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- 1 Refining Industry Faces Stiff Challenges**
- 8 "Fed Quotes"**
- 10 Growth in Per Capita Personal Income
Varies Widely in Texas**
- 14 Regulatory Briefs and Announcements**
- 16 Now Available from the Federal Reserve**

Refining Industry Faces Stiff Challenges

By Edward L. McClelland

Refiners in the United States are confronted with a number of major challenges that call for significant adjustments in their operations. Consumption of petroleum products is declining in response to higher prices. The quality of domestic crude oil is deteriorating. Demand for petroleum products is shifting from heavy heating oils to greater quantities of transportation fuels—unleaded gasoline and diesel and jet fuels. And after more than 20 years the industry is again operating in an unregulated market, where the cost of crude oil is determined by supply and demand in world markets. Many refineries will be closed, and those that remain in operation will require adjustments to meet changes in input supply and product demand.

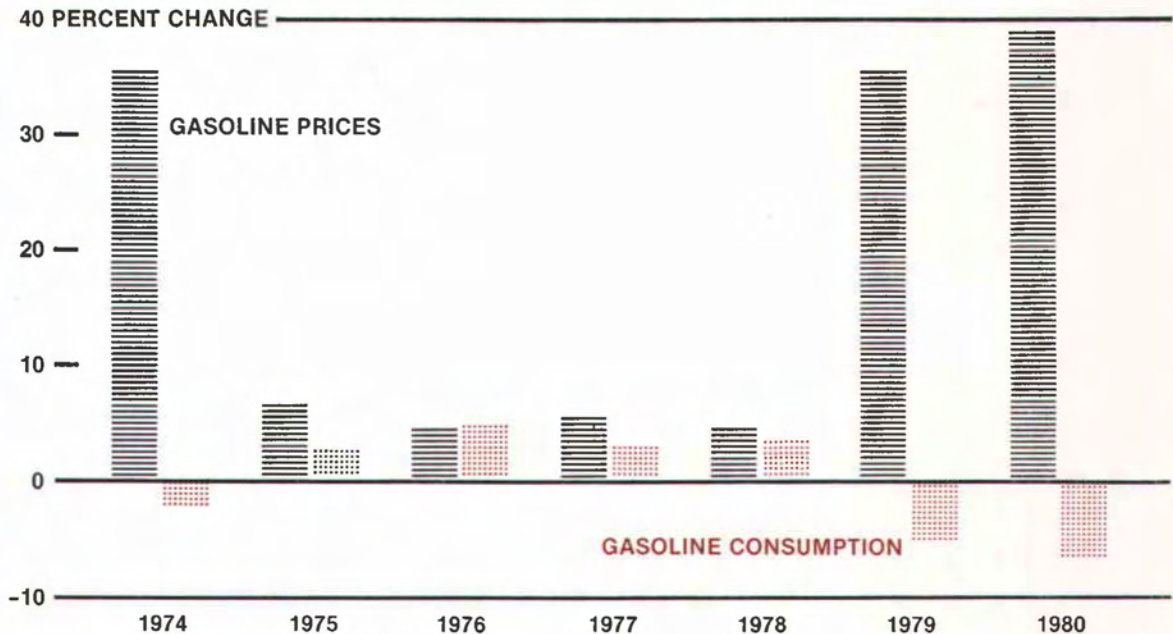
Refining is a highly capital-intensive industry that manufactures a wide range of petroleum products from crude oil. The first refineries produced kerosine and heating oils. But with the growth of the automobile industry, motor gasoline became the product around which refining expanded. To-

day, more than a third of all U.S. refineries are in the four states of the Eleventh Federal Reserve District, and they account for nearly half of total capacity. In terms of value added by manufacture, petroleum refining is the second largest manufacturing industry, following chemicals, in both Texas and Louisiana.

In the past decade, major price increases have substantially altered petroleum product markets. In 1974, for example, gasoline prices rose 35 percent, as measured by the consumer price index, and consumption decreased 2 percent. The use of gasoline then increased four years in a row, peaking in 1978 at nearly 7.5 million barrels a day. Since then, consumption has declined 19 percent after a doubling in pump prices.

Sales of heating oils traced similar patterns. The wholesale price of light heating oil rose 106 percent from 1973 to 1975, and usage declined 8 percent. And from 1978 to 1980, the price of light heating oil increased 119 percent, and consump-

Gasoline consumption drops with each large hike in prices



SOURCES: U.S. Department of Energy.
U.S. Department of Labor, Bureau of Labor Statistics.

tion dropped nearly 17 percent. A 161-percent run-up in prices of residual fuel oil from 1973 to 1975 resulted in a 13-percent decline in consumption. And from 1977 to 1980, residual oil prices rose 72 percent, and usage declined 19 percent.

Prospects of continued high prices and declining consumption, particularly of gasoline, suggest a slow recovery in refinery output from the current capacity utilization rate of 67 percent. Normal operating rates are about 90 percent. As a result, refiners are closing some marginal facilities and putting others in protective storage. Nonetheless, refiners plan substantial increases in outlays for additional plants and equipment that will be needed in the years ahead to accommodate the expected changes in quality of crude oil and shift in product mix.

Shifts in crude oil quality and product mix require investment

Much of the U.S. refining industry was built to process crude oils with low specific gravities and sulfur content. Oils with such characteristics are

referred to as light, sweet crudes. The large complex of refineries on the Gulf Coast, for example, was built to process those grades of oil, which were readily accessible in the Southwest. But with the decline in domestic crude production, the refiners turned to similar grades of imported oil produced in such areas as Nigeria, Libya, Algeria, and the North Sea.

Refining entails distilling crude oil into its basic components. Distillation of light crudes yields relatively high proportions of gasoline and light fuel oils. Heavy, viscous crudes yield greater quantities of residual heating oils, which are of less economic value than lighter products. Increasing the output of gasoline and light oils requires special processing equipment to break the heavy products into lighter ones. Oils containing sulfur require still more processing to remove that impurity.

As production of higher grades of crude declines, refiners are forced to process less desirable grades of oil. In 1978, for example, about 54 percent of all refinery feedstocks was light, sweet crude. That share declined to little more than 50 percent last year and is projected to fall to about

43 percent in 1982 and to as low as 40 percent by 1990, according to the National Petroleum Council.

