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## CROP YIELDS—A MEASURE OF FARMING EFFICIENCY

W. M. PRITCHETT

*Agricultural Economist, Federal Reserve Bank of Dallas*

The almost insatiate demand for agricultural products that persisted throughout the war years and, in fact, through the postwar period until very recent months has caused the government agricultural authorities and farmers to attempt to expand production to a virtual maximum. More intensive utilization of land resources has been an order of the times during most of the period, improved agricultural practices have been encouraged, and more extensive cultivation has been practiced as additional acreage has been drawn into agricultural production of one kind or another.

Although the record of agriculture during those years is deserving of high commendation, we cannot afford to be complacent regarding those problems that are generally recognized as being basic to the sound development and stable future of the agricultural part of our economy. One of these problems that deserves consideration, especially in the Southwest, is that of crop yields per acre of land cultivated. Crop yields are, in fact, a measure of the efficiency of agriculture and become of vital importance not only to the farmer but to the Nation as a whole as the postinflation period of readjustment appears to be moving closer. Probably a considerable degree of productive inefficiency might be tolerated in agriculture—as in industry or in other lines of economic activity—during periods of high demand characterized by inflationary developments, but that is obviously not true as abnormal demand begins to lessen and competitive uses for purchasing power begin to increase.

Since 1940, the huge demand for agricultural products both at home and abroad has enabled farmers to sell their production at prices much in excess of prewar levels; since costs have not risen commensurately with prices, profits have been large. But now the specter of surpluses in several most important farm products and weakness in farm commodity prices again are appearing to haunt farmers and agricultural authorities. Farm prices in October averaged 10 percent below the January 1948 peak. Prices of such basic commodities as cotton and grains are at or near support levels, while prices of some of the nonsupported commodities such as citrus, mohair, and pecans have declined substantially. There is a strong feeling in most quarters that farm commodity prices have passed their postwar peak and that now there will be mounting pressure on the top side of the market. Because of a probable slackening foreign demand, growing sluggishness on the part of domestic buyers, and the large domestic production, larger carry-overs of wheat, cotton, corn, and other crops are in prospect for next year.

On the other hand, costs of farm operation this year are about 8 percent above 1947 and more than double the prewar (1935-39) average. Farm wage rates, which are expected to average about 266 percent above prewar in 1948, are likely to remain relatively high, especially if nonagricultural wage rates retain much of their postwar gains—a probability in the opinion of many observers. Farm real-estate taxes in 1947 averaged about 15 percent higher than similar levies made in 1946 and about 40 percent above the prewar average. In addition, a host of other levies, including the federal income

tax, are taking a sizable share from the farmer's income. As in similar periods in the past, tax rate declines probably will lag far behind reductions in farm commodity prices. Costs of farm machinery are more than 60 percent above the prewar level and, in view of the large unsatisfied demand and relatively high production costs, are not expected to decline significantly in the near or foreseeable future. Costs of building materials, fertilizers, insurance, rents, and supplies also are expected to remain high in relation to probable farm commodity prices. The principal exception to the upward movement of farm costs is in the prices of feeds, which have been declining since April and may decline even further during the months immediately ahead. On the whole, therefore, farm costs during 1949 are likely to average close to the level of 1948 and, although they may decline in succeeding years, their downward trend probably will be at a slower rate than that of farm commodity prices.

Of course, the government price support program will play a part in shaping farm receipts, but there appears to be developing in many quarters and, in fact, among some farm leaders the view that support prices are uneconomically high. Present legislation extends the current levels of support only to 1950, and in view of the possibility that the program will be reviewed by the new Congress, there is no certainty that the percent of parity at which prices will be supported may not be lowered. Moreover, whether or not farm prices are supported at a lower percent of parity, the parity price itself may decline in 1949 and in succeeding years. The index of prices paid by farmers, which is the index series used in compiling the parity prices of individual crops, is based to the extent of about 45 percent on the prices of foods, clothing, feeds, and seed, which are things that are produced or originate on the farm. Declines in prices of any of these commodities tend to reduce the levels at which farm commodity prices are supported. The index reached a record high of 251 in August, but declined one point in each of the following two months. The United States Department of Agriculture predicts that declines in certain prices which have occurred this year and others which are expected during the months ahead may bring about a reduction of as much as 10 percent in parity prices and in support prices next year, unless such declines are offset by increases in prices of industrial products included in the index.

But entirely aside from the question of government support prices, farmers may secure large benefits by reducing their costs and improving their efficiency of production. In fact, this course may be necessary if farmers are to maintain a satisfactory margin between costs and gross income. As farmers produce more efficiently, the prices they receive will bear a more favorable relationship to costs and will provide incomes and services more nearly on a parity with those of nonfarm workers. At the same time greater stability will be given to the agricultural economy and to our economy as a whole. Furthermore, as farm commodities are produced at lower costs, consumers will be able to buy more of the products of farms and buy them at relatively lower prices, which will contribute toward a higher standard of living in this country.

But just how efficient is American agriculture and what progress is being made in increasing its efficiency? Since 1910 there has been an upward trend in efficiency of both agriculture and industry as measured in terms of production per worker, but the increase over the period from 1910 to 1940 was somewhat greater for industry than for agriculture. During World War II the rise was slightly greater in agriculture, and the output per worker on farms in the United States in 1946 reached a peak of 65 percent above the 1935-39 average. These accomplishments have been made by use of more lime and fertilizer and more machinery, by changes in land use, conservation, rotation of crops, by changes and improvements in crops and varieties grown, and by many other miscellaneous means.

One of the best concrete indications of changing efficiency is the trend in production of crops per acre. Progress in this respect in the United States is illustrated by comparison of crop yields during

TABLE I  
CHANGES IN PER ACRE YIELDS OF SELECTED CROPS IN THE  
UNITED STATES AND IN TEXAS BETWEEN PERIODS  
1910-14 AND 1943-47

	Units	Texas			United States		
		1910-14	1943-47	Percent change	1910-14	1943-47	Percent change
Barley.....	Bushels	22.2	17.6	-21	21.6	24.1	12
Corn.....	Bushels	18.8	15.9	-15	26.0	32.6	25
Cotton.....	Pounds	174.0	167.0	-4	200.3	261.4	31
Hay.....	Tons	1.18	0.91	-23	1.15	1.36	18
Oats.....	Bushels	28.2	21.7	-23	29.3	32.2	10
Peanuts.....	Pounds	720.0	429.0	-40	796.0	653.0	-18
Rice.....	Bushels	51.1*	45.0	-12	48.6*	45.9	-6
Sorghums....	Bushels	18.4†	16.9	-8	15.6†	16.7	7
Wheat.....	Bushels	12.7	13.2	4	14.3	17.3	21

\*1933-37.

†1922-26.

SOURCE: United States Department of Agriculture.

the periods 1910-14 and 1943-47. Wheat yields per acre have risen from 14.3 bushels to 17.3 bushels, or 21 percent; corn yields per acre rose from an average of 26.0 bushels to 32.6 bushels, or 25 percent; while cotton yields rose from 200 pounds to 261 pounds per acre, or 31 percent. These and other data shown in Table I indicate that the Nation's farmers, as a group, are moving forward in increasing their efficiency by enlarging the production of commodities on the acreage of land cultivated. Much of this increase has taken place within comparatively recent years, however, as evidenced by the fact that wheat yields, which had fallen considerably, increased 48 percent between 1935-39 and 1943-47, and the production per acre of all crops increased about 22 percent between these two periods.

In Texas, however, yields of most crops have failed to make increases paralleling those of other important producing states and, in fact, yields of many crops are declining. Corn yields in the State averaged 15.9 bushels per acre in 1943-47, compared with an average of 18.8 bushels in 1910-14. They are now about one-half the national average, compared with three-fourths the average in the earlier period. Average hay yields for the same periods have declined from 1.18 tons to 0.91 tons per acre and from 103 percent to about 67 percent

of the average of all states. Oat yields have declined from 28.2 bushels to 21.7 bushels per acre, or from 96 percent to about 67 percent of the national average. Peanut yields, which have declined from 720 pounds to 429 pounds per acre, have declined from 90 percent to 66 percent of the national average. Cotton yields, although lower than during the pre-World War I period, are substantially above levels that prevailed during the Twenties, but are only 64 percent of the national average, compared with 87 percent in 1910-14. Wheat yields, which have risen slightly since 1910-14, have declined from 89 percent to 76 percent of the national average. Yields of most other major crops in the State are low in relation to the combined average of all states, as indicated in Table II, and many of them are lower than they were in 1910-14.

It should be pointed out, however, that there is considerable variation in yields per acre of the same crops between different sections of the State. Yields of cotton, wheat, corn, and other crops vary notably in different crop reporting areas. For instance, in 1947, average yields of cotton per acre varied from a high of 296 pounds in the Lower Rio Grande Valley and southwest Texas area to a low of 148 pounds in north Texas. Tests made with corn at various experiment stations in the State (see Table III) show yield averages in some sections which compare favorably with the national average, while averages in other parts of the State are very low. Likewise, in 1947, grain sorghums grown in the south Texas area returned an average yield of 30 bushels per acre, in contrast with a yield of 18 bushels per acre in the heavy producing Panhandle area. The course of crop yields in Texas, which to some extent reflects farming efficiency—or inefficiency—in the State, raises the rather obvious questions of "Why are yields relatively low or declining?" and "What can be done to increase them?"

There are a number of factors that underlie the decline in crop yields in Texas and which help to answer the first of these questions. One important factor that applies to most crops has been the decline in soil fertility, due to the continuous cropping to soil-depleting crops and to failure on the part of farmers to carry out soil conservation and soil-building practices. Despite the demonstrated advantages of crop rotations, many Texas farmers have been reluctant to rotate green manure crops with cash crops for soil improvement, with the result that continuous cropping of land to cotton, grain, or other crops year after year is still practiced on a large scale. The practice of applying commercial fertilizers and lime to the soil for yield improvement is growing in importance in the State, but still falls far short of recommendations made by agronomists. Then, too, soil fertility has been reduced immeasurably by loss of topsoil due to improper surface drainage. Failure of farmers to establish necessary ditches, terraces, and waterways; to plant crops on contours; to plant cover crops; and to carry out other recommended practices has resulted in the loss of untold millions of tons of

TABLE II  
RELATION OF CROP YIELDS PER ACRE IN TEXAS  
TO UNITED STATES AVERAGE YIELDS  
1910-14 AND 1943-47

Crops	Texas yields as percent of United States averages	
	1910-14	1943-47
Barley.....	103	73
Corn.....	72	49
Cotton.....	87	64
Hay.....	103	67
Oats.....	96	67
Peanuts.....	90	66
Rice.....	105*	98
Sorghums.....	118†	101
Wheat.....	89	76

\*1933-37.

†1922-26.

SOURCE: United States Department of Agriculture.

priceless topsoil and organic matter. Progress has been made in initiating a program of soil conservation and improvement in the State, but the trend toward loss of the fertility of the soil has not been reversed and, consequently, continues to pose a basically important problem.

Some of the decline in yields in recent years has been due to a lack of sufficient labor to cultivate crops properly, to control grass and weeds, and to eliminate insects. Also, there has been a shortage of machinery needed for proper and timely planting, cultivation, and harvesting of crops.

