



The Oil and Gas Industry in New Mexico— An Economic Perspective

Laird Graeser, *Independent Tax Consultant*

It has been said, "if you live in New Mexico, you're in the oil and gas business." This "old saw" has traditionally been undeniably true, and is, to this day, more true than generally held. The "oil patch" extends over four counties in the northwest part of the state, four counties in the southeast, and portions of four other counties elsewhere in the state (Fig. 1). The impacts of the industry on air and water quality, the environment, state and local revenues, and the overall state economy are pervasive. The values of crude oil and natural gas production are strongly linked to state-wide employment and the gross state product. Direct and indirect links simultaneously can be demonstrated with respect to state and local revenues – primarily gross receipts tax revenue. However, the purpose of this paper is to present a survey, not a detailed econometric analysis of these linkages.

PRODUCTION VOLUMES AND VALUES

San Juan Basin (northwest NM)	Permian Basin (southeast NM)	Other
McKinley (gas & oil)	Chaves (gas & oil)	Colfax (gas)
San Juan (gas & oil)	Eddy (gas & oil)	Harding (CO ₂)
Sandoval (gas & oil)	Lea (gas & oil)	Quay (CO ₂)
Rio Arriba (gas & oil)	Roosevelt (gas & oil)	Union (CO ₂)

FIGURE 1 The oil patch in New Mexico (by county).

Note that over a long period of time, there does not appear to be a predictable relationship between gas price and gas volume (Fig. 2a). The lagging price change ten years after changes in volume is clearly spurious and not causal. On the other hand, plotting gas value (volume times price) in logarithmic terms shows that gas price drives the total value of gas, as should be expected (Fig. 2b). The other thing to note is that this strong link between gas value and gas price changed dramatically in 1972, at the time of the first oil embargo. At that time, strong increases in gas price were accompanied by decreases in gas volume, with corresponding modest increases in total value. Earlier—before about 1955—small changes in gas

price caused a relatively strong change in gas value. The production response for the San Juan and Permian Basins is revealing (Fig. 3). It is apparent that the production response in the San Juan—with its current emphasis on the exploration and production of coal seam gas—is very different than in the Permian. In neither basin, however, is the production response clearly dependent on price.

A similar interpretation can be posited for crude oil production and volume. Before the first oil embargo of

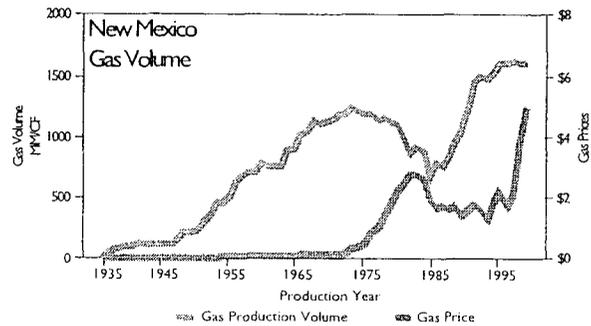


FIGURE 2A New Mexico gas production volume and gas price over time.

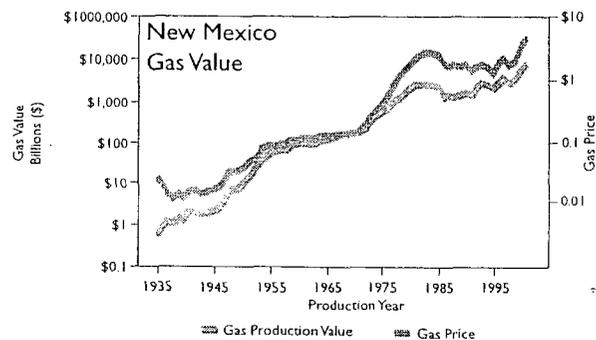


FIGURE 2B New Mexico gas production value and gas price over time.

1972–73, oil volumes were moderately responsive to changes in oil price (Fig. 4). After a decade-long re-equilibration, oil volumes from the early 1980s to the present became quite responsive to price changes.

