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DAIRYING—A POTENTIAL SOURCE OF INCOME TO TEXAS

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Milk from states as far away as Wisconsin and California is being imported into Texas to provide an adequate supply of dairy products for several cities in the State. Some manufactured dairy products, such as butter, cheese, and powdered milk, have been imported for more than a generation, but in recent years increasing amounts of milk, including large quantities of Grade A fluid milk for bottling, have been imported to meet the growing demand for dairy products. This expanding demand has been created by the rapid growth in urban population and in incomes stimulated by the accelerated industrial growth of the area which has resulted in increased wage rates and a high level of employment in industry, construction, trade, and services. The large volume of agricultural production, sold at high prices, has also contributed to the high incomes. The normal tendency of per capita consumption of milk to rise during such periods of prosperity has been accentuated by the fact that during the war the Armed Services emphasized the use of milk in the diets of soldiers, sailors, and marines, and many servicemen have carried this emphasis into their civilian homes.

The major imports of fluid milk into Texas usually occur in the period from September to February to compensate for the seasonal decline in Texas milk production during those months. While this problem of importing milk is common to many Texas cities, its extent is illustrated by the fact that imports into the Dallas area during the month of October 1948 averaged about 17,000 gallons daily and were substantial during the months of January, February, March, November, and December.

The necessity of importing fluid milk to meet the growing demand has been intensified by the fact that production of milk in Texas, which had shown an upward trend in the decade preceding World War II, reversed its trend in 1942 and declined rather sharply subsequent to 1944. This decline was caused in part, at least, by the shortage and high cost of labor and by increasing feed costs, which at the onset of the war began to reduce dairymen's profits and which by 1944 had so increased the cost of milk production that several large dairy herds were dispersed and many low-producing dairy cows were sold for beef. In recent years this decline in dairy cow numbers has been given further impetus by relatively high prices for beef cattle and of cash crops.

Another factor contributing to the deficiency of the milk supply in Texas is that production per cow, already very low, has declined even further in recent years as farmers have given more attention to other enterprises. In 1947, annual milk production per cow in Texas was 3,110 pounds, which is only slightly higher than in 1924, 2,000 pounds below the average for the United States, and lower than the average in all other states except Arkansas, Mississippi, and Louisiana. Even many of the above-average dairy herds of Texas have failed to reach the standards of other states, as evidenced by the fact that in 1947 herds in the Texas Dairy Herd Improvement Associations averaged 300 pounds less per cow than

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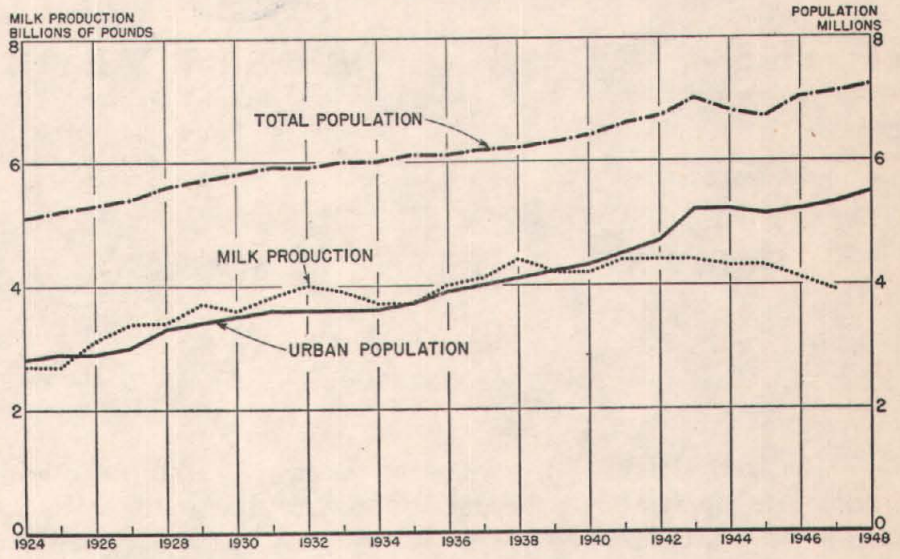
the over-all state average in Wisconsin and 2,607 pounds less than the United States average for cows in Dairy Herd Improvement Associations.

The opportunity for expansion of dairy farming in Texas has been enhanced by certain trends evident in Texas agriculture during the past 20 years. During this period there has been a 50 percent reduction in the acreages of cotton and corn in the State as a whole; in the eastern half of the State, where the opportunity for expansion of dairying is greatest because of heavier rainfall and proximity to large markets, the reduction has been as high as 90 percent. This reduction in row crops in these areas has been accompanied by a three-fold increase in the acreage of tame hay, including legumes, Bermuda grass, and Johnson grass.

TOTAL POPULATION, URBAN POPULATION, AND MILK PRODUCTION
TEXAS
1924-1948



SOURCES: U.S. DEPARTMENT OF COMMERCE
U.S. DEPARTMENT OF AGRICULTURE

FIGURE 1

Thus far, the need for more livestock to utilize the increased production of feed crops made possible by the shift in land use has been met largely by an increase of 80 to 90 percent in the number of beef cattle. In view of the present shortages and prospective deficiencies in the Texas milk supply, fuller utilization of land and labor might be achieved by an expansion in the number of dairy cows and, in some areas, by the replacement of some beef cattle with dairy cattle.

The relative profitableness of dairying and beef cattle production in parts of this area is suggested by scattered reports on operations of individual farms and estimates based on average prices and production. For example, in 1940, income of Hopkins County farmers in the Dairy Herd Improvement Association from the sale of milk and cream averaged $107.58 per cow, or $55.39 above feed costs. Gross returns from beef cows in the same year are estimated at $26.00 per cow. In 1947, the gross income per cow in the Dairy Herd Improvement Associations of Texas averaged $329.00, and the net return above feed costs averaged $179.00 per cow. Estimated average gross returns from beef cows that year were $64.80. In comparing these incomes, consideration should be given to the fact that more labor and slightly more feed are required for milk production; but, on balance, it would appear that dairy farming, where it is feasible and profitable, offers an opportunity of increasing incomes per farm by selling more of the farmer's feed and labor. It should be recognized that some areas could not in the past and cannot now profitably shift to dairying because of the lack of all-weather roads, a readily accessible market, an adequate water supply, or ability to care properly for dairy cows. In other communities, however, conditions have been and are now favorable for an expansion of dairying, which, in most cases, would result in increased farm incomes.

Certain benefits also accrue to agricultural communities where dairy farming contributes a significant proportion of the agricultural income. There is a more regular flow of income, because some milk is sold every day, every year, and the seasonal and year-to-year fluctuations in production are less pronounced than with cash crops, the production of which is highly seasonal and dependent to a large extent upon the weather. The supply of dairy feed crops, although dependent upon the weather, is usually more uniform because a wide variety of forage crops can be used for dairy feed, and surplus feed produced in favorable years or months can be stored for use when feed production is low. Furthermore, the labor force of the community is provided with regular, year-round employment, which adds

to the stability of the income in the area. This regularity of income gives greater stability to the community. Bank deposits, as well as credit demands, have fewer seasonal peaks and are not so subject to the wide fluctuations found in cash crop areas due to unusually high or unusually low yields of crops. Merchants of the community are provided with a steadier volume of business that requires less seasonal extension of credit and permits scheduled buying of replacement stock. Some increase in the volume of trade may be experienced as the regularity of incomes and spending reduces credit costs, permits increased savings, and gives confidence in the future to the members of the community. Long-range community planning is facilitated, and schools, churches, and all civic organizations share in the benefits of a stable income.

In view of these facts, which indicate a need for increased milk production in Texas and the opportunity for profit in dairy farming, it is important to appraise the opportunities for and limitations to the expansion of milk production in the State. Such expansion obviously can be achieved by improving the productivity per cow in present herds, by increasing the number of dairy cows, or by a combination of the two methods. It is important to recognize the factors that have limited improvement in productivity and increases in dairy herds, to review the basic economic requirements for dairying, and to investigate methods that may be employed in stimulating expansion of milk production in areas that are suited to dairy farming.

Factors Affecting Expansion of Milk Production

At the outset, it is important to recognize that, traditionally, farmers of Texas have been producers of cash crops, such as cotton, corn, and wheat, and of beef cattle and sheep. These have been the major farm enterprises in Texas because, in most cases, the climate, soil types, and fertility were suitable for their production and, even though their production may not have represented the best land use in some communities, these crops provided satisfactory incomes for the farm operators. As a result, Texas farmers through the years have acquired skills and work habits associated with these enterprises; consequently, there has been—and still is—a natural reluctance to shift to other agricultural enterprises, such as dairying, which would require the acquisition of new skills; the assumption of new business responsibilities, including substantial outlays of capital and day-to-day handling of new problems; and regular and unfamiliar work habits. At the same time the steady and persistent depletion of soil fertility, with accompanying declines in crop yields, increases in costs of production, and prospective declines in farm incomes, has necessitated the adoption of soil conservation and soil-building practices. Use of these practices has brought about shifts in the crop production and livestock enterprises of many Texas farms in keeping with a new program of soil management and land use designed to rebuild the soil and increase farm incomes.

Dairy farming is easily adapted to a program of soil improvement and efficient land utilization and offers one of the most effective methods of increasing soil fertility. A properly fed and well-managed dairy herd returns more plant nutrients to the soil than any other type of livestock and a great deal more than any cash crop. Furthermore, the necessary program of feed production for the dairy herd makes maximum use of legumes, grasses, and other soil-conserving crops, which also add to the fertility of the soil. The resulting increase in crop yields, together with the more intensive use of labor required by dairying, increases farm incomes. The ability of the dairy herd to assist in building soil fertility while maintaining or increasing income is of special importance in view of the urgent need for a program of soil conservation and land improvement.

Obviously, a shift to dairy farming or the addition of dairying to the present farm program raises new problems and requires skills and work habits that are in many ways very different from those with which most Texas farmers are familiar. To be a successful dairyman a farmer should know how to (1) feed dairy cows for maximum milk production, (2) plan and execute a progressive breeding program that will continually improve the productivity of the herd, (3) maintain, through proper care and handling, the quality of the milk produced, (4) prevent outbreaks of serious diseases by following a suitable program of sanitation and disease prevention, (5) give the dairy herd proper and timely care, and (6) arrange his farm and plan a rotation of crops so that maximum dairy feed production is

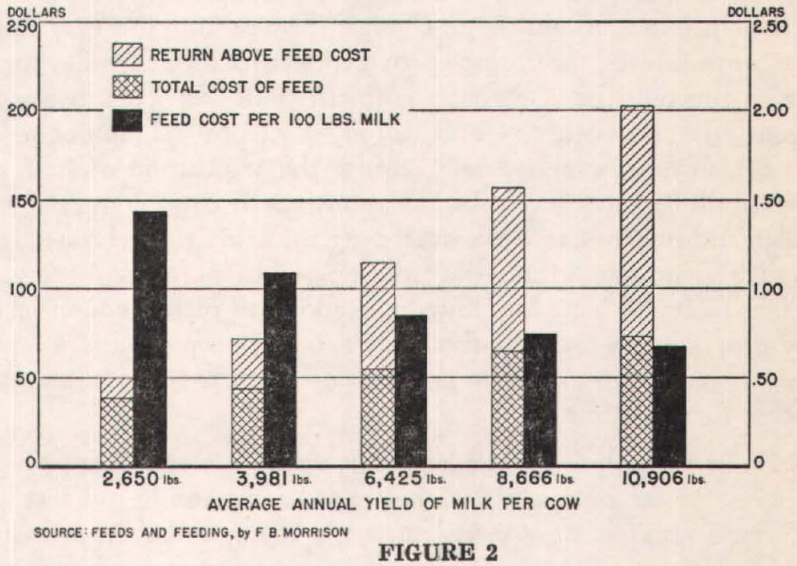
obtained. Because, as a general rule, these skills must be acquired over a considerable period, many operators who have adopted dairy farming as their major enterprise have found it desirable to do so on a gradual basis, starting with a few cows and increasing the size of the herd gradually as they acquired the skills, knowledge, and work habits necessary for the profitable operation of a dairy farm. In fact, many of the present operators of the larger Grade A dairy herds began with small herds selling only sour cream.

