

# TEXAS BUSINESS REVIEW

Bureau of Business Research  
The University of Texas

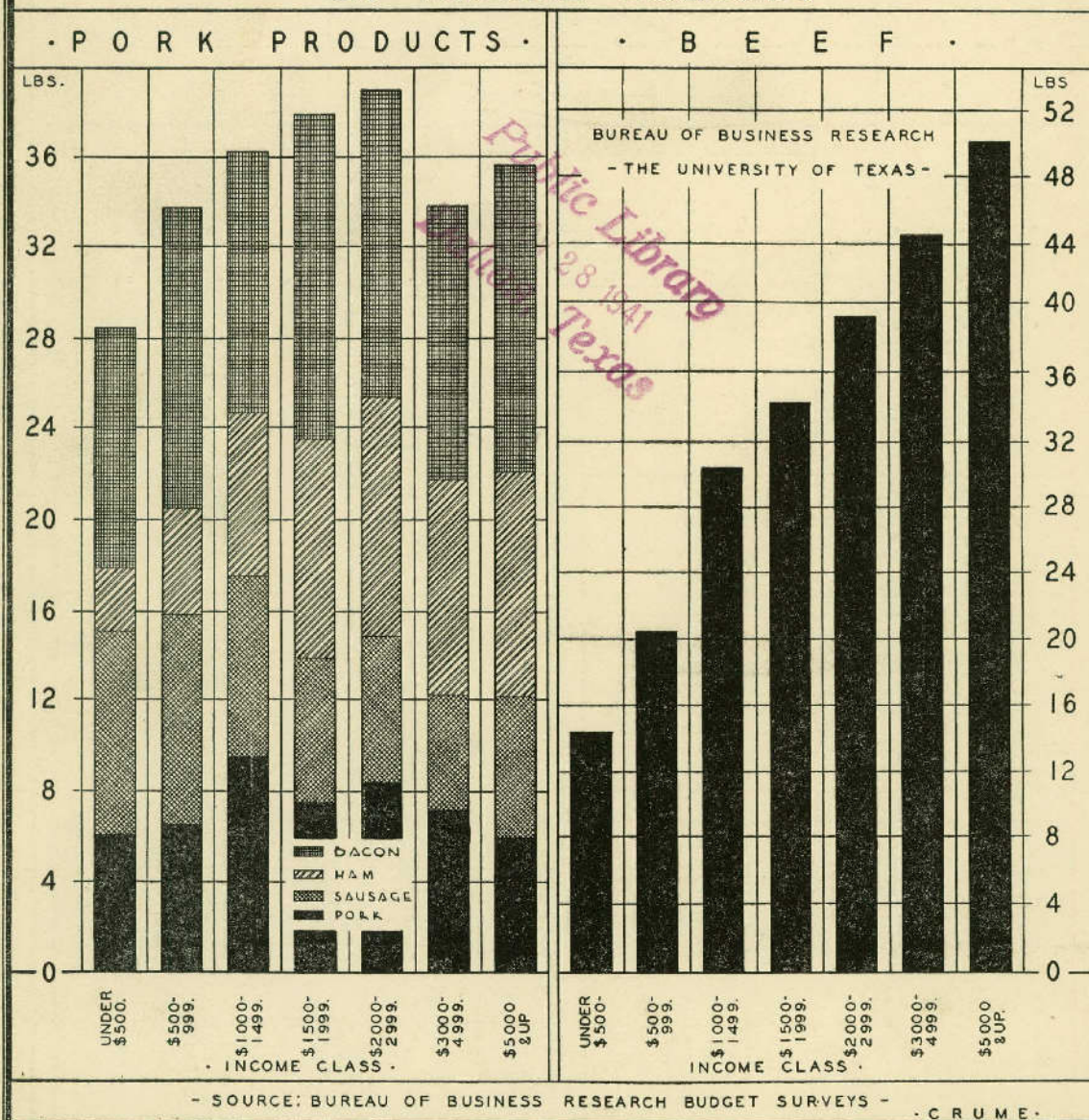
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A Monthly Summary of Business and Economic Conditions in Texas and the Southwest  
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## TRENDS IN ANNUAL PER CAPITA CONSUMPTION OF BEEF AND PORK PRODUCTS IN TEXAS BY INCOME CLASSES



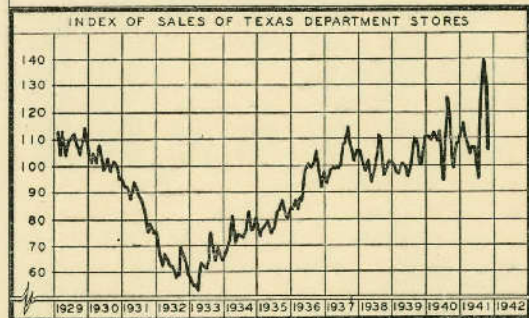
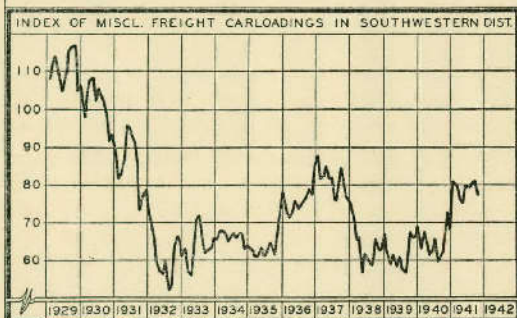
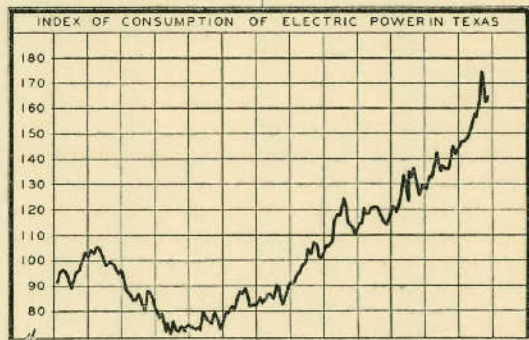
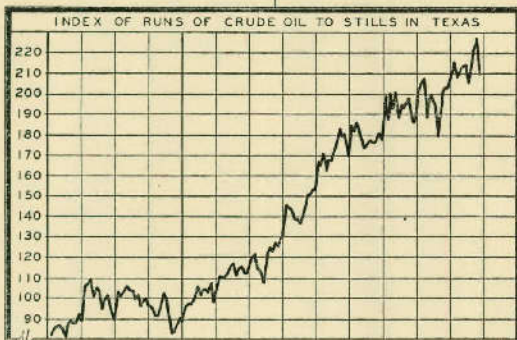
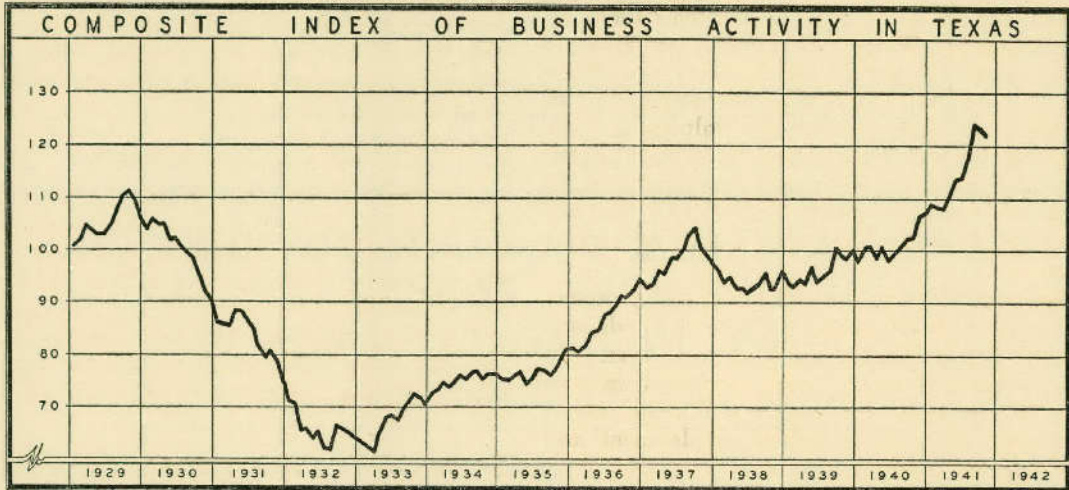


## INDEXES OF BUSINESS ACTIVITY IN TEXAS

AVERAGE MONTH OF 1930 = 100 %

\*WEIGHT IN COMPOSITE INDEX\*

EMPLOYMENT—25%	MISCL. FREIGHT CARLOADINGS—20%
PAY ROLLS—25%	CRUDE OIL RUNS—5%
DEPARTMENT STORE SALES—10%	ELECTRIC POWER CONSUMPTION—15%



# Business Review and Prospect

## GENERAL BUSINESS

In the January 18, 1937, issue of Barron's there appeared an article by Warren M. Persons which could well be read or re-read at this time by every one who is interested in a national business index which reflects, in perspective, the current physical volume of production in this country unobscured by price changes. The article referred to was written on the occasion of the introduction of Barron's weekly index, and the two opening paragraphs suggest the significance and nature of the index.

"Most vitally significant feature of national economy is the per-capita volume of production of goods and services destined to supply the wants of consumers. On the physical volume of wanted goods and services produced each year depends consumers' well-being, social security, business activity, industrial employment and the income and wealth of the nation.

Barron's offers to its readers, and will continue to offer promptly and currently, annual, monthly and weekly indexes of the physical volume of production and trade. These indexes rest on as broad a factual basis as it is possible to secure. In constructing and presenting these indexes, due account has been taken of, first, the long-time trend, over periods of good business and bad, of production and trade; second, the periodic variations of monthly production and trade accompanying the round of the seasons; and, third, the regular variations of weekly production within the month."

