Analysis of the Economic Impact Associated with Oil and Gas Activities on State Leases

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Executive Summary

- The purpose of our study has been to examine the economic, tax, and revenue impacts associated with drilling and production activities on state leases.

- Total direct economic impacts associated with drilling and production activities in a typical year amount to $733 million. Indirect impacts total to some $249 million. The total economic impact (combined direct and indirect) is $982 million – or very close to a billion dollars.

- Total direct employment impacts from drilling and production activities on state leases account for some 3,467 jobs. Indirect employment is estimated to be 3,118 jobs. Estimated total employment from direct and indirect drilling and production operations is some 6,585 jobs.

- The research in this report estimates that there is some $374 million in direct economic impacts associated with drilling activities on state leases in any given "typical" year. The indirect (or total multiplier impacts) are approximately $172 million.

- We estimate that drilling activities on state leases account for approximately 2,350 direct jobs and some 2,091 jobs associated with the multiplier effects of these activities.

- Production activities in a "typical" year have a direct economic impact of some $359 million. Indirect (or total multiplier) effects amount to some $76.8 million in economic activity.

- Based upon our estimates, there are some 1,117 jobs created by production activities on state lease, while an additional 1,027 indirect jobs are created.

- For a typical year, state and local governments receive approximately $500 million in revenue from state lease operations. Some $274 million of this comes from royalties, while $88 million comes from severance taxes. Some $70 million comes from taxes associated with direct and indirect economic impacts associated with annual state lease operations. An additional $58 million comes from fees, bonuses, and rentals.

- In conclusion, we would note that the Office of Mineral Resources and its associated State Mineral Board is a billion dollar economic enterprise that oversees activities that generate nearly one half a billion dollars in revenue for the state and its local governments.

Introduction

The Louisiana Department of Natural Resources' Office of Mineral Resources (OMR) serves as staff for the State Mineral Board (Board), which has the authority to lease, for the development and production of minerals, oil, and gas, any lands belonging to the State, or the title to which is in the public, including roadbeds, water bottoms, and lands adjudicated to the State at tax sale. The Board is also charged with the responsibility of administering all leases, including those granted prior to the creation of the Board, in order that the Board may verify that the terms and conditions of the respective leases are fully complied with.

At the request of the OMR, the LSU Center for Energy Studies has conducted an examination of the economic, tax, and revenue impacts associated with drilling and production activities on state leases. In order to generate reasonable estimates, we have developed economic models that isolate the impacts that oil and gas activities have on the Louisiana economy.

Our study facilitates an economic impact estimating methodology known as Input-Output modeling (I/O model). I/O models are economic tools used to estimate sector specific impacts associated with exogenous changes in regional economic activities. The advantage of I/O models is that they can estimate a host of economic impacts on a commodity and an industry sector specific basis. These impacts include the direct, indirect, and induced economic impacts associated with regional economic changes.

Direct economic impacts are defined as those which are directly associated with a change in regional economic activity. In this case, direct economic impacts are defined as the direct expenditures associated with the drilling and production activities in the Louisiana oil and gas industry. Indirect economic impacts are defined as the additional economic activities stimulated by direct expenditures associated with drilling and production activities. Indirect expenditures include the increased economic activities of other businesses that service those directly involved in drilling and production. Induced economic impacts are those increases in economic activity associated with the increased disposable income created by an increase in either drilling or production activity.

It is important to recognize that the energy industry, as well as the Louisiana economy, is in constant change. Most modeling approaches, however, assume that "other things are equal." Economists commonly refer to this condition in the Latin as *ceteris paribus*. These changes can include shocks from the national and regional economy that also influence the outcome of oil and gas development. Our model assumes that other potential influences to the Louisiana economy were held constant during the study period.

Our model is conservative as it relies on expenditures. Profits for exploration and production and some General and Administrative (G&A) expenses are not included. We do not have an accurate means for estimating how much of the profits and G&A expenses are retained within the Louisiana economy. Politically, one often hears the argument in Louisiana as well as in many other states, that many of the corporations are out of state, and their profits leave the state. In hearings on tax incentives or royalty relief, opponents frequently make the point of non-residency. To avoid this controversy, we chose to assume that all profits and G&A expenses that could be not be specifically identified were non-resident.

