daily average basis is obtained, by dividing the number of bales used for the month by the number of working days in that month. The indexes are therefore unaffected by differences in the number of working days in the different months.

Until this month the District index has been computed only for Alabama, Georgia, and Tennessee, but Mississippi has now been added. The present area covered contains all but two of the 174 major cotton mills in the Six States. Data for Florida and Louisiana would make little change in the index. Moreover, since only five of the major mills in the Six States are outside the District, in its present form the index closely approximates the cotton-textile activity within the borders of the Sixth District.

Characteristics of the Industry

The cotton-textile industry is made up of a group of related industries performing one or more of the spinning, weaving, and finishing functions necessary in the manufacture of fabric. Not only do mills differ because of the part of the productive process they perform, but mills performing similar functions may differ because of the type of product they make. Although integrated weaving mills, for instance, might be considered similar because most of them take the raw cotton and turn it into woven goods, actually they vary widely in the type of process used, in the number of skilled workers needed, and in the amount of cotton consumed according to the fineness or the coarseness of the fabrics produced.

Differences in the products are largely regional. In the Sixth District most of the mills make such heavy and medium-weight fabrics as ducks, Osnaburgs, drills, twills, and tire fabrics, which require coarse yarns. Approximately 75 percent of its yarn production in 1939 was in the heavy gauges, 20 and under, whereas only about 55 percent of the national production was in these gauges. As a consequence District mills are greater-than-average buyers of cotton, normally accounting for more than a third of the entire national cotton consumption with only about a fourth of the looms and spindles in the country.

Frequently the Bureau of the Census' figures for the number of spindles in place are used to indicate trend changes in the importance of the cotton-textile industry, both nationally and regionally. When used to measure the capacity of the spinning segment, however, this figure is no longer as representative as it once was. The number of spindles in the District states has been decreasing since 1935 except in 1942 and 1946, when they increased slightly, and the total number in the United States has been falling ever since 1925. Predictions of cotton-textile production based solely on the trend of the number of spindles in place overlook the technical advances made in fibers and in spinning practices and machinery. Moreover the addition of second and third shifts has enabled the industry to adjust its operations to peak output with no additional machinery. In fact in 1942, though the Sixth District mills consumed more cotton then than they had in any earlier year, the number of spindles required to process the raw cotton was 8 percent smaller than the number necessary during the peak year of 1935. Therefore despite the downward direction that the long-time trend of the industry as measured by spindles in place is taking, some people believe the per capita consumption of cotton has become relatively constant, varying, of course, with the national income.

Stability of the Industry

Year-to-year changes in the rate of industrial production have a less-than-proportionate effect on the consumption of cotton as measured in the national index computed by the Board of Governors of the Federal Reserve System. Since cotton textiles are nondurable goods which deteriorate rather rapidly, consumer purchases normally are not postponed for any great length of time and thus do not vary greatly. For this reason the production of the cotton-textile industry is generally more stable than that of many other large industries, especialy those which manufacture durable goods. National cotton consumption, therefore, has been only about 60 percent as variable as industrial activity in general. The relative stability of this major industry may have important implications for the District economy.

Though such stability is characteristic of the industry as a whole, from 1930 to 1946 cotton-textile activity in the Sixth District was affected by the business cycle slightly more than that in the rest of the nation was. Thus a 10-percent increase in the national consumption of cotton would probably cause a 12-percent increase in District consumption. Similarly, with any decrease in national consumption a more-than-proportionate decrease would occur in the amount of cotton used by mills in the District states.

Probably the greater sensitivity of District cotton consumption is caused largely by the concentration, within the area, of heavy-goods mills, which use more cotton, of course, than the mills that make lighter goods. Much of the heavy-goods production, particularly that intended for industrial

use, is subject to a fluctuating demand that depends in part on the degree of general business activity. For this reason District mills may be more subject to changes in the business cycle than are mills in other areas.

Seasonal changes within the textile industry are not as great as those in many other industries, since both the raw material and the finished product are readily stored. Usually the heaviest activity is in the early spring and the late fall, but in July and December production is often down because of vacation periods. Until 1940 the District index of cotton consumption was seasonally adjusted to minimize the effect of these regular changes. Since the time when war orders began to affect the industry, however, seasonal changes have been irregular and it has been published in only an unadjusted form.

Use of the Index

The cotton-consumption index is more useful for measuring textile activity over a short period. During the war it could have been used to predict District textile employment to the end of the war with a fair degree of accuracy. On the basis of a trend line computed from the wartime relationship between District cotton consumption and textile employment, however, any prediction of employment in the transitional and postwar periods would have shown more workers than were actually employed in those periods. Production of District mills during the war was at an unusually high rate, and efficiency was hampered by absenteeism, some machinery breakdowns, and a lack of skill on the part of a large proportion of the workers. By the time peacetime orders again began to be filled these handicaps had to a great extent been eliminated.