Barron's index has been referred to regularly in this column since its introduction in 1937 because of the characteristics mentioned in the quoted paragraphs. With the sharp changes in commodity prices and costs of living, actual and potential, the index assumes even greater significance now than in previous years for those who are interested in a business index which reflects changes in the standard of living as well as changes in industry and trade.

No appreciable change has occurred in Barron's index during recent weeks, the figure having fluctuated between 102 and 106 since early in July, and now stands at approximately 105. The highest point reached since 1929, when the index registered 115.2, was in July of this year when it attained a level of 105.7. Thus, by reflecting long-time trend factors, including population growth, the index is still well below that reached in 1929.

Total industrial activity for the country as a whole will continue to rise during coming months. That is to say, the increased activity resulting from the defense program will not be completely offset by the growing restrictions which are being imposed on the production of goods for civilian uses. It will take time, however, to shift workers from localities adapted only to the production of civilian products to areas well situated for the production of war materials. Considerable additional hardship will therefore occur in many localities

before the remaining needed adjustments to the defense program will have been completed. But little thought can as yet be given to the post-defense program; in due course, however, this problem, too, will demand solution if a serious decline in the standard of living is to be averted.

## TEXAS BUSINESS

The slight downward tendency in Texas industry and trade which began in September continued through October, but a wide margin of gain over October 1940 still prevails. Indications are that the upward trend which has been interrupted during the past two months will soon be resumed. Industrial activity is gaining and the increasing farm cash income is reflecting rising prices although farm marketings are currently below average.

### INDEX OF BUSINESS ACTIVITY IN TEXAS

	Oct., 1941	Oct., 1940	Sept., 1941
Employment .....	109.6	94.1	107.2
Pay Rolls .....	134.7	101.2	127.3
Miscellaneous Freight Carloadings			
(Southwest District) .....	77.6	69.3	80.8
Crude Runs to Stills .....	209.9	200.2	227.2*
Department Store Sales .....	105.6	99.1	130.0*
Consumption of Electric Power .....	164.9	139.1	162.5*
COMPOSITE INDEX .....	122.4	103.5	123.5*

\*Revised.

All of the factors entering into the October composite index showed substantial gains over the corresponding month last year while three of the six factors—employment, pay rolls, and consumption of electric power—registered increases over September. The net decline in the composite index was one point from September, but the gain over October last year was almost nineteen points.

## FARM CASH INCOME

Cash income from agriculture in Texas during October, exclusive of government subsidies, as computed by this Bureau (See Note under following table.) was \$105,483,000 compared with \$91,944,000 during the corresponding month last year, an increase of 14.7 per cent. With the exception of the month of August this was the poorest year to year comparison thus far in 1941, as a result of the comparatively small volume of marketings of cotton and livestock. Indications are that the year to year margin of gain in farm cash income for the last two months of the year will widen since marketings of cotton, livestock and livestock products are expected to be relatively higher than during the past three months, when seasonal factors are taken into account and prices are expected to maintain the wide margin of gain which now prevails. Had it not been for the sharp increases in prices of farm products as compared with a year ago farm cash income would now be registering a decline.

*For Other Texas Data, See Statistical Tables at the End of This Publication*

## INDEX OF AGRICULTURAL CASH INCOME IN TEXAS

Districts	Oct., 1941	Sept., 1941	Oct.,* 1940	Cumulative Income	
				Jan.-Oct. 1941	Jan.-Oct. 1940
				(000 Omitted)	
1-N .....	96.3	101.3	124.8	40,166	31,771
1-S .....	128.4	136.1	163.3	28,790	26,771
2 .....	154.1	91.1	98.5	58,957	38,545
3 .....	102.1	116.0	78.8	23,504	18,940
4 .....	100.6	92.2	95.1	88,603	68,340
5 .....	67.0	38.6	89.5	27,994	31,375
6 .....	182.3	176.0	140.4	22,364	17,739
7 .....	123.4	131.8	105.4	47,928	39,534
8 .....	122.1	180.7	57.1	41,825	30,009
9 .....	120.8	82.9	75.5	23,501	26,268
10 .....	66.5	126.5	51.8	11,903	9,217
10-A .....	318.2	305.5	240.2	20,460	18,371
STATE .....	116.2	92.4	101.3	435,995	356,880

\*Revised.

Note: Farm cash income as computed by this Bureau understates actual farm cash income by from 6 to 10 per cent. This situation results from the fact that means of securing complete local marketings, especially by truck, have not yet been fully developed. In addition, means have not yet been developed for computing cash income from all agricultural specialties of local importance in scattered areas throughout the State. This situation, however, does not impair the accuracy of the indexes to any appreciable extent.

For the first ten months of 1941 farm cash income, as computed by this Bureau, totalled \$435,995,000 com-

pared with \$356,880,000 during the corresponding period last year, an increase of more than twenty-two per cent.

Abnormal conditions with reference to the growing, maturing and harvesting of the cotton crop this year resulted in an unusually small percentage of ginnings during the first two months of the cotton year, (August and September), even in the old cotton districts, leaving relatively more of the comparatively small total crop to be ginned in the later months and in the production of a large percentage of the state's crop in the northwest districts of the State. Also the unusually favorable condition of Texas ranges, coupled with relatively high prices for livestock and livestock products, has doubtless resulted in cattlemen withholding livestock from the markets in order to secure fuller advantage of these favorable conditions. As a result of this situation, comparatively large marketings of livestock are expected during the remainder of the year or a substantial increase in inventories as of January 1, 1942, will probably be shown by the government report early in the new year. The foregoing factors are reflected in the district indexes of farm cash income shown in the above table.

F. A. BUECHEL

## The Future of Texas Economy

### THE POSITION OF NATURAL RESOURCES, INDUSTRY, AND CONSERVATION IN THE ECONOMY OF TEXAS AND THE SOUTHWEST

The growing significance of the Southwest as a substantial portion of the national economy stands out as a highly important development of the past two or three decades. No one can question the importance of natural resources or the significance of industrial growth to this development. And the subject of conservation looms as one of the most critical factors in Texas and Southwestern economy now and in the near future.

While the items of natural resources, industry, and conservation stand out prominently in the general foreground, yet the Texas region is so large, the natural resources are so diverse, the conditions of their occurrence are so complex, and their relations to industry in this region are so new as well as diverse that an overall conception of the entire field, admittedly so important, is none the less a most difficult objective to achieve.

Added to these factors are the facts that many of these natural resources occur in tremendously large amounts; that the problems and difficulties of making the numerous raw materials derivable from these resources function in the development of a more integrated economy in this region are legion; and that economic developments in the Texas region have to be viewed in their relation to rather inclusive movements and trends in the national economy.

And, as if what appear to be the purely economic problems were not difficult enough to solve, there are multitudinous problems arising in the wake of social implications of industrialization in the 20th century. Finally, an even broader viewpoint has to be considered

in analyzing and interpreting the growing industrialization of the Texas region for our modern economic and social problems are unavoidably bound up with the rapidly changing international situation.

### THE NATURAL RESOURCES PROBLEM

A foremost problem and one of the most fundamental too, is concerned with our natural resources—not an encyclopedic summary, but as interrelated natural objects subjected to scientific research as regards their genesis, their characteristics, and their environmental setting. We need not so much mere inventorying as understanding—and a larger comprehension of what these resources mean in the world that, so to speak, is advancing so rapidly upon us. On these problems a vast amount of highly valuable work has been done yet much most assuredly remains for the future.

Of our natural resources, we may differentiate between those that lie at or very near the surface and those of the subsurface. We can group them as the soil and its products, and as geologic materials—oil and gas, the non-metallics, the metals, and water supplies. Scientific research concerned with the soil and its products, if considered in reference to regional expression, lies in the broad field of physical geography—a field which has made vast strides in regional interpretation since around the turn of the century. Consideration of the subsurface features—of rocks, structural positions, and their relations to mineral resources belong to the geologic sciences. These things are of course understood generally—but since the bases of modern industry are the minerals, the broader economic significance of the geologic sciences has become vastly accentuated in recent decades. Even today this aspect

of minerals is too little appreciated. What is virtually a new field, that of the economics of mineral resources, is gradually evolving. Occasion is taken to note this development here because of its tremendous importance in the world today. Nor is this development something that has grown up overnight; for as long ago as 1909 the late Charles R. Van Hise presented a paper on "Mineral Resources and the History of Civilization" to the International Geological Congress in Sweden and at the time of his death twenty years ago, Dr. Van Hise had a volume on this subject approaching completion.

Modern industry rests directly upon natural resources, and most importantly upon the minerals. This fact alone is sufficient to insure increased attention to the technical aspects of natural resources in the future.

#### ECONOMIC ORGANIZATION AND TECHNOLOGY

But between modern industry and the natural resources there are two great groups of factors which may be designated as institutional conditions. These factors which are so fundamental in conditioning industrial development are economic organization and technology—the latter the application of scientific principles to the general field of industry. Technology utilizes the fruits of a movement in scientific advancement which began a century prior to the inception of the Industrial Revolution in the middle of the 18th century, and which has grown apace during the past hundred years. In fact, there has been a close parallel between industrial developments and scientific advancements during the past several decades. The relations of these two movements have been designated by President Conant as symbiotic. Dr. Conant enlarges on the concept as follows:

It is difficult in these days to view any human activity without prejudice and emotion. Perhaps that is why we have had both a great increase in interest in the history of science and such divergence of opinion as to its interpretation. Who has been the parasite, the industrialist or the scientist? A meaningless question, I believe, but one on which violent sides may be taken. Strong differences of opinion also exist as to the extent to which the growth of science has been influenced by economic and cultural forces. One school of historians today never tires of pointing out examples of the relation of new developments in even pure science to changing economic conditions in the world beyond the laboratory. Others would all but ignore the interactions of science and society. In fact the controversy is a result, it seems to me, of the emotional reactions of those concerned. Many people instinctively dislike complex situations. They prefer to regard their own walk of life as self-contained, as a path surrounded by a high board fence with clearly marked exits and entrances. Some industrialists resent the idea that their industrial art has been influenced appreciably by discoveries of mere professors. Some workers in the quiet retreat of an academic laboratory are apt to be irritated by the suggestion that their behavior has been in any way determined by social and economic forces beyond their own control. But the evidence of history is all against them.

