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# PAYCHECK\$ and POLITICS

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## Digging Deeper:

### Reforming the Arkansas Severance Tax for Working Families

By James Metzger

**Summary** - The current Arkansas budget surplus, which is expected to be between \$800 and \$900 million, provides a unique opportunity to have a public debate about severance tax reform.

- **Arkansas' severance tax is the lowest in the country.** Unlike most states which levy severance taxes based on market value, Arkansas' severance tax on natural gas is levied on the volume produced (0.003 cents per 1,000 cubic feet, or Mcf), a rate that has remained unchanged since 1957. At today's prices, the Arkansas severance tax on natural gas is equivalent to 0.04 percent of market value. That is only about 1/200th the amount of Texas', the highest state in the region at 7.5 percent.
- **Simply normalizing Arkansas' severance tax would mean big revenues for the state.** If Arkansas' severance tax was five percent of the market value of natural gas, the state would have collected \$851.8 million over the past 25 years instead of the \$12.7 million it actually collected during that time. That's a difference of \$839 million. In FY 2006, the severance tax on natural gas generated only \$552,861.
- **A small severance tax equals big losses from gas shipped out-of-state.** The recent Fayetteville Shale developments have changed the dynamics of already weak industry claims about the downside of a higher Arkansas severance tax. These new projects differ from former drilling programs in that virtually all new wells are located near major natural-gas pipelines that cross Conway, Van Buren and other counties, and likely will carry most, if not all, of the product to states north of Arkansas, thereby avoiding state and local taxes and franchise fees.
- **New revenue could create a fairer tax system for low- and middle-income families.** At current prices, the market value of the Fayetteville Shale production has been estimated at \$300 billion over the 30-year life of all the fields. The present severance tax would generate about \$120 million in revenue during this period; however, a market-based rate of 5 percent would raise nearly \$15 billion during the same period. That money could then be used to remove the sales tax on electricity for families among other things.
- **The chance of consumers bearing the brunt of this increase is minimal.** Natural-gas markets are competitive and gas suppliers enter into long-term contracts with utilities at prevailing market rates, thus making it difficult for producers to pass tax increases on to consumers. In addition, the majority of major producers who would be affected are headquartered out-of-state.
- **An increase in the severance tax does not equal job losses.** A recent study by Wyoming economists found that an increase in severance taxes has little or no effect on jobs or production. This occurs for two basic reasons: state severance taxes are deductible from federal taxes, and severance taxes are only paid when the resource is actually produced. Producers drill where the gas is located, not where taxes are lowest.

## Introduction

There will be many competing demands on state general revenue when the legislature convenes in January. The competition for funding will be even more intense than usual because of the budget surplus of \$800 million that state analysts are predicting. Programs that have had to make do with less in past years will be asking for more this time around given the situation.

However, it's important to remember that the budget surplus is temporary. It won't be around forever, especially if tax cuts are implemented. Although tax increases are never popular, now may be the best time to think about new ways to promote tax fairness and ensure adequate revenue

for future years. The surplus presents new opportunities to think about trade-offs and ways to move toward a more equitable tax system.

One of the potential revenue sources to consider is the Arkansas severance tax. This issue brief revisits an earlier AACF brief titled "The Arkansas Severance Tax: New Funding for Education?" and presents some recent facts about the Arkansas natural-gas industry and the severance tax.<sup>1</sup> Since the earlier report, gas prices have reached historic highs and a major new source of natural gas has begun producing sizeable amounts of energy in the north-central part of the state. These Fayetteville Shale developments could help change the way we consider severance taxes in the near future.

## Basics of Arkansas Severance Taxes

Severance taxes are levied on the extraction of minerals/natural resources, *e.g.*, natural gas, oil or diamonds. Severance taxes should not be confused with property taxes that may also be assessed on the land from which these resources are extracted (two-thirds of states with severance taxes, including Arkansas, also levy property taxes on the land where the extraction occurs). Arkansas currently levies severance taxes at varying rates on a broad range of minerals/natural resources that include natural gas, oil, bauxite, and coal. Most Arkansas severance taxes are levied on the volume extracted or produced (*e.g.*, per ton). Only oil and diamonds are taxed at a percentage of market value.

Currently, the severance tax on natural gas is the only major severance tax that has the capacity to generate large amounts of new tax revenue for the state. Other minerals/natural resources are either already taxed at regional/national averages or are produced in small quantities.

