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## FEDERAL FISCAL POLICY AND TAXATION

Prior to the 1930's, except during periods of war, Federal fiscal policy occupied a comparatively narrow place in relation to the economic activity of the nation. It presented a much less difficult problem of determination and solution. The sums involved as budgetary receipts and expenditures were comparatively small considered either from the point of view of the size of the Federal budget, the amount of the Federal debt, the burden of interest cost upon the economy, or the relation of those factors to the national income or the wealth of the nation. Furthermore, the consequences of Federal fiscal policy were, to a much greater extent than is true today, neutral or at least not so significant with respect to decisions and operations in the various fields of economic pursuit.

The effects of the combined forces of several years of the most severe depression, an intensified program of national defense, and our participation in total war, have conspired to confront us with an entirely different situation with respect to the problems of Federal fiscal policy. Now, Federal fiscal policy dominates the economic scene; the manifold ramifications of the problem, which have become extremely complicated, reach out into virtually every segment of the economic system. The consequences of a particular fiscal policy will affect and, in fact, may go far toward actually determining the level of activity in the various economic fields, the achievement of a high or low degree of stability in the nation's economic life, and the character of the country's economic system.

As an aftermath of war and with the cumulative effects of conditions which have prevailed during the last 15 years, many perplexing problems now plague the nation's leaders for solution. These problems, including the attainment of so-called "full employment," the maintenance of very high levels of useful production, stabilization of income payments at a level far above any prewar standard, avoidance of inflation or deflation, attainment of a reasonable degree of economic stability, and determination of the nation's peacetime credit policy, obviously cannot be brought to a sound practical solution without careful consideration being given to the impact of fiscal policy. We cannot approach their solution with an "all other things being equal" attitude.

Until the depression of the 30's the objective of fiscal policy, according to the point of view then generally accepted, was to provide the funds needed to meet the essential and most necessary services of Government. Purposes of social reform and economic control were not considered objectives of fiscal policy. Expenditures were made because of their necessity *per se* and not because of any stimulative effect which they might have had upon the economy or any particular part of it. Principal expenditures included meeting the cost of the Federal debt and providing for debt retirement; providing adequate military, naval, and other policing services; maintaining court, legislative, and executive functions; operating the postal service; undertaking the construction of highways; and an occasional venture, involving comparatively small amounts, into other projects which obviously could not be undertaken profitably by private enterprise.

The severe impact of the depression provided a fertile soil for the growth and development of economic theories which had received, at most, only slight acceptance in earlier, more prosperous years. A new school of economic thought compounded of certain of those theories gained increasing recognition, and its members advanced new views with respect to the objectives of Federal fiscal policy. The central theme of these views is that fiscal policy should be used as an instrument of economic control to lessen or possibly prevent fluctuations in business activity and to secure a high degree of



stability in our economic system at some predetermined desired level. Extremists of this point of view hold the opinion that a central objective of fiscal policy must be compensatory spending and budgetary deficits, not merely as a temporary adjustment but as a more or less continuous adjustment to the total spending, if so-called "full employment" is to be assured.

The middle ground between the position taken by such extremists and by those who still contend for the objectives which were fairly representative of the period prior to the great depression, offers probably a more realistic appraisal of the present-day objectives of Federal fiscal policy. That view of the objectives of fiscal policy gives recognition to the economic developments which occurred during the turbulent years of this generation and which have modified the framework of our economic system. It also acknowledges that fiscal policy properly conceived and timed may have stabilizing influences. Moreover, this concept of the objectives of fiscal policy recognizes the acceptance of a somewhat broader and more realistic view of the place of present-day Government in the sphere of economic activity.

It is not inconsistent to accept this somewhat broader concept of the objectives of fiscal policy and yet insist that the Government should make the strongest effort to hold its expenditures within the limits of its revenue, that it should in every reasonable manner seek to preserve and encourage private enterprise as the dominant characteristic of our economic system, and that it should avoid the use of its fiscal power in competition with private enterprise. On the other hand, acceptance of those qualifying conditions does not preclude the use of Federal fiscal power to encourage the highest levels of production, employment, and income which can be maintained consistently on a stable basis through the efficient operation of our private enterprise system. By implication, this concept of fiscal policy means that when, despite the best efforts of private enterprise supported by favorable Government policies, it becomes impossible to maintain a stable high level of economic activity, the Government may be expected to intervene actively to try to restore, if possible, the desired state of conditions.

The degree of success which can be achieved in accomplishing the desired objectives of Federal fiscal policy depends not only upon the soundness of those objectives but also, in very large measure, upon the skill with which the different elements of the policy are conceived and administered.

There are four major elements of Federal fiscal policy. They are, first, the determination of the amount of expenditures necessary to achieve the objectives of the policy; second, the amount of Government revenue which can be obtained without imposing burdens too restrictive on the economy; third, the amount of net borrowing which will be necessary to supplement revenue to meet the expenditures deemed to be required; and fourth, the management of the Federal debt. Although the importance of each of these elements cannot be minimized, the wartime growth of the national debt and the far-reaching effects of its management give to that element of fiscal policy a dominant position.

Considered perhaps in a narrow sense, management of the national debt means making adequate provision to service the cost of the debt, meeting refunding obligations as they occur, and providing for debt retirement out of current revenue. However, because of the direct effect upon the national debt, the amount and timing of net borrowing must be considered as an element of debt management. In other words, in a broader, more realistic sense, management of the national debt not only involves management with respect to the outstanding debt but also full consideration of factors which will have the effect of increasing the Federal debt. In addition, and certainly a most important factor, management of the Federal debt must include a careful appraisal of its consequences upon the economic system. It is this last factor which makes the debt management so extremely complicated and difficult in the present instance.

Since December 31, 1930, the Federal debt, which had been decreased from the high levels of World War I to approximately \$16 billion, has increased steadily year by year, and during the recent war years, at an average annual rate of more than \$50 billion. On June 30, 1936, after several years of large scale public spending, the national debt was \$33.7 billion. Four years later, on June 30, 1940, when this nation really embarked on its national defense program, the debt amounted to approximately \$43 billion. At the end of 1945, the national debt totaled slightly more than \$278 billion.

The problem of the Federal debt has increased greatly not only as a result of the sheer magnitude of the sums involved but for other reasons. A significant change has occurred in the relative position between Federal and private debt. The character of the ownership of the Federal debt has changed greatly since the early 30's. Federal financing policies during World War II brought about a signifi-



cant change in the composition of the national debt. The much greater annual interest cost on the outstanding Federal debt bears with a different impact upon the economic system.

Whereas in 1930 the Federal debt represented approximately 8 per cent of the total public and private debt of the nation, the proportion has increased to almost 60 per cent at present. This shift in market dominance from private debt securities to securities of the Federal Government has increased tremendously the importance of sound debt management on the part of our Federal administrators.

Likewise, the changes which have occurred in the ownership pattern of the debt have imposed new and heavy obligations upon the Government. In the first place, a substantial part of the savings of many millions of Americans is in the form of Government securities. Over 70 per cent of the earning assets of the nation's banking system is in various issues of Government securities, while the Federal Reserve System, which is the nation's central banking system, holds more than \$23 billion in Governments. Insurance companies, trust funds, and eleemosynary institutions also have invested an increasing proportion of their funds in the securities of the Federal Government, and many business firms have substantial holdings. In a sense, the Government has become the custodian of a tremendous volume of the savings of our people and our institutions. That custodianship carries grave responsibilities and obligations and demands that the management of the national debt and, in fact, the whole fiscal policy of the Government be conceived wisely and carried out with consummate skill.

