



BUSINESS REVIEW

SEPTEMBER 1961
Vol. 46, No. 9

THE DISTRIBUTION OF NATURAL GAS

The era when manufactured gas was used to illuminate most city streets and many homes passed long ago with the introduction of other forms of energy to provide light. However, after the discovery of natural gas, many new uses were found; and, as the fuel became readily available to the Nation's densely populated areas, there was rapid development of residential, commercial, and industrial markets. Natural gas is used in the home and by commercial establishments for heating and, in some cases, year-round air conditioning. In addition, many residential appliances utilize this energy source. Industries use natural gas for heating and power in manufacturing processes, and the rapidly advancing petrochemical industry employs natural gas as a basic raw material, as well as an energy source.

The organization of efficient distribution systems has been vital to the establishment and subsequent growth of markets in the Southwest and in the Nation. Usually, natural gas moves from the wellhead through transmission pipelines to distributors, who sell the natural gas to ultimate consumers. This usual pattern of distribution has been modified for a limited number of industrial customers, mainly chemical manufacturers and large generators of electric power. The distribution firms, along with the producers and transporters, play a key role in making natural gas available at prices that are competitive with those for other fuels.

Growth of Natural Gas Markets

Over 200 natural gas distributing firms — most of them privately owned — provided service to 4.1 million southwestern cus-

FEDERAL RESERVE BANK OF DALLAS
DALLAS, TEXAS

AVERAGE ANNUAL RATES OF GROWTH IN NATURAL GAS CUSTOMERS AND SALES, BY TYPE OF MARKET, 1950-59

Five Southwestern States and United States

(Percentage increase)

Type of market	Arizona	Louisiana	New Mexico	Oklahoma	Texas	SOUTH-WEST	United States
CUSTOMERS							
Residential.....	9.8	6.1	7.9	3.3	5.3	5.4	8.8
Commercial.....	7.6	4.2	7.8	2.0	3.4	3.7	8.4
Industrial.....	11.9	2.1	21.3	2.6	13.2	10.0	10.8
All types.....	9.6	6.0	8.0	3.2	5.2	5.4	8.8
SALES							
Residential.....	12.2	9.1	11.3	4.6	8.4	7.9	10.1
Commercial.....	9.8	7.2	7.0	2.5	5.4	5.7	9.4
Industrial.....	6.3	8.3	9.6	1.5	6.9	6.6	7.9
All types.....	7.5	8.4	13.0	3.8	7.0	7.2	8.9

SOURCES: American Gas Association.
Federal Reserve Bank of Dallas.

tomers in 1960, or 1.4 million more than in 1950. During the 1950-59 decade, new southwestern customers were added at a rate of 5 percent annually, but the advance slowed to 4 percent last year. In the Nation, the number of natural gas users totaled 29 million in 1959, rising an average of about 9 percent each year between 1950 and 1959. Almost 1.5 million additional households and commercial and industrial firms in the Nation became buyers of natural gas in 1960.

The growth in the number of natural gas users in the five southwestern states of Arizona, Louisiana, New Mexico, Oklahoma, and Texas lagged behind the annual rate established in the Nation during the decade, primarily because of the extensive utilization of natural gas in the region prior to 1950. About 13 percent of all customers in the Nation at the end of 1960 were southwesterners, compared with 17 percent in 1950. The faster rate of growth in the United States can be attributed to (1) intensive development of existing markets and (2) initial access to heavily populated, highly industrialized markets. In specific areas of the Southwest where population growth and industrial development have expanded sharply, the number of customers has increased significantly.

Natural gas sales (cubic feet) of distributing companies rose to new heights in 1960 in both the Southwest and the Nation. From 1950 to 1959, total natural gas sales in the Nation increased, on the average, 9 percent each year, or at about the same rate as the number of natural gas customers. Sales continued to increase in 1960 but at a rate less than the average during the prior 10 years. The southwestern growth rate in sales from 1950 to 1959 was only slightly lower than the national rate, with the most rapid development being recorded in New Mexico and Louisiana. In the past year, one-fourth of the total national sales were made in the

Southwest; and the average southwestern consumer used almost twice as much gas as the average national customer. The average southwestern customer bought about 20 percent more gas in 1960 than in 1950, while sales per customer in the Nation advanced only slightly.

Aggregate statistics on customers and sales help to identify over-all growth patterns in the natural gas industry at both regional and national levels but do not show the underlying developments in the primary markets for natural gas. For a better description of the many causes associated with the development of the industry, it is advantageous, therefore, to analyze each of the markets served by distributors.

RESIDENTIAL AND COMMERCIAL MARKETS

About 92 percent of all natural gas customers in the United States in 1960 were classified as residential, and another 7 percent, as commercial; yet, both markets accounted for less than one-half of total natural gas sales. Residential sales in the Nation advanced at a slightly higher rate than commercial sales in the 1950's.

The relative importance of residential and commercial customers in the Southwest with respect to the total number of customers was similar to the national pattern, but these groups consumed a significantly smaller portion of all natural gas sold in the area. While the number of households in the five southwestern states increased about 2 percent each year during the 1950's, the number of residential customers advanced at an annual rate of about 5 percent. In 1960, however, residential customers increased at a slightly slower rate. Sales rose sharply in both residential and commercial markets in the area during the 1950's, and the average amount of natural gas consumed by the southwestern residential and commercial customer advanced significantly.

The most rapid rates of growth for residential and commercial markets in the Southwest during the 1950's were in Arizona and New Mexico, where in-migration has resulted in a significant rise in the number of households. Commercial needs also have expanded to accommodate the influx of new inhabitants. However, more than one-half of all residential and commercial customers in the Southwest during 1960 were in Texas, and a similar percentage of total southwestern residential and commercial natural gas sales was made to Texans.

The average commercial firm burned about four times as much natural gas as the average household in the Nation in 1960; yet, characteristics of both markets

are similar, being seasonal in nature. Natural gas is used by the household and the commercial establishment primarily for heating. The American Gas Association reports that two-thirds of the industry's residential customers in 1960 used natural gas for heating units and for other home appliances, while the remaining residential customers utilized the fuel only for the other appliances. In the Southwest, almost all residential customers use natural gas for heating. About 110 million gas appliances were in use in the United States in 1960 (including 44 million heating units), reflecting an increase of 3 million units over the year-earlier total.

Heating fuel demand may be roughly measured by weighting the average number of local heating degree-days (1939-59) by the number of households in a designated area. According to this measure, heating needs in the Southwest have been less than one-half the average for the entire Nation. On the other hand, a typical southwestern household or commercial establishment has consumed only slightly less than a typical national customer, implying that a higher percentage of southwestern residential customers use gas for home heating and that the use of natural gas for other than heating purposes — e.g., air conditioning, clothes drying, etc. — is more prevalent in the five southwestern states than in the Nation.