Most states collect a percentage of market value as the basis for energy-related severance taxes, allowing severance tax revenues to keep pace with inflation in oil and gas prices. In contrast, the Arkansas severance tax on natural gas, established in 1957, is levied on the volume produced (0.003 cents per 1,000 cubic feet or Mcf) rather than on market value and has remained unchanged over time. After adjusting for inflation, the revenues generated by the Arkansas severance tax on natural gas have decreased by 22 percent since 1991.

### Natural Gas Severance Tax Rates in Selected States

State	Rate of Tax
Arkansas	\$.003 per Mcf (0.04% of market value)
Florida	12.5% of gross value
Kansas	4.33% of gross value
Louisiana	\$.373 per Mcf (5% of market value)
Mississippi	6% of market value
New Mexico	3.75% of gross value
Ohio	\$.025 per Mcf (0.33% of market value)
Oklahoma	7% of gross value
Tennessee	3% of sales price
Texas	7.5% of market value

Source: "All State's Tax Handbook," Thomson RIA, 2007; also available online at [www.iogcc.state.ok.us](http://www.iogcc.state.ok.us); also, Miscellaneous Tax Section, Arkansas Department of Revenue, Aug. 2006. Arkansas, Louisiana and Ohio market value rates are based on a recent price of \$7.50 per Mcf.

At today's prices, the Arkansas severance tax on natural gas is equivalent to 0.04 percent of market value. The state's rate is the lowest in the country, and is only about 1/200th the amount of Texas, the highest state in the region.

## 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. 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 (\$494,106 in FY91 compared to only \$552,861 in FY06).<sup>2</sup> Arkansas's severance tax revenue has stagnated over the years because of its low tax rate (lowest in the nation) and unusual base (using volume rather than market value). In fact, after adjusting for inflation, the purchasing power of natural gas severance tax revenues has decreased 22 percent during the same period. As another example, in 1957, \$1,000 worth of natural gas production would have generated \$27 in severance taxes. In 2005, that same amount would generate only \$0.40.<sup>3</sup> Consider that if Arkansas had a severance tax based on five percent of market value of natural gas over the 25-year span from 1981 to 2005, the state would have collected \$851.8 million instead of the \$12.7 million it actually collected during that time, a difference of \$839 million.<sup>4</sup>

This is money that could have been used, even at today's costs, to fund the construction of 108 elementary or middle school buildings or about 40 new high schools throughout the

Arkansas'  
severance tax rate  
is 1/200<sup>th</sup> the rate  
in Texas.

state.<sup>5</sup> Similarly, this money could have been used for other critical needs, such as providing low-income tax relief, fully funding quality pre-k for every 3- or 4-year old child in the state or providing health care coverage for every uninsured child in the state.

## 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.<sup>6</sup> Before the advent of the Fayetteville Shale developments, Arkansas natural-gas producers made 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 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 in 2003 at the Joint Legislative Committee on Economic

and Tax Policy.<sup>7</sup> If other commodity-based taxes are considered (*e.g.*, state and local sales taxes and municipal franchise taxes), the overall tax rate on Arkansas natural gas was 12.191 percent, compared to 5.8 percent in Louisiana, 8 percent in Mississippi, 3 percent in Missouri, 10.095 percent in Oklahoma, 3.1875 percent in Tennessee, and 12.72 percent in Texas. As part of Arkansas' overall natural-gas tax rate of 12.191 percent, industry representatives included 5.125 percent in state sales taxes and 3 percent in local sales taxes, 4 percent in municipal franchise fees, and 0.066 percent in severance taxes.<sup>8</sup> None of the other surrounding states levy a state sales tax and only two – Missouri and Oklahoma – levy a local sales tax.

This 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 since Arkansas consumers: (1) are 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.

As part of their "analysis," the industry typically includes state and local sales taxes that are not targeted at natural-gas producers or consumers, but must be paid by consumers of all types. This includes consumers of food, clothing, electricity, water, cable television and all other items currently subject to state and local sales taxes. Anyone who doubts this should look more closely at the taxes and fees

## Producer-Paid Taxes on Natural Gas Production

### Arkansas and Regional States, per Mcf

State	Severance <sup>9</sup>	Conservation	County Ad Valorem <sup>10</sup>	Corporate Income <sup>11</sup>	Total
Arkansas	\$0.003	\$0.009	\$0.059	\$0.24	\$0.32
Louisiana	\$0.122			\$0.30	\$0.42
Mississippi	\$0.45			\$0.19	\$0.64
Missouri	n/a			\$0.23	\$0.23
Oklahoma	\$0.525			\$0.23	\$0.75
Tennessee	\$0.225			\$0.24	\$0.43
Texas	\$0.562		\$0.059	n/a	\$0.62

Source: HISTECON Associates, Inc. Data are from Miscellaneous Tax Section, Arkansas Department of Revenue, Aug. 2006 and “Fayetteville Shale Play,” (mimeo), Roger Lewis, 2006.

section of their telephone bill each month.