Substituting synthetic fuels derived from coal in the future will not reverse the deterioration in the quality of crude oil. The "synfuels" will also be heavy and will likely contain chemical impurities, such as arsenic, that have to be removed in the refining process.

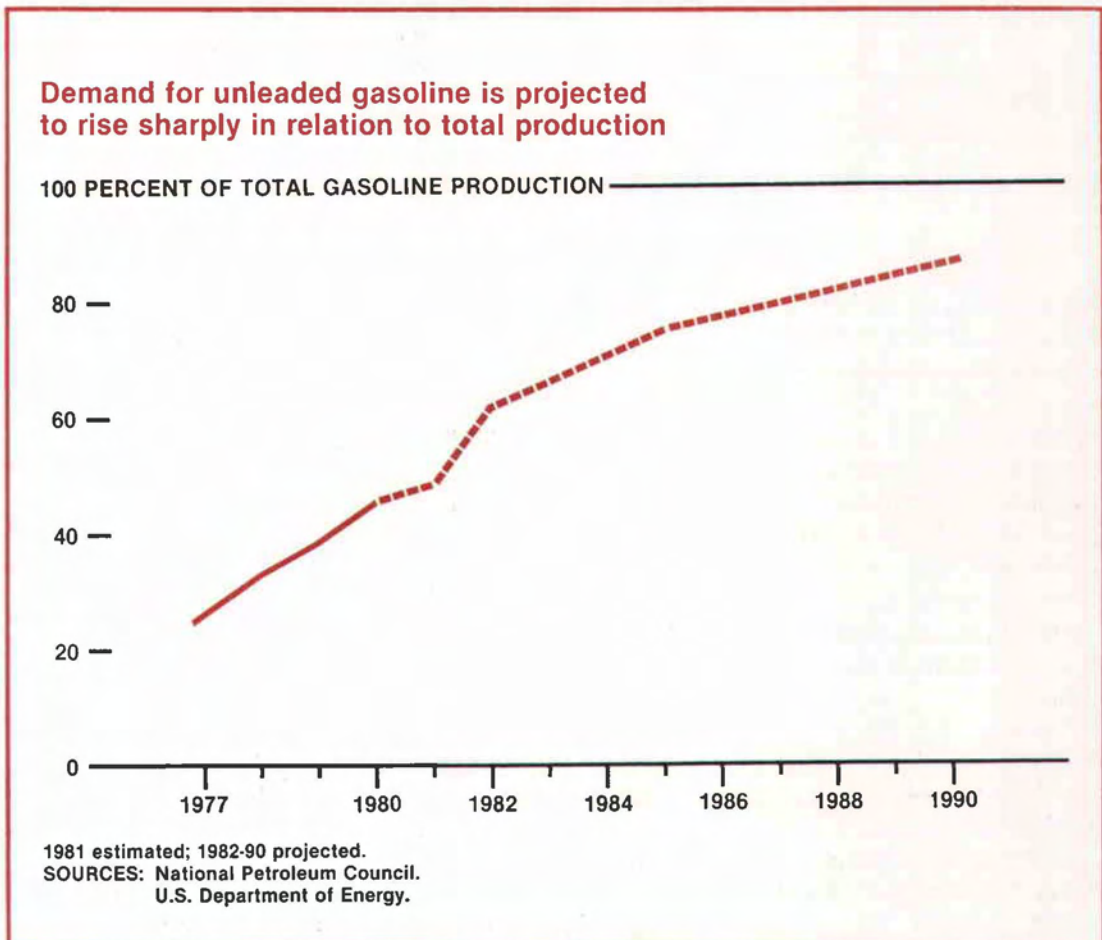
Demand for unleaded gasoline as a share of all gasoline produced is growing rapidly. New cars and trucks require unleaded gasoline to conform with legislated exhaust emission standards. And as more fuel-efficient vehicles replace older gas guzzlers, total consumption of gasoline is expected to decrease through the 1980's.

Nearly half of all gasoline sold today is unleaded, compared with a third in 1978. Moreover, the National Petroleum Council estimates that share will increase to 64 percent in 1982 and to 89 percent in 1990 as the existing stock of older vehicles is scrapped. At the same time, octane levels

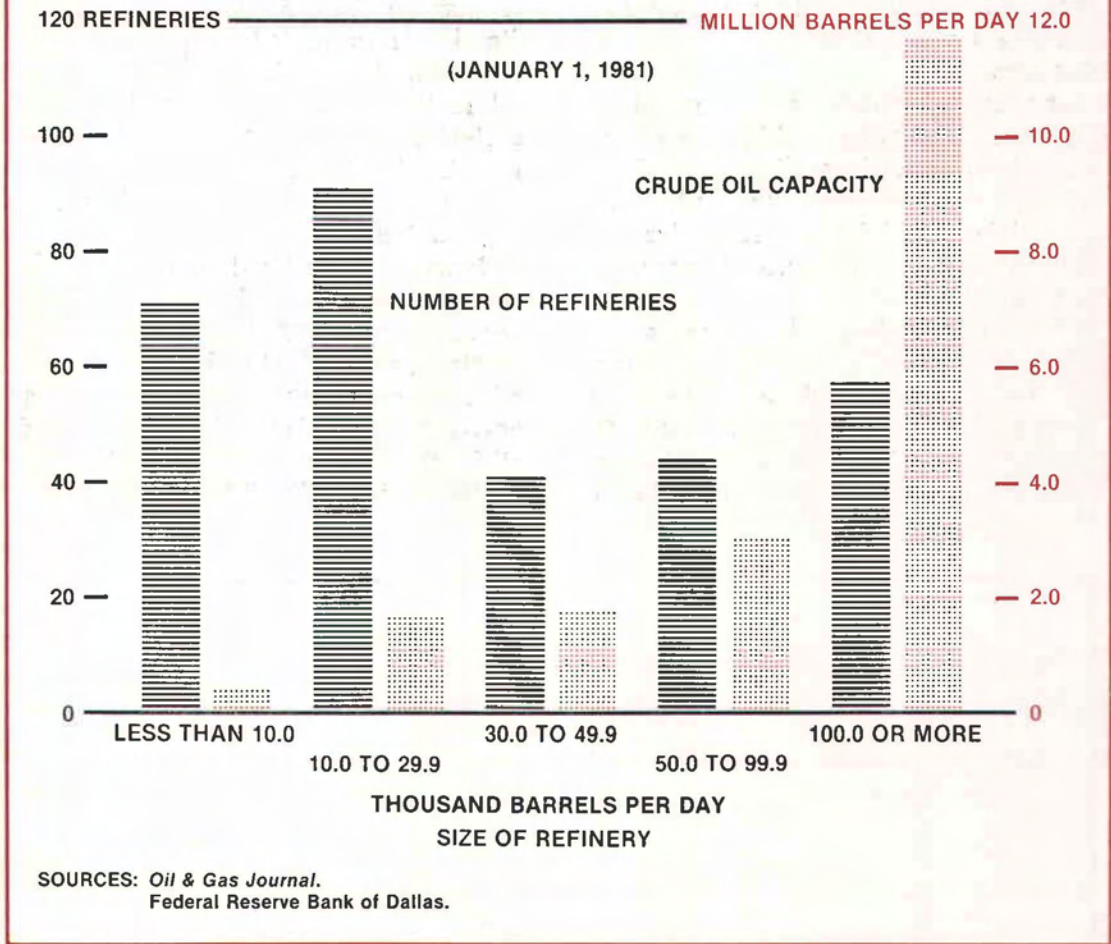
are scheduled to be raised, and that will necessitate further modifications of existing processing facilities.