Largely as a result of policies followed during the war years, the composition of the Federal debt has changed so significantly that it poses additional problems. Whereas at the end of June, 1940, short-term issues in the form of Treasury bills and certificates of indebtedness comprised only 3.5 per cent of the marketable Federal debt, the proportion had increased to 28.5 per cent by September 30, 1945. As a result, refunding requirements during the early postwar years will be large. Policies with respect to refunding, therefore, must occupy an important place in the debt management program. Furthermore, those policies should be consistent with sound fiscal principles in terms of the existing debt management problem and the general economic and financial situation; otherwise, serious consequences may ensue.

Comparison of the computed rate of interest on the interest-bearing Federal debt during the recent war years with the rates which prevailed during earlier periods emphasizes strongly the low interest cost of the Second World War. Whereas World War I was a 4 per cent war, World War II was a 2 per cent war. On August 31, 1919, when the World War I national debt was at its peak, the computed interest rate on approximately \$26 billion of debt was 4.2 per cent. On December 31, 1945, when the World War II debt reached its peak, the computed interest rate on slightly more than \$275 billion of outstanding interest-bearing Government securities was 1.97 per cent.

Despite such favorable wartime financing, the interest charge on the national debt has increased at a faster rate than the increase in the national income, with the consequence that the annual interest charge on the debt now imposes a heavier though not unmanageable burden on the country. The computed annual interest charge on the Federal debt increased from \$1,095 million on June 30, 1940, to approximately \$5,400 million at the end of 1945. That increase in the interest burden is not without real significance. Uncertainty is a characteristic of economic activity. It is possible, therefore, that at some future date the burden of interest cost might be more restrictive upon our economy. This possibility, remote though it may be, is one sound reason why the Federal debt should be retired to the greatest practicable extent as soon as possible, thus reducing the annual interest cost. Also, very large interest charges on the Federal debt raised through the medium of taxation might conceivably distort the distribution of the national income in an undesirable direction.

The interest problem, however, cannot be considered solely from the point of view of the impact of the cost upon the economy, important though that may be. Serious consequences also may result if interest rates are driven down to artificial levels which are obviously too low. The importance of interest rates to certain classes of individuals and to institutional investors cannot be ignored. Also, since interest is in part a payment for risk-taking, rates should be high enough to provide reasonable compensation for the risk element involved in investment ventures; otherwise, the flow of capital may be restricted, with detrimental effects upon the private enterprise system.

Retirement of the Federal debt has already been referred to as an important element of debt management. It has been historically true of our country that periods during which a significant expansion of the Federal debt was experienced have been followed by periods of substantial debt retire-



ment. In the present instance, it should be recognized that the magnitude of the debt militates against the possibility of there being a significantly apparent favorable record in this respect. If we are to be realistic we must reconcile ourselves to the fact that a tremendous Federal debt will persist for many years as an important element of our nation's fiscal problems.

Nevertheless, it can and should be emphatically stated that such rationalization should not be accepted as justification for failing to strive to retire the largest possible amount of the debt. Budget surpluses and their use for redemption of the Federal debt, even though in comparatively small amounts, create a favorable atmosphere for the operation and expansion of private enterprise and are highly desirable at a time when the volume of private spending is so large as to bring about an upward pressure on prices. The anticipation on the part of business enterprisers of a declining tax levy as a result of a smaller debt and interest burden may prove to be a real stimulus to economic activity with a consequent increase in the demand for labor, thus helping to maintain a state of high employment. We should not disregard the fact that the attitude of Government with respect to sound fiscal policy and toward private enterprise can be, oftentimes, almost as significant as the very acts of Government.

If we are willing to recognize that the Government should hold a more important place in the sphere of economic activity than it has in the past, and to accept the view that fiscal policy directed within a framework favorable to private enterprise can have stabilizing economic influences when properly conceived and timed, then we should appraise that policy in the setting of the strong inflationary pressures which exist today as a heritage of the war. It has always been generally acknowledged that inflation, in more or less degree, is the inevitable consequence of war. World War II, though fought by this country under conditions of remarkable economic and financial stability, did not prove to be an exception to that general rule. Wartime financing methods and the huge expenditures of the last five years have left us with the largest volume of potential purchasing power in the country's history at a time when serious shortages of goods persist in a great many lines.

During the war taxation was maintained at comparatively high though not oppressive levels, and individuals and nonbanking institutions purchased large amounts of Government securities. These sources of revenue and borrowed money, however, were not sufficient in amount to provide the Government with the funds needed to meet its essential war and governmental expenditures. Despite the Treasury's policy during the war period of selling the largest possible amount of its securities to nonbanking investors, the cost of the war was so great that it was necessary for the banking system to purchase a large part of the securities. The Federal Reserve System adopted policies designed to enable commercial banks to assist the Treasury in its wartime financing to the extent necessary. Moreover, it was possible to carry out this policy and at the same time maintain low interest rates. Although the inflationary and bank credit-creating characteristics of that policy were fully recognized, the policy followed was considered the most satisfactory alternative in view of all circumstances. Now that the war has ended and the nation is directing its efforts toward peacetime activity, it is only prudent to reconsider our fiscal and related financial policies in their new setting.

It seems obvious that at this time compensatory spending by the Government is neither necessary nor desirable. On the contrary, the expenditures of Government should be restricted to the greatest extent possible to essential or highly necessary purposes. Moreover, at the earliest moment consistent with creating conditions conducive to the expansion of private enterprise, the Federal budget should be balanced and those expenditures of Government which are deemed necessary should be fully covered by the revenues of the Government. In fact, in view of the present inflationary dangers, revenue should be planned to provide a budgetary surplus of funds to the Government to enable a start on debt retirement out of current income as soon as possible. In this respect, there is no intention to over-emphasize the amount of debt retirement that is possible in the next few years or, in fact, for some time to come. However, it cannot be too strongly emphasized that the magnitude of the debt and the comparatively small reductions possible through redemption are not justifiable reasons for an attitude of complacency or for failing to adopt a policy of public debt retirement. Even though the reduction in any given year should be apparently insignificant in amount in terms of the total debt outstanding, such retirement, as matter of policy, would be a move in the direction of sound peacetime finance and would reflect a very healthy attitude on the part of the Government with respect to fiscal policy.

Onerous as taxes are to all of us, our fiscal policy should provide for the maintenance of taxes at a comparatively high level. That level of taxation should be set at a point which will obtain the largest revenue to the Government consistent with achieving the highest degree of economic stability and the



most desirable productive and business output. Pressures for tax reduction which arise merely from a desire for low rates of taxation *per se* should be resisted, regardless of their source. On the other hand, a modification of our tax system may be in order, and possibly tax reductions should be effected in some instances. Pressures for such modifications which may arise because of repressive effects upon some group in our economic system should be promptly and carefully investigated.

One of the most important keys to the solution of our present economic dilemma is the rapid attainment of the highest possible production of goods by our industrial system and the effective distribution of those goods by the various factors in the business system. It is undeniably true that there is a substantial demand for goods of virtually all kinds, and, furthermore, it is adequately supported by the needed purchasing power; only the goods are lacking in the present markets. It is possible that some additional degree of inflation may occur despite our best efforts to control the situation, but we may be sure that that degree, whatever it may be, will be significantly greater and more disruptive in its consequences if we are not successful in launching our private industrial and business system quickly into full productive motion. It is not inconsistent to support a position calling for the maintenance of high and equitable levels of taxation to provide the Government with revenue sufficient to meet its essential or necessary expenditures, and yet urge that tax rates on our productive and distributive enterprises, which in very large measure hold the solution to some of our most difficult problems, not be oppressive or restrictive.

Because of the existence of inflationary pressures and the added problems which would confront the nation if those pressures should prove to be increasingly unmanageable or if additional pressures are created, one of the most difficult aspects of Federal fiscal policy lies in the relationship between Federal debt management and the nation's financial institutions and the creation of purchasing power.