INDUSTRIAL MARKET

The industrial market for natural gas, unlike the residential and commercial markets, is less affected by temperature changes and more affected by economic conditions and technological advances. Natural gas is

utilized by industrial firms today primarily as fuel or as a feedstock for the preparation of petrochemical products.

Last year, the industrial market used 80 percent of all natural gas sold in the Southwest and about one-half of total national consumption. The number of industrial customers in the Southwest increased almost 10 percent per year from 1950 to 1959, or about twice the rate of gain in the number of residential or commercial users in the area. Significant additions to industrial-customer lists were made in Arizona, New Mexico, and Texas; and these states, together with Louisiana, also recorded significant advances in sales. The variance in Louisiana is explained by the sharp growth in petrochemical operations, which loom large in consumption but rank small in numbers of customers.

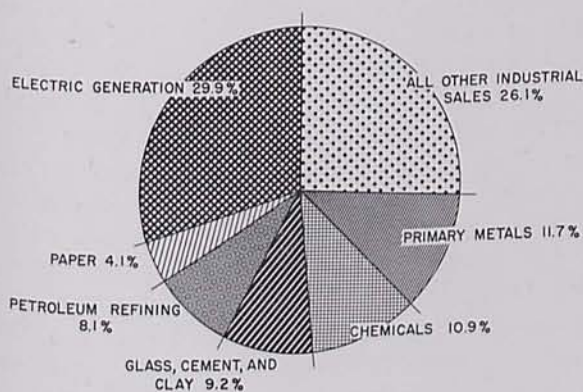
During 1960, the number of industrial customers in the United States advanced 5 percent, exceeding the southwestern increase of 4 percent. The number of industrial customers using natural gas also grew faster in the Nation than in the Southwest during the 1950-59 decade, and this national rate was in excess of those recorded for the national residential and commercial markets. In terms of sales, however, industrial consumption of natural gas in the United States during the 1950's advanced at a slower rate than did the other two major markets for this fuel. These differing rates of gain between sales and the number of industrial customers resulted in a 12-percent reduction in average sales per industrial customer in the Nation between 1950 and 1959.

One of the major factors underlying the national decrease in natural gas sales per customer and the deviation in the annual rates of change between sales and the number of customers is the addition of a significant number of small industrial customers. The fact that a number of major consumer groups accounted for smaller percentages of total industrial sales in 1959 than in 1950 is reflective of the diversification of industrial sales of natural gas.

Historically, electric utilities have been the most important industrial consumer group. About 30 percent of all industrial natural gas sold in the Nation in 1960 was used to generate electric power. In the Southwest, natural gas provides more than nine-tenths of the fuel for generation of electric energy. Also important among the industrial groups consuming natural gas in 1960 were chemical manufacturers, petroleum refineries, and primary metal, cement, paper, food, and fabricated

INDUSTRIAL SALES OF NATURAL GAS BY TYPE OF CONSUMER GROUP

UNITED STATES - 1960



SOURCE: American Gas Association.

metal manufacturers. The most rapid advance among these users was recorded in the chemical industry.

Changes in business activity vitally influenced the industrial sale of natural gas in the United States during the 1950-60 period. Although industrial sales of natural gas rose quickly throughout the period, the most significant advances were made between 1956 and 1959. Reflecting economic conditions, the sales increase was less than the average for the entire period in 1958 and then showed some pickup in 1959. Nevertheless, in 1954, when business activity was at a reduced level, the advance in industrial sales of natural gas was above the rate established for the entire period, mainly because of rapid expansion in petrochemical manufacturing, especially in the Southwest.

The expansion of chemical manufacturing in the Southwest is shown by a 9-percent annual increase in the chemical component of the Texas industrial production index between 1950 and 1959. In addition, a recent release by the United States Tariff Commission indicates that national production of crude products

from petroleum and natural gas for chemical conversion rose about 7 percent during 1960, and sales were valued at around \$650 million. A significant portion of these products was processed in the Southwest from natural gas and its by-products. Thus, expansion of chemical activity has retarded declines in natural gas consumption that would probably have been accentuated by changes in the economic environment.

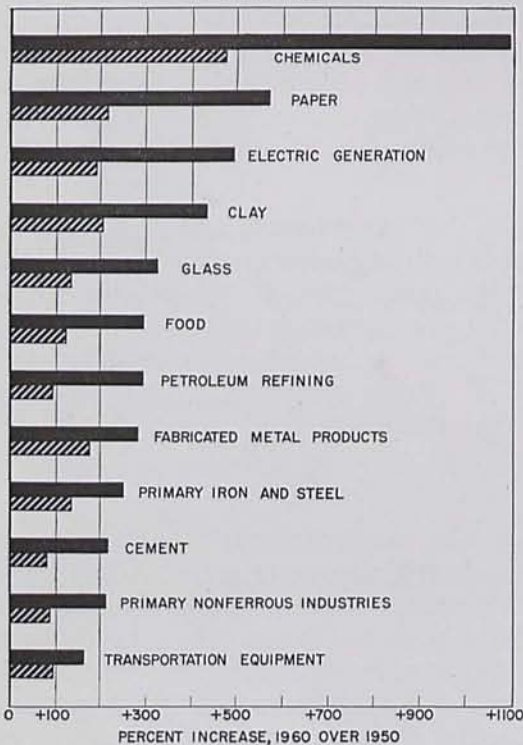
Economic Aspects of Natural Gas Distribution

Differences in the amount of natural gas delivered for each dollar spent by residential, commercial, and industrial customers exist because varying conditions affect cost and demand in the three major markets. For example, industrial customers are generally less expensive to service (per unit of gas volume) than are residential users, as fewer distribution pipelines are required, promotion and customer service costs are considerably smaller, and collection of industrial accounts usually poses fewer problems than obtaining payment from residential accounts. Cost differences among markets and areas also arise because of the variations in equipment needs, delivery volume, and transportation expense. In 1960, as an example, the average southwestern consumer who was located near the gas well received twice as much natural gas for his dollar as did the average user in the Nation.

A second factor causing differences in the amount of natural gas received per dollar expended is demand. The demand for natural gas stems from the consumer's desire to satisfy a basic need, such as temperature control, power for a manufacturing process, or a source of raw materials. Demand is also affected by special conditions, such as stability of consumption or the interruptibility of sales.