The fastest growth in product demand in this decade will be for diesel fuel, which is projected to increase about 5 percent a year. Production of diesel fuel accounted for less than 10 percent of total output of middle distillates—kerosines, diesel fuels, and light heating oils—in 1978 but is projected to rise to 31 percent in 1990. Output of kerosine for jet fuel is also forecast to increase rapidly, but production of light heating oils should begin to fall.

Demand for residual fuel oil, which is burned mainly as an industrial boiler fuel, has declined 22 percent since 1977. The decline is expected to continue, although at a slower rate, as the price of oil increases relative to prices of coal and nuclear power. Those fuels will be substituted for residual oil for the production of heat and steam, and much of the residual oil will be available for conversion



U.S. refinery capacity is concentrated in a fairly small number of large plants



to gasoline and diesel and jet fuels.

The refining industry invested about \$2.5 billion in 1979 to modernize plants to process heavier, high-sulfur grades of crude oil and to increase the production capacity of unleaded gasoline. However, estimates of the cost of making the modifications necessary to satisfy further changes in feedstocks and product mix in the 1980's range as high as \$60 billion.

Several types of downstream facilities will be needed. In order to raise gasoline octane ratings, the capacity for catalytic reforming (a process to produce a high-octane blending component) will have to be increased. Greater use of high-sulfur crudes will call for an increase in hydrotreating facilities. And because consumption of residual

oils is expected to decline, the capacity to convert heavy fuel oils to lighter products (coking facilities) is projected to increase significantly.

Many refineries will close

The refining industry is widely diversified by size and configuration of plant. Differences are related to the grade of feedstock and product mix for which a refinery is specifically designed and the size of market it serves. Small refineries, for the most part, are "topping" or "skimming" plants and only distill crude oil into its component parts without further processing. On the other hand, large refineries have additional processing facilities, which gives them some flexibility to change

The Entitlements Program

Until 1973, prices of imported oil were below domestic price ceilings. Wide disparities in costs of crude oil to independent and integrated refiners occurred following the Arab embargo as prices of foreign oil rose above domestic price ceilings. For example, the well-head price of domestic crude averaged \$6.74 a barrel in 1974, compared with the average official price of \$11.28 a barrel for oil sold by members of the Organization of Petroleum Exporting Countries (OPEC). That was up from \$3.39 for domestic oil and \$2.48 for Arabian light oil (f.o.b. Persian Gulf) two years earlier.

Without secure sources of lower-priced domestic oil, independent refiners found themselves at a severe competitive disadvantage as prices rose in the spot and foreign markets. The Crude Oil Entitlements Program was instituted to eliminate that imbalance. "Entitlements" to refine domestic oil were distributed

to all refiners, roughly on the basis of their capacity. Then, those refiners that actually had the domestic crude to refine were required to purchase the entitlements from those that did not. The purchase price was set by the U.S. Department of Energy at a level that would equalize the average cost of imported and domestic crude to all refiners.

The entitlements program went further than merely equalizing the cost of crude oil, however. Small refiners received a larger number of entitlements than they would have if the distribution had been based solely on capacity. The biggest gainers were small refiners with capacities of less than 10,000 barrels a day, since their crude oil costs were subsidized by large refiners. This "small refiner bias" declined as the size of refinery increased, and no extra entitlements were granted to refiners with capacities of 175,000 barrels a day or more. Thus, the distribution of entitlements subsidized small refiners.

the composition of output.

The whole refining industry will have to adjust to changing market conditions. Refineries of all types will be affected, but the threat to survival will be greatest for the large number of small plants. At the beginning of this year, 304 refineries were operating in the nation, with a total capacity of 18.5 million barrels a day. More than half processed less than 30,000 barrels a day and accounted for 11 percent of total industry capacity. By comparison, the 57 largest refineries, with capacities of 100,000 barrels a day or more, accounted for 63 percent of total capacity.

Size does not guarantee survival, however. Several very large refineries have shut down because they are capable of processing light, sweet crudes only. Nevertheless, most small refineries require proportionately greater investments in additional equipment to adjust to the current changes in feedstocks and product mix. And in many cases, those investments would not provide the economies of scale usually needed to make refineries profitable. Therefore, few small refineries will find it economic to make such investments when total consumption of refined products is declining.

In addition, small, independent refiners that rely heavily on imports and spot markets for their feedstock generally face significantly higher prices for crude oil than they paid previously. Before domestic oil prices were decontrolled last January, the cost of crude to all refiners was set under the Federal Energy Administration's Crude Oil Entitlements Program, which was initiated in 1974 under the authority of the Emergency Petroleum Allocation Act of 1973.¹ The principal purpose of the entitlements program was to equalize the average cost of crude oil supplies among refiners. But the program also subsidized small refiners (as indicated in the accompanying box).