Since 1932 the Government has pursued policies in its fiscal operations which have contributed strongly to the establishment and maintenance of a low interest rate structure. During the war and at times prior thereto the central banking system cooperated actively with the Treasury to assist it in accomplishing its purposes. The present magnitude of the debt and the high interest cost of its service obviously influence the Government to seek to maintain a low rate structure. Also, there are those who believe that a very low rate structure, comparatively speaking, is necessary among other things to assure the attainment of what they call "full employment."

On the other hand, certain other significant facts deserve serious consideration. A plethora of funds, together with access to the services of the central banking system at a very low interest cost, is a circumstance which breeds additional inflationary pressure. Also, the interest rate pattern which has been maintained since early in the war period has made it profitable for commercial banks to seek investment in the longer term Government securities, although an effect of that demand has contributed to forcing down the yield on such securities significantly. A consequence of this development has been a shifting of short term securities into the central banking system and an increase in the holdings of long term securities by the commercial banks, with a consequent expansion in bank credit. The increase in bank credit subsequently contributes to the inflationary pressures as the credit-created savings of individuals flow over into the security markets, real estate and other tangibles. It seems obvious that, in view of the present inflationary trend, Federal fiscal policy should avoid as much as possible the creation of additional inflationary conditions or forces.

These problems of fiscal policy are so far-reaching in their ramifications and are so complex in character it is unlikely that they will be solved by one or a few men, no matter how highly placed those men may be. They challenge the best effort of all intelligent Americans, who actively take a leading part in the operation and policy direction of our business and economic system. We must recognize that we have an important personal interest and part to take in the solution of these problems. We have the responsibility to contribute to their solution to the limit of our ability. No individual is so unimportant, nor is any business so small, as to escape completely the detrimental consequences which will flow from a Federal fiscal policy which is unwisely conceived. On the other hand, all of us must inevitably share in those benefits which will accrue to the nation from a policy soundly conceived and wisely administered. Therefore, we cannot afford to fail to accept to the fullest our responsibility in aiding to reach the best possible solution and to share freely our thinking upon the problems with those responsible for policy formulation.



# Review of Business, Industrial, Agricultural and Financial Conditions

## DISTRICT SUMMARY

The outlook for crops and ranges was improved by general rains during January and February over most of this district, but moisture deficiencies still persist in some areas in the western half of the territory. Recent rains have been especially beneficial to the wheat crop in northwest Texas, where considerable deterioration had resulted from the prolonged period of dry weather. The continuance of mild temperatures, together with better moisture supplies, will be conducive to the early growth of range weeds and grasses which would partially compensate for the shortage of dry feeds. Construction activity is apparently gaining momentum despite the acute shortages of building craftsmen and materials. The value of construction contracts awarded is running far above that of a year ago and substantially higher than in December 1945. Petroleum production in this district increased further in January and February and in the latter month is expected to be nearly as large as in February 1945. Refinery operations have declined somewhat. In view of the reduction of about 350,000 barrels daily in the March allowable for Texas, crude oil production is expected to decline sharply in that month. Buying at retail has continued to exceed expectations. Sales at department and furniture stores during January declined seasonally, but continued to show a wide margin of gain over those of January last year.

## BUSINESS

Consumer buying at department stores in the district continues at an exceptionally high level for this season of the year. January sales at reporting stores were 17 per cent above the large volume in the corresponding month of 1945. This gain was well above the margin of gain registered in December or in the last quarter of 1945. Weekly reports indicate that the margin of gain in February over a year ago may be higher than that in January. Increased supply of certain scarce items that are in heavy demand has contributed to the large volume of sales. Moreover, some stores have apparently resumed the practice of running end-of-season clearance sales, which have brought forth a widespread response and have stimulated sales of merchandise generally.

In January inventories at reporting stores in this district increased 5 per cent and at the end of the month were 9 per cent higher than at the close of January 1945. Despite this overall increase in inventories and the larger receipts of some scarce items, acute shortages still persist in several departments, especially in men's and boys' wear. Inventories in these latter departments on January 31, had declined to a level 38 per cent below those of a year earlier. Low inventories of men's wear were in part the result of the urgent demands of returning servicemen for civilian clothing.

Work stoppages caused by industrial disputes, shortages of materials, and the uncertainties of wage-cost factors continue to hamper all-out peacetime production of consumer durable goods. Despite these difficulties, shipments in December 1945 of such consumer items as refrigerators, sewing machines, vacuum cleaners, electric ranges, and washing machines increased from 10 to 30 per cent over those in November, according to reports of the Civilian Production Administrator. These reports also indicate that it may be possible to attain prewar levels of production of these items by June of this year, provided present obstacles to all-out production are removed shortly.

January sales at furniture stores in this district, although showing a seasonal decline of 23 per cent from the large December volume, were 35 per cent above those in the corresponding month of 1945. Stocks at the end of January stood at 3 per cent

above the December level, and were 3 per cent higher than in January last year. Cash sales during January amounted to 29 per cent of total sales, as compared with 24 per cent in January, 1945.

## AGRICULTURE

The moisture situation in the Eleventh District was generally improved by rains and snows in January and February, but deficiencies persist in many areas. Adequate moisture was reported throughout the eastern section of the district and the Low Rolling Plains of Texas during the third week in February. Heavy snows and light scattered rains over most of the High Plains improved conditions there, and good rains were reported in the Edwards Plateau and parts of southern Texas. Some rain and snow in New Mexico and Arizona improved moisture conditions, but soil moisture in the Trans-Pecos district of western Texas still is inadequate. Cold weather in the commercial vegetable areas retarded the growth of crops. A heavy frost on January 23 reached into many of the Rio Grande districts, but no serious damage occurred.

The large exports of wheat from Oklahoma and Texas during the last half of 1945, together with the feeding of unusual quantities of grain to cattle, have resulted in a sharp decline in stocks. On January 1, 1946, only 22,957,000 bushels were reported for Texas and 22,991,000 bushels for Oklahoma. Stocks in all storage positions in these two states were below those of last year. Interior mills, elevators, and warehouses reported stocks of only 3,610,000 bushels in Texas and 3,852,000 bushels in Oklahoma, as compared with stocks for the corresponding date last year of 10,500,000 and 9,350,000 bushels.

Good growing conditions prevailed in the commercial vegetable areas of Texas during the first part of January, but the general rains and cold weather starting about the middle of the

## WHOLESALE AND RETAIL TRADE STATISTICS

	Number of reporting firms	Percentage change in:			
		Net sales		Stocks †	
		January 1946	December 1945	January 1946	December 1945
<b>Retail trade:</b>					
Department stores:					
Total 11th District.....	48	+17	-45	+ 9	+ 5
Dallas.....	7	+22	-42	+12	+ 6
Corpus Christi.....	4	+ 4	-48	+10	+ 8
Fort Worth.....	4	+ 9	-62	+11	+ 3
Houston.....	7	+19	-46	+14	+15
San Antonio.....	5	+24	-40	+22	+ 4
Shreveport, La.....	3	+ 8	-48	.....	.....
Other cities.....	18	+10	-46	-10	+ 2
Retail furniture:					
Total 11th District.....	51	+35	-23	+ 3	+ 3
Dallas.....	4	+35	-15	- 9	+ 4
Houston.....	8	+42	-16	.....	.....
Port Arthur.....	3	+23	-10	.....	.....
Wichita Falls.....	3	+41	-14	.....	.....
<b>Wholesale trade:*</b>					
Machinery, equipment and supplies.....	3	- 9	+24	.....	.....
Drugs.....	4	+16	+24	+ 8	- 2
Electrical supplies.....	3	+21	+ 9	.....	.....
Groceries.....	22	+20	+24	+14	+ 2
Hardware.....	9	+29	+31	+ 7	-10

\*Compiled by United States Bureau of Census (wholesale figures preliminary).  
†Stocks at end of month.