This gradual development also permits more time to make the necessary adjustments in land utilization, including a rearrangement of fields; the building of pastures through fertilization and seeding of grasses, clovers, and other legumes; and the provision for the production, harvesting, and storing of hay and silage. Gradually a crop rotation and a lay-out of the fields can be arranged so that the proper emphasis is placed upon production of feed for dairy cows. Sometimes it may be desirable to continue a small acreage of one cash crop, such as cotton, peanuts, wheat, or potatoes, if above-average yields can be obtained and sufficient labor is available.

Productivity Per Cow

Farmers interested in establishing a dairy herd, as well as those who are already in the dairy business, should recognize that success in dairy farming is closely associated with high productivity per cow and that highest productivity usually is achieved by the application of certain basic principles. The importance of high productivity is emphasized by the fact that profits increase and costs per pound of milk decrease with higher production per cow, because feed, labor, and other costs per cow do not rise in proportion to the increased production. These facts are illustrated by the experience of thousands of dairymen throughout the United States in 1934, as indicated by the data in Figure 2; although dollar values will differ, the same general relationships exist in any year.

YEARLY PRODUCTION AND RETURNS FROM COWS IN DAIRY HERD IMPROVEMENT ASSOCIATIONS, 1934



SOURCE: FEEDS AND FEEDING, by F B. MORRISON

FIGURE 2

Achievement of the goal of highest possible productivity in the dairy industry requires careful adherence to a management program that takes advantage of proved dairy practices and of new and improved methods whenever possible. The details of such a program can be developed best by consulting with dairy specialists who are familiar with soil conditions, rainfall, and markets of the farmer's community. Nevertheless, some general principles or guides that are applicable in most communities are presented as suggestions that might be incorporated into a dairyman's program.

Feeding: The feeding program should include the provision, in adequate amounts, of: (1) high-quality roughage—pasture, hay, or silage; (2) a concentrate mixture—grains and protein supplements; (3) water; (4) minerals; and (5) vitamins.

Roughage is the cheapest feed because the dairy cow can harvest most of it in the form of pasture, and it is the most essential feed because the dairy cow cannot perform at maximum efficiency without a bulky feed. The quantity of roughage consumed varies somewhat with size of the cow, volume of milk production, and quality of the feed. In general, however, a dairy cow needs about 20

pounds of high-quality hay per day or its equivalent in the form of pasture or silage. If plenty of pasture is available, all of the required roughage may be obtained from grazing; whereas if pasture is inadequate, silage should be substituted for part of the hay. In all cases, dairy cows should be given access to hay because pasture and silage frequently do not provide sufficient dry matter to meet the daily requirements of milk production.

It is desirable, whenever possible, to use only roughages that are relatively high in total digestible nutrients, protein, minerals, and vitamins and relatively low in fiber. Selection of these feeds requires careful attention because hay, silage, and pasture differ within wide limits with respect to these qualities. In general, legumes are relatively high in protein and low in fiber; mature plants are higher in fiber and lower in protein than young plants; fresh hay or silage usually is higher in vitamin content than that which has been stored for long periods of time; and roughages produced on soils deficient in minerals are frequently deficient in the same minerals. Some of the variations in different roughage feeds are illustrated in Table 1.

A concentrate mixture, usually composed of grains produced on the farm and cottonseed meal or other high-protein feed, serves as a means of increasing the amount of protein and net energy value of the ration. With average quality roughage, this concentrate mixture should contain about 17 percent protein and is usually fed at the rate of about one pound to each three or four pounds of milk produced daily.

The average dairy cow will consume from 12 to 15 gallons of water daily, and in warm weather or with very high production, consumption may be as high as 30 gallons daily; therefore, an ample supply of clean, cool water at all times is essential to highest milk production.

Inasmuch as many feeds, both roughages and concentrates, are deficient in minerals, successful dairymen have found it profitable to supplement the ration by giving the dairy cows ready access to a mixture containing the most essential minerals needed for milk production. Content of this mixture will vary somewhat with the roughage and concentrates fed and the fertility of the soil on which they were grown.

Vitamins are essential to many body processes, as well as an important ingredient of milk; therefore, the dairy ration should be checked frequently to avoid declines in milk production and quality due to vitamin deficiencies.

A deficiency in the ration not only will reduce production and profits but also may impair the quality of the milk. While it is true that dairy cows will, to some extent, draw upon their own body reserves to maintain the quantity and quality of milk production, they will not do so beyond a comparatively low level of production; moreover, it has been shown by extensive experiments that the quality of the milk, especially the mineral and vitamin content, can be improved substantially by proper feeding. Thus, the consumer of milk has a vital interest in the feeding program of the dairyman.

TABLE I

PERCENTAGE OF DIGESTIBLE PROTEIN, CRUDE FIBER, AND TOTAL DIGESTIBLE NUTRIENTS IN SELECTED ROUGHAGES

	Digestible protein	Crude fiber	Total digestible nutrients
Dry roughages:			
Alfalfa hay, very leafy	12.4	22.6	53.7
Alfalfa hay, stemmy	8.2	36.0	47.5
Bermuda grass hay, mature	2.3	38.8	42.1
Bermuda grass hay, immature	3.8	25.6	43.0
Johnson grass hay, seed formed	2.5	29.1	51.9*
Johnson grass hay, before heading	8.0	22.5	53.7*
Sudan grass hay, seed formed	2.5	29.1	50.2
Sudan grass hay, before heading	8.0	22.5	45.0
Silages (dry basis):			
Corn, well-matured	4.6	24.5	66.0
Hegari	2.0	18.3	56.5*
Johnson grass	4.0	32.3	53.1*
Pastures (dry basis):			
Bermuda grass, young-tender	7.2	21.7	70.0*
Bermuda grass, tall	5.9	24.7	73.0*
Blue stem, little	2.8	32.1	53.7*
Clover, bur	14.8	15.6	61.3
Johnson grass, young-green	15.7	21.9	61.0*
Johnson grass, headed	4.5	29.7	51.9*
Lespedeza	12.5	26.7	57.0
Oats, before booting	12.0	11.7	49.5*
Sudan grass, young	15.7	21.9	69.0*
Sudan grass, medium height	8.5	30.3	56.0*

*Estimated by comparison with similar feed.

SOURCE: Agricultural and Mechanical College of Texas.
Morrison, F. B., *Feeds and Feeding*, 1939, pp. 954-976.

Breeding: A profitable breeding program will be based upon the use of the best bulls and the highest producing cows available to the dairyman. The importance of the sire in improving the production

of a herd has been demonstrated through extensive experimentation. For example, in experiments at the Iowa Experiment Station scrub cows with an average annual production per cow of only 4,110 pounds of milk containing 192 pounds of butterfat were bred to a pure-bred bull from a strain of high-producing cows, and in two generations this bull had increased the average annual production of milk per cow to 8,056 pounds and butterfat to 363 pounds.

The beginning dairyman usually finds it advisable to start his herd with the highest producing cows that his resources and knowledge of dairying warrant and then to build his herd by using consistently the best bulls available and saving the best heifer calves for replacements and additions to the herd. A very high producing herd can be built in this manner with a minimum outlay of capital. Progress in improving the herd will be more rapid if high-producing females are purchased from time to time as resources permit.

Selection of the herd sire is of utmost importance because his effect upon the production of the herd may be evident for many years as his daughters and granddaughters are added to the herd. The use of an inferior bull may delay progress in improving the productivity of the herd for several years. Therefore, it is important that extreme care be used in selecting the herd sire, always attempting to find one whose pedigree indicates that he will improve the average production of the herd.

The use of outstanding bulls is rapidly being placed within the reach of almost every dairyman by the perfection of artificial insemination techniques. Previously, the bulls available to the dairyman were limited to those he could afford to own or rent from a neighbor. But now the services of many of the best bulls of the breed can be made available to hundreds of dairymen through cooperative Artificial Breeding Associations or private organizations offering similar service. Artificial breeding permits the cost of one bull to be spread over hundreds of cows, thus lowering the cost per cow to a point where even the farmer with only one dairy cow can afford to use the best bull as his herd sire. Artificial Breeding Associations have grown rapidly during the past 10 years, and there are now about 25 such associations in Texas, which include nearly 15,000 dairy cows. It is important to recognize that artificial breeding is not a substitute for proper feeding and care of a herd and that it will not solve overnight all of the breeding problems. Failure to recognize these limitations has led to disappointment in the program and in some cases forced the association to discontinue operations.

Records: Records that will afford an accurate account of daily milk production and feed consumption of each cow are essential to most efficient dairy management. These records provide a basis for appraising individual performance, which is so necessary in the elimination of unprofitable cows, and for making full use of high producers as foundation stock in building the herds. Such records are also valuable in determining the most profitable level of feeding for each cow, as the results of increased or decreased feed consumption can be measured accurately and quickly.

While it is true that fairly accurate estimates of milk production and feed consumption sometimes can be made by experienced dairymen without the aid of individual records, these men are the first to recognize their value and to keep accurate, written, individual production and feed records. In many communities the task of keeping such records is facilitated by membership in a Dairy Herd Improvement Association which hires a dairy specialist to make periodic checks of milk production and feed costs in the herds of its members. When the services of such an association are not available, a notebook, pencil, and scales will provide any farmer with the necessary tools for keeping records, and assistance in their analysis can be obtained from his county agricultural agent.

Other Factors: While the program for feeding, breeding, and keeping of records should be given first consideration in dairy operations, housing, sanitation, milk handling, and the daily work habits are also important. Successful dairymen have found it profitable to provide housing that gives cows protection from sharp changes in temperature, occasional snowstorms, and damp, cold winds and to construct

milking barns that can be cleaned easily and that provide an efficient place to care for the cows and the milk at milking time. Milk must be kept free from dirt and other foreign matter and cooled promptly to maintain its high quality. They also follow a program of sanitation and inspection, including periodic tests for tuberculosis, brucellosis, and mastitis and elimination of infected animals from the herd. Last, but in many ways most important, successful dairymen recognize the urgency of regularity in caring for dairy cattle, insisting that the cows be milked and fed at about the same time each day and that they be treated gently and without unnecessary noise or disturbance.