STATE AND LOCAL TAX REVENUE

Energy in its various forms—crude oil, refined gasoline, natural gas, and electricity—has been a disproportionate candidate for taxation. Currently, there are six taxes imposed directly on oil and gas extraction and processing (Fig. 5):

- 1 Oil and Gas Severance Tax
- 2 Conservation (and Reclamation) Tax
- 3 Emergency School Tax
- 4 Oil and Gas Ad Valorem Production Tax
- 5 Natural Gas Processors Tax
- 6 Oil and Gas Ad Valorem Equipment Tax

Unfortunately, because of the complexity of deductions and rates, it is difficult to determine an effective tax rate on sales or production value without a great deal of work and assumptions about price. Some of the taxes historically have been specific excises, based on volume, not value. Other taxes are based on sales value, but these allow significant deductions from sales value to determine production (wellhead) value. The two ad valorem property taxes have a complicated rate structure dependent upon location of production. Further complicating the calculation is the recent proliferation of contingent tax rates and economic development incentives expressed in rates and base. The details of the taxes are discussed below.

In addition to the taxes enumerated here, oil and gas well servicing and well drilling are considered construction services and subject to the gross receipts tax. In addition, multi-state and multinational corporations produce and market most of New Mexico's oil and gas. These corporations pay corporate income tax to New Mexico on apportioned net profit.

1 OIL AND GAS SEVERANCE TAX

A severance tax is imposed on all oil, natural gas or liquid hydrocarbons, and on carbon dioxide severed from the ground and sold. The tax is based on sales value. The tax rate is 3.75% of the sales price at or near the wellhead on oil, carbon dioxide, other liquid hydrocarbons, and natural gas. An "enhanced oil recovery" tax rate of 1.875% is applied to oil produced from new wells using qualified enhanced-recovery methods. Before January 1, 1994, only carbon dioxide projects qualified. Thereafter any secondary or tertiary method could be used. The lower rate applies to production for the first five or seven years after bringing the enhanced project into production.

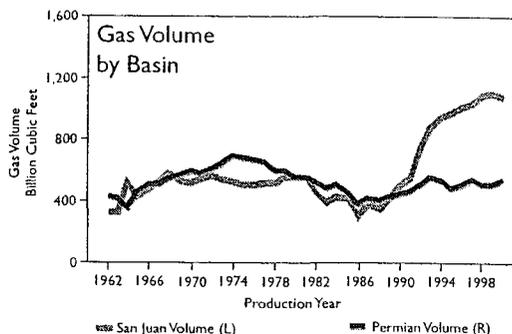


FIGURE 3 New Mexico gas production by basin.

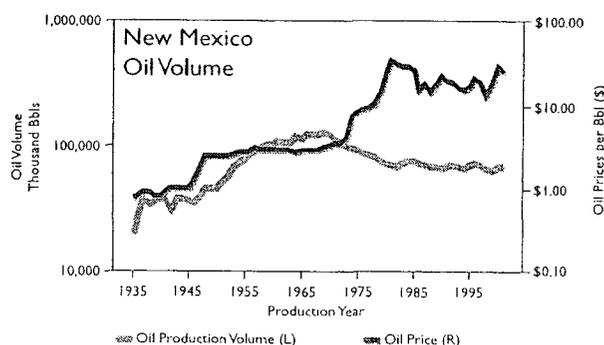


FIGURE 4A New Mexico oil production value and oil price over time.

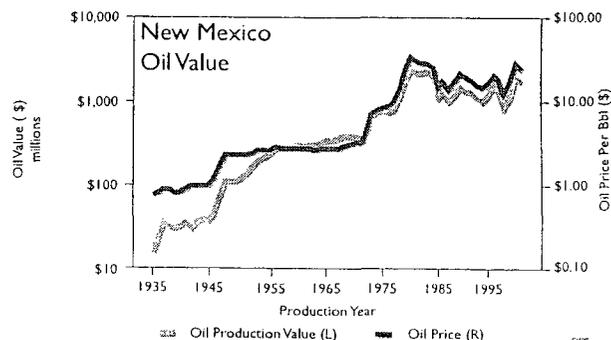


FIGURE 4B New Mexico oil production value and oil price over time.