Besides these factors of management, there is the factor of acreage expansion which has contributed to declines in yield averages of some crops in the State. As production of a crop is increased, less productive land often is brought under cultivation and less experienced producers enter the field. Cotton acreage in Texas, for example, rose from 5,000,000 acres to 16,000,000 acres between 1891-95 and 1922-26, and yields declined from about 220 pounds to 125 pounds per acre. As the acreage was contracted to an average of 7,000,000 acres in 1943-47 and some of the less productive lands were withdrawn from cultivation, yields rose to an average of about 170 pounds per acre. Of course, acreages of crops are expanded or contracted in response to various combinations of factors, and the resulting effect upon yields will depend upon what combination of factors brought about the change. For instance, an increase in yield averages may result from an increase in acreage if, because of relatively more favorable prices for the particular commodity, a shift is made to more fertile lands. The yield average might increase, also, if appropriate measures were taken to conserve and improve the lands added to production of the crop.

One should not necessarily expect, however, to raise Texas average yields of all crops to the national average or to levels attained by some of the highest producing states. The chief limiting factor, of course, is climate. For good production of most crops it is usually desirable to have 20 or more inches of rainfall properly distributed throughout the year; the part of Texas west of the 100th meridian often receives too little rain, while in the remainder of the State rain may not be distributed properly, especially during the growing season. The temperature also is subject to rather extreme variations, with all parts of the State being subject to occasional periods of excessive heat or freezing temperatures at times when they will affect crop yields adversely.

The limiting effect of climate on yields is reflected not only in the yields of crops produced but in other ways. Higher yielding crops generally are affected more than others by changes in climatic conditions, and many farmers prefer to plant lower yielding crops and be more certain of some production each year than to plant higher yielding crops and run greater risks of crop failure in years of limited rainfall or extreme temperatures. Farm management studies have shown, for example, that in seasonable crop years wheat farmers in part of the Plains area could make good yields and more money growing oats, but if they substituted oats for wheat they would risk complete loss due to hard freezes late in the season which are likely to occur in some years. Also, in this connection it should be pointed out that farmers often must plant the crops that can be planted at the time adequate soil moisture is available and not the crops that would produce higher yields. But despite these limiting factors, there undoubtedly exist many opportunities for increasing crop yields in Texas and, in that way, raising the efficiency of farming in the State.

Although a discussion of ways of increasing crop yields in Texas involves all phases of crop production, most of the approaches to the problem may be classified under six headings: (1) Land use, conservation, and improvement; (2) Use of fertilizers, lime, and manure; (3) Selection of adapted crops and varieties; (4) Use of farm machinery; (5) Use of recommended cultural practices; and (6) Control of weeds, insects, and diseases.

### Land Use, Conservation, and Improvement

Yields depend to a large extent upon land being put to its most efficient use or being used for purposes for which it is best suited. Some land, however, is used for crops which are not adapted to it, such as land used for cultivated row crops which should be used for hay crops or pasture. There have been extensive shifts in land use in recent years, but many of these shifts have been toward placing more land of lower productivity to crop use or cropping new land which should remain in grass. The large production of agricultural products in many states during the last decade has been achieved partly by expanding crop production to include less productive land, but some people hold that the

present distribution of land between crops, pasture, and other uses is out of balance, that there is a need for a shift back to fewer acres of crops and more acres of grassland. Certainly if this were done, much of the less productive land now in use for crops would be returned to grass. If such a balance were achieved, it would have the effect of raising crop yields in the State and, at the same time, the grassland could be used for production of livestock, for which there is a strong demand.

The need for shifts in land use applies not only to regions of the State but to particular farms, for many farmers put land to uses to which it is not adapted. The balancing of cultivated crops with grasses and hay will tend to take place, however, as farmers realize the importance of hay and pasture in a system of soil maintenance on their farms. In the more humid areas of southeast Texas, for example, crop rotations that contain a combination of row-planted, close-growing, and sod crops are more likely to maintain fertility and to sustain high crop yields over a series of years than is single cropping. Crop rotations including legumes improve the soil productivity, delay or reduce the damaging effects of root rot, reduce soil erosion, aid in weed control, and distribute farm labor and incomes more uniformly.

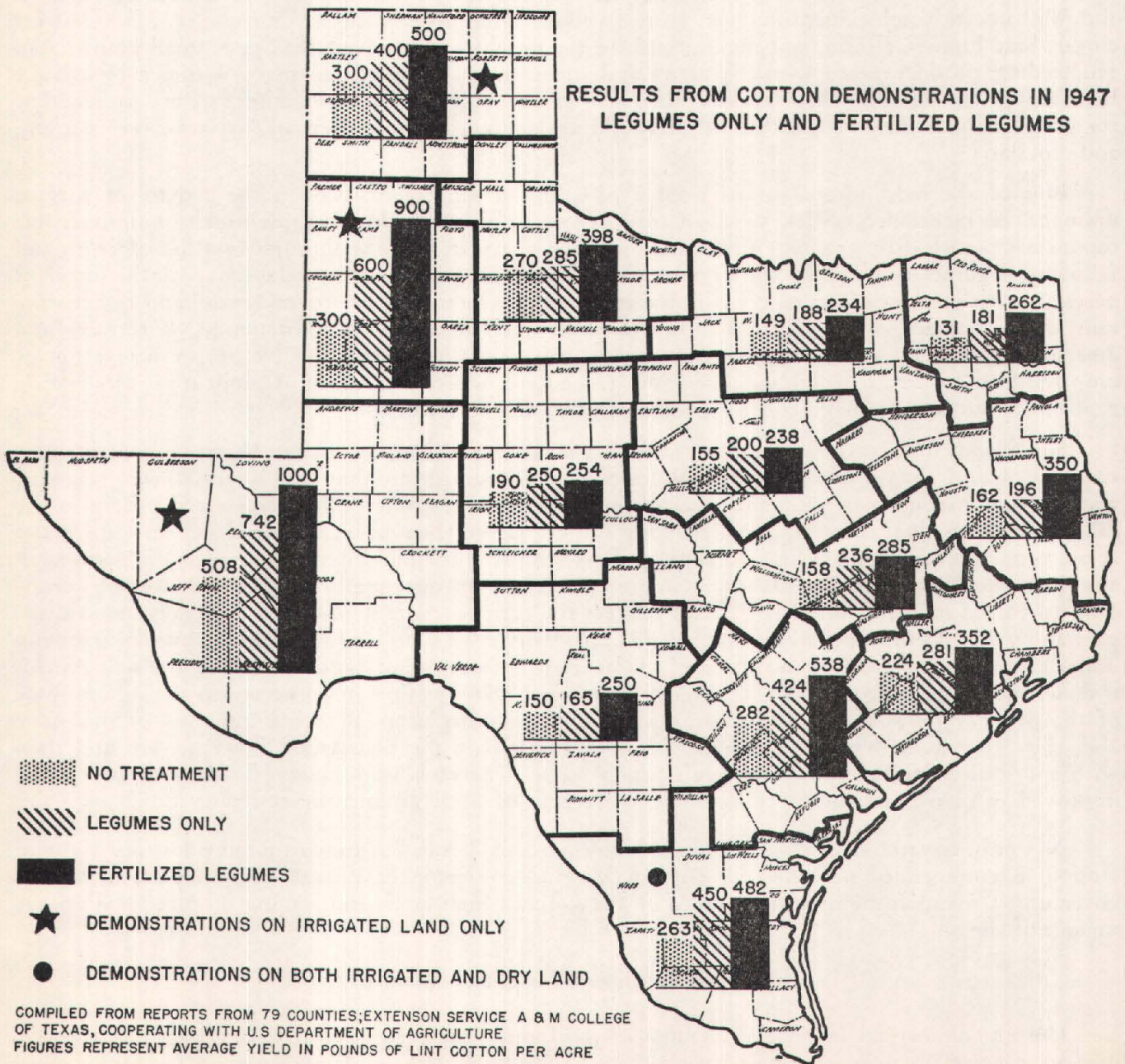


Figure 1

Tests over a long period of years at the Denton Agricultural Experiment Station have shown, for example, that maintaining or increasing the fertility of the black upland soils is largely a problem of increasing the organic matter by turning under all possible organic material. Furthermore, the growing of sod crops, such as the clovers, aids in the binding together of the soil particles and, also, permits rapid movement of air and water within the soil. The necessary organic matter is best produced and utilized in a cropping system which includes leguminous winter or summer green manure crops or which includes a legume grown a year or more for grazing, hay, or seed, depending upon the adaptability of the legume. Crop rotations usually should be set up so that no crop will succeed itself on the same land. Deep-rooted crops should follow shallow-rooted crops. In most sections of the State, each rotation should include a soil-building crop at least once in three or four years.

Some of the benefits to be derived from use of legumes preceding cotton are illustrated in Figure I showing results from cotton demonstrations last year with legumes only and with fertilized legumes. Cotton yields per acre were increased up to 100 percent with legumes only and up to 200 percent with fertilized legumes.

The most favored winter legumes for Texas include hairy vetch, Austrian winter peas, common and Williamette vetch, Hubam clover, annual yellow blossom sweet clover, bur clover, Madrid sweet clover, blue lupines, alfalfa, and small grains. In the northern sections of the State, small grains from fall seeding produce more winter pasture and make more green forage to turn under by May 1 than any other legume. They lack the nitrogen-fixing ability of other legumes but are satisfactory for green manure purposes. Recommended summer legumes include cowpeas, soybeans, velvet beans, and crotalaria.

One of the most important parts of a program of soil conservation is the control of surface drainage. As mentioned earlier, yields of many crops in Texas are low because much of the valuable topsoil has been lost by erosion. While there is much that can be done through rotation of crops and fallowing legumes to build up the organic content and, in general, the productivity of the soil, it is necessary that steps be taken to control drainage, both to retain the improved topsoil and to conserve rain water. Surface drainage can be controlled by such measures as construction of terraces and diversion ditches, by strip cropping and contour tillage, by rotations, and by proper utilization of crop residues. In Texas, where soils are badly eroded and where a shortage of moisture is a recurring problem, a surface drainage control program has much to its credit.

Some lands in Texas, particularly in the Coastal areas and Blacklands, can be made more productive by proper drainage. The principal objections to poor drainage are that land saturated with stagnant water is not in condition for planting crops until late in the spring, killing frosts come early in the fall, and damage due to freezing and thawing is more severe than on well-drained soil. In the Coastal areas, good drainage usually can be developed by proper ditching. Internal drainage problems such as exist in sections of the Blacklands often are caused by improper use of the land. Continuous cropping to cotton, corn, or other row crops reduces the organic content until the topsoil becomes compact and water does not penetrate as it should. The drainage of such lands can be improved by plowing under crops or crop residues in sufficient quantities to restore the organic content of the soil. As this is done, the soil regains much of its original form, and water again can penetrate to the subsoil. One of the primary purposes of crop rotations and green manure crops is to maintain soil permeability and, thus, to reduce drainage problems. Some of the soils in the Blacklands, however, are underlain with a so-called "tight" subsoil through which water penetrates very slowly. This condition can be improved in many cases by ditching or by the laying of underground tile systems.