A perfect example of symbiosis is the growth of both the science of organic chemistry and the dyestuff industry in Germany in the last third of the nineteenth century. And the reason for the time and place of this development is surely not unconnected with the rapid urbanization and industrialization of a newly forged empire. Yet the best history of the science of the compounds of carbon dismisses the coal-tar dye industry in half a page with a totally unilluminating discussion. Pasteur in France and Liebig in Germany were pioneers in organic chemistry, the science which ultimately won such triumphs in the synthesis of new materials of industrial and medical importance. Both these men, however, soon left their first love and devoted their attention to biological

or agricultural chemistry. Is it without significance that they lived and worked in a society still two thirds agricultural? Can we ignore the fact that their successors who completed the framework of the theory of organic chemistry and perfected the art of laboratory synthesis were contemporaries of those industrialists who in manufacturing plants first synthesized new dyestuffs? And unlike Pasteur and Liebig, these men were members of a new Germany deeply concerned with industrial activity, a country whose population figures suggested 'a whole nation rushing to town.'

One can have no adequate picture of scientific progress without examining the social and economic conditions under which this progress took place. Admittedly, one can carry the economic interpretation of history, including the history of science, to absurd lengths. But one can also fail to understand the lessons of the past by reading the history of science solely as the story of scientific heroes who lived and moved in a vacuum.

Let me turn now to another example not drawn from chemistry, another illustration of the way in which the development of science has been conditioned by advances in technology. Take the history of that awe-inspiring branch of physics known as thermodynamics. This is the science which in formal mathematical language sets forth the principles governing the transformation of heat into work, the rules of the game for all heat engines from steam locomotives to Diesels. The story has been well told by J. G. Crowther in his chapter on Joule in "Men of Science." He quotes to good effect from Joule's biographer, Reynolds, who seems to have been at least a generation ahead of his time in his outlook on the history of science. In explanation of the fact that in the 1840's not only did Joule perform his famous experiments on the mechanical equivalent of heat, but many others were concerned with similar inquiries, Reynolds wrote as follows: 'To the locomotive must be attributed the birth of that philosophical interest respecting heat and work which immediately followed its general introduction. The locomotive is obtrusive, it will be seen; by 1842 locomotives had obtruded themselves well over Europe, demanding attention even of philosophers who had previously studied nothing lower than the planets.' In this interpretation of the conditioning of the developing of even theoretical physics by the current technological inventions, Reynolds expresses the essence of the interrelation of science and industry.

The locomotive was not alone in demanding the attention of philosophers. Repeatedly in the history of science we find cases where the path of research has been determined by one or more factors obtruded by society. The past hundred years are replete with examples of the debt that science owes to industry quite as much as the more often proclaimed debt that industry owes to science. Problems and new research tools have often been unconsciously borrowed by the pure scientist from the manufacturer. A casual inspection of a laboratory of modern physics or an astronomical observatory will yield startling evidence to those who look with a fresh eye. Alloys, motors, electrical equipment of all sorts, developed and made possibly only because of commercial demands; photographic plates and developers, the by-product of a large business supported by photographers, amateur and professional, and the moving pictures; radio devices of all sorts, invented and perfected to supply a public demand for entertainment and instruction through a new medium; such is the milieu of the twentieth-century philosopher!

Engineering might be defined as the application of physics to industrial problems. Modern industry is a monument to the effectiveness of such application of pure science to practical matters. The latest atom-smashing machine, the cyclotron, is a monument to the significance of the reverse of this process. It is a triumph of the application of modern electrical engineering to a problem of pure physics.

#### CONSERVATION AND CONSERVATION POLICIES

Adequate consideration cannot be given the problems of true conservation without clear understanding of at least four groups of essentials:

- a) A scientific knowledge of the natural resources and of the environmental setting of the resources. This is obviously of basic importance, as conserva-



- tion policies based upon inadequate scientific information may go wide of the mark.
- b) A comprehensive knowledge of how economic organization operates; and particularly of the factors which hamper its operation.
  - c) The position of technology as an institutional factor; the human significance of our advancing technology can hardly be overemphasized in our rapidly changing industrialized world.
  - d) A clear-cut knowledge of the position of the particular natural resources (or group of resources) in the economy concerned, the rate of depletion or replenishment of the resource, and what continued depletion or replenishment, as the case may be, will mean to the particular economy concerned.

### INDUSTRY IN TEXAS

In recent years there has been a broadening interest in the growth of industry in Texas. In spite of obstacles to be overcome, industry has steadily advanced and is still advancing in the Texas region. In one sense there is clear recognition of the place of Texas in the integration of major regions which comprise the natural economy—the mere size of the Texas region and the stupendousness of its resources necessitate such recognition. On the other hand this integration of the Texas region into the national economy has been sadly neglected as witnessed by the freight-rates situation which everyone admits to be a factor retarding and hampering industrial growth in Texas and the Southwest.

### SOME MAJOR LINES OF TEXAS INDUSTRY

The outstanding importance of the Texas portion of the oil industry is generally recognized. A knowledge of the position the oil industry occupies in the national economy in conjunction with a realization of the high place Texas oil production and oil reserves occupy in the national picture makes for an understanding of the great importance of the oil industry in this State.

Less than a decade ago the chemical industry began to consider in earnest the potentialities of developing chemical industries in Texas and the Southwest. The position of non-metallics as a basis for one group of chemical industries is now a matter of record in the industries already in operation. The original plants have been expanded and new units for the manufacture of other products have been added.

The use of oil refinery gases for making synthetic organic chemicals is well under way, no doubt with still wider developments already in the offing. The vast potentialities of natural gas as a highly important chemical raw material remains virtually untouched.

The winning of metallic magnesium from sea-water and the continued expansion of developments in the Freeport area is an example of what can be done with this resource. The stupendousness of the growth of these operations in the past few months makes it one of the modern wonders of new industry. The Defense Plant Corporation will construct a \$52,000,000 plant in the

Freeport area to extract magnesium from the waters of the Gulf of Mexico; this plant, to be operated by Dow Chemical Company, will produce 72,000,000 pounds of magnesium annually. Dow's first plant at Freeport, having an annual output of 18,000,000 pounds of magnesium has been in operation for some time. Their second plant at Freeport is now nearing completion; it has cost \$8,000,000 and has the same capacity as the first plant. When the new plant gets going, the total magnesium capacity at Freeport will be 108,000,000 pounds annually.

There are other examples of chemical developments but these high-light the progress to date. In consideration of the tremendous potentials, it may be said that so far as the chemical industry in Texas is concerned, the surface has only been scratched.

Developments in the pulp and paper industry in Texas and the Southwest are so generally well known that they need only to be mentioned in this brief summary.

In considering the iron and steel industry still other factors appear on the horizon. Aside from the requirements of the defense effort, and this is recognized as very important, the desirability of a substantial iron and steel industry in Texas from a purely economic standpoint is becoming generally recognized. The economic importance of developing an iron and steel industry is coming to be considered as something much more than merely another industry, important though the latter aspect may be. These considerations can be summed up as follows:

1. Ours is basically an industrial economy, with industry setting the pace through the entire gamut of economic development; at no time has this fact been more important than at the present. Just now actualities count, perhaps critically so, owing to the defense program and all the implications thereto.

2. The backbone of industry today is the iron and steel industry. The rise of a substantial iron and steel industry in any region becomes, in the light of the actualities of what has occurred in the past, an important feature in the economic independence of the region concerned. The rise of a substantial iron and steel industry in a region is of fundamental importance in transforming the economy of that region from a passive or raw materials producing economy—sometimes designated a colonial economy—into an activating economy. An activating economy always rests upon heavy industry, and is characterized by the technique of mass production, which is inherent to heavy industry the world over.

3. Wherever a substantial iron and steel development has taken place in the past century, that iron and steel industry has served as a nucleus for other important industries which gather about—such, for instance, as the electrical industry, the copper refining and fabricating industry, the brass industry, lead and zinc fabricating, machine tools, and the like. For the iron and steel industry is more than the making of pig iron; it includes also a complex series of large enterprises devoted to the manufacture of steel, the ferro-alloy industry, rolling mills, and fabricating plants. Its implications include even more than an integrated iron and steel industry,

for about it cluster especially the various forms of other representatives of heavy industry. This agglomeration aspect of heavy industry is to be seen in the United States in the Pittsburgh region, the Chicago region, and less so in the Birmingham region. At its inception an iron and steel industry may be dependent upon some particular market; as it expands into a substantial industry, it serves to create a new regional market.

#### CONSERVATION: AN ISSUE OF NATIONAL IMPORTANCE

Comprehensive information regarding Conservation based on scientific findings, and objective in point of view, is coming to be considered as one of the vital needs of the times.