Generally, the amount of fuel consumed by residential users fails to vary significantly when individual incomes or natural gas prices change. The initial cost of installing a heating unit or appliance that is driven by a competitive fuel is sufficiently high to prohibit conversion when fuel prices deviate. Automatic temperature controls installed on many heating units often determine the residential demands for fuel, rather than a consumer decision based on either income or fuel price fluctuations. Natural gas distributors have attempted to increase household demand through advertising and other types of promotion. Most of this effort, however, has been directed toward influencing the public to acquire additional natural gas appliances or to substitute gas appliances for those powered by other

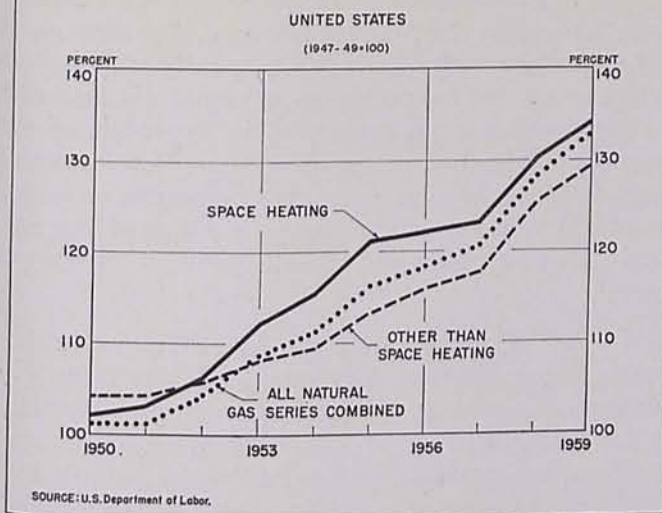
LARGE-VOLUME NATURAL GAS REVENUES AND SALES, BY SELECTED INDUSTRIES
UNITED STATES



SOURCE: American Gas Association.

LEGEND: Revenues (Dollars) Sales (Cubic Feet)

RETAIL PRICE INDEXES FOR GAS



energy sources. Similar factors affect commercial demand for natural gas, although large commercial users usually consider the cost of fuel a vital element in the initial selection of a heating system.

Industrial firms, however, are quite sensitive to fuel costs; a reduction in the price of a fuel to an industrial group could result in a significant rise in the utilization of that type of fuel. Suppliers of energy recognize these demand influences, as well as the possibility of a better-balanced load factor, and usually provide more energy for an equivalent payment to industrial users than to commercial and residential customers. By servicing large-volume accounts, however, the distributor can construct and operate larger and more efficient plants, allocate the overhead burden among all customers (including the large users), and service the smaller accounts more economically than would otherwise be possible.

Local or state regulatory authorities have been established, and the general practice of price regulation applies to natural gas distributors, as well as various other utilities. The philosophy of regulation involves the protection of consumer interest by permitting only a reasonable price, yet a price high enough to provide incentive for the distribution firm to sustain adequate energy supplies.

In 1960 the average industrial user in the Southwest received about four times as much natural gas for his dollar as did the average residential user. The amount of fuel received per dollar also varied among the industrial groups. Petroleum refineries and generators of

electricity received more natural gas per dollar than the other major industrial consumer groups.

Price changes generally reflect shifts in demand conditions in the markets for natural gas and in the costs of production, transmission, and distribution. The national retail price index of gas used for heating advanced from 101.6 in 1950 (1947-49 = 100) to 134.3 in 1959, showing an increase of 32 percent. The similar retail price index of gas used for other than heating purposes rose 24 percent during the same period. Between 1955 and 1959, prices of gas used for electric generation rose significantly in both the Southwest and the Nation.

Revenue derived by distributing companies in the Nation from the sale of natural gas totaled \$5.3 billion during 1960, compared with \$4.7 billion in 1959, according to the American Gas Association. About 13 percent of the total revenue for 1960 was earned in the five southwestern states. Revenue from industrial sales contributed about one-half of the total revenue earned by natural gas utilities in the Southwest, with a large portion of the remaining 50 percent being accounted for by residential sales. In the Nation, slightly less than 30 percent of all natural gas company revenue was derived from industrial customers.

Natural gas revenues in the Southwest and in the Nation grew at a more rapid rate from 1950 to 1959 than did sales (cubic feet) or the number of customers. Total revenue in the Southwest advanced 12 percent annually during the decade. The amount of revenue per customer rose more rapidly in the Southwest than in the Nation from 1950 to 1960, probably because of the lower natural gas prices charged by distributors in this region and the prominence of large industrial sales; nevertheless, revenues received by the distributing companies in 1960 from the average southwestern customer in each type of natural gas market remained less than comparable revenues at the national level.

AVERAGE ANNUAL RATES OF GROWTH IN NATURAL GAS REVENUES, BY TYPE OF MARKET, 1950-59

Five Southwestern States and United States

(Percentage increase)

Type of market	Arizona	Louisiana	New Mexico	Oklahoma	Texas	SOUTH-WEST	United States
Residential.....	14.6	10.4	11.5	9.5	10.4	10.6	14.7
Commercial.....	13.5	8.0	9.2	7.7	8.0	8.5	14.6
Industrial.....	10.7	15.8	14.0	6.6	14.4	13.7	14.0
All types.....	12.5	13.7	14.0	9.0	12.1	12.1	14.6

SOURCES: American Gas Association.
Federal Reserve Bank of Dallas.

According to industry reports, total operating expenses of natural gas distributing companies in the Nation advanced from 67 percent of total operating revenue in 1950 to 69 percent in 1959; net income, exclusive of depreciation, declined from 11 percent to 9 percent during the 1950's. A relative increase was recorded for interest on long-term debt, but the percentage of total operating revenue paid to preferred and common stockholders was reduced.

Outlook

The outlook for natural gas customers, sales, and revenues in the Southwest continues favorable. Unless drastic price increases occur, natural gas should be able to compete effectively with other fuels for energy markets in the area. Continued industrial diversification in the Southwest should enhance industrial sales, and further expansion of petrochemical capacity will intensify industrial use of the resource. Rapid in-migration in certain parts of the region should increase commercial, as well as residential, sales of natural gas; and its greater utilization for air conditioning by both residential and commercial users should aid in balancing seasonal demands.

A more moderate rate of expansion in natural gas customers, sales, and revenues is expected in the Nation, partly because most areas have already been reached by the industry. Industry projections indicate

that, compared with the recent past, natural gas sales (cubic feet) should record a more favorable rate of gain than either customers or revenues. The most rapid growth in natural gas sales is anticipated for the industrial market, with expectations of significant increases in petrochemical purchases and an expansion in the number of firms consuming natural gas. New industrial uses are being sought, including evaporative processes to obtain fresh water from the sea, smelting of iron ore, and the construction of fuel cells powered by natural gas.

