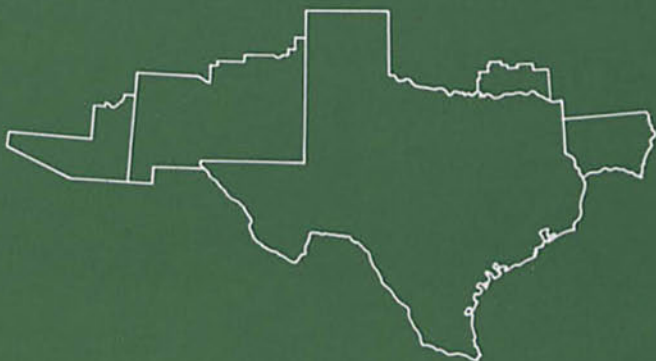


business review



june 1970

**FEDERAL RESERVE
BANK OF DALLAS**

contents

<i>The 1970's: Decade for plastics</i>	
<i>Part 3: Styrenes</i>	3
<i>The fertilizer industry</i>	
<i>faces the road back</i>	9
<i>District highlights</i>	14

The 1970's: Decade for plastics

Part 3: Styrenes

The plastics industry enters the new decade cautiously but with optimism. Looking back on the 1960's, plastics producers see a decade of dramatic growth, with plastics gaining widespread acceptance in an ever-expanding range of markets. They also see the 1960's marred by periodic and sometimes chaotic price and profit erosion as they built larger and larger plants in an effort to reduce costs and expand their market positions.

The further development and expansion of the industry in the coming decade will depend largely on the future of three families of resins: polyethylene, vinyls, and styrenes. The production and marketing of the first two were covered in previous *Business Review* articles. This final article centers on conditions in the styrene market and the outlook for that market.

Consumption of styrene plastics tripled in the last decade, matching the rate of growth for the plastics industry as a whole. And with the

steady increase in new applications for this important group of plastics, sales are expected to continue their rapid growth over the next decade, pushing annual consumption to 6.2 billion pounds by 1980. That will be almost twice the volume projected for 1970.

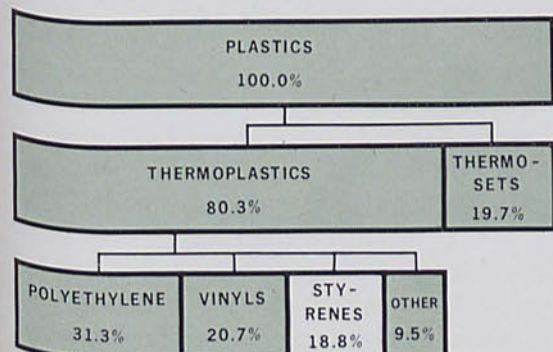
This growth will directly influence the economy of the Southwest. Styrene production, based (like the production of all plastics) on hydrocarbon processing, depends heavily on the petroleum and natural gas facilities of Texas and Louisiana for most of its raw materials. Furthermore, 11 of the nation's 14 plants producing styrene monomer, the major ingredient in styrene plastics, are located in these two states. Together, these 11 southwestern plants account for almost four-fifths of the styrene monomer production.

The styrene industry

The styrene family includes several important members, each with unique properties and applications and all with high potentials for further market growth. Because of their differences, each is considered a separate market within the plastics industry.

The oldest member is polystyrene, a tough, inexpensive plastic that has long been a favorite of molders making such items as thin-wall containers, air-conditioners, radio and television cabinets, small housewares, and toys. Expanded by gas, it has about half the density of cork. In this form, known commercially as "styrofoam," the plastic is used as an insulating material, in construction and in the manufacture of such items as drinking cups, buckets, and iceboxes.

Three major thermoplastics accounted for over two-thirds of plastics production in 1969



SOURCE: U.S. Tariff Commission.

Newer styrene plastics are also rapidly gaining market acceptance. Styrene can be made even tougher and more rigid than polystyrene when combined with acrylonitrile to make styrene-acrylonitrile (called SAN) or when combined with acrylonitrile and butadiene to form acrylonitrile-butadiene-styrene (ABS). In these combinations, styrene is suitable for uses requiring very high impact strength, such as in automotive instrument panels and even front grilles, in small appliances, furniture, drainpipes, telephone casings, luggage, boats, and football helmets.

Styrene is also combined with butadiene to form styrene-butadiene copolymers, which are elastic. The largest selling elastomers, in fact, are copolymers of 24 percent styrene and 76 percent butadiene. This combination accounted for about half of all synthetic rubbers produced last year. Styrene-butadiene copolymers that are at least half styrene are classified as plas-

tics and used in treating and coating textiles and paper.

Polystyrene

Polystyrene is by far the largest selling styrene resin. Production of this plastic reached 2.1 billion pounds last year. At that level, it accounted for two-thirds of all styrene polymer production.

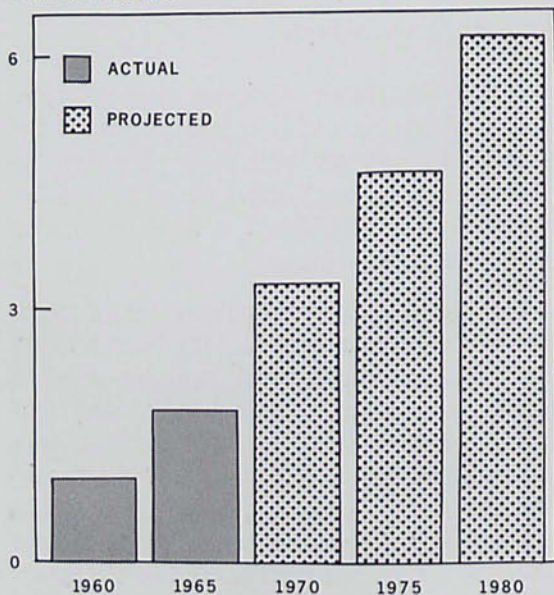
To make polystyrene, ethylene and benzene (products derived primarily from petroleum but also from natural gas and coal tar) are first combined to form styrene monomer. This liquid monomer is then polymerized into a fairly brittle solid. To increase the impact strength of the polymer, polybutadiene is often added. The gain in strength is made at the expense of other properties, however.

Within broad limits, properties of polystyrene can be balanced to fit the requirements of particular end uses. Polystyrene is used almost straight, for example, in food containers and in other products where a fairly clear plastic is needed but only moderate impact strength is required. In the production of polystyrene for use in appliances and in other applications where toughness is needed but transparency is not, the resin is modified by the addition of synthetic rubber. About half the polystyrene produced last year was modified by adding polybutadiene, one of the synthetic rubbers.

Unlike most plastics markets — where economies of scale have brought drastic swings in rates of capacity utilization as new plants were built — the supply-demand balance for polystyrene has been fairly stable in recent years. The average polystyrene plant has an annual capacity of only 85 million pounds, or about 3 percent of the industry's total capacity. Even when U.S. Steel enters the polystyrene market later this year with one of the larger plants — one with an annual capacity of 200 million pounds — it will increase industry capacity only about 7.5 percent.

Sales of styrene-type plastics expected to almost double by 1980

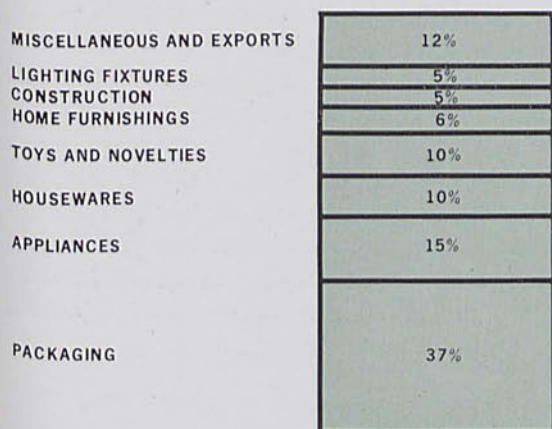
BILLIONS OF POUNDS



SOURCES: Standard & Poor's.

