Arkansas historically has ranked near or at the bottom nationally in college attainment. Just 18.2 percent of Arkansas adults have earned at least a bachelor’s degree—placing Arkansas 49th out of the 50 states. Only West Virginia fares worse. Similarly, just 5.5 percent of adult Arkansans have attained an associate’s degree—which also places Arkansas 49th in the nation, dead last save Louisiana. 1

This brief proposes increasing Arkansas’ severance tax on natural gas to a rate comparable to that of surrounding states and earmarking the new revenues for an Arkansas Promise Trust Fund. Interest earnings from the trust fund could be used to significantly and permanently increase access to college financial aid and meet other higher education needs.

With an adequate severance tax rate of 5 percent of market value or higher—which would be comparable to surrounding states—Arkansas could potentially create an Arkansas Promise scholarship to guarantee every Arkansan with a high school diploma or GED the opportunity to go to college and earn an associate’s degree or even a bachelor’s degree. Such a guarantee would be similar to the El Dorado Promise in Arkansas and Georgia’s HOPE Scholarship Program.

The increased production of natural gas from the Fayetteville Shale Play, if combined with the severance tax increase dedicated to the creation of an Arkansas Promise Trust Fund, provides an historic opportunity to finally and permanently change the dynamics that have driven the economic and social development of the state. Arkansas has historically relied on natural resources—land, timber, and waterways—and a low cost of doing business as the engines of prosperity. These dynamics do not position Arkansas well for prosperity in today’s economy which requires new kinds of resources, particularly a well-educated workforce.

In the knowledge-based economy of the 21st century, an educated workforce is among the most vital resources a state can have. Since 1984, most of the job growth in the United States has occurred in occupations that require postsecondary training, and this trend is expected to accelerate in the future. 2

Improving educational attainment is equally critical to increasing per capita incomes and thus the social well-being of every state. A recent study measured how postsecondary education significantly increases an individual’s lifetime earning power—by a factor of 28 percent with an associate’s degree and by 61 percent with a bachelor’s degree. 3

With very reasonable state policy changes—namely, an increase in the severance tax—the Fayetteville Shale Play can be turned into a permanently renewable resource rather than the one-time, depleting resource it is under current state policy. More importantly, the Fayetteville Shale Play—a natural resource of the state that belongs to all Arkansans—could benefit many for generations to come, rather than a relatively fortunate few now.

The state’s current natural gas severance tax shares common ground with the state’s college attainment rates—the tax is the lowest in the nation. The paltry level of the severance tax, last adjusted a half-century ago, is illustrated by the fact that the state collects approximately twice as much revenue from several types of minor fees as from the tax levied on the extraction of one of the state’s most valuable natural resources. Surrounding states tax the
extraction of natural gas at rates significantly higher than Arkansas.

Fortunately, the merits of and uses for a severance tax increase are beginning to be debated. As this debate occurs, an important fact to keep in mind is that unless Arkansas can find a way to produce more college graduates, the future prosperity of the state and its residents will not significantly change.

**Severance tax background**

Most states levy taxes on the removal, or severance, of natural resources such as oil and natural gas based on market value of the resource. For example, Arkansas’ severance tax on oil is levied at 5 percent of market value. However, Arkansas’ severance tax on natural gas is levied based on the volume of gas produced rather than market value. This prevents severance tax revenues from keeping pace with changes in gas prices.

The state’s current natural gas severance tax rate of three-tenths of one cent ($0.003) per 1,000 cubic feet (Mcf) of natural gas was established by Act 21 of 1957. In fiscal 2007, the state collected $619,418 from the severance tax on natural gas, which represented a scant 0.011 percent of state general revenue.

The chart to the right indicates how Arkansas’ severance tax on natural gas compares with Louisiana, Mississippi, Oklahoma, and Texas—the four neighboring states with significant natural gas deposits—all in the rate levied and revenue generated. The table shows that Arkansas’ natural gas severance tax revenue is significantly lower than that in neighboring states, both in dollars generated and as a percentage of state revenues.

Arkansas in fiscal 2007 collected more than twice as much revenue—$1,806,778—from vending machine decal fees than from the severance tax on natural gas. The state collected nearly twice as much from liquor permit fees ($1,109,437) and from motor boat registration fees ($1,012,417) as from the severance tax on natural gas.

The bottom line is that the severance tax rate on natural gas in Arkansas collects pennies on the dollar compared with Louisiana, where the severance tax rate at projected 2008 annualized prices is 91 times higher than in Arkansas; Mississippi, where it’s 160 times higher; and Texas, where it’s 200 times higher.