In view of the continued growth anticipated in natural gas consumption, distribution facilities likely will expand. The industry expects that distribution pipelines could increase to about 550,000 miles by 1970 and construction expenditures for distribution facilities and underground storage may total about \$13 billion between 1959 and 1970.

The prospects of all three segments of the natural gas industry — production, transmission, and distribution — are interrelated. Most of the factors dominating the current natural gas picture in the Southwest and in the Nation reflect over-all optimism. In summary, it seems reasonable to expect continued expansion in the distribution element, as well as in the other two segments, of the industry.

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This is the last in a series of articles about the three sectors of the natural gas industry — production, transmission, and distribution. Additional copies may be obtained by addressing a request to:

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BUSINESS REVIEW

BUSINESS, AGRICULTURAL, AND FINANCIAL CONDITIONS



The Texas industrial production index set a new record of 177 in July, as substantial output increases were registered for total manufactures and mining.

Nonfarm employment in the Eleventh District states declined to an estimated 4,481,500 during the month, mainly as a result of a seasonal reduction in government employment. Unemployment in Texas decreased to 217,200, or 5.8 percent of the State's civilian labor force.

June construction contracts in the District states totaled \$410 million, which is considerably above both a month earlier and a year earlier. Cumulative contracts during the first half of this year were 4 percent above January-June 1960.

District department store sales rose contraseasonally in July, registering a 2-percent gain over June, and showed a 1-percent increase over July 1960. Department store inventories at the end of July were above June but were approximately 4 percent lower than at the end of July last year.



Retail sales at department stores in the Eleventh Federal Reserve District in July rose contraseasonally to register a 2-percent gain over the June total and were

1 percent more than in July 1960. The adjusted index of sales, which makes allowances for differences in the number of trading days and seasonal variations, rose from 162 percent of the 1947-49 average in June to 178 in July, compared with 175 in July last year.

According to the combined experience of a group of representative District department stores, moderate to substantial year-to-year gains were recorded for July sales of wearing apparel and furniture. On the other hand, lower sales were noted for certain major household appliances, particularly air-conditioning units, laundry equipment, and mechanical refrigerators. Total

New passenger automobile registrations in July in four major Texas markets combined declined 8 percent from June but were the same as a year earlier. In the first 7 months of this year, registrations trailed the same period in 1960 by 16 percent.

Hot, dry August weather hastened maturity of crops in most sections of the District. Cotton output in the District states is indicated to be slightly above the 1960 crop, and prospects for other crops are generally favorable. Forage conditions are unusually favorable in some sections of the District, and livestock remain in good condition.

Daily average crude oil production in the District and crude runs to refinery stills advanced in early August, after declining in July. Drilling activity in the District showed mixed trends in July.

In the 4 weeks ended August 16, loans, investments, and deposits expanded at the District's weekly reporting member banks. Member bank reserves improved somewhat in the 4 weeks ended August 2 and remained comfortable.

department store sales were above a year ago in early August, showing gains of 1 percent in the week ended August 5 and 2 percent in the week ended August 12. However, cumulated sales for the year through August 12 were 1 percent below the corresponding period in 1960.

DEPARTMENT STORE SALES

(Percentage change in retail value)

Area	July 1961 from		7 months, 1961 from 1960
	June 1961	July 1960	
Total Eleventh District.....	2	1	-1
Corpus Christi.....	2	-8	-8
Dallas.....	-1	-1	-1
El Paso.....	-12	-4	-6
Fort Worth.....	2	5	-2
Houston.....	10	5	2
San Antonio.....	4	5	2
Shreveport, La.....	-4	2	2
Waco.....	-4	5	-1
Other cities.....	0	0	-1

INDEXES OF DEPARTMENT STORE SALES AND STOCKS

Eleventh Federal Reserve District

(1947-49 = 100)

Date	SALES (Daily average)		STOCKS (End of month)	
	Unadjusted	Seasonally adjusted	Unadjusted	Seasonally adjusted
1960: July.....	156	175	180	190
1961: May.....	160	160	177	178
June.....	149	162	167	180
July.....	158	178	173p	182p

p — Preliminary.

The adjusted index of District department store inventories for July, at 182 percent of the 1947-49 average, was 2 points above June but 8 points lower than in July 1960. Orders outstanding for merchandise at the end of July, on the basis of selling prices, were 2 percent less than at the same time a year earlier. However, new orders placed during the month were 10 percent more than in July last year.

New passenger automobile registrations in the four major Texas markets combined declined 8 percent from June to July and were virtually unchanged from July 1960. Experiences in the individual markets were mixed. The Dallas market showed decreases of 17 percent from June and 11 percent from July last year. Houston registrations, although declining 9 percent from June, were 3 percent above a year ago. New car registrations in Fort Worth and San Antonio in July rose 4 percent and 9 percent, respectively, over June and were 5 percent and 12 percent above July 1960. Total registrations in the four markets in the first 7 months of this year trailed the same period last year by 16 percent.



Crops matured rapidly throughout most of the District during August as a result of the generally hot, dry weather. Cotton is opening in the Blacklands as far

north as the Red River, and irrigation wells are being utilized almost constantly in western irrigated areas to replenish the moisture for maturing cotton and grain sorghum crops. Shower activity has delayed harvesting and plowing in some areas along the Texas Gulf Coast.

Showers and locally heavy rains have delayed cotton harvest in the Lower Valley and coastal areas; but harvesting is more than three-fourths complete in these sections. Hot weather is rapidly maturing bolls in the Blacklands, and first bales have been ginned in most counties. Root rot has appeared in many fields and will reduce prospective yields. On the High Plains, cotton

is setting a good crop of bolls, and insect damage remains light. Cotton production in the Nation, as of August 1, is indicated at 13,918,000 bales, or 2 percent below last year's crop. In the District states, output is placed at 6,555,000 bales, or 2 percent above 1960. Indicated production decreases in Arizona, Oklahoma, and Louisiana are more than offset by increases in New Mexico and Texas. Texas production is placed at 4.6 million bales, or 6 percent above the 1960 outturn; decreases are indicated for the Red Bed Plains, Western Cross Timbers, East Texas Timbered Plains, and Southern Texas Prairies.

About one-third of the sorghum crop has been harvested. Showers have delayed combining in coastal areas, and high-moisture content of the grain has checked harvesting in much of the Blacklands. In western areas, combining has begun in a few fields in the Southern High Plains, and the crop is well advanced as far north as Amarillo. Output of grain sorghums in the District states is placed at 251 million bushels, which is 16 percent below last year but is significantly greater than the 1950-59 average. The decrease from last year reflects diversion of grain sorghum acreage under the 1961 feed grain program.

