

THE IMPACT OF OIL ON THE TEXAS ECONOMY

by

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Approved by:

A handwritten signature in black ink, appearing to read "Gary Halter", written in a cursive style.

Dr. Gary Halter

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ABSTRACT

The following paper demonstrates Texas' present dependency upon oil in both public and private sectors. First, it historically discusses Texas and reviews how Texas is affected by OPEC's present political situation. Second, it lists production, price, value and tax, figures. Third, it shows why oil dependency is no longer advantageous for the states. Finally, the paper states Texas should avoid dependency upon a single industry. It suggests, rather, that the state diversify both its industrial sector and its tax base.

ACKNOWLEDGMENT

I would like to thank Dr. Gary Halter for assisting me with this project. He provided motivation, assistance, and criticism which were necessary for its completion.

DEDICATION

I would like to dedicate this paper to my roommate, Christine J. Wubbena, who lived with me while I wrote this paper. Her emotional support and patience during my final days of writing were invaluable.

Additionally, I would like to thank both my parents, Thomas E. Shipp and Judith M. Shipp, and my grandparents, Dr. J.D. Shipp and Mrs. Mary Shipp, for their financial support. Without it, neither my education, nor this paper would have been possible.

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INTRODUCTION

The oil industry has driven the Texas economy since the first gusher erupted at Spindletop in 1901. Following this event, the success of the economy has depended upon the price of oil. During the oil boom of the late 1970's and early 1980's, oil dependency gave Texas a prosperous economy. In 1983, however, oil prices began declining. As a result, the economy contracted and oil dependence became a burden. The rapid fall of oil prices caused fiscal problems for both state coffers and private industry.

At the governmental level, in 1982, oil and gas taxes directly accounted for "about 27.4% of state tax income and 17.7% of total state income."¹ This is approximately \$2,284,541,300 in government services which the oil industry financed instead of private citizens. In 1985, the oil and gas industry paid only 21.2% of state tax income. The state not only suffered a direct loss of oil taxes, but also an indirect loss of sales taxes. Approximately 30% of all sales tax collections are directly or indirectly related to the petroleum industry. The estimated total loss of these revenues between 1982 and 1985 is \$3 billion.²

The private sector was also affected since "about twenty-five percent of economic output in Texas is produced by oil and gas extraction and is related to manufacturing industries."³ This revenue is substantial since the oil and gas industry is a \$37 billion enterprise employing more than 400,000 Texans.

An excellent example of how the oil and gas industry effects private industry is explained by State Comptroller, Bob Bullock, in his "oil pipeline" through the Texas economy. Mr. Bullock's example illustrates how each division of the industry significantly effects some portion of the economy.

The industry's impact on Texas' economic well-being starts with the search for oil or gas. Seismic crews are put to work with sophisticated geological equipment. When a potential oil or gas reserve is located, the company seeks permission from landowners and the Texas Railroad Commission to drill for oil.

If permission is granted, construction crews may be put to work preparing the site for the heavy drilling equipment. If the site is in a hard-to-reach area, new roads may be needed. When the site is ready, drilling begins and with luck oil may be found.

Once oil is out of the ground, its trip through the Texas economy is really just beginning. The next step is to get it to the refinery. Oil may be transported to a refinery by rail, barge, or pipeline. In Texas as in the rest of the U. S., the pipeline is by far the most common method.

More than 5,000 miles of pipeline criss-cross the Texas countryside. Countless jobs in construction have been created to lay this network and thousands more in manufacturing to produce the pipe and equipment they require..."⁵

When the oil reaches the refinery, it is processed into different forms to be used by consumers.

"It's estimated that every dollar spent on drilling in Texas creates an additional \$1.75 in business activity and every job on a drilling rig creates 4.3 more jobs in the state."⁶ Likewise, when the

price of oil drops, the production level drops. This decrease in production leads to job losses which in turn puts other people outside of the oil industry out of work. The total effect of this unemployment means lower sales and severance tax collections. Lower sales tax collections because fewer people can afford to spend money. Lower severance tax collections because the drop in production and oil price leaves the state less to tax.

Texas must lessen its dependency on oil if the state wants a return to strong economic growth and budgetary surpluses. The private sector must protect itself by moving into new industrial markets and the public sector must broaden its tax base.

The following paper will discuss the impact of oil on the Texas Economy by citing a general economic history of Texas, discussing how OPEC's decisions effect Texas' economy and defining Texas' tax structure.

HISTORY

The first oil well was discovered in 1866 by Lyne T. Barret in Melrose County near Nacogdoches.⁷ Between this time and the Spindletop gusher of 1901, interest in oil production was primarily limited to Corsicana. In 1894, Corsicana brought in three wells which produced 2,200 barrels per day. After watching these wells bring in steady profits for three years, J. S. Cullinan decided to build

Texas' first refinery. Soon afterward, in 1909, another entrepreneur founded the first natural gas company.⁸

While central Texas was developing its oil potential, most of the country had written off prospects of discovering oil on the coastal plains of southeastern Texas. "A top Standard Oil official boasted he could drink all the oil likely to be found west of the Mississippi."⁹

Captain Anthony F. Lucas, however, believed differently. He continued to search for oil in East Texas until Spindletop blew in on January 10, 1901 at 10:30 a.m.¹⁰ Oil shot 200 feet into the air and 75,000-100,000 barrels of oil per day poured on to the ground. The gusher was so intense that it blew for six days before it could be capped. Further, it took another three days to shut it down completely.¹¹

So intense was the gusher that the total production for Spindletop, in 1901, was 17.4 million barrels. Its production rate glutted the market causing prices to fall to 3 cents per barrel. The effect was an end to the Pennsylvania oil monopoly.¹²

People from all over the country came in to reap profits from Spindletop. Within three months, Beaumont's population went from 9,000 to 50,000.¹³ These residents were easily accommodated since Spindletop was producing 94% of Texas oil by 1902.¹⁴

Spindletop was the largest discovery of petroleum reserves. Presently, the field still produces about 600 barrels a day. Further, it's estimated that total production has been 140 million barrels of oil.¹⁵

Michael T. Halbouty, a Houston earth scientist who headed

President Reagan's energy transition team, stated, "The Spindletop discovery changed the entire concept of oil...It was the oil discovery that changed the world."¹⁶ After Spindletop, oil became big business in Texas. Presently, more than 700,000 wells have been drilled in Texas and 45 billion barrels of oil have been produced.

By 1911, the profits from Spindletop had leveled off and the focus in oil shifted westward to the Wichita Falls County area. There, Electra Field was discovered. Shortly afterward, two other major oil fields were discovered: Ranger and Burkburnett. By 1918, enough fields had been discovered that Texas became the number one oil producing state.¹⁷

After the discovery of Kilgore Field in East Texas, Texas produced more oil than the state could even export. By 1930, the production of one million barrels per day caused chaos within the state as prices dropped from \$1.10 to \$.10 per barrel.¹⁸ In an attempt to control prices, the Texas Railroad Commission assigned each well a production quota on May 1, 1931, total production was set at 160,000 barrels per day. Often wells were pumped only eight days per month to maintain quotas. Frustrated oil men once again began overproducing and oil dropped to 8 cents per barrel. As a result, on August 17, 1931, Governor Ross Sterling declared martial law in the East Texas Field and sent the National Guard to enforce the rules.¹⁹

Until 1932, only the private sector was benefiting from oil production. Then, in 1932, Ma Ferguson, Governor of Texas, signed an

oil severance tax into law. The tax was 4.6% of the barrel price of oil. At the time, the tax was of little significance to the state.²⁰ Later in the century, however, the oil tax became the state's leading source of revenue.²¹

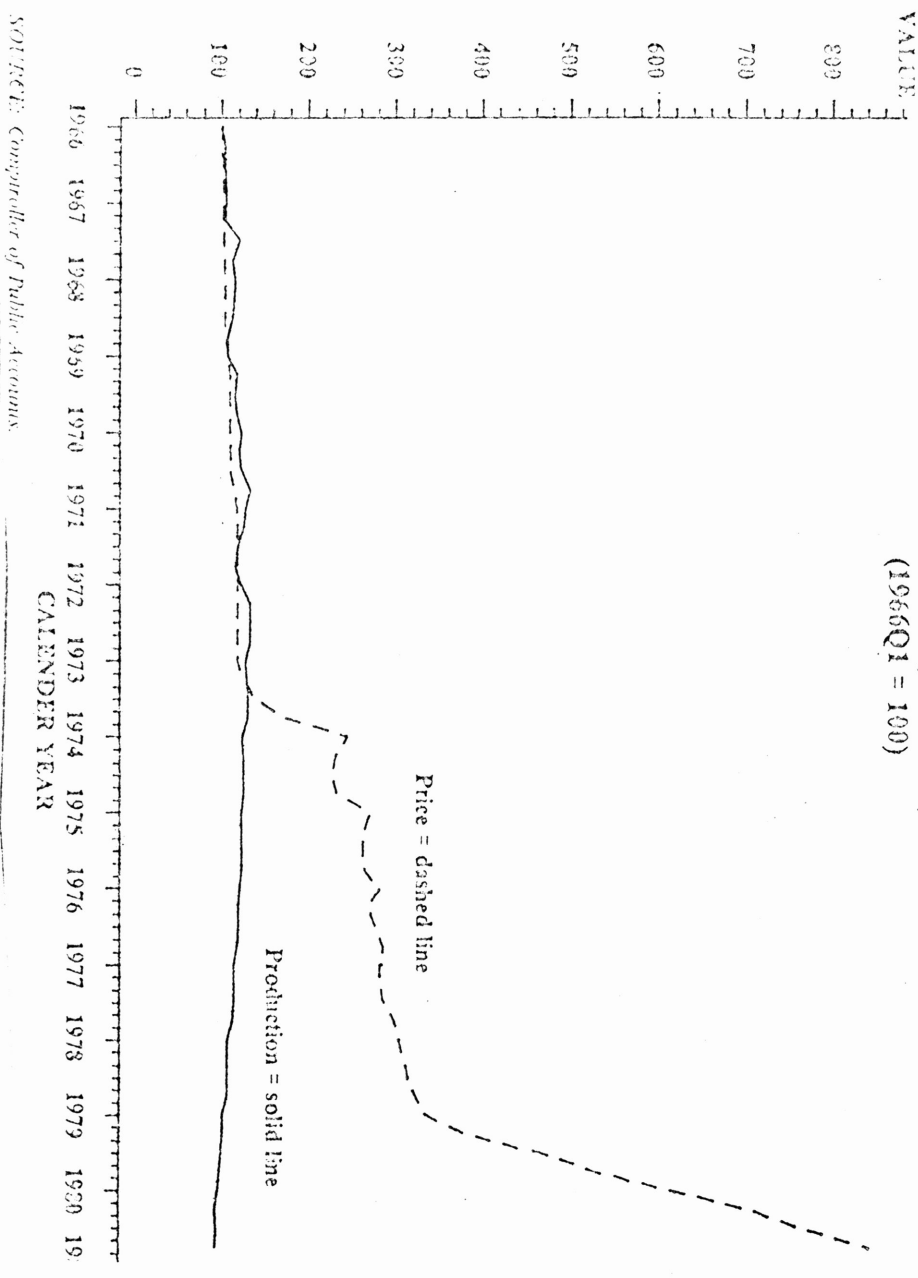
During World War II, oil tax revenues increased because Texas oil was the primary source of energy used by the United States throughout the world. In fact, such a large percent of reserves were consumed that during the 1950s a conservation effort began. Many Texans believed their petroleum reserves would be exhausted within a generation. In the sixties, however, more resources were discovered. Conservation became less of an issue until the 1973 oil embargo.