## INDEXES OF DEPARTMENT STORE SALES AND STOCKS

	Daily average sales—(1935-1939=100)					
	Unadjusted*			Adjusted		
	Jan. 1946	Dec. 1945	Nov. 1945	Jan. 1946	Jan. 1946	Dec. 1945
District.....	248	467	352	211r	306	287
Dallas.....	257	454	357	210	313	287
Houston.....	230	461	334	193	294	290
Stocks—(1935-1939=100)						
	Unadjusted*			Adjusted		
	Jan. 1946	Dec. 1945	Nov. 1945	Jan. 1946	Jan. 1946	Dec. 1945
	District.....	161	169	202	148	179

\*Unadjusted for seasonal variation.  
r-Revised.



month retarded the growth of most crops, interrupted planting, and made harvesting operations difficult and costly. Considerable loss of spinach and cabbage was reported due to the delay in harvest. Moisture is ample in all districts and, with more favorable weather conditions during the first part of February, improved growth has been reported for most crops. Growers' planting intentions indicate a slight increase in acreage of spring and summer Irish potatoes above 1945 plantings and well above the 1935-44 average. The estimated 58,300 acres of onions for harvest in Texas this year is an increase of 2 per cent above the harvested acreage in 1945 but about 5 per cent below the 10-year average harvested acreage. Production of winter carrots on February 1 was estimated at 2,942,000 bushels compared with 3,383,000 last year and the 10-year average production of 1,984,000 bushels. Most of the land for the planting of cantaloupes, watermelons, and cucumbers has been prepared in spite of the unfavorable weather, and planting was under way by mid-February. Shipments of spinach and beets on February 1 were below those reported on the same date last year. Shipments of Texas grapefruit for the season were reported on February 15 to be 11,373 cars compared with 10,718 cars to the same date last season; orange shipments were reported at 2,346 cars compared with 2,516 and mixed citrus at 4,065 cars compared with 4,302.

Excessive soil moisture and cold weather during the latter part of January and the first part of February damaged some old grass in the eastern part of the district, and range and pasture feeds were somewhat limited. Additional moisture and warmer weather were needed in the High Plains and in southwest Texas, but range conditions in both Texas and Oklahoma were reported as average or better. Snow and rain in New Mexico and Arizona improved the soil moisture situation, but range feed is limited and warmer weather is needed to make additional range weeds and grasses. Range conditions in these areas are slightly below average and below those of last year. Small grain pastures throughout the district have supplied little feed, and this condition, together with the acute shortage of grain feeds and concentrates, has necessitated the heavier feeding of hay and roughage. As a result, hay stocks have been rapidly depleted, and locally grown feeds are very short in most areas. Pear burning was active in western Texas, and range cattle were being fed in some south Texas counties.

Cattle and calves were in fair to good condition in Texas and Oklahoma on February 1, but some shrinkage occurred during January, particularly in southeastern Oklahoma, the High Plains, and western Texas, where range feeds were short. The cold, wet weather and the shortage of grains and concentrates which limited feeding operations in these areas also contributed to the decline in weight. The condition of cattle in New Mexico and Arizona was good, although falling below the 20-year average, and little shrinkage was indicated during the month. Sheep are in fairly good condition throughout the district but slightly lower than average, and some improvement was expected with bettered feed prospects from January moisture. Breeding ewes were in good condition, and early lamb prospects were fairly good.

Livestock receipts at Fort Worth underwent a sharp decline during January as a result of the curtailment of marketing operations by strikes between January 15 and January 28. Receipts of cattle, calves, and hogs at San Antonio fell slightly below those of December but were well above January 1945 receipts. The movement of sheep at San Antonio declined sharply, falling more than 40 per cent below receipts for both December and January of last year.

Preliminary figures for 1946 indicate a considerable decline in the number of cattle on feed at the beginning of the year in the Southwest as well as in the United States as a whole. In Texas,

only 115,000 head of cattle and calves were reported on feed on January 1, 1946, compared with 150,000 on the same date last year. Substantial declines from last year were also registered in Oklahoma, New Mexico, and Arizona. The total number of cattle and calves on feed at the beginning of this year in the United States was 4,157,000 head compared with 4,324,000 in 1945. Sheep and lambs on feed in Texas and Oklahoma in 1946 also declined from 200,000 to 150,000 and from 60,000 to 39,000, respectively. In New Mexico the number declined from 58,000 at the beginning of 1945 to 52,000 in 1946, while in Arizona, the only state in the Southwest to register an increase, the number rose from 10,000 head in 1945 to 40,000 head in 1946. The 1946 total for the United States of 6,724,000 head represents a 2 per cent decline from last year.

Mid-January prices received by Texas farmers, as reported by the Department of Agriculture, showed important increases for beef cattle, sheep, and sweet potatoes compared with mid-December prices, and noticeable declines were registered in the prices of Irish potatoes, eggs, and citrus fruits. Prices of other farm commodities remained about constant or showed no significant changes. Prices of oats, rice, cottonseed, and sheep were slightly lower than those reported on the same date last year, while all other farm commodities showed substantial price gains.

FINANCE

The daily average of combined gross demand and time deposits of member banks in this district rose further in January, reaching a new peak of \$5,668,000,000, which was more than \$100,000,000 above the December average and \$1,200,000,000 above that of January 1945. The increases over both the preceding month and the corresponding month last year were about equally divided between reserve city banks and country banks.

The reserve balances of member banks also reached a new high level during the first half of January but declined steadily during the subsequent thirty days. The daily average during the first half of February, amounting to \$739,000,000, was about \$18,000,000 below that of January but was \$132,000,000 above that for February 1945. During January, when reserve balances were at a high level, the daily balances of these banks with correspondents averaged nearly \$900,000,000, which was also a new peak. The required reserves of member banks showed

CASH FARM INCOME

(Thousands of dollars)

	November 1945		Nov. 1945	Total receipts	
	Receipts from Crops	Livestock*		Nov. 1944	Jan. 1 to Nov. 30 1945
Arizona	5,765	6,606	12,371	9,891	118,847
Louisiana	44,714	7,204	51,918	47,908	210,623
New Mexico	4,894	22,377	27,271	19,449	108,836
Oklahoma	22,504	20,619	43,123	51,857	399,917
Texas	82,338	58,440	140,778	156,825	1,082,676
Total	160,215	115,246	275,461	285,930	1,920,899

\*Includes receipts from the sale of livestock and livestock products.

SOURCE: United States Department of Agriculture.

LIVESTOCK RECEIPTS—(Number)

	Fort Worth			San Antonio		
	January 1946	January 1945	December 1945	January 1946	January 1945	December 1945
Cattle	37,879	62,892	64,472	26,494	20,634	27,361
Calves	21,212	39,605	41,776	18,183	22,775	19,540
Hogs	62,785	70,147	96,469	15,500	14,138	19,050
Sheep	50,333	93,963	86,448	13,419	23,952	22,448

COMPARATIVE TOP LIVESTOCK PRICES

(Dollars per hundred weight)

	Fort Worth			San Antonio		
	January 1946	January 1945	December 1945	January 1946	January 1945	December 1945
Beef steers	\$17.35	\$16.00	\$16.50	\$16.00	\$14.00	\$15.75
Stocker steers	14.00	13.00	14.25	16.00	14.25	15.50
Heifers and yearlings	17.25	15.25	16.25	16.00	11.50	12.50
Butcher cows	13.00	12.75	13.25	13.00	11.50	12.50
Calves	15.00	14.25	14.25	14.75	14.00	14.75
Hogs	14.65	14.55	14.65	14.65	14.55	14.65
Lambs	14.00	15.00	14.00	13.25	13.85	13.00



little change from December to January, but excess reserves rose moderately, reflecting the increase in average reserve balances. The average of excess reserves during January, which amounted to \$143,000,000, was close to the three-year peak reached in July 1945.