In 1995 a 50% credit was authorized for projects approved by the Oil Conservation Division that restore non-producing wells to production, or that increase the production from currently producing wells. Originally, qualification for the credit required a



well to have been shut in for a specific two-year period. In 1999 the credit was extended to any well shut in for a period of two years beginning on or after 1/1/93.

In 1995 an "intergovernmental oil and gas tax credit" was enacted to ameliorate dual taxation of oil and gas production on Indian lands. The credit is against state production taxes for taxes paid to Indian tribes on production from new wells drilled on Indian land after June 30, 1995. The credit amount is the smaller of 75% of the Indian production taxes or 75% of the state production tax.

In 1999 several severance tax incentives were provided to oil and gas producers hard hit by a severe oil price slump. The Marginal Wells Conditional Tax Reduction provides either a 50% or a 25% reduction in both oil and gas severance tax and oil and gas emergency school tax to stripper wells when prices are low. Stripper wells are oil wells that have been certified by the Oil Conservation Division to have produced less than 10 barrels per day in the previous calendar year and natural gas wells certified to have produced less than 60 mcf per day in the previous calendar year.

Special price-contingent oil and gas severance tax rates were also enacted in 1999. When prices are at or below \$15 per barrel for oil or \$1.15 per mcf of natu-

ral gas, the oil and gas severance tax rate is 1.875%. A 2.8125% rate applies when prices are more than \$15 but not more than \$18 per barrel for oil or more than \$1.15 but not more than \$1.35 per mcf for natural gas.

The severance tax is distributed to the state severance tax bonding fund, with any excess after meeting severance tax bonding fund obligations being distributed to the severance tax permanent fund.

2 OIL AND GAS CONSERVATION TAX

A conservation tax is levied on the sale of all oil, natural gas, liquid hydrocarbons, carbon dioxide, uranium, coal, and geothermal energy severed from the soil of the state. The measure of the tax is 0.18% or 0.19% of the taxable value of products (sales price less deductions for state, federal, and Indian royalties), depending on the balance in the oil and gas reclamation fund. If the balance in that fund is over \$1 million, the lower rate goes into effect. Tax is due on the 25th day of the second month after the close of the month in which the taxable event took place. Since July 1991 a monthly advance payment of conservation tax has been required from high-volume producers. Proceeds from the tax are distributed to the state general fund and the oil and gas reclamation fund.

Fiscal year	1996	1997	1998	1999	2000	2001 est.
OIL						
Volume (million Bbls)	74.69	74.05	72.43	66.32	67.72	71.04
Value (\$)	\$1,338.30	\$1,571.30	\$1,148.20	\$832.40	\$1,648.30	\$1,390.70
Derived price (\$/Bbl)	\$17.92	\$21.22	\$15.85	\$12.55	\$24.34	\$19.58
NATURAL GAS						
Volume (Bcf)	1,506	1,575	1,619	1,606	1,628	1,623
Value (\$)	\$2,133	\$3,350	\$3,349	\$2,737	\$4,142	\$6,255
Derived price (\$/mcf)	\$1.42	\$2.13	\$2.07	\$1.70	\$2.54	\$3.85
TAX COLLECTIONS (in million \$)						
Oil & gas						
O & g severance tax	\$105.91	\$153.34	\$152.15	\$106.36	\$165.13	\$315.58
Conservation tax (o & g only)	\$5.05	\$7.47	\$8.04	\$5.44	\$8.68	\$16.46
Emergency school tax	\$102.22	\$151.36	\$153.68	\$107.85	\$169.51	\$329.03
Ad valorem:						
O & G production tax	\$1.79	\$3.04	\$2.83	\$2.01	\$3.41	\$6.54
General obligation bond fund						
County treasurers	\$26.25	\$39.40	\$38.55	\$27.62	\$45.52	\$83.82
Natural gas processors tax	\$24.57	\$13.89	\$12.84	\$11.28	\$12.26	\$12.11
O & g equipment tax						
General obligation bond fund	\$0.38	\$0.41	\$0.51	\$0.60	\$0.46	\$0.58
County treasurers	\$5.50	\$5.00	\$7.20	\$8.02	\$6.09	\$7.26

FIGURE 5 Oil and gas tax collections. Source: Taxation and Revenue Department records provided by Tax Research and

Statistics Office.