Throughout the sixties and early seventies, oil prices remained relatively stable. (See Figure 1 also, i.e. in 1960 the price was \$3 per barrel and in 1979, the price was \$3.28.) In 1973, however, price began escalating due to the decrease in supplies brought on by the Arab-Israeli War and the subsequent oil embargo. Price continued to increase until it peaked in February, after hitting \$37.10 per barrel.²² After oil prices peaked, price continuously declined.²³

Production peaked in 1972, and has since declined. After 1972, it was the first time in history that Texas could not produce enough oil to make up for the oil slump in other parts of the world. After production for oil peaked in 1972, it continued to decrease.

During the winter of 1973-74 oil price quadrupled from \$3 per barrel to over to over \$12 per barrel. The Federal Energy

FIGURE 1
INDEX OF TEXAS TAXABLE CRUDE OIL PRODUCTION
AND PRICES, BY QUARTER, 1966-80
(1966Q1 = 100)



SOURCE: Comptroller of Public Accounts

Administration estimates that this price rise cost the United States \$10-\$20 billion in lost GNP.²⁴ Joel Popkin of the National Bureau of Economic Research gives further economic estimates of this period by stating, "about one-third of the increase in U. S. Consumer prices between the fourth quarter of 1973 and the end of 1975 was caused by OPEC's crude oil policies. Were it not for OPEC consumer prices over the two year period would have risen only 15% compared with the actual 22% increase."²⁵

Once tensions in the Middle East subsided, during 1975-78, prices regained stability. (i.e. oil prices only increased \$2 per barrel during this period.) In 1979, turmoil again resulted in the Middle East. A revolution began in Iran and the Shah was ousted from power. As a result, Iran nearly stopped producing oil. Iran, at the time, was the second largest member of the Organization of Petroleum Exporting Countries (OPEC). Without its contributions, oil became scarce and prices began to rise. Then, the Soviets invaded Afghanistan in December, 1979. Demand increased, further driving up prices. For the first time in fifteen years, Texas' annual production dropped below one billion barrels. This further aggravated world shortages. Then, in September 1980, the Iran-Iraq war commenced. Prices began to appear limitless as all of these situations worsened the oil supply problem.

During the 1979-81 period, prices rose 160%²⁶. This brought the total price increase between the 1973-81 period to twelve-fold. (i.e.

at \$3 per barrel to \$37 per barrel.) At this point, the United States dependency upon OPEC peaked. The U. S. was importing 46% of its oil, and 67% of our imports were from OPEC.²⁷

Supplies continued to appear scarce. Forecasts made during the 1980-81 period said oil-demand would forever expand. As a result, approximately one-half trillion dollars was invested in the oil industry.²⁸

As prices skyrocketed, everyone, including the federal government, wanted to reap the gains. On April 2, 1980, the Windfall Profits Tax was signed into law. The tax was a series of excise taxes in the difference between the controlled and decontrolled price of oil in various categories. The tax would prevent oil companies from getting all the extra money due to deregulation. Instead, the government would use these revenues to pay for mass transit programs, low-income energy assistance and a greatly expanded synthetic fuels program.²⁹ To assist taxing efforts, all federal controls on domestic oil prices ceased on January 28, 1981. Texas oil prices could now peak in a free market. As a result of decontrol, West Texas Intermediate crude's price increased 34% within four weeks. At this time, February 1981, the price peaked at \$37.10.

Though the windfall profits tax was sometimes greater than 50%, profits could still be made. This being true, an unprecedented level of exploration, development, and drilling activity was revived throughout the United States. The number of drilling rigs increased

twenty percent in 1980 and 33% in 1981. By 1982, the total number of operating rigs peaked at 1,424. This compares with 4,436 rigs operating nationally.³¹ (See Table 1).

This increased production made Texas even more dependent upon oil as more jobs and capital were invested in the energy sector. Likewise, the Texas government came to depend upon the oil severance taxes.

As oil consuming countries watched their capital shift into the hands of oil exporting countries, they started efforts to decrease their dependency. Efforts included: conservation, oil exploration programs, and development of new retrieval methods.

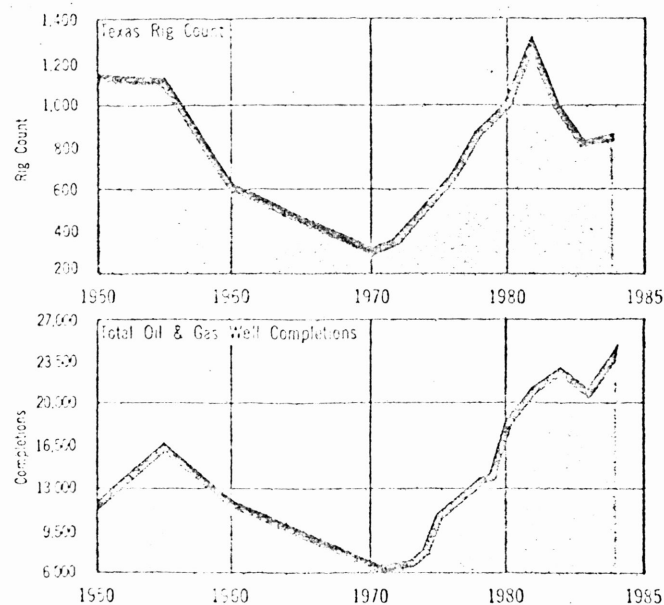
The primary conservation effort was initiated by the International Energy Agency. This agency suggested oil consumption should be reduced 13.8% from the 1979 consumption rate of 35.9 billion barrels a day. By 1983, consumption decreased 9.4%.³²

TABLE 1
TEXAS DRILLING STATISTICS

	Regular Drilling Applications	Oil Well Completions	Total Wells Drilled	Texas Rig Count*
1950	16,921	10,660	15,975	1,063
1955	24,225	15,075	23,540	1,059
1960	15,601	9,666	17,342	604
1965	14,227	6,902	14,433	425
1970	11,034	4,987	9,438	302
1971	12,324	4,784	9,299	291
1972	13,105	4,632	9,557	338
1973	13,586	4,345	9,348	376
1974	18,438	5,073	10,707	508
1975	20,293	7,004	14,393	638
1976	22,693	7,348	15,378	653
1977	25,189	8,121	16,577	778
1978	26,050	8,132	17,139	855
1979	29,241	8,487	17,509	770
1980	39,442	12,322	21,427	989
1981	47,940	15,627	25,209	1,318
1982	41,224	16,296	27,648	990
1983	45,550	15,941	26,882	796
1984	37,507	18,716	30,898	849

*yearly average

Sources: Railroad Commission, Joint Association Survey, Hughes Rig Count, Petroleum Information Corp.



Oil exploration and development programs were initiated all over the world. Primary points of focus include the Alaskan North Slope, the North Sea, and Mexico.

Petroleum engineers developed secondary and tertiary recovery techniques. Areas which were once considered "dry" and therefore worthless became profitable.

The United States became actively involved in conservation efforts in 1973, but many of the effects of these efforts were not realized until the eighties.

Most individual consumer conservation efforts were in the areas of gasoline and heating oil consumption. The primary gas reductions resulted when consumers converted from cars which used an average of 13.1 miles per gallon in 1973, to cars which used an average of 16.3 miles per gallon in 1983. This change resulted in a 25% reduction between 1973-1983. A sizeable amount when one considers 45% of a barrel of oil is converted to gasoline.³³

The total result of America's efforts resulted in a dramatic important change: 6.3 million barrels per day in 1973, 8.5 million barrels per day in 1979 and only 4.9 million barrels a day in 1983.³⁴ (See Table 2).

TABLE 2
U. S. CRUDE OIL AND PETROLEUM PRODUCT IMPORTS
(Thousands of Barrels Per Day)

Country	1973	1979	1983	73-79	79-83	73-83
Algeria	136	636	235	+367.6%	-63.1%	+72.8%
Libya	164	658	0	+301.2	-100.0	-100.0
Saudi Arabia	486	1,356	356	+179.0	-75.2	-30.9
U. Arab Em.	71	281	29	+295.8	-89.7	-59.2
Indonesia	213	420	335	+97.2	-20.2	+57.3
Iran	223	304	48	+36.3	-84.2	-78.5
Nigeria	459	1,080	294	+135.3	-72.8	-35.9
Venezuela	1,135	690	414	-39.2	-40.0	-63.5
Other OPEC	106	212	140	+100.0	-34.0	+32.1
Total OPEC	2,993	5,637	1,832	+88.3	-67.5	-38.8
Canada	1,325	538	542	-59.4	+0.7	-59.1
Mexico	16	439	822	+2,643.7	+87.2	+5,037.5
United Kingdom	15	202	381	+1,246.7	+88.6	+2,440.0
Other Non-OPEC	1,907	1,640	1,421	-14.0	-13.9	-26.0
Total Non-OPEC	3,263	2,819	3,156	-13.6	+12.0	-3.3
Total Imports	6,256	8,456	4,988	+35.2%	-41.0%	-20.3%

Source: Monthly Energy Review. Department of Energy, Energy Information Administration, December 1983.

As a result of efforts such as these, demand did not continue on an endless curve. Rather, by 1983, oil demand dropped 18%.³⁵ Further, OPEC's share of the market also declined. In 1979, OPEC supplied 58% of the world market, by 1981, it dropped to 50% and by 1982, it further tumbled to 44%.³⁶

Saudi Arabia recognized high prices were reducing demand by increasing conservation and stimulating research for new energy resources. In 1982, Saudi Arabia made an effort to regain their portion of the oil market by decreasing price by producing at 94% of capacity. Within four weeks, price dropped from \$34 per barrel to \$28.60 per barrel. The price fall caused concern for many of the other nations within the cartel. They were worried price would continue to fall. To prevent this occurrence, OPEC set their first production limit in March, 1982 at 17.5 million barrel per day.³⁷ Soon after this agreement, many nations began production over their quotas and an oil glut resulted. Other factors which increased the glut include a world-wide recession and a mild 1982-83 winter. Prices continued to fall as OPEC tried to reestablish a production quota. On March 12, 1983, after three unsuccessful attempts, OPEC agreed on a production ceiling of 17.5 million barrels a day (a 4.7% decrease) and a price of \$29 per barrel (a 8.3% decrease).