The subsidy kept some refineries in operation that would otherwise have gone out of business.

1. "Entitlements program" was a common designation for regulations promulgated in 10 CFR § 211.67 [Code of Federal Regulations], originally known as the Old Oil Allocation Program and after April 1, 1976, known as the Domestic Crude Oil Allocation Program. The entitlements program replaced the Mandatory Oil Import Program, instituted in 1959 to limit imports of crude oil and petroleum products.

In fact, many small refineries were only marginally profitable in 1973, but the entitlements program ensured them a profit. Now, small refiners find themselves facing the same situation as in December 1973: they must pay market prices for crude oil. And about half of the 71 refineries with capacities of less than 10,000 barrels a day are expected to close.

Those in special situations could survive. Refiners that invested in additional capacity for downstream processing have a better chance. Small refineries in relatively isolated markets, where competition from other refineries is minimal, could also survive. Rather than build new distillation facilities, large refiners may take over some nearby small plants that were built to process lower-quality imported crude. The output from those plants could be routed through the adjacent down-

stream facilities of larger refineries, and production costs could be minimized.

One recent development has been the growing interest of OPEC members in buying small U.S. refineries. For example, Kuwait has acquired four refineries, three of which are in Texas, that range in size from 39,000 barrels a day to 50,000 barrels a day. In addition, Venezuelans, Algerians, and Saudis are reported to be seeking refineries.

In a free market, only the most efficient producers stay in business. With total consumption declining, with substantial additional expenditures required for new plants and equipment, and with many refiners facing high crude oil costs, the refining industry will have to make adjustments. The market will determine which refineries, both large and small, are shut down and will allow the survival of the lowest-cost operations.

New Nonmember Bank

First State Bank, Cypress, Texas, a newly organized nonmember bank located in the territory served by the Houston Branch of the Federal Reserve Bank of Dallas, opened for business July 1, 1981.

New Member Banks

First National Bank of Allen, Allen, Texas, a newly organized institution located in the territory served by the Head Office of the Federal Reserve Bank of Dallas, opened for business July 1, 1981, as a member of the Federal Reserve System. The new member bank opened with capital of \$750,000 and surplus of \$750,000. The officers are: Claude D. Whitaker, Chairman of the Board; William R. Nethery, President; and Chris B. Milburn, Vice President and Cashier.

United National Bank of Plano, Plano, Texas, a newly organized institution located in the territory served by the Head Office of the Federal Reserve Bank of Dallas, opened for business July 1, 1981, as a member of the Federal Reserve System. The new member bank opened with capital of \$1,250,000 and surplus of \$1,250,000. The officers are: Robert L. Harrington, Jr., Chairman of the Board; Joe D. Willard, President; Jim Mills, Vice President; and VaRue Coley, Cashier.

International Bank, N.A., Brownsville, Texas, a newly organized institution located in the territory served by the San Antonio Branch of the Federal Reserve Bank of Dallas, opened for business July 6, 1981, as a member of the Federal Reserve System. The new member bank opened with capital of \$750,000 and surplus of \$750,000. The officers are: Emery Green, Jr., Chairman of the Board and President; Richard H. Taylor, Senior Vice President; Walter C. Rathjen, Senior Vice President; and Marilyn Kelly, Vice President and Cashier.

RepublicBank Kingwood, N.A., Kingwood, Texas, a newly organized institution located in the territory served by the Houston Branch of the Federal Reserve Bank of Dallas, opened for business July 6, 1981, as a member of the Federal Reserve System. The new member bank opened with capital of \$1,000,000 and surplus of \$1,000,000. The officers are: J. R. Barsalou, III, Chairman of the Board; H. Michael Van Meter, President; Kris A. Allison, Vice President and Cashier; and James C. Marlar, Vice President.

Franklin National Bank, Mount Vernon, Texas, a newly organized institution located in the territory served by the Head Office of the Federal Reserve Bank of Dallas, opened for business July 15, 1981, as a member of the Federal Reserve System. The new member bank opened with capital of \$750,000 and surplus of \$750,000. The officers are: Thomas D. Ramsay, Chairman of the Board; Joe Dan Coe, President; Jack H. Caraway, Vice President and Cashier; and Yvonne Byrd, Assistant Cashier.

Collin Creek Bank, N.A., Plano, Texas, a newly organized institution located in the territory served by the Head Office of the Federal Reserve Bank of Dallas, opened for business July 20, 1981, as a member of the Federal Reserve System. The new member bank opened with capital of \$1,250,000 and surplus of \$1,250,000. The officers are: Alan Feld, Chairman of the Board; Edward D. Mahon, President; Sam J. Switzer, Vice President; and Brenda Maiden, Cashier.

“Fed Quotes”

Brief Excerpts from Recent Federal Reserve Speeches, Statements, Publications, Etc.

“The banking system’s share of total credit flows was 26 percent during the past five years. This was a little lower than the 28 percent share recorded in the first five years of the 1970’s, and lower still than the 31 percent share that prevailed in the 1960’s. But it is well above the 19 to 20 percent share of the total that prevailed in the 1950’s, when the innovations we have been discussing got underway. Perhaps the biggest single factor in the ability of the banking system to increase its share of total credit supplied since the 1950’s has been the added funds for lending obtained by commercial banks through development of markets for negotiable CD’s [certificates of deposit].

“The share of the household savings flow captured by commercial banks follows a broadly similar pattern. Increased holdings of currency and commercial bank deposits over the past five years account for 34 percent of the increase in total holdings of currency, deposits at all depository institutions, money market fund shares and credit market instruments by the household and nonprofit sector. This compares with 39 percent in the first half of the 1970’s and 43 percent in the 1960’s. Again, however, the share in the past five years is substantially above the 28 percent figure of the decade of the 1950’s.

“Banks are not only obtaining a bigger piece of the action than they did in the 1950’s, they are also putting the funds to profitable uses. In the 1950’s, the net income of all insured commercial banks was about 0.63 percent of total assets. That ratio moved up to .75 percent in the 1960’s, and to .81 percent in the 1970’s. Since bank capital has risen somewhat less rapidly than assets, the ratio of net income to equity has risen still more. In fact during the past five years the ratio of net income to equity at all insured commercial banks was more than 50 percent above its level in the first five years of the 1950’s.