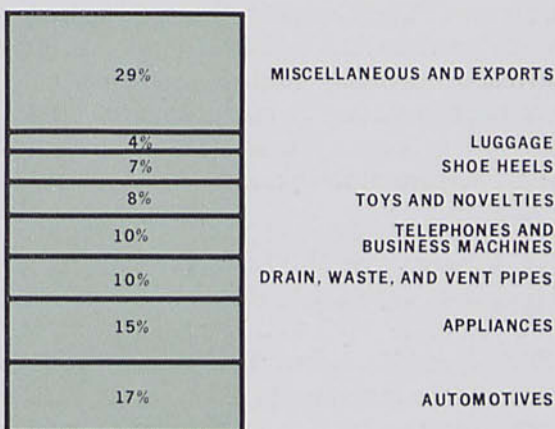
U.S. Tariff Commission.

Packaging took more than a third of the polystyrene sold in 1969...



SOURCE: Chemical and Engineering News.

... while sales of ABS and SAN went to a variety of applications...



SOURCE: Chemical and Engineering News.

The near-term outlook for polystyrene is very favorable. Total capacity will average about 2.7 billion pounds this year. With production expected to reach 2.4 billion pounds, the capacity utilization rate will average 89 percent. And with capacity scheduled to increase with demand, producers expect to operate at about 90 percent of capacity through at least 1972. Reflecting the firm market conditions, polystyrene prices have moved upward in the first half of this year.

ABS and SAN

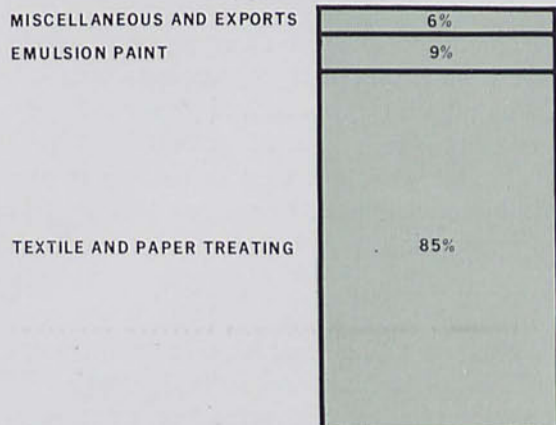
Both ABS and SAN are still youngsters in the styrene family. Only in the last ten years has either resin been marketed extensively. Nevertheless, they accounted for almost a fifth of the styrene-type plastics produced last year, and their importance in the family is increasing rapidly. Where polystyrene production expanded about 12 percent last year, production of ABS and SAN increased 20 percent.

As with most of the newer plastics, production of ABS and SAN has not reached a volume large enough to prevent fairly broad swings in the balance between supply and demand when new plants go on stream. The newest ABS

plants have annual capacities in excess of 100 million pounds, or more than 12 percent of total industry capacity.

Production of ABS and SAN totaled 559 million pounds last year, or about 83 percent of the 675 million pounds of capacity available. With capacity now totaling 800 million pounds — 18.5 percent larger than last year — demand for ABS and SAN will have to in-

... and most styrene-butadiene was used in treating paper and textiles



SOURCE: Chemical and Engineering News.

crease as fast this year as last for any noticeable improvement to be made in capacity utilization. The slump in the auto industry, which provides ABS and SAN producers their largest market, may keep sales of these plastics from increasing as fast as in 1969. If so, the rate of capacity utilization may be only about 80 percent this year.

The outlook remains optimistic for the long run, however. Use of ABS in automobiles, for example, is expected to increase from 90 million pounds in 1969 to 270 million pounds in 1975. General Motors, Ford, and American Motors have their own injection-molding facilities for making plastic auto parts, and Chrysler has acquired several plastic-processing firms.

Styrene-butadiene

After years of relatively slow growth, the styrene-butadiene copolymer market has been expanding rapidly for several years. Production has increased 40 percent in the past two years, for example, or slightly more than in the previous seven years. Last year was particularly good, with production increasing 25 percent to a total of 405 million pounds. This increase allowed producers to use 92 percent of their 440 million pounds of capacity. And producers expect further rapid growth. Forecasts show production with an average annual growth rate of 15 percent for 1970-75.

In contrast to most other styrenes, which have a variety of uses, styrene-butadiene copolymer is a highly specialized plastic with only a few end uses. About 85 percent of its production last year was used in treating textiles and paper, and most of the rest was used in emulsion paints.

Styrene producers

Polystyrene, like other large-volume thermoplastics, is produced primarily by large, diversified chemical and petroleum companies, many of which are also significant producers

of other plastics. Five of the six leading polystyrene producers — Amoco, Dow, Monsanto, Sinclair-Koppers, and Union Carbide — also manufacture polyethylene. But because efficiency does not require that polystyrene plants be as large as polyethylene plants, many small, specialized producers are able to compete successfully in the polystyrene industry. Southern Petrochemicals, for example, successfully entered the polystyrene market last year with a plant near Houston having an annual capacity of 40 million pounds, or less than 2 percent of the year's total production.

Probably the greatest problem facing small producers — and the greatest obstacle to entry into the polystyrene industry — is the backward vertical integration of large producers into styrene monomer. Eight of the nine leading polystyrene producers have captive sources of styrene monomer, while none of the other six producers have their own supply. With monomer accounting for about 70 percent of the cost of producing polystyrene, a company can realize significant cost savings by producing its own, provided it can build a monomer plant of efficient size and operate it close to full capacity. A company producing large amounts of polystyrene can operate a monomer plant to support its polystyrene production, but because a small producer cannot, it has to buy monomer on the open market.

Several of the leading polystyrene producers have moved into the production of ABS and SAN. Of the eight companies making these resins, five also produce polystyrene. And of these five, four are among the five largest polystyrene producers. Participation in the polystyrene industry is no prerequisite for success in other styrene plastics, however. The two companies leading in ABS and SAN capacity — Uniroyal and the Marbon Chemical Division of Borg-Warner (which together account for half the industry's capacity) — do not produce polystyrene.

**Large chemical and petroleum companies
dominate the polystyrene industry,
and most make their own styrene monomer**

Producer	Plant location	ANNUAL CAPACITY, beginning of 1970 (Millions of pounds)	
		Polystyrene	Styrene monomer
Amoco Chemicals (Standard Oil of Indiana)	Torrance, California	—	—
	Joliet, Illinois	170	—
	Willow Springs, Illinois	(combined total)	—
	Leominster, Massachusetts	—	—
	Medina, Ohio	—	—
	Texas City, Texas	—	800
BASF	Jamesburg, New Jersey	80	—
Cosden Oil & Chemical	Carville, Louisiana	—	1250
	Big Spring, Texas	145	100
Dart Industries	Santa Ana, California	—	—
	Joliet, Illinois	140	—
	Holyoke, Massachusetts	(combined total)	—
	Ludlow, Massachusetts	—	—
Dow Chemical	Torrance, California	—	—
	Allyn's Point, Connecticut	700	—
	Midland, Michigan	(combined total)	350
	Hanging Rock, Ohio	—	—
	Freeport, Texas	—	550
Foster Grant	Peru, Illinois	190	—
	Leominster, Massachusetts	(combined total)	—
	Baton Rouge, Louisiana	—	240
Hammond Plastics	Oxford, Massachusetts	25	—
Howard Industries	Hicksville, New York	15	—
Monsanto	Long Beach, California	—	—
	Springfield, Massachusetts	375	—
	Addyston, Ohio	(combined total)	—
	Texas City, Texas	—	800
Richardson Co.	West Haven, Connecticut	50	—
Shell Chemical	Torrance, California	—	240
	Wallingford, Connecticut	80	—
	Marietta, Ohio	(combined total)	—
Sinclair-Koppers	Kobuta, Pennsylvania	300	430
	Houston, Texas	—	110
Solar Chemical	Leominster, Massachusetts	60	—
Southern Petrochemicals	Houston, Texas	40	—
Union Carbide	Bound Brook, New Jersey	170	—
	Marietta, Ohio	(combined total)	—
	Seadrift, Texas	—	300
ALL PRODUCERS		2,540	4,170

¹ One-half of 500-million-pound monomer plant owned jointly by Cosden and Borg-Warner.
SOURCE: Chemical and Engineering News.