Throughout 1984 and most of 1985 the price and production of oil remained relatively constant. As a result, Texas was able to recover from its 1983 recession. This recovery primarily resulted from the states diversification efforts. Unfortunately, Texas did not diversify enough.³⁹

Instead, prospects for Texas look grim again in 1986. Though the state has diversified considerably since 1983 there is still a large dependency upon the oil industry. This dependency has become more

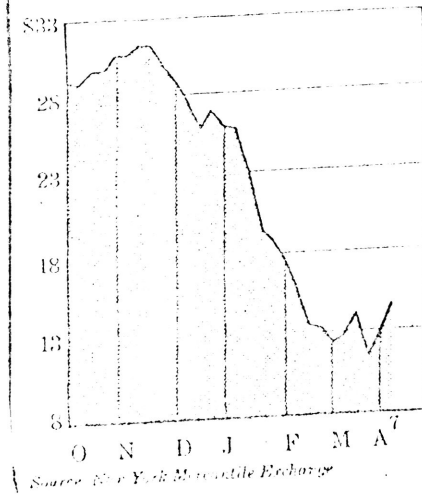
visible as the price of oil continues to drop due to the price war initiated by Saudi Arabia. In 1985, the price of oil may have been at a low compared to earlier years, but it remained relatively stable. Due to its stability, the state was able to pick up the monetary slack for earlier declines. The price in 1986, however, has dropped tremendously and has reached as low as \$10.40 a barrel.⁴⁰ This drop is so extreme the states's economy will be severely damaged. Though much diversification has been achieved, the state will still suffer, too many livelihoods are dependent upon the success of the oil industry. An article by Laurie P. Cohen of the Wall Street Journal printed an elaboration "Some parts of the oil belt will suffer more than others. For each \$1 drop in the price of oil, Texas stands to lose \$100 million in state income and 28,000 jobs, reflecting its position as the nation's number one oil producer. Some economists suggest the latest round of oil-price cuts could eventually force Texas to institute a state income tax. But Texas substantial electronic financial services and manufacturing industries will cushion the blow."⁴¹

A CLOSER LOOK AT THE 1985-1986 PRICE WAR^{41a}

Saudi Arabia began a price war in the final quarter of 1985 for the purpose of regaining their portion of the oil market. (see figure 21)

Figure 2

Crude Oil Futures (Dollars per barrel)



Since 1979, OPEC had lost approximately one-third of the market to non-OPEC countries. Saudi Arabia is the OPEC country most concerned with regaining control because they have lost the greatest share of the market. (This is because Saudi Arabia has been the primary country to reduce production to maintain oil price.)

As of March 25, 1986, Saudi Arabia has doubled their production to approximately 5.5 million barrels per day.⁴² As a result of these actions, future and past oil prices⁴³ have fallen to their lowest levels since before the 1979 Iranian Revolution. On Tuesday, March 25, 1986, West Texas intermediate crude, the U.S. bench mark trade, closed at \$12.10 compared to the \$27 per barrel before the Saudis began escalation. Also, on Tuesday, March 25, Britain's benchmark crude, British North Sea Brent, closed at \$12.70.⁴⁴

Most experts never thought oil would ever fall so low. Price predictions became a popular game for many petroleum and economics "experts" after Saudi Arabia threatened to drive price below \$20 a barrel. At that time, many experts said the price would not fall below \$18 a barrel. When oil did fall below \$18 a barrel, many said price would not fall below \$15 a barrel. On February 2, 1986, the Wall Street Journal reported price would not fall below \$14 a barrel. Experts believed at \$14 a barrel other market factors would come into play such as tariffs, taxes and alternative fuel sources. It was printed that if prices remained below \$15 per barrel, tariffs and taxes would be imposed by consuming countries. These charges combined

with a revival of demand would push the price of oil back up.⁴⁵ Mr. Ian Smart, an energy advisor to the government and private companies, claims that at prices below \$15 a barrel, heavy fuel oil⁴⁶ becomes cheaper than coal. If this occurs, demand will be generated for an additional 1.5 million barrels a day of fuel which would, in turn, immediately lift prices in Europe.⁴⁷

Michael T. Halbouty, a Houston earth scientist who headed President Reagan's energy transition team, does not give an argument as to why oil prices will not remain low, but says, "I believe the oil markets will stabilize in the very, very near future. I feel very strongly this is only a temporary adjustment."⁴⁸

Others, such as economist Russell Thompson, have a somewhat different viewpoint. Dr. Russell points out the Saudis are in the driver's seat. He says, "Give OPEC just four years. Members will be back in charge of the oil market, by then, oil prices will go 'very high' in 1990."⁴⁹

The experts make their predictions, but as always no one can determine the price of oil. Already, oil has dropped below the \$15 per barrel mark and is still falling. Sheik Ahmed Zaki al-Yamani, Saudi Arabia's oil minister, has claimed oil could drop below \$8 per barrel.⁵⁰ The only information which is certain is Saudi Arabia and Kuwait are the ones who devised the price war and set it in motion.⁵¹ Further, they are capable of maintaining the war because together they account for nearly half of the Cartel's output. Commenting on this

situation, Yamani has said, "There will be no limitation to the downward price spiral which may bring crude prices to less than \$15 with adverse and dangerous consequences for the whole world economy."⁵²

Prior to February, experts were basing their predictions primarily on economic models. Since that time, political factors have become increasingly more recognized. One political factor is the threat of terrorist action from Iran and Libya. Some believe that if Saudi Arabia does not slow production these countries may take terrorist actions against the Saudis.⁵³ Second, the Saudis fear that if the price rises, the Iranians might gain enough capital to start a military attack on Saudi Arabia. Without the increased capital, Iran cannot attempt an attack due to their war with Iraq.⁵⁴

A third factor concerns very poor countries such as Latin American countries and Egypt. These countries' primary source of revenue is oil. Without these revenues, their people starve. Further, many Latin American countries need their own revenues to make payments on their debts to the United States.⁵⁵ Saudi Arabia has felt enough pressure from other countries to let up on their own production that Yamani's public speeches are changing. Yamani no longer claims that Saudi Arabia will keep producing over its OPEC quota. Instead, Yamani has claimed Saudi Arabia will hold its OPEC ceiling of 4.3 million barrels per day. A Middle East Economic Survey, a publication often used to convey Saudi views printed that Saudi oil production fell below four million barrels a day showing "Saudi restraints". This

appears, however, to only be a political move. Oil executives from four companies of the Aramaco partnership, which produces Saudi oil, asserted that Saudi Arabia was producing 4.6 million barrels per day in a discreet campaign to keep price low and falling.⁵⁶ Fourthly, OPEC has become divided into two warring factions. Each held a separate meeting during the third week in March. Each believed the depressed price of oil was the other faction's fault.⁵⁷

The first factor consisted of Saudi Arabia and its chief allies - Kuwait, the United Arab Emirates, and Qatar. This faction's primary concern has been to keep prices down for the principle purpose of:

- (1) Encouraging consumption to make demand grow.
- (2) Driving current high cost production from the market.
- (3) Discouraging new oil investments by presenting the investors an oil market with lower and more volatile prices.
- (4) Shocking other oil exporters such as Britain, the Soviet Union, Norway, and others to share the burden of price control.⁵⁸

This faction met in Geneva, Switzerland along with nine other OPEC members and five non-OPEC countries. At the meeting, Yamani continued to stress Saudi Arabia was not the one to blame. (Even though it is the largest oil exporter.) But, rather all oil producing countries, not just OPEC countries, would have to work together to end the market chaos. Kuwait, however, said they would begin producing at record levels if they couldn't get cooperation from the other countries. The meeting did not come to any conclusion except to meet again on April 15, 1986.⁵⁹

The other faction led by Iran, Libya, and Algeria met in Tripoli, Libya. This group discussed alternatives to end the price war. One suggestion was a strict cartel-wide production cut. They felt the primary countries which would need to reduce their production would be Saudi Arabia and Kuwait. This group does not believe Saudi Arabia and Kuwait will be able to convince the other countries to cooperate. Rather, they believe the meeting's postponement for agreement was a Saudi excuse to drag prices lower.⁶⁰

Obviously, there are many different political and economic views which must be resolved before the price of oil will stabilize. Until that time, economies which are dependent upon oil production will suffer. One of these economies is Texas. The next section will discuss how OPEC often determines the state of Texas's economy.

HOW DOES THE ENERGY INDUSTRY EFFECT TEXAS ?

Texas is by far the nation's leading energy producing state, (See Table 3). As a result, international trends in the energy industry impact every sector of the Texas economy. These impacts extend far beyond the process of searching for and producing oil and natural gas, (as illustrated earlier by Bob Bullock's oil pipeline through the Texas economy.) Directly affected are such important industrial sectors as refining, petro-chemicals and gasoline marketing. Indirect effects touch nearly all other sectors of the economy, ranging from construction to retail trade.⁶¹

State government collects revenue both directly and indirectly from the oil industry. Directly, the state collects on both production and regulation. The production tax is "4.6% of the market value of oil produced in the state."⁶² The regulation tax is "3/16 of 1 cent on each barrel produced."⁶³ The primary source of indirect taxation comes from the sales tax.

TABLE 3

<u>State</u>	<u>Million Barrels</u>	<u>Rank</u>	<u>% of U. S.</u>
Texas	894.3	1	28.0
Alaska	627.8	2	19.7
Louisiana	502.6	3	15.8
California	406.6	4	12.8
Oklahoma	159.9	5	5.0
Wyoming	114.2	6	3.6
New Mexico	75.9	7	2.4
Kansas	73.7	8	2.3
North Dakota	51.5	9	1.6
Mississippi	32.5	10	1.0
TOTAL U. S.	3,188.3		

Source: World Oil, February 15, 1985

On the average, 60% of Texas revenue comes from tax collections. (Federal funding supports approximately 25%. Interest, licenses, fees, rents, and royalties make up the final 15%.) Twenty percent of the sixty percent of tax revenue comes directly from oil and gas production taxes. Forty percent of the sixty percent comes from sales taxes. Of the total sales tax collections, 30% is directly or indirectly related to the petroleum industry. Obviously, the state government is highly dependent upon the petroleum industry.⁶⁴ A

monetary example of this phenomenon is "a \$1 drop in crude oil prices reduces oil production tax revenue by \$40 million and sales tax revenue by \$30 million."⁶⁵

Before further discussing how the Texas oil industry effects both the economy and government revenues, there is a discussion on Table 4, which concerns production, price, and value production. (See below)

TABLE 4
Texas Crude Oil
Production, Price, and Value

Calendar Year	Production		Per Barrel	Price		Millions of \$	Value	
	Millions of barrels	Percent Change		Percent Change	Percent Change			
1966	997.4	-%	\$ 2.96	-%	\$2952	-%		
1967	1068.5	7.1	3.02	2.0	3227	9.3		
1968	1082.3	1.3	3.06	1.3	3310	2.5		
1969	1099.5	1.6	3.21	4.9	3529	6.6		
1970	1203.5	9.5	3.26	1.6	3,923	11.1		
1971	1173.5	-2.5	3.48	6.7	4,084	4.1		
1972	1255.4	6.9	3.48	0.0	4,369	7.0		
1973	1250.4	-0.4	4.10	17.8	5127	17.3		
1974	1209.8	-3.2	6.90	68.3	8348	62.8		
1975	1178.5	-2.6	7.80	13.0	9192	10.1		
1976	1145.6	-2.8	8.18	4.9	9371	1.9		
1977	1095.8	-4.4	8.48	3.7	9292	-0.8		
1978	1032.2	-5.8	9.26	9.2	9558	2.9		
1979	968	-6.2	12.60	36.1	12,198	27.6		
1980	919	-5.1	21.94	74.1	20,170	65.4		
1981	877	-4.6	34.52	57.3	30,266	50.1		
1982	836	-4.7	31.66	- 8.3	26,495	-12.5		

SOURCE: Comptroller of Public Accounts tax records

OIL PRODUCTION

Briefly

Oil production in Texas steadily increased between 1966 and 1970.