The taxes paid solely by the producers of natural gas, including Arkansas’ property and conservation taxes that most other states in the region do not assess, are the lowest in the region (Missouri does not have a severance tax because it has very little production of natural gas). At current rates, Arkansas has about one-half the tax burden of Mississippi or Texas, and assesses only 43 percent of the burden of gas-rich Oklahoma.

The recent Fayetteville Shale developments have further changed the dynamics of what were already weak industry claims about the downside of changing the basis of the Arkansas severance tax. What makes the Fayetteville Shale developments different from former drilling

programs is that virtually all the new wells are located near two major natural-gas pipelines that cross Conway, Van Buren, and other counties and will carry the product to states north of Arkansas. To the extent that a large share of this production is sent out-of-state, no state and local

The taxes paid solely by the producers of natural gas are the lowest in the region.

sales taxes or franchise fees will be collected on any of this production. The state will be left with its paltry 0.04 percent in severance taxes for additional revenue.

Perhaps more importantly, and what the natural-gas industry seems to ignore, is that the state’s high sales tax burden is the major reason why the Arkansas tax system is so regressive. Arkansas now has the 5<sup>th</sup> highest general sales tax burden in the country. Low- and middle-income families pay a higher share in state and local taxes, as a percent of their income, than do our richest families. The high sales tax rate on natural gas is an obvious by-product of a low severance tax. A higher severance tax on producers is one progressive option (among others) for eliminating or reducing the sales tax on natural gas. Recent increases in the sales tax to fund education and other programs have made 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. The issue, however, is much more complicated than the industry would have us 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 on who ultimately purchases the natural gas produced in-state. As a net importer of natural gas, our gas prices include severance taxes charged in states where the gas originated.

The market forces for natural gas include such factors as energy shortages, cold weather in the north, industrial demand, and new gas fields in production. 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, taxes, or water disposal fees – 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 on 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 consumed 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 most of the gas that is produced in state.

In 2005, Arkansas consumed more natural gas (219.6 billion cubic feet or Bcf) than the state’s total production of only 187.3 Bcf.<sup>12</sup> However, tremendous volumes of the resource flow into, through and out of the state each year just as production from states like Louisiana and Texas is exported to Mississippi, Missouri, the Midwest and beyond.

The state’s total production of 187 Bcf is only a small part of the natural gas that enters or exits the state

### Potential State Revenue from Natural Gas Production of Fayetteville Shale, 2006-2035

Years	Total Projected Production, Fayetteville Shale (Bcf)	Market Value or Sales @ \$7.50 per Mcf, Fayetteville Shale only	Potential Severance Tax Revenue @ Different New Rates:*		
			3%	4%	5%
2006-2015	10,000	\$75 billion	\$2.25	\$3.0	\$3.75
2016-2025	5,000	\$37.5 billion	\$1.125	\$1.5	\$1.875
2026-2035	5,000	\$37.5 billion	\$1.125	\$1.5	\$1.875
30 Year Total	20,000	\$150 billion	\$4.5	\$6.0	\$7.5

\*Based on Fayetteville Shale projections only (in \$ billions).

through jurisdictional pipelines. For example, in 2004 about 2 trillion cubic feet (Tcf) of natural gas entered the state and about 1.9 trillion left the state through the jurisdictional pipelines. It is unknown how much of the state’s total production of 187 Bcf left the state or how much of it was consumed in Arkansas. 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 estimate 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.<sup>13</sup>

As increased production from Fayetteville Shale comes online, Arkansas will go from being a net importer to a net exporter of natural gas, allowing a shift of some of the severance tax burden to out-of-state consumers. The Fayetteville Shale

production in north-central Arkansas presents this case starkly, since virtually all of the natural gas will be sent into the two gas pipelines for sale to customers out-of-state.<sup>14</sup> At current prices, these sales have been estimated to total \$150 to \$300 billion over the 30-year life of all the fields, depending on the recovery rate used.<sup>15</sup> Using the more conservative \$150 billion in sales, the present severance tax will generate about \$60 million in revenue during this period; however, a market-based rate of 5 percent will raise almost \$7.5 billion during the same period.

