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The Arkansas Severance Tax: New Funding for Education?

In December, the Arkansas General Assembly will convene in a special session to develop plan for reforming education (and finding the funds to implement the plan) in response to a 2002 Arkansas Supreme Court mandate in the Lake View case. Funding education reform will be an expensive undertaking. According to a recent study by the Joint Legislative Committee on Educational Adequacy, the ultimate price tag for developing an adequate education system (including preschool for all at-risk children) will be $847 million.

While it is unlikely that all of the money will be raised during this special session, the legislature will have to raise a large share to show compliance with the Supreme Court mandate. One of the potential revenue sources the legislature is likely to consider is increasing the Arkansas severance tax. This brief explores the basic issues concerning the Arkansas severance tax.

Arkansas Severance Taxes

Severance taxes are levied on the extraction of minerals/natural resources, e.g., natural gas, oil, diamonds, etc. The State of Arkansas currently levies severance taxes on a broad range of minerals/natural resources, including natural gas, oil, bauxite, and coal, at varying rates.

Currently, the Arkansas severance tax on natural gas is the only major severance tax with the capacity to generate large amounts of new state tax revenue. Other minerals/natural resources are either already taxed at regional/national averages or are produced in small quantities that would not result in significant new revenue.

In most states, the severance tax on natural gas is levied as a percent of the market value of the resources extracted. In contrast, the Arkansas severance tax on natural gas is levied on the volume produced (0.3 cents per 1000 cubic feet) rather than on market value. At today's prices, the Arkansas severance tax on natural gas of 0.3 cents per 1000 cubic feet is equivalent to 0.071 percent of market value. The state's rate is the lowest in the country as well as the region.

Natural Gas Severance Tax Rates in Selected States

State	Rate of Tax
Arkansas	$.003 per mcf (equiv. of 0.071% of market value)
Florida	12.5% of gross value
Kansas	4.33% of gross value
Louisiana	$.122 per mcf (equiv. of 2.9% of market value)
Mississippi	6% of market value
New Mexico	3.75% of gross value
Ohio	$.025 per mcf (equiv of 0.6% of market value)
Oklahoma	7% of gross value
Tennessee	3% of sales price
Texas	7.5% of market value

Source: "Tax Options for Arkansas: Funding Education after the LakeView Case." Winthrop Rockefeller Foundation. August, 2003.

Impact on State Tax Revenue

Arkansas' severance tax, which is based on the volume produced rather than market value, has major implications for state tax revenue and education funding. State tax revenue can increase only when the volume of production increases, not when prices (market value) increase. As a result, the revenue generated by the tax on natural gas hasn't changed much over the years ($452,040 in 1982 compared to $471,969 in 2003).[1] Arkansas severance tax revenue has stagnated over the years because of its low tax rate (lowest in the region) and unusual base (using volume rather than market value). Consider that if Arkansas had a severance tax based on five percent of market value of natural gas over the 28-year span from 1975 to 2003, the state would have collected **$693.2 million** instead of the **$12.6 million** it actually collected during that time, a gain of **$680.6 million**.[2] This is money that could have been used to fund the construction of 136 modern school buildings over the years.

Would higher severance taxes hurt Arkansas families?

Special interests in Arkansas are opposed to increasing the severance tax rate on natural gas or changing the basis from volume to production.[3] Arkansas natural gas producers make three basic arguments against raising the severance tax.

- Arkansas already has one of the highest natural gas tax burdens in the region.
- Arkansas consumers would bear the brunt of any severance tax increase.
- Higher severance taxes would hurt the profitability of the Arkansas natural gas industry.