Corn harvesting made slow progress during early August, but the crop matured rapidly in the latter part of the month. Harvesting of peanuts is continuing, and combining of early rice varieties is under way in coastal sections. Prospective production of peanuts in the District states is 5 percent below output in 1960, but that for rice is 5 percent above last year's outturn. The pecan crop is indicated to be 6 percent smaller than

CROP PRODUCTION

(In thousands of bushels)

Crop	TEXAS			FIVE SOUTHWESTERN STATES ¹		
	1961, estimated August 1	1960	Average 1950-59	1961, estimated August 1	1960	Average 1950-59
Cotton ²	4,600	4,346	3,910	6,555	6,445	5,894
Corn.....	25,326	27,522	38,502	40,072	44,456	61,366
Winter wheat....	86,856	78,826	32,891	208,042	206,434	104,031
Oats.....	26,190	24,492	26,202	43,600	39,623	42,034
Barley.....	9,528	9,518	3,549	39,706	37,184	18,239
Rye.....	368	310	240	1,103	1,285	933
Rice ³	13,657	12,927	13,331	27,397	26,209	25,846
Sorghum grain....	222,894	258,552	149,134	251,407	297,623	171,361
Flaxseed.....	1,610	1,112	501	1,610	1,135	580
Hay ⁴	2,306	2,166	1,821	6,741	6,631	5,408
Peanuts ⁵	222,300	223,725	173,368	374,100	392,161	278,320
Irish potatoes ⁶ ..	2,738	2,465	1,662	6,314	5,572	3,817
Sweet potatoes ⁶ ..	1,190	1,200	1,246	4,501	4,531	6,307
Pecans ⁶	42,000	31,000	32,270	89,700	95,000	69,333

¹ Arizona, Louisiana, New Mexico, Oklahoma, and Texas.

² In thousands of bales.

³ In thousands of bags containing 100 pounds each.

⁴ In thousands of tons.

⁵ In thousands of pounds.

⁶ In thousands of hundredweight.

SOURCE: United States Department of Agriculture.

1960 production. The principal activity in commercial vegetable areas is the harvesting of cantaloupes, carrots, potatoes, and watermelons.

Despite the hot, dry August weather, the favorable moisture during July has resulted in the best forage conditions in several years in many parts of the District. The principal exceptions to the generally favorable forage situation are sections in southern New Mexico and in Arizona. Livestock are in good to excellent condition throughout most of the District.



During the 4 weeks ended August 9, loans and demand deposits declined at the Nation's weekly reporting member banks. On the other hand, investments

rose substantially, reflecting the banks' participation in recent Treasury financing operations, and time deposits continued to expand. The money market was easy in the first 2 weeks of the period but firmed somewhat in early August. The rate on Federal funds was generally 1 percent or below during the 2 weeks ended July 26 but ranged between 1¼ percent and 3 percent the remainder of the period.

The market for Government securities displayed a firm tone in the 2 weeks ended July 26, as developments were dominated by the August 1 Treasury refinancing. In the latter part of the 4-week period, however, the market weakened somewhat because of domestic and international developments. The auction rate on 91-day Treasury bills, which had fallen from 2.322 percent on July 13 to 2.200 percent on July 20, rose to 2.366 percent on August 10, and price declines of a point or more were common for long-term Government securities.

Loans, investments, and deposits advanced at the weekly reporting member banks in the Eleventh Federal Reserve District during the 4 weeks ended August 16. Cash accounts and total assets also moved to higher levels.

Gross loans (excluding interbank loans) rose \$44.4 million at the weekly reporting banks in the District, primarily reflecting increases in commercial and industrial loans and loans for purchasing or carrying securities. The principal decreases occurred in "loans to other financial institutions" and consumer-type loans. The expansion in commercial and industrial loans was broadly based, with increases shown for almost every type of business borrower. The largest dollar gains in commercial and industrial loans were accounted for by

CONDITION STATISTICS OF WEEKLY REPORTING MEMBER BANKS IN LEADING CITIES

Eleventh Federal Reserve District

(In thousands of dollars)

Item	Aug. 16, 1961	July 19, 1961	Aug. 17, 1960
ASSETS			
Commercial and industrial loans.....	1,545,313	1,508,179	1,471,897
Agricultural loans.....	33,186	39,062	30,391
Loans to brokers and dealers for purchasing or carrying:			
U. S. Government securities.....	33,322	311	13,604
Other securities.....	55,074	54,295	21,965
Other loans for purchasing or carrying:			
U. S. Government securities.....	4,672	4,735	9,585
Other securities.....	227,043	230,909	178,424
Loans to domestic commercial banks.....	61,343	29,462	64,713
Loans to foreign banks.....	174	128	347
Loans to other financial institutions:			
Sales finance, personal finance, etc.....	81,973	88,438	128,428
Savings banks, mtge. cos., ins. cos., etc.....	150,007	155,288	125,740
Real-estate loans.....	223,806	221,268	204,498
All other loans.....	770,165	777,752	748,753
Gross loans.....	3,186,078	3,109,827	2,998,345
Less reserves and unallocated charge-offs..	55,756	55,990	55,346
Net loans.....	3,130,322	3,053,837	2,942,999
Treasury bills.....	156,028	99,115	95,599
Treasury certificates of indebtedness.....	48,573	72,449	33,332
Treasury notes and U. S. Government bonds, including guaranteed obligations, maturing:			
Within 1 year.....	212,866	243,716	74,806
After 1 but within 5 years.....	673,094	608,960	825,834
After 5 years.....	449,565	459,239	297,461
Other securities.....	422,106	401,114	352,612
Total investments.....	1,962,232	1,884,593	1,679,644
Cash items in process of collection.....	525,213	492,097	505,145
Balances with banks in the United States.....	476,212	486,428	465,699
Balances with banks in foreign countries.....	1,918	1,695	1,660
Currency and coin.....	55,674	56,527	51,908
Reserves with Federal Reserve Bank.....	538,814	539,623	568,031
Other assets.....	178,875	184,642	167,918
TOTAL ASSETS.....	6,869,260	6,699,442	6,383,004
LIABILITIES AND CAPITAL ACCOUNTS			
Demand deposits			
Individuals, partnerships, and corporations....	2,932,400	2,954,181	2,878,107
Foreign governments and official institutions, central banks, and international institutions..	5,787	2,686	
United States Government.....	173,352	62,184	144,256
States and political subdivisions.....	176,644	186,541	224,071
Banks in the United States, including mutual savings banks.....	1,046,833	995,942	948,685
Banks in foreign countries.....	13,682	12,055	19,156
Certified and officers' checks, etc.....	59,568	52,929	42,760
Total demand deposits.....	4,408,266	4,266,518	4,257,035
Time and savings deposits			
Individuals, partnerships, and corporations			1,092,677
Savings deposits.....	779,922	779,686	
Other time deposits.....	561,657	548,167	
Foreign governments and official institutions, central banks, and international institutions..	8	6	
U. S. Government, including postal savings..	7,077	7,102	8,849
States and political subdivisions.....	306,994	286,355	237,729
Banks in the United States, including mutual savings banks.....	5,765	9,557	4,794
Banks in foreign countries.....	900	900	
Total time and savings deposits.....	1,662,323	1,631,773	1,344,049
Total deposits.....	6,070,589	5,898,291	5,601,084
Bills payable, rediscounts, etc.....	116,000	122,000	127,709
All other liabilities.....	85,733	86,240	94,272
Capital accounts.....	596,938	592,911	559,939
TOTAL LIABILITIES AND CAPITAL ACCOUNTS.....	6,869,260	6,699,442	6,383,004