<table>
<thead>
<tr>
<th>State</th>
<th>Natural gas severance tax rate</th>
<th>Annual revenues, FY07 (as % of state general revenue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkansas</td>
<td>$0.003 per Mcf (equivalent to 0.0375% of market value)*</td>
<td>$619,418 (0.011%)</td>
</tr>
<tr>
<td>Louisiana</td>
<td>$0.269 per Mcf (equivalent to 3.4% of market value)**</td>
<td>$375.3 million (3%)</td>
</tr>
<tr>
<td>Mississippi</td>
<td>6% of market value</td>
<td>$21.8 million (4.7%)</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>7% of gross value+</td>
<td>$634.4 million (10.7%)</td>
</tr>
<tr>
<td>Texas</td>
<td>7.5% of market value</td>
<td>$1.9 billion (2.5%)</td>
</tr>
</tbody>
</table>

Sources: Interstate Oil & Gas Compact Commission Oil and Natural Gas Tax Reference Chart; Arkansas Department of Finance and Administration; Louisiana Department of Revenue; Mississippi State Tax Commission; Oklahoma State Treasurer; Texas Comptroller of Public Accounts.

* Market value based on U.S. Energy Information Administration’s projected 2008 annualized average spot price of $8 per Mcf. Mcf=1,000 cubic feet of gas.

** Louisiana’s severance tax rate is adjusted annually every July 1, depending on the market price of the commodity on the New York Mercantile Exchange, but may never be less than $.07 per Mcf.

+Oklahoma uses a sliding scale that levies a 7 percent tax on the gross value of the production of gas when the price per Mcf is $2.10 or greater. The tax falls to 4 percent when the price per Mcf is $1.75 to $2.09 and to 1 percent if the price per Mcf is less than $1.75.

**Severance tax revenue potential**

A January 2007 report by Arkansas Advocates for Children and Families, Digging Deeper: Reforming the Arkansas Severeance Tax for Working Families, offered estimates of how much state revenue could be generated from Fayetteville Shale Play natural gas production over 30 years. Depending on the recovery rate used, Fayetteville Shale Play production could vary from 20,000 billion cubic feet of gas (Bcf) to 40,000 Bcf.

The Advocates report used the more conservative of the two estimates in making potential revenue calculations, as does this report. The U.S. Energy Information Administration’s projected 2008 annualized average spot price of $8 per Mcf is used for these revenue calculations. Over the first decade of natural gas production in the Fayetteville Shale, a market-based natural gas severance tax comparable to those of neighboring states would generate $2.4 billion to $5.6 billion in potential state revenue,
Based on a price of $8 per Mcf. At this price, the current Arkansas severance tax would generate just $30 million over the same 10-year period.

Over 30 years, the potential revenues are $4.8 billion to $11.2 billion, depending on the severance tax rate. Again, if Arkansas’ current severance tax structure was left unchanged, the state would see just $60 million during the same three decades. The table above shows the revenue estimates from various severance tax levels over 10-, 20- and 30-year periods.

### Building a Trust Fund from New Revenues

Using the lower end of the revenue estimates, which are based on a 3 percent market-value based severance tax rate, over the first 10 years of production at least $230 million per year in Fayetteville Shale-related severance tax revenue could be generated. This is assuming that the 10-year revenue estimate of $2.4 billion from a 3 percent severance tax rate is generated in roughly equal amounts annually. At a conservative annual investment return of 5 percent, $230 million deposited in a permanent trust fund each year could generate $737.6 million in accumulated interest over the first decade.

The table to the right shows the annual interest that could be generated by such a trust fund over three decades. If the severance tax were set at 3 percent of market value, the trust fund could generate $63.5 million in annual interest in the fifth year; $144.6 million in the 10th year; $307.9 million in the 20th year; and $573.9 million in the 30th year. A 5 percent severance tax rate—which would still leave Arkansas with a tax rate lower than three of the four surrounding states—would increase the interest forecast by more than 40 percent (with $1.25 billion in accumulated interest over the first decade). A 7 percent severance tax rate would more than double the accumulated interest (with $1.8 billion in accumulated interest over the first decade).

Natural gas industry arguments against an increased severance tax are summarized and rebutted in Arkansas Advocates’ Digging Deeper report, available online at [http://www.aradvocates.org/_images/pdfs/paycheck_webquality.pdf](http://www.aradvocates.org/_images/pdfs/paycheck_webquality.pdf)

### Cumulative Arkansas Promise Trust Fund interest earnings under three severance tax rate scenarios

<table>
<thead>
<tr>
<th>Severance tax rate (% of market value)</th>
<th>Interest earned in 10th year*</th>
<th>Interest earned in 20th year*</th>
<th>Interest earned in 30th year*</th>
</tr>
</thead>
<tbody>
<tr>
<td>3%</td>
<td>$144.6 million</td>
<td>$307.9 million</td>
<td>$573.9 million</td>
</tr>
<tr>
<td>5%</td>
<td>$245.3 million</td>
<td>$522.1 million</td>
<td>$973.1 million</td>
</tr>
<tr>
<td>7%</td>
<td>$345.9 million</td>
<td>$704.9 million</td>
<td>$1.29 billion</td>
</tr>
</tbody>
</table>

*At 5 percent annual rate of return
The primary recommendation of this brief is to use the revenues from an increase in Arkansas’ natural gas severance tax to create a permanent state trust fund for higher education called the Arkansas Promise Trust Fund. Annual interest revenues from such a trust fund could be used to significantly increase access to need-based financial aid and meet other higher education needs.