“You might well argue that these figures do not tell the whole story, and that a more careful look at the data would uncover evidence of slippage in the relative position of commercial banks in one or another areas of the financial system. Indeed, there has been some slippage in recent years, particularly relative to the 1960’s. Moreover, some of the increase in earnings probably reflects additional risk-taking. But the record of the past 30 years does indicate that banks have done quite well in a world of rapid financial innovation, increasing competition, and advancing technology. I see no reason why that should not continue.”

Lyle E. Gramley, Member, Board of Governors of the Federal Reserve System (At the 47th Annual Session of the Stonier Graduate School of Banking, New Brunswick, New Jersey, June 11, 1981)

"The question is often asked whether cash management accounts, shares of money market mutual funds, and similar substitutes for bank deposits pose a significant problem for the monetary control. Today, the answer to that question is, I think, no. The volume of cash management accounts is still quite low. Moreover, available evidence suggests that average turnover rates for money market mutual fund shares are very low. In this respect, money market fund shares are more like passbook savings accounts than checking deposits.

"New financial assets that could potentially be used for transactions purposes are, however, proliferating at a rapid pace. It would therefore seem to me useful if the Federal Reserve had the power to define as deposits for purposes of Regulations D and Q any financial asset that is properly classified as a transactions balance. Such a step seems to me important for reasons of equity as well as for purposes of monetary control.

"Generally speaking, however, public policy should not seek to close loopholes by extending regulation to the offending instrument or institution. History clearly indicates that such a course of policy only perpetuates the basic problem and creates further opportunities for other unregulated firms. The better solution to deal with competitive inequities in financial markets is gradual, but steady, deregulation."

Lyle E. Gramley, Member, Board of Governors of the Federal Reserve System (At the 47th Annual Session of the Stonier Graduate School of Banking, New Brunswick, New Jersey, June 11, 1981)

"An examination of the available data indicates quite clearly that, while the farm sector—like others—is confronted today with a problem of high credit costs, it is not facing a significant problem with respect to credit availability. You will recall the serious concerns about shortages of agricultural credit supply at rural banks in late 1979 and early 1980. For agricultural banks nationwide, the average loan-deposit ratio—one indicator of banks' capacity to make additional loans—had reached 68 percent by the fall of 1979, having climbed in the late 1970s from the 55 percent area that had prevailed throughout the period from 1968 to 1975. Many agricultural bankers believed that they might be unable to accommodate the increased loan demands they expected from farmers in the spring of 1980.

"However, even during this period of concern, changes were in train in deposit and loan trends that subsequently alleviated the liquidity squeeze. On the deposit side, favorable 1979 farm income and the availability of the attractive new six-month money market certificate (MMC) helped to maintain a substantial inflow of lendable funds. Meanwhile, with interest rates on loans at banks rising faster than those posted by production credit associations and the Farmers Home Administration early last year, demands for production credit were diverted from the banks. The business recession also cut into nonfarm loan demands. As a result of all these developments, agricultural banks saw their loan-deposit ratio fall sharply last year, to 60 percent. Thus far in 1981, loan growth at these banks has picked up a bit, but deposit growth has kept pace so that liquidity positions in the aggregate have not deteriorated."

Frederick H. Schultz, Vice Chairman, Board of Governors of the Federal Reserve System (Before the Subcommittee on Conservation, Credit, and Rural Development, U.S. House of Representatives, June 23, 1981)

Growth in Per Capita Personal Income Varies Widely in Texas

By Mary G. Grandstaff

Per capita personal income in Texas rose at an annual rate of 11.3 percent between 1973 and 1978, or considerably faster than the growth rate of 9.5 percent for the United States. The more rapid growth in per capita personal income in Texas reflected a sharper rate of growth in per capita labor income and a slightly higher rate of increase in per capita income from dividends, interest, and rent. Per capita proprietors' income and transfer payments in the state as a whole rose slightly less than in the nation between 1973 and 1978, but some parts of the state had much sharper growth in these categories.

Much of the faster growth in Texas is directly attributable to the rapid increases in oil prices after 1973. Although Texas has had a relatively high level of oil activity throughout most of the 20th century, the higher prices boosted oil exploration in the state, as well as worldwide. Workers in drilling, oil servicing, and manufacturing firms supplying these industries benefited from rapidly rising wages as demand for qualified workers soared; the rising wages resulted in greater demand for goods and services, which, in turn, increased proprietors' income in many areas. In addition, rental income expanded in response to both rising royalties from oil and gas wells and increased oil leasing activity.

The faster rate of growth in per capita personal income also was due to the greater strength of the Texas economy, which has encouraged rapid growth in the state's labor force. The Texas unemployment rate has consistently been lower than the national average in recent years, and Texas has had a steadily higher proportion of its population in the work force.

Analysis of local area data, however, indicates that all Texans have not been equally fortunate. In some areas of the state, especially those whose economies are closely related to the production of oil and gas, growth in per capita personal income was substantially higher than the national average. Other areas, notably those in which the economy is largely based on a single nonpetroleum industry (such as trade, tourism, or the military), had much lower average rates of growth.

Per capita personal income in 7 of the 25 standard metropolitan statistical areas (SMSAs) in Texas—Midland, Odessa, Longview-Marshall, Amarillo, Beaumont-Port Arthur-Orange, San Angelo, and Abilene—rose at annual rates that were over 3 percentage points higher than the national average between 1973 and 1978. Increases in average annual growth in per capita personal income in three SMSAs—San Antonio, Killeen-Temple, and El Paso—fell short of the national gain. Annual