NOTE.—As a result of changes in call report instructions, additional information is available, effective April 26, 1961, on the deposit structure of member banks. Comparable year-earlier figures will be shown when they become available.

petroleum, coal, chemicals, and rubber manufacturers; construction firms; and commodity dealers. In the corresponding period a year earlier, gross loans declined

RESERVE POSITIONS OF MEMBER BANKS

Eleventh Federal Reserve District

(Averages of daily figures. In thousands of dollars)

Item	4 weeks ended Aug. 2, 1961	4 weeks ended July 5, 1961	4 weeks ended Aug. 3, 1960
RESERVE CITY BANKS			
Total reserves held.....	569,471	568,905	550,220
With Federal Reserve Bank....	529,536	529,819	548,112
Currency and coin.....	39,935	39,086	2,108
Required reserves.....	560,420	559,358	544,366
Excess reserves.....	9,051	9,547	5,854
Borrowings.....	178	107	4,577
Free reserves.....	8,873	9,440	1,277
COUNTRY BANKS			
Total reserves held.....	517,583	513,211	445,333
With Federal Reserve Bank....	415,272	413,951	436,466
Currency and coin.....	102,311	99,260	8,867
Required reserves.....	447,878	445,829	396,671
Excess reserves.....	69,705	67,382	48,662
Borrowings.....	886	740	15,163
Free reserves.....	68,819	66,642	33,499
ALL MEMBER BANKS			
Total reserves held.....	1,087,054	1,082,116	995,553
With Federal Reserve Bank....	944,808	943,770	984,578
Currency and coin.....	142,246	138,346	10,975
Required reserves.....	1,008,298	1,005,187	941,037
Excess reserves.....	78,756	76,929	54,516
Borrowings.....	1,064	847	19,740
Free reserves.....	77,692	76,082	34,776

NOTE.— Beginning November 24, 1960, all currency and coin held by member banks allowed as reserves; during the period December 1, 1959-November 23, 1960, only part of such holdings was allowed.

\$31.9 million, as reductions in consumer-type loans and "loans to other financial institutions" offset an increase in loans for purchasing or carrying securities.

Total investments of the District's weekly reporting member banks were up \$77.6 million between July 19 and August 16. Holdings of both Government and non-Government securities expanded. Reflecting the participation of District banks in the recent Treasury financing operations, increased holdings of Treasury bills and of Treasury notes and Government bonds due in 1 to 5 years exceeded decreases in holdings of other Government securities. Non-Government security holdings rose \$21.0 million. In the comparable period of 1960, total investments fell \$22.6 million, as a decline in holdings of Government securities more than offset an advance in holdings of non-Government securities.

In the 4 weeks ended August 16, demand deposits of the District's weekly reporting member banks rose \$141.7 million, largely as a result of increases in United States Government deposits and deposits of domestic banks. Time and savings deposits gained \$30.6 million, with an expansion in deposits of states and political subdivisions and in deposits of individuals, partnerships, and corporations more than offsetting a decrease in deposits of domestic banks.

Total reserves moved slightly higher at District member banks in the 4 weeks ended August 2. Excess re-

serves expanded at country banks but moved fractionally lower at reserve city banks. With borrowings relatively unchanged at both classes of banks, free reserves increased at country banks but declined moderately at reserve city banks. Nevertheless, reserve positions remained comfortable at both reserve city banks and country banks.



Refined product markets in early August were firm throughout most of the Nation. The seasonally adjusted index of refined product demand rose from 101 percent of the 1957-59 base in June to 105 percent in July, as significant increases in distillate fuel oil and residual fuel oil consumption offset a decline in the demand for kerosene. Gasoline demand was virtually unchanged in July. In early August, total demand for the four major products continued upward; gasoline, kerosene, and distillate fuel oil demand strengthened, while the consumption of residual fuel oil was almost unchanged.

New supplies of refined products were expanded significantly in July and early August, and combined inventories of the four major products in early August were at a higher level than in July. Gasoline stocks declined less than seasonally during July, while inventories of light and heavy fuel oils advanced more than anticipated. These trends continued in early August. Wholesale gasoline prices were reduced, especially in the Middle West, but retail gasoline price wars have subsided; light heating oil prices remained steady.

The demand for crude oil in the Nation rose moderately in July, but daily average crude runs to Dis-

NATIONAL PETROLEUM ACTIVITY INDICATORS

(Seasonally adjusted indexes, 1957-59 = 100)

Indicator	July 1961p	June 1961p	July 1960
CRUDE OIL RUNS TO REFINERY			
STILLS (daily average).....	106	103	107
DEMAND (daily average)			
Gasoline.....	103	103	101
Kerosene.....	151	166	141
Distillate fuel oil.....	114	98r	101
Residual fuel oil.....	100	87	92
Four refined products.....	105	101	100
STOCKS (end of month)			
Gasoline.....	107	105	108
Kerosene.....	113	112	109
Distillate fuel oil.....	99	98	100
Residual fuel oil.....	89	85	77
Four refined products.....	102	100	101

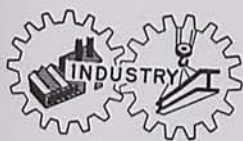
p — Preliminary.

r — Revised.

