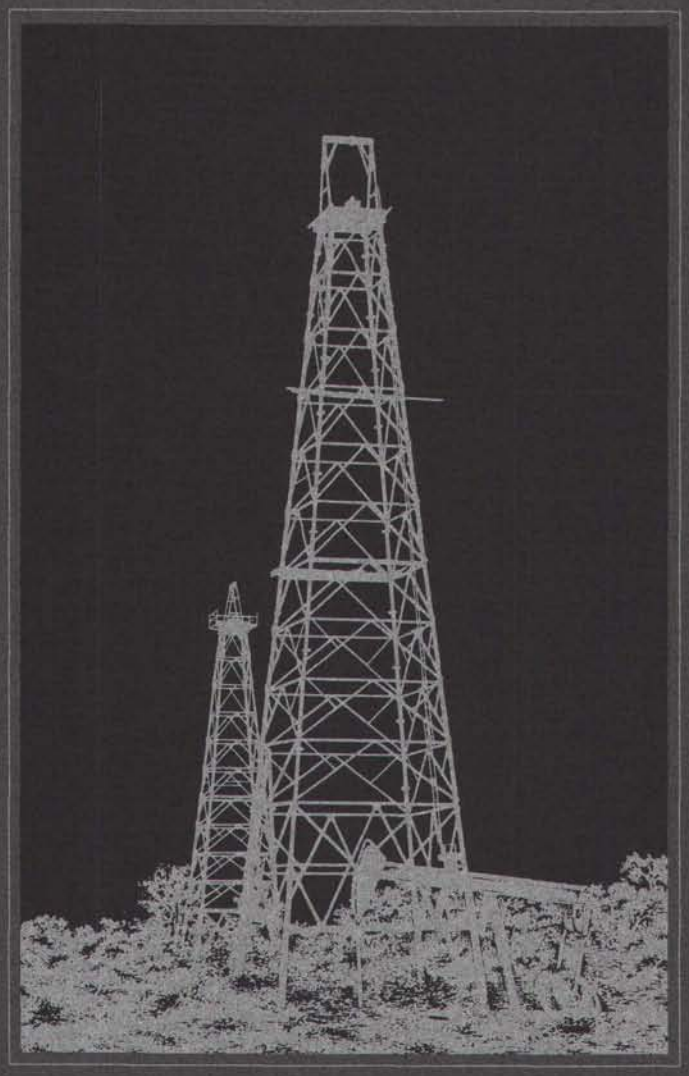
1986 Annual Report



Lower Oil Prices and the Economic Outlook for the Eleventh District States

FEDERAL RESERVE BANK
OF DALLAS

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Message from the Chairman and the President

As 1986 is viewed in retrospect, it will be remembered as a year of both rude awakenings and challenging opportunity. We have become increasingly aware that this District's dependence on the energy sector remains significant and that diversification is essential to sustained growth. In response to this awareness, we are learning to reposition ourselves and to create and draw on new sources of strength. Traditional methods of banking in this area are going to change dramatically and from the experiences of yesterday we must apply our knowledge to the challenges of tomorrow.

Without question, the region's economy felt a dramatic impact from the effects of falling oil prices. Oil prices fell precipitously in early 1986, but late in 1986 and in January of 1987, a general rise in prices helped stabilize the energy industry and enhanced the outlook for 1987. Our dependence on the energy sector and its effects on the regional economy are the topics that this Annual Report explores in detail.

Several other major sectors of this District's economy also declined throughout 1986. Agricultural and real estate sectors were weak, as were construction and manufacturing. Lower support prices and continuing surpluses should extend the adversity of the agricultural industry in 1987. The real estate sector and construction in general are also expected to face a challenging year. However, based on recent declines in the value of the dollar, manufacturing is expected to show a moderate turnaround nationally, as well as locally. In addition, it is anticipated that the new immigration law, changes in state fiscal policy, and the potential impact of federal budget legislation will have important implications for the District.

Strong performances in the services, defense, and high-technology sectors were bright spots in 1986 and it appears they will continue to be so in 1987. For the District states—Texas, Louisiana, and New Mexico—the outlook is improving somewhat, and it is anticipated that positive benefits will be experienced in this area in 1987.

While all of these issues have significantly affected the financial institutions in this District over the past year, banking legislation has presented a new challenge for the

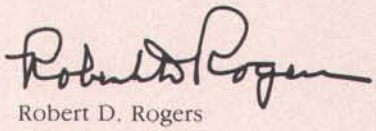
coming year. Legislation in 1986 paved the way for interstate banking in both Texas and Louisiana—providing greater opportunity for capital to be attracted to the area which will certainly have a positive impact on economic health. In addition, Texas residents voted to allow limited branch banking, eliminating a law that had existed since 1904.

The exact effects of this legislation may develop slowly and as the District financial institutions adapt to these effects, so too will the Federal Reserve. With respect to operations, we have set our goals and focused our efforts this past year on providing services designed to support your efforts in the efficient operations of your institutions. We have continued to explore and introduce new electronic services, making available key cash management advices earlier in the day. In response to user requests, a centralized customer assistance group has been created to help resolve problems and answer financial services questions. We believe that this service is unique among the Federal Reserve Banks. Our goals for 1987 are to continue to concentrate on user needs and to serve customer organizations to the best of our ability.

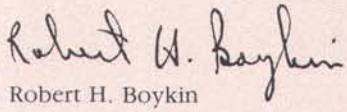
The new year brings about some new leadership at the Federal Reserve Bank of Dallas. On January 1, Admiral Bobby R. Inman, Chairman and Chief Executive Officer of Westmark Systems, Inc., located in Austin, officially assumed the chairmanship of our Board of Directors. It is a pleasure to extend our congratulations and support to him in this responsibility of significant importance to the Bank's operation, as well as to national Federal Reserve policies.

Looking ahead, encouraging improvements are foreseen in the economic outlook, as well as promising new directions for financial institutions in this District. It is our conviction that this is a time to look back only to benefit from our experiences of yesterday, to envision and utilize the opportunities before us today, and to strive to accomplish the goals of tomorrow.

Sincerely,



Robert D. Rogers
Chairman of the Board



Robert H. Boykin
President

Lower Oil Prices and the Economic Outlook for the Eleventh District States

In mid-November 1985, West Texas intermediate crude oil was selling for $31 per barrel. By the end of March 1986, its price had tumbled to $11.50 per barrel (Chart 1). That amounts to a 63-percent decline in less than five months. Rarely in the history of markets has the price of such an important and widely traded commodity changed so much in such a short period of time. Analysts are divided over whether market fundamentals will allow oil prices to remain this low for very long. But it is clear that expectations have changed and that, at least for the next few years, oil prices will be substantially lower than previously thought.