In 1971, production dropped 2.5% before increasing 6.9% in 1972. At this time, production peaked at 1,255,400,000 barrels of oil. Since Texas' peak, production has continually declined. The rate of decline, however, has varied due to changes in price. The most obvious changes occurred during the 1983 to 1984 period. During this period, production nearly stopped its decline due to the response between deciding to drill and actually recovering oil. Soon after the 1979 price increases, most producers realized price would not continue an endless escalation. As a result, 1985 production declined at a rate more like the 1970s period. Then, in 1986, production hit its lowest rate since the 1950s. (See Figure 3 and Table 5.)

An elaboration:

Production rates have vascillated primarily due to declining sources and changing prices.

Declining resources:

Prior to 1967, the rate of extraction was less than the rate at which new reserves were being discovered. As a result, production could continue to increase at the same rate demand increased. In fact, Texas production capacity was so large that Texas was able to produce enough oil to supply Europe during oil shortage periods such as World War II and the 1956 Egyptian-Israeli conflict.⁶⁶ After 1967, proved reserves were no longer increasing, instead, they dropped at an average of 4.4% a year.⁶⁷ As a result of diminishing reserves, Texas' rate peaked in 1972. Since Texas could no longer escalate production

Figure 3

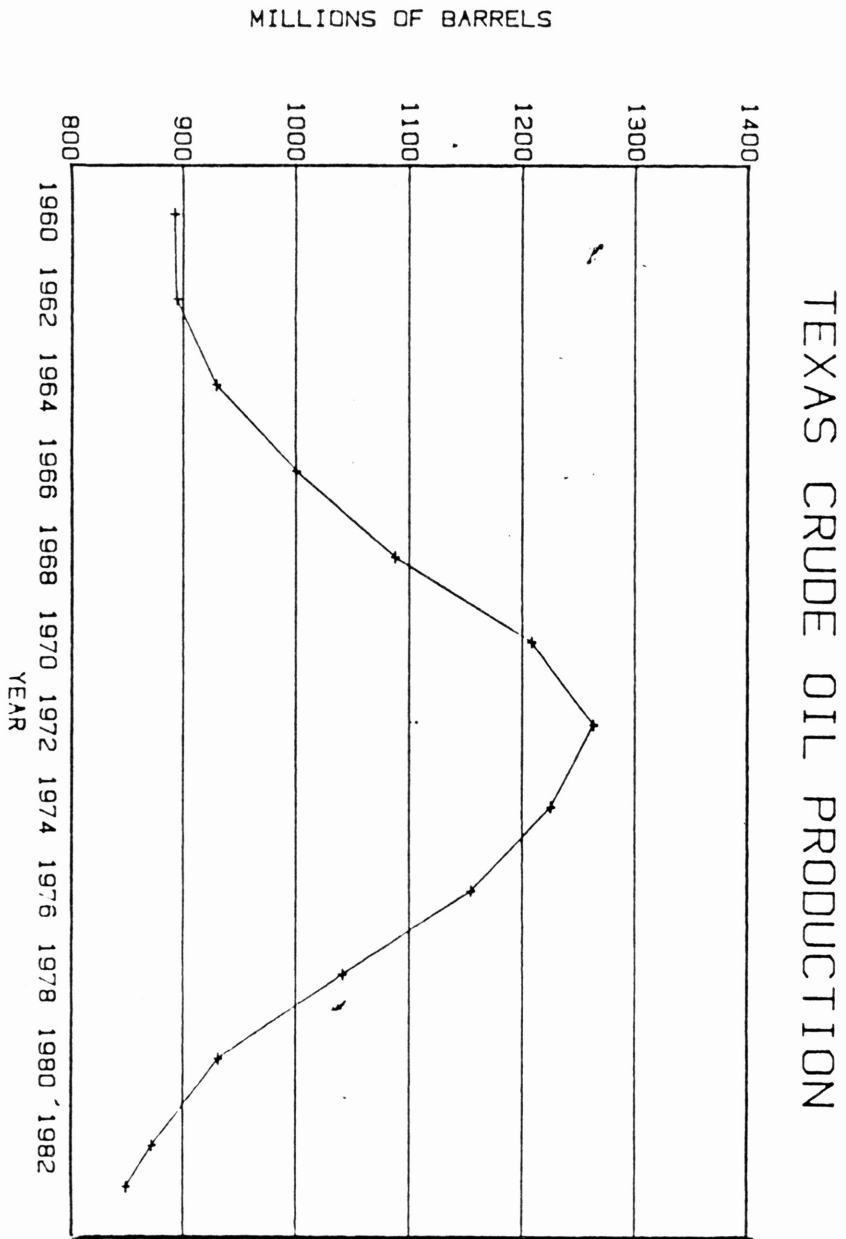


Table 5

HISTORY OF TEXAS CRUDE OIL RESERVES.
PRODUCTION AND NUMBER OF PRODUCING WELLS

Year at January 1	CRUDE OIL		
	(M Barrels) Estimated Proven Reserves* of Crude Oil at January 1	(M Barrels) Total Crude Oil Production** for Year	No. Crude Oil Producing Wells End of Year
1935	5,500,000	375,617	59,461
1936	6,010,000	418,776	68,054
1937	6,422,000	506,067	77,565
1938	8,247,928	468,782	85,137
1939	9,447,764	476,550	89,914
1940	9,768,371	486,662	95,214
1941	10,623,515	499,208	98,802
1942	10,975,641	477,828	98,757
1943	11,545,727	587,436	98,596
1944	11,324,954	741,126	99,746
1945	10,835,257	751,045	101,225
1946	11,470,294	755,900	103,109
1947	11,646,360	816,188	105,537
1948	11,777,537	898,314	109,643
1949	12,484,218	736,627	115,483
1950	13,509,732	817,842	123,271
1951	13,581,642	991,983	130,309
1952	15,314,964	1,009,793	136,398
1953	14,916,168	1,000,545	142,159
1954	14,998,620	954,434	149,142
1955	14,982,003	1,002,480	158,598
1956	14,933,502	1,078,886	168,930
1957	14,783,139	1,057,997	176,705
1958	14,555,140	909,958	182,633
1959	14,322,216	944,410	188,934
1960	14,859,674	892,084	192,627
1961	14,758,492	894,765	196,396
1962	14,849,574	894,023	197,659
1963	14,648,325	915,420	198,236
1964	14,573,125	928,606	199,119
1965	14,299,847	932,810	197,924
1966	14,303,058	1,000,325	196,308
1967	14,077,134	1,073,848	192,100
1968	14,494,109	1,087,825	187,681
1969	13,809,906	1,107,146	183,141
1970	13,063,182	1,207,625	177,221
1971	13,195,476	1,182,371	172,636
1972	13,023,529	1,263,412	167,233
1973	12,144,057	1,257,057	159,090
1974	11,756,613	1,225,166	159,702
1975	11,001,506	1,185,683	160,603
1976	10,080,035	1,153,941	160,546
1977	9,226,250	1,101,137	155,746
1978	8,467,436	1,040,966	166,365
1979	7,689,991	978,544	169,826
1980	7,636,084	931,078	175,673
1981	8,206,000	897,573	183,991
1982	8,093,000	871,780	191,319
1983	7,616,000	849,072	197,983
1984	7,539,000	845,502	207,451

* Estimated by American Petroleum Institute
** Railroad Commission of Texas

to meet world demand, the 1973 Arab oil embargo resulted in oil shortages and price increases for the U. S. ⁶⁸

In 1975, the rate of reserves dropped again from 4.4% to approximately 7%. This decline has resulted in even lower production rates after 1976. ⁶⁹

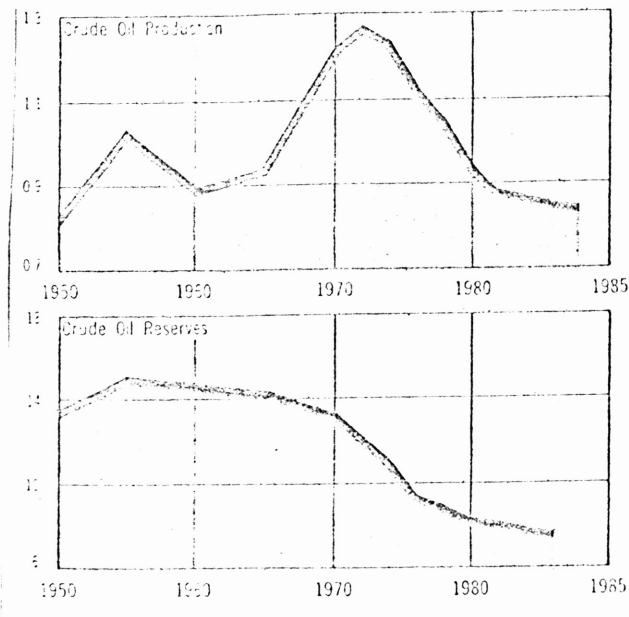
Price Increases:

In 1980, the rate of "production decline" lessened from 6.2% in 1979 to 5.1%. This trend of lowered decline rates continued until the 1983-1984 period. At this time, production nearly leveled off. Table 6 from the Texas Railroad Commission, shows the production difference between 1983 and 1984 to be a decline of only 3 million barrels. After 1984, however, "production declines" once again escalated.

TABLE 6
Texas Crude Oil Statistics

	Production	% of U.S. Production	Producing Wells (Year End)	Wells Change
1950	818	41.9	123,271	
1955	1,022	42.2	158,598	
1960	892	36.1	192,627	
1965	933	34.5	197,924	
1970	1,208	36.2	177,221	-5,920
1971	1,182	36.3	172,696	-4,525
1972	1,263	38.3	167,233	-5,463
1973	1,257	39.5	159,090	-8,143
1974	1,225	39.4	159,702	+ 612
1975	1,186	40.8	160,603	+ 901
1976	1,154	39.7	160,546	- 57
1977	1,101	38.4	163,746	+3,200
1978	1,041	34.3	166,365	+2,619
1979	979	33.1	168,944	+2,579
1980	931	30.5	175,673	+6,729
1981	898	29.7	183,991	+8,318
1982	872	28.5	191,319	+7,328
1983	849	27.8	197,983	+6,664
1984	846	27.3	207,451	+9,468

Sources: Railroad Commission, U.S. Department of Energy, American
+ Petroleum Institute



This lessening of production decline is attributed to dramatic price increases causing increased drilling and exploration. In 1979, price began escalating due to increased prices on the world market initiated by OPEC. In Texas, price hit an all time high of \$37.10 per barrel in 1981 due to decontrol. Many producers believed oil price would continue to escalate. Many "experts" made predictions such as \$55 per barrel by 1990.⁷⁰ Since people believed oil prices would continue to escalate, many invested large sums of money in drilling and exploration. The number of wells drilled (Figure 4) in Texas continued to escalate until 1981. The increase of "wells drilled" explains the trend toward a decrease in production decline. The reason production decline did not reach its slowest point until the 1983-1984 period is due to response. Further, the tremendous increase in wells drilled did not cause a positive production rate because less oil was being recovered from each well.