3 OIL AND GAS EMERGENCY SCHOOL TAX

An emergency school tax is imposed for the privilege of engaging in the business of severing oil, natural gas or liquid hydrocarbons, and carbon dioxide from New Mexico soil. A 3.15% rate is imposed on the net taxable value of the products listed, with the exception of natural gas, which is taxed at 4%. Net taxable value is defined as the actual price received for products at the production unit, less federal, state, or Indian royalties and the cost of transporting oil or gas to the first place of market. Tax payments are due on the 25th day of the second month after the close of the month in which the taxable event took place. A monthly advance payment equal to the average monthly payment made in the previous year is required from high-volume producers. The school tax is distributed to the state general fund each month.

In 1999 a non-refundable one-time drilling credit of \$15,000 was made available for the first 600 new crude oil or natural gas wells drilled between January 1, 1999, and June 30, 2000. The Marginal Wells Conditional Tax Reduction, also enacted in 1999, provides either a 50% or a 25% reduction in both oil and gas severance tax and oil and gas emergency school tax to stripper wells when prices are low.

Special price-contingent oil and gas emergency school tax rates were enacted in 1999. When prices are at or below \$15 per barrel for oil or \$1.15 per mcf of natural gas, oil and gas emergency school tax rates are 1.58% and 2%, respectively. When prices are more than \$15 but not more than \$18 per barrel for oil or more than \$1.15 but not more than \$1.35 per mcf for natural gas, oil and gas emergency school tax rates are 2.36% and 3%, respectively.

4 OIL AND GAS AD VALOREM PRODUCTION TAX

An ad valorem tax is levied monthly on the sale of all oil, natural gas, liquid hydrocarbons, and carbon dioxide severed from the soil of the state. The ad valorem tax is based on the assessed value of products. The tax rate is the property tax rate for the taxing district in which products are severed. This rate changes annually, effective each September 1. Assessed value is equivalent to 50% of market value less royalties. The tax is due on the 25th day of the second month after the close of the month in which the taxable event took place. A monthly advance payment of ad valorem tax is required from high-volume producers. The ad valorem tax is distributed monthly to the applicable property tax beneficiaries, primarily counties and school districts.

5 NATURAL GAS PROCESSOR'S TAX

A natural gas processor's privilege tax is levied on processors based on the value of products processed. Before July 1, 1998, the tax rate was 0.45% of the value of the products processed. In 1998 landmark legislation, the tax was totally revamped, with tax imposition being shifted entirely to the processing plants. Tax is measured by the heating content of natural gas at the plant's inlet, measured in million British Thermal Units (mmbtu). The rate is set initially at \$.0065 per mmbtu but will be adjusted every July 1. The adjustment factor is equal to the average value of natural gas produced in New Mexico the preceding calendar year divided by \$1.33. The rate starting January 1, 1999, will be similarly adjusted. New deductions are added for gas legally flared or lost through plant malfunction. Deductions for the value of products sold to any federal or New Mexico governmental unit or any non-profit hospital, religious, or charitable organization when such products are used in the conduct of their regular functions were repealed.

The natural gas processor's tax is due within 25 days following the end of each calendar month in which sales occurred. A monthly advance payment of processor's tax is required from high-volume producers. Revenue is distributed to the state general fund.

6 OIL AND GAS AD VALOREM EQUIPMENT TAX

An ad valorem tax is levied annually on assessed value of equipment used at each production unit. Assessed value is equivalent to 9% of the previous calendar year sales value of the product of each production unit. The tax rate is the certified property tax rate for the taxing district in which products are severed.

The Taxation and Revenue Department is required to prepare a tax statement on or before October 15. Payment is due on November 30. The production equipment tax is distributed to property tax beneficiaries, primarily counties and school districts.