The fall in oil prices has had a chilling effect on oil-producing industries. National employment in the oil and gas extraction industry dropped 22 percent in the first six months of 1986. Even more striking, the number of rotary drilling rigs in operation fell 63 percent during the same six-month period. But while energy producers suffer, energy consumers benefit from the reduced cost of oil products and other goods and services that use oil in their production. American consumers were expected to save some $60 billion in energy costs during 1986 if the price of oil averaged $15 per barrel.

This article seeks to determine how much of an effect lower oil prices ultimately will have on employment in the states of the Eleventh Federal Reserve District. Oil and gas production is found to be sufficiently important to the economies of the District states that each will, on balance, suffer a loss of employment. Louisiana will sustain the greatest proportionate loss, followed by Texas and then New Mexico. If oil prices were to remain in the $15 range and if most of the economic adjustments to the oil shock were completed by the end of 1987, then little or no growth in overall employment would be expected for Louisiana and Texas over the two-year period 1986–87. For New Mexico, growth would be at only one-third the national rate. In contrast, employment in the three states grew at 2½ times the national rate over the 1973–82 period.

While oil prices will dominate the District employment picture over the next couple of years, the longer-term outlook hinges more on the prospects for non-energy growth. After examining the near-term effects of lower oil prices, we review the general locational attributes of the District states to see how they measure up, against one another and against other states in the nation, in their ability to attract new business and industry. We conclude by offering some basic guidelines as to how the governments of the District states can best respond to the loss in energy revenues in order to enhance opportunities for a timely and diversified economic recovery.

Chart 1
SPOT PRICE OF WEST TEXAS INTERMEDIATE CRUDE OIL

Who Wins and Who Loses When Oil Prices Fall?

Winning and losing industries. As a rule, lower oil prices help industries that use large amounts of oil and energy in their production and hurt industries involved in the production of oil and other competing fuels. Shown in Table 1 are the industries likely to be most affected by the drop in crude oil prices.

Any industry that consumes a significant amount of energy will enjoy reduced production costs and, therefore, an eventual increase in sales and employment. Industries with costs that are most sensitive to oil prices are petroleum refining and petrochemicals. Crude oil purchases account for 80 percent of the costs of producing petroleum products. And in the petrochemical industry—which produces plastics, synthetic rubber, and a wide variety of organic chemicals—oil and gas feedstocks account for roughly 40 percent of costs. Other energy-intensive industries that are favored by a fall in oil prices include the transportation industry, electric and gas utilities, the steel industry, food processing, and stone, clay, and glass.

Table 1
INDUSTRIES MOST AFFECTED BY FALLING OIL PRICES

Winning industries	Losing industries
Petroleum refining	Producers of oil and other fuels, including natural gas and coal
Petrochemicals	
Transportation, primarily airlines and trucking	Manufacturers of drilling rigs, drill pipe, and related equipment
Electric and gas utilities	
Other energy-intensive industries, including steel and food processing	Suppliers of engineering and geological services

While the benefits of lower oil prices are widely distributed, the costs are confined to a relatively small group of industries. Among the biggest losers are oil companies, particularly the independents, whose primary activity is oil production and exploration. Producers of alternative fuels, including natural gas and coal, will also be hurt when they are forced to compete with a cheaper fuel source. Another industry group to suffer consists of firms that supply products and services to the energy extraction industry. This group includes manufacturers of drilling rigs and drill pipe and suppliers of engineering and geological services.

Winning and losing regions. Whether a region benefits or suffers from falling oil prices depends on the relative importance of energy-producing and energy-consuming industries in its economic base. Shown in Chart 2 are the shares of total nonfarm employment in the three District states and the United States that are accounted for by four industries especially sensitive to oil prices. Two of these industries are associated with the production of energy: oil and gas extraction and oil field machinery. The other two are heavy users of energy: petroleum refining and petrochemicals. The larger the proportion of its labor force absorbed by energy-producing industries, the more likely a given region will, on balance, be harmed by a drop in oil prices. Conversely, the more important are energy-consuming industries, the greater is the chance that the region will prosper.

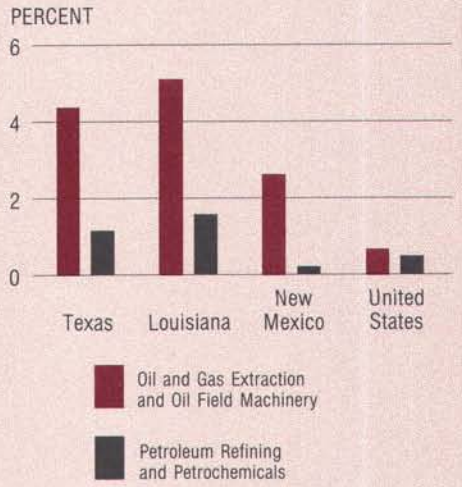
The most striking feature of Chart 2 is the above-average representation of energy-producing activities in the economies of the District states. The fraction of total employment in Louisiana accounted for by oil and gas extraction and oil field machinery manufacturing is eight times the national average. By the same measure, energy production is six times more prominent in Texas than in the nation and is four times more prominent in New Mexico.