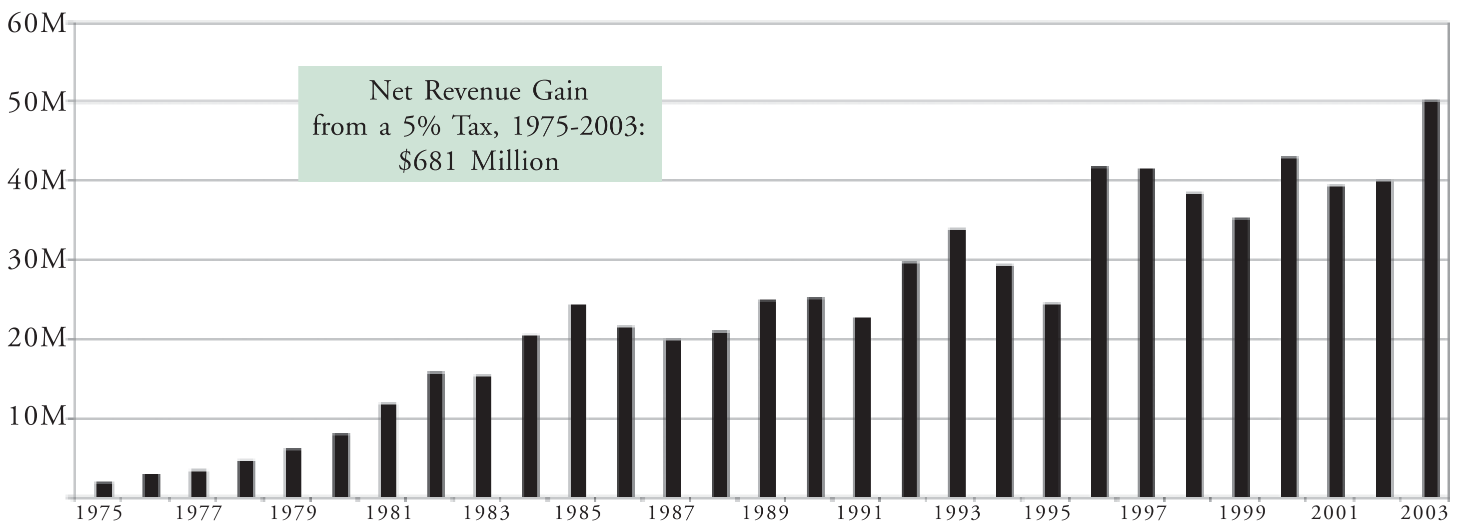
Let's consider each of these arguments in turn.

The industry claims that Arkansas' overall natural gas tax burden is one of the highest in the region. According to an industry analysis presented at a recent meeting of the Joint Legislative Committee on Economic & Tax Policy, if other commodity-based taxes are considered (i.e., state & local sales taxes and municipal franchise taxes), the overall tax rate on Arkansas natural gas tax is 12.191, compared to 5.8 percent in Louisiana, 8.00 percent in Mississippi, 3.00 percent in Missouri, 10.095 percent in Oklahoma, and 3.1875 percent in Tennessee, and 12.72 percent in Texas.[4] As part of Arkansas' overall natural gas tax rate of 12.191 percent, the taxes include state sales taxes of 5.125 percent, local sales taxes of 3.0 percent, municipal franchise fees of 4.0 percent, and 0.066 percent in severance taxes. None of the other surrounding state levies a state sales tax and only two, Missouri and Oklahoma, levy a local sales tax.

Their analysis, however, is somewhat misleading. First, it adds together all of the various taxes impacting natural gas. Some taxes, such as sales taxes, are levied at the consumer level. Others, such as severance taxes, are levied on natural gas producers. The level of state and local sales taxes has no impact on the competitiveness of in-state natural gas producers because Arkansas consumers are (1) unlikely to move to avoid paying the tax and (2) have to pay the tax (and the same rate of tax) regardless of whether the gas is produced in state or out of state. Moreover, state and local sales taxes are not targeted at natural gas producers or consumers, but must be paid by consumers of all types, including consumers of food, clothing, and all other items currently subject to state and local sales taxes.

Perhaps more importantly, and what the natural gas industry seems to gloss over, is that the state's high sales tax (Arkansas has the 8th highest general sales tax burden in the country) is the major reason why the Arkansas tax system is so regressive (it imposes a higher tax burden on low and middle-income families). The high sales tax on natural gas is a good reason why the legislature may want to consider eliminating the sales tax on natural gas and replacing it with a more progressive tax–either a severance tax on producers or an income tax. The alternative, increasing the sales tax to fund education, would make the tax system even more regressive for low and middle-income families.

The second claim the industry makes is that Arkansas consumers would bear the brunt of a severance tax increase



Estimate of annual revenue gain from adopting a five percent of market value natural gas severance tax, 1975 to 2003 ($Millions).

levied on Arkansas producers. The issue, however, is much more complicated than the industry would have you believe. The Arkansas severance tax on natural gas is levied on in-state producers. Consumers would pay a severance tax increase only to the extent that producers can pass this tax increase on to them in the form of higher retail gas prices. The ability of producers to do this, however, depends on a complex set of market forces and who ultimately purchases the natural gas produced in state.

The market forces for natural gas include such factors as energy shortages, cold weather in the north, industrial demand, new gas fields in production, etc. These factors determine a set of long-term contract prices and "spot" prices where gas is available for immediate delivery. In most cases, individual producers have little room to negotiate these posted prices, and any higher costs – whether drilling costs, water disposal fees or higher severance taxes– are borne by the owners or producers of the resource. Prevailing market rates may prevent them from passing the burden of a severance tax increase onto consumers (in-state or out-of-state).