Not only is water erosion a problem in many parts of Texas, but much topsoil is lost due to wind erosion. Recommended practices for control of wind erosion include strip cropping, use of winter cover crops, maintaining organic content of the soil at a high level, and leaving crop residues on the surface of the soil.

#### Use of Fertilizers, Lime, and Manure

Use of commercial fertilizer and lime in the United States was greatly accelerated in the immediate prewar and war years and has continued to increase. A considerable part of the larger farm production during recent years can be attributed to the greater use of these materials. More farmers

have come to realize that increased yields can be obtained from the use of fertilizers; this is evidenced by the fact that fertilizer sales in Texas increased from 85,000 tons in 1936-37 to 451,000 tons in 1947-48.

Studies by the Texas Agricultural Experiment Station show that most of the soils of Texas, except those of the Blacklands, the Edwards Plateau, and scattered smaller areas, are very deficient in nitrogen. Practically the whole State is deficient in active phosphorus, and land in east, eastcentral, and northcentral Texas is low in potash. The eastern half of the State, with the exception of the Blacklands and counties bordering on the Gulf, is deficient in lime. Careful analyses of Texas soils show that there are deficiencies in some of the plant food elements which are generally considered to be of minor importance but which may have a definite bearing on the yields of crops per acre. East Texas farmers, for example, have recently been told by soil scientists that many of the soils of that part of the State are deficient in boron, which is necessary to successful production of many vegetable and forage crops. There are possibly many instances of deficiencies in soil content of other of the minor or so-called "trace" elements, such as manganese, copper, and zinc.

In undertaking extensive applications of fertilizers, farmers will find it worth-while to have their soils analyzed to determine which fertilizers will prove most beneficial. If soils already have a high nitrogen content, it may be unprofitable to apply fertilizers containing large quantities of nitrogen. In such cases, the benefits from potash or phosphate in the fertilizer may be offset by the unfavorable effects of an over-supply of nitrogen. One reason why some farmers have concluded that the use of fertilizers is unprofitable is that they have used the wrong kind of fertilizers or did not apply them at the most appropriate time. Many of these errors can be corrected by taking advantage of the services of soil analysis offered by the Texas Agricultural Experiment Station at College Station.

One factor that has contributed to the reluctance of many farmers to use fertilizers or to use them more extensively has been the uncertainty of weather conditions during the season ahead. It is known that if large quantities of fertilizer are used under a crop in a year of drought, the fertilizer may reduce yields rather than increase them, but farmers can reduce this risk—if not eliminate it—by applying the fertilizer to a legume to be fallowed before the particular crop is planted. In this way, the benefits of the fertilizer are still available to the crop and the possibility that the crop will suffer damage from the fertilizer during drought is reduced to a minimum.

The possibilities that exist for increasing crop yields by use of fertilizers in combination with legumes are illustrated in Figure I, which shows the results of tests with cotton on a selected group of farms in areas throughout the State in 1947. In the High Plains, for example, cotton following a legume produced 600 pounds of lint per acre, compared with 300 pounds per acre without the benefit of a legume. Where legumes and fertilizer both were used, yields averaged 900 pounds per acre, or three times the untreated cotton. It is known that fertilized legumes also will raise the grade of cotton staple and increase the oil content of cottonseed.

Fertilizer not only may increase production of a crop but also may make the difference between a good crop and no crop at all. Fertilized oats in north Texas, for example, are much more winter-hardy than are those grown without fertilizer. Much of the Texas oat crop was killed last winter by the severe freeze in March, but fields of oats that had been fertilized with 20 percent superphosphate withstood the cold and produced high yields.

In areas of lime deficiency it is necessary to make annual applications of lime in order to obtain full value from commercial fertilizer, especially phosphates; lime and phosphate applications are required for successful stands of the legumes and grasses necessary in a good crop rotation program and for soil maintenance. The United States Department of Agriculture has recommended that lime consumption in the country as a whole be increased to more than seven times the 1935-39 average in order to bring about desirable and economic adjustments in land use. Lime consumption rose rapidly during the war and perhaps half of recommended annual use of lime has been achieved. Attention is called again to the fact that soils in some areas of Texas have an abundance of lime, but the areas of greatest need are in east Texas, parts of south Texas, and the western part of the South High Plains. In these areas, lime would increase appreciably the yields of crops by adding to the supply of available nutrients and by helping to get full use of fertilizers.

The yields of crops in Texas could be increased very markedly if farmers were more efficient in the use of manure. Because of enormous losses of manure due to improper handling, only a small portion of the potential crop-producing and soil-conserving values of manure is actually realized. Even after it is spread on the land, serious losses from evaporation of ammonia are probable if fermented manure dries before it is effectively incorporated into the soil or at least before the soluble constituents have been leached out and absorbed by the soil. Other factors in the inefficient use of manure are that it is not always applied at the season, in the manner, at the rate, or to the crop which would give the greatest return. The economic possibility of preventing much of this loss has been conclusively demonstrated, both experimentally and practically. The wasteful and inefficient methods of handling manure are evidence that many farmers still do not understand the true nature of manure, the perishable character of its most valuable constituents, and the direct money loss incurred through its improper treatment. A study of the facts regarding the production, losses, care, and field management of manure should help any farmer better to understand the problem and to work out a solution practical for the conditions of his own farm. Of course, the greatest benefits of manure to crop yields are to be realized only from its intelligent use in combination with other practices that constitute good soil management.

In common with most other improved practices, greater use of fertilizers, lime, and manure, especially on cash crops, would increase the volume of farm products that goes to market, which in turn would tend to reduce the prices of those products; but the farmers who use these materials would have lower costs per unit of product and an increased volume to offset the lower prices. Also, it is to be remembered that insofar as the increased use of these materials promotes soil-building rotations, the emphasis is shifted away from the staple cash crops that are likely to be overproduced. Such shifts, therefore, might actually aid in avoiding market gluts of some products. Moreover, part of the increase in lime and fertilizer constitutes a capital investment in permanent soil improvement that is in the interest of future welfare, both for individual farmers and for the Nation as a whole.

### Selection of Adapted Crops and Varieties

Farmers are able to increase production of crops by using new plants that are better adapted to the soils and climate of their respective areas; however, actual cultivation usually lags far behind the discovery of new plants. Farmers who are alert to the introduction of new crops are able to increase the productivity of their farms and to increase their net return, while farmers who produce low yields and have low incomes usually are among those who are last to make recommended changes. This applies not only to the adoption of new crops but to the planting of new varieties of a crop already in cultivation. Of course, changes in relationships of prices of various farm commodities tend to increase or decrease the relative advantages of producing different crops, for it is the farmer's *net return*, not the *absolute physical quantity of commodities produced*, that is the factor determining what crops are, or should be, grown.

TABLE III  
SUMMARY OF CORN YIELDS AT NINE TEXAS AGRICULTURAL EXPERIMENT STATIONS FOR  
THREE-YEAR PERIOD, 1943-45

Hybrid or variety	Yield of shelled corn per acre, bushels								
	Temple	Denton	College Station	Beeville	Tyler	Angleton	Chillicothe	Stephenville	Weslaco
<b>Hybrids:</b>									
Texas Hybrid No. 8.....	38.6	30.6	51.1	26.2	46.7	31.3	28.2	25.1	....
Texas Hybrid No. 9-W.....	39.4	25.0	53.9	23.6	49.6	35.5	25.4	....	76.3
Texas Hybrid No. 12.....	36.3	29.9	61.4	23.2	54.8	29.7	30.1	19.5	70.1
Texas Hybrid No. 18.....	38.2	27.6	53.6	26.2	50.3	31.2	....	....	....
Texas Hybrid No. 22.....	....	....	....	....	....	....	....	....	78.0
Funk G711.....	42.3	26.7	56.3	26.1	49.1	27.8	28.4	21.3	....
National 134 T.....	42.0	25.5	53.2	26.6	49.9	....	....	....	....
<b>Varieties:</b>									
Ferguson Yellow Dent.....	29.0	18.4	40.3	15.9	37.3	18.8	18.9	16.1	....
Golden June.....	....	....	....	20.0	....	25.1	22.1	19.3	....
Mexican June.....	....	....	....	22.1	....	32.7	19.3	....	....
Reese Drouth Resistant.....	29.8	17.1	34.9	17.6	....	22.9	17.0	18.8	....
Surcropper.....	29.8	19.8	....	20.6	37.3	28.8	16.8	22.7	....
Yellow Surcropper.....	30.3	20.8	32.8	19.2	32.4	23.2	21.5	....	....
Yellow Tuxpan.....	....	....	....	....	....	26.4	....	....	67.8

SOURCE: Progress Report 103, Texas Agricultural Experiment Station.



Since World War I, Texans have witnessed the introduction in the State of new farm crops, such as grapefruit, oranges, flax, and various forage crops. Other crops which have become more important since World War I include peanuts, grain sorghums, rice, barley, oats, and many commercial vegetables. In addition, crops such as sesame, broomcorn, sweet potatoes, dry beans, rye, and ramie may become of major importance as time goes on. From the standpoint of selection of adapted crops and varieties, however, the greatest advantage will accrue to farmers in the relatively short run from selection of adapted varieties.

Some of the possibilities that exist for increasing yields of crops produced on Texas farms may be illustrated by results of variety tests conducted by the agricultural experiment stations in the State. For example, in tests with corn varieties, including hybrids adapted to the State, yields at Beeville during 1943-45 varied from 15.9 bushels to 26.6 bushels per acre, as shown in Table III. At College Station, yields varied from 32.8 bushels to 61.4 bushels per acre for the varieties and hybrids tested. In tests at Denton, yields varied from 17.1 bushels to 30.6 bushels per acre. In each case, the highest yields were obtained from hybrids.

Plant breeders in Texas have been active in developing improved varieties of crops for Texas farms. They have tested for adaptation to Texas regional climatic and soil characteristics or have developed new varieties of most of the important crops grown in the State.

#### Use of Farm Machinery

The use of mechanical power and associated equipment on the farm results in an increased output per worker by enabling him to do the job faster, by doing a better job of tillage or other operation, and by enabling him to do the work (or at least more of it) at the proper time. The effects of the greater timeliness in farm operation that is possible by mechanization are difficult to measure, but as power equipment can cover more acres per hour and also can be used longer hours if necessary, it enables the farmer to do critical jobs without the delay that frequently occurs where horse or mule-drawn equipment is used.

Perhaps one of the best illustrations of the contribution of mechanical power to timeliness of operations in Texas is the experience of farmers in the Winter Wheat Belt. In years when there is a serious shortage of moisture at seeding time, a light shower which would be sufficient for seeding is effective for only a short time before the moisture is dissipated. With mechanical equipment for large-scale seeding operations, a farmer may seed his entire crop within the short time that sufficient moisture is available. Likewise, the quick coverage possible in spring potatoes with a multiple-row power sprayer may salvage a crop that otherwise would be seriously damaged. The farmer is able also to harvest the crop at the proper time, thereby avoiding losses which might result from delay. Corn producers find that with a tractor and power equipment they can prepare and plant three acres of corn during the same time required to plant one acre with work animals. In terms of a 24-hour schedule, which is not possible with work animals, the preparation and planting job can be done seven times as fast as with animal power. With machinery, farming operations are less subject to the irregularities of climate; this is a major contribution of mechanization to crop production.