The return flow of currency from circulation which began in the last week of December continued in substantial volume during January and the first half of February. On February 15, the total circulation of Federal Reserve notes of this bank amounted to \$601,000,000, representing a net decrease of \$26,000,000 since the all-time peak in circulation was reached around the middle of December last year. Total circulation on February 15 was at the lowest level since last August and was only \$54,000,000 above that of February 15, 1945. The decline since mid-December represents the first major reduction in the Federal Reserve note circulation of this bank in six years. The usual heavy month-end demand for currency to meet pay rolls and business settlements was apparently about counterbalanced by receipts of currency from circulation since there was only a very slight increase in circulation during the latter part of January and the early part of February. Although the decline in circulation during the past seven weeks occurred in bills of all denominations except the \$50 and \$100 bills, the major portion of the decline was accounted for by the decrease in the circulation of bills in denominations of \$20 and under.

The deposits in weekly reporting member banks in this district, after reaching a new high level early in January, declined by \$60,000,000 between January 9 and February 13. This decrease was accounted for by the net withdrawal of \$71,000,000 in interbank deposits, which was only partially counterbalanced by a moderate increase in other deposits. To meet the decline in deposits, the reporting banks withdrew \$14,000,000 from their reserves with the Federal Reserve Bank and \$37,000,000 from their balances with correspondent banks and decreased their loans and investments by \$4,500,000.

Although the aggregate loans of these banks declined by \$5,400,000 during the five-week period ending February 13, there was an increase of \$5,900,000 in commercial, industrial, and agricultural loans, \$2,200,000 in real estate loans, and \$4,200,000 in "all other" loans. The principal decrease, aggregating \$17,600,000, occurred in loans to brokers and dealers in securities and to others for security trading. This decrease reflected chiefly the liquidation of loans made to customers during the Victory Loan Drive for the purpose of entering subscriptions to Government securities offered during the drive. Although these loans have declined approximately \$44,000,000 since the close of the Victory Loan Drive, the total of \$162,000,000 on February 13 was still \$88,000,000 higher than at the beginning of the drive and \$107,000,000 above the total on the corresponding date last year.

The investments of weekly reporting member banks, on February 13, were slightly larger than those of five years earlier, but during the period there were substantial changes in the distribution of holdings among the classes of securities. Holdings of Treasury bills were reduced by \$30,000,000 to the lowest level in more than three years, and holdings of Treasury notes declined by approximately \$4,000,000. These decreases, however, were

#### CONDITION OF THE FEDERAL RESERVE BANK

(Thousands of dollars)

	Feb. 15, 1946	Feb. 15, 1945	Jan. 15, 1946
Total cash reserves	\$497,989	\$533,697	\$530,244
Discounts for member banks	None	275	None
Foreign loans on gold	1,440	None	1,410
U. S. Government securities	892,733	669,274	893,791
Total earning assets	894,173	669,549	895,201
Member bank reserve deposits	741,341	608,005	791,348
Federal Reserve Notes in actual circulation	600,979	547,326	610,670

#### CONDITION STATISTICS OF WEEKLY REPORTING MEMBER BANKS

##### IN LEADING CITIES

(Thousands of dollars)

	Feb. 13, 1946	Feb. 14, 1945	Jan. 9, 1946
Total loans and investments	\$2,168,850	\$1,659,374	\$2,173,302
Total loans	661,827	404,517	667,250
Commercial, industrial and agricultural loans	388,485	271,896	382,587
Loans to brokers and dealers in securities	5,461	3,992	6,422
Other loans for purchasing or carrying securities	156,899	52,158	173,541
Real estate loans	31,584	22,485	29,395
Loans to banks	1,343	139	1,447
All other loans	78,055	54,447	73,858
Total investments	1,507,023	1,254,857	1,506,052
U. S. Treasury bills	61,399	65,245	90,956
U. S. Treasury certificates of indebtedness	511,493	316,141	494,432
U. S. Treasury notes	213,231	273,046	216,931
U. S. Government bonds	658,580	540,243	641,923
Obligations guaranteed by United States Gov't.	145	14,201	253
Other securities	62,175	45,981	61,557
Reserves with Federal Reserve Bank	382,972	337,268	396,664
Balances with domestic banks	275,335	215,534	312,151
Demand deposits—adjusted*	1,358,203	1,163,155	1,356,614
Time deposits	290,501	229,588	287,700
United States Government deposits	490,044	255,182	483,766
Interbank deposits	602,960	502,992	673,649
Borrowings from Federal Reserve Bank	None	None	None

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

#### DEBITS TO INDIVIDUAL ACCOUNTS

(Thousands of dollars)

	January 1946	January 1945	Pctg. change over year	December 1945	Pctg. change over month
Abilene	\$ 22,983	\$ 20,988	+10	\$ 24,074	- 5
Amarillo	51,188	47,780	+ 7	50,767	+ 1
Austin	117,692	102,109	+15	74,998	+57
Beaumont	66,814	64,572	+ 3	60,530	+10
Corpus Christi	68,994	57,878	+19	69,676	- 1
Corsicana	9,560	7,082	+35	8,928	+ 7
Dallas	667,516	633,803	+ 5	778,104	-14
El Paso	92,916	71,484	+30	89,716	+ 4
Fort Worth	215,732	227,576	- 5	246,047	-12
Galveston	52,273	45,290	+15	53,371	- 2
Houston	636,236	588,434	+ 8	696,269	- 9
Laredo	13,830	12,391	+12	12,807	+ 3
Lubbock	40,373	38,395	+ 5	36,705	+10
Monroe, La.	26,299	21,869	+20	23,933	+10
Port Arthur	24,564	24,279	+ 1	24,600	- 1
Roswell, N. M.	12,171	9,630	+26	11,767	+ 3
San Angelo	22,541	18,169	+24	20,030	+13
San Antonio	197,287	163,300	+21	201,506	- 2
Shreveport, La.	92,571	96,455	- 4	95,128	- 3
Texarkana*	20,096	22,158	- 9	20,621	- 3
Tucson, Ariz.	42,899	33,090	+30	39,569	+ 8
Tyler	29,704	25,402	+17	32,159	- 8
Waco	39,175	32,165	+22	39,891	- 2
Wichita Falls	39,397	32,425	+22	40,788	- 3
Total—24 cities	\$2,602,863	\$2,396,784	+ 9	\$2,751,944	- 5

\*Includes the figures of two banks in Texarkana, Arkansas, located in the Eighth District.

†Indicates change less than one-half of one per cent.

#### GROSS DEMAND AND TIME DEPOSITS OF MEMBER BANKS

(Average of daily figures—Thousands of dollars)

		Combined total		Reserve city banks		Country banks	
		Gross demand	Time	Gross demand	Time	Gross demand	Time
January 1944		\$3,242,366	\$270,576	\$1,699,310	\$165,973	\$1,543,056	\$104,603
January 1945		4,104,746	345,591	2,099,671	218,338	2,014,075	127,253
September 1945		4,518,798	438,792	2,276,265	281,535	2,242,533	157,257
October 1945		4,562,119	438,196	2,290,933	278,991	2,271,186	159,205
November 1945		4,824,008	444,663	2,441,944	284,172	2,382,064	160,491
December 1945		5,109,360†	451,887	2,634,630	285,371	2,474,730†	166,516
January 1946		5,215,222	452,353	2,681,476	286,583	2,533,746	165,770

r-Revised.