Several polystyrene producers also turn out ABS and SAN

Producer and plant location	Annual capacity, beginning of 1970 (Millions of pounds)
Dart Industries Joliet, Illinois	40
Dow Chemical Midland, Michigan	100
B. F. Goodrich Louisville, Kentucky Akron, Ohio	30 (combined total)
Marbon Chemical (Borg-Warner) Ottawa, Illinois Washington, West Virginia	200 (combined total)
Monsanto Addyston, Ohio	190
Sinclair-Koppers Kobuta, Pennsylvania	10
Union Carbide Bound Brook, New Jersey	30
Uniroyal Baton Rouge, Louisiana Scotts Bluff, Louisiana	200 (combined total)
ALL PRODUCERS	800

SOURCE: Chemical and Engineering News.

Ownership of styrene monomer capacity, though beneficial, is not as crucial to success in ABS and SAN as in polystyrene. This is because styrene monomer is only one of the raw materials going into ABS and SAN production. Styrene makes up approximately 60 percent of the inputs to ABS and 75 percent of the inputs to SAN.

Most of the leading tire manufacturers are producers of styrene-butadiene copolymer. In fact, all but four of the 13 companies making styrene-butadiene copolymer are also significant producers of styrene-butadiene rubber. Many of the copolymer plants are adjacent to synthetic rubber facilities and draw on the same sources for raw materials.

Vertical integration back into styrene monomer is even less important for a producer's success in styrene-butadiene than in ABS and SAN. Only three styrene-butadiene producers own styrene monomer facilities, and two of them also make polystyrene. In fact, these two

Manufacturers of synthetic rubber active in styrene-butadiene copolymer

Producer and plant location	Annual capacity, beginning of 1970 (Millions of pounds)
American Mineral Spirits La Mirada, California Charlotte, North Carolina	18 (combined total)
Borden Illioopolis, Illinois Geismar, Louisiana Leominster, Massachusetts	15 (combined total)
Dewey & Almy (W. R. Grace) Owensboro, Kentucky Acton, Massachusetts	10 (combined total)
Dow Chemical Pittsburg, California Allyn's Point, Connecticut Dalton, Georgia Midland, Michigan Freeport, Texas	160 (combined total)
Firestone Tire & Rubber Pottstown, Pennsylvania	12
GAF Chattanooga, Tennessee	30
General Tire & Rubber Mogadore, Ohio Odessa, Texas	20 (combined total)
Goodyear Tire & Rubber Akron, Ohio	20
Marbon Chemical (Borg-Warner) Washington, West Virginia	5
Sinclair-Koppers Kobuta, Pennsylvania	48
Southwest Polymers Bayport, Texas	12
Standard Brands Chemical Industries Cheswold, Delaware Kensington, Georgia	50 (combined total)
Uniroyal Baton Rouge, Louisiana	40
ALL PRODUCERS	440

SOURCE: Chemical and Engineering News.

—Dow Chemical and Sinclair-Koppers—are the only polystyrene producers that have diversified into all types of styrene plastics.

The outlook for styrenes, like the outlook for polyethylene and vinyls, is for another decade of dramatic expansion. The success of producers will depend largely on their orderly response to this growth. With more and more uses being found for plastics in a seemingly endless variety of markets, the 1970's may indeed set the stage for an Age of Synthetics.

WILLIAM H. KELLY

The fertilizer industry faces the road back

The fertilizer industry, having overestimated its potential market, overbuilt in the 1960's. Although demand for plant nutrients increased rapidly, production capacity increased even faster. Now, with a sizable imbalance between supply and demand, the industry faces the long — and maybe slow — road back to stability.

There remains a considerable potential for greater use of fertilizer in the decade ahead, but the rate of growth is apt to be slower than in the 1960's. Over 16 million tons of plant nutrients were used in this country last year. This amount, which was more than twice the consumption in 1959, represented an average annual increase of almost 8 percent. Estimates by the Tennessee Valley Authority show the country using 25 million tons a year by 1980. This increase, however, represents an average annual increase of about 5 percent for the 1970's.

Sources of excess capacity

Excess capacity in both production and distribution facilities — often representing large investments by new companies in the industry — has created a disequilibrium in the supply-demand relationships of all three basic plant nutrients: nitrogen, phosphate, and potash. Some experts estimate that for fertilizer consumption to have kept up with the increase in capacity, it would have had to expand at a compound annual rate of 15 to 20 percent throughout the 1960's. Since it did not (consumption, in fact, increased slightly less than 1 percent in 1969) and cannot be expected to increase at anything like that rate in the 1970's, the near-term outlook is for a combination of surpluses, incomplete plant utilization, and some shutdown of less competitive facilities.

Nitrogen. Although use of nitrogen has increased faster than use of the other two primary nutrients, consumption last year still amounted to less than 7 million tons. The rapid increase in demand for anhydrous ammonia slowed, while demand for aqua ammonia actually declined. Plant capacity continued to expand, however, at a rate expected by the TVA to bring total ammonia capacity close to 20 million tons by 1972. Slower growth rates were also evident in the use of solid ammonium nitrate, urea, and nitrogen solutions.

While production of urea and ammonium sulfate continued to rise, supported by foreign sales, production of other major nitrogen fertilizers fell. Output of ammonium nitrate dropped 400,000 tons in 1968, and output of nitrogen solutions slipped 200,000 tons. Capacity for the production of ammonium nitrate, according to TVA, is nevertheless expected to continue its rise, though at a slower rate. Urea capacity is expected to reach 4.7 million tons by 1972, almost twice the capacity in 1967.

Phosphate. Consumption of phosphate fertilizer has been leveling off, showing an increase of only 3.5 percent in 1968 and 4.7 percent in 1969. The result has been sizable inventories of phosphate and a marked slowing in the development of reserves. Although exploration continues, here and abroad, the capacity of American mines is not expected to increase until demand begins to catch up. Capacity in the United States is estimated at more than twice the 4.7 million tons of phosphate fertilizer used in 1969.

Potash. Consumption of potash in the United States totaled almost 4 million tons last year.

That was a 2.6-percent gain over 1968. But production still exceeded demand. Potash production in the United States has been declining since it reached a high of 3.3 million tons in 1966. Output has been on the rise in Canada, however, bringing total North American production in 1968 to about 5.6 million tons, or a third of the world's total. Annual U.S. capacity is expected to remain at about 3.4 million tons. But according to TVA estimates, Canadian capacity could go over 8 million tons by 1972, bringing the North American total to more than 11 million tons.

The net effect for the 1969-70 season is an expected rise in domestic supplies of plant nutrients to a record 16.8 million tons. This increase—a gain of 11 percent over the 1968-69 season—will be due primarily to increased imports and loss of foreign sales. Estimates by the Department of Agriculture show domestic production of nitrogen only about 4 percent higher than last year. But with some increase in imports and a sharp reduction in exports, domestic supplies will probably approach 7.9 million tons, a year-to-year gain of 13 percent.