Because of the growing importance of scrap iron in the steel industry the following timely article dealing with the problem of scrap metal in general is taken from the November, 1941, issue of the "Industrial Bulletin" of Arthur D. Little, Inc.:

The law of the conservation of matter is one of the classics of natural science, but it takes a junk dealer to put it into commercial operation. Right now both the law and the junk dealer have become unusually important, for much of the defense program depends on the fact that metals once produced are not destroyed; they only become hard to find. The scrap markets, insignificant in this country in 1900, made their first bid for a basic role in the nation's economy during the first World War, which then, as now, saw price ceilings on scrap and urgent campaigns to save waste. Today scrap iron, the most important of the reclaimed materials, is being used at a rate almost twice the peak reached in World War I.

The emphasis on scrap procurement during periods of high industrial demand is based on the fact that scrap supply is difficult to expand. During such periods virgin metal becomes scarce, putting demand upon scrap as the production of primary metal expands. With some important exceptions, scrap is produced when things wear out, a phenomenon which has little relation to the demand for scrap. To expand the supply, scrap that would otherwise have been neglected must be collected, sometimes by heroic measures.

With the aging of the American industrial economy, scrap has come to occupy a more and more important position. In 1933 for the first time, and again in 1934 and 1935, the total value of scrap metal recovered exceeded the value of primary metal output. Although scrap becomes relatively less important as industrial output rises, since mine production is more easily expanded than scrap collection, scrap will contribute almost half the steel, more than one third of the copper, 29 per cent of the zinc and 22 per cent of the aluminum to be used for 1941's unparalleled production. The steel industry, the biggest user of scrap, makes a good share of its own scrap, since only 70 per cent of a steel ingot becomes finished steel.

With proper treatment, scrap can meet almost any of the demands put upon virgin metals. Much of the value of scrap materials is contributed by the grading and preparation they receive from the dealers. The Government's price ceilings for scrap iron and steel have 22 grades, for waste paper 23, and for aluminum 9. The importance of proper preparation is indicated by the fate of the eight to nine million pounds of household aluminum recently gathered. Shipped directly to smelters, much of it contained so much iron as to be fit for no more exalted (although essential) service than that of scavenging oxygen and other gases from molten steel, as manganese does.

In countries whose war effort is at a maximum the ratio of scrap to primary metal is determined strictly by the amount of scrap available. In Germany and its occupied countries, streets and parks have been stripped of fences, war trophies and ornaments made of iron. Copper- and nickel-bearing coins have been called in, and, in Japan, iron manhole covers are being replaced by non-metallic substitutes and bronze bells are being stripped from temples and shrines.

Like mining, scrap collection and treatment face rapidly mounting costs. Development of means to cut these is active. Although loaded with difficulties and still in an experimental stage, perhaps the most interesting in its potentialities, as reported in a recent issue of *Business Week*, is the process being worked on by the Universal Research Corporation of Buffalo, for dumping entire junked automobiles and trucks into a cupola, applying heat and pressure, and at various stages of the "smelting" drawing off the different metals.

Greater demand for metal necessitates reliance on the more difficult sources. Some scrap sources, such as tin cans, are virtually impossible to tap. One hundred pounds of tin cans contain only 1.2 pounds of tin and are so bulky that transportation is expensive. There are, however, in the United States vast amounts of submarginal scrap which can be called into use as the need increases, such as the pound or so of paper (worth less than half a cent) which the average urban family discards each day, the metal in auto wrecking yards in cities and towns far from manufacturing areas, the millions of tons of iron rusting on farms, abandoned mines, oil fields, bridges and industrial plants. With a government-sponsored aluminum collection campaign completed, one for waste paper in progress, and collections for scrap iron, metals, rubber, cotton and wool in the planned stage, this country is waking up to a fact long recognized—that scrap is a major source of raw material.

As to the problem of oil, certain definite trends are beginning to make themselves felt in the general consciousness of people throughout the nation. The following extract is from an article on oil written by Henry E. Rose and published in *The Wall Street Journal* of October 20, 1941.

For the first time in years, the American oil industry is drawing more crude from the ground than is being replaced by the opening up of new, or expansion of older, fields.

This has been caused by the rapid acceleration in production in the past year. The industry has had to meet an abnormal increase in demand resulting from the broadening of defense production, plus British and now Russian requirements.

If the present rate of increase in demand, now running 10 per cent over last year, continues for another year, it will be sufficient to cut the known reserves from an estimated 15 to less than 13 years supply, based on latest reports of the geologists.

To avoid such a depletion, and at the same time to meet all demands for oil products, it will be necessary for the oil industry not only to effect a material increase in exploration and development but also a substantial expansion in refinery equipment.

#### EQUIPMENT WILL BE NEEDED

To bring this about, however, the oil industry will require large supplies of materials and equipment of all kinds. The rub is that most of the needed items already rate high in allocation orders for other phases of the defense program.

If the oil industry can't get what it needs to expand its facilities this next year, there is a bare possibility that an actual petroleum shortage will develop.

Such is the predicament of an industry which a year ago was considered one of the few basic industries in a position to meet every conceivable demand that could be made.

The oil industry is the second largest consumer of steel products, is a major purchaser of chemicals, paints and related items; shipping drums, cans and other containers; machinery, tools and other equipment, automobiles, trucks and parts; coal; animal and vegetable oils; pumping equipment of all types; rubber tires; tank cars and parts; precision instruments and electrical appliances; bricks, cement, lime, etc., and lumber. Close to 500 million dollars is expended annually for these items.

This is aside from drilling equipment, casing for wells and pipelines, and refinery equipment.

#### SITUATION COMPARED WITH 1940

An indication of conditions in the oil industry today as compared with a year ago is given in the accompanying tabulation. Production of crude oil is running 12 per cent higher and refinery

operations are approximately 15 per cent greater than a year ago. The figures are on a daily average basis, except for gasoline production which is on a weekly basis (all in barrels):

	Week Ended		Average all 1940
	Oct. 11, 1941	Oct. 10, 1940	
Crude production .....	4,070,950	3,641,550	3,694,000
Refinery runs .....	4,075,000	3,529,000	3,536,000
Gasoline output .....	13,515,000	11,680,000	11,850,000

From the standpoint of crude oil production, the country might expand another 10 per cent to 15 per cent without serious injury to wells, such as exhausting pressures in natural flowing producers and resorting to pumps, and failing to get maximum recoveries from pools. In other words, production could be lifted to around 4.5 million barrels before difficulties would be encountered.

As of January 1, last, geologists estimated that the reserves of crude oil in the ground were 20 billion barrels which, on the basis of 1940 demand, would be equal to about 15 years' supplies. If, as some economists in the industry estimate, withdrawals in 1942 may amount to as much as 1.5 billion barrels, those reserves would be reduced to less than a 13-year supply. It becomes apparent, hence, that the industry must begin seriously to plan for the future if an adequate supply is to be assured.

During the first six months of this year it is estimated that withdrawals from the ground were almost 100 million barrels in excess of new discoveries and extensions of older pools. Of the 22 oil producing states today there are, at best, only three which could provide the additional crude if it became necessary. These are Texas, Louisiana and California.

Because oil is so important to Texas economy, it will be given special consideration in later articles of this series. The problem of natural gas is of course of vital importance to Texas. Long recognized as "the perfect fuel," it is now becoming apparent that natural gas constitutes a vast reservoir of chemical raw materials which are lost forever when natural gas is burned for fuel or allowed to escape into the atmosphere.

Provision for adequate water supplies, already recognized as a vital problem, is another item that will grow in importance with the expanding of industry in the State. The problem of water has been one of the most persistent throughout the history of Texas. The water supply problem is complex, involving climatic and physiographic conditions, rock outcrops and subsurface regional structural conditions, factors which impede rapid surface run-off, the regimen of streams, flood control, and even in some areas the possible encroachment of salt water.

The impact of the defense effort is making itself felt in agriculture. Problems of soil conservation, together with the conservation of native grasses and forests, will require broader attention and more careful consideration than perhaps at any time in the past.

That new problems confront Texas upon every hand is abundantly evident in the spread of industry in the State and in the Southwest; that Texas agriculture, together with range and timber management, is face to face with the necessity for readjustments of a profound nature is becoming just as evident.

In conclusion, the magnitude of the problems engendered by the changing economy of Texas is of such vast extent and the social and economic implications of these changes are so significant and vital as to challenge Texas leadership on the one hand and on the other to present that leadership with opportunities for substantial progress to be carried out on a stage of immense proportions.

ELMER H. JOHNSON

## Cotton Situation

Cotton consumption in the United States is at the greatest rate in history, and if the rate so far this year is maintained, consumption in the United States will reach an all-time high of 10,800,000 bales, a record by about 1,300,000 bales. It is currently estimated that exports this year will reach about 1,200,000 bales under provisions of the Lease-Lend Act, and the export subsidy provided by the Surplus Commodity Administration. If these predictions come true, the carryover next August will be reduced by about 1,000,000 bales to 11,100,000 bales, which will still be the fourth largest carryover in the United States on record. It becomes more and more evident that foreign markets are essential to stabilize the cotton industry of the South.

The 1941-42 United States cotton crop, because of continuous rainy weather, is of exceptionally low grade. Ginnings to October 31 showed only 10.6 per cent of the crop of strict M. and above compared with 16.6 per cent last year. The staple length averages longer than average, though the staples 1 1/16 inch and longer show a slight decline.

Largely because of the high quality of cotton demanded for many defense purposes, premiums for the longer staples of cotton are much higher than normal, and especially for 1 3/16 inch and longer. Even 1 3/16 inch staple is currently quoted at Carolina mill

points at 1,000 points "on" December N. Y. This length of staple can be grown to advantage in favored places in Texas.

The market price of American cotton in the United States remains about 2.20 cents a pound above its loan value based on eighty-five per cent of parity, and parity is about eighty-five points above the market price. The loan value at Dallas for M. 15/16 is about 14.05 cents; the market price, 16.25 cents; and the parity price, about 17.12 cents.