Production of Dairy Feeds in Texas

Inasmuch as roughage produced on or near the dairy farm is the most economical dairy feed, it seems desirable to consider the potential capacity of Texas for the production of hay, pasture, and silage. Obviously, lack of rainfall seriously limits feed production in many parts of the State. Counties receiving less than 30 inches of rainfall annually find it difficult to produce sufficient roughage for more than a limited amount of milk production, because more feed must be stored for use during dry periods and total feed production faces rather definite limits due to the uncertainty of rainfall.

However, in the area lying east of a line from Wichita Falls, Brownwood, Austin, San Antonio, Cuero, and Corpus Christi, production of feed for dairy farming is generally practicable. Annual rainfall exceeds 30 inches and is fairly well distributed throughout the year. A wide variety of crops, including small grains, legumes, grasses, sorghums, and corn, can be used in the production of roughage. Since the cultural practices and varieties used for each crop may differ with the soil, rainfall, and length of growing season in the community, the practices best suited to an individual farm may vary within wide limits.

With proper fertilization and care, pastures will provide some grazing during 10 months of the year, and in some areas under favorable conditions pasturage may be available for the entire year. Sufficient hay and silage can be produced to permit adequate amounts for supplemental and emergency feeding. However, one of the principal economic advantages in milk production held by Texas dairymen is the long growing season for the production of pasture; therefore, every effort should be made to make maximum use of this advantage by developing the best possible pastures. The soil and climatic conditions are favorable for relatively high production, and many farmers are obtaining satisfactory yields of forage crops and pasture. For example, in Harrison County, a mixture of Ladino clover, Abruzzi rye, and Kobe lespedeza has produced pastures capable of carrying approximately one cow per acre. In Angelina County, seedings of Kobe lespedeza alone, properly fertilized, have produced from 60 to 100 bales of hay per acre. In many other areas a program of soil conservation and improvement, including such practices as terracing, liming, fertilization, and seeding of clovers and native and improved grasses, has increased forage production to the point where yields of more than two tons per acre are not uncommon; and sufficient feed for one dairy cow is being produced on from one to three acres. These examples illustrate the improvement that can be made on many central, east, and northern Texas farms where, instead of one to three acres, five to ten acres usually are required to produce sufficient feed for one dairy cow.

Water Supply in Texas

Providing adequate water is a major problem in many counties of Texas. Very few streams and stock ponds are reliable sources of year-round supplies of water, and many shallow wells fail during dry weather. Any farmer considering entry into the dairy business must obtain a source of water that will provide, even in periods of excessive drought, sufficient drinking water for the cattle and additional amounts for cooling the milk and washing the utensils. Such a source is generally available in most eastern, central, coastal, and northern counties of the State, either by buying water from a nearby city or town or by drilling a deep well on the farm, although extensive local explorations may be required if a deep well is to be used.

Building a Community Dairy Program

Much can be accomplished in achieving the goal of high productivity in the dairy industry through a well-designed and properly organized program of education. This applies not only to communities that are already predominantly dairy, but also to communities that are just beginning to shift to dairy farming. Such a program should be geared to the needs of the community and directed toward activities that will keep pace with the growth and expansion of dairying in the area. It may be desirable in the first phase of such a program to emphasize the improvement of conditions that may be retarding the development or expansion of dairying, such as the lack of all-weather roads or a local outlet for the sale of milk. A second phase of this educational program can be directed toward improving pastures, increasing hay yields, and encouraging production of silage, which are prerequisites to the expansion of a sound and profitable dairy industry. A third phase, which may be initiated simultaneously with the program for increased feed production, might be a program designed to increase the skills and knowledge of farmers in the field of dairy management—feeding, breeding, housing, care of milk, and other practices.

The details of the program may differ in each community in accordance with local needs and facilities. Some features that have proved successful in many areas and that might be applicable either in communities desiring to expand dairy farming or in those seeking to improve the present productivity of existing dairies include:

(1) Visits to successful dairy farms in the community and in other areas with similar soil and climatic conditions. These tours, properly arranged, are very effective in illustrating approved dairy practices to farmers, businessmen, and groups of 4-H and F.F.A. boys.

(2) Short courses in dairying presented in the community. These may be in the form of one-day meetings on special topics, a series of meetings covering broader topics, or evening classes in the local high schools. In addition to these local meetings, farmers may attend short courses on dairying held by agricultural colleges.

(3) Wide dissemination of appropriate pamphlets and bulletins on dairy farming through feed, implement, and hardware stores, lobbies of local banks, and schools. Special effort should be made to acquaint feed dealers with the latest information on dairy feeding, because many farmers rely upon their advice in planning their feeding program.

(4) Community fairs, exhibits, contests, and other competitive devices. These are helpful in promoting a dairy program, although care should be exercised in planning the events to assure emphasis on the practical aspects of the dairy industry. Prizes for the highest production per cow or the most improvement in herd-average are effective means of stimulating greater efficiency in dairying.

Initiation of such an educational program should be preceded by a complete inventory of available resources to determine whether dairying is likely to be more profitable for the community than other agricultural enterprises. In considering dairying, careful attention should be given to such resources as rainfall, soil, and the availability of an adequate water supply. The market for dairy products also should be appraised on the basis of both the demand in near-by cities and the facilities available for reaching the market.

Some Factors Affecting Texas Milk Markets

It was indicated earlier that the demand for dairy products in Texas experienced a rapid growth during the war and immediate postwar years. As a result, Texas cities have continually reached farther and farther into surrounding counties in their quest for more milk, so that today practically every

county in the eastern half of Texas markets some Grade A fluid milk. On the basis of the best available data, the demand for fluid milk and milk products in Texas has exceeded by a substantial amount the volume of milk produced on Texas farms. Further evidence of the scope and growth of the market in the Southwest is found in the fact that urban population of the area has increased nearly 40 percent since 1940 and that total population of the five states of Texas, Oklahoma, Louisiana, Arkansas, and New Mexico approximated 14,500,000 people in 1948, one-half of whom were urban residents.

Although this expansion in the milk market has occurred and acute shortages of fluid milk have been experienced by some Texas cities, farmers at the fringe of present milksheds are vitally concerned about the future market for milk and milk products. In the event of a decline in the amount of milk needed in urban areas, they would be in a vulnerable position with respect to their dairy operations because the cities would tend to draw their milk supply from near-by areas and the farmers at the farthest edge of the milkshed would be forced to seek other markets. On the other hand, continued growth of the milk markets in Texas not only would assure these farmers of an outlet for their products but also would encourage many located beyond the present limits of the milkshed to expand their dairy operations.

The extent of a milk market is determined largely by the size of the urban population and the level of personal incomes in the area. Consequently, the key to the permanence and stability of milk markets in Texas is found in the factors which cause an increase or decrease in these two items. Industrial growth and rate of industrial activity are probably the most important factors affecting the size of urban population and level of incomes. A large number of manufacturing, construction, and extractive industries tends to increase the concentration of people in urban areas. As these industries grow, the demand for trade, services, and related industries expands, attracting many small manufacturing, processing, and servicing industries to the area, which gives further impetus to the concentration of population in urban centers. Greater competition for labor and the increased efficiency of many persons as they shift to new jobs which make full use of their talents stimulate increases in wage scales. A rate of activity in these industries such as that experienced in the past few years provides a high level of employment, which, together with the increasing wage rates, results in higher incomes.

Since the beginning of World War II, industrial growth in the Southwest has been very rapid and, because it is based largely upon use of natural resources of the area, gives promise of continued expansion. The defense plants and Army installations of the war period provided a stimulus for an expansion in industry, trade, and employment; but the basic industries of the area were well-established prior to the war and, along with many new ones, have continued to grow at a fast rate since V-J Day. The petroleum industry, of paramount importance to the area, continues to expand its operations and now contributes a very substantial part of the income of the State of Texas and is a large factor in the income of the entire Southwest. Its continued importance is suggested by the fact that nearly two-thirds of the total United States proved reserves of oil are located in the Southwest, and more intensive explorations continue to reveal additional reserves. Closely associated with the petroleum industry are the production and distribution of natural gas, which play an important role in the economy of the Southwest. Gas furnishes an efficient, inexpensive fuel and a basic raw material for producing many manufactured products. Three-fourths of the total United States proved reserves of natural gas are located in this area, insuring an adequate supply for many years.

One of the newest segments of the economy of the Southwest is the chemical industry, which is concentrated in the coastal area of Texas. Large deposits of sulphur (99 percent of total United States supply), plus sea water and large amounts of petroleum, salt, and other raw materials, are used in this new and fast-growing industry which manufactures thousands of products varying from aspirin to explosives. Chemistry is becoming more and more important to the industry and trade of the national economy, and the many raw materials found in the Southwest insure continued growth of this industry in the area.

Other natural resources of the area provide the basis for additional industries. The wide variety of productive soils in the area produces a large volume of agricultural products which furnish raw materials for many manufacturing, processing, and service industries. Clay and limestone found in several parts of the area are the basis of a large cement industry that supplies nearly all of the cement for the large volume of construction in the Southwest. Synthetic rubber plants, glass and pottery factories, aircraft plants and Air Force training fields, lumber mills, and box factories add to the growing family of industries in the Southwest whose future is based firmly upon the natural resources of the area. With the growth of these plants, many associated industries, trades, and services have been attracted to the area to increase further the industrialization of Texas and the Southwest.

In addition to these manufacturing, processing, and extractive industries, the area is located strategically with respect to the water transportation lanes of the world and the aerial routes from central and western United States to Central and South America. Steamship companies, airline corporations, railroads, and trucking companies are establishing terminal facilities in Texas and the Southwest which add to the industrial development of the area. Almost ideal flying weather during a large part of every year encourages the location of aircraft plants and Air Force training fields in the Southwest, while the trend toward greater dispersion of strategic industries for defense purposes appears likely to add to the growth of industry in the area. All of this industrialization tends to cause greater concentration of people in urban centers, to increase the volume of employment, and to provide increased incomes.

Conclusions

The war and postwar industrial growth of Texas, with the accompanying expansion of total and urban population, high level of employment, and increased incomes, has created a demand for milk and other dairy products that today exceeds by a substantial amount the production of milk on farms in the State. As a result, substantial quantities of fluid milk are now imported into the State. While this increase in demand has occurred, production of milk in Texas has declined, following the general pattern of milk production in the United States. Of even greater importance to the State has been the low and declining rate of productivity per cow, which in 1947 was lower than all but three other states and about 2,000 pounds below the United States average.

Experience of farmers in many communities has demonstrated that dairy farming can be adapted to the most efficient program of soil improvement and land utilization on most farms in the eastern half of Texas. Furthermore, in view of the broad market now available to that area, farm incomes might be increased in many communities by a shift to dairy farming and, on present dairy farms, by an improvement in the productivity per cow. In either case, the key to greater milk production and higher return from dairy farming lies in the adoption of proved principles of dairy farming, such as proper and adequate feeding, constructive breeding, sufficient housing, disease control, and regular and timely attention to the herd.

Responsibility for effecting the adoption of these principles lies largely with the farmers, agricultural colleges, and farm organizations, supported by the cooperation of merchants, bankers, and civic groups of the communities. The program of such a group should include an inventory of the resources of the community to determine its potential capacity for the support of dairying and the major problems that will be encountered; the promotion of greater acreage and higher yields of feed crops, especially pasture, hay, and silage; and a continuing program of activities designed to acquaint the farmers and others in the community with the most effective and profitable methods of operating a dairy farm. Many educational techniques can be used in all phases of this program, including local meetings, tours, educational movies, contests, special speakers, and wide dissemination of available literature.