#### SAVINGS DEPOSITS

	Number reporting banks	January 31, 1946		Percentage change in savings deposits from	
		Number of savings depositors	Amount of savings deposits	Jan. 31, 1946	Dec. 31, 1945
Beaumont	3	12,446	\$ 7,667,166	+21.5	+ 1.1
Dallas	8	128,034	67,832,021	+31.6	+ 1.4
El Paso	2	27,901	21,909,649	+40.0	+ 2.7
Fort Worth	3	39,446	30,912,221	+29.9	+ 7
Galveston	4	23,322	19,188,053	+18.8	+ 1.6
Houston	8	93,041	62,972,293	+22.6	+ 4
Lubbock	2	876	1,027,160	+85.8	- 8
Port Arthur	2	5,734	5,346,255	+25.0	+ 1.6
San Antonio	5	35,148	40,963,966	+29.8	+ 9
Shreveport, La.	3	32,766	24,929,314	+29.9	+ 1.3
Waco	3	9,119	8,584,303	+32.6	+ 1.1
Wichita Falls	3	7,138	4,731,579	+17.9	- 1.0
All other	57	59,018	48,064,557	+27.0	+ 1.6
Total	103	473,689	\$344,128,537	+28.1	+ 1.1



about offset by additions to holdings of certificates of indebtedness and United States Government bonds.

On February 16, the Treasury Department announced that the 3 3/4 per cent Treasury bonds of 1946-56, which have been called for redemption on March 15, 1946, and the 1 per cent Treasury notes, due on March 15, 1946, will be redeemed in cash. In announcing an offering of 7/8 per cent Treasury certificates of indebtedness in exchange for the issue maturing March 1, 1946, it was stated that since approximately \$1,000,000,000 of the maturing certificates of indebtedness would be redeemed in cash, exchange subscriptions received from holders of the maturing certificates would be allotted on an equal percentage basis, except that subscriptions in amounts up to \$25,000 would be allotted in full.

INDUSTRY

Current data indicate that the value of construction contracts awarded during January in the district was sustained at a level far above that of a year ago and approximately 50 per cent higher than in December 1945. This conclusion is confirmed by the value of building permits issued during January in sixteen principal cities of this district, which totaled nearly \$25,000,000, or about eight times the value of permits issued in those cities in January last year. Reports indicate that very large gains in activity have taken place in the construction of residential buildings, especially in Texas, and of some types of commercial buildings. A major development relative to the construction industry during recent weeks was the announcement of a Veterans' Housing Program. The goal of this program is the construction of 1,200,000 additional homes this year and 1,500,000 homes during 1947. Of the total units to be added, 1,600,000 would be conventional houses, and 850,000 would represent permanent prefabricated units. The program contemplates vast increases in output of building material with Government subsidies where necessary. It is proposed that "the largest part" of the allocated equipment and material would be channeled into homes selling for not more than \$6,000, or renting for not more than \$50 per month.

On February 11, the Administrator of the Civilian Production Administration announced that regulations would be issued shortly which would drastically curtail industrial and commercial construction, as well as residential building which does not conform to the veterans' program, since the use of scarce building materials would be restricted to approved projects. The announcement also indicated that construction started at this

COTTONSEED AND COTTONSEED PRODUCTS

	Texas		United States	
	August 1 to January 31 This season	Last season	August 1 to January 31 This season	Last season
Cottonseed received at mills (tons).....	601,685	869,032	2,801,547	3,933,951
Cottonseed crushed (tons).....	565,009	587,836	2,385,842	2,694,851
Cottonseed on hand Jan. 31 (tons).....	120,875	312,842	634,053	1,350,856
Production of products:				
Crude oil (thousand lbs.)....	170,290	177,316	741,648	827,865
Cake and meal (tons).....	261,456	277,191	1,052,949	1,234,861
Hulls (tons).....	131,085	137,826	568,742	623,798
Linters (running bales).....	178,602	181,101	720,607	787,192
Stocks on hand January 31:				
Crude oil (thousand lbs.)....	15,755	13,979	51,873	56,174
Cake and meal (tons).....	16,346	21,923	81,072	84,288
Hulls (tons).....	19,302	21,791	51,109	51,035
Linters (running bales).....	23,972	38,008	98,359	122,886

SOURCE: United States Bureau of Census.

DOMESTIC CONSUMPTION AND STOCKS OF COTTON—(Bales)

	January 1946	January 1945	December 1945	August 1 to January 31	
				This season	Last season
Consumption at:					
Texas mills.....	17,825	16,161	13,652	94,988	93,349
United States mills.....	811,368	850,425	651,784	4,407,219	4,870,811
U. S. stocks—end of month:					
In consuming estab'm'ts.....	2,366,336	2,292,765			
Public stg. & compresses.....	9,964,513	12,980,186			

CRUDE OIL PRODUCTION—(Barrels)

	January 1946		Increase or decrease in daily average production from	
	Total production	Daily avg. production	Jan. 1945	Dec. 1945
North Texas.....	7,247,800	233,800	+ 1,950	+ 3,029
West Texas.....	15,184,400	489,819	+ 11,219	+22,766
East Texas.....	14,291,500	461,016	+ 64,463	+19,790
Southwest Texas.....	10,304,600	332,406	+ 9,944	+17,403
Texas Coastal.....	15,421,600	497,471	+ 55,129	+26,663
Total Texas.....	62,449,900	2,014,512	-116,367	+89,641
New Mexico.....	3,049,550	98,373	+ 4,899	+ 578
North Louisiana.....	2,457,600	79,278	+ 10,302	+ 2,839
Total District.....	67,957,050	2,192,163	-110,874	+93,058

SOURCE: Estimated from American Petroleum Institute weekly reports.

BUILDING PERMITS

	January 1946		Percentage change valuation from	
	Number	Valuation	Jan. 1945	Dec. 1945
Abilene.....	91	\$ 526,115	*	+218
Amarillo.....	198	694,490	+358	- 7
Austin.....	468	1,397,612	+751	+ 36
Beaumont.....	223	229,270	+206	+ 45
Corpus Christi.....	195	765,663	+331	+ 94
Dallas.....	1,125	5,602,254	*	- 5
El Paso.....	115	405,756	+304	- 30
Fort Worth.....	579	1,970,305	+446	+ 71
Galveston.....	95	264,468	+397	+157
Houston.....	625	8,065,235	*	- 64
Lubbock.....	209	425,849	+191	- 52
Port Arthur.....	157	291,906	+989	+ 36
San Antonio.....	1,133	2,605,985	+526	- 62
Shreveport, La.....	314	640,995	+188	+259
Waco.....	105	212,346	+471	+ 51
Wichita Falls.....	63	369,390	*	+161
Total.....	5,695	\$24,467,639	+692	- 33

\*Over 1,000 per cent.

VALUE OF CONSTRUCTION CONTRACTS AWARDED

(Thousands of dollars)

	January 1946	January 1945	December 1945
Eleventh District—total.....	\$ 32,897	\$ 15,216	\$ 22,945
Residential.....	9,567	951	6,519
All other.....	23,330	14,265	16,426
United States*—total.....	357,501	140,949	330,685
Residential.....	89,715	19,536	86,134
All other.....	267,786	121,413	244,551

\*37 states east of the Rocky Mountains.

SOURCE: F. W. Dodge Corporation.