IMPACT OF OIL AND GAS PRODUCTION ON THE STATE'S ECONOMY

Roughly 6% of New Mexico's Gross State Product (GSP) is attributable to production of oil and gas in the state. Oil and gas production contributes an unusually large amount to Gross State Product with a minimal contribution to value added from wages and salaries (and proprietorship profit). For the average industry, 39% of production value is used to pay

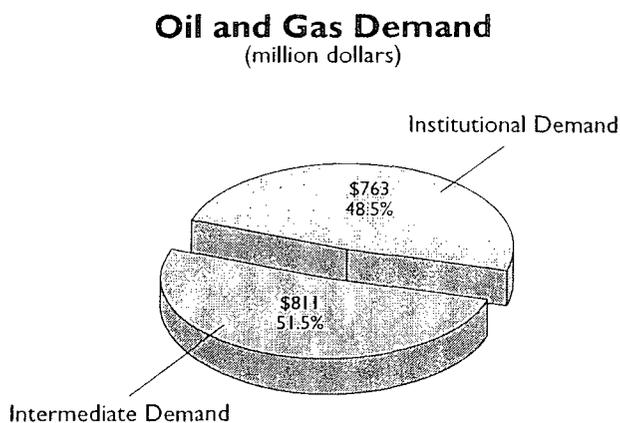
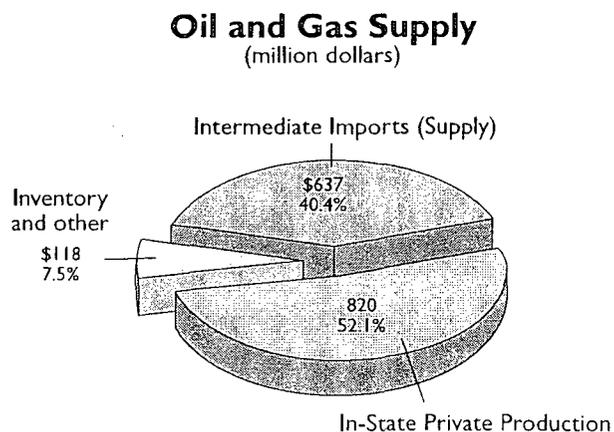


FIGURE 6 New Mexico oil and gas supply and demand.

salaries and 65% of GSP value added is contributed by wages and salaries paid. For oil and gas production, these percentages are about 18% and 25%. This is certainly not unexpected for primary mineral production, but is interesting nonetheless. The computer equipment industry also is heavily capital intensive, with a ratio of about 17% of production value devoted to wages and salaries, but 50% of contribution to GSP. Apparently, most of the value of computer equipment is retained as implicit or explicit return to capital. The other important export industry in New Mexico is agriculture and other mining. This is also capital intensive with 26% of production and 54% of contribution to GSP in the form of wages and salaries.

Oil and gas production is sold in the state for manufacturing purposes and sold outside the state for energy and subsequent manufacturing. Figure 6 shows

imports, exports and supply-demand balance for oil and gas production. The institutional demand is primarily exports to surrounding states for process and manufacturing uses.

IMPACT ON REVENUES OF OIL AND GAS PRODUCTION

The life of a revenue estimator for the New Mexico state government is interesting. The old Chinese curse says, "may you live in interesting times." This curse is the motto for trying to predict the flow of revenue from the oil and gas industry. During the gas price bubble which lasted throughout fiscal year 2000, gas prices paid to New Mexico's producers exceeded \$5 per mcf. Because the General Fund's sensitivity to an increase in gas price is over \$10 million per \$0.10 change in gas price, these unexpected prices led to soaring revenue collections. Just as abruptly, prices collapsed as California learned how to adapt to a new energy delivery and price regime. Revenue estimates were revised up and down by over \$100 million over the period from first estimates to final collections. Severance taxes have had a variable history in the General Fund. Figure 7 illustrates a modest variation. However, this is only a part of the true impact of oil and gas severance over time. First and foremost, a substantial portion of oil and gas have been produced from state and federal lands in New Mexico. Fifty percent of the royalties and bonus payments from production on federal lands accrue directly to the state general fund. For production on state-owned lands, producers pay royalties in addition to the various severance taxes. These royalties add to the corpus of the land grant permanent fund. The corpus generates income (primarily as interest on corporate bonds). This interest does accrue to the General Fund. For a more complete picture of the importance of oil and gas severance to the state general fund, then, we must sum direct General Fund severance taxes, rents and royalties, and interest paid. Figure 8 exhibits both the direct impact and the total impact measured by the total General Fund. This impact peaked in the "Big Mac" era (1981-82) at 47% of the General Fund. The current level (before the expansion of direct severance revenues during 1999-2000 and 2000-2001) is about 23%. This is money that the state's resident taxpayers do not have to pay for critical government services.