Changes in production techniques and improvements in machinery and fibers also seriously affect the validity of the index as a measure of long-run activity. Furthermore, changes in the weights of the fabrics produced by District mills can further disturb the long-range accuracy of the index. There is also a factor that can weaken the predictive value of the index even over a short period. A shift to a different grade of goods will reflect a change in cotton consumption just as a change in the rate of mill activity will.

The use of the cotton-consumption index requires, as does the use of all other business-activity indexes, analysis and judgment. As it is regularly published in the *Review* the index provides one of the best means of keeping track of short-run changes in the District economy.

Whatever efficiency the index may have for longer-run predictions, however, will in the future depend strongly on the position cotton is able to maintain in the face of stiff rivalry from other fibers. During 1946 the national consumption of about five billion pounds of cotton made up approximately 75 percent of the entire textile-fiber consumption in the United States. But in that year the consumption of cotton was only about 33 percent greater than it was in 1939, whereas the total fiber consumption of cotton, wool, rayon, and silk had increased 43 percent. It may be, therefore, that competition for textile uses will grow even more as postwar adjustments continue.

THOMAS R. ATKINSON

This is the sixth in a series of articles on those indexes regularly carried in the Monthly Review. *Back figures for the individual-state and District indexes of cotton consumption are available on request to this bank.*

Sixth District Indexes

DEPARTMENT STORE SALES*

	Adjusted**			Unadjusted		
	Sept. 1947	Aug. 1947	Sept. 1946	Sept. 1947	Aug. 1947	Sept. 1946
DISTRICT	361	352	367	368	309	374
Atlanta	422	397	422	448	389	447
Baton Rouge	394	364	402	429	328	438
Birmingham	363	365	347	378	322	361
Chattanooga	351	329	384	365	293	399
Jackson	325	314	334	374	289	384
Jacksonville	430	429	448	422	378	439
Knoxville	311	303	344	318	278	351
Macon	346	330	357	363	274	375
Miami	380	420	387	296	281	302
Montgomery	352	342	348	373	305	369
Nashville	418	394	434	426	355	443
New Orleans	306	306	309	327	267	330
Tampa	484	465	485	460	405	460

DEPARTMENT STORE STOCKS

	Adjusted**			Unadjusted		
	Sept. 1947	Aug. 1947	Sept. 1946	Sept. 1947	Aug. 1947	Sept. 1946
DISTRICT	282	273	277	311	295	305
Atlanta	392	413	405	418	403	432
Birmingham	253	224	230	257	225	233
Montgomery	276	294	314	308	291	351
Nashville	446	444	436	483	444	473
New Orleans	256	281	228	269	264	240

GASOLINE TAX COLLECTIONS***

	Adjusted**			Unadjusted		
	Sept. 1947	Aug. 1947	Sept. 1946	Sept. 1947	Aug. 1947	Sept. 1946
SIX STATES	171	181	157	175	179	160
Alabama	179	187	167	188	189	176
Florida	159	165	145	156	160	142
Georgia	164	171	154	171	174	161
Louisiana	155	168	150	162	170	158
Mississippi	181	193	154	187	199	159
Tennessee	194	196	170	198	198	174

COTTON CONSUMPTION*

	Sept. 1947	Aug. 1947	Sept. 1946
TOTAL	136	134	173
Alabama	144	135	182
Georgia	134	136	174
Mississippi	91	91	128
Tennessee	126	124	135

ELECTRIC POWER PRODUCTION*

	Aug. 1947	July 1947	Aug. 1946
SIX STATES	285	276	266
Hydro-generated	193	201	260
Fuel-generated		376	273

MANUFACTURING EMPLOYMENT***

Place	Aug. 1947	July 1947	Aug. 1946
SIX STATES	143	140	139
Alabama	152	152r	145
Florida	114	111	109
Georgia	129	126r	137
Louisiana	144	142	129
Mississippi	161	155r	148
Tennessee	155	152r	151

CONSTRUCTION CONTRACTS

	Aug. 1947	July 1947	Aug. 1946
DISTRICT	473	353r	447
Residential	708	464r	739
Other	360	299r	306
Alabama	585	324	609
Florida	685	487	458
Georgia	476	345	611
Louisiana	241	301	134
Mississippi	317	236	174
Tennessee	317	259	429

CONSUMERS' PRICE INDEX

Item	Aug. 1947	July 1947	Aug. 1946
ALL ITEMS	166	164	149
Food	205	202	181
Clothing	185	182	156
Rent	n.a.	n.a.	115
Fuel, elec., and ice	129	130	114
Home furnishings	179	177	154
Misc.	143	143	133
Purchasing power of dollar	.60	.61	.67

ANNUAL RATE OF TURNOVER OF DEMAND DEPOSITS

	Sept. 1947	Aug. 1947	Sept. 1946
Unadjusted	17.5	16.2	16.7
Adjusted**	18.0	18.5	17.3
Index**	73.0	74.8	66.8