VALUE OF CONSTRUCTION CONTRACTS AWARDED

(Thousands of dollars)

	December 1945	December 1944	November 1945	Jan. 1 to Dec. 31 1945	Jan. 1 to Dec. 31 1944
Eleventh District—total... \$	22,945	\$ 29,894	\$ 30,194	\$ 279,041	\$ 178,224
Residential.....	6,519	1,188	3,702	42,609	23,970
All other.....	16,426	28,706	26,492	236,432	154,254
United States*—total.....	330,685	188,481	370,685	3,299,303	1,994,016
Residential.....	86,134	23,902	88,374	563,467	348,443
All other.....	244,551	164,579	281,713	2,735,836	1,645,573

\*37 states east of the Rocky Mountains.

SOURCE: F. W. Dodge Corporation.

PORTLAND CEMENT STATISTICS—TEXAS MILLS

(Thousands of barrels)

Month	Production		Shipments		Stocks (end of month)—	
	1945	1944	1945	1944	1945	1944
January.....	553	430	512	449	1,050	1,116
February.....	465	479	497	470	1,018	1,124
March.....	576	456	598	549	997	1,032
April.....	566	575	572	622	991	984
May.....	651	541	815	512	825	1,014
June.....	661	454	730	579	757	888
July.....	726	530	758	575	724	843
August.....	715	554	715	580	725	857
September... 885	597	774	627	638	907	907
October..... 812	520	790	579	659	848	848
November... 801	523	902	478	558	893	893
December... 831	501	734	385	656	1,010	1,010
Total.....	8,042	6,160	8,397	6,285		

SOURCE: Bureau of Mines.



time is subject to the risk of prolonged delays unless it is sufficiently essential to receive approval under the proposed regulations. It was indicated that it may be necessary to prohibit the completion of some projects already under way.

The Texas cement industry has experienced an upward trend in production during recent months coincident with the expansion in construction activity. In December production of cement in Texas amounted to 831,000 barrels, which was the largest monthly output since July 1943. While December production was only 4 per cent higher than in November, it was 66 per cent above the output in December 1944. Production during 1945, amounting to 8,042,000 barrels, exceeded that of 1944 by 31 per cent, in comparison with a 13 per cent increase at all mills in the United States.

After declining substantially following the termination of the war, consumption of cotton in United States textile mills increased sharply in January, when 811,000 bales were utilized. This amount represented an increase of 24 per cent over that consumed during the preceding month and was only 4 per cent under that used in January 1945. Total consumption during the first half of the 1945-1946 season, amounting to 4,407,000 bales, was 10 per cent less than that during the corresponding period of the preceding season. On January 31, 1946, stocks of cotton in consuming establishments, amounting to 2,366,000 bales, were 3 per cent higher than a year ago, but stocks in public storage and compresses, totaling 9,965,000 bales, were about 23 per cent lower.

Petroleum production in this district increased further in January, the daily average of 2,192,000 barrels being 4 per cent larger than the average in December but 5 per cent under that in January 1945. In other sections of the country, production was maintained at approximately the same rate in January as in December. Production allowables for Texas, which were increased by 98,000 barrels daily during February, were cut by approximately 350,000 barrels daily for March. On the basis of March allowables, the State's production for that month will drop to the lowest level since last fall when the refinery strikes were in progress. The reduction was ordered in view of the accumulation of crude oil stocks and of mounting gasoline inventories.

Although crude oil runs to refinery stills in this district, which averaged 1,391,000 barrels daily in January, declined about 4 per cent from the December average, the demand for southwestern crude oil from other sections of the country was sustained at a high level. The high rate of refinery operations in the United States, which is being maintained in an effort to meet the heavy demands for fuel oil and kerosene, is expanding greatly the supply of gasoline. While the increase is a normal seasonal development, stocks of gasoline on February 16 had risen to 105,000,000 barrels, or only about 4,000,000 barrels under the all-time peak reached in the spring of 1942.

### Trends in Petroleum Production, Proven Reserves, and Drilling Activity 1942-1945, Inclusive

The high level of crude oil production during the war period has created much interest in and concern about its effect upon the proven petroleum reserves in the Eleventh District and in the United States. Crude oil production reached new all-time peaks for three successive years and this district was called upon to furnish a large proportion of the total increase in United States production. The relatively larger expansion of output in

the district resulted chiefly from the huge proven reserves in this area, which permitted marked production increases before reaching maximum efficiency rates, and from the policy of the Petroleum Administration for War in endeavoring to bring the production of the various states into a more equitable relationship with proven reserves during a period in which the Nation's need for petroleum was increasing rapidly. Although production in the Eleventh District increased from about 40 per cent of the National total in 1942 to 48 per cent in 1945, the district still had approximately 60 per cent of total proven reserves in the United States on January 1, 1946, or about the same percentage as four years earlier.

In the face of an unprecedented demand for petroleum and petroleum products, drilling activity was curtailed sharply during 1942 and 1943, when our economy was being geared to full-scale war production. The 40 per cent decline in well completions between 1941 and 1943 reflected such factors as the readjustment in drilling programs, shortages of manpower and materials, and Government conservation regulations. During 1944 and 1945, in recognition of the need for additional petroleum reserves to compensate for the expansion in production and to provide for future contingencies an intensified exploratory program calling for the drilling of an increased number of wildcat wells was put into effect, and in the distribution of equipment and materials, preference was given to the requirements for carrying out that program.

Despite the decline in total well completions in the United States during 1942 and 1943, the number of new fields discovered was larger than in the immediate prewar period. During the 1942-45 period, the yearly average number of new fields discovered increased to 403 as compared with 289 for the 1938-1941 period. As a result of the readjustment in development programs, drilling operations declined by more than 50 per cent in the older, well developed producing areas, such as Illinois and southern Louisiana, and increased in Arkansas, Kentucky and Wyoming. New well completions in the Eleventh District declined from 11,400 in 1941 to 4,756 in 1943 but rose substan-

#### SIGNIFICANT INDICATORS OF PETROLEUM ACTIVITY

Year	UNITED STATES			ELEVENTH DISTRICT		
	Proven Petroleum Reserves—(January 1 of each year)	(Thousands of barrels)		(Thousands of barrels)		
1942	19,589,296			11,936,697		
1943	20,082,793			12,513,304		
1944	20,064,152			12,240,176		
1945	20,453,231			12,223,963		
1946	20,970,011			12,653,853		
	Total Annual Petroleum Production					
	(Thousands of barrels)					
1942	1,386,645			546,730		
1943	1,503,176			655,898		
1944	1,678,421			809,056		
1945	1,710,275			814,974		
	Number of New Wells Completed Annually					
Year	Pro-ductive	Unpro-ductive	Total	Pro-ductive	Unpro-ductive	Total
1942	12,922	5,684	18,606	3,949	1,882	5,831
1943	11,149	5,928	17,077	2,808	1,948	4,756
1944	15,456	6,751	22,207	4,335	2,432	6,767
1945	16,375	7,226	23,601	5,405	2,714	8,119
	Number of Wildcat Wells Completed Annually					
Year	Pro-ductive	Unpro-ductive	Total	Pro-ductive	Unpro-ductive	Total
1942	523	2,643	3,166	220	1,016	1,236
1943	644	2,968	3,612	239	1,108	1,347
1944	805	3,519	4,324	327	1,383	1,710
1945	818	3,519	4,337	321	1,405	1,726
	Number of Drilling Rigs in Operation—(January 1 of each year)					
Year	United States		Eleventh District			
1942	2,797		711			
1943	3,595		1,118			
1944	4,683		1,652			
1945	4,637		1,402			

SOURCE: Bureau of Mines and The Oil Weekly.



tially in the subsequent two years, totaling 8,119 during 1945. The decline was most pronounced in the intensively developed East Texas field. Drilling activity was well sustained in the Texas Gulf Coast region and in New Mexico, with new well completions in the latter state during 1944 and 1945 exceeding those in 1941.