The introduction of the general-purpose tractor adapted for use on smaller farms and for a wide variety of farm jobs, introduction of rubber tires for tractors and other machines, and improvements in designs of tractor equipment have accelerated the shift to tractor power and stimulated the adoption of combines, corn pickers, and other tractor-drawn machines which reduce costs of farm operation. Furthermore, improvements in construction of both tractors and associated equipment have enabled farmers who are relatively unskilled at mechanical work to operate power equipment without serious disadvantage. Substitution of tractors for horses and mules in Texas has moved ahead of the Nation since 1920, as indicated by percent increase, and the number of tractors on farms in the State increased about 40 percent between 1940 and 1945, compared with about 30 percent increase for the United States. Large numbers of tractors are being added to Texas farms each year, and this will be an important factor in increasing the yields of crops in the State.

### Use of Recommended Cultural Practices

Cultural practices include fallowing, disking, rolling, and harrowing of land, preparation of seedbeds, and planting and cultivating the crop. In considering the effects of these practices on yields, it is important to consider also the dates at which they are done. Changes in cultural practices usually are made rather slowly. Studies of the effects of different cultural methods on yields, however, indicate that yields may vary considerably due to differences in methods of cultivation, which suggests that many farmers could increase their crop yields if more attention were given to this subject.

The importance of cultural practices to yields has been demonstrated by the results of tests conducted by the agricultural experiment stations throughout the country. In a test at the Georgia Agricultural Experiment Station a few years ago, corn yields varied as much as 11.9 bushels per acre merely as a result of differences in seedbed preparation. In a test in Mississippi, yields varied from 7.9 bushels to 31.8 bushels per acre due to date of planting. In a similar test in Louisiana, corn yields varied from 10.0 bushels to 50.9 bushels per acre.

Results of experiments in various states to determine the effect of the number of cultivations, variations in depth of cultivation, ridge versus level culture, time of cultivations with respect to age or growth of crop, spacings in the rows, width of rows, and many other similar matters show that they have an important effect on yields. Farmers, therefore, should give careful attention to each cultural practice or combination of cultural practices used and their effectiveness in producing good yields. They can do this by studying the results of experiments with crops in their localities and on their types of soil. Also, they can analyze the variations in their own yields which can be attributed to differences in cultural methods. The best choice of methods to be followed in cultivation of crops varies, of course, from crop to crop, from region to region, and from year to year. Furthermore, as climatic conditions are variable, there are advantages to be gained by varying the methods of cultivation. It is significant that adoption of the most preferred methods of cultivation usually can be made without any increase in costs of operation.

### Control of Weeds, Insects, and Diseases

With many crops the yields per acre are seriously reduced by the heavy growth of weeds. This is especially true of crops that are not cultivated after seeding, such as rice and flax. Weeds in rice crops have been eliminated successfully by applications of 2,4-D. Yields of flax and small grain crops also can be increased by application of chemical weed killers. Of course, weeds can be eliminated to some extent through cultural practices, such as clean tillage and proper crop rotations.

Estimates of cotton losses from insects in the State during recent years have run as high as one bale in seven or eight produced or that would have been produced if damage from insects had been prevented. Other crops experience heavy losses from insects, although the losses may not be as high proportionately as with cotton. Savings that can be made by control of insects may make the difference between profit and loss for many farmers and, consequently, the importance of insect control to production of high yields per acre can scarcely be overestimated.

As new insecticides are introduced frequently, farmers should attempt to keep up with the insecticides most suitable for use on their crops. Operators of large farms frequently employ entomologists to supervise insect control work, but this is a service that operators of small farms cannot afford. Because of their lack of complete understanding of the proper use of insecticides, operators of small farms are usually less successful in controlling insects and their crop yields are reduced. As more is learned by farmers about insect pests and methods of control, and as this knowledge is put into practice, a long step will have been taken toward increasing crop yields.

There are many insecticides available for controlling insects. Probably the most widely known at present is DDT. A new insecticide which is closely related to DDT and called DDD, or Rhothane, is equally as effective and has the added advantage of being harmless to warm-blooded animals. There

are on the market today various insecticides that will kill most of the harmful insects of importance. The chief difficulty so far in control of insects with chemicals has been attributed to improper or untimely application.

A program for control of insects may not be complete without what is generally referred to as a fall cleanup campaign. Cotton insects, for example, hibernate during the winter in stalks and other residue left on the land following harvest. More of the weevils and bollworms will freeze out during the winter if cotton stalks are plowed under during the fall. As evidence of this fact, it may be noted that Williamson County last year had a county-wide stalk cleanup program completed September 30; this year on July 30, 27 per cent of the squares had been punctured. In contrast, in the adjoining county of Milam, where there was no county-wide stalk destruction campaign last season, 63 percent of the squares were punctured on the same date.

Many of the diseases of crops which may be traced to infected seed may be eliminated by seed treatment. New Improved Ceresan, for example, is a preparation widely used in treating grain seed. One may secure seed treatments for most crops produced in the State, and these undoubtedly will add substantially to yields of crops.

There are other diseases, such as root rot in cotton, that are related to soil conditions. Usually the only method of control is to improve the soil by proper land use practices. Cotton root rot may be eliminated by crop rotations including a legume, such as Austrian winter peas, hairy vetch, or Hubam clover. Soils seriously infected with cotton root rot usually can be cleared sufficiently to produce cotton safely after two or three crops of legumes. A rotation of a legume about every third or fourth year thereafter may be necessary to keep the root rot under control. This disease is typical of others that destroy various crops or which reduce crop yields in the State.

### Summary

A study of crop yields in Texas reveals trends that are disquieting to those who are concerned about the future prosperity of agriculture in the State. In the case of some crops, yields have declined in contrast with increasing yields for the United States, while yields of other crops either have declined more than the national averages or have increased at a slower rate. The unfavorable trends in the State apparently have resulted largely from the unnecessary losses of fertility through soil erosion and continuous cropping to soil-depleting crops and from the slowness of farmers generally in adopting improved farm management practices.

Fortunately, the facts developed as a result of extensive research and experiments indicate that soil fertility can be restored and crop yields increased significantly. In fact, many farmers in various sections of the State have demonstrated on their respective farms that improved yields are possible year after year. These results have been accomplished by the adoption of such measures as adequate soil conservation practices, crop rotation, planting of leguminous cover crops, the use of fertilizer where feasible and desirable, more extensive mechanization, the introduction of new crop and seed varieties better adapted to the soils and climate, the use of better cultural methods, and the application of chemical compounds to control weeds, insects, and plant diseases. Significant improvements in yields are possible on other farms throughout the State where some or all of these measures are adopted and followed consistently.

In view of the opportunities for developing greatly increased efficiency in farming operations, these measures deserve careful consideration not only by individual farmers but also by all those whose operations are related directly or indirectly to the maintenance of a sound and prosperous agriculture. Much can be accomplished in communities where the interested groups, through concerted action, strive to achieve maximum results. The present is an especially desirable time to work intensively for increased yields because of the possibility that net incomes of farmers may decline during the next several years as a result of lower prices and the probable continuance of high production costs. To the extent that net incomes can be sustained through increased yields and greater efficiency in farming operations, farmers will be in a stronger position to meet any necessary readjustments in future years and will contribute toward the maintenance of stability in the economy of the State and Nation.

# Review of Business, Industrial, Agricultural, and Financial Conditions

## DISTRICT SUMMARY

The sales of department stores in the Eleventh Federal Reserve District showed a counter-to-seasonal decline from September to October, and the increase over October last year was narrowed to 4 percent. Cumulative sales for the ten months, however, were 11 percent higher than in the corresponding period of 1947, the largest percentage gain for any Federal Reserve District. October sales of furniture stores declined 31 percent from the large September volume and were 17 percent smaller than in October last year.

The value of construction contracts awarded in the District increased sharply in October from the low September volume but was considerably smaller than in October last year.

Daily average production of crude petroleum reached new peaks in October both in the District and in the United States at levels 6 percent higher than in October last year. Stocks of crude petroleum and of refined products at the end of October showed larger increases over a year ago than were recorded a month earlier.

Moisture conditions were improved during the past month by the light to heavy rains which fell over most of the Eleventh District, but there is still a marked deficiency of subsoil moisture in nearly all areas. The District's wheat crop is making good growth under the stimulus of more adequate moisture, with prospects greatly improved for winter pasturage and production next year. Estimated productions for 1948 on November 1 were lower than a month earlier for cotton, peanuts, and sweet potatoes. In Texas, the 1948 production of cotton, corn, rice, potatoes, and peanuts is lower than in 1947, in contrast with increased production of those crops in the United States. Condition of livestock and their ranges is substantially below the average for this season, and in the drought areas shrinkages in livestock weights have occurred despite supplemental feeding.

The loans of weekly reporting member banks increased substantially between October 13 and November 10, extending the rise that had been in progress during the preceding four months. Investments also increased during the four weeks, after having declined sharply during the preceding four-week period. Deposits showed a seasonal expansion, reflecting chiefly a rise in interbank deposits.

## BUSINESS

Department stores in the Eleventh Federal Reserve District reported a contraseasonal decline in sales during October, the dollar volume being 4 percent below that of September and only 4 percent above that of October 1947. This year-to-year gain, which compares with 15 percent in September, is the smallest reported for any month since October 1947. The cumulative sales of reporting stores for the first ten months of this year exceeded by 11 percent those during the corresponding period of 1947, a percentage which is larger than that reported for any other Federal Reserve District. Reflecting the decline in sales from September to October, the seasonally adjusted index of department store sales in this District dropped sharply in October to 388 percent of the 1935-39 average, the lowest level since March, as compared with 423 percent in September of this year and 360 percent recorded in October 1947. Each October since 1945, the adjusted index of sales has declined from the September level, but in each of the

previous two years it has shown an increase from October to November. Some executives anticipate a recurrence of the upward trend this November, but a continued lag in sales is indicated by reports from weekly reporting department stores for the first two weeks of November, which show that sales in the District were 10 percent below those of the corresponding 1947 period. Further evidence of the lagging sales is the increasing number of storewide promotional sales and of promotions of special purchases in particular departments, including some of the household durable goods items.

Reflecting at least in part the decline in sales during the month, stocks of reporting department stores increased 5 percent in October. The increase in October this year, however, was much smaller than the 12 percent gain from September to October last year; as a result, the year-to-year increase at the end of October this year was only 19 percent, compared with 26 percent at the end of September. The increase in October was the smallest year-to-year gain in inventories for any month since January of this year. Outstanding orders, after having declined during the preceding two months, rose slightly in October, largely because of increased purchases of merchandise for the holiday season, but were 27 percent below those at the end of October 1947.

## WHOLESALE AND RETAIL TRADE STATISTICS

	Number of reporting firms	Percentage change in		
		October 1947	October 1948	October 1948 from 10 mo. 1947
<b>Retail trade:</b>				
Department stores:				
Total 11th Dist. ....	48	4	-4	11
Corpus Christi. ....	4	-†	-1	2
Dallas. ....	7	†	-5	5
Fort Worth. ....	4	1	4	9
Houston. ....	7	10	-13	27
San Antonio. ....	5	1	-5	9
Shreveport, La. ....	3	23	7	20
Other cities. ....	18	4	3	7
Furniture stores:				
Total 11th Dist. ....	44	-17	-31	..
Dallas. ....	4	-41	-63	..
Houston. ....	5	-22	-37	..
Port Arthur. ....	4	3	-31	..
San Antonio. ....	4	-12	-19	..
<b>Wholesale trade:</b>				
Machinery, equip't and supplies. ....	3	23	22	..
Automotive supplies	4	2	5	..
Drugs. ....	7	No chg.	-5	5
Dry goods. ....	8	-20	-17	..
Groceries. ....	44	-10	-16	5
Hardware. ....	7	-1	-1	5
Tobacco & products.	10	-5	-4	†
Wiring supplies, construction material distributors. ....	4	-13	-2	..