Table 1
PER CAPITA PERSONAL INCOME, 1973 AND 1978

Area	1973		1978		Average annual growth rate, 1973-78 (Percent)
	Level	Percent of U.S. average	Level	Percent of U.S. average	
Texas SMSAs ¹					
Midland	\$5,173	104	\$10,658	136	15.6
Odessa	4,315	87	8,551	109	14.7
Longview-Marshall	4,213	85	7,799	99	13.1
Amarillo	4,679	94	8,530	109	12.8
Beaumont-Port Arthur-Orange	4,416	89	8,052	103	12.8
San Angelo	4,309	87	7,859	100	12.8
Abilene	4,131	83	7,512	96	12.7
Houston	5,234	105	9,398	120	12.4
Corpus Christi	3,975	80	7,104	91	12.3
Galveston-Texas City	4,642	93	8,099	103	11.8
Laredo	2,598	52	4,529	58	11.8
Tyler	4,625	93	8,084	103	11.8
McAllen-Pharr-Edinburg	2,491	50	4,323	55	11.7
Texarkana (Texas-Arkansas)	3,848	77	6,628	85	11.5
Wichita Falls	4,795	96	8,255	105	11.5
Brownsville-Harlingen-San Benito ...	2,943	59	5,024	64	11.3
Lubbock	4,324	87	7,260	93	10.9
Austin	4,348	87	7,270	93	10.8
Dallas-Fort Worth	5,271	106	8,756	112	10.7
Waco	4,419	89	7,360	94	10.7
Bryan-College Station	3,763	76	6,133	78	10.3
Sherman-Denison	4,479	90	7,297	93	10.3
San Antonio	4,266	86	6,648	85	9.3
Killeen-Temple	4,390	88	6,795	87	9.1
El Paso	3,660	73	5,639	72	9.0
Texas (state total)	4,525	91	7,746	99	11.3
United States	4,981	100	7,840	100	9.5

1. Standard metropolitan statistical areas.
SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis.
Federal Reserve Bank of Dallas.

growth in the other 15 Texas SMSAs ranged from nearly 1 percentage point to almost 3 percentage points higher than the national gain.

Labor income growth has been linked to labor supply and dominant industries

Since wages and salaries accounted for at least three-fifths of total per capita personal income in all Texas SMSAs in 1978, any factors affecting growth in this source of income are of considerable importance in explaining variations in average incomes. Per capita wages and salaries in a given area are directly dependent on the proportion of its residents employed and the wages and salaries received.

The three Texas SMSAs with below-average growth in per capita personal income between 1973 and 1978 were among the lowest SMSAs in Texas

in terms of the proportion of their populations—30 to 39 percent—in the labor force in 1978. Nationally, about 46 percent of the population was in the labor force. Because of the lower levels of labor force participation and the higher unemployment rates in two of the areas, the proportion of the population actually working in these three SMSAs—28 to 37 percent—was also considerably below the U.S. average of 43 percent. These lower ratios of employment to population are partially due to the proximity of the three areas to the Texas-Mexico border. Thousands of Mexican nationals cross the border annually, both legally and illegally, to work in the United States, and many of these workers secure employment near the border.

The unemployment rate, on the other hand, is directly dependent on the ability of the local economy to provide suitable job opportunities for residents who have joined the work force. In six

Table 2

PER CAPITA PERSONAL INCOME, BY SOURCE, 1978

Area	Labor	Propri-	Dividends,	Transfer	Other
	income	etors' income	interest, and rent	payments	sources ²
	As percent of area's total per capita personal income				
Texas SMSAs ¹					
Midland	72.8	9.5	19.7	5.4	-7.3
Odessa	76.4	7.5	12.3	6.4	-2.6
Longview-Marshall	74.7	7.3	17.5	12.2	-11.8
Amarillo	66.9	7.7	18.8	9.4	-2.7
Beaumont-Port Arthur-Orange	78.1	5.2	12.5	10.2	-6.1
San Angelo	61.7	8.6	20.9	12.3	-3.5
Abilene	63.3	9.5	18.1	12.8	-3.8
Houston	82.8	5.3	11.4	6.3	-5.7
Corpus Christi	71.0	8.5	14.4	11.5	-5.3
Galveston-Texas City	61.2	4.7	13.5	10.0	10.5
Laredo	69.3	9.1	10.4	17.8	-6.5
Tyler	69.5	8.5	20.3	11.0	-9.3
McAllen-Pharr-Edinburg	60.6	8.5	19.3	16.7	-5.2
Texarkana (Texas-Arkansas)	67.1	7.9	15.8	17.2	-8.0
Wichita Falls	66.0	8.5	18.6	12.4	-5.4
Brownsville-Harlingen-San Benito ..	64.8	8.2	17.3	15.7	-6.0
Lubbock	68.6	8.0	17.9	9.5	-4.0
Austin	70.8	6.3	16.3	11.5	-4.9
Dallas-Fort Worth	75.5	6.5	13.9	8.6	-4.5
Waco	63.6	6.9	18.9	14.5	-4.0
Bryan-College Station	71.8	5.0	18.2	12.0	-6.9
Sherman-Denison	65.7	5.9	17.9	15.3	-4.8
San Antonio	68.5	5.9	15.1	15.9	-5.4
Killeen-Temple	80.7	4.0	10.7	10.5	-5.9
El Paso	75.7	5.4	11.5	15.2	-7.8
Texas (state total)	71.4	7.1	15.1	10.5	-4.1
United States	70.4	6.7	13.8	13.1	-4.1

1. Standard metropolitan statistical areas, ranked by average annual growth rates of total per capita personal income, 1973-78 (Table 1).

2. Includes personal contributions for social insurance and a residence adjustment (total inflows of commuters labor income minus the total outflows).

NOTE: Percentages may not add to 100.0 because of rounding.

SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis.
Federal Reserve Bank of Dallas.

of the seven Texas SMSAs where per capita personal income rose substantially faster than the national average—Midland, Odessa, Longview-Marshall, Amarillo, San Angelo, and Abilene—unemployment rates were below the national average. These lower rates occurred even though a higher proportion of the population in the six areas (48 to 60 percent) was included in their labor force.

The average wages and salaries of a given locality also depend on the industries in the area. Some jobs command higher wages than others. For example, both levels of and increases in average wage rates paid in mining and some types of manufacturing jobs, such as chemicals and refining,

were quite high relative to average rates paid in most other industries.

The proportion of employees working in mining and manufacturing industries in the areas with lowest income growth—17 percent—was considerably less than the proportion of employees in such industries in the SMSAs with fastest growth in average income—27 percent. Over a fourth of the employees in Midland, the top SMSA in terms of average income growth, worked in the oil industry alone, compared with less than one-half of 1 percent in the three SMSAs with slowest overall growth in average income. These three areas generally had a larger proportion of workers in

trade, services, state and local government, and finance, insurance, and real estate than the areas with more rapid per capita income growth.