The price of cotton in the United States is relatively far above foreign growths of cotton in world markets. The price of South Brazilian cotton, which is normally about ninety-seven per cent of the price of M. 7/8 inch American, is only a little over forty per cent of it. The same disparity exists between American and other foreign growths.

The well being of the South demands foreign markets for at least three to five million bales of cotton annually—at least, until more profitable enterprises are available to take its place. It is none too soon for the Nation to lay plans to regain these markets, and the South must take the lead in showing how it can be done constructively.

A. B. Cox.



# The Texas Statistical Council

The Texas Statistical Council held its annual meeting on October 24, 1941, at The University of Texas with Mr. Stuart McGregor, president of the organization, presiding.

The Program Committee composed of Dr. John R. Stockton, Chairman, Mr. L. J. Logan, and Dr. T. R. Hamilton, in cooperation with Mr. Stuart McGregor, President, and Dr. F. A. Buechel, Secretary, arranged the following program.

Mr. W. L. Pier, Vice-President, Fort Worth National Bank, Fort Worth, spoke on "Changing Agricultural Aspects in Texas." Mr. Pier's address was discussed by Mr. Walter W. Cardwell, Manager, Luling Foundation Farm, Luling, and Dr. Fred H. Arnold, Professor of Agricultural Economics, Agricultural and Mechanical College of Texas, College Station.

The work and purposes of the Defense Contract Service of the Office of Production Management were discussed by Mr. Walter E. Dickerson, Deputy Coördinator, Division of Contract Distribution, O. P. M., San Antonio, and Mr. P. E. Locke, Area Manager, also of the San Antonio office.

A joint luncheon meeting of the American Statistical Association and the Texas Statistical Council was held in the Junior Ball Room of the Texas Union and attended by fifty-five members and guests. Dr. Edward L. Dodd, Professor of Pure Mathematics, The University of Texas, was the principal speaker.

Dr. Richard J. Gonzalez, Humble Oil and Refining Company, Houston, spoke on "The Importance of the Petroleum Industry to the Economy of Texas." Dr. Gonzalez' address was discussed by Mr. Harold Vance, Professor of Petroleum Engineering, Agricultural and Mechanical College of Texas, and Mr. L. J. Logan, Associate Editor, The Oil Weekly, Houston.

A round table discussion on an annual census of agriculture for Texas included Mr. T. C. Richardson, Associate Editor, *Farm and Ranch Magazine*, Dallas; Mr. Ralph L. Baker, Turkey Marketing Specialist, Texas Agricultural Experiment Station; Mr. I. H. Lloyd, Statistician, Agricultural and Mechanical College of Texas; Mr. V. C. Childs, U.S. Department of Agriculture, Austin; and Mr. Stuart McGregor, Editor of the Texas Almanac, the *Dallas Morning News*, Dallas.

It was the concensus of opinion that an annual census of agriculture would be of considerable value to both the agricultural and business interests of the State. Mr. Childs suggested that a committee be appointed to work with Mr. Lloyd of the A.A.A., located at A. and M. College, to outline plans for making such a census. The

following committee was named: Mr. I. H. Lloyd, Chairman, Dr. F. A. Buechel, Mr. V. C. Childs, Mr. L. G. Gabbard, Mr. Stuart McGregor, and Mr. T. C. Richardson. Mr. McGregor discussed the practicability of taking an annual agricultural census through the public schools. Several states which already publish an annual census on agriculture have, at Dr. Buechel's request, furnished him with copies of their reports. These bulletins are available to those interested in examining or studying such reports.

The nomination committee consisting of Mr. W. L. Pier, Mr. F. E. Finley, and Dr. F. A. Buechel, placed before the Council the names of Mr. L. J. Logan for President and Mr. V. C. Childs for Vice-President. These officers were unanimously elected.

The following standing committees have been appointed by the president to serve during the coming year:

#### *Membership Committee*

J. V. McGoodwin, Houston, Chairman (Chamber of Commerce)  
T. R. Hamilton, College Station (Professor of Statistics, A. & M. College)  
Harold M. Young, Dallas (Bureau of Foreign and Domestic Commerce, Chamber of Commerce Building)  
Watrous H. Irons, Austin (Professor of Business Administration, The University of Texas)  
Roy D. Parker, San Antonio (W.P.A., Smith-Young Tower)  
W. L. Pier, Fort Worth (Vice-President, The Fort Worth National Bank)  
William Powell, Beaumont (Chamber of Commerce)

#### *Publicity Committee*

Stuart McGregor, Dallas, Chairman (Dallas Morning News)  
Mrs. Clara H. Lewis, Austin (Bureau of Business Research, The University of Texas)  
J. Lowell Lafferty, Fort Worth (Vice-President, The Fort Worth National Bank)  
A. W. Grant, San Antonio (San Antonio Express)

#### *Program Committee*

Morgan H. Rice, Dallas, Chairman (Federal Reserve Bank)  
F. A. Buechel, Austin (Bureau of Business Research, The University of Texas)  
R. J. Gonzalez, Houston (Humble Oil & Refining Company, Box 2180)

#### *Projects Committee*

Elmer H. Johnson, Austin, Chairman (Bureau of Business Research, The University of Texas)  
Glenn D. Scott, Dallas (Chief, Actuarial and Analysis Division, Federal Crop Insurance Corporation, U.S.D.A.)  
George H. Anderson, Dallas (Texas Power and Light Company)

It was voted that the addresses presented at this meeting should be mimeographed and distributed among the members of the Council.

CLARA H. LEWIS, *Assistant Secretary.*

EMPLOYMENT AND PAY ROLLS IN TEXAS

October, 1941

	Estimated Number of Workers Employed*		Percentage Change from		Estimated Amount of Weekly Pay Roll		Percentage Change from	
	September 1941 <sup>(1)</sup>	October 1941 <sup>(2)</sup>	September 1941	October 1940	September 1941 <sup>(3)</sup>	October 1941 <sup>(3)</sup>	September 1941	October 1940
<b>MANUFACTURING</b>								
All Manufacturing Industries	155,852	156,787	+ 0.6	+ 12.6	3,471,556	3,498,697	+ 0.8	+ 28.1
<i>Food Products</i>								
Baking	6,863	6,899	+ 0.5	+ 7.0	157,830	155,350	- 1.6	+ 11.9
Carbonated Beverages	3,360	3,259	- 3.0	+ 11.7	89,007	86,085	- 3.3	+ 26.1
Confectionery	970	1,093	+ 12.7	+ 34.4	9,436	10,546	+ 11.7	+ 30.7
Flour Milling	1,858	1,852	- 0.3	- 0.9	35,167	35,073	- 0.3	+ 1.9
Ice Cream	1,205	1,135	- 5.8	+ 33.6	23,375	22,719	- 2.8	+ 42.4
Meat Packing	5,532	5,606	+ 1.3	+ 26.9	134,360	136,108	+ 1.3	+ 40.2
<i>Textiles</i>								
Cotton Textile Mills	6,941	6,927	- 0.2	+ 14.8	121,712	121,965	+ 0.2	+ 50.4
Men's Work Clothing	4,109	3,902	- 5.0	+ 6.8	54,718	56,187	+ 2.7	+ 38.8
<i>Forest Products</i>								
Furniture	2,333	2,366	+ 1.4	+ 20.2	45,349	48,803	+ 7.6	+ 41.3
Planing Mills	2,596	2,178	- 16.1	+ 3.4	61,881	56,312	- 9.0	+ 28.3
Saw Mills	18,042	17,845	- 1.1	+ 6.5	250,740	244,050	- 2.7	+ 12.5
Paper Boxes	679	707	+ 4.2	+ 25.4	13,787	14,393	+ 4.4	+ 50.3
<i>Printing and Publishing</i>								
Commercial Printing	2,544	2,719	+ 6.9	+ 13.5	58,774	64,378	+ 9.5	+ 22.8
Newspaper Publishing	4,641	4,768	+ 2.7	- 1.7	113,443	115,260	+ 1.6	- 6.1
<i>Chemical Products</i>								
Cotton Oil Mills	3,208	4,399	+ 37.1	+ 3.5	29,136	47,045	+ 61.4	+ 19.3
Petroleum Refining	21,533	21,863	+ 1.5	+ 8.8	804,951	836,436	+ 3.9	+ 26.0
<i>Stone and Clay Products</i>								
Brick and Tile	2,170	2,109	- 2.8	+ 2.6	31,640	30,421	- 3.8	+ 17.6
Cement	1,147	1,186	+ 3.4	+ 22.9	35,414	36,862	+ 4.1	+ 33.7
<i>Iron and Steel Products</i>								
Foundries and Machine Shops	15,496	15,092	- 2.6	+ 35.7	507,346	482,519	- 4.9	+ 54.5
Structural and Ornamental Iron	2,701	2,701	± <sup>(3)</sup>	+ 27.1	58,124	57,821	- 0.5	+ 46.8
<b>NONMANUFACTURING</b>								
Crude Petroleum Production	30,637	30,637	± <sup>(3)</sup>	+ 1.6	1,123,573	1,118,750	- 0.4	+ 16.0
Quarrying	( <sup>(4)</sup> )	( <sup>(4)</sup> )	+ 2.8	+ 36.4	( <sup>(4)</sup> )	( <sup>(4)</sup> )	+ 8.6	+ 75.2
Public Utilities	( <sup>(4)</sup> )	( <sup>(4)</sup> )	- 0.2	+ 11.4	( <sup>(4)</sup> )	( <sup>(4)</sup> )	+ 6.5	+ 22.4
Retail Trade	201,125	201,922	+ 0.4	+ 9.3	3,699,205	3,762,606	+ 1.7	+ 14.3
Wholesale Trade	63,344	65,767	+ 3.8	+ 7.8	1,947,461	2,005,930	+ 3.0	+ 11.1
Dyeing and Cleaning	2,827	2,864	+ 1.3	+ 14.5	44,540	45,340	+ 1.8	+ 30.7
Hotels	15,352	15,825	+ 3.1	+ 5.2	185,744	192,673	+ 3.7	+ 10.4
Power Laundries	12,147	12,437	+ 2.4	+ 24.1	158,331	168,132	+ 6.2	+ 33.6