\*Compiled by United States Bureau of Census. (Wholesale trade figures preliminary.)

†Stocks at end of month

†Indicates change less than one-half of one percent.

## INDEXES OF DEPARTMENT STORE SALES AND STOCKS

	Daily average sales—(1935-39=100)				
	October 1948	Sept. 1948	August 1948	October 1947	October 1948
11th District. ....	427	444	365	396r	388
Dallas. ....	397	416	353	382r	361
Houston. ....	480	552	426	419	437

	Adjusted—(1935-39=100)				
	October 1948	Sept. 1948	August 1948	October 1947	October 1948
11th District. ....	419	423r	411	346	370
Dallas. ....	397	416	353	382r	361
Houston. ....	480	552	426	419	437

\*Unadjusted for seasonal variation.

r-Revised.

The ratio of collections to accounts receivable outstanding at the beginning of the month showed little change in October from that of the previous month. The ratio of collections on regular accounts rose slightly and amounted to 53 percent in October, while that on installment accounts continued at 18

percent, where it has been for five consecutive months, in spite of the fact that installment accounts outstanding increased during each of the four previous months. The influence of Regulation W may be reflected to some extent in the ratio of cash sales to total sales, which rose in October to 34 percent from 31 percent in September.

After having shown substantial sales increases during August and September, furniture stores in the Eleventh District reported a decline of 31 percent in October volume from the level of the previous month and 17 percent from that of the previous October. The October decline probably reflects the effects of the large August and September sales volume and, to some extent, the more restrictive terms of Regulation W, which became effective September 20, 1948. It should be pointed out that aggregate sales for the three months—August, September, and October—were 7 percent larger than those for the corresponding three months of 1947, which is slightly larger than the percentage gain in cumulative sales for the first seven months of the year.

The effects of the credit regulation also were indicated by the decline of credit sales, both in actual amount and relative to total sales. Credit sales declined 35 percent in October as compared with those in September, while cash sales increased 5 percent, causing the ratio of credit sales to total sales in October to drop to 85 percent from 91 percent in September. The October ratio, however, was above the 83 percent reported in October last year. One reason for the increase in cash sales in October was the unusually low level to which such sales had fallen in September, when consumers were increasing their credit purchases prior to the reimposition of control on installment credit. As a result of the substantial decline in credit sales during October and the small increase in collections during the month, accounts receivable at the end of October were 2 percent below those at the close of the previous month but were 56 percent above those of October last year.

The inventories of reporting furniture stores were 8 percent larger in October than at the close of the previous month and were 16 percent above the dollar value of stocks in October 1947. The September to October rise was the largest month-to-month increase for any month since August 1946, and the percentage gain over the previous October was the largest year-to-year rise in stocks since September 1947. The sharp drop in sales during October probably accounts for the size of the gain in inventories, especially since reports indicate that stores generally have followed conservative policies with respect to inventories over the past several months.

## AGRICULTURE

Moisture conditions in the Eleventh Federal Reserve District improved as moderate to heavy rains fell in the Panhandle, North High Plains, and coastal areas of Texas and light general rains brought some relief to eastern and central areas during late October and early November. The more favorable moisture supply improved prospects for wheat pasture in the North Plains and Panhandle and permitted seeding and germination of small grains and winter cover crops in central and eastern sections of the District. Additional rains are needed in most areas to increase subsoil moisture and for the continued development of late feed crops and improvement of pastures and ranges. Harvesting of fall-maturing crops has made good progress and is nearing completion for corn, cotton, rice, and grain sorghums. Estimates of production in Texas of cotton, corn, rice, hay, potatoes, peanuts, and citrus are below those of last year, but larger crops of grain sorghums, flaxseed, and pecans are forecast. The outlook at mid-November for produc-

tion of winter vegetables was generally good, although frost on November 10 interrupted harvesting and caused some damage to tender vegetables and tomatoes in the Winter Garden and parts of the Laredo area. The condition of cattle and sheep continued to decline in October except in the North High Plains and in coastal areas, where livestock were making good gains. In central and eastern areas, shrinkage continued despite supplemental feeding.

### TEXAS COTTON PRODUCTION BY CROP REPORTING DISTRICTS

Crop reporting districts	(In thousands of bales—500 lb. gross wt.)			1948 indicated November 1	1948 as percent of 1947
	1945	1946	1947		
1-N.....	15	35	105	130	124
1-S.....	105	198	946	585	62
2.....	380	270	494	505	102
3.....	17	14	15	20	133
4.....	587	482	810	795	98
5.....	119	96	185	220	119
6.....	80	99	113	130	115
7.....	27	15	32	15	47
8.....	227	185	315	285	90
9.....	106	46	129	160	124
10.....	131	229	293	355	121
State.....	1,794	1,669	3,437	3,200	93

The November 1 cotton report of the United States Department of Agriculture indicates a record yield for the United States in 1948 of 312.1 pounds of lint per acre. This is 44.8 pounds above the 1947 yield and 57.9 pounds above the 10-year average. Texas, however, is not experiencing a record yield, since estimates for 1948 indicate a lint yield in the State of only 171 pounds per acre, 27 pounds below the yield in 1947 and about the same as the 10-year average. The report estimates the United States crop in 1948 at 15,166,000 bales, which is 87,000 bales higher than the October 1 estimate, while the Texas crop, estimated at 3,200,000 bales, is 50,000 bales below the October 1 estimate for the State. Ginnings in Texas prior to November 1, totaling 2,379,000 bales, represent 74 percent of the crop and compare with 68 percent in 1947 and 75 percent in 1946.

### CROP PRODUCTION—(In thousands of bushels)

	Texas			States in Eleventh District*		
	Average 1937-46	1947	Estimated Nov. 1, 1948	Average 1937-46	1947	Estimated Nov. 1, 1948
Winter wheat.....	45,688	124,270	54,169	113,001 <sup>†</sup>	238,712 <sup>‡</sup>	159,602 <sup>§</sup>
Corn.....	70,442	48,592	46,167	123,919	87,664	100,157
Oats.....	34,370	31,248	14,734	65,166	69,006	40,004
Barley.....	4,049	2,520	2,370	12,120 <sup>¶</sup>	9,230 <sup>¶</sup>	11,213 <sup>¶</sup>
Cotton†.....	2,894	3,437	3,200	4,348	4,685	4,855
All hay†.....	1,383	1,436	1,319	4,271	4,744	4,817
Potatoes, Irish.....	4,311	4,536	4,400	9,978	9,280	8,734
Potatoes, sweet.....	5,121	4,675	3,290	14,366 <sup>¶</sup>	12,565 <sup>¶</sup>	10,964 <sup>¶</sup>
Rice.....	15,588	23,700	23,092	36,991 <sup>¶</sup>	45,155 <sup>¶</sup>	46,842 <sup>¶</sup>
Grain sorghums.....	55,552	68,313	77,704	68,497	77,130	92,144

\*Figures are combined totals for five States lying wholly or partly in the Eleventh Federal Reserve District: Texas, Arizona, New Mexico, Louisiana, and Oklahoma. †In thousands of bales. ‡In thousands of tons. ¶Arizona, New Mexico, Oklahoma, and Texas. §Louisiana, Oklahoma, and Texas. ¶Louisiana and Texas.

SOURCE: United States Department of Agriculture.

November 1 estimates of corn, grain sorghum, and rice crops in Texas, details of which are given in the table on crop production, were unchanged from the October 1 report. The acreage of grain sorghums was substantially higher than last year, but much of the increase occurred in the High Plains, where a large acreage failed to produce grain and is being utilized for forage. Yields of peanuts in Texas are lower than expected earlier and production on November 1 was placed at 294,750,000 pounds, 10 percent below the October 1 forecast. While late peanuts suffered some frost damage on November 10, harvest of early peanuts was being rushed to completion in most counties by mid-November. This year's pecan crop was estimated at 47,250,000 pounds, 125 percent above last year's crop and 76 percent above average. The relatively low

price offered for pecans this season and the high labor costs have tended to delay harvest, with reports indicating that hogs have been turned into some native groves.

The Texas grapefruit crop was estimated at 19,000,000 boxes, which, although 500,000 boxes above the October 1 forecast and 9 percent above average, is 18 percent below last year's near-record crop. The prospective orange crop, estimated at 4,500,000 boxes, unchanged from a month earlier, compares with the 1947 crop of 5,200,000 boxes and an average of 3,242,000 boxes. Harvest of the new crop is well under way, with total shipments to date larger than for the same period in 1947.

Although heavy rains and below-normal temperatures in late October and early November delayed field work, interrupted planting in irrigated districts, and retarded the maturing of tomatoes, the general condition of most fall and winter crops in the commercial vegetable areas of Texas was favorable. Planting for late season harvest was active, and growers were able to cultivate earlier planted crops, such as beets, broccoli, cabbage, carrots, cauliflower, onions, and spinach. Beans, eggplant, peppers, and squash were available in increased supplies, and harvest of fall-crop tomatoes, although delayed by the November 10 frost, was under way in all areas. Harvesting of carrots and lettuce from the fall-crop acreage in the Panhandle area continued active, but the season there was nearing an end.

#### CASH RECEIPTS FROM FARM MARKETINGS

(In thousands of dollars)

State	September 1948			September 1947		Cumulative receipts Jan. 1 to Sept. 30	
	Crops	Livestock	Total	Total	1948	1947	
Arizona.....	\$ 5,104	\$ 4,161	\$ 9,265	\$ 7,053	\$ 134,147	\$ 117,843	
Louisiana.....	46,934	11,904	57,838	51,493	228,248	183,070	
New Mexico.....	5,943	6,100	12,043	10,682	86,809	81,358	
Oklahoma.....	21,711	41,215	62,926	57,427	501,967	456,956	
Texas.....	150,213	69,734	219,947	233,977	1,373,833	1,231,161	
Total.....	\$228,905	\$133,114	\$362,019	\$360,632	\$2,325,004	\$2,070,388	

SOURCE: United States Department of Agriculture.

Range feed conditions deteriorated further during October and early November in those parts of the District where drought conditions continued but improved in areas receiving light to heavy rain. Winter range feed prospects are very good in south Texas as a result of rains during September and again in October, which started winter weeds and grass. Scattered light showers in October and November have benefited grass and weeds in some Trans-Pecos counties, but more rain is needed for continued growth. A generally adequate supply of range feed is available in northern range counties, and scattered showers during October, along with a general rain on November 1, sharply improved winter wheat prospects in that area. Winter oats for pasture in southern counties have been making very good growth. Small grain pastures in most of central Texas, which were at a standstill until the rains of mid-November, have taken on new growth. In the southeastern and upper coastal counties of Texas, range feed was critically short prior to rains last month. Ranges in southern New Mexico and Arizona, which are in need of moisture, are in poor to fair condition. Supplemental feeding of livestock was rather heavy during October and November in all range sections of the District.