Price Decreases:

In 1985, production rates resumed their pre-1980 decline rate because price began to fall again in 1983 making production in many areas less profitable. The low production rates of 1986 can be attributed to oil reaching its lowest price level since 1978.

Production is determine largely by price. Since this is true, price trends will be reviewed before looking at the value of production and its effects on governmental revenues. (See Figure 5).

TEXAS CRUDE OIL PRODUCTION/WELLS DRILLED

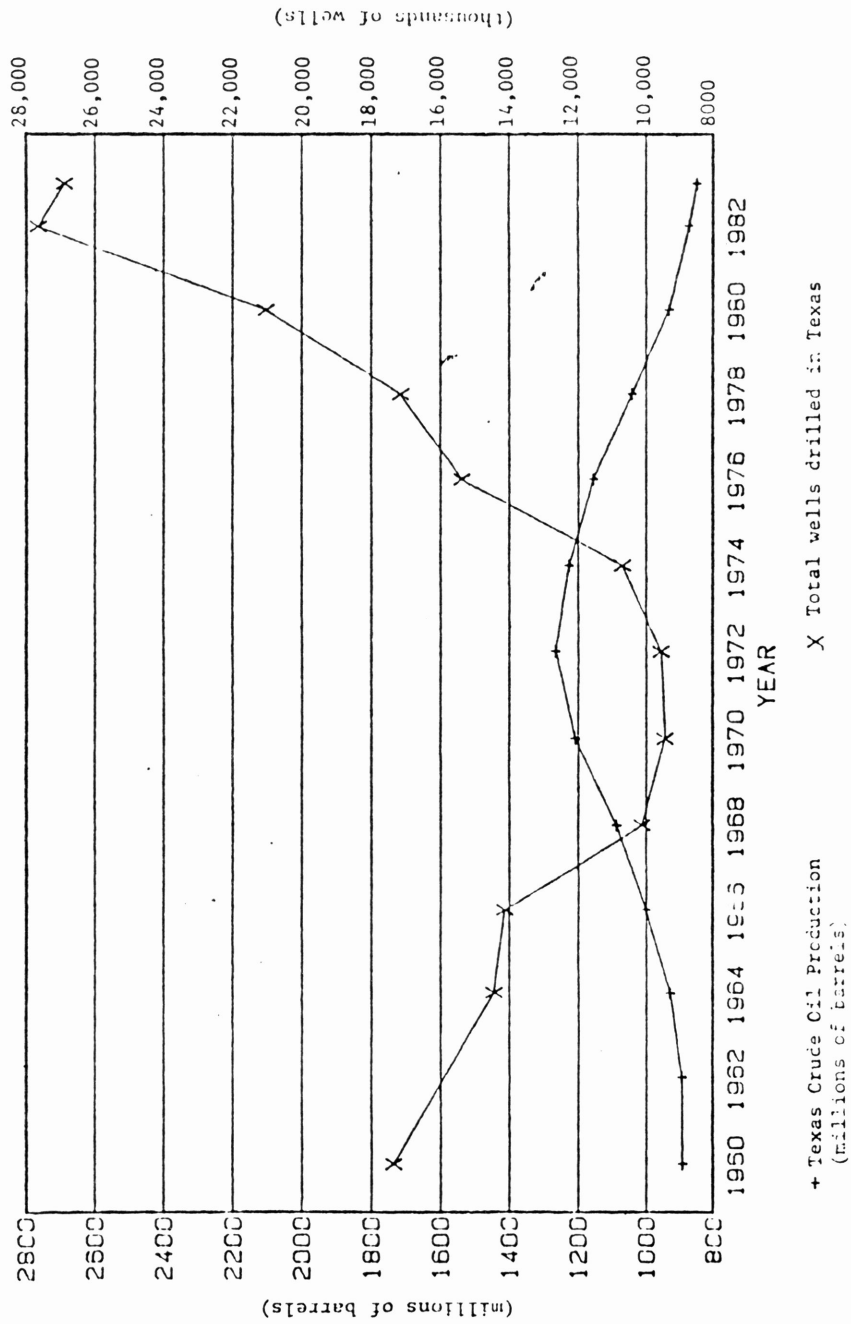
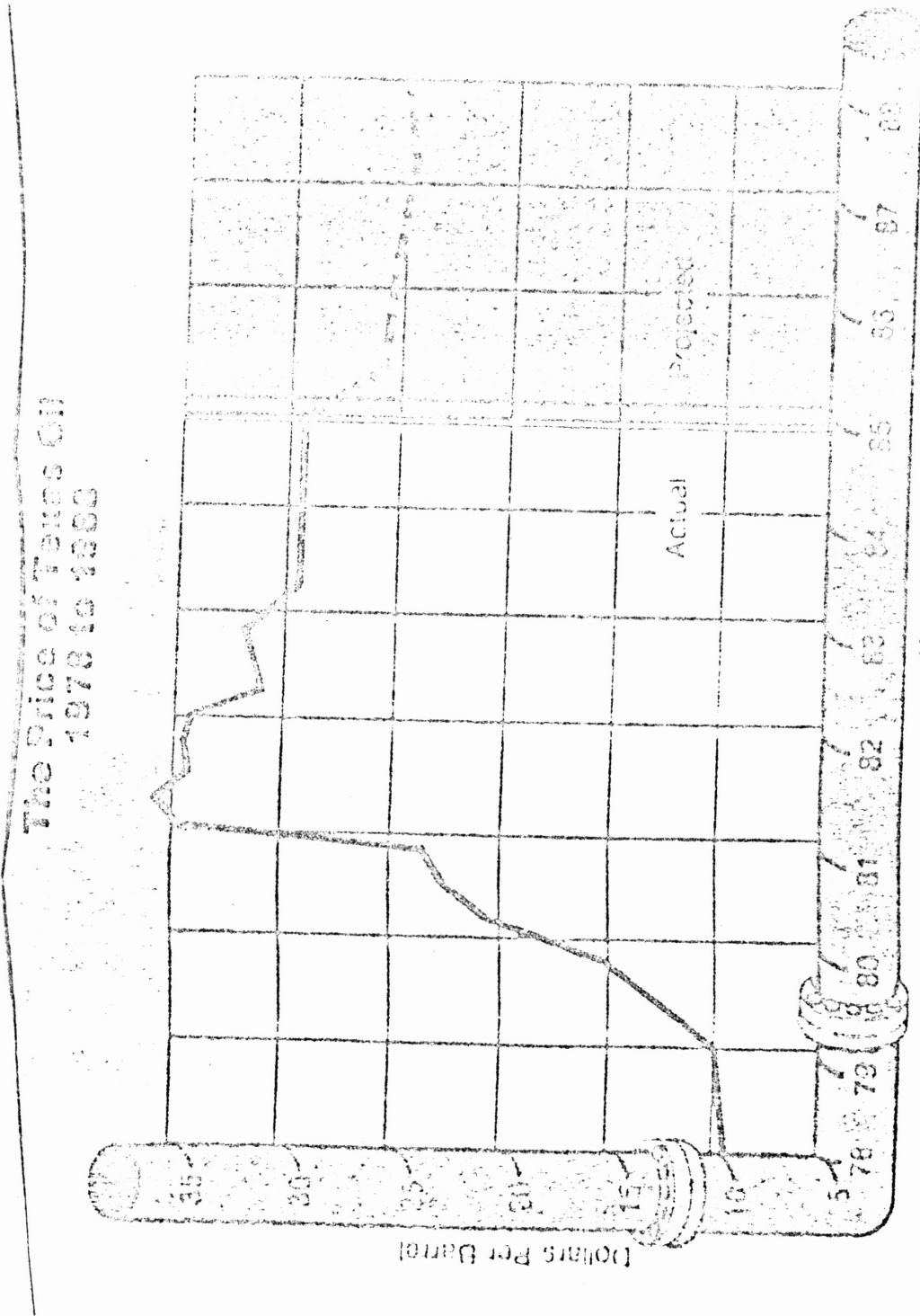


Figure 4

Figure 5



SOURCE: Bus B. Alex, Texas Comptroller of Public Accounts

Price:

Since 1901, Texas oil prices have continually fluctuated depending upon supply verses demand. As a result of these fluctuations, the oil industry has been characterized by "boom or bust".

Oil prices in Texas have continually increased from 1966 until their peak in 1981. Since 1981, prices have declined. The most dramatic price drops, however, began in the final quarter of 1985. As a result of this price slide, oil is presently being sold at an eleven year low (refer to Table 4.)

Between 1966 and 1972, Texas oil price remained relatively stable with a less than 2% increase. Likewise, international oil prices also remained stable over this period of time. In October 1973, however, the world price of oil began rapidly increasing. Price increases first resulted on October 16, 1973, because OPEC wanted more profits from their product. To achieve this, OPEC raised the price of oil to \$5.12 a barrel.⁷¹ The second price increase resulted when the Organization of Arab Petroleum Exporting Countries (OAPEC) used oil as a political weapon⁷² against the U. S. and other countries which were supporting Israel in the Yom Kippur War. OPEC reduced production so much that by November, premium oil was being auctioned at \$20 a barrel. On December 23, the oil ministers announced a new posted price of \$11.65 a barrel.⁷⁴

As a result of OPEC's price increases, Texas oil price increased 17.8% in 1973, 68.3 in 1974; and 13.0% in 1975.⁷⁵ The price controls imposed by the Nixon administration in 1971 was the reason Texas oil

price did not also increase 75% like the world market price. Price, in Texas, was instead further suppressed until 1981 due to the Emergency Petroleum allocation Act of 1973, the Energy Policy and Conservation Act of 1975, and the Energy Conservation and Production Act of 1976. Between 1976 and 1978, price again remained relatively stable. OPEC, for the most part, limited their price increases to 5%. Texas price increases remained below the OPEC price increases.

In December, 1978, OPEC decided to make price increases throughout 1979. Before these price increases could even go into effect, market conditions changed, driving up price. A revolution began in Iran dropping its production from 5.2 million barrels per day to below 1.1 million barrels a day in early 1979. The Soviet invasion of Afghanistan caused further oil shortages. As the wars continued, supplies continued to decrease driving up the price of oil. As a result of the oil shortages, the ceiling price in premium oil rose to \$41 a barrel in December of 1980.⁷⁶

Though the Carter administration began to phase out the price control programs in mid-1979, complete decontrol did not result until February 1981. As a result, Texas oil producers did not gain profits at \$41 a barrel. Rather, the average price in 1980 was \$21.94 a barrel.