CRUDE PETROLEUM PRODUCTION IN COASTAL LOUISIANA AND MISSISSIPPI*

	Sept. 1947	Aug. 1947	Sept. 1946
Unadjusted	259	256	230
Adjusted**	262	256	232

*Daily average basis
**Adjusted for seasonal variation
***1939 monthly average=100; other indexes, 1935-39=100

rRevised
n.a.Not available

District Business Conditions

Trade

HIGHER sales at Sixth District department stores during the last two weeks of September more than offset in dollar value the declines occurring in the preceding weeks of the month and somewhat exceeded the sales for September 1946. Because there were more working days in the month this year, however, the index of average daily sales adjusted for seasonal variation at 361 percent of the 1935-39 average was six points lower than that for the corresponding month last year. Despite a gain over the August index, which was 352, it was below the year's peak, 367 percent reached in May. During the weeks ended October 4 and 11 the sales at those stores which report every week were 9 and 2 percent, respectively, above the levels for the corresponding weeks in 1946, but for the week ended October 18 they were 6 percent below the level for the corresponding period last year.

In preparation for heavier fall and holiday sales, department stores normally increase their inventories at this time of the year. Beginning at the end of July, however, the stores have increased their stocks at a greater rate than those influences alone would warrant. The seasonally adjusted index at the end of September was 282 percent of the 1935-39 average, an increase over the index for August, which in turn was three points higher than the index of 270 for July. Stocks as measured by the adjusted index declined progressively between December 1946, when the index was 363, and July of this year. The greater-than-seasonal gains since July have not been sufficient to bring stocks to the level of September last year. Price increases have played their part, of course, in raising the levels of both the sales and the stocks indexes.

Despite the stock increases during the past two months there are no indications that the stores are embarking on inventory-building programs similar to those of last year. Outstanding orders of Sixth District department stores were larger at the end of September than they were in August, which is a normal seasonal condition, but were only 1.9 times the September sales, against a ratio of 2.9 in September 1946.

Reversing the situation in June and August, during which months their sales were lower than they were in the corresponding months of 1946, furniture stores sold goods in September this year that exceeded in dollar value their September 1946 sales by 14 percent. September jewelry-store sales, on the contrary, were not quite as great as they were in 1946, the decline amounting to only one percent, however, which is less than their declines reported in preceding months. Sales at household-appliance stores, however, were up 26 percent.

The elimination of consumer-credit controls on November 1 will provide retailers with an opportunity to expand their credit sales, either by reducing the size of down payments or lengthening the repayment periods. Already, within the limits of the regulation, consumer credit has expanded greatly.

In department stores during September of this year cash sales amounted to 48 percent of total sales, compared with 53 percent in September 1946. Both open-book sales and instalment sales had become more important parts of the total. Last year in September the Sixth District department stores collected 56 percent of the amount of their open-book charge accounts that were outstanding at the beginning of the month. The average account was outstanding, on the basis of this collection ratio, for a period of 54 days. This September the collection ratio for the same type of account was 49, with the accounts outstanding for approximately 61 days. On instalment accounts also the September collection ratio declined this year, from 32 to 29. Similar changes have taken place at the other types of stores.

Despite the increases in consumer credit and a lengthening of the period for which accounts are outstanding, conditions by no means have returned to those of 1941. In September of that year, for example, only 36 percent of the sales at department stores in the Sixth District were made for cash, with the open-credit accounts outstanding for approximately 80 days and instalment accounts for 14 months. Both competition and economic conditions will undoubtedly determine whether many retailers can carry out their announced policy of not returning to their prewar practices.

C. T. T.

Finance

The large volume of farm-land sales made since the end of the war has not resulted in widespread farm-mortgage lending by Sixth District commercial banks, according to information obtained in June 1947 by the Federal Reserve Bank and the Federal Deposit Insurance Corporation in a survey of farm-real-estate loans. Estimates made in that month from the reports of 188 insured Sixth District Banks, both member and nonmember, showed that the amount outstanding on the 27,314 loans secured by farm-real-estate mortgages at all insured District banks was about 44 million dollars. This sum is only 12 percent of the estimated 350 million dollars in farm-real-estate-mortgage debt outstanding in the Sixth District.

If the experience of the member banks is typical, most of the postwar expansion which did take place occurred in 1946. From December 31 of that year to June 30, 1947, the amount of loans on farm real estate outstanding at the member banks increased only a million dollars, bringing their total to 21 millions. During the preceding six-month period it had increased more than five million dollars.

Although loans secured by farm real estate are of considerable importance to some individual banks, in value they constitute less than one tenth of one percent of the total loan portfolios at all member and nonmember banks. This sort of loan, however, is concentrated more in some types of banks than in others. More than half the mortgage loans were held by the nonmember banks, although these banks hold only 25 percent of total bank loans in the District. Almost 90 percent of such loans held by member banks were at the smaller banks, those with deposits of less than 10 million dollars. In this size classification those banks which had deposits of less than two million dollars, and which together had little more than one percent of total member-bank deposits in the District, held 28 percent of them.

Farm loans constitute a very important part of total earning assets at some of the smaller banks. Of the total loans at 30 of the 340 member banks in the District, farm loans, including farm-production loans, constitute 50 percent or more, and farm-real-estate loans make up about half of this percentage. Consequently developments in farm lending are extremely important to a sizable portion of the member

banks. For the same reason an understanding of the character of that lending is important to a fair appraisal of current banking conditions.