Phosphate production is expected to drop 4 percent. But with imports probably up 18 percent and exports down 45 percent, the domestic supply could total well over 4.5 million tons this year, or 6 percent more than last year.

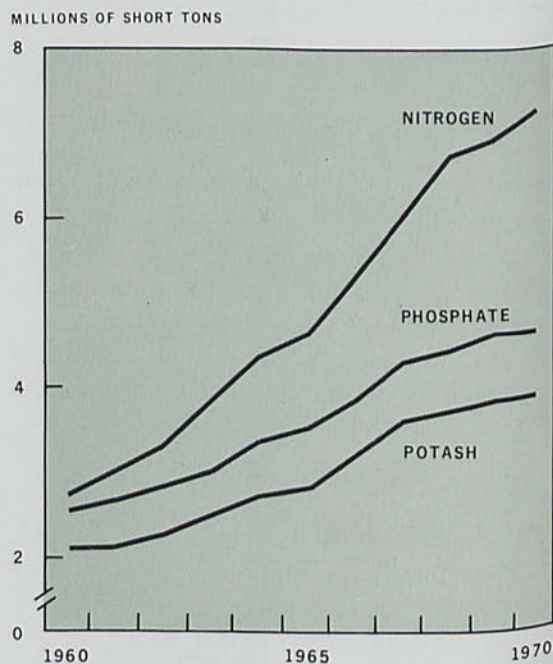
Production of potash will be 9 percent less than last year. This cutback will be more than offset, however, by a 35-percent increase in imports and a 6-percent decline in exports, leaving supplies totaling over 4.4 million tons, or about 12 percent more than in 1968-69.

Development of the glut

Imbalances in the production of nitrogenous fertilizer ingredients came with technological changes that soon overshadowed market considerations. Petroleum processors, attracted to the fertilizer industry by the low operating costs of running large ammonia plants in con-

junction with refineries, began building units with daily capacities in excess of 1,000 tons, compared with many existing plants of 50 to 150 tons. By the end of the decade, 24 oil and gas companies owned 36 plants accounting for 40 percent of the nation's anhydrous ammonia capacity. Faced with this new competition, companies already in the industry expanded their facilities, adding further to the increase.

Domestic use of nitrogen outpaces consumption of other primary nutrients



1970 estimated.
SOURCES: Tennessee Valley Authority.
U.S. Department of Agriculture.

Meanwhile, the development of new potash fields in Canada and phosphate mines in North Carolina and northern Florida further extended the availability of other basic fertilizers. Several oil companies, seeking diversification into other basic nutrients, reached beyond their nitrogenous operations to compete with mining companies. Again, the result was a drive toward large-scale operations.

Much of this increased capacity was built on the expectation that a large market could be developed overseas. But foreign demand remained weak and several countries increased their own production of plant nutrients, entering into competition with American producers both in other countries and in the United States.

Government decisions also had an important bearing on sales, both foreign and domestic. Government aid for purchases of fertilizer for other countries was less than expected, and changes in Government farm programs affected the fertilizer industry in several ways. The amount of fertilizer farmers buy is closely related to the prices they expect to receive for their products. Since reductions in the acreage actually planted to crops tend to reduce demand for fertilizer, the amount farmers use is also related to Government land retirement and crop diversion programs.

More important in the future, however, may be any developments changing overseas markets, as illustrated in part by the large domestic supply expected in the 1969-70 season. This oversupply results primarily from increased imports and a lack of export demand. Construction of fertilizer plants overseas indicates that other countries plan to import not only less fertilizer but also fewer agricultural products, and a cutback in foreign demand for American farm products tends to lower domestic demand for fertilizer.

Lack of market planning

Disequilibrium in the industry stems partly from technological developments that allowed large-scale production at costs low enough to attract companies into the industry without adequate market planning. With an abundance of feedstocks flowing as by-products of their refining operations and new techniques becoming available in ammonia production, several large oil and gas companies hurried into construction of ammonia plants in the midsixties.

Few of the new producers considered vertical integration in the beginning, choosing instead to sell their ammonia to smaller companies mixing the nutrients for resale to retailers. Only recently have producers established outlets to increase their marketing efficiency and reduce costs of getting fertilizer to the farm.

Before the major expansion of the industry in the 1960's, most plants were small and most producers limited their markets to areas 200 or 300 miles from their plants. As a result, managers could keep up with conditions in their markets. But with the construction of large plants and the rapid expansion of market areas, management was removed from direct knowledge of conditions in its market. And because conditions in the fertilizer market vary enormously from area to area, production planning became difficult. The market is highly seasonal, for example, with most of the sales coming in the spring, usually in March and April. If these months are wet or spring comes late, sales can be drastically reduced, as some companies report was the case in 1969.

Increased market research

As producers try to cope with the growing problem of oversupply, they have undertaken considerable research, individually and as an industry, into both the state of the industry and the conditions of its markets. To handle one of its most pressing problems — how to gauge the extent of the supply situation — the industry turned to its National Plant Food Institute in 1968 to set up an index providing statistical information on fertilizer. Working from data supplied by participating companies through an independent statistical organization that keeps individual company information confidential, the institute began compiling a monthly index of fertilizer production, inventory, and disappearance.

Also to help the industry strike a balance in its operations, the institute is planning to com-

FERTILIZER CONSUMPTION IN THE SOUTHWEST AND UNITED STATES

(As of June 30)

Area	In tons ¹		Percent change
	1969	1968	
Arizona	277,681	259,101	7
Louisiana	503,525	524,520	-4
New Mexico	95,086	96,530	-1
Oklahoma	560,374	534,804	5
Texas	2,285,454	1,889,650	21
Southwest	3,722,120	3,304,605	13
United States	38,947,818	38,743,020	1

¹ Consists of commercial mixtures, primary and secondary nutrients, and micronutrients; excludes liming materials.

SOURCE: U.S. Department of Agriculture.

pile an industry-wide profit and loss statement and balance sheet. Again, an independent organization, in this case an accounting firm, will gather financial data and compile a monthly statement to the industry. The statement will include information on income and expenses, assets, retail sales, and such other data as credit arrangements. To further assist the industry, the institute is planning similar reports on the transportation of fertilizer.

Other efforts at gathering information, while less organized, have also been made in recent years, with individual companies undertaking research on consumption, market practices, and profits. Fundamental data on fertilizer are compiled by the Department of Agriculture and Tennessee Valley Authority. Even with these data, however, companies have some difficulty in developing short-term estimates of consumption, because of such variables as weather, and long-term estimates are complicated by changes in Government policies and shifts in market conditions overseas.

By conducting their market research through field interviews, companies are gaining a better grasp of their distribution and marketing problems. Out of this research have come, for example, analyses of the costs of various methods of moving fertilizer to the farm. Cost

studies have been especially promising, since the price a farmer pays for fertilizer must include transportation and distribution costs. Any reduction of these costs improves the possibilities for increased earnings, for the farmer and the industry.

Companies are also trying to establish a base price for fertilizer that will allow them to recover all the costs of manufacture and distribution and still leave a reasonable margin of earnings. Such a pricing system will be necessary in the long run. As long as returns are higher than variable expenses, companies can operate for a while. Eventually, however, they will have to realize returns high enough to cover the fixed costs of plant and equipment as well.

Efforts to develop markets

Since conditions requisite to a stable industry include balance between supply and demand, the stability of the industry in the long run depends on development of markets to match production capabilities. Although the industry neglected the development of market potentials while it concentrated on developing technical capability, it has recently turned attention to programs designed to promote the use of fertilizer.