In 1981, complete decontrol went into effect. Texas oil prices hit an all time high of \$37.10 in February, 1981. Since 1981, price has continually declined resulting in a continuous production decline.

Value Production

Value production is the taxable dollar amount for a year determined by multiplying the year's total barrels produced by average price per barrel. After determining this figure, the approximate revenue collected from the oil production tax can be determined by multiplying the value production figure by 4.6%.

Value production is important because it combines both production and price to determine how the oil industry is fairing as a whole.

Value production continually increased from 1972-1982. (Refer to Table 1.) This was because oil prices rose at a much higher rate than production declined. During this period, oil dependency was quite advantageous.

After 1982, however, value production had declined. As a result, the state government has had to search for revenues from other sources. Until 1986, the government had been fairly successful. Now, however, the comptroller's office is looking at revenue shortfalls of approximately \$6.1 billion for fiscal 1988-89 budgets.

HOW VALUE PRODUCTION EFFECTS GOVERNMENTAL REVENUES AND THE ECONOMY

Perhaps the best way to evaluate the effects of the value production decline is to examine what the oil production tax finances, at what rate this tax is declining, and how dependent Texas' economy is on its oil industry. After looking at these factors, four

scenarios which predict probably impacts on the Texas economy will be presented.

GOVERNMENTAL REVENUES

What oil taxes finance

The oil severance tax primarily supports the Available School Fund and the legislature. The Available School Fund receives 25% of the severance tax revenues. This money finances teacher's salaries and the public school texts for elementary and secondary schools. The Comptroller's office receives less than one-half of one percent for operating expenses. The remaining (nearly 75%) is appropriated by the legislature to pay for items such as farm-to-market roads, medical and children's assistance, highways, teacher retirement and the Foundation School Program.⁷⁷

The amount of money allocated from the severance tax to these beneficiaries in 1982 was \$1.3 billion. Obviously, the oil tax has the potential to raise a lot of revenue for the state as long as value production remains high.

Declining Tax Rates

Likewise, when value production declines, the state loses revenues. (Compare figures 6 and 7.) In 1983, value production began declining. The effect of a one-dollar drop in oil prices was an annual decline of about \$38 million in oil tax revenues.⁷⁸ The losses to the state, however, did not end with the oil tax declines. The

sales tax also declined because approximately 30% of the Texas sales tax is linked directly or indirectly to the oil and gas industry. (See Figure 8). As a result, a decrease in oil price will also bring a decrease in the amount of sales tax collected (See Figure 9.) The Comptroller's 1983 estimate concerning this relationship was "a one dollar drop in the price of a barrel of oil would decrease sales tax revenues by \$30 million."⁷⁹ The Comptroller's office went on to estimate that oil revenues never declined at an annual rate of 4.3%. Further, the oil tax and sales tax losses combine for a total loss of \$3 billion for the state.⁸⁰

FIGURE 6
The Major State Taxes, 1980
(Millions of Dollars)

Notice when price was higher in 1980, the oil production tax financed 12.4% of all tax while in 1985, when price is lower, the oil production tax only financed 9.7%

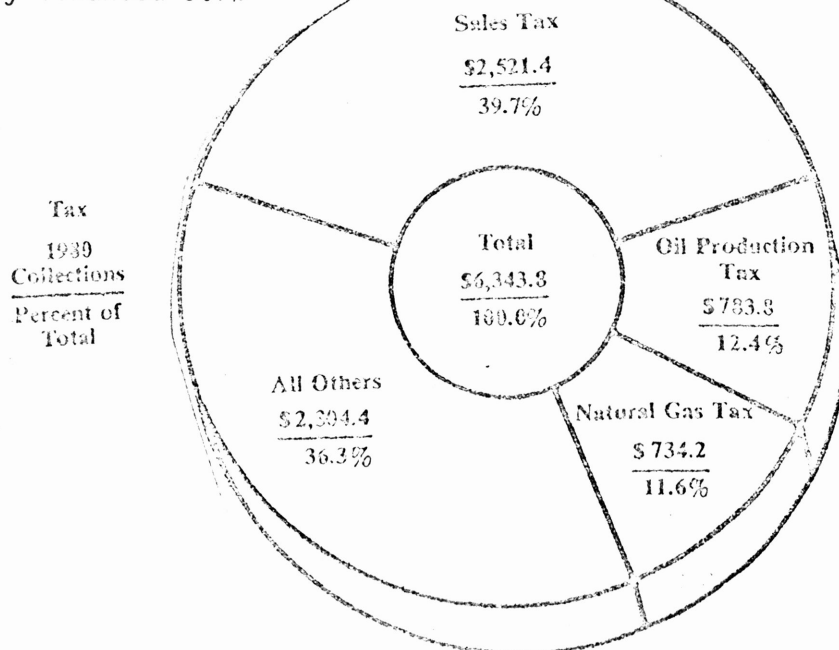
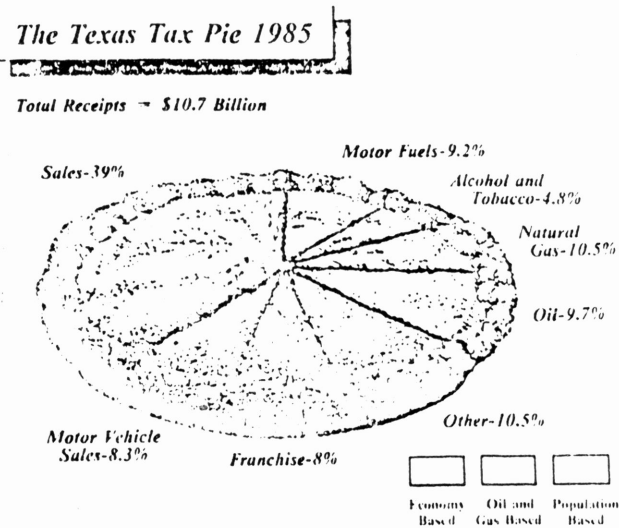
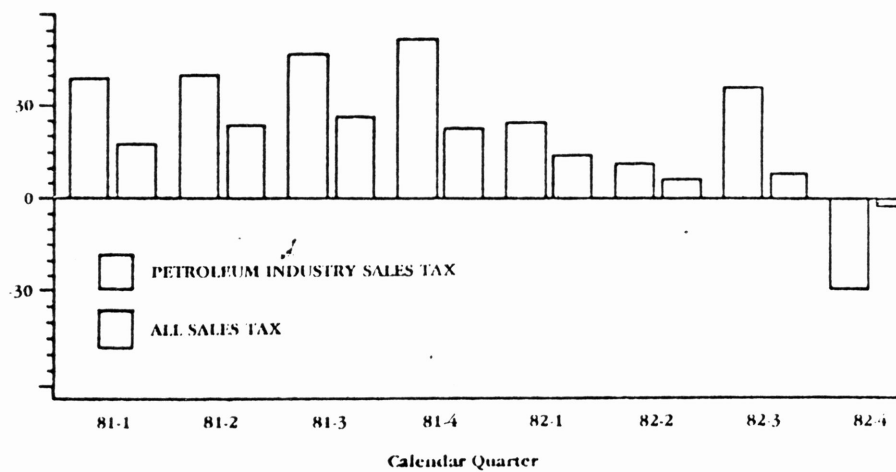


Figure 7 & 8



SOURCE: Bob Bullock, Comptroller of Public Accounts

QUARTERLY SALES TAX COLLECTIONS FROM THE TEXAS PETROLEUM INDUSTRY PERCENTAGE CHANGE FROM PRIOR YEAR



SOURCE: Comptroller of Public Accounts

THE ECONOMY

Although the oil industry has a great impact on the state revenues, probably its most significant impact is on the state's economy. Due to Texas' dependency upon oil, when the price of oil is high the economy booms. Likewise, when the price of oil is low, the economy suffers. (This also extends into the employment sector, see Figure 10.)

In 1983, the oil industry may have taken a downfall, but it still significantly supported the economy. "Oil and gas companies spent an estimated \$8.5 billion drilling for energy resources. Because much of this was spent buying materials and supplies from Texas businesses, the ripple effects through the Texas economy were great."⁸¹ Further, at the time, the industry was a \$37 billion business employing approximately 400,00 Texans.⁸² (See Table 7 p.40)

FIGURE 9
Annual Percentage Change in
Net Revenue by Source, 1982-1985

Tax Collections by Major Tax	Percentage Change from Prior Year			
	1982	1983	1984	1985
Sales Tax	16.0%	- 4.5%	14.5%	10.8%
Oil Production Tax	2.0	- 9.6	- 5.9	- 7.1
Natural Gas Production Tax	17.2	0.4	3.2	2.5
Motor Fuels Taxes (gas,diesel,LPG)	3.3	- 1.2	8.4	85.6
Motor Vehicle Sales and Rental Taxes	12.6	1.6	22.8	24.7
Corporation Franchise Tax	15.3	15.4	9.3	41.0
Cigarette and Tobacco Taxes	1.9	2.6	- 4.1	9.8
Alcoholic Beverages Taxes	13.2	1.6	4.7	16.9
Insurance Companies Taxes	5.8	11.8	62.0	1.5
Utility Taxes	21.7	19.3	- 6.0	- 0.4
Inheritance Tax	11.9	-18.0	10.3	51.4
Telephone Tax	16.4	6.3	- 0.2	30.5
Hotel and Motel Tax	19.8	- 4.8	10.6	35.7
Other Taxes	-18.5	-23.1	3.4	5.9
 TOTAL TAX COLLECTIONS	 11.7%	 - 1.8%	 9.5%	 15.2%
 <u>Revenue by Source</u>				
Tax Collections	11.7%	- 1.8%	9.5%	15.2%
Federal Funding	14.7	17.0	9.3	11.4
Interest Income	30.6	- 3.5	7.4	16.0
Licenses and Fees	7.7	0.4	19.5	30.9
Land Income: Rents, Royalties, Sales	- 7.6	-21.5	1.3	- 5.7
 TOTAL NET REVENUE	 5.5%	 1.0%	 9.9%	 15.0%

Source: Bob Bullock, Comptroller of Public Accounts

In 1986, however, the picture has changed. The falling price of oil has caused job and income losses to be so severe that Texas has returned to the ranks of "low-income" states. (Texas per capita personal income in 1982 was 102% of the national average only to fall two points below the national norm in 1984.)⁸³ Unemployment (See Figures 10 and 11) has even increased to 8.4 in Texas, the highest rate since 1970.⁸⁴ One of the more significant factors of this increased unemployment is the workers it affects. Usually, when a large industry is contracting the majority of employment cutbacks are blue collar workers. In 1986, many employment layoffs have been white collar administrative positions.

Accompanying these layoffs have been reduced capital spending budgets. All major oil companies have not only laid off employees but also cut their capital spending budgets between 10-33%.