That activity in the farm-real-estate market has been great since the end of the war is well known. Almost equally well known is the increase in the sale value of farm real estate. The Bureau of Agricultural Economics reports that the average value per acre of farm land sold in the District states in July 1947 was 110 percent greater than the 1935-39 average. Failure of the increase in turnover and value to be accompanied by a greater gain in lending is, of course, partly explained by the large number of cash transactions and higher down payments which the accumulation of liquid assets by the farmers and other purchasers has made possible.

The survey indicates that a large part of commercial-bank lending on farm real estate has had nothing to do with the purchase of land. Of the total amount of farm real-estate-mortgage debt outstanding in June of this year, the banks reported, only 55 percent was incurred to buy land. The remainder was borrowed to erect or repair buildings, 11 percent, and for still other purposes, 33 percent. Only 45 percent of the value of those loans for which agreements were signed in 1947 was borrowed for the purpose of buying land, and only 56 percent of the value of those incurred in 1946.

Farm real-estate mortgages are frequently used at Sixth District banks as security for short-term loans for purposes other than buying land. Of the total amount of loans secured by farm real estate that were outstanding in June, 64 percent was to mature either on demand or in less than a year's time. About 21 percent was to mature in periods of from five to 10 years, and five percent in 10 years or more. About one percent was reported past due.

The principal danger to a bank in long-term farm-mortgage lending lies, of course, in the possibility that the land mortgaged may decline in value before the mortgage matures and thus, in the event of foreclosure, the bank may be unable to realize the full amount of the loan. In an effort to avoid such contingencies, National banks are forbidden by law to lend more than 60 percent of the appraised value even when the mortgage is amortized and more than 50 percent when it is not.

Even this protection could be nullified by a sharp decline in land prices, which generally follows periods of inflated values. The Bureau of Agricultural Economics estimates that a debt of 75 percent of current farm-land values exceeds in dollar amount a debt made for the full value three years ago. If loans were made now at a high proportion of the appraised value, a return to the values of three years ago would wipe out any of the margins allowed at present. Many banks have, consequently, been even more conservative in their policies than the law requires them to be.

Only 28 percent of the banks even in 1940, before the recent trend toward increasing land values began, reported that their policy was to lend as much as 60 percent of the current selling price of the land being mortgaged. The most frequent maximum at that time was 50 percent, but about 20 banks out of every hundred were unwilling to lend even that much.

By 1947 their policies had tightened. This year, according to the survey, only 11 out of every hundred have been willing to lend as much as 60 percent of the current selling price. About 33 in every hundred are unwilling to lend as much as

Sixth District Statistics

CONDITION OF 28 MEMBER BANKS IN SELECTED CITIES
(In Thousands of Dollars)

Item	Oct. 22 1947	Sept. 24 1947	Oct. 23 1946	Percent Change Oct. 22, 1947, from Sept. 24 1947	Percent Change Oct. 22, 1947, from Oct. 23 1946
Loans and investments—Total	2,371,973	2,337,084	2,482,302	+ 1	— 4
Loans—total	800,434	750,741	674,911	+ 7	+ 19
Commercial, industrial, and agricultural loans	472,426	430,835	378,819	+ 10	+ 25
Loans to brokers and dealers in securities	7,260	7,634	11,428	— 5	— 36
Other loans for purchasing and carrying securities	85,348	80,654	103,746	+ 6	— 18
Real estate loans	61,462	59,518	47,376	+ 3	+ 30
Loans to banks	5,636	5,600	3,788	+ 1	+ 49
Other loans	168,302	166,500	129,754	+ 1	+ 30
Investments—total	1,571,539	1,586,343	1,807,391	— 1	— 13
U. S. direct obligations	351,822	362,589	576,185	— 3	— 39
Obligations guaranteed by U. S.	1,024,943	1,029,826	1,035,223	— 0	— 1
Other securities	194,774	193,928	195,983	+ 0	— 1
Reserve with F. R. Bank	464,948	440,088	439,852	+ 6	+ 6
Cash in vault	43,022	43,103	39,002	— 0	+ 10
Balances with domestic banks	182,402	172,930	188,833	+ 5	— 3
Demand deposits adjusted	1,779,016	1,746,634	1,716,986	+ 2	+ 4
Time deposits	549,458	548,807	537,072	+ 0	+ 2
U. S. Gov't deposits	42,412	36,387	168,772	+ 17	— 75
Deposits of domestic banks	518,373	484,503	553 629	+ 7	— 6
Borrowings	5,000	8,000	11,300	— 37	— 56

DEBITS TO INDIVIDUAL BANK ACCOUNTS
(In Thousands of Dollars)