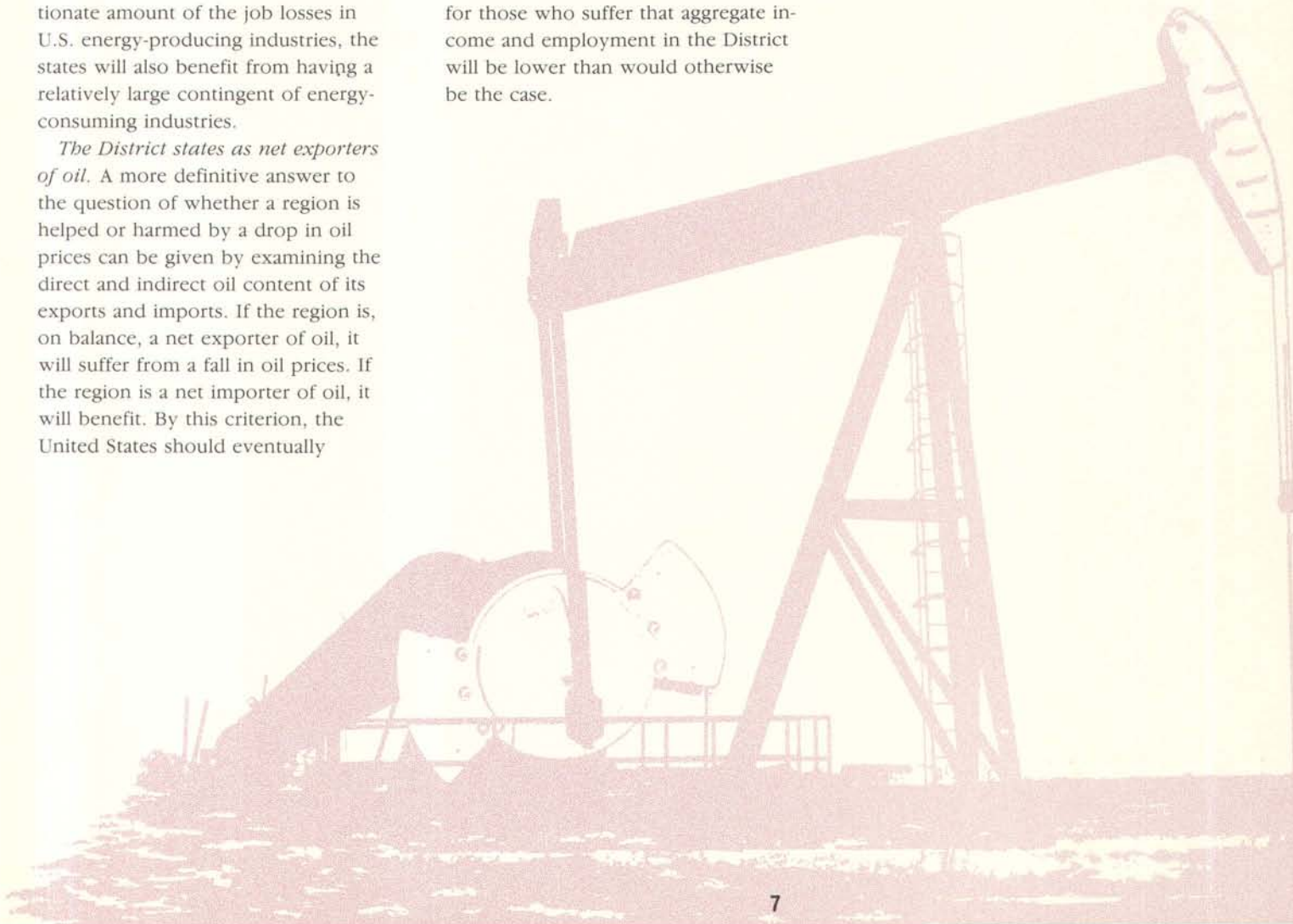
Although not as crucial as the energy-producing industries, energy-consuming industries also play an important role in the employment base of the District economy. Petroleum refining and petrochemicals together are responsible for 1.6 percent of Louisiana employment. In Texas the two industries account for 1.2 percent of total employment. Each of these figures is more than twice the national average. So, while the District states will suffer a disproportionate amount of the job losses in U.S. energy-producing industries, the states will also benefit from having a relatively large contingent of energy-consuming industries.

The District states as net exporters of oil. A more definitive answer to the question of whether a region is helped or harmed by a drop in oil prices can be given by examining the direct and indirect oil content of its exports and imports. If the region is, on balance, a net exporter of oil, it will suffer from a fall in oil prices. If the region is a net importer of oil, it will benefit. By this criterion, the United States should eventually benefit from lower oil prices. In 1984, U.S. imports of crude oil and petroleum products exceeded exports by 1,726 million barrels. The District states, on the other hand, are likely to be net losers. In 1984, PAD (Petroleum Administration for Defense) District III—which includes and is dominated by Texas, Louisiana, and New Mexico—exported 391 million more barrels of crude oil and petroleum products than it imported.

While it is likely that the District states will experience an overall decline in economic activity because of the fall in oil prices, not all of their residents will be adversely affected. Benefits arising out of reduced prices of petroleum products may outweigh costs for an individual who is not directly employed in the oil and gas industry and who does not own property in areas that are dominated by energy production. Nevertheless, even if a majority of residents benefit, the costs will be sufficiently onerous for those who suffer that aggregate income and employment in the District will be lower than would otherwise be the case.

Chart 2
ENERGY EMPLOYMENT AS A SHARE OF TOTAL NONFARM EMPLOYMENT, 1985





Energy Industries Shocked by Oil Price Collapse

Although many industries are sensitive to changes in oil prices, four stand out as particularly important to the District: oil and gas extraction, oil field machinery manufacturing, petroleum refining, and petrochemical production. Shown in Table 2 are estimates of the long-run employment effects in each of these industries of a $5 drop in crude oil prices.

Table 2
EFFECT ON ENERGY EMPLOYMENT OF A $5 DROP IN OIL PRICES

	Texas	Louisiana	New Mexico
	Thousands of workers		
Oil and gas extraction	−52.0	−16.2	−2.8
Oil field machinery	−8.0	−.5	([a])
Petroleum refining	+5.2	+1.8	+.1
Petrochemicals	+3.8	+1.2	([a])

[a] Rounds to fewer than 100 workers.
SOURCE: Federal Reserve Bank of Dallas.