CHANGES IN EMPLOYMENT AND PAYROLLS IN SELECTED CITIES<sup>(5)</sup>

	Employment		Pay Rolls		Employment		Pay Rolls		
	Percentage Change		Percentage Change		Percentage Change		Percentage Change		
	Sept., 1941	Oct., 1940	Sept., 1941	Oct., 1940	Sept., 1941	Oct., 1940	Sept., 1941	Oct., 1940	
	to	to	to	to	to	to	to	to	
	Oct., 1941	Oct., 1941	Oct., 1941	Oct., 1941	Oct., 1941	Oct., 1941	Oct., 1941	Oct., 1941	
Abilene	+ 5.5	+ 5.4	- 1.3	+ 20.0	Galveston	+ 10.0	- 4.8	+ 3.9	+ 2.5
Amarillo	+ 3.4	+ 14.3	+ 2.5	+ 22.4	Houston	- 1.7	+ 12.4	+ 5.9	+ 27.6
Austin	+ 7.9	+ 12.9	+ 8.9	+ 13.9	Port Arthur	+ 0.2	+ 2.4	+ 2.6	+ 18.9
Beaumont	+ 12.5	+ 69.0	+ 15.6	+ 116.6	San Antonio	+ 0.4	+ 10.0	+ 1.7	+ 20.6
Dallas	+ 3.1	+ 19.7	+ 5.3	+ 32.7	Sherman	- 10.2	+ 7.4	- 25.4	+ 11.0
El Paso	- 0.6	+ 17.9	+ 2.3	+ 29.4	Waco	- 3.2	+ 9.0	- 0.8	+ 24.4
Fort Worth	+ 1.7	+ 19.4	+ 2.6	+ 35.6	Wichita Falls	- 2.9	+ 10.8	+ 2.0	+ 24.1
					STATE	+ 2.2	+ 16.3	+ 5.8	+ 33.3

ESTIMATED NUMBER OF EMPLOYEES IN NONAGRICULTURAL BUSINESS AND GOVERNMENT ESTABLISHMENTS<sup>(6)</sup>

	1940 <sup>(1)</sup>	1941 <sup>(2)</sup>	1940 <sup>(1)</sup>	1941
January	944,000	1,052,000	July	983,000
February	943,000	1,092,000	August	988,000
March	965,000	1,086,000	September	1,009,000
April	963,000	1,097,000	October	1,022,000
May	983,000	1,077,000	November	1,048,000
June	982,000	1,084,000	December	1,084,000

\*Does not include proprietors, firm members, officers of corporations, or other principal executives. Factory employment excludes also office, sales, technical and professional personnel.

(1) Revised.

(2) Subject to revision.

(3) No change.

(4) Not available.

(5) Based on unweighted figures.

(6) Not including self-employed persons, casual workers, or domestic servants, and exclusive of military and maritime personnel. These figures are furnished by the Bureau of Labor Statistics, U.S. Department of Labor.

Prepared from reports from representative Texas establishments to the Bureau of Business Research cooperating with the Bureau of Labor Statistics.

POSTAL RECEIPTS

	October, 1941	October, 1940	September, 1941
Abilene	29,122	20,961	20,954
Amarillo	40,340	37,972	33,600
Austin	86,864	72,875	76,361
Beaumont	34,567	29,830	27,764
Big Spring	8,064	7,462	5,737
Brownsville	8,270	6,752	5,412
Brownwood	14,311	8,226	9,290
Childress	3,149	3,501	2,499
Cleburne	3,877*	†	3,052*
Coleman	3,266	2,565	2,738
Corpus Christi	43,354	34,710	39,006
Corsicana	7,092	6,006	6,577
Dallas	459,204	427,096	427,098
Del Rio	6,222	4,526	3,722
Denison	7,437	6,662	6,475
Denton	10,750	10,025	7,280
El Paso	65,946	51,140	59,336
Fort Worth	185,360	167,117	178,849
Galveston	38,897	34,354	32,229
Gladewater	3,241*	2,687*	†
Graham	2,454	2,566	2,617
Harlingen	7,508	7,422	6,841
Houston	304,381	280,048	268,549
Jacksonville	3,470	3,325	3,268
Kenedy	1,708	1,590	1,277
Kilgore	7,089	6,545	5,437
Longview	11,001	10,880	8,752
Lubbock	24,466	21,696	25,644
Lufkin	5,603*	5,521*	†
McAllen	5,563	5,493	4,374
Marshall	8,141	7,934	6,502
Palestine	6,015	5,893	5,271
Pampa	8,312	7,465	6,677
Paris	6,854	7,290	7,136
Plainview	4,590	4,570	4,313
Port Arthur	16,779	15,133	14,620
San Angelo	15,039	13,200	13,805
San Benito	2,684*	1,244*	†
Sherman	8,759	8,295	7,900
Sweetwater	6,268	6,260	4,912
Temple	7,988	7,552	7,032
Tyler	18,904	18,801	16,121
Waco	39,862	37,019	37,294
Wichita Falls	35,579	27,032	29,267
TOTAL	1,602,945	1,437,789	1,433,282

\*Not included in total.  
†Not available.

Note: Compiled from reports from Texas chambers of commerce to the Bureau of Business Research.

BUILDING PERMITS

	Oct., 1941	Oct., 1940	Sept., 1941
Abilene	104,630	61,391	9,485
Amarillo	237,685	151,276	247,736
Austin	340,042	506,128	433,179
Beaumont	205,977	126,480	148,796
Big Spring	13,080	22,150	10,036
Brownwood	26,580†	†	†
Coleman	4,300	11,250	7,300
Corpus Christi	564,344	449,846	417,353
Corsicana	8,475	5,960	9,900
Dallas	2,778,473	1,160,150	1,120,644
Del Rio	1,705	6,433	12,618
Denton	26,450	41,800	20,850
El Paso	458,124	135,057	145,534
Fort Worth	739,444	514,064	386,250
Galveston	656,482 <sup>(2)</sup>	118,171	132,041
Gladewater	6,950	0	0
Graham	33,413	10,876	2,160
Harlingen	77,245	6,525	43,700
Houston	1,645,065	1,912,352	1,498,866
Jacksonville	10,650	7,130	10,610
Kilgore	17,400*†	78,575†	†
Longview	19,000	20,225	9,020
Lubbock	138,384	431,578	260,133
Lufkin	49,233†	†	37,102†
McAllen	10,238	18,380	13,233
Marshall	26,285	18,024	25,198
Midland	65,200	51,100	49,120
New Braunfels	25,429†	†	7,245†
Palestine	14,982	16,030	56,277
Pampa	17,150	19,300	30,470
Paris	39,375	12,785	27,235
Plainview	400	9,590	4,540
Port Arthur	143,655	102,982	113,860
San Angelo	86,634	93,123	88,124
San Antonio	659,363	388,950*	790,431
Sherman	70,738	24,040	38,418
Sweetwater	29,520	12,070	9,100
Temple	5,200†	†	6,200†
Tyler	146,426	113,420	42,046
Waco	156,812	831,631 <sup>(2)</sup>	159,086
Wichita Falls	160,059*	269,519	250,723
TOTAL	9,696,755	7,679,786	6,624,072

\*Does not include public works.

†Not included in total.

‡Not available.

<sup>(2)</sup>Includes government buildings worth \$512,510.

<sup>(3)</sup>Includes F.H.A. project.

Note: Compiled from reports from Texas chambers of commerce to the Bureau of Business Research.

COTTON BALANCE SHEET FOR THE UNITED STATES AS OF NOVEMBER 1

(In Thousands of Running Bales Except as Noted)

	Carryover Aug. 1	Government		Total	Consumption to Nov. 1	Exports		Balance Nov. 1
		Imports to Nov. 1*	Estimate as of Nov. 1*			Total	Nov. 1	
1932-33	9,682	18	11,947	21,647	1,399	2,194	3,593	18,054
1933-34	8,176	33	13,100	21,309	1,592	2,445	4,037	17,272
1934-35	7,746	30	9,634	17,410	1,237	1,322	2,559	14,851
1935-36	7,138	22	11,141	18,301	1,412	1,440	2,852	15,449
1936-37	5,397	32	12,400	17,829	1,856	1,613	3,469	14,360
1937-38	4,498	22	18,243	22,763	1,729	1,626	3,370	19,408
1938-39	11,533	40	12,137	23,710	1,637	1,054	2,693	21,017
1939-40	13,033	37	11,845	24,915	1,941	1,744	3,685	21,230
1940-41	10,596	30	12,847	23,473	2,064	350	2,414	21,059
1941-42	12,376	109	11,020	23,505	2,703	439	3,142	20,363

\* In 500-pound bales.

The cotton year begins August 1.