Place	No. of Banks Reporting	Sept. 1947	Aug. 1947	Sept. 1946	Percent Change Sept. 1947 from Aug. 1947	Percent Change Sept. 1947 from Sept. 1946
ALABAMA						
Anniston	3	18,555	17,283	21,995	+ 7	— 16
Birmingham	6	289,303	267,880	253,210	+ 8	+ 14
Dothan	2	11,943	9,970	9,661	+ 20	+ 24
Gadsden	3	16,041	14,765	13,983	+ 9	+ 15
Mobile	4	114,270	116,319	99,839	— 2	+ 14
Montgomery	3	70,265	63,987	57,808	+ 10	+ 22
FLORIDA						
Jacksonville	3	226,334	228,083	198,111	— 1	+ 14
Miami	7	193,638	180,592	173,551	+ 7	+ 12
Greater Miami*	12	258,043	243,491	237,673	+ 6	+ 9
Orlando	3	39,007	35,729	41,266	+ 9	— 5
Pensacola	3	30,992	30,526	27,984	+ 2	+ 11
St. Petersburg	3	41,367	38,587	39,085	+ 7	+ 6
Tampa	3	91,233	89,887	82,222	+ 1	+ 11
GEORGIA						
Albany	2	15,328	13,261	12,416	+ 16	+ 23
Atlanta	4	722,327	655,694	632,994	+ 10	+ 14
Augusta	3	50,667	43,956	48,374	+ 15	+ 4
Brunswick	2	8,986	7,733	7,595	+ 16	+ 18
Columbus	4	53,577	53,959	47,714	— 1	+ 12
Elberton	2	4,076	3,211	3,470	+ 27	+ 17
Gainesville*	3	12,672	12,008	11,668	+ 6	+ 9
Griffin*	2	10,326	9,914	8,395	+ 4	+ 23
Macon	3	60,427	59,796	51,543	+ 1	+ 17
Newnan	2	8,075	7,922	8,131	+ 2	— 1
Rome*	3	20,340	17,508	17,231	+ 19	+ 21
Savannah	4	89,136	82,287	76,878	+ 8	+ 16
Valdosta	2	13,747	36,008	9,237	— 62	+ 49
LOUISIANA						
Baton Rouge	3	81,490	73,038	63,297	+ 12	+ 29
Lake Charles	3	27,504	25,764	22,985	+ 7	+ 20
New Orleans	7	591,378	551,712	517,279	+ 7	+ 14
MISSISSIPPI						
Hattiesburg	2	15,137	14,567	14,767	+ 4	+ 3
Jackson	4	110,789	103,485	89,471	+ 7	+ 24
Meridian	3	27,773	24,109	26,555	+ 15	+ 5
Vicksburg	2	22,838	18,959	24,158	+ 20	— 5
TENNESSEE						
Chattanooga	4	125,817	121,756	113,004	+ 3	+ 11
Knoxville	4	102,163	99,043	94,665	+ 3	+ 8
Nashville	6	262,335	261,815	227,271	+ 0	+ 15
SIXTH DISTRICT 32 Cities	109	3,536,404	3,351,683	3,111,019	+ 6	+ 14
UNITED STATES 334 Cities		91,889,000	84,406,000	83,295,000	+ 9	+ 10

*Not included in Sixth District total.

50 percent, and only 30 of every hundred are willing to lend as much as 33 1/3 percent. These policies contrast sharply with the current practices of all mortgage lenders as a group, whose customary practice, as reported by the Bureau of Agricultural Economics, is to lend 75 percent of the current value.

Just as in commercial and industrial lending, both the size and the term of a farm mortgage influences the rate of interest paid on it at the bank. According to the survey, about 80 percent of the banks in 1930 ordinarily charged 8 percent on farm real-estate mortgages. The interest rates charged by the banks, however, have been declining progressively since that time. By 1940 the number charging that rate made up less than half the banks. This year about three fourths of them are usually charging 6 percent or less. The average interest rate reported by banks for all farm-mortgage loans was 5.8 percent. The rates contributing to this average ranged from an average of 6.9 percent on loans originally made for less than $500 down to one of 4.9 percent on loans whose original amount was $25,000 or more. For loans of equal size in amounts of less than $1,000 farm-mortgage borrowers paid approximately the rates that commercial and industrial borrowers did. The rates for larger loans were from a half of one percent to one percent higher. Since the interest rates for individual loans are influenced by many other factors, they may, of course, differ considerably from the averages.

C. T. T.

Employment and Industry

In the Six District states August showed a gain in manufacturing employment of 2.5 percent over July and one of 3 percent over August 1946. Even so the total in the District was still somewhat below the peacetime peak, which was reached in the winter months of 1946-47.

Only Alabama failed to participate in the gains. In that state employment remained at the July level. Employment gains in the coal mines and steel mills at Birmingham balanced layoffs in the textile industry in the Montgomery area.