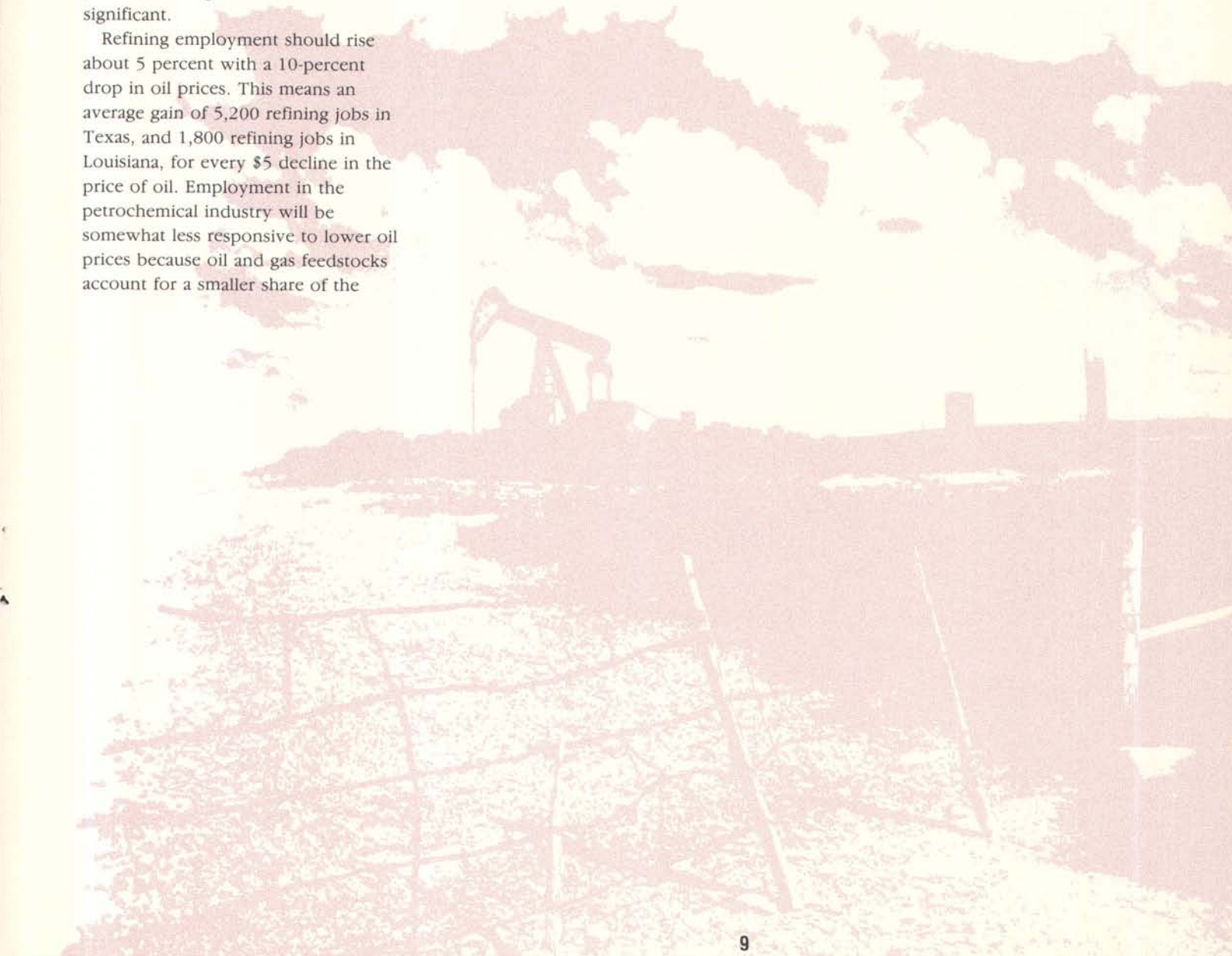
Employment losses in extraction and oil field machinery. The energy industry that is most important to the District is oil and gas extraction. In 1985, this industry employed more than 340,000 District workers. These include not only the roughnecks who work directly in the fields but also the employees of oil field service companies and exploration firms. A statistical analysis of the historical relationship between oil prices and Texas employment in the oil and gas extraction industry indicates that extraction employment falls roughly 10 percent in response to a 10-percent decline in the price of oil. This means that Texas will lose an average of 52,000 extraction jobs with each $5 drop in oil prices. If a comparable response is assumed for the other District states, Louisiana can be expected to lose 16,200 extraction jobs and New Mexico 2,800 extraction jobs for each $5 decline in oil prices.

Another energy-producing industry that is well represented in the District is oil field machinery manufacturing. Texas alone accounts for more than one-half of all U.S. employment in this industry. The percentage reductions expected in oil field machinery employment are just as significant as the ones expected for extraction. But the machinery industry employs less than one-sixth the workers employed in the extraction industry. Consequently, a $5 drop in oil prices will reduce District oil field machinery employment by 8,500 workers. Virtually all of these job losses will be in Texas.

Employment gains in refining and petrochemicals. In contrast to their effect on extraction and oil field machinery manufacturing, lower oil prices are expected to raise production and employment in the refining and petrochemical industries. A decline in crude oil prices reduces feedstock costs and forces down the prices of final products. As a result, consumers and producers are encouraged to substitute petroleum and petrochemical products for other fuels and raw materials. A complete adjustment may take years, requiring changes in capital to accommodate a different energy mix and more energy-intensive means of production. But the long-term effects of lower oil prices on refining and petrochemical production could be significant.

Refining employment should rise about 5 percent with a 10-percent drop in oil prices. This means an average gain of 5,200 refining jobs in Texas, and 1,800 refining jobs in Louisiana, for every $5 decline in the price of oil. Employment in the petrochemical industry will be somewhat less responsive to lower oil prices because oil and gas feedstocks account for a smaller share of the costs in that industry. Petrochemical employment will rise only 3 percent as a result of a 10-percent decline in oil prices. The implication is that District employment in the petrochemical industry will increase by 5,000 jobs for every $5 drop in oil prices.

The actual levels of employment in refining and petrochemicals need not rise during the next few years. Not only are the stimulative effects of lower oil prices likely to be delayed, but these industries will continue to struggle with deregulation and excess capacity in world markets. Still, the drop in oil prices will make refining and petrochemical employment greater than would otherwise be the case.



Oil Price Drop Affects Employment Throughout the District

The influence of lower oil prices on District employment is more pervasive than the effects just described for the four principal energy industries. There are many industries other than refining and petrochemicals that benefit from reduced energy costs. And still other industries are indirectly affected as changes in energy employment generate ripple effects throughout the District. When extraction employment declines, so does the demand for many professional, financial, and business services. Reductions in oil field machinery production are felt in the primary and fabricated metals industries. And declines in District income that result from contractions in the energy sector reduce the demand for housing, office space, and many other goods and services.

Table 3
TOTAL EMPLOYMENT EFFECTS OF A $5 DROP IN OIL PRICES

	Texas	Louisiana	New Mexico
	Thousands of workers		
1. Oil and gas extraction[a]	-45.2	-14.7	-2.2
2. Associated multiplier effects	-117.5	-38.2	-5.7
3. Oil field machinery[a]	-7.2	-.4	([b])
4. Associated multiplier effects	-11.5	-.6	([b])
5. Petroleum refining[a]	+3.9	+1.5	([b])
6. Associated multiplier effects	+26.9	+10.3	+.2
7. Petrochemicals[a]	+2.2	+.8	-.1[c]
8. Associated multiplier effects	+11.0	+4.0	-.6
9. National effects	+21.8	+4.8	+2.0
10. Total	-115.6	-32.5	-6.4
11. Total as percent of 1985 nonfarm employment	-1.7	-2.0	-1.2

[a] Includes only losses or gains above the national average.
[b] Rounds to fewer than 100 workers.
[c] Sign indicates an underrepresentation of petrochemical employment in New Mexico.
SOURCE: Federal Reserve Bank of Dallas.