Cattle and calves showed heavy shrinkage during October and early November in the upper coastal and most eastern counties of Texas, where range feed was very short. However, in the southern and western Edwards Plateau counties, cattle were in good flesh and gaining on the new supply of green feed at the beginning of November. Herds have been culled closely on most ranches in the District, old cows and calves having

been sold and the younger breeding stock retained. Sheep in the northern and eastern Plateau counties are going into the winter with poor flesh. In most southern and western counties of Texas, sheep generally are gaining on improved feed supplies. The condition of both cattle and sheep in Texas on November 1 was about 7 percent below average for this season of the year.

As a result of usual seasonal increases in the marketing of livestock, total receipts at the Fort Worth and San Antonio markets in October were 13 percent higher than in September but 9 percent below those in October last year. All classes of meat animals shared in the increase over September receipts, but only cattle and calf receipts were below those of a year ago; hog receipts increased slightly and marketings of sheep were up 16 percent.

#### LIVESTOCK RECEIPTS—(Number)

Class	Fort Worth			San Antonio		
	October 1948	September 1948	October 1947	October 1948	September 1948	October 1947
Cattle.....	79,302	75,140	100,169	33,907	29,133	52,201
Calves.....	40,545	37,811	68,257	31,689	23,607	40,549
Hogs.....	40,049	33,675	40,347	7,078	9,055	6,115
Sheep.....	137,004	102,898	135,918	80,956	87,148	51,801

#### COMPARATIVE TOP LIVESTOCK PRICES (Dollars per hundredweight)

Class	Fort Worth			San Antonio		
	October 1948	September 1948	October 1947	October 1948	September 1948	October 1947
Beef steers.....	\$31.00	\$31.00	\$27.00	\$36.00	\$27.50	\$24.50
Stocker steers.....	25.50	28.00	22.50	26.00	28.00	20.00
Heifers and yearlings.....	31.00	31.00	27.00	26.00	27.50	24.25
Butcher cows.....	20.00	22.50	17.50	20.50	22.00	17.00
Slaughter calves.....	26.00	28.00	22.50	26.25	29.00	20.50
Hogs.....	27.00	29.50	29.75	26.50	28.00	28.50
Lambs.....	25.00	25.50	22.50	22.50	24.00	20.00

The downward trend in the general level of prices received by Texas farmers continued for the third successive month, with the mid-October index of 299 the lowest since March 1948, according to the midmonth price report of the United States Department of Agriculture. The report indicates sharp declines in midmonth average prices of meat animals and corn, with moderately lower prices for cottonseed, sweet potatoes, and butterfat. These declines were only partially offset by limited price gains registered for other grains, poultry products, and wholesale milk. Prices received for cotton, flaxseed, grain sorghums, and retail milk remained unchanged. During the month ended October 15, hogs dropped \$2.90 to average \$23.40 per hundredweight. Beef cattle at \$20.20 and veal calves at \$22.90 were off \$2.60 and \$2.30 per hundredweight, respectively, while lambs at \$20.30 were 90 cents lower than the previous month. Prices of all meat animals were below the high August levels but averaged higher than a year earlier, except for hogs, which were at an all-time high in October 1947. Corn declined 9 cents to average \$1.43 per bushel as of mid-October, while other grains reflected only limited price changes. Following the usual seasonal pattern, the prices of chickens, eggs, and turkeys made substantial advances during the month.

Reports from spot commodity markets indicate that from October 15 to mid-November prices of grains increased slightly, hog prices declined further, and prices of other meat animals and cotton fluctuated within narrow limits.

#### FINANCE

Reflecting the favorable operating conditions experienced during the first six months of 1948, figures recently released by the Comptroller of the Currency show that national banks in the United States and possessions reported net operating earnings of \$355,307,000 for the period ended June 30, 1948. This total represented an increase of \$36,125,000 over the first half of 1947.

The principal item of operating earnings in the first half of 1948 was \$423,091,000 received from interest and discount on loans, or about \$94,262,000 more than the amount earned during the corresponding period of 1947. An increased average volume of loans during the period at moderately higher interest rates contributed to the more favorable trend. Earnings from interest on United States Government obligations and interest and dividends on other securities totaled \$349,384,000, or a reduction of \$15,191,000 from the amount earned during the first half of the previous year.

While gross earnings increased, operating expenses excluding taxes on net income rose to \$570,883,000 from \$516,946,000 for the first half of 1947. Principal operating expenses were \$272,545,000 for salaries and wages of officers and employees and fees to directors, a sum approximately \$27,128,000 more than was paid during the first half of 1947, and an increase in payments for interest on time and savings deposits, which brought total expenditures for that purpose to \$87,194,000.

Net profits before dividends for the six months ended June 30, 1948, amounted to \$196,866,000, which at an annual rate is approximately 7.10 percent of capital funds. Comparison of net profits before dividends during the first half of 1948 and the first half of 1947 is not practical, owing to reserve accounts amounting to more than \$99,000,000 which were charged out of current earnings under provisions of a ruling issued by the Bureau of Internal Revenue. Cash dividends declared on common and preferred stock were slightly larger than during the comparable period of 1947 and amounted to \$92,393,000. The annual rate of cash dividends was 3.33 percent of capital funds and was 46.93 percent of the net profits available. The remaining 53.07 percent of net profits, or more than \$104,000,000, was retained by the banks in their capital accounts.

Between October 13 and November 10, total loans of the member banks in leading cities in the Eleventh District rose by about \$33,934,000. Over \$26,000,000 of the increase during that period was in commercial, industrial, and agricultural loans and represented a more or less normal seasonal increase for those types of borrowings. "All other" loans, which include consumer credit transactions, also showed a substantial increase of some \$10,737,000. Minor decreases were reported for other types of commercial bank loans. The increase in commercial, industrial, and agricultural loans was rather well distributed throughout the four-week period, although the rate of increase lessened somewhat during the week ended November 10. Despite the rising loan trend that has prevailed during the last few months, the rate of increase in member bank loans in leading cities of this District has been notably less in 1948 than during the comparable period in 1947.

Holdings of United States Government securities of these selected member banks increased by \$13,666,000 as banks added to their investment in Treasury bills and Treasury certificates of indebtedness but sold off some of their holdings of Treasury notes and Government bonds. An interesting note is reflected in the figures which show that during the year ended November 10, 1948, member banks in leading cities in this District reduced their holdings of United States Government bonds by \$112,272,000, reported holdings of Treasury notes some \$41,356,000 less than on the comparable date a year ago, but increased their short-term portfolio of bills and certificates of indebtedness by a total of \$49,699,000.

Total deposits of selected member banks in leading cities in this District increased by \$58,604,000 during the four-week period ended November 10. An increase of \$18,318,000 was reported for demand deposits adjusted, while time deposits were

\$2,402,000 larger than on October 13. Interbank deposits, however, showed the largest increase during the four-week period, rising by \$45,193,000.

CONDITION STATISTICS OF WEEKLY REPORTING MEMBER BANKS  
IN LEADING CITIES—Eleventh Federal Reserve District  
(In thousands of dollars)

Item	Nov. 10, 1948	Nov. 12, 1947	October 13, 1948
Total loans and investments	\$2,309,285	\$2,274,367*	\$2,260,804
Total loans—Net†	1,097,610		1,063,896
Total loans—Gross	1,104,004	973,833*	1,070,070
Commercial, industrial, and agricultural loans	763,689	674,046	737,611
Loans to brokers and dealers in securities	6,299	7,355	6,890
Other loans for purchasing or carrying securities	57,219	72,600	58,093
Real-estate loans	87,348	74,786	88,654
Loans to banks	346	161	456
All other loans	189,103	144,885	178,366
Total investments	1,205,281	1,300,534	1,190,734
U. S. Treasury bills	45,108	36,553	28,722
U. S. Treasury certificates of indebtedness	232,379	191,235	210,106
U. S. Treasury notes	68,910	110,266	79,551
U. S. Government bonds (incl. gtd. obligations)	738,088	850,360	752,440
Other securities	120,796	112,120	119,915
Reserves with Federal Reserve Bank	573,515	499,820	545,233
Balances with domestic banks	281,427	325,135	296,792
Demand deposits—adjusted*	1,934,520	1,850,963	1,916,202
Time deposits	417,427	375,406	415,025
United States Government deposits	32,255	28,055	39,564
Interbank deposits	644,447	723,710	599,254
Borrowings from Federal Reserve Bank	2,000	1,500	None

\*Includes all demand deposits other than interbank and United States Government, less cash items reported as on hand or in process of collection.

†Prior to June 30, 1948, the individual classes of loans were reported net; however, the amount of reserves deducted subsequent to June 30, 1948, was so small as to have no significant effect upon the comparability of the data.

‡After deductions for reserves and unallocated charge-offs.

Gross demand deposits of all member banks in the Eleventh District continued to follow the rising trend that has been in evidence for several months, although during October all of the increase was reported by country banks. During that month, average daily figures of gross demand deposits for the District's country banks were \$2,740,900,000, or approximately \$45,384,000 higher than the September average. In contrast, average daily figures for the reserve city banks showed total gross demand deposits during October of \$2,506,619,000, reflecting a decline from the September level of \$1,633,000. Time deposits during October averaged slightly higher at both reserve city banks and country banks of the District.

GROSS DEMAND AND TIME DEPOSITS OF MEMBER BANKS  
Eleventh Federal Reserve District  
(Averages of daily figures. In thousands of dollars)

Date	Combined total		Reserve city banks		Country banks	
	Gross demand	Time	Gross demand	Time	Gross demand	Time
October 1946	\$4,845,188	\$500,813	\$2,342,242	\$317,424	\$2,502,946	\$183,389
October 1947	5,100,591	541,504	2,437,292	337,197	2,665,289	204,307
June 1948	5,044,942	576,282	2,415,559	364,548	2,529,383	211,734
July 1948	5,095,434	587,716	2,459,933	375,215	2,539,501	212,501
August 1948	5,112,411	591,551	2,449,802	379,803	2,662,609	211,748
September 1948	5,203,768	589,519	2,508,252	378,943	2,695,516	210,576
October 1948	5,247,519	592,462	2,506,619	379,873	2,740,900	212,589

SAVINGS DEPOSITS

Eleventh Federal Reserve District

City	Number of reporting banks	October 30, 1948		Percentage change in savings deposits from	
		Number of savings depositors	Amount of savings deposits	October 31, 1947	Sept. 30, 1948
Louisiana: Shreveport	3	32,759	\$ 24,963,405	— 4.7	0.4
Texas:					
Beaumont	3	12,130	6,160,126	— 7.2	— 0.2
Dallas	8	142,308	77,838,017	— 0.4	0.1
El Paso	2	32,367	22,355,990	— 4.0	1.5
Fort Worth	4	43,092	34,521,840	— 0.7	1.6
Galveston	4	28,137	21,724,327	— 1.8	— 0.5
Houston	8	101,819	72,909,450	4.1	0.1
Lubbock	2	1,489	2,836,459	51.6	—23.3
Port Arthur	2	6,171	4,816,949	— 4.7	0.2
San Antonio	5	39,028	45,258,348	— 4.1	0.1
Waco	3	10,188	9,898,100	— 2.9	0.7
Wichita Falls	3	7,136	4,687,215	— 2.2	— 0.1
All other	55	63,120	53,888,184	— 0.8	0.2
Total	102	514,744	\$381,758,410	— 0.6	0.1

During October, bank debits as reported by banks in 24 cities in the District showed an increase of 10 percent when

compared with figures for the same month of last year and were 4 percent larger than during September. Largest increases in debits were reported from Roswell, New Mexico, and Lubbock and El Paso, Texas, with moderate to slight increases being reported by most other cities in the group. Five cities, however, reported declines in bank debits, ranging from a low of 1 percent at Monroe, Louisiana, and San Angelo, Texas, to the largest decline of 13 percent reported from Austin. Although the annual rate of turnover of deposits declined from 13.9 in September to 13.4 in October, the turnover continued at a higher rate than for the comparable period last year, when reports showed a turnover in October 1947 of 13.1. The highest rate of turnover of deposits on an annual basis continued to be reported from Dallas, as the turnover in that city was 17.5 for October. Houston, El Paso, Fort Worth, Amarillo, and Lubbock also reported a turnover for the latest month in excess of the average for the group of 24 cities.