This represents a major change in direction, since much of the industry's problem has been a tendency to take current demand for granted. Because much of the additional capacity was built to meet an overestimated export demand, many producers have recently devoted considerable effort to the development of foreign markets. But perhaps more important in the long run, they have also begun to seek new approaches to the further development of domestic markets.

Several development programs have been undertaken, with varying degrees of success. Some producers, for example, have started upgrading their products by adding secondary nutrients, such as iron, copper, manganese,

zinc, and molybdenum, and by turning out high-analysis concentrates with lower application costs. Others have started producing slow-release fertilizers that become active in stages, thereby affording farmers a wholly new kind of fertilizer with new levels of use.

Other companies have turned attention to land that is not ordinarily fertilized, such as parks, roadways, and forests. One important possibility for the additional use of fertilizer is on pastures and forage crops, especially in the South. Because of the high rainfall and long growing season, areas throughout the South respond well to fertilization. With an increased demand for feeder calves and the rapid spread of cattle operations in the South, fertilizer producers are pointing out the gains southern stockmen can make by fertilizing their pastures.

Several demonstrations by the industry's Texas Plant Food Educational Society show that adequate fertilization can be highly profitable in a well-managed livestock operation. According to these demonstrations, a stockman can intensify his cow-calf operation by allowing improved pastures to substitute for additional land, producing more beef per acre with lower unit costs than on unimproved pastures.

Services to customers

One of the most promising areas of development, however, has been in industry efforts to improve service to its customers. Since costs to farmers include not only the fertilizer itself but also such services as delivery, spreading, blending, financing, soil testing, and crop management, any marketing improvements that will reduce these charges can be expected to cut the effective cost of fertilizing. Some of these charges seriously limit fertilizer sales, and for reasons some fertilizer producers have only recently come to understand.

As farms get bigger, for example, technical and managerial decisions get harder. At the very time when some operators are under pres-

sure to improve productivity, their labor problems become more complicated and it becomes harder for them to make the best use of their own time. This — and the high cost of owning the equipment to apply fertilizer with precision — makes dependable service more important to farmers than ever before.

Between 35 and 40 percent of the fertilizer used on American farms last year was spread under custom contracts. The proportion is almost certain to increase as application methods become more complex and fertilizers are applied in combination with pesticides. By providing not merely fertilizer alone but also reliable services, fertilizer producers may well be in a better position to market their products. Some producers think they can reduce both the direct costs of fertilizing a field and the indirect costs of operators' time.

Fertilizer producers are also exploring the use of credit in financing fertilizer purchases. Because large farms now require large amounts of capital, some fertilizer producers reason that progressive merchandising should include financial advice and prearranged credit — if not from the fertilizer producer, then from some other source.

To provide such services, sales offices are taking on the character of farm service centers. Some centers are owned and operated by the fertilizer company. Others are informally franchised by companies that consider independent dealers more efficient in meeting local needs. Either way, the aim is outlets geared to specialized service to local markets.

Implications for the future

The outlook for the industry in the 1970's is for changes in marketing practices on a par with the production changes of the 1960's. To reestablish equilibrium in the industry, producers will have to encourage more use of fertilizers. And with fewer but larger farms than a decade ago and farm operators becoming

still more sophisticated in the pursuit of profits, fertilizer producers will operate in markets characterized by far more discrimination in purchase decisions.

The result is apt to be a continuing effort to gain back the kind of familiarity with local

markets producers had before their plant capacities outgrew local demand. Such efforts will reflect needs to integrate vast production capabilities and to decentralize sales forces so they can concentrate more on local conditions.

CARL G. ANDERSON, JR.

District highlights

There were indications on May 1 that winter wheat production in the five states of the Eleventh District will total 192 million bushels this year. That would be 3 percent less than in 1969 and 12 percent less than in 1968. More than 90 percent of the District's wheat production is in Texas and Oklahoma. Compared with last year, production will probably be off about 1 percent in Texas and 8 percent in Oklahoma.

These declines result mainly from cutbacks in acreage planted to wheat. Actually, prospects in May were for good yields throughout the District. Farm and ranch activities, in fact, were progressing with the generally favorable weather. Livestock continued in good condition, and prospects for most major crops were considered generally excellent.

There were 1,142,000 head of cattle and calves on feed in Texas on May 1. Although that was 14 percent more than on May 1, 1969, it was 8 percent fewer than on April 1, 1970. Placements into Texas feedlots in April totaled 190,000 head, or 17 percent fewer than a year before and 24 percent fewer than a month before.

There were 436,000 head of cattle on feed in Arizona on May 1. That was 3 percent more than a year earlier but 4 percent fewer than a

month earlier. At 68,000 head, placements into Arizona feedlots were 42 percent more than in March but 14 percent fewer than in April 1969.

The index of prices Texas farmers and ranchers receive for their products was 2 percent lower on April 15 than on March 15. The index was 5 percent higher than in April 1969, however. The all-crops price index was unchanged from the previous month but 3 percent higher than in the same month last year. For livestock and livestock products, the index was 4 percent lower than a month earlier but 5 percent higher than a year earlier.

With reductions in loans more than offsetting increases in security holdings, total bank credit at weekly reporting commercial banks in the Eleventh District declined in the four weeks ended May 13. There was also a substantial decline in total deposits, resulting mainly from a reduction in demand deposits.

Loans adjusted declined \$143 million, which was in sharp contrast to a \$140 million increase in the previous reporting period. There was also a decline a year earlier, when loans adjusted dropped \$88 million. Contributing to the decline this year were reductions of \$37

million in commercial and industrial loans, \$18 million in loans to financial institutions other than banks, and \$20 million in "other" loans. Agricultural and consumer instalment loans expanded, but only negligibly.

Total investments increased \$144 million, primarily because of increased holdings of municipals. Banks reduced their holdings of U.S. Government securities by a small amount while increasing their holdings of short-term municipals by \$46 million and long-term municipals by \$65 million. In the comparable 1969 period, total investments decreased \$68 million.

On the liability side, demand deposits dropped \$205 million, compared with a decline of \$151 million a year before. Deposits of individuals, partnerships, and corporations declined \$201 million, while deposits of the Government dropped \$53 million and inter-bank deposits dropped \$72 million. Deposits of states and their political subdivisions rose, however, increasing \$140 million.

Total time and savings deposits increased \$50 million, in contrast to a decline of \$20 million a year earlier. This increase can be attributed primarily to gains of \$33 million in deposits of individuals, partnerships, and corporations and \$12 million in deposits of states and their political subdivisions. Large certificates of deposit increased \$49 million.

Department store sales in the Eleventh District for the four weeks ended May 23 were 5 percent higher than in the corresponding period last year. Cumulative sales through that date were 3 percent higher than a year earlier.

Registrations of new passenger automobiles in the major metropolitan reporting areas of Texas — Dallas, Fort Worth, Houston, and San Antonio — were 16 percent higher in April than in March. This advance resulted primarily from a 37-percent increase in Houston. Total registrations were 5 percent lower than in April

1969. The cumulative total for the first four months of 1970 was 8 percent lower than in the same period a year before.

Daily average crude oil production in the four producing states of the Eleventh District totaled 6,878,200 barrels in April — 1.2 percent more than in March. This increase brought the daily average to a level 6.7 percent higher than in April 1969. Production in Louisiana advanced 2.0 percent over March to a level 6.2 percent higher than a year before. New Mexico posted a decline of 0.5 percent, which brought production to a level 1.7 percent higher than a year earlier. In Oklahoma, production increased 0.8 percent but was still 0.4 percent lower than in April last year. Texas production was up 0.9 percent to a level 9.1 percent higher than a year before.