The accompanying table shows the potential state revenue from natural gas production of the Fayetteville Shale area for the years 2005-2035, in 10-year intervals. If Arkansas changed its severance tax to a market-based rate based on various levels around the regional average, the state would reap \$2 to \$4 billion in state tax revenue over the next 10 years.

Over the 30-year projected life of the field, it would yield \$4.5 to \$7.5 billion in new tax revenue.

One option that has been suggested is raising the severance tax on natural gas enough to offset the elimination of the sales tax on consumers' heating bills. In 2005, this sales tax generated about \$26.8 million in revenue for the state.<sup>16</sup> This constituted only about one percent of the Arkansas sales-tax revenue of \$2.56 billion that year, but represented a noticeable addition to the energy bills of many families each month during the winter.

Even without the new Fayetteville Shale gas production, this amount of revenue could be gained by increasing the severance tax on natural gas to about \$0.15 per Mcf, or about two percent of market value of sales in 2005. This would still leave Arkansas with the lowest tax in the region while reducing the regressive nature of its tax system overall.

### 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 or owns companies producing Arkansas natural gas. However, two observations can be made about the likely distribution 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, even without the Fayetteville Shale production).

1. Even if producers can pass part of the tax onto consumers, an increasing share of the burden will go

to out-of-state consumers as production from the Fayetteville Shale increases.

2. Because 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. (Note: The most common leases have landowners and energy companies splitting the severance tax at a set ratio.)

Most of the major producers are publicly traded corporations, headquartered out-of-state. Most of any additional severance tax would be passed to those companies. Although a detailed analysis of all of the state's producers is beyond the scope of this report, a quick review of the top ten producers is very insightful. In 2005,

10 companies accounted for 161.4 Bcf, or 84.3 percent of Arkansas's total natural-gas production. Smaller companies (117 firms) accounted for less than 16 percent of the state's total. Of the top 10 producers, only two – Hanna Oil & Gas and Stephens Production – are Arkansas-owned companies. The remaining eight are large, publicly-traded companies, their subsidiaries or privately-held, out-of-state firms. The two Arkansas companies accounted for only about 21 percent of the 161.4 Bcf produced by the top 10 companies, while the eight publicly-traded, out-of-state companies produced the remaining 79 percent (or 66.6 percent of the state's total). Thus, to the extent that producers bear the burden of a severance tax increase, the addition would be passed mostly to out-of-state companies and stockholders.<sup>17</sup>

### Top Ten Producers of Arkansas' Natural Gas in 2005

Producer	Million Cubic Feet (Mcf)
XTO Energy, Inc.	55,563
Stephens Production Co. *	28,959
SEECO Inc.	25,227
The Houston Exploration Co.	24,849
Merit Energy Company	5,716
Hanna Oil & Gas *	4,883
Sedna Energy Company	4,834
Chesapeake Operating, Inc.	4,507
Reliance Gas Company	3,603
Ross Explorations, Inc.	3,222
All Others	29,996
Total Natural-Gas Production	191,358

\* Arkansas-owned company

Source: Arkansas Oil & Gas Commission 2006

## Impact on Industry

The third claim that industry officials have made is that higher severance taxes on natural gas “would represent ... a drastic effect on our profitability.”<sup>18</sup> 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.”<sup>19</sup> Increased severance taxes have a small impact on jobs and production for two basic reasons: state severance taxes are deductible from federal business 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 similar to meters and trucking costs. 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. At present, our extremely low tax rate means that more of our potential state tax revenue is lost to Washington.<sup>20</sup>

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 Mcf 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.

For example, the Fayetteville Shale gas fields have become economically viable due to new drilling and extraction technologies,

“Severance taxes  
have little or no  
effect on jobs...”

not the low level of the Arkansas severance tax. In fact, productivity in the Fayetteville Shale gas fields is expected to continue improving with new technology and experience with non-conventional gas drilling.<sup>21</sup>

Additionally, current natural-gas inventories continue well 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 historically high prices for natural gas in recent years even before the effects of Hurricane Katrina, one analyst commented: “For the next two or three years, we are going to be in a very tight supply-demand situation.”<sup>22</sup> 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 cents per Mcf).

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, and replacing the current sales tax on natural gas with a higher severance tax on producers – *e.g.*, one equal to the national average of five percent of market value – would reduce the tax burden for them. And increasing the severance tax would generate new revenue from the Fayetteville Shale production, which would be virtually untaxed under the current tax system.