Increased seasonal demand for currency, Federal Reserve notes of this bank in actual circulation increased by \$5,088,000 during the month ended November 15 and were slightly larger in outstanding amount than on the same date in 1947. As a result of a decline in holdings of United States Government securities from \$1,058,756,000 to \$1,046,051,000 and slight changes in other earning assets, the total earning assets of the bank showed a decline between October 15 and November 15 of \$13,359,000.

## CONDITION OF THE FEDERAL RESERVE BANK OF DALLAS

(In thousands of dollars)

Item	Nov. 15, 1948	Nov. 15, 1947	Oct. 15, 1948
Total gold certificate reserves.....	\$ 641,528	\$ 530,611	\$ 623,033
Discounts for member banks.....	2,280	2,700	2,418
Foreign loans on gold.....	7,857	1,247	8,373
U. S. Government securities.....	1,046,051	1,009,521	1,058,756
Total earning assets.....	1,056,188	1,013,468	1,069,547
Member bank reserve deposits.....	978,391	841,167	962,218
Federal Reserve notes in actual circulation.....	680,294	628,078	626,206

## BANK DEBITS, END-OF-MONTH DEPOSITS, AND ANNUAL RATE OF TURNOVER OF DEPOSITS

(Amounts in thousands of dollars)

City	Debits			End-of-month deposits* Oct. 31, 1948	Annual rate of turnover		
	October 1948	Oct. 1947	Sept. 1948		October 1948	October 1947	Sept. 1948
Arizona: Tucson.....	\$ 60,726	4	5	\$ 85,265	8.6	8.6	8.2
Louisiana:							
Monroe.....	39,737	10	— 1	42,005	11.4	10.8	11.6
Shreveport.....	165,303	33	11	167,761	12.0	10.1	10.9
New Mexico: Roswell.....	16,831	18	23	19,282	10.9	9.4	8.8
Texas:							
Abilene.....	36,329	— 2	1	42,421	10.3	11.3	10.3
Amarillo.....	96,178	4	5	84,775	13.8	13.3	13.1
Austin.....	104,288	4	—13	102,255	12.1	11.6	13.8
Beaumont.....	103,382	25	2	101,553	12.6	10.9	12.5
Corpus Christi.....	75,280	— 2	— 6	80,644	11.3	12.6	12.0
Corsicana.....	13,107	— 6	2	20,533	7.8	8.4	7.9
Dallas.....	1,062,490	7	4	728,452	17.5	17.3	16.8
El Paso.....	134,854	13	17	113,508	14.4	13.4	12.4
Fort Worth.....	328,724	— 1	1	287,408	13.8	14.4	13.9
Galveston.....	68,307	8	1	96,521	8.5	8.4	8.4
Houston.....	1,135,281	20	5	900,452	15.1	14.3	14.4
Laredo.....	15,888	2	4	21,741	8.6	9.2	8.0
Lubbock.....	74,280	— 4	24	67,998	13.7	15.7	11.3
Port Arthur.....	35,160	6	3	38,280	11.0	10.1	10.6
San Angelo.....	31,074	— 3	— 1	39,964	9.6	9.8	9.8
San Antonio.....	241,084	— 1	1	318,268	9.1	9.1	9.0
Texarkana.....	16,527	1	4	22,784	8.6	9.0	8.3
Tyler.....	41,245	9	— 3	54,293	9.1	9.2	9.4
Waco.....	56,029	4	3	66,532	10.3	9.8	10.2
Wichita Falls.....	59,711	19	5	82,229	8.8	8.0	8.3
Total—24 cities.....	\$4,011,815	10	4	\$3,584,915	13.4	13.1	13.9

\*Demand and time deposits at the end of the month include certified and officers' checks outstanding but exclude deposits to the credit of banks.

†This figure includes only one bank in Texarkana, Texas. Total debits for all banks in Texarkana, Texas-Arkansas, including two banks located in the Eighth District, amounted to \$29,815.

## MEMBER BANK RESERVES AND RELATED FACTORS

Eleventh Federal Reserve District

(In millions of dollars)

Item	Changes in weeks ended				Cumulative changes	
	Nov. 10, 1948	Nov. 3, 1948	Oct. 27, 1948	Oct. 20, 1948	4 weeks ended Nov. 10, 1948	Jan. 1 to Nov. 10, 1948
Federal Reserve credit—						
local.....	30.4	—19.8	—10.5	18.4	18.5	1.6
Interdistrict commercial & financial transactions.....	—13.3	11.1	10.1	—26.2	—18.3	—41.9
Treasury operations.....	16.5	6.5	3.1	9.7	35.8	150.0
Currency transactions.....	— 1.0	— 8.7	4.5	3.1	— 2.1	—12.5
Other deposits at the Federal Reserve Bank.....	— 0.2	— 0.2	0.1	— 0.1	— 0.4	0.3
Other Federal Reserve accounts.....	— 0.1	2.1	0.6	0.3	2.9	9.4
Member bank reserve balances.....	32.3	— 9.0	7.9	5.2	36.4	106.9

Note: Amounts preceded by a minus sign reduce reserves; all others add to reserves.

Principal changes in the condition of the Federal Reserve Bank of Dallas included an increase in total gold certificate reserves, an increase in Federal Reserve notes in actual circulation, and a decline in total earning assets. Gold certificate reserves of the bank rose by \$18,495,000 to bring the total on November 15 to \$641,528,000, or almost \$111,000,000 more than on the same date a year ago. Reflecting the in-

## NEW MEMBER BANK

*The First State Bank, Abilene, Texas, a newly organized institution located in the territory served by the Head Office of the Federal Reserve Bank of Dallas, opened for business November 18, 1948, as a member of the Federal Reserve System. This bank has paid-in capital funds of \$250,000, including capital of \$150,000, surplus of \$50,000, and undivided profits of \$50,000. The officers are: E. L. Thornton, Chairman; Charles P. McGaba, Vice Chairman; R. B. Tanner, President; Wayman Rose, Vice President and Cashier; Jasper Albright, Assistant Cashier.*

## NEW PAR BANK

*The Bellaire State Bank, Houston, Texas, a newly organized nonmember bank located in the territory served by the Houston Branch of the Federal Reserve Bank of Dallas, was added to the Federal Reserve Par List on its opening date, November 12, 1948. This bank, a member of the Federal Deposit Insurance Corporation, has total capital of \$200,000, surplus of \$25,000, and unallocated funds of \$25,000. Its officers are: Alfred J. Knapp, President; Dewey Marsh, Executive Vice President; Edmond A. Fretz, Vice President; George Gentry, Cashier.*

The United States Treasury Department is now engaged in its third peacetime savings bond drive in an effort to encourage and expand the habit of regular saving among the American people. The current drive extends until December 11 and places its greatest emphasis on pay roll savings and the Bond-A-Month Plan.

Latest Treasury figures show that there are currently about 7,500,000 persons who are buying savings bonds regularly through pay roll deduction. The average deduction for these purchases amounts to about \$20, so that the aggregate being saved regularly in this way is running in the neighborhood of \$150,000,000 a month.

The Bond-A-Month Plan, according to Treasury Department reports, has shown very marked gains over figures of a year ago. At that time, the Treasury estimated that there were about 250,000 participants in the Bond-A-Month Plan, with aggregate purchases of \$15,000,000 of savings bonds a month.



Around the first of this year, the number of participants was estimated to have risen to more than 500,000, while the latest official estimate is that more than 1,000,000 persons are now buying bonds regularly under the Plan, with aggregate monthly purchases of some \$50,000,000.

INDUSTRY

The value of construction contracts awarded in the Eleventh Federal Reserve District during October increased sharply from the low September volume but was considerably smaller than the large total for October last year. Nevertheless, total awards for the first ten months of 1948, which amounted to \$647,000,000, exceeded those in the same period of 1947 by about 14 percent. Although awards for the final two months of the year may fall below those for the corresponding months of last year, awards for 1948 are expected to exceed the 1947 volume by some 10 percent. Moreover, the 1948 total will be larger than any other year of record except 1942, when construction for war purposes was at a peak.

The construction materials situation has tended to improve, despite the continuance of occasional shortages of some items in some localities. The production of practically every construction material has been increasing, with new records established in many lines during the third quarter of the year. The usual seasonal slackening in construction during the winter months should permit some further increase of stocks throughout the country.

VALUE OF CONSTRUCTION CONTRACTS AWARDED

(In thousands of dollars)

	October 1948 <sup>Ⓟ</sup>	October 1947	September 1948	January 1 to October 31 1948 <sup>Ⓟ</sup>	January 1 to October 31 1947
Eleventh District—total ..	\$ 58,568	\$ 76,006	\$ 45,635	\$ 647,421	\$ 565,925
Residential.....	17,358	22,058	19,234	214,747	201,865
All other.....	41,210	53,948	26,401	432,674	364,060
United States*—total.....	778,606	703,286	762,192	8,124,379	6,419,397
Residential.....	296,760	349,490	279,658	3,087,236	2,636,757
All other.....	481,846	443,796	482,534	5,037,143	3,782,640

\*37 states east of the Rocky Mountains.

Ⓟ—Preliminary.

SOURCE: F. W. Dodge Corporation.