Even if Arkansas producers can pass part of a severance tax increase to consumers, it may be out-of-state consumers, rather than Arkansas consumers, who bear the burden of the increase. The final burden depends on who ultimately consumes the gas that is produced in Arkansas. If out-of-state consumers consume the gas produced in state, then Arkansas consumers would not bear the burden of a severance tax increase. Unfortunately, we have no good way of knowing who ultimately consumes the gas that is produced in state.

It's difficult to know how much of Arkansas's natural gas production is sold to in-state customers. In 2001, Arkansas consumed more natural gas (227.9 million cubic feet) than it produced (167.2 million cubic feet).[5] However, tremendous volumes of the resource flow into, through, and out of the state each year as production from states like Louisiana and Texas is exported to Mississippi, Missouri, the Midwest, and beyond.

For example, in 2001 about 2.31 trillion cubic feet (tcf) of natural gas entered the state and about 2.25 trillion left the state through the jurisdictional pipelines.[6] It is unknown how much of the state's total production of 167 million cubic feet left the state or how much of it was consumed by Arkansas customers. Exact figures are the proprietary information of the gas distributors and no overall estimates for the industry have ever been publicly released. Although some industry officials will dispute the estimates as too high, other industry sources estimate that about 85 percent of the natural gas that is sold by Arkansas producers is sent to customers in other states.[7]

To the extent that a significant share of the gas produced in Arkansas is sold to out-of-state customers, then the current severance tax allows the state to effectively export a share of its tax burden to out-of-state consumers. This would be true as well of any future severance tax increase on natural gas.

Who would bear the burden of a severance tax increase?

It is difficult to know the precise burden of a severance tax increase without knowing who ultimately consumes Arkansas-produced gas. However, two observations can be made about the likely impact if Arkansas increased its severance tax to 5 percent of market value (a national average that would generate $35 million annually in new severance tax revenue). First, to the extent that producers can pass part of a severance tax increase on to customers, then part of the burden will go to out-of-state consumers of natural gas. Arkansas customers thus would bear only part of the burden of a $35 million increase in severance taxes.

Second, since the natural gas markets are fairly competitive and gas suppliers enter into long-term contracts with utilities at prevailing market rates, it may be difficult for producers to pass tax increases on to consumers. In this case, natural gas producers would bear the burden of a severance tax increase.

Top Ten Producers of Arkansas Natural Gas, SFY 2003

Producer	Production
XTO Energy Inc.	56,721,469
Stephens Production Company*	21,927,847
SEECO, Inc.	18,189,037
The Houston Exploration Company	9,931,068
Freedom Energy Inc.	4,974,621
Hanna Oil & Gas Company*	3,884,633
Merit Energy Company	3,375,120
Chesapeake Operating Inc.	3,368,383
El Paso Production Company	2,974,654
Samson Resources Company	2,410,443
All Others	29,688,139
Total	157,445,414

*Arkansas owned

Source: Production figures from Arkansas Oil & Gas Commission.

Although a detailed analysis of the ownership of all of the state's producers was beyond the scope of this report, a quick glance at the top ten producers is very insightful. According to 2003 state fiscal year data from the state Oil & Gas Commission, 10 producers accounted for 127 million cubic feet of production, or 81 percent of Arkansas' total natural gas production. Smaller producers (118 producers) accounted for less than 20 percent of the state's total production.

Of the top ten producers, only two – Stephens Production and Hanna Oil & Gas – are Arkansas owned companies. The remaining eight are large publicly traded companies (or their subsidiaries) or privately held, out-of-state companies. The two Arkansas companies — Stephens and Hanna — accounted for only 20 percent of the 127 million cubic feet produced by the top ten producers, while the eight publicly

traded or out-of-state companies accounted for the remaining 80 percent of production of this group's production (or 64 percent of all of the state's production). Thus, to the extent that producers bear the burden of a severance tax increase, the increase would be passed mostly to out-of-state companies.

Impact on Industry

The third claim that industry officials in Arkansas have made is that higher severance taxes on natural gas "would represent ... a drastic effect on our profitability."[8] However, a recent study by Wyoming economists found that increased severance taxes have little or no effect on jobs or production, and that tax breaks in this area cause "substantial losses in state tax revenues."[9] This occurs for two basic reasons: state taxes are deductible from federal taxes, and severance taxes are only paid when the resource is actually produced.