## OCTOBER RETAIL SALES OF INDEPENDENT STORES IN TEXAS

TEXAS	Number of Firms Reporting	Percentage Change in Dollar Sales		
		Oct., 1941 from Oct., 1940	Oct., 1941 from Sept., 1941	Year 1941 from Year 1940
TEXAS	1,099	+ 7	- (3)	+ 18
<b>STORES GROUPED BY LINE OF GOODS CARRIED:</b>				
APPAREL	130	+16	-10	+16
Family Clothing Stores	27	+26	+14	+19
Men's and Boys' Clothing Stores	44	+22	+ 8	+14
Shoe Stores	24	+23	- 2	+16
Women's Specialty Shops	35	+10	-22	+16
AUTOMOTIVE*	79	-20	+28	+25
Motor Vehicle Dealers	75	-21	+29	+25
COUNTRY GENERAL	103	+13	- (3)	+14
DEPARTMENT STORES	58	+16	- 6	+15
DRUG STORES	132	+12	+ 1	+10
DRY GOODS AND GENERAL MERCHANDISE	25	+15	+14	+10
FILLING STATIONS	41	+18	- 8	+13
FLORISTS	25	+ 4	+22	+ 4
FOOD*	168	+19	+ 3	+10
Grocery Stores	52	+23	+ 8	+12
Grocery and Meat Stores	109	+16	+ 1	+ 9
FURNITURE AND HOUSEHOLD*	61	- 2	+ 3	+18
Furniture Stores	55	- 1	+ 6	+18
JEWELRY	35	+21	-21	+30
LUMBER, BUILDING, AND HARDWARE*	201	+14	+ 1	+25
Farm Implement Dealers	10	+22	+10	+30
Hardware Stores	66	+24	- 1	+22
Lumber and Building Material Dealers	121	+10	+ 1	+26
RESTAURANTS	26	+37	+10	+13
ALL OTHER STORES	15	+ 1	-21	+11
<b>TEXAS STORES GROUPED ACCORDING TO POPULATION OF CITY:</b>				
All Stores in Cities of—				
Over 100,000 Population	184	+ 6	- 5	+17
50,000-100,000 Population	121	+12	+ (3)	+26
2,500-50,000 Population	518	+ 6	+ 7	+16
Less than 2,500 Population	276	+12	- (3)	+14

\*Group total includes kinds of business other than the classifications listed.

(3) Change of less than .5%.

NOTE: Prepared from reports of independent retail stores to the Bureau of Business Research cooperating with the United States Bureau of the Census.

## OCTOBER, 1941, CARLOAD MOVEMENT OF POULTRY AND EGGS

## Shipments from Texas Stations

Destination*	Cars of Poultry						Cars of Eggs				Shell Egg† Equivalent	
	Dressed			Turkeys	Shell		Frozen		Dried		Oct. 1941	Oct. 1940
	Chickens	Oct. 1941	Oct. 1940		Oct. 1941	Oct. 1940	Oct. 1941	Oct. 1940	Oct. 1941	Oct. 1940		
TOTAL	5	9	4	—	6	30	57	33	75	3	720	120
Intrastate	1	1	0	—	1	3	2	2	11	0	93	7
Interstate	4	8	4	—	5	27	55	31	64	3	627	113

## Receipts at Texas Stations

Origin	Chickens	Turkeys	Shell	Frozen	Dried	Shell Egg† Equivalent						
TOTAL	1	2	1	—	74	27	2	5	10	0	158	37
Intrastate	0	0	0	—	0	1	2	3	10	0	84	7
Interstate	1	2	1	—	74	26	0	2	0	0	74	30

\*The destination above is the first destination as shown by the original waybill. Changes in destination brought about by diversion orders are not shown.

†Powdered eggs and frozen eggs are converted to a shell egg equivalent on the following basis: 1 rail carload of powdered eggs = 8 carloads of shell eggs, and 1 carload of frozen eggs = 2 carloads of shell eggs.

NOTE: These data are furnished to the Agricultural Marketing Service, U.S.D.A., by railroad officials through agents at all stations which originate and receive carload shipments of poultry and eggs. The data are compiled by the Bureau of Business Research.

OCTOBER RETAIL SALES OF INDEPENDENT STORES  
IN TEXAS

	Number of Firms Reporting	Percentage Change in Dollar Sales	
		Oct., 1941 from Oct., 1940	Oct., 1941 from Sept., 1941
TOTAL TEXAS	1,099	+ 7	- 0
TEXAS STORES GROUPED BY PRODUCING AREAS:			
District 1-N	60	- 3	- 8
Amarillo	11	+ 2	- 10
Plainview	10	- 3	- 1
All Others	39	- 6	- 8
District 1-S	25	+ 8	+ 20
District 2	79	+ 29	+ 11
Abilene	11	+ 50	+ 12
Wichita Falls	12	+ 16	- 5
All Others	56	+ 26	+ 18
District 3	37	+ 1	- 3
District 4	254	+ 6	- 4
Dallas	40	+ 4	- 11
Denison	10	+ 9	+ 20
Denton	18	+ 4	+ 6
Fort Worth	38	+ 7	+ 5
Sherman	16	+ 32	- 7
Waco	26	+ 8	- 7
All Others	105	+ 6	+ 8
District 5	116	+ 2	+ 4
Tyler	14	+ 3	+ 1
All Others	102	+ 2	+ 6
District 6	43	+ 7	+ 3
El Paso	29	+ 7	+ 3
All Others	14	+ 14	+ 1
District 7	57	+ 24	+ 2
San Angelo	11	+ 29	- 1
All Others	45	+ 22	+ 4
District 8	192	+ 13	+ 0
Austin	17	+ 5	- 2
Corpus Christi	11	+ 41	+ 14
San Antonio	55	+ 12	- 3
All Others	109	+ 10	+ 6
District 9	134	+ 4	- 2
Beaumont	17	+ 30	+ 3
Galveston	10	+ 17	- 2
Houston	51	+ 3	- 4
Port Arthur	13	- 23	+ 2
All Others	43	+ 5	+ 3
District 10	44	+ 8	- 1
Laredo	12	+ 16	+ 3
All Others	32	+ 0	- 5
District 10-A	58	+ 8	+ 9
Brownsville	19	+ 3	+ 4
All Others	39	+ 12	+ 12

0 Change of less than .5%.

Note: Prepared from reports of independent retail stores to the Bureau of Business Research, cooperating with the U.S. Bureau of the Census.

PURCHASES OF SAVINGS BONDS

	Oct., 1941	Oct., 1940	Year 1941	Year 1940
Abilene	4,613	13,875	†	245,554*
Amarillo	8,457	36,225	256,651	351,000
Austin	16,705	44,006	452,744	591,018
Beaumont	6,919	32,606	290,563	459,724
Big Spring	2,231	8,475	78,056	95,063
Brownsville	11,269	16,275	†	82,407*
Brownwood	5,381	1,369	86,402*	†
Corpus Christi	14,681	9,131	†	†
Dallas	66,244	124,575	1,847,850	2,287,389
Del Rio	1,125	150	†	15,864*
Denison	3,206	7,025	83,776	116,827
Denton	1,715	492	65,777*	†
El Paso	29,438	48,919	†	1,085,083*
Fort Worth	25,369	65,850	768,826	858,972
Galveston	17,344	39,825	458,513	476,025
Gladewater	7,894	3,919	77,450	75,562
Harlingen	7,050	2,925	67,144	50,940
Kenedy	4,688	38	27,488	11,401
Kilgore	2,156	6,788	†	96,208*
Longview	10,575	17,869	277,519	233,420
McAllen	1,969	2,806	78,264	66,526
Marshall	3,806	3,700	138,355	155,775
Palestine	7,219	13,650	†	91,512*
Pampa	7,313	9,581	†	†
Paris	1,969	3,094	69,379	110,956
Plainview	844	3,094	†	51,489*
Port Arthur	12,975	13,313	250,036	266,013
San Angelo	8,531	10,838	†	154,106*
San Benito	506	169	†	37,351*
Sherman	1,388	375	48,417	79,388
Temple	6,450	6,356	†	70,708*
Tyler	85,013	25,931	335,158	254,587
Waco	95,160	18,994	†	560,060*
Wichita Falls	12,881	24,919	233,700	422,684
TOTAL	493,084	621,657	5,839,889	6,963,270

\*Not included in total.

†Not available.

Note: Prepared from reports from Texas chambers of commerce to the Bureau of Business Research.

PERCENTAGE CHANGES IN CONSUMPTION  
OF ELECTRIC POWER

	Oct., 1941 from Oct., 1940	Oct., 1941 from Sept., 1941
Commercial	+ 27.5	- 6.2
Industrial	+ 14.1	- 12.4
Residential	+ 15.5	- 7.2
All Others	+ 12.6	- 3.5
TOTAL	+ 17.6	- 8.9

Prepared from reports of 13 electric power companies to the Bureau of Business Research.

CEMENT

(In Thousands of Barrels)

	Oct. 1941	Oct. 1940	Sept. 1941
Texas Plants			
Production	859	743	930
Shipments	782	784	885
Stocks	825	807	749
United States			
Production	16,688	13,984	16,115
Shipments	17,833	15,824	18,284
Stocks	16,416	18,073	17,563
Capacity Operated	78.6%	63.9%	78.3%

Note: From U.S. Department of Interior, Bureau of Mines.

LUMBER

(In Board Feet)

	October 1941	October 1940	September 1941
Southern Pine Mills:			
Average Weekly Production per unit	312,722	351,865	332,137
Average Weekly Shipments per unit	353,607	444,314	355,373
Average Unfilled Orders per Unit, End of Month	1,238,989	1,186,529	1,490,245

Note: From Southern Pine Association.