The Texas allowable was reduced from 64.5 percent of maximum efficient production in May to 59 percent in June. This is the second consecutive reduction from the 68-percent rate that held for the first four months of the year. Cited as reasons for the cutback were lower nominations and higher crude stocks, resulting from refinery turnarounds and the seasonal slack in demand as needs for fuel oil fell and the summer buildup in demand for gasoline began.

The temporary shutdown of offshore production associated with a recent oil spill has brought several special adjustments in the Louisiana allowable. To make up shortfalls in production, the allowable was raised in April from the expected rate of 48 percent to 50 percent. But as offshore production resumed, the allowable previously announced for May was reduced, from 50 percent to 49 percent. The rate for June was announced at 49 percent.

The daily allowable for regulated wells in southeastern New Mexico was cut from 75 barrels in May to 70 barrels in June. Nomina-

tions were up slightly over May, but at the higher production rate, producers had to flare too much casinghead gas. The Oklahoma allowable remained unchanged at 125 percent.

Seasonally adjusted, the Texas industrial production index dropped 0.7 percent in April, to 175.8 percent of the 1957-59 base. All of the decline was in manufacturing. Petroleum refining and production of transportation equipment slowed substantially. Only two manufacturing groups — leather goods and primary metals — showed increases. Utilities were unchanged. In April, as in other recent months, oil activity was a major force sustaining the index level. Based primarily on increased oil production, total mining output rose nearly 2.0 percent.

The total index was up 6.3 percent over April 1969. Utilities were up 12.6 percent, and mining was up 8.8 percent. Manufacturing also rose, but only 4.4 percent. All the year-to-year

increase in manufacturing was due to a gain in the production of nondurable goods. Production of durable goods registered a slight decline.

Total nonagricultural wage and salary employment in the five southwestern states rose less than seasonally expected in April to 6,352,600. Manufacturing employment showed continued weakness, declining 0.6 percent in contrast to an expected seasonal increase of 1.0 percent. Nonmanufacturing payrolls were up, with all categories except transportation and public utilities rising. Construction, trade, and services showed the most strength.

Moderate year-to-year gains were recorded. Manufacturing employment rose only 0.5 percent over April 1969, and nonmanufacturing increased 4.0 percent. All categories of nonmanufacturing were up except mining, which showed no change. Construction and finance registered the largest gains.

**new
member
bank**

The Houston Intercontinental National Bank, Houston, Texas, a newly organized institution located in the territory served by the Houston Branch of the Federal Reserve Bank of Dallas, opened for business May 15, 1970, as a member of the Federal Reserve System. The new member bank has capital of \$240,000, surplus of \$240,000, and undivided profits of \$120,000. The officers are: A. G. McNeese, Jr., Chairman of the Board; Wm. B. Black, Jr., President; R. D. Nolen, Jr., Executive Vice President; and Henry H. Efird, Vice President and Cashier.

STATISTICAL SUPPLEMENT
to the
BUSINESS REVIEW

June 1970



**FEDERAL RESERVE BANK
OF DALLAS**

CONDITION STATISTICS OF WEEKLY REPORTING COMMERCIAL BANKS

Eleventh Federal Reserve District

(In thousands of dollars)

Item	May 27, 1970	April 29, 1970	May 28, 1969 ¹
ASSETS			
Federal funds sold and securities purchased under agreements to resell.....	496,025	408,750	6,509,397
Other loans and discounts, gross.....	5,917,150	5,983,676	
Commercial and industrial loans.....	2,909,601	2,927,480	3,104,493
Agricultural loans, excluding CCC certificates of interest.....	109,783	106,784	115,749
Loans to brokers and dealers for purchasing or carrying:			
U.S. Government securities.....	500	500	501
Other securities.....	36,136	43,067	40,338
Other loans for purchasing or carrying:			
U.S. Government securities.....	1,089	1,183	542
Other securities.....	398,889	392,312	382,395
Loans to nonbank financial institutions:			
Sales finance, personal finance, factors, and other business credit companies.....	137,338	135,654	139,639
Other.....	343,355	365,705	397,031
Real estate loans.....	594,113	596,669	580,817
Loans to domestic commercial banks.....	11,174	9,617	352,103
Loans to foreign banks.....	9,772	9,872	5,850
Consumer instalment loans.....	732,641	731,077	666,735
Loans to foreign governments, official institutions, central banks, international institutions.....	175	175	0
Other loans.....	632,584	663,581	723,204
Total investments.....	2,540,349	2,629,679	2,497,868
Total U.S. Government securities.....	875,727	904,134	954,073
Treasury bills.....	39,244	48,276	32,384
Treasury certificates of indebtedness.....	0	0	0
Treasury notes and U.S. Government bonds maturing:			
Within 1 year.....	153,464	173,303	102,424
1 year to 5 years.....	598,247	605,152	611,131
After 5 years.....	84,772	77,403	208,134
Obligations of states and political subdivisions:			
Tax warrants and short-term notes and bills.....	7,151	69,585	11,322
All other.....	1,514,551	1,516,691	1,297,205
Other bonds, corporate stocks, and securities:			
Certificates representing participations in:			
Federal agency loans.....	74,892	69,492	148,932
All other (including corporate stocks).....	68,028	69,777	86,336
Cash items in process of collection.....	1,066,318	1,100,895	1,031,881
Reserves with Federal Reserve Bank.....	682,276	711,340	624,404
Currency and coin.....	86,944	85,814	80,353
Balances with banks in the United States.....	421,903	422,271	457,634
Balances with banks in foreign countries.....	5,975	8,322	6,307
Other assets (including investments in subsidiaries not consolidated).....	513,732	516,502	382,175
TOTAL ASSETS.....	11,730,672	11,867,249	11,590,019

LIABILITIES

Total deposits.....	9,042,932	9,107,418	9,417,382
Total demand deposits.....	5,642,053	5,705,180	5,659,082
Individuals, partnerships, and corporations.....	3,932,895	3,942,047	3,870,381
States and political subdivisions.....	327,355	340,336	389,017
U.S. Government.....	129,307	173,876	159,574
Banks in the United States.....	1,151,453	1,136,881	1,109,152
Foreign:			
Governments, official institutions, central banks, international institutions.....	3,654	2,729	2,589
Commercial banks.....	23,069	25,719	25,378
Certified and officers' checks, etc.....	74,320	83,592	102,991
Total time and savings deposits.....	3,400,879	3,402,238	3,758,300
Individuals, partnerships, and corporations:			
Savings deposits.....	918,260	914,233	994,735
Other time deposits.....	1,679,164	1,668,016	2,043,356
States and political subdivisions.....	757,455	775,292	672,759
U.S. Government (including postal savings).....	7,193	7,254	11,858
Banks in the United States.....	23,247	22,873	28,102
Foreign:			
Governments, official institutions, central banks, international institutions.....	14,210	13,220	7,000
Commercial banks.....	1,350	1,350	490
Federal funds purchased and securities sold under agreements to repurchase.....	814,890	855,176	834,207
Other liabilities for borrowed money.....	270,622	326,610	
Other liabilities.....	463,907	435,449	260,676
Reserves on loans.....	133,251	134,422	118,322
Reserves on securities.....	13,278	13,275	n.a.
Total capital accounts.....	991,792	994,899	959,432
TOTAL LIABILITIES, RESERVES, AND CAPITAL ACCOUNTS.....	11,730,672	11,867,249	11,590,019

RESERVE POSITIONS OF MEMBER BANKS

Eleventh Federal Reserve District

(Averages of daily figures. In thousands of dollars)