Producers of natural gas, oil, coal, or any other natural resource are taxed on the revenue from the sale of their product. A severance tax on natural gas is applied at the time when the flow of gas enters a common pipeline through a measurement meter, and is considered a business cost just as meters and trucking costs are. These costs are deductible against any income derived from the sale of the resource, so if state severance taxes go up, a producer's federal income tax goes down.[10] At present, our extremely low tax rate means that more of our potential state tax revenue is lost to the federal government.

The study also makes clear that severance taxes have only a small effect on decisions about when, where, and how much to invest in gas exploration and development. Recall that these taxes, unlike real property taxes, are not paid until the gas actually flows through the meter. Thus, a tax preference like the 0.003 cents charge per million cubic feet in Arkansas is too distant from the point in time when investment decisions are made to have much influence – much less "a drastic effect" – on the decision. It is the expected location of the resource, whether oil and gas in Texas or coal in Wyoming, and the likelihood of commercial recovery that determines most investment and production plans.

At present, national natural gas inventories are 38 percent below the recent five-year average, meaning that demand for production is not likely to be dampened by changes in relatively small costs of production. Noting the current high prices for natural gas, one analyst commented: "For the next two or three years, we are going to be in a very tight supply-demand situation."[11] Oil and gas exploration in Texas has not slowed during the recent energy shortages simply because the state has the highest severance tax rate in the country at 7.5 percent, nor have exploration companies moved their operations to Louisiana where the rate is about one-half lower (at 3.8 percent).

The Wyoming study includes an economic forecasting model of the effect on employment and production of increasing the severance tax (on coal: the state is the nation's largest producer). Tax increases of 28 percent in one case, or 57 percent in another, resulted in only a one-percent decrease in jobs and production, while increasing state tax revenue dramatically.

At this point, it's unclear who would ultimately bear the burden of a severance tax increase or how it might impact the competitiveness of Arkansas natural gas producers. One issue is clear — low and middle-income families already bear the burden of a high sales tax on natural gas. Replacing the current sales tax on natural gas with a higher severance tax on producers — e.g., one equal to the national average of 5 percent of market value — would not generate new state tax revenue for education (such a trade off would be revenue neutral). However, it would reduce the tax burden for low and middle-income families.

Moreover, even if the state kept its existing sales tax on consumers of natural gas, raising the severance tax on producers would reduce the amount of new revenue for education that would have to be raised through a general sales tax increase. It would also end a special protection that owners of natural gas and oil producers have long enjoyed (national data suggests that natural gas and oil producers enjoy net profits of 21 percent), and help promote a more fair tax system for the state's families.[12]

Endnotes

1. Data from Miscellaneous Tax Section, Arkansas Department of Revenue.
2. Collections data from Miscellaneous Tax Section, Arkansas Department of Revenue. Estimates of revenue that would have been generated by a tax equal to 5 percent of market value are by Histecon Associates.
3. Ernest Dumas, "Paying for Tax Breaks," *Arkansas Times*, May 10, 2003
4. "Taxes Applied to the Natural Gas Commodity in Arkansas and Other States," presentation by Mike Parker at the August 15 meeting of the Joint Legislative Committee on Economic and Tax Policy.
5. Data from the website of the U.S. Department of Energy at http://tonto.eia.doe.gov/dnav/ng/ng_sum_lsum_sar_a_d.htm.
6. "Interstate Movements and Movements Across U.S. Borders of Natural Gas by State, 2001," (Table 12), *Natural Gas Annual*, U.S. Energy Information Administration, 2002.
7. Winthrop Rockefeller Foundation, *Tax Options for Arkansas: Funding Education After the* Lake View *Case*, June 2003, p. 35.
8. Arkansas Democrat-Gazette, "Higher tax on natural gas fodder for panel," August 15, 2003.
9. M. Kunce, S. Gerking, W. Morgan and R. Maddux, "State Taxation, Exploration, and Production in the U.S. Oil Industry," *Journal of Regional Science* (2003). Forthcoming in press. This paper is reviewed in *The Journal of Energy Literature IX* (1): 97 103.
10. Federal mineral taxation is a complex process, with differing tax rules for such items as "intangible drilling costs," "completion tangibles," and "leaseholds." For example, 15 percent of any producer revenue is tax-free as a "depletion allowance."
11. "Of Drills and Energy Bills," *The Washington Post National Weekly Edition*, May 26, 2003, p. 20.
12. National estimates of industry profitability can be found at http://www.eia.doe.gov/emeu/perfpro/btab06.html.

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