Even if the state kept its existing sales tax on natural gas, increasing the severance tax on producers would reduce the amount of new revenue that might have to be raised in the future for critical programs such as education and health care, possibly through sales-tax increases that would further increase the burden on low- and middle-income families. It would also end a special protection that profitable owners of natural-gas resources have long enjoyed (national data suggest that oil and natural-gas producers enjoy average profits of 21 percent, even before the recent run-ups in energy prices), and help promote a fairer tax system for the state’s families.<sup>23</sup> Ultimately, an increase in Arkansas’ severance tax could help promote a fairer tax system for working families.

## Endnotes

<sup>1</sup>Metzger, James, "The Arkansas Severance Tax: New Funding for Education," Paychecks and Politics, Issue 19, Fall 2003

<sup>2</sup>Data from Miscellaneous Tax Section, Arkansas Department of Revenue, Aug. 2006.

<sup>3</sup>US Energy Information Administration, <http://www.eia.doe.gov/emeu/aer/txt/stb0607.xls>

<sup>4</sup>Collections data are from Miscellaneous Tax Section, Arkansas Department of Revenue, 2006. Estimates of revenue that would have been generated by a tax equal to five percent of market value are by HISTECON Associates, Inc.

<sup>5</sup>Average cost of an average elementary school of 64,000 sq.ft. in 2006 is \$7.7 million; an average middle school of 65,000 sq.ft. is \$7.8 million; and a new high school of 180,00 sq.ft. costs about \$21.6 million.

<sup>6</sup>Ernest Dumas, "Paying for Tax Breaks," *Arkansas Times*, May 10, 2002.

<sup>7</sup>"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.

<sup>8</sup>State sales tax rate has since increased to 5.625.

<sup>9</sup>Per Mcf, based on current price of \$7.50 per Mcf.

<sup>10</sup>Based on a 45 mill property tax on assessed value of 20 percent of resource value, less 13 percent production costs.

<sup>11</sup>Based on an estimated profit of 50 percent of the wellhead price.

<sup>12</sup>"Interstate Movements of Natural Gas by State," U.S. Energy Information Administration, 2005, available on-line at [http://tonto.eia.doe.gov/dnav/ng/ng\\_move\\_ist\\_a2dcu\\_SAR\\_a.htm](http://tonto.eia.doe.gov/dnav/ng/ng_move_ist_a2dcu_SAR_a.htm).

<sup>13</sup>Winthrop Rockefeller Foundation, Tax Options for Arkansas: Funding Education After the Lake View Case, June 2003, p. 35.

<sup>14</sup>"Projecting the Economic Impact of the Fayetteville Shale Play for 2005-2008," Center for Business and Economic Research, Fayetteville, AR, May 2006.

<sup>15</sup>Reserve estimates from Southwestern Energy Co., available on-line at <http://www.swn.com/fayettevilleshale>. Some observers estimate that only 50 percent of the resource is recoverable, reducing total sales to \$150 billion.

<sup>16</sup>Personal communication from Robert Booth, manager of the PSC Gas and Water Section, Aug. 21, 2006, in response to a revenue estimate by the Public Policy Program, Southern Good Faith Fund, Aug. 15, 2006.

<sup>17</sup>Again, in most cases, individual producers have little room to negotiate posted prices, and any higher costs are borne by the owners or producers of the resource. The prevailing market price prevents them from passing to consumers (in-state or out-of-state) the burden of a severance tax. Because they are in a competitive market, economists call them "price-takers."

<sup>18</sup>*Arkansas Democrat-Gazette*, "Higher tax on natural gas fodder for panel," Aug. 15, 2003.

<sup>19</sup>M. Kunce, S. Gerking, W. Morgan, and R. Maddux, "State Taxation, Exploration, and Production in the U.S. Oil Industry," *Journal of Regional Science* Vol, 43, No. 4, November 2003, pp. 749-770(22). This paper is reviewed in *The Journal of Energy Literature* IX (1): 97-103.

<sup>20</sup>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."

<sup>21</sup>An economic analysis by Phillip Crouse, of E&Pnet.com suggests "the average horizontal well would turn over 8 times the before-tax income over investment. The economics were run using an average drilling and completion costs of \$1.7 million with \$500-per-acre bonus and a eighth royalty. Most of the wells pay out in less than a year. Even if natural gas prices fall back to the \$5 to \$6/Mcf range, the play is quite economic, showing very quick payouts and a before-tax income over investment of more than four times." See Crouse, Philip C., "Fayetteville Shale draws a crowd," January 4, 2006, <http://www.eandpnet.com/articles/features/4221.htm>

<sup>22</sup>"Of Drills and Energy Bills," *The Washington Post National Weekly Edition*, May 26, 2003, p. 20.



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