Review of Business, Industrial, Agricultural, and Financial Conditions

DISTRICT SUMMARY

Significant developments and trends of the year 1948 in the business, agriculture, finance, and industry of the Eleventh Federal Reserve District are reviewed and summarized on this and the following pages.

The production of most crops in the District in 1948 was affected adversely by the continuance of drought over wide areas, with largest declines being reported for winter wheat, oats, peanuts, and grapefruit. On the other hand, larger crops of cotton, corn, barley, grain sorghums, rice, and pecans were harvested. Since prices received by farmers, as well as crop production, declined generally, the total farm value of all crops was appreciably below the 1947 record, though above all previous records.

Industrial employment and production in the District edged upward gradually but steadily throughout 1948. The petroleum industy again had a record year, with crude oil production in the District exceeding by 10 percent the previous record set in 1947. Refinery operations were also at record levels, but in the last four months of the year did not keep pace with crude oil production. In consequence, stocks of crude oil, as well as petroleum products, increased during the year. The number of new wells completed in the District in 1948 approximated 14,000, second only to the 1937 record. The value of construction contracts awarded totaled 15 percent more in 1948 than in the previous year and was second only to the 1942 wartime peak. Residential, commercial, and institutional building increased, but public utility and manufacturing construction declined.

Department store sales in the District, after having been maintained for the first nine months of 1948 at a rate of 12 percent above the corresponding 1947 period, declined in the fourth quarter to a level that reduced the gain for the entire year to 9 percent. Total sales surpassed the record dollar volume of 1947 by a greater margin than the previous year-to-year increase. The 1948 sales record was largely the result of the high level of consumer incomes, increased use of consumer credit, and the greater availability and variety of goods. The fourth-quarter sales lag, which was particularly pronounced in the case of durable goods, reflected adjustments in basic factors of the economy and to some extent the reimposition of controls over consumer installment credit.

Loans by the banks of the District in 1948 reflected the very high level of business activity, while demand and time deposits rose to new record totals. The increases in loans and deposits were smaller than those of the preceding year but deposit accounts were considerably more active, as indicated by higher turnover rates and a 20 percent rise in total bank debits.

BUSINESS

The dollar volume of department store sales in the Eleventh Federal Reserve District reached a new peak in 1948, and the percentage increase over 1947 equaled or exceeded that of any other Federal Reserve District. While sales during the first nine months of the year were maintained at a level 12 percent above that in the corresponding period of 1947, the lag in buying during the fourth quarter of 1948, which held sales to approximately the same level as a year earlier, reduced the gain for the year to 9 percent. This increase, however, was slightly larger than the 7 percent year-to-year gain reported in 1947.

The increased volume of sales resulted largely from the record consumer incomes during 1948, induced by increased employment and higher wage rates, but was augmented to some extent by customers' use of savings and of a larger volume of consumer credit. The increased use of credit was indicated by the gradual decline in the proportion of cash sales to total sales and a corresponding increase in credit sales. Another factor contributing to the strong consumer demand was the increasing availability of both soft and durable goods, which offered consumers a wider selection of merchandise. While soft goods generally were in ample supply throughout the year, shortages of some durable goods, especially the major items, persisted for several months but had virtually disappeared before the end of the year. Moreover, the increased supply of available goods was accompanied by a trend toward better quality merchandise offered within wider price ranges, which afforded consumers a broader selection more nearly in line with their preferences. The gradually rising prices of many goods sold by department stores also tended to increase the dollar value of sales, without a corresponding rise in physical volume.

WHOLESALE AND RETAIL TRADE STATISTICS

		Percentage change in				
	Number	Net sales			Stocks‡	
Retail trade:	of reporting firms	December 1948 from Dec. 1947	Nov. 1948	12 mo. 1948 comp. with 12 mo. 1947	December 1948 from Dec. 1947	Nov. 1948
Department stores:						
Total 11th Dist.	48	2	42	9	5	—21
Corpus Christi	4	4	64	1	— 5	—21
Dallas	7	†	40	4	17	—19
Fort Worth	4	3	53	6	14	—18
Houston	7	6	43	20	— 4	—25
San Antonio	5	— 1	30	7	— 6	—19
Shreveport, La.	3	11	46	17	..	..
Other cities	18	1	42	5	6	—23
Furniture stores:						
Total 11th Dist.	42	—15	35	..	14	— 6
Dallas	4	—26	38	..	— 4	— 6
Houston	5	—14	56	..	..	..
Port Arthur	3	6	24	..	..	..
San Antonio	4	—15	40	..	..	..
Wholesale trade:*						
Automotive supplies	3	— 4	—31	..	..	..
Drugs	6	8	— 7	6	10	— 5
Dry goods	3	—22	—41	..	— 2	3
Grocery	31	2	— 2	5	— 8	—16
Hardware	6	—14	—11	2	11	— 6
Machinery, equip't and supplies	4	—15	—12	..	21	13
Tobacco	11	— 1	3	†	—10	—16

*Preliminary data. Compiled by United States Bureau of Census. ‡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)

	Unadjusted*				Adjusted			
	Dec. 1948	Nov. 1948	Oct. 1948	Dec. 1947	Dec. 1948	Nov. 1948	Oct. 1948	Dec. 1947
11th District.	648	475	427	634r	397	390	388	389r
Dallas	581	432	397	579	368	357	361	366r
Houston	769	561	480	726	483	464	437	457

Stocks—(1935-39=100)

	Unadjusted*				Adjusted			
	Dec. 1948	Nov. 1948	Oct. 1948	Dec. 1947	Dec. 1948	Nov. 1948	Oct. 1948	Dec. 1947
11th District.	352	431	419	327r	419	402	370	389r

*Unadjusted for seasonal variation. r-Revised.

Although the dollar volume of sales reached a new peak in 1948, readjustments in certain basic factors of the economy were in evidence throughout the year. An important development was the continued upward trend in the cost of living until late in the year, which had the effect of exerting pressure upon the incomes of a large segment of the population. A direct outgrowth of this pressure was an increasing consumer resistance to high prices, a growing demand for quality merchandise at more reasonable prices, and a decreasing de-

mand for luxury goods. The effect of these trends was reflected in increased sales of goods in basement departments, decreased sales of some luxury items or of certain goods the purchase of which could be deferred, the increase in accounts receivable, and a slowing down in the rate of collections.

These developments resulted in the intensification of competition among retailers, which found expression in pressure upon manufacturers for better quality merchandise at more reasonable prices and a return to the former practice of frequent and widespread promotions, clearance sales, and price reductions. These practices not only acted as sales stimulants but also provided the means of maintaining a proper internal balance in inventories, of moving merchandise of inferior quality, and of passing on to consumers the benefit of special reduced-priced purchases from manufacturers.

Another significant development was the general slowing down in consumer buying during the fourth quarter of the year. This trend probably reflected the growing consumer resistance to high prices in the face of a less urgent demand for goods and ready availability of merchandise and, to some extent, the effect of the reimposition of installment credit controls on selected commodities. Early in August, the Congress enacted legislation authorizing the Board of Governors of the Federal Reserve System to exercise control over consumer installment credit, and shortly thereafter it was announced that certain controls would become effective on September 20, 1948. During the period immediately preceding the effective date, there was a marked increase in the sales of consumer durable goods to be affected by the credit restrictions. The heavy purchases at that season and the regulated credit terms applicable to installment sales of some goods later in the year may have contributed to the year-to-year decline in sales of such goods during the fourth quarter. The comparative declines in November and December, however, were accentuated by the unusually large sales of durable goods in those months of 1947 following the removal of consumer credit controls in effect prior to November of that year. Coincident with the general slowing down in buying, merchants advertised store-wide clearance and promotional sales, which were continued at frequent intervals during the remainder of the year. The generally favorable response of consumers to these markdowns seems to indicate a willingness to buy when prices are considered satisfactory. Reflecting a softening in the price structure of certain goods, some downward readjustments in manufacturers' prices were announced late in the year, and this trend toward lower prices was emphasized by the substantial reductions on numerous items included in the spring catalogues of several large mail-order companies.

During 1948, the value of end-of-month inventories at reporting department stores averaged about one-fourth larger than in 1947. The margin of gain over 1947 tended to widen during the first eight months of the year but by the year-end had declined to 20 percent, or the same margin as that prevailing at the end of January. The increasing supply of goods and the shortening of delivery periods enabled retailers to build up stocks of those goods which had been in short supply and to achieve greater flexibility in adjusting purchases and receipts of merchandise in line with sales in the various departments. This problem was accentuated during 1948, however, because of marked shifts in consumer demand, which caused more than the usual variations in sales of some departments at certain periods of the year.

The increased availability of goods also enabled retailers to reduce the volume of their outstanding orders. While these orders fluctuated widely from month to month, due in part to seasonal factors, they were maintained at a lower level than that of a year earlier during most months. Toward the end of the year, orders were reduced sharply and on December 31 were 44 percent smaller than a year earlier and the lowest in six years.

The upward trend in accounts receivable in evidence since the end of the war was accelerated during 1948, largely because of expansion in installment accounts. The volume of installment receivables at Eleventh District department stores more than doubled between October 1947 and September 1948, the period during which installment credit was not subject to control. The increase in accounts receivable was accompanied by a slowing down in the rate of collections, the most pronounced decline occurring in installment accounts during the early months of the year.

The economic factors influencing department store sales also had a marked effect upon furniture store sales. During the first nine months of 1948 sales showed a substantial increase over those in 1947, but in the fourth quarter of 1948 they averaged about 20 percent lower than in the comparable period of the preceding year. During most of the year inventories were maintained at a level close to that prevailing in 1947, but in the fourth quarter when sales declined, merchandise stocks rose to a level about 16 percent higher than that of a year earlier. The ratio of credit sales to total sales increased steadily until September, when it reached 90 percent, but declined somewhat in the final quarter of the year. The upward trend in accounts receivable continued during the first nine months of 1948, and at the end of September such accounts were 63 percent higher than those of a year earlier. In the final quarter of the year, the decline from the previous year in the volume of credit sales, accompanied by a further increase in collections, had the effect of arresting the increase in receivables. On December 31, the year-to-year increase in receivables had fallen to about 29 percent.

A significant development during the postwar period has been the steadily increasing number of business failures, both in the District and in the Nation, even though general business activity has reached new peaks. The number of failures in the District rose to 107 in 1948, as compared with 62 in 1947 and 273 in 1941. Although failures are still relatively few in comparison with those in the period preceding the war, the upward trend in the number of failures and the decrease in the average liability of defaulting firms suggest that many of the smaller concerns, some of which have been established since the end of the war, are finding it difficult to maintain profitable operations under conditions of keener competition, uncertain price trends, and more difficult credit problems. In some cases, the effects of these conditions are more pronounced because the businesses are undercapitalized or the operators do not have adequate experience to manage the enterprises successfully.