BUILDING PERMITS

City	October 1948		Percentage change valuation from		Jan. 1 to Oct. 30, 1948		Percentage change valuation from 1947
	No.	Valuation	Oct. 1947	Sept. 1948	No.	Valuation	
Louisiana:							
Shreveport.....	239	\$ 711,070	-35	-52	3,231	\$ 25,524,827	161
Texas:							
Abilene.....	128	495,436	56	21	977	4,547,956	22
Amarillo.....	213	919,350	-10	1	2,011	9,511,939	33
Austin.....	292	1,316,275	-16	-9	3,243	20,074,969	21
Beaumont.....	394	637,354	13	12	3,698	8,163,097	51
Corpus Christi.....	307	1,049,506	-53	15	3,046	14,028,760	5
Dallas.....	1,439	5,120,638	-26	-25	13,838	76,696,751	58
El Paso.....	212	2,372,016	184	89	1,419	10,357,777	64
Fort Worth.....	561	2,245,518	-14	10	5,675	24,225,836	8
Galveston.....	142	191,598	-3	-47	1,609	3,353,890	56
Houston.....	600	7,329,700	-12	-7	7,535	84,609,447	43
Lubbock.....	190	480,549	-25	-76	2,368	11,977,829	28
Port Arthur.....	140	210,622	10	12	1,442	2,751,333	42
San Antonio.....	1,240	2,325,245	-13	-24	12,556	30,154,332	34
Waco.....	150	714,250	-21	-14	1,521	10,342,161	33
Wichita Falls.....	63	183,255	-5	-40	780	3,394,121	56
Total.....	6,275	\$26,302,382	-13	-14	64,949	\$339,715,025	42

The production of Portland cement in Texas during September was fractionally below the July record, while the figure for the United States was only 2 percent below the August peak. Production for the year is expected to total about 13,500,000 barrels in Texas and 200,000,000 barrels in the Nation, in each case exceeding the high production levels of 1947 and 1942. During the past decade, production capacity has declined in the Nation, though rising in Texas, with the

latter enjoying also a higher rate of utilization of existing capacity. Stocks of Portland cement in the Nation generally have been smaller throughout most of 1948 than in 1947, with the reverse being true in Texas. Stocks have followed the usual seasonal pattern, with an excess of production above consumption accumulating considerable stocks by the second and third months of the year, followed by a drawing down of stocks thereafter until a seasonal low is reached, usually in October.

PRODUCTION AND STOCKS OF PORTLAND CEMENT

(In thousands of barrels)

	September 1948	September 1947	August 1948	January 1 to September 30 1948	January 1 to September 30 1947
Production					
Texas.....	1,196	1,013	1,158	10,047	8,993
United States.....	18,905	17,319	18,961	150,215	135,295
Stocks, end of month					
Texas.....	387	271	385		
United States.....	7,022	7,921	8,406		

SOURCE: United States Bureau of Mines.

Texas has cement plants at Dallas, El Paso, Fort Worth, Houston, San Antonio, and Waco, which assures supplies for the large centers of construction activity in the State. The abundance of natural gas for fuel and of limestone, marls, and clays for raw materials, as well as the expanding markets of the Southwest, make Texas a very suitable location for cement production.

Lumber production in the Southwest and in the Nation has increased considerably since the war, but the proportion of the national production in the Southwest appears to have declined slightly. Texas has tended to produce just under half of the total output of the five States included in the Eleventh Federal Reserve District, with Louisiana producing practically as much as Texas. Stocks of lumber at the mills, concentration yards, and retail yards of the Nation have been increasing gradually; and with the seasonal winter slack in construction in most parts of the country, there are prospects of an easing of the supply situation for lumber as well as most other construction materials.

LUMBER PRODUCTION

(In billions of board feet)

	1939	1940	1945	1946	1947	Jan.-Aug. 1948
Texas.....	1.1	1.3	0.9	1.3	1.4*	n.a.
Louisiana.....	1.0	1.1	1.0	n.a.	n.a.	n.a.
Oklahoma.....	0.1	0.2	n.a.	n.a.	n.a.	n.a.
New Mexico.....	0.1	0.1	0.1	n.a.	n.a.	n.a.
Arizona.....	0.1	0.1	0.2	n.a.	n.a.	n.a.
Total, 5 States.....	2.4	2.8	2.4*	n.a.	n.a.	n.a.
Total, United States.....	25.0	28.9	28.1	34.9	36.6	24.7
Percent of U. S. production in:						
Texas.....	4.4	4.5	3.2	3.8	3.8	n.a.
Louisiana.....	4.0	3.8	3.6	n.a.	n.a.	n.a.
Above 5 States.....	9.6	9.7	8.5	n.a.	n.a.	n.a.

\*Approximate.

n.a.—Not available.

SOURCES: United States Bureau of the Census.  
National Lumber Manufacturers Association.

The daily average production of crude petroleum during October reached new peaks at 2,752,000 barrels in the Eleventh Federal Reserve District and at 5,574,000 barrels in the Nation. Production has edged up in most months of 1948 but at a slower rate than in 1947 because the industry for some time has been producing at virtual capacity and increases in production have depended largely upon the completion of new producing wells. Nevertheless, production for the first ten months of 1948 exceeded that for the corresponding period of 1947 by 11 percent in the District and 9 percent in the Nation. The expansion in refinery operations has about kept pace with that of crude oil production, as is indicated by the fact that crude oil stocks, though rising, were at the end of October only 3,600,000 barrels higher than a year earlier. The industry has made excellent progress in accumulating supplies

of refined products in an effort to prevent the development of shortages this winter. At the end of October, supplies of refined products were substantially larger than a year ago, ranging from 11 percent more for gasoline to 41 percent for residual fuel oil. In view of the favorable stock situation, it is believed that the winter demands can be met if, as now seems likely, the problems of geographical distribution and local storage can be solved.

## CRUDE OIL PRODUCTION—(Barrels)

Area	October 1948		Increase or decrease in daily average production from	
	Total production	Daily avg. production	September 1948	October 1947
Texas:				
District 1	882,850	28,479	- 287	4,076
2	5,569,300	179,655	88	17,582
3	15,626,500	504,081	9,473	11,423
4	7,878,450	254,143	3,560	-5,364
5	1,586,300	51,171	1,921	10,118
6	9,358,700	301,894	-7,248	-17,909
Other 6	3,776,000	121,806	1,706	3,508
7b	1,782,550	57,502	4,919	13,781
7c	1,480,700	47,765	2,923	7,104
8	22,586,700	728,603	20,828	82,908
9	4,412,700	142,345	2,345	6,416
10	2,741,600	88,439	1,697	-708
Total Texas	77,682,350	2,505,883	41,925	132,933
New Mexico	4,124,750	133,056	1,123	15,929
North Louisiana	3,510,350	113,237	-800	10,128
Total Eleventh District	85,317,450	2,752,176	42,248	158,988
Outside Eleventh District	87,463,150	2,821,392	155,519	161,740
United States	172,780,600	5,573,568	197,767	320,728

SOURCE: Estimated from American Petroleum Institute weekly reports.

Drilling operations, as measured by well completions, have been on a large scale this year despite the shortages of pipe and other materials. The 36,000 well completions expected in the United States will be the largest number on record, while the 13,600 completions in this District will be the highest since the 1937 peak.

## NUMBER OF OIL AND GAS WELLS COMPLETED

Year	United States	Eleventh District	Texas	Northern Louisiana	New Mexico
1920	33,911	n.a.	n.a.	n.a.	n.a.
1921-30 (avg.)	22,883	n.a.	6,352	n.a.	n.a.
1931	12,233	n.a.	6,381	n.a.	n.a.
1932	14,910	n.a.	9,133	n.a.	n.a.
1933	12,765	n.a.	6,559	n.a.	n.a.
1934	21,122	n.a.	9,310	n.a.	n.a.
1935	20,975	11,915	11,235	343	337
1936	25,167	13,224	12,024	648	552
1937	31,622	15,620	14,275	680	665
1938	26,905	13,012	11,810	622	580
1939	25,419	10,468	9,325	537	606
1940	28,093	10,378	9,094	673	611
1941	29,774	10,901	9,833	791	277
1942	16,390	5,479	4,688	445	346
1943	16,862	4,641	4,175	209	257
1944	22,057	6,725	6,021	288	416
1945	23,567	8,100	7,229	456	415
1946	26,321	8,994	7,805	730	419
1947	30,724	10,828	9,254	1,013	561
1948 (est.)	36,000	13,600	11,500	1,500	600
January-September 1948	26,396	10,022	8,533	1,062	427

n.a.—Not available.

SOURCES: United States Bureau of Mines.  
World Oil.

The long-continued expansion of crude petroleum production may soon taper off, with future increases being more gradual and with some possibility of decline for a time below present record levels. Both crude production and the demand for petroleum products have been rising since the war, with the present levels of both production and refining being about 15 percent above the 1945 average and 11 percent above the

August 1945 wartime peak. The growth of demand is now at a slower rate, so that, as the number of wells in operation increases, there will be less need for production at any cost and more attention can be given to conservation practices. The Railroad Commission of Texas has reduced the daily allowable production for East Texas by 9,333 barrels, or about 3 percent. Earlier the Commission had announced that orders were being prepared by which 17 fields, mostly in West Texas, would be shut down until the 330,000,000 cubic feet of casinghead gas produced daily in those fields could be saved. The daily allowable crude production of the 17 fields has been 397,000 barrels, or about 15 percent of the State total and 7 percent of national production. However, arrangements have already been made for the utilization of the gas from one of these fields and similar plans may be announced for others. In the period ahead, the installation of additional injection systems, the completion of natural gasoline plants now planned or under construction, and other means of utilizing the gas are expected to decrease the practice of flaring.

After some hesitancy in July and August, nonagricultural employment in Texas showed a strong upward tendency in September and October, with further gains expected during the last two months of the year, according to the Texas Employment Commission. The mid-September total of 2,301,600 represented a one-month rise of 15,700. Nonmanufacturing employment made a greater proportionate increase than did manufacturing, but only because of the return of teachers to schools. Retailers also hired many more workers, but employment in construction declined, in part due to labor disputes. In manufacturing, which accounted for about 17 percent of all nonagricultural employment in the State, gains occurred in cotton oil mills and in aircraft, chemical, and other industries.

## COTTONSEED AND COTTONSEED PRODUCTS

	October 1948			
	Texas		United States	
	August 1 to October 31 This season	Last season	August 1 to October 31 This season	Last season
Cottonseed received at mills (tons) . . . . .	750,336	728,175	3,196,661	2,486,106
Cottonseed crushed (tons) . . . . .	382,812	317,294	1,414,364	1,101,496
Cottonseed on hand October 31 (tons) . . . . .	431,718	465,309	1,871,377	1,484,138
Production of products:				
Crude oil (thousand pounds) . . . . .	114,208	94,188	438,531	335,524
Cake and meal (tons) . . . . .	183,231	149,826	640,767	508,117
Hulls (tons) . . . . .	85,151	70,517	322,680	250,875
Linters (running bales) . . . . .	128,428	106,044	444,187	341,650
Stocks on hand October 31:				
Crude oil (thousand pounds) . . . . .	13,736	14,512	42,795	55,604
Cake and meal (tons) . . . . .	30,442	13,029	80,246	62,021
Hulls (tons) . . . . .	24,671	26,363	70,796	72,432
Linters (running bales) . . . . .	68,600	43,226	170,842	154,334

SOURCE: United States Bureau of Census.

## DOMESTIC CONSUMPTION AND STOCKS OF COTTON—(Bales)

	October 1948	October 1947	September 1948	August 1 to October 31 This season	October 31 Last season
Consumption at:					
Texas mills . . . . .	11,942	13,827	15,309	39,341	37,360
United States mills . . . . .	695,887	828,576	739,139	2,163,758	2,270,046
U. S. stocks—end of month:					
In consuming establs'ts . . . . .	1,468,500	1,478,112	1,282,404	.....	.....
Public stg. & compresses . . . . .	7,325,729	5,098,757	4,140,319	.....	.....