The three SMSAs with slowest growth in per capita income—El Paso, Killeen-Temple, and San Antonio—also had a higher dependence on military installations than most other Texas SMSAs. Cut-backs in defense allocations in the middle and late 1970's had a negative impact on income growth in the three areas.

Growth in income from other sources has followed growth in labor income

The relationships between labor income, proprietors' income, and property income are straightforward. Faster rising wages generally will lead to higher demand for goods and services, which, in turn, should result in increased proprietors' income. Per capita proprietors' income increased at an average annual rate of 8.9 percent in the seven Texas SMSAs with the fastest growth rates in total per capita income between 1973 and 1978 but increased only 3.8 percent in the three areas where such income rose slowest.

Similarly, income from dividends, interest, and rent is related to both labor income and proprietors' income. Where labor and proprietors' incomes increase faster, more funds will be available for investment in assets generating dividends, interest, or rent. Rental income in many areas also was boosted by the sharp increase in the sale of oil leases in the middle and late 1970's. Per capita income from dividends, interest, and rent rose at an average annual rate of 14.0 percent in the seven Texas SMSAs with the fastest growth in total per capita income between 1973 and 1978, compared with 10.2 percent in the areas with below-average rates of increase in total per capita income.

The remaining major component of per capita personal income, transfer payments, may also depend on wage and salary income, but the direction of dependence is not the same for all types of transfer payments. Higher average earnings normally mean larger average retirement or disability benefits because the payments under social security, retirement, and disability insurance are based on individual earnings. On the other hand, a negative relationship between wage and salary income and transfer payments may be observed where a larger proportion of the population is drawing transfer payments.

In 1978, average per capita transfer payments in

the three Texas SMSAs with slowest growth in average income exceeded those in the seven SMSAs with the fastest growth. That occurred partially because of the lower employment-population ratios in the low-income areas. The higher unemployment rates meant that more people were eligible for unemployment compensation, and the larger portion of the population not in the labor force probably meant more people were eligible to receive some other form of transfer payment for income maintenance. Thus, even though the level of unemployment and income maintenance benefits per recipient may have been lower (these benefits tend to be related to local income levels), the higher proportion of recipients resulted in higher per capita transfer payments in the low-income areas.

Strong growth likely to continue in Texas

On the whole, per capita personal income should still grow more rapidly in Texas than nationwide in the next few years. Most Texas SMSAs with higher than average per capita personal income are likely to continue to experience more rapid growth because all have strong and somewhat varied economies. And growth in per capita income in many of the other SMSAs has been exceeding the national average in recent years. Moreover, unemployment rates in most of the Texas areas are well below the national average.

The advantage Texas has historically enjoyed as a result of its petroleum industry could begin to deteriorate somewhat, however, as energy development in other states gains momentum and alternative energy sources are tapped further. Nevertheless, Texas should continue to have a sizable advantage in chemicals and many other types of manufacturing, such as electronics, fabricated metals, and nonelectrical machinery. Income in the state should also receive added boosts from the projected increase in defense spending and the continuing migration of businesses to the Sun Belt.

Average incomes in a few areas of the state, though, have remained well below the national average. These are largely areas whose economies are based primarily on a single industry. They have large, elastic supplies of labor and are somewhat isolated from major industrial centers. For residents of these areas, the outlook for a substantial increase in their average incomes is not good. In the near term, they likely will continue to be plagued by the same problems that have restrained their income growth in the past.

Regulatory Briefs and Announcements

Margin Regulations: Board Proposes Further Revisions

The Federal Reserve Board has published for comment a second group of proposed revisions of its margin regulations G, T, and U, intended to simplify the regulations and reduce the regulatory burden of compliance. These proposed revisions come as part of the Board's Regulatory Improvement Project.

One of the proposed amendments to Regulation T (Credit by Brokers and Dealers) would reduce the number of types of securities and other accounts subject to Regulation T from 11 to 7 and would restructure the accounts along functional lines. Four of the accounts would be used for public customer transactions, and three for transactions between industry members. A second proposal would revise the terminology of Regulation T to prescribe the amount of margin required rather than the maximum loan value of securities used as collateral.

For Regulation U (Credit by Banks for the Purpose of Purchasing or Carrying Margin Stocks) and Regulation G (Securities Credit by Persons Other Than Banks, Brokers, or Dealers), it is proposed that the definition of "indirectly secured" margin loans be amended to achieve more objective standards. This would principally affect lending arrangements, by banks and insurance companies with corporate borrowers, that contain restrictions on disposition of the borrower's assets.

Another proposed amendment to Regulation G would broaden the types of credit that may be extended by lenders subject to that regulation, chiefly insurance companies and credit unions.

Comments should be submitted by September 15, 1981, to the Secretary, Board of Governors of the Federal Reserve System, 20th Street and Constitution Avenue, N.W., Washington, D.C. 20551. The comments should refer to Docket No. R-0362.

Recorded Interest Rate Message Available

As of July 15, 1981, the Dallas Federal Reserve Bank has additional telephone lines available for easier access to the tape recording that announces the current ceiling rates for 26-week money market certificates of deposit and certain types of small-saver CDs, the 3- and 6-month Treasury bill rates, and the Federal Reserve discount rate.

In addition to the local Dallas telephone number, (214) 651-6177, the recorded message may be accessed by calls to the following toll-free numbers:

- (214) 263-1093 for those in the Dallas-Fort Worth metropolitan calling area;
- 1-800-442-7390 for those within Texas but outside the Dallas-Fort Worth metropolitan calling area;
- 1-800-527-9208 for those outside Texas.

Calls regarding periodic securities offerings to be made at this Bank on behalf of the U.S. Treasury can continue to be directed to (214) 651-6384.

Improved Securities Safekeeping and Transfer System to Be Implemented in Eleventh District

The Eleventh District will be the fourth district in the Federal Reserve System to implement an improved securities safekeeping and transfer system. The two most significant changes will be that dollar amount balances will be kept by book-entry issue, instead of individual safekeeping acknowledgment, and numeric account code designations will change. Definitive deposit handling will not change; however, each definitive deposit will be treated as a separate unit.