AGRICULTURE

Mid-December rains over much of the eastern half of the Eleventh District, together with light rains, snow, and sleet over wide areas during the first part of January, brought some relief from the severe and widespread drought, but heavy rains are still needed throughout the District to stimulate the growth of winter cover crops, small grains, and range grasses and to provide subsoil moisture. The acreage of winter wheat seeded in Texas for harvest in 1949 is estimated at a record of 7,630,000 acres, or 13 percent above that seeded in the fall of 1947. On the basis of December 1 conditions, the production forecast is placed at 64,855,000 bushels, or 8,565,000 bushels above

last year's crop; but high winds, sand storms, and continued drought during December retarded seed germination and caused heavy damage to wheat stands. Open weather during December and the first week of January favored the harvest of commercial truck crops and permitted satisfactory progress in the planting of vegetables for late-season harvest. Texas citrus continued to move in large volume, with 1948 fourth-quarter shipments of fresh fruits up 17 percent as compared with the same period last season.

The two most important developments affecting agriculture in the Eleventh Federal Reserve District during 1948 were the continuation of the drought over wide areas and the decline in prices received by farmers for most commodities. The droughty conditions prevailing in the fall of 1947 prevented farmers from seeding their intended acreage of small grains for 1948 harvest. Also, moisture shortages and extremely low temperatures during the winter months of early 1948 caused heavy losses to grains and other winter crops. Rains during the spring months gave promise of a seasonable crop year, but by late July the situation was dominated by high temperatures, dry winds, and shortages of soil moisture. Although some early planted crops reached full development, most midseason and late crops suffered in varying degrees from the drought, and yields per acre of many major crops were reduced to below-average levels. The dry, open weather favored harvesting of crops, however, and field losses due to weather conditions during the harvest season were small. Because of the unfavorable weather, total agricultural production during 1948 in the five states lying wholly or partly in the Eleventh District—Arizona, Louisiana, New Mexico, Oklahoma, and Texas—was substantially below that of 1947. Although larger crops of cotton, barley, corn, grain sorghums, rice, and pecans were harvested as compared with the previous year, production of most other crops declined, with the greatest declines reported for winter wheat, oats, peanuts, and grapefruit. The total number of acres from which crops were harvested in 1948 (excluding orchards and vineyards) was down to 49,000,000, compared with about 50,300,000 acres in 1947.

1948 CROP PRODUCTION—ANNUAL SUMMARY

(Units in thousands)

		Texas			Five states[1]		
	Unit	1948	1947	1937-46 average	1948	1947	1937-46 average
Cotton	Bales	3,200	3,437	2,894	4,890	4,685	4,348
Corn	Bushels	44,698	48,592	70,422	96,178	87,664	123,919
Winter wheat	Bushels	56,290	124,270	45,686	159,127[2]	238,712[2]	113,001[2]
Oats	Bushels	14,240	31,248	34,370	35,560	69,006	65,166
Barley	Bushels	1,891	2,520	4,049	10,563[2]	9,230[2]	12,120[2]
Rice	Bushels	23,040	21,330	15,588	46,562[3]	43,398[3]	36,991[3]
Broomcorn	Tons	2,900	6,000	4,570	16,000[4]	21,700[4]	23,950[4]
Sorghums for grain	Bushels	76,434	68,313	55,552	92,870	77,286	68,497
Sorghums for forage	Tons	2,750	1,925	4,022	4,146	2,926	5,698
Tame hay	Tons	1,162	1,232	1,193	4,050	4,026	3,621
Wild hay	Tons	149	190	190	676[2]	700[2]	650[2]
Peanuts picked and threshed	Pounds	276,375	355,300	239,416	434,560[5]	516,350[5]	312,648[5]
Irish potatoes	Bushels	4,356	4,536	4,311	8,813	9,260	9,978
Sweet potatoes	Bushels	3,250	4,675	5,121	10,973[6]	12,925[6]	14,366[6]
Peaches	Bushels	1,140	1,696	1,698	1,824	2,524	2,635
Oranges	Boxes	4,700(P)	5,200	3,242	6,200[7]	6,280[8]	4,335[8]
Grapefruit	Boxes	19,000(P)	23,200	17,488	22,600[9]	26,200[10]	20,789[10]
Pecans	Pounds	43,000	21,000	26,815	70,000[6]	69,400[6]	53,359[6]

[1]Arizona, Louisiana, New Mexico, Oklahoma, Texas. [2]Arizona, New Mexico, Oklahoma, Texas. [3]Louisiana, Texas. [4]New Mexico, Oklahoma, Texas. [5]Louisiana, New Mexico, Oklahoma, Texas. [6]Louisiana, Oklahoma, Texas. [7]Arizona, Louisiana, Texas, December 1 estimate. [8]Arizona, Louisiana, Texas. [9]Arizona, Texas, December 1 estimate. [10]Arizona, Texas.

(P)–Preliminary.

SOURCE: United States Department of Agriculture.

Crop production in Texas during 1948 was slightly better than average but, like the five-state total, was substantially below the large production of 1947. Rice and flaxseed established new production records, while the pecan crop was a near-record. Unfavorable weather reduced yields of most other crops, however, and production fell below that of 1947. The acreage of crops harvested in the State in 1948 is estimated at 27,926,000 acres—3 percent below the 1947 acreage but 2 percent above average. Reductions of 23 percent in wheat acreage harvested and 42 percent in the acreage of oats harvested, together with small declines in corn and hay acreage, were only partially offset by increases in harvested acreage of cotton, flaxseed, and sorghums.

Cotton production in the five states increased slightly in 1948, due to larger crops in Arizona, Louisiana, New Mexico, and Oklahoma. In Texas, on the other hand, the crop of 3,200,000 bales was about one-quarter million bales below the production of 1947. A yield of 170 pounds of lint per acre in Texas was produced on 8,750,000 acres, compared with a yield per acre of 198 pounds of lint from 8,350,000 acres in 1947. Larger cotton crops were harvested in the North High Plains, in east Texas, and in the southern part of the State as compared with the production in 1947. As the fall and early winter weather was favorable for cotton harvesting, most of the crop had been picked by the year's end.

The production of small grains in the five states in 1948 fell about one-third below the crop of 1947. As compared with the previous year, the 1948 wheat and oat crops were down 33 percent and 48 percent, respectively, overshadowing a small increase in the barley crop. The declines in wheat and oat production were due both to smaller harvested acreages and lower yields per acre. In Texas the production of 56,290,000 bushels of wheat and 14,240,000 bushels of oats amounted to only 45 percent of the previous crops, and the harvest of 1,891,000 bushels of barley represented a decline of 25 percent in production. The lower production of small grains in 1948 reflected very clearly the unfavorable weather conditions that prevailed during the planting and growing seasons.

CASH RECEIPTS FROM FARM MARKETINGS

(In thousands of dollars)

State	November 1948 Crops	November 1948 Livestock	November 1948 Total	November 1947 Total	Cumulative receipts Jan. 1 to Nov. 30, 1948	Cumulative receipts Jan. 1 to Nov. 30, 1947
Arizona	$ 19,544	$ 13,318	$ 32,862	$ 27,857	$ 183,154	$ 168,095
Louisiana	36,147	12,030	48,177	48,144	331,667	289,335
New Mexico	13,635	20,608	34,243	34,133	162,698	163,148
Oklahoma	44,483	26,811	71,294	68,833	661,511	598,959
Texas	160,687	75,232	235,919	253,512	1,834,853	1,766,617
Total	$274,496	$147,999	$422,495	$432,479	$3,173,883	$2,986,154

SOURCE: United States Department of Agriculture.

The corn crop of 96,178,000 bushels in the five states was up about 8,500,000 bushels from 1947 due principally to higher yields, which may be attributed in part to the rapid expansion in use of hybrids. Some of the increase in corn production in other states of the District was offset by a 4,000,000 bushel or 8 percent decline in production in Texas, resulting from a reduction of a quarter of a million acres in the State's harvested acreage.

Due partly to the failure of farmers to seed their intended acreage of winter wheat and to the subsequent abandonment of poor wheat stands, a larger acreage was devoted to production of grain sorghums in 1948. With the five-state total of acreage harvested for grain up 25 percent over 1947, production is estimated at 92,870,000 bushels, or 15,000,000 bushels over the previous year. Also included in the 1948 sorghum crop were 3,234,000 acres harvested for forage and 142,000 acres harvested for silage. In Texas the grain sorghum acreage rose some 800,000 acres to reach 4,635,000 acres, from which 76,434,000 bushels of sorghum grain were harvested. The State's acreage for forage rose one-half million acres to 2,248,000 acres, from which 2,750,000 tons of forage were produced.

A record 512,000 acres of rice were harvested in Texas in 1948, exceeding the previous record established in 1947 by 8 percent. Although there were occasional shortages of irrigation water during the growing season, near-average yields of 45 bushels per acre were obtained and a record production of 23,040,000 bushels was harvested.

The reduction of 12 percent in the Texas peanut acreage in 1948, together with the same proportionate decline in yields per acre due to the summer drought, resulted in the production of only 276,375,000 pounds of peanuts—22 percent below the 1947 crop. The Texas flaxseed crop of 1,320,000 bushels set a new record, but an acreage more than double that of 1947 accounted for the increase, as yields of six bushels per acre were 2.4 bushels below average. Production of sweet potatoes was off 30 percent and the crop of Irish potatoes was lower by 4 percent as compared with production in 1947. Production of hay was 8 percent below that of the previous year, with reductions in peanut vine and wild hay accounting for the decline.

Range and livestock conditions in the District during 1948 were affected very strongly by the adverse weather conditions. At the beginning of the year the situation was unfavorable, due principally to the extended drought over the range areas. Cold weather during the first three months of the year killed or retarded development of grains in many areas and, along with the drought, checked the growth and development of range feeds. Beneficial rains were received over the range areas during the spring and early summer, after which the drought became critical, causing farmers and ranchers to sell large numbers of their livestock. The drought continued throughout the remainder of the year except in some eastern and extreme southern and northwestern sections of the District. At the year's end the condition of ranges in Texas was generally poor and considerably below average for that season of the year. Ranges in New Mexico and Arizona were in fair condition, although below average for that date. Snow, sleet, and rain during the first few weeks of 1949 brought some relief to the ranges, but more moisture is needed for growth of range grasses.

SELECTED MIDMONTH PRICES RECEIVED BY TEXAS FARMERS IN 1948

Commodity	Unit	Jan. 15	Year's high		Year's low		Dec. 15
			Month	Price	Month	Price	
Wheat	Bushels	$ 2.79	January	$ 2.79	August	$ 1.97	$ 2.07
Corn	Bushels	2.35	January	2.35	October	1.43	1.50
Oats	Bushels	1.29	January	1.29	August	.89	.95
Grain sorghums	Cwt.	3.70	January	3.70	August	1.95	2.25
Rice	Bushels	3.30	July	3.50	September	2.10	3.00
Cotton	Pounds	.32	May	.34	December	.29	.29
Hogs	Cwt.	25.20	August	26.30	December	20.50	20.50
Beef cattle	Cwt.	20.20	July	23.60	February	18.20	20.00
Lambs	Cwt.	19.20	July	23.00	March	18.50	20.00
Chickens	Pounds	.25	December	.29	February	.24	.29
Wool	Pounds	.41	June	.60	January	.41	.47
Grapefruit	Box	.45	October	1.76	May	.35	.71

SOURCE: United States Department of Agriculture.