Tabulating all the gains and losses. To get an idea as to the total effect of lower oil prices on District employment, the economy of each District state is divided into two parts. The first part is based on the above-average representation of energy industries in the state's economy. It is defined by hypothetically withdrawing workers from the four basic energy industries, along with the non-energy workers they directly or indirectly support, until the employment that remains is identical to the nation's in its industry composition. The effect of lower oil prices on the first part of the economy can be determined from the information presented in Table 2. Assuming the percentage responses are the same, the changes in employment in the remaining part can be determined from information provided in studies of the effects of lower oil prices on U.S. employment.

With this methodology in mind, Table 3 details the effects of a $5 drop in oil prices on employment in the District states. The figures in rows 1, 3, 5, and 7 indicate the changes in energy employment that are over and above what would be expected if energy were of the same importance to the District as it is to the nation. Thus, of the 52,000 extraction jobs Texas will lose, 45,200 can be attributed to an above-average representation of oil and gas extraction in the Texas economy. Rows 2, 4, 6, and 8 provide estimates of the ripple effects on non-energy industries that will accompany the above-average changes in energy employment.

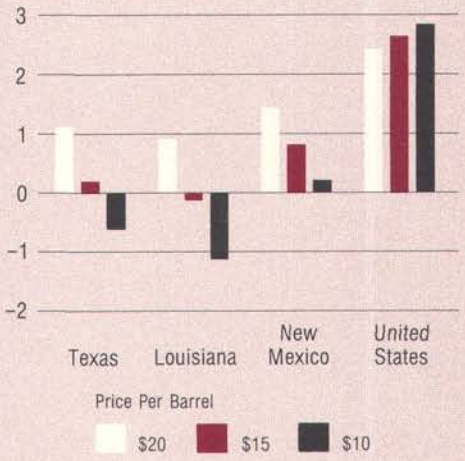
The figures in row 9 are the net gains in employment expected for parts of the District states that have the same contingent of energy industries as the nation has. Studies of the U.S. economy suggest that a $5 decline in the price of oil will raise national employment by some 0.2 to 0.6 percent within two years of the price drop. For the calculations in Table 3, it is assumed that each $5 drop in oil prices increases by 0.4 percent employment in the parts of the state economies that resemble the national economy.

Presented in row 10 are estimates of the effect on total employment of a $5 drop in oil prices. Employment in each District state falls with the price of oil. The gains in refining, petrochemicals, and the non-energy sector are insufficient to outweigh the employment losses generated by energy-producing industries. To put the totals in perspective, row 11 expresses each net employment loss as a fraction of 1985 nonfarm employment. The results show that Louisiana suffers the greatest proportionate loss, a loss equal to 2 percent of its employment base. Texas is also significantly affected. Each $5 decline in the price of oil reduces Texas employment by 1¾ percent. New Mexico does not suffer as great a loss as the other two District states, but it still loses jobs in excess of 1 percent of its total employment in 1985.

Implications for near-term growth. To gain further perspective on the importance of these employment losses, Chart 3 shows average annual rates of employment growth in the United States and the Eleventh District states for the 1986–87 period. The estimates assume that U.S. employment increases 0.4 percent with each $5 drop in oil prices. It is also assumed that all the adjustments to lower oil prices will be completed by the end of 1987 and that employment in each region would have grown at a rate of 2.2 percent per year—the average growth rate of U.S. employment during the post–World War II period—had oil prices remained at 1985 levels.

There is a clear contrast between the expansionary effects of lower oil prices on U.S. employment and their contractionary effects on employment in each of the three District states. With oil at $15 per barrel, national employment increases at an average rate of 2.6 percent a year. But little employment growth takes place in Texas and Louisiana over the two-year period. Although New Mexico employment fares somewhat better, it still grows at only one-third the national average. With oil at $10 per barrel, employment declines more than one-half of 1 percent a year in Texas and more than 1 percent a year in Louisiana.

Chart 3
EMPLOYMENT GROWTH UNDER DIFFERENT OIL PRICES



The District Business Climate

Box A
Determinants of State Economic Growth

What factors determine the rate of economic growth in a state? The following discussion summarizes what is known from studies of the location decisions made by U.S. businesses and their employees over the past several decades.

Natural attributes. It is clear from the experiences of Texas, West Virginia, and other states with large mineral deposits that natural resources can play an important role in the course of a state's economic development. But other natural factors seem to matter too. There is substantial agreement, for example, that the arid and variable climates of the western states contributed significantly to the growth of their populations during the past two decades. On the other hand, heat and humidity worked to the disadvantage of the southeastern states. The availability of land also seems to have been a factor in many location decisions. Capital-intensive industries, in particular, have located with increasing frequency in states with low population densities.

Educational attainment. The education level of a state's population does not have much of an effect on its overall rate of economic growth. But education levels do influence the composition of business activity that takes place within a state's borders. The presence of highly educated and skilled workers is critical for technologically sophisticated industries. States with an abundance of low-skilled workers, on the other hand, will be more successful in attracting industries that employ large numbers of workers performing simple and routine job tasks.

Unionism. Virtually all studies show unionization to be one of the most important factors in the location

Adjustments in energy and related industries will continue to dominate the District economy over the next couple of years. Once these adjustments have been made, however, the economic health of the District states will hinge more crucially on their ability to retain and attract non-energy business. Box A provides a summary of the locational attributes that have proved to be most significant in explaining state economic growth. Those criteria are used here to see how the District states measure up as potential sites for new people and industry.

Labor force characteristics. Natural resources clearly influence the course of economic growth in a region, as evidenced by the fortunes of the District states during the past two decades. But an area's human resources are also important. Shown in Table 4 are data on educational attainment and union activity. Studies indicate that each of these variables is important to business location decisions.

Compared with other states in the nation, each of the District states has an abundance of adult individuals with less than four years of high school education. In addition, Texas and Louisiana are below the national average in their representation of individuals with four years or more of college, and New Mexico is only slightly above the national average. No District state, then, offers a particularly well-educated labor force.

There is only slender evidence of a relationship between educational attainment and the rate of economic growth. But the composition of industry in a region does seem to be affected by the educational characteristics of its population. States in the Eleventh District will have a comparative advantage in attracting industries that make intensive use of low-skilled labor.

The labor force characteristic that is most important in explaining the location of jobs and industry during the 1970s is union activity. Firms tended to avoid states with highly organized labor in order to reduce labor costs and escape union work rules. On this count, each of the District states compares favorably with other states in the nation. Both Texas and Louisiana are right-to-work states, and union membership in each state is well below the national average. New Mexico is not a right-to-work state, but it too has little union representation. The relative insignificance of unions to the District states should help them attract new manufacturing plants, particularly those with high labor costs.