During the 1942-1945 period, exploratory drilling, as measured by the number of wildcat wells completed in the United States, increased each year with total completions rising from 3,166 in 1942 to a record level of 4,337 during 1945. The center of interest in exploratory drilling shifted from area to area during the course of the war period, but well completions were concentrated in the states of Oklahoma, Illinois, Kansas, and Texas, these being the only states in which as many as 300 wildcat wells were drilled during any year of the period. California intensified its search for new oil fields, the number of wildcat completions increasing from 120 in 1941 to 297 during 1945. In the latter year, however, most of the wildcat wells drilled were unproductive. In the Eleventh District exploratory drilling increased throughout the four-year period, and in 1945 wildcat completions totaled 1,726 wells. The greatest number of wildcat wells was drilled in the North Texas district, although the largest number of productive wildcat tests was drilled in the lower Gulf Coast area. In East Texas and in the Panhandle district, exploratory drilling was relatively inactive throughout the period.

The intensive exploratory campaign was disappointing in the sense that relatively few new fields of substantial size were discovered. With the emphasis upon exploration and with the decline in developmental drilling, the percentage of total completions represented by dry holes naturally increased, the ratio of dry holes drilled to total well completions in the United States rising to a yearly average of 29 per cent during the war period from 22 per cent during 1940 and 1941. The following table which gives the amount of new oil discovered for each dry hole or wildcat well drilled, furnishes a measure of the efficiency of the search for new oil.

OIL DISCOVERED IN RELATION TO  
DRY HOLES AND WILDCAT TESTS

	United States		Eleventh District	
	Oil discovered in relation to each		Oil discovered in relation to each	
	Dry hole (barrels)	Wildcat (barrels)	Dry hole (barrels)	Wildcat (barrels)
Annual average, 1939-41 . . . . .	307,100,000	647,100,000	400,700,000	672,800,000*
Average, 1942-45 . . . . .	293,900,000	499,100,000	396,300,000	594,600,000

\*1939 only.

Except in 1943, extensions and new pays in previously discovered fields, combined with revisions in estimates for older fields, added substantially each year to proven reserves, both in this district and in the United States. Total discoveries of the four-year period amounted to 5,779,000,000 barrels, of which 61 per cent, or 3,540,000,000 barrels, were found in the Eleventh Federal Reserve District. When converted to an average annual rate of discovery, these amounts represent declines of 31 per cent and 17 per cent, respectively, from the discovery rate during the three-year period immediately preceding our entry into the war. Although no very large new fields were discovered during the war years, there were a few significant discoveries. Oil was discovered in Florida during 1943, and in Alabama the following year, but the principal new sources found were in other areas. Large amounts of new oil were found in West Texas, the Fullerton field of Andrews County and the Keystone field of

Winkler County being the largest current producers. In Oklahoma, discoveries included the Pauls Valley field and the West Edmond field. The latter has been regarded as one of the most significant discoveries in recent years. Mississippi rose to the rank of tenth state in proven reserves, due primarily to the discovery of the Heidelberg field. Currently, attention is being devoted to Ranglely field, Colorado, which has been termed perhaps the most important discovery during 1945.

As mentioned earlier, production of crude oil reached successive all-time peaks during each of the past three years, the 1945 production for the United States totaling 1,710,275,000 barrels, or an increase of 27 per cent over the average for the 1939-1941 period. Meanwhile, production in this district rose even more rapidly, the 1945 production of 814,974,000 barrels representing a 46 per cent increase over the average for the three prewar years. Despite this unprecedented production, proven reserves of the Nation increased each year, the net gain for the four-year period being more than 1,390,000,000 barrels. The largest excess of new oil found over production occurred during the past year, when the net gain in reserves was estimated to be more than 500,000,000 barrels. Reserves in this district declined in 1943 and 1944 under the impact of curtailed drilling and increased production. Nevertheless, large discoveries during 1942 and 1945 enabled the district to make a net addition of more than 717,000,000 barrels to its proven reserves during the war period. As a result, Eleventh District reserves, which represented 61 per cent of the United States total on January 1, 1942, remained virtually unchanged percentage-wise at the end of 1945. Proven reserves in the United States as of January 1, 1946, were estimated by the *Oil Weekly* to total 20,970,011,000 barrels, 12,653,853,000 of which were within the Eleventh Federal Reserve District. More than 80 per cent of the Nation's reserves are located in four states: Texas having 11,764,296,000 barrels; California, 3,288,977,000 barrels; Louisiana, 1,653,522,000 barrels; and Oklahoma, 931,257,000 barrels.

Despite increases in proven reserves of 717,000,000 barrels in the Eleventh District and of 673,000,000 barrels in the area outside the district, seven states experienced declines in reserves during the four years. In addition to New Mexico, whose reserves declined 95,746,000 barrels from 1942 to 1945, largely because of revision in earlier estimates, the states of Kansas, Oklahoma, Pennsylvania, California, Arkansas, and Ohio sustained losses in proven reserves. Since the majority of fields in some of these states are among the older oil producing areas, increased production and restricted drilling served jointly to reduce remaining reserves. In Texas, estimated reserves showed a net increase of 788,655,000 barrels, or 57 per cent of the Nation's net additions. Net additions to the proven reserves of four other states are estimated by the *Oil Weekly* to be 264,000,000 barrels in Wyoming; 223,000,000 barrels in Louisiana; 214,000,000 barrels in Colorado; and 135,000,000 barrels in Mississippi.

The progress of the war and the effects of its termination influenced developments in the petroleum industry to a large extent during 1945. Nevertheless, a number of additional significant factors might be mentioned. The end of the war brought a sharp decline in the military demand, which was only partially counter-balanced by the expansion in civilian demand. Wells were drilled deeper, as reflected by new depth records in 11 states. A larger number of new gas, oil, and distillate producing sources were found than during any previous year; also, discoveries of 2,227,000,000 barrels were larger than during any year since



1939. Despite the continued shortage of labor and materials, there were 400 more rigs drilling on January 1, 1946, than on the same date four years earlier. The year's outstanding single development was the discovery of the Ranglely field in Colorado, where the widely expanded limits have not yet been defined. This field enabled Colorado to rank next to Texas in exploratory success during 1945. Texas continued to lead in virtually every phase of oil and gas activity, with deep explorations in the West Texas Permian Basin setting the pace for the State and Nation in contributing to crude reserves. North Louisiana had an active and satisfactory year in 1945, the Delhi field developing into one of the Nation's major fields.

By the end of 1945, average daily production per well in the United States had declined to 10.7 barrels, as compared with 11.4 barrels a year earlier. It appears reasonable to assume that a number of wells may be abandoned during the current year, since approximately 70 per cent of the 421,000 producing wells were receiving subsidy payments at the end of 1945, and the reduction or elimination of such payments would likely result in many wells being withdrawn from production.

At the end of 1945, the Eleventh Federal Reserve District had 112,300 producing wells with an average daily output of 19.9 barrels per well. This reflects in part the fact that 85 per cent of the 49,000 flowing wells in the United States were located in the district.

After a period of peak production, the petroleum industry is now experiencing a period of at least temporarily reduced operations. While some new civilian demands have developed during the war period, the over-all requirements are likely to be restricted for a considerable period of time. The *Oil Weekly* estimated that total United States crude oil requirements for 1946 would be close to 4,300,000 barrels daily; that rate, while substantially under the 1945 rate, would represent an increase of 450,000 barrels daily over the 1941 production rate. The consensus in the petroleum industry appears to indicate some decline in the number of wells to be drilled during 1946, with the emphasis being placed upon deeper drilling, which requires larger expenditures and more time per well. However, the trend of recent years toward extensive exploration seems likely to continue.

### ACCUMULATED CRUDE OIL DISCOVERIES UNITED STATES AND ELEVENTH FEDERAL RESERVE DISTRICT