TABLE 7
Texas Energy Industry Employment

	1984	1983	1982	1981	1980
Oil and Gas Extraction	260,300	253,200	292,900	285,500	231,800
Fabricated Structural Metals	43,200	43,600	49,100	55,200	52,300
Oil Field Machinery	39,200	42,000	72,200	80,700	64,700
Petroleum Refining	38,700	40,700	39,800	43,000	37,400
Gas Production and Distribution	28,900	30,000	20,200	28,900	28,000
Total Energy Industry	410,300	409,500	484,200	493,300	414,200

SOURCE: Texas Employment Commission

Figure 10

PRICE OF TEXAS OIL AND
OIL AND GAS INDUSTRY EMPLOYMENT

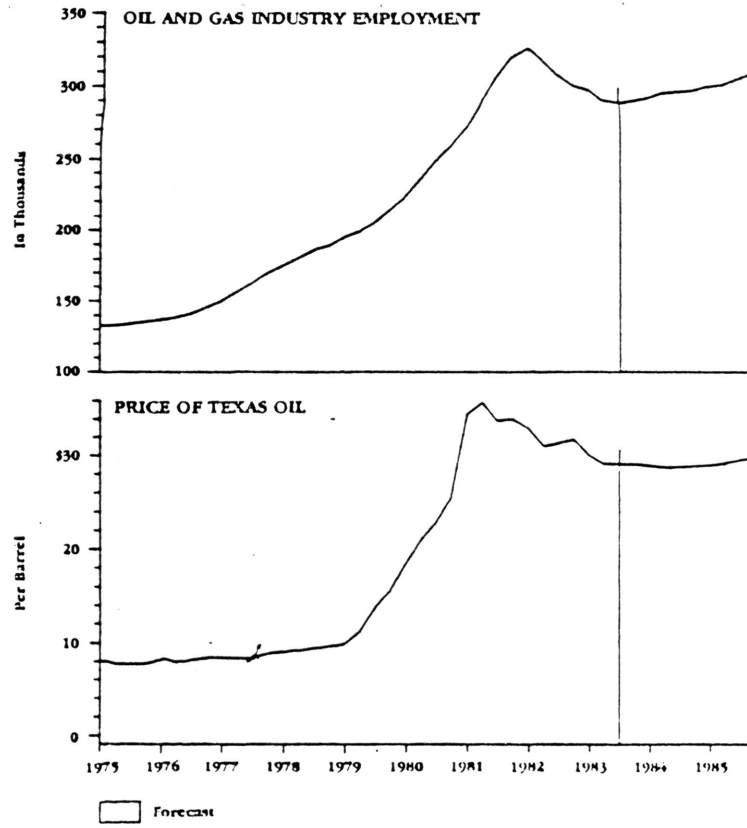
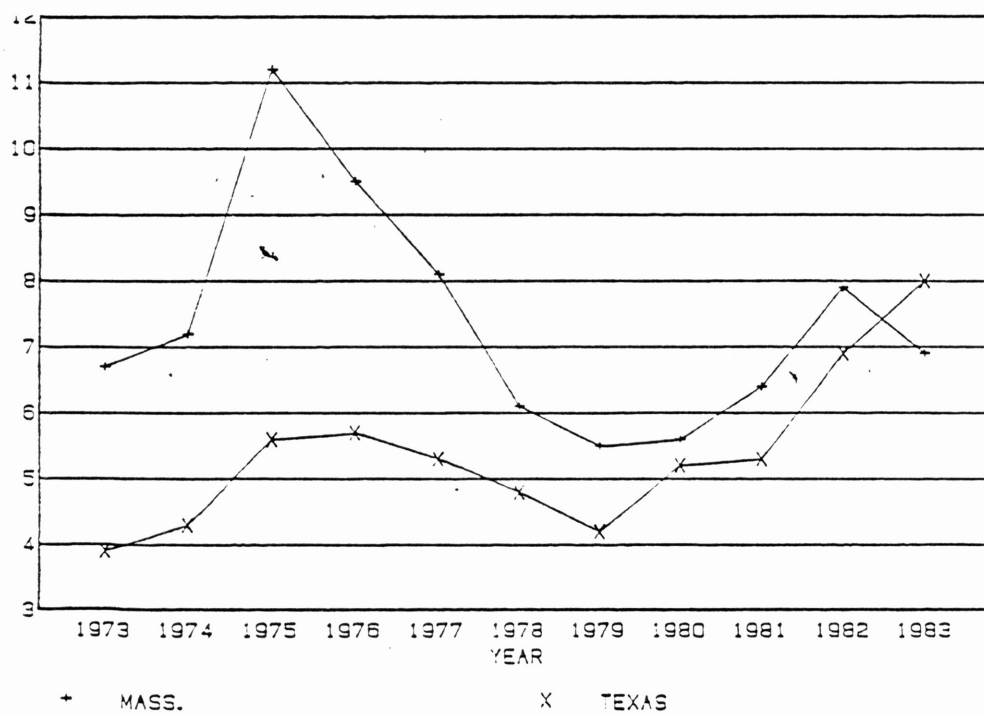


Figure 11

UNEMPLOYMENT RATES



The effects of these layoffs and cutbacks will not be limited to the industrial sector. Rather, non-industrial sectors of the economy will also experience underemployment and layoffs as they adapt to the more subdued level of economic activity.

Other additional impacts will hit the state in areas of financial institutions and the state government itself. Many financial institutions' portfolios are composed of energy-related companies. (For example, Texas Commerce Bank's portfolios are composed of 18% oil related companies.) As these institutions cannot make profits, they will not be able to pay back their interest, much less their loans. Houston banks, in particular, are especially hard hit by this phenomenon. Other businesses have also declined at record levels. In 1986, a record total of 1,386 Houston area companies filed for bankruptcy in 1985 due to the oil crisis.⁸⁶

Finally, the state's fiscal condition has gone from bad to worse. No longer will Texas be able to boast about budget surpluses, rather, the state faces a severe fiscal crisis. Bob Bullock believes the state may write a few "hot checks" in the final days of December, 1986.⁸⁷ More importantly, however, his office estimates a revenue shortfall of \$6.1 billion during the 1988-89 fiscal biennium.⁸⁸

Taking all of these economic factors into account, Bernard Weinstein and Harold T. Gross, members of the Center for Enterprising at Southern Methodist University, composed three scenarios which discuss the impacts to the Texas Economy by the yearly average price

of oil at \$20, \$18, and \$15 per barrel.

Their report establishes three benchmarks that are useful in gauging the probable impacts of these various oil prices. These benchmarks are: jobs, gross state output and state and local tax revenues. The report states that generally, each dollar decrease in the yearly average oil price costs Texas:

- * 25,000 jobs
- * \$3 billion in gross state output;
- * \$100 million in state and local tax revenue

The scenarios are:

Scenario 1: \$20. A stabilization of oil prices at an average of \$20 per barrel, down roughly \$5 from the 1985 average would:

--cost Texas roughly 125,000 jobs, reducing expected total non-agricultural employment growth by approximately one third for the next three years;

--remove approximately \$15 billion in purchasing power from the state economy, sharpening Texas' recent declines in gross state output.

Scenario 2: \$18. A further deterioration of oil prices to a yearly average of \$18 per barrel, a decrease of \$7 from the 1985 average would:

--cost Texas 175,00 jobs, reducing expected total non-agricultural employment growth by approximately 50% per year for three to five years;

--remove approximately \$21 billion in purchasing power from the state economy.

Scenario 3: \$15. \$15 per barrel oil, a drop of \$10 would:

--cost Texas 250,000 jobs over the next three to five years, likely resulting in an overall contraction of non-agricultural employment;

--remove \$30 billion in purchasing power.⁸⁹

Since the price of oil has fallen below \$15 a barrel, Texas obviously will loose a considerable amount of revenues. The Comptroller's office realizes this and has made the following revisions:

TABLE 8

Revenue Source	FY 1986	FY 1987	Total 86-87
Oil Production Tax	<u>-\$111.9</u>	<u>-\$265.2</u>	<u>-\$377.1</u>
Natural Gas Tax	- 104.1	- 247.9	- 388.0
Sales Tax	- 122.5	- 211.5	- 334.0
Franchise Tax	- 70.6	- 84.7	- 155.3
Other Taxes	<u>- 8.8</u>	<u>- 27.4</u>	<u>- 36.2</u>
SUB TOTAL	<u>-\$453.9</u>	<u>-\$836.7</u>	<u>-\$1,290.6</u>
Federal Funds	- 26.6	0.0	- 26.6
Interest Income	- 28.5	- 93.1	- 121.6
Land Income	- 40.0	- 40.0	0.0
Other Revenue	+ 58.2	+ 44.5	+ 102.7
TOTAL REVENUES	<u>-\$490.8</u>	<u>-\$845.3</u>	<u>-\$1,336.1</u>

Source: Comprtoller's Office

The Houston Post printed an article in January which reports losses already accrued to the state, "The \$10 per-barrel decrease in crude oil prices between 1981 and this year was accompanied by a virtual halving of the state's active drilling rigs from the 1981 peak of about 1,300 and net loss of some 118,000 manufacturing jobs in addition to the 33,000 jobs lost in the drilling industry."⁹⁰

Since this article has been printed even more rigs have been shut down in Texas. As of March 17, 1986, Texas had only 386 operating rigs, as compared with 1,424 operating rigs in 1981. Applying Bob Bullock's "oil pipeline through the Texas economy" to these figures, one can see that within the drilling sector alone a considerable amount of jobs have already declined.(See Table 9.)

TABLE 9
Rig Activity

	<u>March 17</u>	<u>March 10</u>	<u>Year Ago</u>
Texas	386	413	735
Louisiana	185	186	292
Oklahoma	159	169	249
Kansas	50	50	99
Wyoming	37	41	75
New Mexico	36	31	63
California	64	73	70
U. S. Gulf	120	129	203
U. S. TOTAL	1,137	1,212	1,937
Canada	367	398	400
Worldwide Offshore	532	540	638

Source: Hughes Tool Co, Offshore Data Services

CONCLUSION

The Economy

All of these figures further demonstrate Texas' dependence upon the oil industry and therefore oil prices. As a result, the highly

volatile price of oil dictates the economy, characterizing it by periods of "boom or bust".

Presently, price is at its lowest level since 1978. As a result, the economy is in a slump. Since the future of the oil market is highly unpredictable, no one knows when Texas will recover. Some believe oil prices will level off between \$14 and \$18 a barrel and at this point the economy will stabilize. Others state oil recovery costs in Texas average \$12 a barrel. This being the case, the \$14 to \$18 a barrel range will not be profitable enough for the oil industry to continue in Texas. Others suggest a different scenario. They believe OPEC will once again gain control of the oil market and drive prices back up by 1990. Texas oil prices could then resume their 1979-82 price levels. Then the Texas economy would return to periods of strong economic growth. Others argue that the Middle East will eventually gain control and therefore drive up prices; they do not agree, however, that Texas will necessarily benefit from this occurrence. Rather, their fear is that by the time this happens, Texas oil industry will not be able to compete with world markets. They agree that the present capital spending budget and exploration program cuts will cause a lag response. That is, since Texas oil companies are not looking for oil today, they will not be able to find it tomorrow.