Tax and expenditure policies. Studies also indicate that the tax and expenditure policies of a state have an influence on its rate of economic growth. Shown in Table 5 are salient features of the fiscal systems of the District states. The information presented does not reflect the effects of declining severance tax revenues and other fiscal consequences of falling oil prices. But it may be indicative of the general attitudes in these states regarding the appropriate role of state and local governments in economic activity.

The conventional view holds that taxation per se retards economic growth in a region. The prescription for maintaining a healthy economic climate is to keep taxes low. The top section of Table 5 reveals the importance of taxes and other revenues in the economies of the District states.

The broadest measure of government involvement expresses total state and local revenues as a fraction

Table 4
LABOR FORCE CHARACTERISTICS OF ELEVENTH DISTRICT STATES AND UNITED STATES

	Texas	Louisiana	New Mexico	United States
Educational attainment, 1985				
Percent of population over 24 completing				
Less than four years of high school	33.0	32.4	30.4	26.8
At least four years of college	17.6	16.2	19.2	18.8
Unionism				
Right-to-work state	Yes	Yes	No	—
Workers covered by a collective bargaining agreement as percent of total employment, 1985	11.0	12.9	12.8	21.1

SOURCE: U.S. Bureau of the Census.

of state personal income. Here there is great variation between the District states. Texas is below the national average in the fraction of personal income absorbed by state and local revenues. Louisiana and New Mexico, on the other hand, are well above the national average. New Mexico, in particular, has more than one-fourth of personal income going to state and local governments. This fact partly reflects that New Mexico is a relatively poor state, with a great deal of subsistence farming and few two-income families. Nevertheless, judging from these figures, Texas would be at an advantage, and Louisiana and New Mexico at a disadvantage, when recruiting new businesses.

While all taxes are thought to influence industry location decisions, business taxes are often considered more important than personal taxes. The second line of Table 5 displays information on rates of taxation of manufacturing income in the District states. By this measure, all the District states are low-tax states. Louisiana, Texas, and New Mexico rank 48th, 39th, and 31st lowest among the continental states.

A more recent view of the determinants of regional growth emphasizes the need to look simultaneously at both taxes and expenditures when assessing the fiscal attractiveness of a state. Tax revenues that are used to finance transfer payments, including income maintenance and social services, have a negative effect on economic growth. But growth need not be retarded if taxes are spent on public goods and services that yield a perceived flow of benefits to residents. There is evidence, for example, that the favorable effects on location decisions of expenditures on education and transportation more than offset the disincentive effects of the associated taxes and fees.

Shown in the second section of Table 5 are data on education and welfare expenditures in the District states. The structure of public spending in Texas and New Mexico is seen to be broadly consistent with the guidelines suggested by recent studies for promoting regional growth. Each state is not substantially different from the nation in its support of primary and secondary education. And each is well below the national average in its provision of social services and income maintenance programs. Louisiana, on the other hand, devotes relatively few resources to education and is above the national average in welfare spending.

In a further attempt to quantify the overall attractiveness of the fiscal systems in the District states, the last line of Table 5 gives local revenues and expenditures as a fraction of total state and local revenues and expenditures. As a rule, the more dominant are local governments in total fiscal activity, the tighter is the relationship between contributions by and benefits for the individual resident. Based on this indicator, Texas again fares well relative to other states in the nation. Local government activities are less important in Louisiana and New Mexico, making for less of a match in these states between taxes paid and services received.

decisions of manufacturing enterprises. Much of the migration of industry to the South during the 1960s and 1970s can be attributed to a desire on the part of managers to escape the high wages and inflexible work rules of the Northeast. Companies whose location choices seem to be most sensitive to unionization are those in labor-intensive manufacturing industries.

Taxes. Other things equal, taxes and other public revenues are an impediment to state economic growth. But the extent to which growth is discouraged is highly sensitive to the nature of the revenue source. Generally speaking, revenues that are closely tied to the benefits they finance, such as user fees, are not particularly disruptive. More onerous are taxes that are perceived as having a large redistributive component. Thus, a state-dominated tax system with high corporate and personal income taxes tends to restrain growth more than does a locally dominated tax system characterized by high property taxes. One study found a corporate income tax to be 1½ to 5 times as damaging to new business activity as a corporate property tax that raises the same amount of revenue.

Public spending. By themselves, expenditures on public services tend to attract new people and industry. But the size of the benefits again varies with the nature of the expenditure. Expenditures with the greatest potential for enhancing economic growth are those on public education, transportation, and health and safety. Funds used to finance social services and income maintenance are less conducive to growth.

When an account is made of both the benefits of the services and the costs of the associated taxes and fees, expenditures on public education have been shown to have a net positive effect on economic growth. Tax increases retard growth, however, when the revenue is used to fund transfer payments.

Table 5
TAXATION AND SPENDING IN ELEVENTH DISTRICT STATES AND UNITED STATES

	Texas	Louisiana	New Mexico	United States
State and local tax effort				
State and local revenues as percent of state personal income, 1984	14.4	17.7	27.3	16.3
Effective rate of taxation of manufacturing income, 1977 (Percent)	4.2	2.1	5.5	8.3
Selected expenditures				
Education spending per pupil, primary and secondary, 1985	$3,287	$2,821	$3,278	$3,429
Welfare spending per capita, 1984	$325	$502	$398	$481
Degree of local involvement				
Local revenues and expenditures as percent of total state and local revenues and expenditures, 1984	58.4	46.8	42.8	52.5

SOURCES: U.S. Bureau of the Census.
William C. Wheaton, "Interstate Differences in the Level of Business Taxation," *National Tax Journal* 36 (March 1983): 83-94.

Box References

Bartik, Timothy J. "Business Location Decisions in the United States: Estimates of the Effects of Unionization, Taxes, and Other Characteristics of States." *Journal of Business & Economic Statistics* 3 (January 1985): 14–22.

Carlton, Dennis W. "The Location and Employment Choices of New Firms: An Econometric Model with Discrete and Continuous Endogenous Variables." *Review of Economics and Statistics* 65 (August 1983): 440–49.

Helms, L. Jay. "The Effect of State and Local Taxes on Economic Growth: A Time Series–Cross Section Approach." *Review of Economics and Statistics* 67 (November 1985): 574–82.

Newman, Robert J. "Industry Migration and Growth in the South." *Review of Economics and Statistics* 65 (February 1983): 76–86.

Plaut, Thomas R., and Joseph E. Pluta. "Business Climate, Taxes and Expenditures, and State Industrial Growth in the United States." *Southern Economic Journal* 50 (July 1983): 99–119.

Wasylenko, Michael, and Therese McGuire. "Jobs and Taxes: The Effect of Business Climate on States' Employment Growth Rates." *National Tax Journal* 38 (December 1985): 497–511.