Prices received by United States farmers for crops in 1948 declined 20 percent, on the average, between January 15 and mid-December. Prices received for livestock and livestock products at the end of the period were 7 percent lower than at the beginning and 11 percent below the high levels of July and August. Two major declines in prices of crops occurred during the year: a sharp break took place in February, bringing prices down from the January peak, and a more gradual decline developed during the summer as marketing of the large crops progressed. Prices received by farmers for most crops were lowered as each of these market declines occurred; the full effect of these declines on prices received by Texas farmers is illustrated by the comparison of farm prices in January and December shown in the accompanying table. Prices received for wheat, for example, averaged 72 cents per bushel lower on December 15 than at mid-January. Corn prices were 85 cents per bushel lower, while grain sorghums per hundredweight were down $1.45, or about 40 percent. Prices received for livestock reached high levels during the summer but declined in subsequent months. Comparisons with December 15 quotations show that prices of beef cattle and lambs fell 15 percent and 13 percent, respectively, after mid-July; hog prices dropped 22 percent after reaching a peak in August.

VALUE OF TEXAS CROPS, 1948

(Amounts in thousands of dollars)

Crop	Value		Percent of total value	
	1948Ⓟ	1947	1948Ⓟ	1947
Corn	$ 69,282	$ 102,043	6.04	7.03
Wheat	115,394	264,695	10.06	18.23
Rice	56,448	59,937	4.92	4.13
Sorghums for grain	94,014	121,597	8.19	8.37
Other grains	24,911	38,217	2.17	2.63
Peanuts for nuts	28,190	34,109	2.46	2.35
Cotton lint	475,200	533,040	41.42	36.70
Cottonseed	94,536	121,862	8.24	8.39
Vegetables and fruits	77,593	74,213	6.76	5.11
Other crops	111,818	102,587	9.74	7.06
Total value of field crops, fruits, nuts, and feed crops	$1,147,386	$1,452,300	100.00	100.00

Ⓟ–Preliminary.

SOURCE: United States Department of Agriculture.

The farm value of Texas crops exceeded a billion dollars again in 1948, and at $1,147,386,000, is surpassed only by the all-time peak of $1,452,300,000 reached in 1947. While the 1948 total is about 21 percent below the record set in 1947, it is 23 percent greater than the 1946 total. Declines occurred in the value of all major crops, reflecting generally lower prices as well as smaller production of many crops. The decline of $164,000,000 in the value of wheat and oats resulted chiefly from the sharp decrease in production, while the decline of $118,000,000 in the value of cotton, cottonseed, and corn was due both to smaller production and lower prices. The value of grain sorghums also declined appreciably, the lower

LIVESTOCK RECEIPTS—(Number)

Class	Fort Worth market			San Antonio market		
	Dec. 1948	Dec. 1947	Nov. 1948	Dec. 1948	Dec. 1947	Nov. 1948
Cattle	48,368	58,315	69,108	24,517	27,607	38,714
Calves	29,242	38,405	54,056	15,659	20,583	34,634
Hogs	76,819	103,042	86,995	6,675	11,712	7,452
Sheep	59,711	54,222	87,324	36,196	27,429	52,267

LIVESTOCK RECEIPTS, 1948—(Number)

Class	Fort Worth		San Antonio		Total	
	1948	1947	1948	1947	1948	1947
Cattle	785,706	967,902	369,579	445,700	1,155,285	1,413,602
Calves	329,250	446,410	272,148	284,146	601,398	730,556
Sheep	1,586,654	1,765,692	705,512	497,694	2,292,166	2,263,386
Hogs	748,930	681,356	97,818	82,698	846,748	764,054
Total	3,450,540	3,861,360	1,445,057	1,310,238	4,895,597	5,171,598

TOP LIVESTOCK PRICES

(Dollars per hundredweight)

Class	Fort Worth market			San Antonio market		
	Dec. 1948	Dec. 1947	Nov. 1948	Dec. 1948	Dec. 1947	Nov. 1948
Slaughter steers	$35.00	$32.00	$31.00	$26.50	$26.50	$27.50
Stocker steers	25.00	24.00	25.50	.....	.....	.....
Slaughter cows	21.00	20.00	21.00	20.50	21.00	20.00
Slaughter heifers and yearlings	33.00	33.00	30.00	26.00	27.50	25.00
Slaughter calves	26.00	28.00	26.00	26.00	26.00	25.25
Stocker calves	26.00	.....	26.50	25.00	.....	26.00
Slaughter lambs	25.00	23.50	25.00	23.50	22.75	21.50
Hogs	24.00	28.00	26.00	23.50	27.00	25.00

prices more than offsetting the effect of larger production. Lower values were reported also for citrus, barley, peanuts, and sweet potatoes. On the other hand, the value of the flaxseed, hay, Irish potato, and many commercial vegetable crops increased.

Receipts of livestock at the Fort Worth and San Antonio markets during 1948 showed a net decline of 5 percent as compared with 1947. Reflecting both the heavy marketings in the years immediately preceding and the relatively small number on farms, receipts of cattle and calves were down 18 percent from the previous year. Receipts of sheep and lambs, on the other hand, were up slightly, due partly to the severe drought in the principal sheep-raising areas of Texas. Hog marketings were 11 percent over those of 1947. Receipts of all categories of livestock at these markets in December were below those of November.

FINANCE

During 1948, changes in principal asset and liability accounts of the selected member banks in leading cities of the District reflected rather closely the over-all trend of business activity in this area. Various categories of loans of these banks increased moderately during the year as the working capital requirements of the high level of business activity and an increased demand for real-estate and consumer financing were met, while demand and time deposits rose gradually to new record totals. These increases which occurred during 1948, however, were notably less in amount than those of the preceding year and, while reflecting record business levels, also showed a tendency toward a leveling out and a declining rate of increase.

Total loans of these weekly reporting banks increased approximately $114,000,000 during the year as increases of $71,000,000 were reported for commercial, industrial, and agricultural loans, $11,000,000 for real-estate loans, and $37,000,000 for the group of loans classified as "all other." Real-estate loans showed a gradual upward trend through October, then declined slightly during the remaining nine weeks of the year. The category "all other" loans, including loans to consumers for personal purposes, showed a strong demand during most of the year, with weekly totals rising steadily to more than $197,000,000 at the end of December.

On the other hand, following an increase during January amounting to about $21,000,000, commercial, industrial, and agricultural loans declined steadily during the first half of the year, reaching a low figure of about $683,000,000 on June 9. Thereafter, however, a steady upward movement occurred to bring the total to some $783,000,000 on December 29. It should be noted that the increase in commercial, industrial, and agricultural loans during the last six months of 1948 was substantially less than the increase reported for the comparable period of 1947. These loans increased by approximately $100,000,000 between June 9 and December 29, 1948, whereas the increase during the roughly comparable period in 1947 amounted to $162,000,000.

Several factors accounted for this slower upward trend during 1948. In the first place, monetary and credit authorities followed more restrictive credit policies—and especially during the last half of the year—than had been the case during 1947. In addition, the Voluntary Credit Control Program of the American Bankers Association, which was generally supported by leading member banks in this District, tended to minimize loans of a speculative and inflationary character. Finally, the noticeably slower increase in the rate of expansion of business activity, together with an increased cautiousness and selectivity on the part of commercial bankers, also contributed in restraining the upward loan trend.

Changes which occurred during 1948 in holdings of Government securities resulted in a decline in total investments amounting to $24,000,000. Selected member banks in the District increased their holdings of Treasury bills and certificates of indebtedness during the year by about $45,000,000 and $77,000,000, respectively, while their investments in Government bonds were reduced from about $846,000,000 at the end of December 1947 to some $719,000,000 at the end of 1948. During the year holdings of Treasury notes declined by about $31,000,000, partially offset by a minor increase in holdings of all other stocks, bonds, and securities.

Factors contributing to shifts in holdings of Government securities included a change in the support price level which was announced late in December 1947 and which was followed by rather substantial sales of bonds, the rising trend of rates on bills and certificates which was evident during most of the year, and increased pressure on reserves at times when loan demand continued strong, inducing some selling of Government bonds to obtain funds for loan purposes.

CONDITION STATISTICS OF WEEKLY REPORTING MEMBER BANKS IN LEADING CITIES—Eleventh Federal Reserve District

(In thousands of dollars)

Item	Jan. 12, 1949	Jan. 14, 1948	Dec. 15, 1948
Total loans and investments	$2,343,221	$2,291,632*	$2,336,438
Total loans—Net‡	1,122,901		1,115,528
Total loans—Gross	1,131,561	1,034,058*	1,121,849
Commercial, industrial, and agricultural loans	796,316	721,802	774,074
Loans to brokers and dealers in securities	5,098	6,600	5,754
Other loans for purchasing or carrying securities	59,940	65,805	57,972
Real-estate loans	89,217	78,474	87,732
Loans to banks	75	841	86
All other loans	180,915	160,536	196,231
Total investments	1,211,660	1,257,574	1,214,589
U. S. Treasury bills	57,051	11,763	64,047
U. S. Treasury certificates of indebtedness	287,220	174,532	244,079
U. S. Treasury notes	41,343	118,895	66,507
U. S. Government bonds (incl. gtd. obligations)	706,101	839,561	719,187
Other securities	119,945	112,823	120,769
Reserves with Federal Reserve Bank	563,744	509,898	571,568
Balances with domestic banks	340,475	306,351	329,501
Demand deposits—adjusted*	2,022,281	1,906,090	2,015,334
Time deposits except Government	412,853	378,191r	404,032r
United States Government deposits	33,406	24,989r	33,209r
Interbank demand deposits	644,153	672,934	650,038
Borrowings from Federal Reserve Bank	0	1,000	0

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

‡After deductions for reserves and unallocated charge-offs. r-Revised.

*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.

Adjusted demand deposits, or total demand deposits other than interbank and United States Government less cash items reported as on hand or in process of collection, increased during the year at the selected reporting banks by about $145,000,000. Time deposits of these banks increased $33,000,000.

Latest reports of selected member banks in leading cities show that between December 15, 1948, and January 12, 1949, total loans increased by $9,712,000, reflecting an increase of $22,242,000 in commercial, industrial, and agricultural loans partially offset by a decrease in the category "all other" loans of $15,316,000. Increases were also reported in loans for security trading and real-estate purposes. Total investments of these banks during this latest four-week period declined by almost $3,000,000, as holdings of United States Treasury bills, notes, and bonds declined while holdings of Treasury certificates of indebtedness were increased from about $244,000,000 to approximately $287,000,000. During this period demand de-

posits adjusted increased almost $7,000,000, which, together with an increase in time deposits and an offsetting decrease in interbank deposits, raised the total adjusted deposits by approximately $10,000,000.

Gross demand deposits of all member banks in the Eleventh District averaged $5,427,633,000 during December 1948, or approximately $144,000,000 above the average for December 1947, while time deposits of these banks showed an increase of almost $46,000,000. The increase in gross demand deposits was substantially greater at the Reserve city banks, as these banks reported an increase during the year of more than $96,000,000 in contrast with an increase of about $47,000,000 for the country banks of the District. Likewise, the increase in time deposits occurred largely at the Reserve city banks, where this type of deposit rose from $342,638,000 to $382,-118,000 from December 1947 through December 1948, while the increase reported by country banks of the District amounted only to slightly more than $6,000,000. Gross demand deposits at the member banks of the District showed a declining trend during the first four months of 1948 but then rose steadily throughout the rest of the year. On the other hand, time deposits increased each month throughout the year except during May and September, when small declines from the preceding months were reported.