In addition to the use of the I/O model, we also used some Louisiana-specific models that provide estimates of taxes generated by oil and gas activities other than severance tax. These are based on some previously published work by the

Studies, including, but not limited to, audited statements of the Texaco Global Settlement Agreement. Total annual expenditures were estimated from a representative sample of both drilling and production activities from this database. These "typical" expenditures were estimated separately for drilling and production activities, respectively. Total annual drilling expenditures were estimated by extrapolating typical per-well expenditures to the total number of drilled wells, including a breakdown by depth, and by oil, gas, and dry holes. Figure 1 presents the annual expenditures by type of well over the period examined in this study.

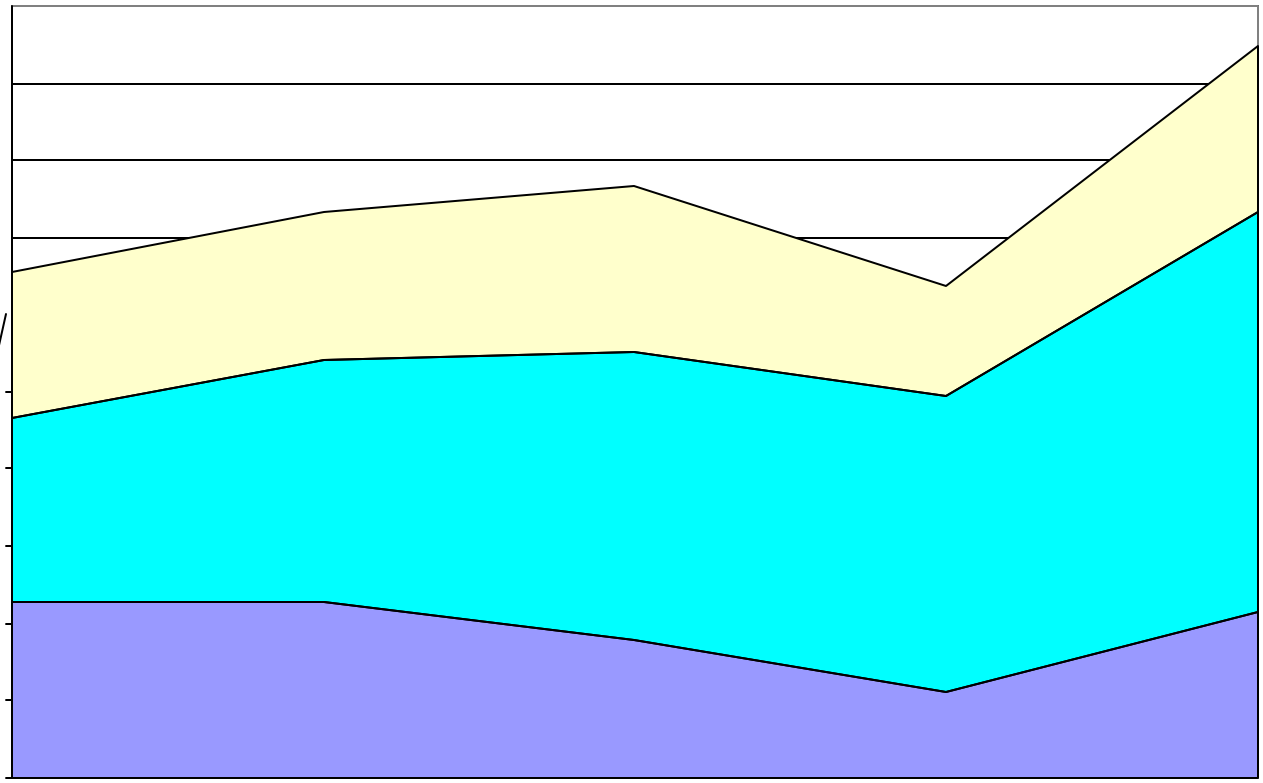

Figure 1: Annual Drilling Expenditures by Type of Well on State Leases

Total annual production expenditures (i.e., lease operating expenses) were also estimated by taking typical per-well expenditures on a barrel of oil equivalent (BOE) basis and extrapolating by the total BOE production. Annual expenditures

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leases in Louisiana. There is an additional $95 million in indirect economic impacts, and $77 million in induced impacts associated with drilling activities.