In the other states the increase resulted partly from seasonal changes in industrial activity, especially in food-processing. With the opening of the fishing season the seafood industries in the coastal states added numerous workers. In Louisiana, for example, where the shrimping season opened on August 12, employment increases occurred not only in fishing, and canning but in the related tin-can and paperboard-container industries. These gains offset to some extent a decrease in shipbuilding employment and smaller declines in the number of workers employed by the chemical and petroleum industries. In the New Orleans area the gain in the shrimp industry's employment consisted of a large addition to the number of women workers in the packing plants as well as the addition of a thousand men to the fishing fleets. At the opening of the season the seafood industry faced an unprecedented demand for its product because of the rising meat and poultry prices. Canning of late summer vegetables in Tennessee has continued the employment increase in that state. In central Georgia a lull in food-processing operations that was occasioned by the close of the peach season will be counteracted to some extent when the pimiento crop is harvested. An additional prospect is that the citrus fruit-canning industry in Florida will probably experience a large expansion in employment when the 1947 season gets fully underway.

A number of factors promise to have a favorable influence on District employment and production in the near future. One of these is the near completion of two paper plants in the Savannah area, and another is the completion of a large automobile-assembly plant just outside Atlanta. The work called for by contracts awarded for ship conversion in Mobile, Alabama, and for ship repair in New Orleans and by the progressive conversion of the Brunswick, Georgia, shipyard to industrial use also may be expected to contribute to employment stability, if not to an increase.

Petroleum production in the Sixth District States in August registered a slight gain over that in July and a considerable increase over that in August a year ago. This expansion, which has been gradual since the first of the year and unbroken except for small declines in February and April, is attributable to continual completions of new drillings and to operations of the Louisiana Gulf Coast refineries at a rate of from 97 to 98 percent of daily capacity. In July the drilling of 115 new oil wells had been completed in Louisiana. As a result, in that month Louisiana reported the second largest increase in daily output (8,000 barrels) in the nation, exceeded only by Oklahoma's gain of 10,000 barrels a day.

The demand for petroleum and petroleum products for both domestic use and export has outstripped production in the country as a whole. In turn, the rate of increase in demand for the past year has been exceeded by the rate of increase in prices. Though the total demand for petroleum and petroleum products was 10.2 percent higher in July than it was in the same month last year, prices were 37.9 percent higher than they were at that time. Since crude-oil production during the past year has increased 10.2 percent in Louisiana and the national increase has been only 7.5 percent, Louisiana producers have been in a very favorable position to reap the advantage of the high prices.

Steel-ingot production continues high in the District as well as in the nation as a whole. Since the settlement of the labor difficulties in the coal industry during the first week of July the operations of Southern steel plants have averaged 99 percent of weekly capacity. This is considerably above the national average. During August, however, the blast furnaces in Alabama were operating at only 76.2 percent of capacity.

L. C.

Agriculture

Damage to District crops from the storms in September and October, though not widespread, was severe in some sections. When the mid-September hurricane struck, about two thirds of the Louisiana rice crop had been harvested, but the remaining third was damaged heavily. Favorable harvesting weather and an increased use of combines saved most of the damaged crop. Since early-crop yields that exceeded expectations offset much of the storm loss, the crop was estimated on October 1 at about 21.6 million bushels, or only 300,000 bushels fewer than the estimate a month earlier. The September storm flattened and twisted part of the sugarcane crop in the main producing sections of Florida and Louisiana. On October 1 the Louisiana production of sugarcane for sugar and seed was estimated at 4.7 million tons, a 6 percent reduction from the September forecast. No acreage abandonment is expected in that state, but harvesting will require more hand labor. Losses from high winds and water during September reduced the Florida sugarcane crop about 10 per-

cent. Further damage from high water during October may have reduced the crop even below the 1.1 million tons in prospect on the first of the month.

Mississippi and Louisiana pecan growers, who normally produce about 28 percent of the District's pecans, lost about a fourth of their prospective crops during October. Although high winds caused some damage to pecans in Georgia, the 25.4-million-pound crop remaining in prospect at the beginning of October was of average size.

Since Florida's heaviest-producing sections for fall snap beans and tomatoes are located within the areas damaged most by the hurricanes and heavy rains, the volume of these crops has also been drastically reduced below that of previous years. In the Everglades, where the bulk of the fall snap bean crop is grown, the September hurricane and subsequent heavy rains destroyed all early snap-bean plantings. Though the Everglades growers have had to battle continually against high water since mid-September, they were able to plant considerable acreage before the storm of October 11-12 completely destroyed the planting in some fields and seriously damaged that in others. Consequently the total crop in this area was estimated at only between 5,000 and 7,000 acres in mid-October. Total losses have not been determined, but yields of the surviving crop are likely to be light.

Injuries to Florida's fall tomato crop were also great, particularly in the heavy-producing section around Fort Pierce. About 5,000 acres had been planted there, but floods, winds, and strong beating rains reduced the crop to 2,000 acres or even fewer. Since a recovery from the September storm depended upon ideal growing conditions, the October storm virtually ruined prospects in the area for a good fall crop of tomatoes.

Although the high winds and heavy rains considerably damaged Florida's citrus crop for 1947-48, the total output is estimated at 84.8 million boxes. The grapefruit crop in the lower Indian River territory sustained the heaviest storm losses. Only about 10 percent of the state's grapefruit crop is produced in this area, but about a fourth of that part sold as fresh fruit is grown there. Growers on the west coast also lost a great deal of grapefruit because of storm damage. Since over most of the state the set of grapefruit was heavy, however, storm losses reduced total production, estimated on the October 1 conditions, no lower than 31 million boxes. This crop is about 7 percent larger than last year's and 17 percent larger than the 26.5-million-box crop utilized last season.