SOURCES: American Petroleum Institute,
United States Bureau of Mines,
Federal Reserve Bank of Dallas.

tract refinery stills decreased slightly. In early August, crude runs to both District and national refinery stills increased significantly; and during the week ended August 11, crude runs in the Nation were above 8 million barrels per day for the fifth successive week.

Daily average crude oil production in both the District and the Nation declined about 1 percent during July. However, new supplies of crude oil advanced in the Nation during the month, primarily because of a significant rise in crude oil imports. In early August, crude oil imports remained at the July level, but District and national production rose slightly. Although Texas, Louisiana, and New Mexico have retained their August allowables, daily average output for September should increase, as the month has a fewer number of calendar days.



The seasonally adjusted Texas industrial production index advanced 2 percent to a record 177 during July, compared with 174 a year ago. Total manufactures

increased to a new high which is almost 6 percent above the February 1961 low and is 3 percent above July 1960; mining also registered significant gains. Both durable and nondurable manufactures showed advances over a month earlier and a year earlier. Substantial production increases in cement, machinery, food, chemicals, and primary metals more than offset slight declines in apparel, lumber, fabricated metals, electrical equipment, and paper products.

Nonfarm employment in the District states declined 17,600 during July to an estimated 4,481,500, or about the same as a year ago. All employment sectors except construction and trade decreased slightly; government employment showed a seasonal decline of 13,600. On

INDUSTRIAL PRODUCTION

(Seasonally adjusted indexes, 1947-49 = 100)

Area and type of index	July 1961p	June 1961	May 1961	July 1960
TEXAS				
Total industrial production.....	177	174	175	174
Total manufactures.....	225	220	223	219
Durable manufactures.....	257	255	260r	249
Nondurable manufactures.....	210	204	206	206
Mining.....	132	130	130r	130
UNITED STATES				
Total industrial production.....	171	168	164	166
Total manufactures.....	169	166	163	165
Durable manufactures.....	176	171	167	172
Nondurable manufactures.....	167	165	162r	163
Mining.....	130	129	128	128
Utilities.....	308	304	304r	289r

p — Preliminary.
r — Revised.

SOURCES: Board of Governors of the Federal Reserve System.
Federal Reserve Bank of Dallas.

NONAGRICULTURAL EMPLOYMENT

Five Southwestern States¹

Type of employment	Number of persons			Percent change July 1961 from	
	July 1961e	June 1961	July 1960r	June 1961	July 1960
Total nonagricultural wage and salary workers..	4,481,500	4,499,100	4,483,200	-0.4	0.0
Manufacturing.....	774,200	775,500	790,300	-2	-2.0
Nonmanufacturing.....	3,707,300	3,723,600	3,692,900	-4	-4
Mining.....	244,300	244,500	248,300	-1	-1.6
Construction.....	303,100	302,800	321,600	.1	-5.8
Transportation and public utilities.....	393,700	393,900	408,700	-1	-3.7
Trade.....	1,102,200	1,101,600	1,103,800	.1	-2
Finance.....	223,200	223,600	214,900	-2	3.9
Service.....	603,300	606,100	583,300	-5	3.4
Government.....	837,500	851,100	812,300	-1.6	3.1

¹ Arizona, Louisiana, New Mexico, Oklahoma, and Texas.

e — Estimated.

r — Revised.

SOURCES: State employment agencies.
Federal Reserve Bank of Dallas.

a year-to-year basis, employment gains in government, services, and finance were sufficient to offset lower employment in construction, mining, manufacturing, transportation and public utilities, and trade. Insured unemployment in Texas declined steadily during July and the first 2 weeks of August. Total unemployment decreased 13,200 in July to 217,200, or 5.8 percent of the State's civilian labor force — compared with 4.9 percent in July 1960.

The value of construction contracts in the District states in June totaled \$410 million, or 21 percent above the previous month and 10 percent larger than in June 1960. Substantial month-to-month gains in the non-residential building and public works and utilities categories more than offset a reduction in residential contracts. During the first half of 1961, construction contracts in the five states amounted to \$2,083 million, which is 4 percent greater than in the comparable 1960 period. Nonresidential contracts were 30 percent above those in January-June 1960; however, contracts for public works and utilities decreased 12 percent. Residential contracts showed no change.

VALUE OF CONSTRUCTION CONTRACTS

(In millions of dollars)

Area and type	June 1961p	May 1961	June 1960	January—June	
				1961p	1960
FIVE SOUTHWESTERN STATES¹					
Residential building.....	410	340	372	2,083	2,001
Nonresidential building....	141	161	144	830	830
Public works and utilities...	165	114	98	686	527
	104	65	132	567	645
UNITED STATES.....					
Residential building.....	3,602	3,501	3,472	18,220	17,574
Nonresidential building....	1,558	1,553	1,483	7,762	7,600
Public works and utilities...	1,221	1,105	1,110	5,992	5,802
	823	843	879	4,465	4,171

¹ Arizona, Louisiana, New Mexico, Oklahoma, and Texas.

p — Preliminary.

NOTE: — Details may not add to totals because of rounding.

SOURCE: F. W. Dodge Corporation.

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

(Dollar amounts in thousands)

Area	Debits to demand deposit accounts ¹			Demand deposits ¹			
	July 1961	Percent change from		July 31, 1961	Annual rate of turnover		
		June 1961	July 1960		July 1961	June 1961	July 1960
ARIZONA							
Tucson.....	\$ 244,248	-9	12	\$ 135,553	21.5	23.3r	20.5
LOUISIANA							
Monroe.....	77,475	-7	-1	52,231	18.1	19.9	18.1
Shreveport.....	312,351	-10	-1	178,855	21.2	23.6	21.2
NEW MEXICO							
Roswell.....	46,013	-3	13	34,859	16.0	16.1	16.4
TEXAS							
Abilene.....	96,572	-5	5	68,583	16.7	17.6	18.0
Amarillo.....	242,663	8	8	120,582	24.0	22.9	23.8
Austin.....	210,259	-7	6	153,078	16.3	17.8	16.8
Beaumont.....	174,462	10	16	98,516	21.1	19.3	19.0
Corpus Christi.....	186,608	-2	-4	107,561	21.1	21.7	22.4
Corsicana.....	15,095	-7	-9	18,967	9.5	10.2	10.7
Dallas.....	2,855,710	-11	9	1,225,127	28.2	32.3r	27.2
El Paso.....	348,700	1	5	168,294	25.1	24.6r	24.4
Fort Worth.....	807,520	-3	8	385,130	25.2	26.2	24.7
Galveston.....	95,347	6	15	61,299	18.1	17.2	16.1
Houston.....	2,618,204	-5	12	1,328,372	24.0	25.7r	22.3
Laredo.....	26,477	-5	-2	21,822	14.6	15.6r	14.8
Lubbock.....	168,607	-2	-3	110,091	18.4	18.6	19.7
Port Arthur.....	63,300	0	-1	44,438	17.2	17.5	18.5
San Angelo.....	50,808	-7	-3	47,376	13.1	14.0	13.4
San Antonio.....	606,540	-5	8	412,563	18.4	20.3r	18.4
Texarkana ²	22,382	1	-4	16,865	16.0	15.8	17.0
Tyler.....	83,367	-4	6	62,016	16.3	17.3	16.2
Waco.....	102,750	-7	1	68,664	18.2	19.6	18.1
Wichita Falls.....	114,095	-4	4	99,860	13.7	14.6	13.3
Total—24 cities.....	\$9,569,553	-6	8	\$5,020,702	23.0	25.0r	22.4

¹ Deposits of individuals, partnerships, and corporations and of states and political subdivisions.