Table 1: Economic Impacts of Drilling Activities on State Leases

Economic Impacts -- Average Annual Drilling		
Annual Average Expenditures		
Oil Wells	$	95,871,816
Gas Wells	$	182,806,437
Dry Holes	$	95,150,534
Total	$	373,828,786
Estimated Direct Economic Impact	$	373,828,786
Estimated Indirect Economic Impact	$	95,308,558
Estimated Induced Economic Impact	$	77,448,304
Total Economic Impact	**$**	**546,585,648**
Estimated Direct Employment Impact (Jobs)		2,350
Estimated Indirect Employment Impact (Jobs)		877
Estimated Induced Employment Impact (Jobs)		1,214
Total Employment Impact		**4,441**
Estimated Annual Average Wage -- Direct Employment	$	42,330
Estimated Annual Average Wage -- Indirect Employment	$	27,306
Estimated Annual Average Wage -- Induced Employment	$	19,727

There are considerable employment impacts associated with drilling activities on state leases. Our results indicate that there are some 2,350 jobs associated with direct activities in oil and gas drilling on state leases. There are an additional 877 jobs created through indirect support activities, and 1,214 jobs associated with the induced effects of oil and gas drilling on state leases.

Wages paid to employees associated with oil and gas drilling activities are relatively high. Total annual average wages for those employees directly involved in oil and gas drilling activities is $42,330 per year. The annual average wages for those employed in indirect and induced (support) activities are $27,306 and $19,727, respectively.

Table 2 provides the estimates associated with our economic impact model of production activities on state leases.

Table 3: Economic Impacts of Drilling and Production Activities on State Leases

Combined Economic Impacts -- Drilling & Production		
Estimated Direct Economic Impact	$	733,055,230
Estimated Indirect Economic Impact	$	133,333,752
Estimated Induced Economic Impact	$	116,322,013
Total Economic Impact	**$**	**982,710,995**
Estimated Direct Employment Impact (Jobs)		3,467
Estimated Indirect Employment Impact (Jobs)		1,295
Estimated Induced Employment Impact (Jobs)		1,823
Total Employment Impact		**6,585**
Estimated Annual Average Wage -- Direct Employment	$	41,935
Estimated Annual Average Wage -- Indirect Employment	$	43,482

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Table 4: Average Annual Taxes, Royalties, Fees, and Rentals Generated from Drilling and Production Activities on State Leases 1997-2000

Revenues	State[a]	Local[a]
Fees	$ 7,043,660[b]	
Rentals	21,255,100	
Bonuses	29,695,331	
Royalties	246,597,657	$ 27,399,739
Severance	86,893,995	975,000
Production Taxes (non severance)	16,400,088	10,933,392
Drilling – Sales Taxes	8,479,695	7,323,373
Taxes Generated from Direct Employment	13,008,237[c]	8,672,158[c]
Taxes Generated from Indirect Employment	2,992,384[c]	1,994,922[c]
TOTAL ESTIMATED STATE & LOCAL REVENUE	**$ 432,366,147**	**$ 57,298,584**

a. Revenue sharing amounts from state to parishes are included in the local totals.
b. Only includes fees to the Office of Mineral Resources
c. Calculated using the Scott and Richardson multipliers of $0.066 (state) and $0.44 (local)