Item	5 weeks ended May 6, 1970	4 weeks ended Apr. 1, 1970	5 weeks ended May 7, 1969
RESERVE CITY BANKS			
Total reserves held.....	760,527	732,912	759,848
With Federal Reserve Bank.....	709,339	681,714	708,529
Currency and coin.....	51,188	51,198	51,319
Required reserves.....	754,176	748,574	761,901
Excess reserves.....	6,351	15,662	2,053
Borrowings.....	50,627	39,943	36,051
Free reserves.....	44,276	55,605	38,104
COUNTRY BANKS			
Total reserves held.....	780,976	771,344	778,291
With Federal Reserve Bank.....	602,650	592,429	602,895
Currency and coin.....	178,326	178,915	175,396
Required reserves.....	764,382	751,860	763,963
Excess reserves.....	16,594	19,484	14,328
Borrowings.....	4,784	6,567	11,704
Free reserves.....	11,810	12,917	2,624
ALL MEMBER BANKS			
Total reserves held.....	1,541,503	1,504,256	1,538,139
With Federal Reserve Bank.....	1,311,989	1,274,143	1,311,424
Currency and coin.....	229,514	230,113	226,715
Required reserves.....	1,518,558	1,500,434	1,525,864
Excess reserves.....	22,945	3,822	12,275
Borrowings.....	55,411	46,510	47,755
Free reserves.....	32,466	42,688	35,480

CONDITION OF THE FEDERAL RESERVE BANK OF DALLAS

(In thousands of dollars)

Item	May 27, 1970	April 29, 1970	May 28, 1969
Total gold certificate reserves.....	259,887	270,478	244,640
Discounts for member banks.....	101,085	123,585	30,099
Other discounts and advances.....	5,040	5,040	0
U.S. Government securities.....	2,487,243	2,393,357	2,245,891
Total earning assets.....	2,593,368	2,521,982	2,275,990
Member bank reserve deposits.....	1,179,910	1,240,413	1,135,617
Federal Reserve notes in actual circulation.....	1,746,729	1,717,920	1,155,390

CONDITION STATISTICS OF ALL MEMBER BANKS

Eleventh Federal Reserve District

(In millions of dollars)

Item	Apr. 29, 1970	Mar. 25, 1970	Apr. 30, 1969
ASSETS			
Loans and discounts, gross ¹	11,589	11,456	11,091
U.S. Government obligations.....	2,026	2,029	2,354
Other securities.....	3,375	3,230	3,311
Reserves with Federal Reserve Bank.....	1,240	1,329	1,272
Cash in vault.....	264	255	251
Balances with banks in the United States.....	1,162	1,174	1,194
Balances with banks in foreign countries ²	11	11	8
Cash items in process of collection.....	1,259	1,161	1,410
Other assets ³	815	854	679
TOTAL ASSETS⁴.....	21,741	21,499	21,570
LIABILITIES AND CAPITAL ACCOUNTS			
Demand deposits of banks.....	1,485	1,463	1,485
Other demand deposits.....	8,778	8,655	9,053
Time deposits.....	7,379	7,258	7,681
Total deposits.....	17,642	17,376	18,219
Borrowings.....	1,238	1,294	1,096
Other liabilities ⁵	1,097	1,077	569
Total capital accounts ⁶	1,764	1,752	1,686
TOTAL LIABILITIES AND CAPITAL ACCOUNTS⁷.....	21,741	21,499	21,570

¹ Because of format revisions as of July 2, 1969, earlier data are not fully comparable.
r — Revised.
n.a. — Not available.

¹ Before July 2, 1969, this item was published on a net basis.
² — Estimated.

BANK DEBITS, END-OF-MONTH DEPOSITS, AND DEPOSIT TURNOVER

(Dollar amounts in thousands, seasonally adjusted)

Standard metropolitan statistical area	DEBITS TO DEMAND DEPOSIT ACCOUNTS ¹				DEMAND DEPOSITS ¹			
	April 1970 (Annual-rate basis)	Percentage change			April 30, 1970	Annual rate of turnover		
		April 1970 from		4 months, 1970 from 1969		April 1970	March 1970	April 1969
		March 1970	April 1969					
ARIZONA: Tucson.....	\$ 5,728,164	-4	9	17	\$ 223,337	25.1	25.7	24.4
LOUISIANA: Monroe.....	2,721,612	4	12	11	82,293	33.5	32.2	29.3
Shreveport.....	10,384,560	7	36	39	228,033	44.6	41.9	33.0
NEW MEXICO: Roswell ²	977,940	14	16	16	36,241	25.6	22.7	23.7
TEXAS: Abilene.....	2,100,600	5	10	5	98,148	21.1	20.3	19.0
Amarillo.....	5,610,900	-6	8	15	158,144	35.5	37.7	34.8
Austin.....	8,443,872	-14	-7	1	344,966	26.4	34.8	31.4
Beaumont-Port Arthur-Orange.....	6,259,428	3	4	5	230,731	26.7	25.6	25.7
Brownsville-Harlingen-San Benito.....	1,951,872	8	15	14	73,947	26.0	24.1	23.5
Corpus Christi.....	4,885,704	-5	6	9	206,336	23.5	25.1	22.4
Corsicana ²	477,792	9	1	5	31,415	15.3	14.1	15.2
Dallas.....	117,514,308	-5	6	11	2,088,031	55.3	57.6	51.5
El Paso.....	7,027,464	1	9	9	232,235	30.8	30.8	29.5
Fort Worth.....	21,567,576	2	7	11	639,336	33.5	33.5	31.9
Galveston-Texas City.....	2,628,684	-4	5	14	109,275	24.6	25.7	24.7
Houston.....	102,026,688	6	21	14	2,411,199	41.6	39.2	35.7
Laredo.....	943,392	0	18	12	38,821	24.0	23.6	20.9
Lubbock.....	4,473,828	3	-8	0	154,433	29.3	29.0	32.1
McAllen-Pharr-Edinburg.....	1,733,916	4	2	4	96,565	17.7	17.0	18.8
Midland.....	1,953,336	-1	6	2	130,567	14.8	14.7	13.8
Odessa.....	1,647,252	-1	8	14	77,901	20.8	20.8	20.2
San Angelo.....	1,230,384	1	8	9	65,713	18.1	17.9	17.5
San Antonio.....	17,069,352	3	13	12	634,553	27.0	27.0	25.0
Sherman-Denison.....	1,132,968	4	17	12	64,486	17.5	17.0	16.0
Texarkana (Texas-Arkansas).....	1,483,680	4	-9	-9	66,497	21.7	20.5	23.1
Tyler.....	2,199,024	4	0	7	87,415	24.2	22.8	23.5
Waco.....	3,180,624	8	14	15	112,738	27.8	25.8	24.0
Wichita Falls.....	2,218,152	7	-8	-4	116,188	19.0	17.8	20.6
Total—28 centers.....	\$339,573,072	0	11	12	\$8,839,544	38.1	38.2	35.1

¹ Deposits of individuals, partnerships, and corporations and of states and political subdivisions.² County basis.