Guidelines for Replacing Lost Energy Revenues

An overall assessment. There is no simple means of summarizing the locational attributes of the District states. They are all low-union states, which should help them attract new manufacturing facilities. But they have very different tax and expenditure policies. Of the three states, Texas seems to have the fiscal system that is most conducive to economic growth. Taxes are low, transfer payments are low, and a relatively large share of fiscal activity takes place at the local level. Louisiana, on the other hand, appears to have the least attractive fiscal system. Its state and local revenues absorb an above-average share of personal income; yet it ranks 38th lowest in the United States in education spending per pupil. The other District state, New Mexico, also has a relatively large government sector. But the composition of its spending is more favorable from a growth perspective, with greater emphasis on education and less emphasis on welfare.

In the past the governments of the District states have relied to an extraordinary degree on revenues from the taxation of oil and gas production. During fiscal year 1983, severance tax collections accounted for 17 percent of general state revenues in Texas and Louisiana and for 15 percent of state revenues in New Mexico. In contrast, severance taxes nationwide contributed only 3 percent to the revenues of all state governments. Since severance tax collections and other energy-related revenues are sensitive to oil and gas prices, the governments of the District states face the prospect of severe budget shortfalls in coming years. Barring any significant depletion of capital reserves, some combination of spending cuts and revenue increases will be necessary.

Recommendations on expenditures. As noted previously, public spending on social services and income maintenance appears to have a detrimental effect on the overall level of state economic activity. Cuts in transfer programs, then, might be made without reducing the long-term rate of economic growth. But other forms of spending, including education and transportation, seem to be positively related to economic growth, even after allowance for the associated taxes and fees. Cuts in these areas are clearly advisable only when service levels are excessive by national standards.

Texas is well below the national average in its provision of most public services. Examples include not only welfare but also education, public safety, the environment, and other services that are highly valued by prospective residents. In the case of Texas, it is easier to argue for a selective increase in spending than for cuts in services that might already be regarded as substandard.

Government expenditures absorb a larger fraction of income in New Mexico than in Texas. But it is not apparent that the potential for economic growth would be enhanced by cutting spending in New Mexico either. Per capita welfare payments in that state are already below the national average. And because of the state's young age distribution and low population density, residents must devote a relatively large share of their incomes to taxes in order to provide even average levels of education and transportation.

Of the three District states, Louisiana stands to benefit the most from a restructuring of its public spending. Welfare payments are above the national average, and some cuts in this area might be considered. But it may also be desirable for expenditures on public education to increase. Support for public education in Louisiana currently is among the lowest in the country, and this may represent the single most important obstacle to a balanced recovery in the state's economy. Thus, a strong argument can be made for redirecting the activities of the Louisiana state government. There is less of a case for reducing its overall budget.

In sum, none of the District states appear to have provided excessive amounts of public services because of a special access to mineral revenues. Rather, the majority of residents have simply acquired these services at artificially low prices. With the decline in energy revenues, it is inevitable that residents more fully realize the cost of providing public services. It should not be presumed, however, that the desired response to these higher prices is a drastic curtailment in the amount and quality of services. Indeed, when the present character of public spending in the District is evaluated in light of results from studies of the determinants of regional economic growth, the conclusion most readily drawn is that any fiscal imbalances resulting from reduced energy revenues would be better addressed through revenue increases than through spending cuts.

Recommendations on revenues. Basic principles of public finance suggest a number of guidelines for raising state revenues. First, to the extent possible, public services should be financed through user fees and benefit taxes. This approach provides a tight match between funds collected and services received. Particular areas where greater emphasis on user charges might be desirable include higher education and highway construction. For example, tuition and fees at the University of Texas at Austin are roughly one-half the tuition levels at the University of California (Berkeley) and University of Illinois (Urbana), and they are only one-third the tuition at the University of Michigan (Ann Arbor). Tuition increases at public universities in Texas could be engineered so as to raise substantial new revenues while at the same time maintaining significant subsidies for in-state residents.

For many types of public services, the benefits are widely dispersed, and it is uneconomical to identify particular beneficiaries. Examples include state prisons and government administration. A shortfall in these areas must be addressed through general tax increases. In choosing the appropriate tax vehicle, preference should be given to personal taxes, rather than business taxes, and to taxes with a broad base, such as income and general sales.

Personal taxes are generally preferred to business taxes because they tend to correlate more highly with benefits. Reliance on business taxation might be justified if there is a potential for exporting the tax burden to out-of-state residents. But in view of the substantial competition in District export markets and with the relative mobility of national and international capital, it seems unlikely that taxes levied against businesses operating in the District states could be shifted either to nonresident consumers or to nonresident owners of capital. Taxes on corporate profits or industrial property would more likely fall on District consumers, workers, and landowners.

The tax base used to generate additional revenues should be broad. Broad-based taxes offer a stable source of revenues, which facilitates long-range planning of public service delivery. And by striking a large class of economic activities, they keep to a minimum the extent to which economic choices are distorted.

The most prevalent broad-based taxes are on income and general sales. When the two are compared, sales taxes have the advantage of not taxing saving, thus being neutral with respect to household decisions as to how to allocate wealth between present and future consumption. But sales taxes are typically regressive, since the proportion of family income spent on goods and services subject to tax falls as income rises. And in light of the recent reform in federal tax laws, sales taxes suffer the further disadvantage of not being deductible under the federal income tax. In sum, there is no clear basis for preference when choosing between an income tax and a general sales tax. Indeed, the vast majority of states derive substantial revenues from both sources.

Conclusion

Each of the states in the Eleventh Federal Reserve District is highly dependent on oil and gas production. And each will suffer a net loss of employment as a result of lower oil prices. Estimates presented in this article indicate that if oil prices were to remain in the $15 range, employment in Louisiana, Texas, and New Mexico by the end of 1987 would be some 4½ percent, 4 percent, and 3 percent lower than would otherwise be the case. This translates into a total loss of more than 350,000 jobs in the three District states.

The drop in oil prices and the attendant employment losses in energy-producing industries are events that are largely outside the control of the governments of the District states. But decisions concerning taxation and spending provide one avenue through which policymakers can influence the course of economic growth and development in their states.

Particularly crucial at this time are decisions regarding the replacement of lost severance tax and other energy-related revenues. For decades, a natural endowment of easily taxable mineral wealth has enabled the governments of the District states to offer services at artificially low prices. With the drop in oil prices, the District states must now compete on more even terms when offering present and prospective residents a package of taxes and public services. To the extent possible, it is naturally desirable to avoid tax increases by cutting any wasteful and superfluous government spending. But it may be no less desirable for taxes to be raised or broadened if that is the only way of providing adequate services in such basic areas as police and fire protection, transportation, and education—all of which are important considerations in the location decisions of people and industry.