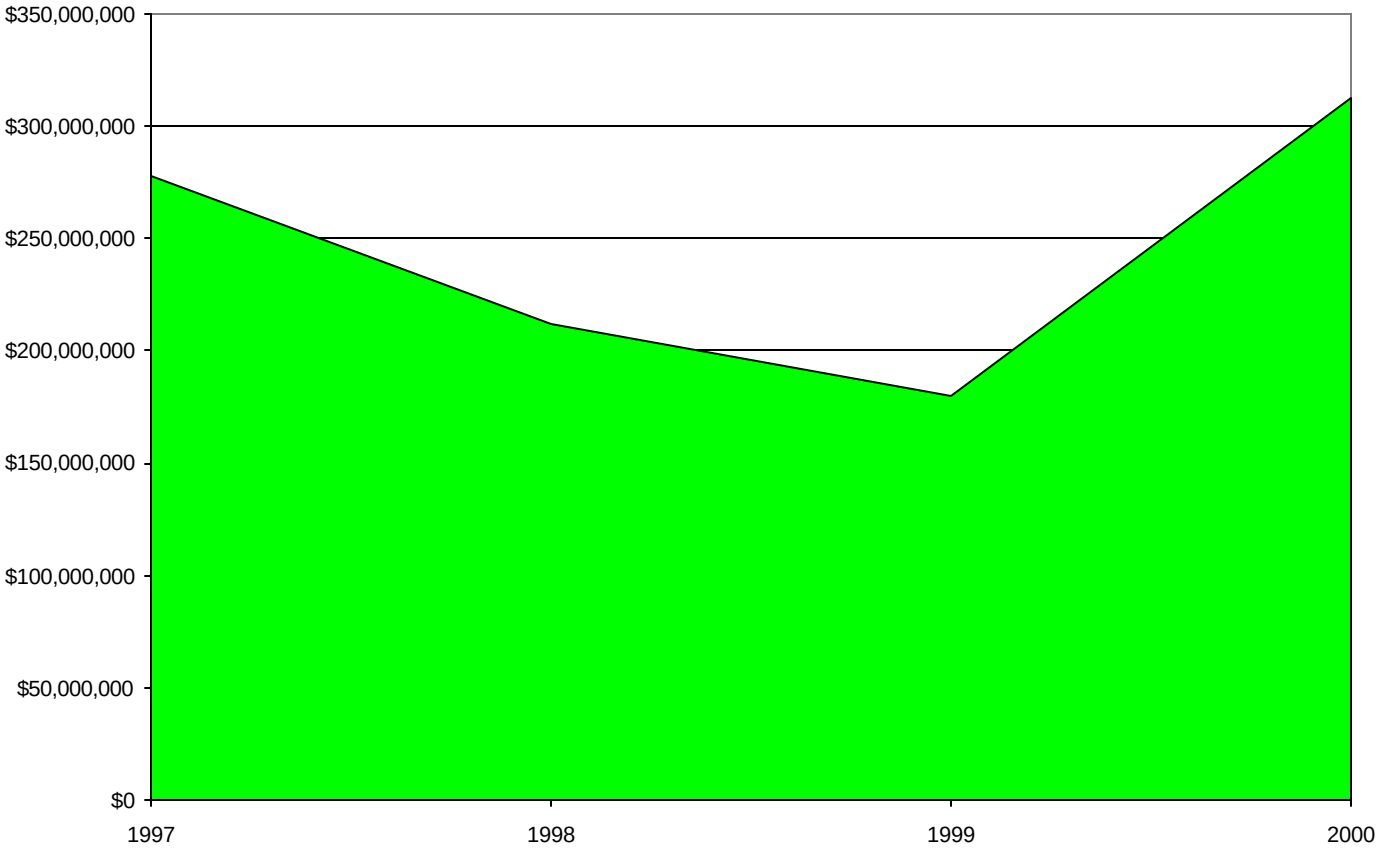

Figure 3: Historic State Royalty Collections

Conclusions, Recommendations, and Other Observations

The Office of Mineral Resources and its associated State Mineral Board is, in effect, a billion dollar economic enterprise that oversees activities that generate an additional one half a billion dollars in revenue for the state and its local governments. As such, policy changes can have substantial effects on government revenue, although they can be masked by commodity price swings, which clearly dominate changes in both direct and indirect revenue.

While we risk stating the obvious, the drill bit overwhelmingly generates the revenues to government. This is true for both direct revenues as well as the indirect revenues associated with the economic activity of drilling and operating leases. While we certainly acknowledge that debates over fee structures and amounts are real and substantive, fee income to the Office of Mineral Resources

represents only 1.4 percent of the total revenues to government generated from state leasing activities. From this revenue perspective, fee debates are truly on the margin, however, if the debate actually results in operator activity level change, either positively or negatively, the impact can be magnified seventy fold.

Production on state leases is on the decline, although we cannot distinguish whether the decline rate differs appreciably from the overall state rate. A longer time series analysis would be required to determine any difference.

Although total production has declined since 1996, the production per acre under lease by the state has experienced a slight increase from 66 BOE to 69 BOE per annum. The slight increase in production per acre was insufficient to compensate for a decline in total acres leased. Given that the state averaged some $379 per acre and local governments an additional $50 per acre in

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