## OCTOBER CREDIT RATIOS IN TEXAS DEPARTMENT AND APPAREL STORES

(Expressed in Per Cent)

	Number of Stores Reporting	Ratio of Credit Sales to Net Sales		Ratio of Collections to Outstandings		Ratio of Credit Salaries to Credit Sales	
		1941	1940	1941	1940	1941	1940
All Stores .....	67	64.0	66.8	40.3	40.8	1.0	1.0
Stores Grouped by Cities:							
Abilene .....	3	55.3	56.3	35.2	33.8	1.4	1.8
Austin .....	6	57.5	60.7	49.9	49.0	1.0	1.0
Bryan .....	3	49.5	51.9	37.8	32.6	2.6	3.4
Dallas .....	10	70.7	73.2	40.4	42.4	0.7	0.7
El Paso .....	3	58.4	61.7	36.4	34.5	1.1	0.9
Fort Worth .....	6	63.9	66.8	39.9	37.6	1.1	1.1
Houston .....	8	64.0	65.6	41.0	41.1	1.3	1.4
San Antonio .....	6	54.6	58.8	41.5	45.7	1.7	1.2
Waco .....	5	59.0	63.9	33.1	32.8	1.2	1.1
All Others .....	17	62.5	62.7	42.9	41.8	1.1	1.3
Stores Grouped According to Type of Store:							
Department Stores (Annual Volume Over \$500,000) .....	21	63.9	66.7	41.4	41.3	1.0	1.0
Department Stores (Annual Volume under \$500,000) .....	11	54.7	57.6	39.4	38.6	1.4	1.7
Dry-Goods-Apparel Stores .....	5	61.9	63.7	41.8	41.4	1.5	1.5
Women's Specialty Shops .....	15	66.0	69.1	36.8	39.9	0.5	0.6
Men's Clothing Stores .....	15	65.6	67.3	42.1	40.6	1.2	1.3
Stores Grouped According to Volume of Net Sales During 1940:							
Over \$2,500,000 .....	10	67.0	71.2	41.8	41.8	1.0	0.9
\$2,500,000 down to \$1,000,000 .....	11	59.7	63.9	41.6	44.3	1.0	0.9
\$1,000,000 down to \$500,000 .....	10	60.1	56.2	43.4	41.7	1.0	1.3
\$500,000 down to \$100,000 .....	28	57.5	60.1	40.2	39.1	1.3	1.4
Less than \$100,000 .....	8	50.6	55.9	44.2	40.0	2.4	2.7

NOTE: The ratios shown for each year, in the order in which they appear from left to right are obtained by the following computations: (1) Credit Sales divided by Net Sales. (2) Collections during the month divided by the total accounts unpaid on the first of the month. (3) Salaries of the Credit department divided by credit sales. The data are reported to the Bureau of Business Research by Texas retail stores.

## PETROLEUM

## Daily Average Production

(In Barrels)

	Oct., 1941	Oct., 1940	Sept., 1941
Coastal Texas*	283,740	222,890	281,700
East Central Texas	84,040	73,020	83,900
East Texas	355,470	344,990	351,900
North Texas	104,030	110,830	102,050
Panhandle	79,170	81,930	84,250
Southwest Texas	211,540	215,880	209,350
West Central Texas	31,000	30,120	30,800
West Texas	272,670	228,050	266,200
STATE	1,421,660	1,307,710	1,410,150
UNITED STATES	4,042,450	3,583,630	3,995,700

\*Includes Conroe.

NOTE: From American Petroleum Institute.

See accompanying map showing the oil producing districts of Texas.

Gasoline sales as indicated by taxes collected by the State Comptroller were: September, 1941, 136,311,000 gallons; September, 1940, 119,557,000 gallons; August, 1941, 140,221,000 gallons.





BANKING STATISTICS

(In Millions of Dollars)

	October, 1941		October, 1940		September, 1941	
	Dallas District	United States	Dallas District	United States	Dallas District	United States
DEBITS to individual accounts.....	\$ 1,216	\$44,670	\$ 878	\$34,661	\$ 1,102	\$42,121
Condition of reporting member banks on—	October 29, 1941		October 30, 1940		October 1, 1941	
<b>ASSETS:</b>						
Loans and investments—total.....	660	29,582	560	24,602	644	29,125
Loans—total.....	358	11,203	290	8,909	344	11,024
Commercial, industrial, and agricultural loans.....	245	6,554	193	4,773	255	6,447
Open market paper.....	2	419	2	304	2	397
Loans to brokers and dealers in securities.....	5	531	3	410	3	494
Other loans for purchasing or carrying securities.....	14	431	13	455	14	428
Real estate loans.....	24	1,265	23	1,222	23	1,257
Loans to banks.....	—	37	1	36	1	39
Other loans.....	68	1,966	55	1,709	66	1,962
Treasury Bills.....	40	797	37	736	39	785
Treasury Notes.....	33	2,244	33	1,834	34	2,280
U.S. Bonds.....	122	8,277	95	6,804	117	7,917
Obligations fully guaranteed by U.S. Gov't.....	45	3,330	46	2,627	49	3,319
Other securities.....	61	3,731	59	3,692	61	3,800
Reserve with Federal Reserve Bank.....	169	10,215	142	12,030	164	10,792
Cash in vault.....	15	568	13	526	14	537
Balances with domestic banks.....	291	3,449	283	3,270	301	3,596
Other assets—net.....	32	1,247	31	1,230	31	1,209
<b>LIABILITIES:</b>						
Demand deposits—adjusted.....	609	24,258	506	21,858	593	24,277
Time deposits.....	133	5,440	135	5,349	133	5,429
U.S. Government deposits.....	20	672	32	528	35	599
Inter-bank deposits:						
Domestic banks.....	305	9,357	267	8,707	296	9,669
Foreign banks.....	1	640	1	668	1	624
Borrowings.....	—	2	—	1	—	1
Other liabilities.....	6	796	4	744	5	772
Capital account.....	93	3,896	89	3,803	91	3,888

NOTE: From Federal Reserve Board.

COMMODITY PRICES

TEXAS CHARTERS				Wholesale Prices:			
	Oct., 1941	Oct., 1940	Sept., 1941		Oct., 1941	Oct., 1940	Sept., 1941
Domestic Corporations:				U.S. Bureau of Labor Statistics, (1926=100%).....	92.4	78.7	91.8
Capitalization*.....	\$606	\$1,171	\$411	Farm Prices:			
Number.....	59	94	53	U.S. Dep't of Agriculture (1910- 1914=100%).....	139.0*	99.0	139.0
Classification of new corporations:				U.S. Bureau of Labor Statistics, (1926=100%).....	90.9	66.4	91.0
Banking-Finance.....	1	2	4	Retail Prices:			
Manufacturing.....	8	19	13	Food (U.S. Bureau of Labor Statistics, 1935-39=100%).....	111.6*	96.2	110.7†
Merchandising.....	14	32	5	Department Stores (Fairchild's Publications, Jan. 1931=100%)	106.2	93.6	105.2
Oil.....	7	9	3				
Public Service.....	1	0	6	*Preliminary.			
Real Estate Building.....	14	7	3	†Revised.			
Transportation.....	1	5	1				
All Others.....	13	20	18				
Number capitalized at less than \$5,000.....	28	45	17				
Number capitalized at \$100,000 or more.....	0	2	1				
Foreign Corporations (Number).....	16	24	8				

\*In thousands.

NOTE: Compiled from records of the Secretary of State.

TEXAS COMMERCIAL FAILURES

	Oct., 1941	Oct., 1940	Sept., 1941*
Number.....	13	25	13
Liabilities†.....	\$91	\$585	\$113
Assets†.....	42	358	58
Average Liabilities per Failure†.....	7	23	9

†In thousands.

\*Revised.

NOTE: From Dun and Bradstreet, Inc.



## OCTOBER SHIPMENTS OF LIVE STOCK CONVERTED TO A RAIL-CAR BASIS\*

	Cattle		Calves		Hogs		Sheep		Total	
	1941	1940	1941	1940	1941	1940	1941	1940	1941	1940
Total Interstate Plus Fort Worth†	5,334	7,823	2,049	2,357	569	730	729	1,704	8,681	12,614
Total Intrastate Omitting Fort Worth	1,034	803	220	110	30	22	246	340	1,530	1,275
TOTAL SHIPMENTS	6,368	8,626	2,269	2,467	599	752	975	2,044	10,211	13,889

## TEXAS CAR-LOT\* SHIPMENTS OF LIVE STOCK, JANUARY 1-NOVEMBER 1

	Cattle		Calves		Hogs		Sheep		Total	
	1941	1940	1941	1940	1941	1940	1941	1940	1941	1940
Total Interstate Plus Fort Worth†	35,517	39,112	10,050	11,356	8,248	7,008	8,501	10,801	62,316	68,277
Total Intrastate Omitting Fort Worth	4,481	4,085	1,310	889	168	198	1,047	915	7,006	6,087
TOTAL SHIPMENTS	39,998	43,197	11,360	12,245	8,416	7,206	9,548	11,716	69,322	74,364

\*Rail-car Basis: Cattle, 30 head per car; calves, 60; hogs, 80; and sheep, 250.

†Fort Worth shipments are combined with interstate forwardings in order that the bulk of market disappearance for the month may be shown.

Note: These data are furnished the Agricultural Marketing Service, U.S.D.A. by railway officials through more than 1,500 station agents, representing every live stock shipping point in the State. The data are compiled by the Bureau of Business Research.

ANNOUNCING  
SUPPLEMENT TO 1941 DIRECTORY OF TEXAS  
MANUFACTURERS

A Supplement to the 1941 Directory of Texas Manufacturers has now come from the press and is being sent, free of charge, to all who have purchased a copy of the Directory. Future purchasers will receive both publications when ordering a Directory.

The supplement has a twofold purpose:

1. To bring the list of manufacturing firms of the State as nearly up to date as possible; and
2. To delete from the original directory such firms listed there as were later found to do no manufacturing in the cities

from which they were reported. These firms will be listed in the Wholesale Directory as manufacturers agents, brokers, or otherwise.

The Supplement is arranged in the same form as the main Directory and is complete with firms names and products manufactured. It contains one additional feature—the street address.

The material in the supplement is directly connected with the Directory, and the two publications should be used as a unit.

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