² These figures include only two banks in Texarkana, Texas. Total debits for all banks in Texarkana, Texas-Arkansas, including one bank located in the Eighth District, amounted to \$51,557,000 for the month of July 1961.

r—Revised.

NOTE.—For comparability of the data, the June 1961 figures have been revised to exclude deposits and debits of mutual savings banks and foreign banks. Revised debits for June may be approximated by use of percentage changes.

CONDITION OF THE FEDERAL RESERVE BANK OF DALLAS

(In thousands of dollars)

Item	Aug. 16, 1961	July 19, 1961	Aug. 17, 1960
Total gold certificate reserves.....	667,148	703,730	725,545
Discounts for member banks.....	4,245	5,974	11,806
Other discounts and advances.....	0	0	0
U. S. Government securities.....	1,107,996	1,079,068	1,081,363
Total earning assets.....	1,112,241	1,085,042	1,093,169
Member bank reserve deposits.....	906,346	908,634	962,524
Federal Reserve notes in actual circulation.....	847,353	838,688	806,253

MARKETED PRODUCTION OF NATURAL GAS

(In millions of cubic feet)

Area	First quarter 1961	Fourth quarter 1960	First quarter 1960
Louisiana.....	809,300	772,000	804,500
New Mexico.....	206,300	228,000	223,800
Oklahoma.....	228,900	204,400	199,700
Texas.....	1,580,000	1,543,500	1,579,200
Total.....	2,824,500	2,747,900	2,807,200

SOURCE: United States Bureau of Mines.

DAILY AVERAGE PRODUCTION OF CRUDE OIL

(In thousands of barrels)

Area	July 1961p	June 1961p	July 1960	Percent change from ¹	
				June 1961	July 1960
ELEVENTH DISTRICT.....	2,816.8	2,857.3	2,805.7	-1.4	0.4
Texas.....	2,450.4	2,477.2	2,432.2	-1.1	.7
Gulf Coast.....	445.8	443.4	440.8	.5	1.1
West Texas.....	1,117.1	1,113.7	1,090.9	.3	2.4
East Texas (proper).....	122.8	127.8	125.3	-3.9	-2.0
Panhandle.....	106.8	104.9	101.0	1.8	5.7
Rest of State.....	657.9	687.4	674.2	-4.3	-2.4
Southeastern New Mexico.....	255.0	269.3	246.0	-5.3	3.7
Northern Louisiana.....	111.4	110.8	127.5	.5	-12.6
OUTSIDE ELEVENTH DISTRICT.....	4,138.8	4,180.3	4,053.8	-1.0	2.1
UNITED STATES.....	6,955.6	7,037.6	6,859.5	-1.2	1.4

p—Preliminary.

SOURCES: American Petroleum Institute.
United States Bureau of Mines.
Federal Reserve Bank of Dallas.

CONDITION STATISTICS OF ALL MEMBER BANKS

Eleventh Federal Reserve District

(In millions of dollars)

Item	July 26, 1961	June 28, 1961	July 27, 1960
ASSETS			
Loans and discounts.....	5,084	5,112	4,890
United States Government obligations.....	2,884	2,663	2,483
Other securities.....	934	912	818
Reserves with Federal Reserve Bank.....	939	853	957
Cash in vault.....	158	160	152
Balances with banks in the United States.....	1,070	1,199	966
Balances with banks in foreign countries.....	3	2	2
Cash items in process of collection.....	538	534	487
Other assets.....	220	347	254
TOTAL ASSETS.....	11,830	11,782	11,009
LIABILITIES AND CAPITAL ACCOUNTS			
Demand deposits of banks.....	1,134	1,248	1,021
Other demand deposits.....	6,777	6,533	6,531
Time deposits.....	2,759	2,756	2,235
Total deposits.....	10,670	10,537	9,787
Borrowings.....	56	40	141
Other liabilities.....	93	191	125
Total capital accounts.....	1,011	1,014	956
TOTAL LIABILITIES AND CAPITAL ACCOUNTS.....	11,830	11,782	11,009

e—Estimated.

BUILDING PERMITS

VALUATION (Dollar amounts in thousands)

Area	NUMBER				Percent change		
	July 1961	7 mos. 1961	July 1961	7 mos. 1961	July 1961 from		
					June 1961	July 1960	7 months, 1961 from 1960
ARIZONA							
Tucson.....	840	6,354	\$ 6,110	\$ 30,679	30	151	36
LOUISIANA							
Shreveport.....	1,040	9,170	2,159	23,299	-24	32	44
TEXAS							
Abilene.....	106	834	957	9,374	-59	-45	-24
Amarillo.....	249	2,019	3,061	23,146	-50	-7	7
Austin.....	328	2,387	4,525	33,930	2	8	20
Beaumont.....	296	2,136	959	8,774	-48	-10	5
Corpus Christi.....	281	2,153	1,819	11,762	0	135	63
Dallas.....	2,384	15,872	18,823	124,280	53	43	52
El Paso.....	575	4,113	5,310	41,688	4	30	51
Fort Worth.....	709	4,350	3,758	35,178	-36	10	18
Galveston.....	143	894	872	3,885	182	61	-16
Houston.....	1,241	9,641	25,675	156,329	-6	-52	-9
Lubbock.....	227	1,596	2,624	25,963	10	11	3
Port Arthur.....	254	1,435	822	4,898	26	-14	-27
San Antonio.....	1,097	8,316	2,728	29,794	-50	-26	-8
Waco.....	259	1,829	571	10,366	-19	-42	-4
Wichita Falls.....	404	2,015	2,530	14,290	103	-52	-21
Total—17 cities.....	10,433	75,114	\$83,303	\$587,635	-2	-19	12