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
December 1946	$4,837,618	$506,672	$2,323,619	$321,379	$2,513,999	$185,293
December 1947	5,284,150	549,698	2,516,849	342,638	2,767,301	207,060
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
November 1948	5,407,874	594,125	2,584,489	379,905	2,823,385	214,220
December 1948	5,427,833	595,339	2,613,198	382,118	2,814,435	213,221

SAVINGS DEPOSITS

Eleventh Federal Reserve District

City	Number of reporting banks	December 31, 1948		Percentage change in savings deposits from	
		Number of savings depositors	Amount of savings deposits	Dec 31, 1947	Nov. 30, 1948
Louisiana: Shreveport	3	32,622	$ 24,962,106	— 3.6	0.03
Texas:					
Beaumont	3	11,991	6,162,920	— 6.3	— 0.2
Dallas	8	140,321	78,596,108	— 1.1	0.8
El Paso	2	31,630	22,481,696	— 6.2	1.3
Fort Worth	4	43,185	34,905,795	— 0.8	1.5
Galveston	4	23,094	21,422,064	— 2.1	— 0.6
Houston	8	101,804	73,794,151	5.2	1.1
Lubbock	2	1,595	3,665,384	88.2	1.9
Port Arthur	2	6,059	4,704,037	— 4.8	— 1.6
San Antonio	5	39,233	45,688,786	— 4.7	1.0
Waco	3	10,234	10,244,919	5.1	3.1
Wichita Falls	3	7,232	4,541,259	— 2.8	0.4
All other	55	62,727	54,488,931	— 1.2	1.0
Total	102	511,727	$385,658,156	— 0.5	0.9

Bank debits reported from 24 cities in the District were 15 percent higher during December 1948 than a year earlier and were 16 percent above November 1948. Largest increases during the year were reported from Beaumont, Galveston, Houston, and Wichita Falls, the increases in bank debits in these cities being substantially above the average increase for the reporting cities in the District. The annual rate of turnover of deposits during December 1948 was 14.9, in contrast with a rate of turnover during November of 13.1 and during December 1947 of 13.9. The highest rate of turnover during the latest month for which figures are available was reported from banks in Dallas, the turnover being at the rate of 20.4 times a year. Other cities reporting an annual rate of turnover during December 1948 higher than the average for all reporting cities included El Paso, Fort Worth, and Houston.

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

(Amounts in thousands of dollars)

City	Debits*			End-of-month deposits*	Annual rate of turnover		
	Dec. 1948	Pctg. change over Dec. 1947	Pctg. change over Nov. 1948	Dec. 31, 1948	Dec. 1948	Dec. 1947	Nov. 1948
Arizona: Tucson	$ 65,303	1	10	$ 88,726	8.9	9.2	8.3
Louisiana:							
Monroe	40,758	16	6	46,511	11.0	10.0	11.0
Shreveport	157,301	19	9	169,920	11.3	10.2	10.3
New Mexico: Roswell	17,866	14	6	20,268	10.6	9.6	10.2
Texas:							
Abilene	37,328	1	2	42,403	10.6	10.8	10.3
Amarillo	97,756	10	5	86,421	13.7	12.6	13.2
Austin	117,190	15	10	104,015	13.7	11.8	12.6
Beaumont	106,443	27	3	101,811	12.5	10.3	12.1
Corpus Christi	82,868	8	9	81,819	12.2	12.1	11.3
Corsicana	13,085	1	17	21,250	7.4	7.6	6.5
Dallas	1,301,559	15	21	776,089	20.4	19.2	17.4
El Paso	148,590	13	7	121,125	15.1	13.4	14.6
Fort Worth	395,019	8	16	301,037	15.8	15.8	14.0
Galveston	87,009	29	30	97,687	10.7	8.8	8.3
Houston	1,300,266	23	20	941,285	16.7	15.1	14.3
Laredo	18,471	7	17	22,041	10.0	10.3	8.5
Lubbock	76,431	—11	— 4	71,943	13.2	14.9	14.0
Port Arthur	39,132	16	15	39,898	11.8	10.1	10.4
San Angelo	32,385	— †	5	40,879	9.5	10.0	9.2
San Antonio	274,026	2	16	327,623	10.1	10.1	8.8
Texarkana‡	16,858	2	4	23,960	8.6	8.5	8.5
Tyler	45,013	10	10	54,503	10.0	9.7	9.1
Waco	55,429	— 2	4	66,028	10.0	10.2	9.5
Wichita Falls	65,976	22	16	84,775	9.5	8.3	8.3
Total—24 cities	$4,592,062	15	16	$3,732,017	14.9	13.9	13.1

*Debits to deposit accounts except interbank accounts.

*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 $27,463.

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

On an annual basis, bank debits during 1948 increased about 20 percent above the total reported for 1947, with the largest increases for the full year being reported by banks in Houston, El Paso, Beaumont, Shreveport, and Wichita Falls. The annual rate of turnover for the year 1948 was considerably above that of the preceding year, with largest increases being reported by banks in Austin, Beaumont, Dallas, El Paso, and Houston. Whereas the annual rate of turnover of deposits averaged 11.8 times during 1947, the velocity increased during 1948 to average 13.3 times.

ANNUAL BANK DEBITS AND ANNUAL RATE OF TURNOVER OF DEPOSITS

(Amounts in thousands of dollars)

City	Debits*		Percentage change from 1947	Annual rate of turnover	
	1948	1947		1948	1947
Arizona: Tucson	$ 733,802	$ 621,442	18	8.6	7.7
Louisiana:					
Monroe	419,557	358,289	17	10.2	9.3
Shreveport	1,649,723	1,357,797	21	10.3	9.3
New Mexico: Roswell	174,138	152,038	15	9.5	8.5
Texas:					
Abilene	408,281	352,182	16	9.8	9.1
Amarillo	1,073,259	943,710	14	12.7	12.1
Austin	1,339,310	1,163,280	15	13.0	11.7
Beaumont	1,181,473	898,040	32	12.1	10.4
Corpus Christi	945,827	843,046	12	12.3	12.1
Corsicana	130,734	117,965	11	6.6	6.1
Dallas	12,302,301	10,317,692	19	17.1	15.5
El Paso	1,499,532	1,222,995	23	13.0	11.3
Fort Worth	3,911,407	3,588,000	9	14.0	13.0
Galveston	843,543	715,411	18	8.9	8.1
Houston	12,894,992	9,926,139	30	14.7	12.8
Laredo	201,913	190,544	6	9.0	9.3
Lubbock	800,067	696,515	15	11.8	11.9
Port Arthur	426,567	364,914	17	10.8	9.3
San Angelo	372,974	313,325	19	9.6	8.5
San Antonio	2,946,884	2,714,839	9	9.3	8.6
Texarkana‡	187,409	169,273	11	8.3	7.6
Tyler	491,594	413,042	19	9.3	8.8
Waco	614,370	563,732	9	9.6	9.0
Wichita Falls	665,128	552,396	20	8.3	7.9
Total—24 cities	$46,214,785	$38,556,606	20	13.3	11.8

*Debits to deposit accounts except interbank accounts.

‡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 $311,833 for the year 1948.

Between January 15, 1948, and January 15, 1949, the most significant changes in the condition of the Federal Reserve Bank of Dallas included an increase in gold certificate reserves amounting to $165,200,000 and an increase in member bank reserve deposits of approximately $125,000,000. Minor changes in the condition statement of this bank included a decline of $5,500,000 in total earning assets, resulting from slight declines in holdings of United States Government securities and discounts for member banks, partially offset by a moderate increase in foreign loans on gold. During the 12-month period Federal Reserve notes of this bank in actual circulation rose only slightly, to increase the total from $611,881,000 on January 15, 1948, to $613,207,000 on the comparable date in 1949.

CONDITION OF THE FEDERAL RESERVE BANK OF DALLAS

(In thousands of dollars)

Item	Jan. 15, 1949	Jan. 15, 1948	Dec. 15, 1948
Total gold certificate reserves	$706,893	$541,672	$640,148
Discounts for member banks	0	1,500	0
Foreign loans on gold	6,169	2,747	6,667
U. S. Government securities	965,439	972,846	1,042,036
Total earning assets	971,608	977,093	1,048,703
Member bank reserve deposits	985,505	860,641	967,657
Federal Reserve notes in actual circulation	613,207	611,881	628,738

During 1948, a number of important financial events occurred which affected member banks in this District. These developments were steps in the program of restraining inflationary expansion of bank credit. Effective January 12, 1948, the discount rate of this bank was raised from 1 percent to 1¼ percent, and then on August 13 another increase raised the rate on discounts from 1¼ percent to 1½ percent. In the meantime, on August 7 the Special Session of Congress passed the Anti-Inflation Act of 1948, which was signed August 16. This Act authorized the Board of Governors of the Federal Reserve System to reinstitute consumer installment credit restrictions and to increase reserve requirements of member banks 4 percentage points and 1½ percentage points, respectively, against demand and time deposits. The increase permitted was in addition to the statutory limits existing at that time. Acting under the authority granted by the Anti-Inflation Act, increases of 2 percentage points on demand deposits and 1½ percentage points on time deposits of member banks in the District were announced during September. Also acting under the authority of this special legislation, consumer installment credit controls became effective September 20. During the year the yield on new Treasury bills rose steadily reaching 1.157 for the last issue of December, while the rate on United States Treasury certificates of indebtedness was permitted to rise from 1⅛ percent to 1¼ percent with the September 15 and October 1 refundings.

Sales of United States savings bonds during 1948 for the country as a whole amounted to $7,295,035,000, while redemptions and maturities during the same period totaled $5,143,895,000. Figures reported by the Texas Savings Bond Division of the Treasury Department show sales of Series E bonds during 1948 amounting to $139,591,216, Series F bonds $9,471,138, and Series G bonds $47,386,233, resulting in a total sale of savings bonds during the year in Texas of $196,448,587. Redemptions and maturities of Series A through E savings bonds in Texas during 1948 amounted to $180,295,936 at redemption or maturity value.

INDUSTRY

During 1948, industry in the Eleventh District participated extensively in the prosperity which accompanied the Nation's attainment of record peacetime levels of production and income. In the Southwest all major divisions of industry reached new peacetime peaks in employment and output, which in many cases exceeded even wartime records.

Supplies of basic materials were increasingly available in 1948, so that production of numerous products was in more normal relation to demand. However, continuance of scarcities of a few materials, particularly steel, tended to curtail production in some industries. On the other hand, the relatively greater abundance of many soft goods and some durables led to price weaknesses and a revival of concern as to levels and distribution of inventories.

Demand for most products continued strong, but increases in production reduced or eliminated backlogs, so that rates of output in 1949 are expected to show fewer striking increases than characterized much of the earlier postwar period. Even such industries as oil and construction show some indications of leveling off. Particularly in construction, there is increasing market pressure to reduce costs and prices.

In the District, industrial production and employment edged upward gradually but steadily throughout 1948. At the year-end, manufacturing employment in Texas totaled about 405,000 persons and all nonfarm employment about 2,350,000 persons, according to estimates of the Texas Employment Commission. Both of these figures represent increases of about 5 percent during the year and both are new records. Manufacturing employment in the State is now nearly twice what it was in 1940. Employment in aircraft factories and petroleum refineries increased considerably during 1948, while during the last quarter of the year increases in employment—largely seasonal—occurred in food processing, retail trade, and the postal service. Unemployment in Texas dropped toward the end of the year to a new postwar low of about 2 percent of the nonfarm labor force.