SUMMARY AND CONCLUSION

By any measure, the oil and gas extraction industry has been and continues to be an important source of

revenues to state and local governments; an important source of employment, although for a declining number of workers; and a generator of production value

model of energy deregulation, power will be produced in New Mexico with a combination of improved coal

burning, base load generating plants and peak load gas turbine plants located close to the source of natural gas. With either variant, New Mexico's place in the energy production future of the western United States is assured.

However, state policymakers must constantly check that tax, environmental, and employment laws and regulations to not unduly dampen the apparently bright future for the state.

A number of sources of information have been tapped for this report. In some cases, the data are old and at least partially defective. At minimum, the state should invest whatever money is required to have access to the best, most timely, and accurate data and analysis available. New Mexico's energy future is not so certain that the state can afford to take its eye off the ball.

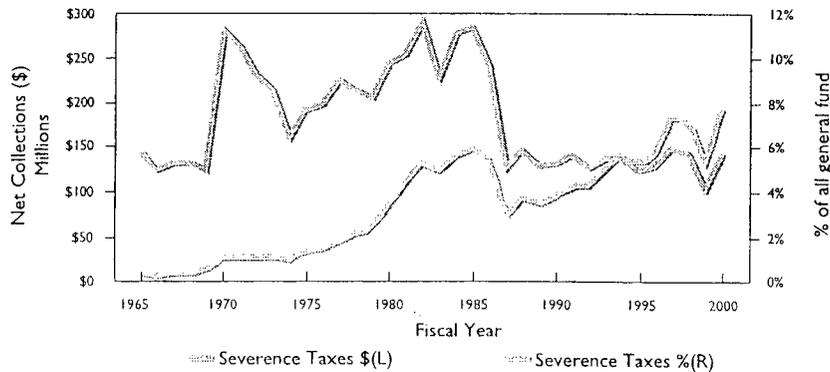


FIGURE 7 General Fund Revenues—severance taxes by amount and percent of all general fund revenues.

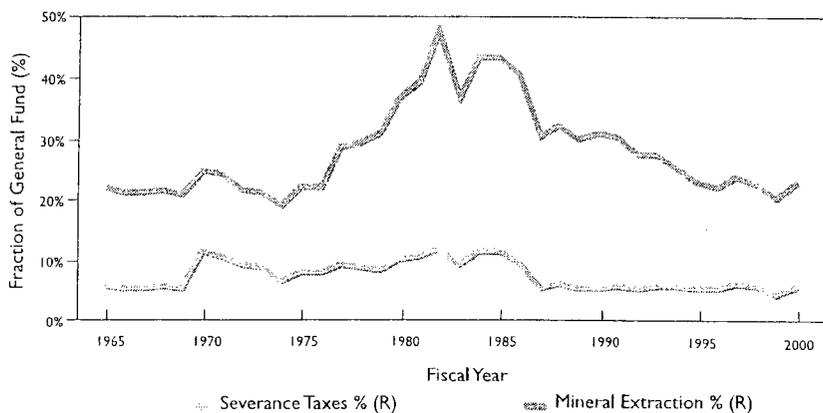


FIGURE 8 General Fund Revenues—severance taxes, rents and royalties, interest by amount and percent of all general fund revenues.

helping to sustain New Mexico's economy. There continues to be a great deal of validity to the phrase that opened this paper, "if you live in New Mexico, you're in the oil and gas business." The industry is still pretty healthy and will continue to prosper, no matter what the energy future of the United States. Under a balkanized model of energy deregulation, each of the western states will license a number of high-efficiency natural gas turbines. The operators of these new generating plants will buy all the natural gas the state can produce. New fields are ready to come on line and produce for years to come. Under an energy-province