GROSS DEMAND AND TIME DEPOSITS OF MEMBER BANKS

Eleventh Federal Reserve District

(Averages of daily figures. In millions of dollars)

BUILDING PERMITS

Area	VALUATION (Dollar amounts in thousands)						
	NUMBER		Percent change				
	April 1970	4 mos. 1970	April 1970	4 mos. 1970	April 1970 from		4 months, 1970 from 1969
					Mar. 1970	Apr. 1969	
ARIZONA: Tucson.....	676	2,400	\$ 2,816	\$ 16,687	-52	-69	-1
LOUISIANA: Monroe-West	50	229	1,689	5,679	195	27	19
Shreveport.....	462	1,552	1,646	9,992	1	-69	-41
TEXAS: Abilene.....	44	146	781	2,876	344	152	-39
Amarillo.....	498	2,257	1,985	19,703	-18	-57	106
Austin.....	416	1,405	9,358	33,020	-10	-55	-48
Beaumont.....	190	591	853	3,712	-50	-15	-9
Brownsville.....	94	285	196	1,062	-14	-69	-77
Corpus Christi.....	384	1,312	2,748	11,576	-19	39	40
Dallas.....	1,935	7,337	24,942	115,353	-57	-10	13
Denison.....	57	131	280	1,652	-37	-8	-90
El Paso.....	598	1,792	7,548	34,326	-28	-14	1
Fort Worth.....	448	1,464	7,095	27,105	84	-26	-24
Galveston.....	80	284	823	2,742	-8	-63	-66
Houston.....	2,638	11,519	41,523	138,718	53	12	-13
Laredo.....	70	200	364	1,624	-25	-26	-3
Lubbock.....	226	740	8,514	18,487	243	461	55
Midland.....	85	193	348	1,184	-35	-9	-31
Odessa.....	93	273	383	3,513	-73	58	-22
Port Arthur.....	77	278	143	795	43	-68	-77
San Angelo.....	48	204	276	4,537	-73	-45	154
San Antonio.....	1,415	4,649	9,366	32,854	-30	33	4
Sherman.....	78	232	525	4,863	-42	14	120
Texarkana.....	27	111	1,585	4,006	478	71	35
Waco.....	230	755	3,615	12,225	-48	224	96
Wichita Falls.....	81	259	1,829	3,882	29	20	-39
Total—26 cities..	11,000	40,598	\$131,231	\$512,173	-16	-10	-7

VALUE OF CONSTRUCTION CONTRACTS

(In millions of dollars)

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks
1968: April.....	9,655	4,486	5,169	6,973	2,869	4,104
1969: April.....	10,497	4,893	5,604	7,704	2,988	4,716
November..	10,373	4,750	5,623	7,268	2,690	4,578
December..	10,692	4,947	5,745	7,203	2,628	4,575
1970: January...	10,793	4,910	5,883	7,108	2,568	4,540
February....	10,256	4,625	5,631	7,145	2,554	4,591
March.....	10,284	4,727	5,557	7,231	2,581	4,650
April.....	10,497	4,819	5,678	7,328	2,634	4,694

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

Area and type	GROSS DEMAND DEPOSITS			TIME DEPOSITS		
	Date	Total	Reserve city banks	Total	Reserve city banks	Country banks

||
||
||

WINTER WHEAT PRODUCTION

(In thousands of bushels)

Area	1970, indicated May 1	1969	1968
Arizona.....	9,246	4,526	2,704
Louisiana.....	1,161	874	2,112
New Mexico.....	5,880	5,088	7,625
Oklahoma.....	108,315	118,275	122,383
Texas.....	67,886	68,856	84,150
Total.....	192,488	197,619	218,974

SOURCE: U.S. Department of Agriculture.

DAILY AVERAGE PRODUCTION OF CRUDE OIL

(In thousands of barrels)

Area	April 1970	March 1970	Percent change from		
			April 1969r	March 1970	April 1969
FOUR SOUTHWESTERN STATES.....	6,878.2	6,796.4	6,446.4	1.2	6.7
Louisiana.....	2,492.0	2,442.4	2,346.5	2.0	6.2
New Mexico.....	359.0	360.7	353.0	-5	1.7
Oklahoma.....	618.3	613.5	621.0	.8	-4
Texas.....	3,408.9	3,379.8	3,125.9	.9	9.1
Gulf Coast.....	694.7	677.8	624.1	2.5	11.3
West Texas.....	1,616.3	1,621.0	1,470.5	-3	9.9
East Texas (proper).....	207.0	185.0	152.9	11.9	35.4
Panhandle.....	82.7	84.6	85.0	-2.3	-2.7
Rest of state.....	808.2	811.4	793.4	-4	1.9
UNITED STATES.....	9,677.8	9,598.0	9,232.0	.8	4.8

SOURCES: American Petroleum Institute.
U.S. Bureau of Mines.
Federal Reserve Bank of Dallas.

INDUSTRIAL PRODUCTION

(Seasonally adjusted indexes, 1957-59 = 100)

Area and type of index	April 1970p	March 1970	February 1970	April 1969
TEXAS				
Total industrial production.....	175.8	177.0	175.6r	165.4r
Manufacturing.....	194.5	198.2	195.3r	186.3r
Durable.....	212.9	218.4	220.3	214.1r
Non-durable.....	182.3	184.8	178.6r	167.8r
Mining.....	134.5	132.2	132.3r	123.6r
Utilities.....	255.2	255.2	258.2r	226.7r
UNITED STATES				
Total industrial production.....	170.4	171.1	170.5r	171.7
Manufacturing.....	170.1	170.7	170.3r	173.0r
Durable.....	168.8	170.4	169.5r	175.7
Non-durable.....	171.6	171.4	171.3r	169.6r
Mining.....	135.5	136.1	134.3r	128.8r
Utilities.....	231.5	230.0	230.2r	216.3

p — Preliminary.

r — Revised.

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

CASH RECEIPTS FROM FARM MARKETINGS

(Dollar amounts in thousands)

Area	January—March		Percent change
	1970	1969	
Arizona.....	\$ 115,400	\$ 119,000	-3
Louisiana.....	108,900	111,700	-3
New Mexico.....	47,800	42,800	12
Oklahoma.....	224,400	175,500	28
Texas.....	607,000	572,000	6
Total.....	\$ 1,103,500	\$ 1,021,000	8
United States.....	\$10,990,400	\$10,003,200	10

SOURCE: U.S. Department of Agriculture.

COTTON ACREAGE, PRODUCTION, AND VALUE OF PRODUCTION

(In thousands)

Area	Acres harvested		Bales produced ¹		Value of lint and seed	
	1969	1968	1969	1968	1969	1968
Arizona.....	310	298	634	734	\$ 80,495	\$ 102,394
Louisiana.....	420	410	483	545	61,643	73,425
New Mexico.....	146	151	157	176	22,271	25,571
Oklahoma.....	465	380	279	264	31,234	30,396
Texas.....	4,675	4,125	2,862	3,525	314,542	419,387
Total.....	6,016	5,364	4,415	5,244	\$ 510,185	\$ 651,173
United States.....	11,075	10,160	10,015	10,948	\$1,210,994	\$1,446,513

¹ 500 pounds gross weight.

SOURCE: U.S. Department of Agriculture.

NONAGRICULTURAL EMPLOYMENT

Five Southwestern States¹

Type of employment	Number of persons			Percent change Apr. 1970 from	
	April 1970p	March 1970	April 1969r	Mar. 1970	Apr. 1969
Total nonagricultural					
wage and salary workers..	6,352,600	6,315,900	6,148,300	0.6	3.3
Manufacturing.....	1,165,000	1,172,300	1,159,000	-6	.5
Nonmanufacturing.....	5,187,600	5,143,600	4,989,300	.9	4.0
Mining.....	229,500	229,400	229,400	.0	5.3
Construction.....	408,200	401,500	387,600	1.7	
Transportation and public utilities.....	462,200	463,200	447,400	-2	3.3
Trade.....	1,463,800	1,446,700	1,398,600	1.2	4.7
Finance.....	323,100	320,000	302,800	1.0	6.7
Service.....	1,015,600	1,002,800	972,800	1.3	4.4
Government.....	1,285,200	1,280,000	1,250,700	.4	2.8

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

p — Preliminary.

r — Revised.

SOURCE: State employment agencies.