Such indicators of industrial activity as industrial electric power consumption and freight carloadings showed increases for 1948 over the previous year. On the basis of data for 11 months, industrial power consumption increased about 12 percent in Texas, while miscellaneous carloadings in the southwestern freight district were up about 4 percent. However, the number of cars unloaded at Texas ports declined about 5 percent.

The petroleum industry again had a record year, with crude oil production in the District averaging 2,689,000 barrels daily in 1948, which was 252,000 barrels per day or 10 percent more than the previous record reached in 1947. Production increased more gradually in 1948 than in 1947 but in November at-

CRUDE OIL PRODUCTION—(Barrels)

Area	December 1948 Total production	December 1948 Daily avg. production	Increase or decrease in daily average production from Dec. 1947	Increase or decrease in daily average production from Nov. 1948
Texas:				
District 1	864,950	27,902	3,013	237
2	5,536,950	178,611	14,516	636
3	15,554,900	501,771	13,287	— 2,459
4	7,743,400	249,787	— 8,077	— 4,983
5	1,599,150	51,586	9,233	— 209
6	8,973,600	289,471	— 4,555	— 7,544
Other 6	3,862,450	124,595	4,924	— 305
7b	1,925,250	62,105	19,960	3,905
7c	1,558,300	50,268	8,784	1,373
8	22,989,950	741,611	92,280	— 4,989
9	4,473,900	144,319	7,377	1,699
10	2,761,600	89,084	— 284	364
Tota lTexas	77,844,400	2,511,110	160,458	—12,275
New Mexico	4,154,700	134,022	13,898	— 213
North Louisiana	3,586,700	115,700	7,477	1,910
Total Eleventh District	85,585,800	2,760,832	181,833	—10,578
Outside Eleventh District	88,881,750	2,867,153	171,721	7,908
United States	174,467,550	5,627,985	353,554	— 2,670

SOURCE: Estimated from American Petroleum Institute weekly reports.

tained a new monthly peak at an average of 2,771,000 barrels daily. The December rate was only 10,000 barrels per day less than the peak rate of the preceding month and was 182,000 barrels daily above the level of December 1947. Due to the gradual easing of the supply situation, daily allowables in Texas were reduced for January 1949, so that a further moderate decline in crude production is anticipated.

The year 1948 may have marked a postwar peak in petroleum prices. Throughout most of the year the continued pressure of demand led to the payment of premiums above the higher prices for crude posted in November and December 1947. Late in September 1948 one major company—and somewhat later another—increased their posted prices for crude oil by 35 cents per barrel. During the latter part of the year, however, the easing of the supply situation and some softening in the prices of petroleum products made it evident that no industry-wide price increase could be expected, with the result that the increases in the posted prices of crude oil by the aforementioned companies were rescinded in December.

Crude oil runs to refinery stills in the District, as in the Nation, attained record levels during 1948 but in the last four months of the year did not keep pace with crude oil production. In consequence, the crude oil stocks of the Nation increased during the latter period and at the end of the year totaled 243,000,000 barrels, or 9 percent more than a year earlier. Stocks of most refinery products also increased and at the end of December were sharply higher than the year before, the gains ranging from 11 percent for gasoline to 68 percent for residual fuel oil.

Such accumulation of stocks, as well as the productive capacity evidenced by that accumulation, indicates that the oil industry should be able to meet prospective peacetime needs and that there is sufficient margin of safety to make shortages less likely than during the earlier postwar period. An easier supply situation in 1949 than in the previous year is suggested on the basis of the expected demand situation. The daily average requirements of the Nation for domestic crude petroleum in 1949 have been estimated at 5,550,000 barrels by the Interstate Oil Compact Commission. This rate of consumption is only 2 percent above the actual 1948 rate of production of 5,458,000 barrels daily and is actually 1 percent below the peak rate of 5,631,000 barrels per day attained in November.

Drilling activity as measured by the number of wells completed edged upward, particularly during the first half of the year, and in the Eleventh District total completions in 1948 are expected to approximate 14,000 wells, or second only to the 1937 record but about 3,000 more wells than were completed in 1947. This showing is particularly noteworthy in view of the shortages of pipe and equipment.

Construction activity in the Eleventh District, as in the Nation, set a new postwar record in 1948, although the rise in construction costs from the previous year allowed the dollar volume of construction to increase considerably while the physical volume changed only moderately.

The value of construction contracts awarded in the District during 1948 totaled $782,000,000, or 15 percent above 1947 and second only to the 1942 wartime peak. Residential awards in 1948 totaled $263,000,000, or 8 percent above the previous record in 1947. Commercial and institutional building also increased markedly, but public utility and manufacturing construction declined considerably from their 1947 levels. The rise in construction costs was an important factor in these declines and in the moderateness of the increases in residential and some other types of construction. Resistance to high prices was particularly important in the case of residential building, with houses in the $10,000 to $20,000 price range becoming increasingly difficult to sell during the last half of the year. The completion of many industrial expansion programs and the reduction of the backlog of demand were additional factors limiting the rise in construction volume in 1948.

VALUE OF CONSTRUCTION CONTRACTS AWARDED

(In thousands of dollars)

	December 1948	December 1947	November 1948	January 1 to December 31 1948	1947
Eleventh District—total	$ 82,411	$ 43,971	$ 54,074	$ 782,480	$ 681,131
Residential	28,059	14,285	21,693	262,946	243,401
All other	54,352	29,686	32,381	519,534	437,730
United States*—total	694,023	625,363	611,216	9,429,618	7,759,868
Residential	256,746	226,796	264,033	3,608,015	3,153,773
All other	437,277	398,567	347,183	5,821,603	4,606,095

*37 states east of the Rocky Mountains.

SOURCE: F. W. Dodge Corporation.

In December 1948, the value of construction contracts awarded rose to $82,000,000, or only moderately below the postwar monthly peak of $90,000,000 in May of the same year and nearly double the level of December 1947. The December gains were augmented substantially by the letting of contracts for a number of large housing, commercial, and educational projects.

BUILDING PERMITS

City	December 1948 No.	December 1948 Valuation	Percentage change valuation from Dec. 1947	Percentage change valuation from Nov. 1948	Jan. 1 to Dec. 31, 1948 No.	Jan. 1 to Dec. 31, 1948 Valuation	Percentage change valuation from 1947
Louisiana:							
Shreveport	194	$ 520,974	—20	—19	3,656	$ 26,691,892	115
Texas:							
Abilene	95	393,997	7	37	1,147	5,228,738	19
Amarillo	126	525,446	†	3	2,319	10,549,956	21
Austin	228	1,335,088	—10	62	3,661	22,234,307	12
Beaumont	242	544,523	—61	—39	4,271	9,602,606	35
Corpus Christi	70	441,290	—50	—64	3,350	15,702,358	5
Dallas	883	2,496,568	—56	—69	16,013	87,313,354	49
El Paso	140	473,369	— 2	11	1,702	11,256,537	41
Fort Worth	400	2,658,083	34	— 2	6,656	29,587,977	7
Galveston	94	154,490	—64	13	1,838	3,645,360	28
Houston	446	7,886,950	8	3	8,519	100,160,322	38
Lubbock	179	1,574,706	34	— 3	2,728	15,171,373	36
Port Arthur	99	202,852	187	—40	1,678	3,291,097	46
San Antonio	1,162	2,586,006	8	— 3	15,476	35,375,818	22
Waco	84	531,889	—24	3	1,704	11,390,000	25
Wichita Falls	46	699,415	9	218	923	4,313,571	47
Total	4,488	$23,006,276	—12	—20	75,641	$391,515,266	34

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

A factor in the upward movement of contract awards, which is also a potential factor in any future cost reductions, is the gradual easing of the construction materials situation. The production of practically every construction material increased during 1948, and the winter slackening of construction in most parts of the Nation is permitting some increase of stocks. Lumber production in 1948 appears to have been up fractionally from 1947, while more pronounced gains were made in the case of brick and cement.

PRODUCTION AND STOCKS OF PORTLAND CEMENT

(In thousands of barrels)

	November 1948	November 1947	October 1948	Jan. 1 to Nov. 30, 1948	Jan. 1 to Nov. 30, 1947
Production					
Texas	1,167	1,137	1,178	12,392	11,285
United States	18,435	16,814	19,349	187,999	170,410
Stocks, end of month					
Texas	370	320	344	....	....
United States	6,419	6,209	6,086	....	....

SOURCE: United States Bureau of Mines.

Cotton consumption in the United States has been declining as a result of the weakness irregularly but increasingly shown in the cotton textile market since the middle of 1947. By early 1948 the cotton textile industry had largely caught up with

the backlog of consumer demand, inventories of manufacturers and distributors had in most cases been replenished, and the 1947 record export demand for cotton cloth had partially subsided. Exports of cotton cloth in 1948 were at an annual rate of about 900,000,000 square yards, or 40 percent less than in 1947 but considerably above the rate of any other previous year. The very high level of personal incomes has cushioned the decline in demand so that cotton consumption is still substantially above prewar levels in both the United States and Texas. The sharp drop in cotton consumption in October and the continuance of the low level of consumption into November and December indicate that the period of readjustment may not have been completed. United States consumption in the latter month was 1 percent under that of the previous month and 10 percent below that of a year earlier, while during the first five months of the August 1948-July 1949 season consumption was 7 percent less than during the corresponding period of the previous season. By contrast, in Texas during the first five months of the season cotton consumption was 3 percent above the level of a year earlier.

DOMESTIC CONSUMPTION AND STOCKS OF COTTON—(Bales)

	December 1948	December 1947	November 1948	August 1 to December 31 This season	August 1 to December 31 Last season
Consumption at:					
Texas mills	12,790	12,656	11,967	64,098	61,960
United States mills	680,670	754,847	685,166	3,529,594	3,784,759
U. S. stocks—end of month:					
In consuming estabm'ts	1,649,284	2,162,114	1,653,888	.....	.....
Public stg. & compresses	8,811,478	5,499,200	8,434,988	.....	.....

COTTONSEED AND COTTONSEED PRODUCTS

December 1948

	Texas		United States	
	August 1 to December 31 This season	August 1 to December 31 Last season	August 1 to December 31 This season	August 1 to December 31 Last season
Cottonseed received at mills (tons)	1,053,363	1,032,683	4,779,215	3,583,727
Cottonseed crushed (tons)	715,393	623,836	2,796,448	2,259,126
Cottonseed on hand Dec. 31 (tons)	402,164	463,275	2,065,204	1,423,129
Production of products:				
Crude oil (thousand pounds)	215,998	189,956	878,698	690,438
Cake and meal (tons)	341,058	294,777	1,264,584	1,044,327
Hulls (tons)	160,933	139,717	640,759	511,218
Linters (running bales)	232,058	207,260	868,261	703,358
Stocks on hand December 31:				
Crude oil (thousand pounds)	24,946	17,787	61,584	50,619
Cake and meal (tons)	26,022	13,594	81,515	74,760
Hulls (tons)	22,319	20,171	80,328	71,587
Linters (running bales)	63,595	39,488	190,971	189,456

SOURCE: United States Bureau of Census.