The early and midseason orange crop is estimated at 26.5 million boxes, or an amount 13 percent less than last season's production. Estimated at 23 million boxes, Valencia-orange production shows little change from last year's figure. Tangerine prospects indicate a crop slightly less than last year's, or 4.3 million boxes.

These initial estimates can be taken only as an approximation of the Florida citrus fruit that will be harvested during the 1947-48 season. Economic conditions and additional weather losses may make the final harvested crop much smaller. Last year, for example, the crop was estimated on October 1 at slightly more than 100 million boxes, but subsequent cold damage reduced it to 87.4 million boxes, of which only 83.1 million were harvested. Because of low prices fruit sufficient to fill about 4.3 million boxes was left unharvested.

B. R. R.

Sixth District Statistics

INSTALMENT CASH LOANS

Lender	No. of Lenders Reporting	Volume: Percent Change Sept. 1947 from August 1947	Volume: Percent Change Sept. 1947 from Sept. 1946	Outstandings: Percent Change Sept. 1947 from August 1947	Outstandings: Percent Change Sept. 1947 from Sept. 1946
Federal credit unions	42	— 5	+ 29	+ 2	+ 60
State credit unions	25	— 28	+ 32	+ 1	+ 54
Industrial banking companies	11	— 2	— 10	+ 1	+ 20
Industrial loan companies	20	+ 3	+ 3	— 1	+ 20
Small loan companies	54	+ 3	+ 4	+ 1	+ 17
Commercial banks	34	+ 12	+ 68	+ 3	+ 79

RETAIL JEWELRY STORE OPERATIONS

Item	Number of Stores Reporting	Percent Change September 1947 from August 1947	Percent Change September 1947 from September 1946
Total sales	44	+ 2	— 1
Cash sales	40	— 1	— 18
Credit sales	40	+ 3	+ 13
Accounts receivable, end of month	40	— 1	+ 32
Collections during month	41	+ 16	+ 19

WHOLESALE SALES AND INVENTORIES*

Items	SALES: No. of Firms Reporting	SALES: Percent Change Sept. 1947 from Aug. 1947	SALES: Percent Change Sept. 1947 from Sept. 1946	INVENTORIES: No. of Firms Reporting	INVENTORIES: Percent Change Sept. 30, 1947, from Aug. 31 1947	INVENTORIES: Percent Change Sept. 30, 1947, from Sept. 30 1946
Clothing and furnishings	3	+ 29	+ 1	..	..	..
Shoes	3	— 3	+ 6	..	..	..
Drugs and sundries	9	+ 15	+ 12	3	+ 2	+ 10
Dry Goods	8	+ 8	— 5	3	— 15	+ 36
Electrical appliances	4	+ 9	+ 9	3	+ 1	+ 90
Confectionery	5	+ 6	+ 9	..	..	..
Groceries						
Full lines	26	+ 6	+ 13	14	+ 11	+ 39
Specialty lines	7	+ 16	+ 21	3	— 8	+ 28
General hardware	8	— 7	+ 11	3	— 3	+ 41
Plumbing and heating Supplies	4	+ 21	+ 48	..	..	..
Jewelry	6	0	— 1	5	— 2	— 10
Lumber and building materials	3	+ 8	+ 37	..	..	..
Machinery, equipment, and supplies	3	+ 11	+ 24	..	..	..
Tobacco products	16	+ 4	+ 8	7	+ 5	+ 23
Miscellaneous	20	+ 20	+ 61	16	+ 6	+ 84
Total	125	+ 7	+ 17	57	+ 2	+ 46

* Based on U. S. Department of Commerce figures

DEPARTMENT STORE SALES AND STOCKS

Place	SALES: No. of Stores Reporting	SALES: Percent Change Sept. 1947 from Aug. 1947	SALES: Percent Change Sept. 1947 from Sept. 1946	INVENTORIES: No. of Stores Reporting	INVENTORIES: Percent-Change Sept. 30, 1947, from Aug. 31 1947	INVENTORIES: Percent-Change Sept. 30, 1947, from Sept. 30 1946
ALABAMA						
Birmingham	5	+ 13	+ 7	4	+ 14	+ 10
Mobile	5	+ 18	+ 8	..	..	..
Montgomery	3	+ 18	+ 5	3	+ 6	— 12
FLORIDA						
Jacksonville	4	+ 7	+ 0	3	+ 5	— 20
Miami	4	+ 1	+ 2	3	+ 4	— 10
Orlando	3	+ 21	— 11	..	..	..
Tampa	5	+ 9	+ 4	3	+ 13	+ 20
GEORGIA						
Atlanta	6	+ 11	+ 4	5	+ 4	— 3
Augusta	4	+ 22	+ 2	3	+ 9	— 12
Columbus	3	+ 22	+ 2	..	..	..
Macon	4	+ 28	+ 1	4	+ 1	— 6
LOUISIANA						
Baton Rouge	4	+ 26	+ 2	4	+ 2	+ 2
New Orleans	5	+ 18	+ 3	4	+ 2	+ 12
MISSISSIPPI						
Jackson	4	+ 24	+ 1	4	+ 5	+ 6
TENNESSEE						
Bristol	3	+ 10	— 0	3	+ 8	+ 33
Chattanooga	4	+ 20	— 5	3	+ 1	+ 45
Knoxville	4	+ 10	— 6	..	..	..
Nashville	6	+ 15	+ 0	5	+ 9	+ 2
OTHER CITIES*	18	+ 13	+ 0	22	+ 5	+ 3
DISTRICT	94	+ 13	+ 2	73	+ 5	+ 2