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Statement of Condition

ASSETS	December 31, 1986	(thousands)*	December 31, 1985
Gold certificate account[1]	$ 692,000		$ 713,000
Special Drawing Rights certificate account[2]	307,000		307,000
Coin	40,130		38,639
Loans to depository institutions	194,500		18,975
Securities:			
Federal agency obligations	501,350		531,790
U.S. government securities	12,654,882		11,492,195
Total securities	$13,156,232		$12,023,985
Items in process of collection	709,272		1,359,237
Bank premises (net)	19,863		19,069
Other assets	1,000,137		1,101,281
Interdistrict settlement account	(79,498)		(612,062)
TOTAL ASSETS	$16,039,636		$14,969,121
LIABILITIES			
Federal Reserve notes	$11,249,578		$11,099,711
Deposits:			
Depository institutions	3,674,720		2,614,772
Foreign	12,450		12,000
Other	41,782		51,470
Total deposits	$ 3,728,953		$ 2,678,242
Deferred credit items	609,927		751,309
Other liabilities	136,110		143,436
TOTAL LIABILITIES	$15,724,567		$14,672,699
CAPITAL ACCOUNTS			
Capital paid in	$ 157,534		$ 148,211
Surplus	157,534		148,211
TOTAL CAPITAL ACCOUNTS	$ 315,068		$ 296,423
TOTAL LIABILITIES AND CAPITAL ACCOUNTS	$16,039,636		$14,969,121

*Detail figures may not balance to totals due to rounding.
[1]This Bank's share of gold certificates deposited by the U.S. Treasury with the Federal Reserve System.
[2]This Bank's share of Special Drawing Rights Certificates deposited by the U.S. Treasury with the Federal Reserve Bank of New York.

Income and Expenses

For the year ended December 31	1986	(thousands)*	1985
CURRENT INCOME			
Interest on loans	$ 29,554		$ 38,832
Interest on government securities	1,031,823		1,077,764
Income on foreign currency	32,681		18,383
Income from priced services	46,291		44,421
All other income	1,096		1,067
Total current income	$1,141,445		$1,180,468
CURRENT EXPENSES			
Current operating expenses	$ 75,154		$ 72,119
Less expenses reimbursed	(5,433)		(4,065)
Current net operating expenses	$ 69,721		$ 68,053
Cost of earnings credits	4,412		4,376
Current net expenses	$ 74,133		$ 72,429
CURRENT NET INCOME	$1,067,312		$1,108,038
PROFIT AND LOSS			
Additions to current net income:			
Profit on sales of government securities (net)	$ 4,294		$ 6,964
Profit on foreign exchange transactions (net)	163,562		0
All other additions	20		123,458
Total additions	$ 167,876		$ 130,422
Deductions from current net income:			
Loss on foreign exchange transactions (net)	0		$ 640
All other deductions	3,430		27,351
Total deductions	$ 3,430		$ 27,991
Net additions or deductions	164,446		102,431
Assessment by Board of Governors:			
Expenditures	$ 8,138		$ 6,177
Federal Reserve currency costs	11,059		11,149
NET INCOME AVAILABLE FOR DISTRIBUTION	$1,212,561		$1,193,142
DISTRIBUTION OF NET INCOME			
Dividends paid	$ 9,223		$ 8,360
Payments to the U.S. Treasury (interest on F.R. notes)	1,194,015		1,165,867
Transferred to surplus	9,323		18,915
Surplus, January 1	148,211		129,296
Surplus, December 31	$ 157,534		$ 148,211

*Detail figures may not balance to totals due to rounding.

Volume of Operations

HEAD OFFICE AND BRANCHES COMBINED

	Number of Pieces Handled		Dollar Amount (thousands)	
	1986	1985	1986	1985
Currency received and counted	812,550,906	797,200,000	10,495,540	10,029,645
Coin received and counted	1,792,379,500	1,687,785,000	292,259	306,071
Food stamps redeemed	183,828,486	170,343,352	889,048	806,378
Transfers of funds	6,316,858	6,129,981	8,344,572,013	7,537,771,275
Checks handled:				
U.S. government checks	35,752,474	35,746,892	47,690,697	41,499,886
Fine sort	213,957,099	173,327,631	66,209,777	61,355,995
All other[1]	1,095,756,723	1,064,970,786	561,096,515	597,404,421
ACH items handled:				
Commercial	38,987,000	28,860,000	200,960,546	204,543,181
U.S. government	24,768,000	21,952,000	14,183,805	12,767,997
Collection items handled:				
U.S. government coupons paid	42,398	59,798	31,954	36,154
All other	234,657	264,031	717,527	736,196
Issues, redemptions and exchanges of U.S. government securities:				
Definitive and book-entry	9,163,129	7,825,097	1,040,471,524	627,665,463
Loans: advances made	1,960	747	43,098,145	3,774,566

[1]Exclusive of checks drawn on the Federal Reserve Banks.

Bank Holding Activity

NUMBER OF BANK HOLDING COMPANIES, BANK AND NONBANK SUBSIDIARIES

	December 31, 1986	December 31, 1985
COMPANIES		
One-bank holding companies	600	596
Multibank holding companies	166	165
Total bank holding companies	766	761
SUBSIDIARY BANKS		
One-bank holding companies	554*	549
Multibank holding companies	905	881
Total subsidiary banks	1,459	1,430

*These figures are adjusted to reflect ownership of 51 subsidiary banks through intermediate shell holding companies also known as "second tier" bank holding companies.

NONBANK SUBSIDIARIES*		
One-bank holding companies	117	110
Multibank holding companies	401	377
Total nonbank subsidiaries	518	487

*Reflects only nonbank subsidiaries formed under Section 4(c)(8) of the Bank Holding Company Act.

DEPOSIT DATA FOR SUBSIDIARY BANKS OF BANKHOLDING COMPANIES IN THE ELEVENTH FEDERAL RESERVE DISTRICT

	December 31, 1986	December 31, 1985
DOMESTIC DEPOSITS IN SUBSIDIARY BANKS (millions)		
One-bank holding companies	$ 27,970	$ 26,733
Multibank holding companies	111,732	109,921
Total	$139,702	$136,654
SUBSIDIARY BANKS, PERCENT OF DISTRICT DOMESTIC DEPOSITS		
One-bank holding companies	17.2	17.0
Multibank holding companies	68.8	70.0
Total	86.0	87.0

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