No matter which one of these scenarios results (or any scenario for that matter), Texas cannot expect the energy industry to continue playing the major role of supporting its economy. Further, Texans must

realize it is not fiscally prudent to depend on a single, volatile industry as a state's number one source of financial support. Rather, the state must move into numerous markets for an even more diversified economy.

Likewise, the state must diversify its tax revenues if it plans to continue providing its residents with the numerous services it has in the past.

The Government Sector

The Texas state government's dependency upon the price of oil has landed the treasury in a fiscal crisis as the 1986 tax collections fall farther behind expenditures. This dependency became increasingly more obvious in January, 1986 as prices continued to slide. Before this time, oil prices remained relatively high making Texas' disproportionate tax structure profitable for the state. Now, however, Texas government's dependence upon oil price will cause the state revenue shortfalls, possibly as much as \$5.1 billion barrels during the fiscal 1988-89 biennium.

An article from the Wall Street Journal reported Texas' fiscal dilemma as:

"Nearly two-thirds of the money Texas pulls in each year comes from taxes. The tax pie, however, is sliced in an unusual fashion. There is no corporate or personal income taxes, a point of considerable pride to most Texas. A 4 1/8% sales tax generated about 40% of tax revenue last year. Next comes taxes on oil and gas production, about 20% of the tax pie.

When oil prices soared, oil and gas revenues did likewise, up 700% in the decade ending in 1982 or 23% a year. But when oil prices fell, taxes did, too. Oil and gas revenues have dropped an average of 4% annually since 1982."⁹¹

If Texas is to avoid further fiscal problems, the state must diversify its tax base with more stable and productive sources of revenue. Further, these new revenue sources should increase as population and inflation increases.

Suggestions as to where Texas should seek new revenue sources are made by Edward McClelland, vice president and economist at Republic Banc Corporation, and Bernard Weinstein.

Mr. McClelland says "a state lottery and racetrack betting will get attention as will taxing the service industry."⁹²

Mr. Weinstein believes the state "could raise \$2 billion annually by expanding the sales tax to cover personal and business services and by boosting the rate to 5%."⁹³

Other possible tax base options include a personal income tax and a corporate income tax. Personal income tax advantages include a direct relationship with population growth. Future fiscal crisis could be avoided by having a tax which expands as the economy expands. The problem with a personal income tax is primarily a political one. Texans are, for the most part, opposed.

The advantages to a corporate income tax include an approximate annual collection of 400 million dollars for the state and approximately 75% of the tax burden would shift to out-of-state people. This tax would have the least effect on the purchasing power of the Texas consumer.

Whether Texas chooses a personal income tax, a corporate income tax, a lottery, parimutual betting, an expansion of the sale tax base into the service industry or an increase in the sales tax, it must find a new revenue source. The oil industry can no longer fund a high proportion of state revenues as it presently cannot support itself.

NOTES

1. Bob Bullock, Comptroller of Public Accounts, Biennial Revenue Estimate 1982-1983, (Austin, Texas).
2. Eugene Carlson, "Plunging Fuel prices Present a Taxing Problem for Texas," The Wall Street Journal, 28 January 1986, p. 27.
3. Fiscal Notes, by Bob Bullock, State Comptroller (Austin, Texas: June 1984), p. 1.
4. Ibid, p. 2.
5. Ibid, p. 3.
6. Ibid, p. 3.
7. Wayne Gard, The First 100 Years, Texas Mid-Continent Oil & Gas Association, p.1.
8. Juen Rayfield Welch, Texas: New Perspectives (Austin: Steck-Vaugh Co., 1970) p. 200.
9. Gard, p. 11.
10. Fiscal Notes, by Bob Bullock, State Comptroller (Austin, Texas: November 1981), p. 1.
11. Gard, p. 16.
12. Ibid, p. 16.
13. Texas Railroad Commission, Office of Information Services, (Ray Grassnoff).
14. Gard, p. 16.
15. "Halbouty cites Spindletop's Significance," Houston Post 13 January 1981
16. Ibid.
17. Welch, p. 204.
18. Texas Oil and Gas Moles, Texas Railroad Commission, p. 1.

19. Gard, p. 24.

20. Welch, p. 299.

21. Please note there has been a discrepancy between sources. Welch says the tax was enacted in 1932 by Ma Ferguson. The Texas Legislative Council, however, prints the tax was first levied in 1905. The Comptrollers interpretation of the Council's data states: "In fact, the 1905 Texas tax, levied at a rate of one percent of the market value of oil produced in the state, was almost an afterthought in a larger general tax bill of the time. Enacted in a period when oil brought only about five cents a barrel, the tax produced only \$80,000 in 1905 - about two percent of state revenue, including taxes and all other sources. As oil became more valuable and state production increased, however, the importance of the tax also grew. by 1940, the oil tax accounted for 12 percent of all state revenue. Spurred by wartime demand, the oil tax was producing 24 percent of state revenue by the end of World War II. In 1949, the tax accounted for 28 percent and was the state's most important revenue source. Only the introduction of the sales tax in 1961 marked the decline of the oil tax from the number one position among Texas' state taxes. Today, it ranks second among taxes in revenue production behind the sales tax."

22. Fiscal Notes, by Bob Bullock, State Comptroller (Austin, Texas: September 1981) p. 1.

23. Texas Oil and Gas Notes, Texas Railroad Commission.

24. Fiscal Notes, by Bob Bullock, State Comptroller (Austin, Texas: August 1982). pp. 7-16.

25. Ibid. pp. 7-16.

26. Ibid. pp. 7-16.

27. Congressional Quarterly Inc. Energy Policy, (Washington, D.C.: Government Printing Office, 1981), p. 16.

28. Texas Research League, (Austin, Texas: June 1985) p. 2.

29. Fiscal Notes, by Bob Bullock, State Comptroller (Austin, Texas: February-March 1980).

30. Fiscal Notes, by Bob Bullock, State Comptroller (Austin, Texas: June 1986) p. 6.

31. Ibid, p. 6.
32. Texas Research League, pp. 1-5.
33. Ibid, pp. 1-5.
34. Fiscal Notes, by Bob Bullock, State Comptroller (Austin, Texas: June 1984) p. 10.
35. Texas Research League, pp. 1-5.
36. Ibid, pp. 1-5.
37. Fiscal Notes, by Bob Bullock, State Comptroller (Austin, Texas: June 1983) p. 6.
38. Ibid, p. 6.
39. Comptroller of Public Accounts, State of Texas 1985 Annual Financial Report, (Austin, Texas: 1983) pp. 1-50.
40. Youseff M. Ibrahim, "OPEC Session collapses as Members Fail in Effort to Divide up Production Shares," The Wall Street Journal, 25 March 1986, p. 1.
41. Laurie P. Cohen, "Plunge in Oil Prices Brings Economic Woes to Energy-Belt States," The Wall Street Journal, 4 February 1986, p. 1.
- 41a. For the purpose of completing this paper within the specified deadline dates and prices after March 25, 1986, will not be discussed.
42. Ibrahim, p. 1.
43. spot market: The day-to-day transactions carried out in crude oil or refined products by traders around the world promising quantities to be delivered at specified prices.
futures market: Markets in New York and London where commitments are made to buy or sell oil at agreed-upon prices at some point in the future.
Note: The New York Mercantile Exchange operates and maintains the largest commodities market for crude oil and refined products in the world. Approximately 35 million barrels of oil is traded daily (when there's not a price war and prices are relatively stable) on NYMEX energy futures markets.
44. Ibrahim, p. 1.

45. Youseff M. Ibrahim. "Global Oil Price War is Expected to Affect the Industry for Years" The Wall Street Journal, 11 February 1986, p. 1.
46. Heavy fuel oil is a crude oil derivative used by European industry.
47. Ibrahim, "Global Oil" p. 1.
48. Ibid, p. 1.
49. Kate Thomas, "Can Cartel Reapply Brakes?", Houston Post, 8 March 1986.
50. Barbara Shook " \$8 a Barrel Oil Possible, Saudi Claims," 17 March 1986.
51. Ibrahim, "Global Oil" p. 1.
56. Ibrahim, "OPEC Session" p. 1.
57. Ibid, p. 1.
58. Henry S. Rowen, "Saudi Gambit Can Succeed," The Wall Street Journal, 2 march 1986, p. 1.
59. Ibrahim, "OPEC Session" p. 1.
60. Ibid, p. 1.
61. Comptroller of Public Accounts, State of Texas 1980 Annual Financial Report, (Austin, Texas: 1980) pp. 1-25.
62. Annual Financial Report, 1985.
63. Ibid.
64. A Special Financial Report, by Bob Bullock, Texas Comptroller of Public Accounts (Austin, Texas: April 1, 1983), p. 1.
65. Fiscal Notes, Bob Bullock, State Comptroller (Austin, Texas: Juen 1983).
66. Energy Policy, pp. 1-23.
67. Fiscal Notes, Bob Bullock, Texas Comptroller (Austin, Texas: Juen 1983).
68. Energy Policy, pp. 1-23.

69. Fiscal Notes, Bob Bullock, State Comptroller, (Austin, Texas: January 1986).

70. Texas Research League, June , 1985 p. 2.

71. Energy Policy, p. 15.

72. Ibid. OAPEC agreed to cut production "by 5% each month until Israel had withdrawn from Arab territories occupied since the 1967 war and had agreed to respect the rights of Palestinian refugees."

On October 18, 1973, Saudi Arabia announced it "would cut oil production by 10% and end all shipments to the U. S. if the U. S. continued to supply Israel with arms." The U. S. reacted by appropriating \$2.2 billion in emergency military aid to Israel.

On October 20, 1973, Saudi Arabia reduced production by 25% and completely cut off imports to the U. S. By October 22 most other Arab producers had joined in the additional production cutback and embargo.

73. Ibid.

74. Ibid.

75. Fiscal Notes, Bob Bullock, State Comptroller, (Austin, Texas: September, 1981) p. 1-8.

76. Energy Policy.

77. Fiscal Notes, Bob Bullock, State Comptroller, (Austin, Texas: September, 1981) p. 1-8.

78. Fiscal Notes, Bob Bullock, State Comptroller, (Austin, Texas: Juen 1984) p. 1.

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83. Bernard L. Weinstein and Harold T. Gross, "Falling Oil Prices and Their Impact on the Texas Economy," 31 January 1986. p. 3.

84. Fiscal Notes, Bob Bullock, State Comptroller (Austin, Texas: June 1984).

85. Earl C. Gottschalk, Jr., "Arco Slashes Capital Budget, Cites Oil Prices," The Wall Street Journal, 13 February 1986, p. 3.

86. Houston Post. 9 March 1986.

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88. Glenn Smith and Fred Bonavita, "Bullock sees state crisis in Oil Woes," Houston Post, 17 February 1986, p. 1

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