* When fewer than 3 stores report in a given city, the sales or stocks are grouped together under "other cities."

National Business Summary

INDUSTRIAL output and employment expanded somewhat further in September. Value of retail trade increased, reflecting partly a further rise in prices. In the early part of October department-store sales declined. Prices of wheat, hides, rubber, and steel scrap showed marked advances, while prices of most other basic commodities showed little change.

Bank Credit

Commercial and industrial loans at banks in leading cities continued to increase substantially during September and the first half of October. Real-estate and consumer loans also showed further growth. Holdings of Government securities declined somewhat, reflecting Treasury retirement of bonds maturing on October 15.

Additions to monetary gold stock continued to supply reserve funds to banks. Treasury balances at reserve banks, which were expanded considerably in late September as a result of large quarterly tax receipts, declined in October. The effects of these fluctuations on the reserve positions of banks were offset by changes in Federal Reserve holdings of Government securities, which increased in the latter part of September and declined during the first three weeks of October.

Employment

Nonagricultural employment increased by 450,000 persons in September and was at the record level of 43 million, according to Bureau of Labor Statistics figures. The increase largely reflected seasonal gains in nondurable-goods manufacturing and trade, and in the number of school employees of state and local governments.

Industrial Production

Output of manufactured products and minerals showed some further rise in September, and the Board's seasonally adjusted index of industrial production advanced three points to 185 percent of the 1935-39 average. This was the same as the May index and five points below the postwar peak in March of this year.

Activity in durable-goods industries as a group increased further in September owing mainly to larger output of steel and of most types of machinery and transportation equipment. Steel production was temporarily curtailed around the middle of the month as a result of an industrial dispute but advanced sharply in the latter part of the month and continued to rise in October, reaching a scheduled rate of 97 percent of capacity. Output of passenger automobiles and trucks rose sharply in September but declined again in the early part of October. Production of railroad equipment, chiefly freight cars, showed a substantial gain in September, reflecting in part improved supplies of materials. Output of building materials was maintained in large volume to meet demands arising from the advanced rate of construction activity.

The Board's index of nondurable-goods output showed a slight increase in September, reflecting mainly increased production of rayon textiles, paperboard, and petroleum products. Activity at cotton mills and output of manufactured food products and some other nondurable goods showed little change from the level of the preceding month.

Minerals production rose further in September, reflecting a new record rate of crude-petroleum output and a substantial gain in coal production. Output of bituminous coal advanced 7 percent and was close to the same volume produced in September of last year. Output of fuels continued to rise in early October, under the pressure of exceptionally strong demand.

Construction

The value of new construction activity on projects under way, as estimated by the Departments of Commerce and Labor, increased somewhat further in September. Work was started on 88,000 new dwelling units in September, an increase of 2,300 from August, and work was completed on 77,000 units. The value of construction contracts awarded, as reported by the F. W. Dodge Corporation, declined in September following a sharp increase in August and was at about the level of other recent months. Declines occurred in most lines, but the greatest reduction took place in public utilities, which had increased most markedly in August.

Commodity Prices

The general level of wholesale commodity prices in the middle of October was at the advanced level reached in the middle of September. Prices of wheat and some other farm products and foods reached new high levels. Prices of butter, corn, and meats, however, declined following earlier sharp increases. Wholesale prices of most groups of industrial commodities continued to show advances in the early part of October.

Retail prices rose further by about one percent from July to August, with the largest increases shown in prices of foods and fuels. Further marked advances in retail food prices have occurred since August.

Bank Announcements

The newly-organized First National Bank of Picayune, Mississippi, opened for business on September 29 as a member of the Federal Reserve System. This bank has capital stock of $75,000, surplus of $15,000, and reserves of $5,600. Its officers are William C. Carter, chairman of the board; S. G. Thigpen, president; J. M. Smallwood, executive vice president; J. E. Mitchell, vice president; and P. G. Cooper, cashier.

On September 30 the Merchants and Farmers Bank, Greenback, Tennessee, began remitting at par. This is a non-member bank located in Nashville-branch territory. It has capital amounting to $25,000, surplus and undivided profits amounting to $23,000, and deposits of $590,000. S. F. Carroll is president, J. A. Walker vice president, C. L. Melton vice president and cashier, and C. H. Everett assistant cashier.