The new system is designed to integrate securities transfer and safekeeping activities, which will result in only one acknowledgment being generated for both a security (CPD) transfer and the corresponding update to a depository institution's book-entry safekeeping account. Currently, each institution receives two advices—one for the security transfer and one reflecting the safekeeping account update. The same type of advice will be printed for all transfers of securities between two institutions, regardless of whether the security transfer is intraterritory or interterritory.

The new system identifies the different securities by the nine-digit identification (CUSIP) number assigned to each security, including book-entry and municipal securities. Under the new system, deposits of securities can be made only at the Federal Reserve office serving the territory in which the particular depository institution is located. If the institution has had securities held at Federal Reserve offices in the Eleventh District other than the office serving its territory, those securities will be transferred to the office serving its territory, and all future deposits of securities will be made to that office.

The system is scheduled to be implemented on September 24, 1981. At that time, a statement of holdings under the new system will be sent to each depository institution for verification.

Now Available

Recently issued Federal Reserve circulars, speeches, statements to Congress, publications, etc., may be obtained by contacting the Department of Communications, Financial and Community Affairs, Federal Reserve Bank of Dallas, Station K, Dallas, Texas 75222, unless indicated otherwise. Requests for circulars should specify the circular numbers.

Circulars

- Routing Number Policy.** 2 pp. Circular No. 81-129 (July 1, 1981).
- Improved Securities Safekeeping and Transfer System.** 5 pp. Circular No. 81-130 (July 1, 1981).
- Mock Billing Cycles for Pricing of Checks and ACH Services.** 1 p. Circular No. 81-133 (July 6, 1981).
- Regulation T [Credit by Brokers and Dealers]: Proposed Amendments.** 8 pp. Circular No. 81-134 (July 7, 1981).
- Solicitation of Nominations for Members of the Consumer Advisory Council.** 6 pp. Circular No. 81-135 (July 7, 1981).
- Holidays [All Federal Reserve banks and branches].** 2 pp. Circular No. 81-137 (July 8, 1981).
- Regulation Y—Bank Holding Companies and Change in Bank Control Act (Proposed Rulemaking Relating to Travelers Checks).** 5 pp. Circular No. 81-138 (July 9, 1981).
- Check and ACH Pricing.** 4 pp. Circular No. 81-139 (July 10, 1981).
- Interest Rates: Telephone Numbers for Recorded Interest Rate Messages.** 1 p. Circular No. 81-140 (July 10, 1981).
- Regulations T [Credit by Brokers and Dealers] and U [Credit by Banks for the Purpose of Purchasing or Carrying Margin Stocks]: Proposed Amendments.** 8 pp. Circular No. 81-141 (July 13, 1981).
- Amendment to Regulation T [Credit by Brokers and Dealers].** 5 pp. Circular No. 81-142 (July 15, 1981).
- Regulations D [Reserve Requirements of Depository Institutions] and Q [Interest on Deposits]: Amendments.** 9 pp. Circular No. 81-143 (July 15, 1981).
- Federal Financial Institutions Examination Council: Proposed Definition of Bank Capital to Be Used in Determining Capital Adequacy.** 10 pp. Circular No. 81-144 (July 16, 1981).
- Amendments to Regulation D [Reserve Requirements of Depository Institutions].** 8 pp. Circular No. 81-146 (July 17, 1981).
- Regulations G [Securities Credit by Persons Other Than Banks, Brokers, or Dealers], T [Credit by Brokers and Dealers], and U [Credit by Banks for the Purpose of Purchasing or Carrying Margin Stocks]: Proposed Amendments.** 6 pp. Circular No. 81-149 (July 21, 1981).
- Fed Standard Time.** 3 pp. Circular No. 81-150 (July 22, 1981).
- 1981 Bank Telephone Directory.** 16 pp. Circular No. 81-151 (July 22, 1981).

- Interest Rate Ceilings on Deposits: Phase Out Schedule.** 25 pp. Circular No. 81-154 (July 29, 1981).
- New Bulletin 11 [Automated Clearing House Operations].** 15 pp. Circular No. 81-155 (July 30, 1981).
- Fee Schedule for Securities and Noncash Collection Services.** 15 pp. Circular No. 81-157 (July 31, 1981).
- Information Directories Relating to Checks and ACH Pricing Effective August 1, 1981.** 4 pp. Circular No. 81-158 (July 31, 1981).

Speeches and Statements

- Statement by **Lyle E. Gramley** before the **Subcommittee on Monopolies and Commercial Law** of the Committee on the Judiciary, U.S. House of Representatives. 22 pp., including tables. July 8, 1981.
- Statement by **Paul A. Volcker** before the **Joint Economic Committee** of the U.S. Congress. 10 pp. July 16, 1981.
- Statement by **Paul A. Volcker** before the **Committee on Banking, Finance and Urban Affairs**, U.S. House of Representatives. 71 pp., including tables. July 21, 1981.
- Statement by **Nancy H. Teeters** before the **Subcommittee on Financial Institutions** of the Committee on Banking, Housing, and Urban Affairs, U.S. Senate. 5 pp. July 21, 1981.
- Statement by **John E. Ryan** before the **Subcommittee on General Oversight and Renegotiation** of the Committee on Banking, Finance and Urban Affairs, U.S. House of Representatives. 18 pp., including attachments. July 23, 1981.
- Statement by **Lyle E. Gramley** before the **U.S. Senate Forum**. 6 pp., including table. July 27, 1981.

Pamphlets, Brochures, and Reports

- Pamphlet announcing complete Federal Reserve Regulatory Service.** Issued by the Board of Governors of the Federal Reserve System. (Describes a new looseleaf service of the Federal Reserve Board and includes an order form) 4 pp. June 1981.
- Monetary Policy Objectives for 1981: Midyear Review of the Federal Reserve Board.** Prepared by the Board of Governors of the Federal Reserve System. (Executive summary of report to the Congress on monetary policy pursuant to the Full Employment and Balanced Growth Act of 1978, with testimony presented by Paul A. Volcker) 10 pp. July 21, 1981.