With an adequate severance tax rate of 5 percent or higher, as trust fund interest accumulated, the state could eventually guarantee every Arkansan with a high school diploma or GED the opportunity to earn an associate’s degree or even a bachelor’s degree. Such a guarantee would be similar to the El Dorado Promise, which for high school graduates of the El Dorado School District provides scholarships with a maximum value equal to the highest in-state tuition and fees charged by an Arkansas public university. Georgia's HOPE Scholarship Program is a similar program on a statewide level.

Arkansas Promise Trust Fund: Priorities and Governing Board

Although there are many barriers to earning a college degree, perhaps the most fundamental barrier is affording the cost. In Arkansas, college affordability is a challenge for many students and their families.

Data from the National Center for Public Policy and Higher Education’s *Measuring Up 2006: The State Report Card on Higher Education* indicates that for students from lower-income families, college in Arkansas is simply not affordable.

In Arkansas, for the 20 percent of the population with the lowest income, net college costs even at a community college represent 44 percent of average annual income. For this population, public four-year college net costs exceed half of average annual income, and private four-year college net costs exceed average annual income. The next highest 20 percent income population of Arkansans does not fare much better: community colleges and four-year public colleges cost between 24 percent and 29 percent of average annual income respectively, and four-year private colleges cost more than 60 percent. Unfortunately, only the wealthiest 20 percent of families can comfortably afford net college costs.

Not only are prices high for many Arkansas families, but they are getting higher. The College Board’s most recent *Trends in College Pricing* report, published in October 2007, states that the gathered data “confirm the widespread perception that published college prices are rising more rapidly than the prices of other goods and services.”

Four-year public college costs in Arkansas increased by 5.1 percent in 2007-08 compared with the prior year; for two-year public college costs, the increase was 3.2 percent. The Consumer Price Index for all goods and services increased by 2.8 percent between September 2006 and September 2007, the first full months of the respective academic years compared in the report.

Given that college costs are high and climbing higher, the top priority for the Arkansas Promise Trust Fund should be expanding access to need-based financial aid so that more Arkansans can afford college. The specific financial aid programs that should receive these additional resources or be created are mentioned below.

Recognizing that significantly increasing the number of students who attend college will require additional resources to serve such students well, the second priority for the Arkansas Promise Trust Fund should be to provide general operating funding to Arkansas’ public institutions of higher education. Such funding, however, should be tied to specific performance accountability measures, such as increased retention and graduation, to ensure students are indeed being served well.

To establish specific priorities for the Arkansas Promise Trust Fund and balance the various higher education needs within the state, an oversight commission for the Arkansas Promise Trust Fund should be established. The commission would make all funding decisions for the fund. Commission members should include several gubernatorial appointees and representatives from the two-year and four-year college systems in the state. The California Legislature in 2005 passed legislation creating a California Hope Endowment to fund higher education needs. The bill was vetoed by California’s Governor, but had it become law would have established a similar oversight commission: four appointees by the Governor and four representatives from the two-year and four-year college systems.
Specific Financial Aid Proposals

In the early years of the Arkansas Promise Trust Fund the revenues allocated to financial aid should be directed to meeting the following financial aid needs. These needs have been identified as those that current state financial aid programs are not adequately meeting.

- **Increase funding for the Workforce Improvement Grant (WIG) program.** WIG targets adult students 24 and older with unmet financial aid need who are not served by either of the state's two primary need-based financial aid programs—the GO! Opportunities Grant Program and the Academic Challenge Scholarship. Both the GO! Opportunities Grant and the Academic Challenge target only traditional students – those transitioning from high school to college within a year of high school graduation. Over the next two fiscal years (2008 and 2009) WIG will be funded at $3.7 million annually. This program is not funded adequately, especially given that the adult student population at Arkansas two-year colleges in recent years has grown more than twice as fast as the population of younger students. The $3.7 million annual funding for WIG is a fraction of the annual funding for Academic Challenge ($30.2 million a year in both fiscal years) or the GO! Opportunities Grant Program ($7.2 million in fiscal 2008 and $11.2 million in fiscal 2009).

- **Extend need-based financial aid to young adults who have been out of high school for more than a year but are younger than 24.** Because WIG only reaches adults 24 and older, and the state's other two primary need-based aid programs reach young adults recently out of high school, there is a critical gap in need-based financial aid eligibility. Consequently, there is very little need-based financial aid for young adults ages 19 through 23. Extending access to need-based financial aid could be accomplished by lowering the age eligibility for WIG, extending the post-high school graduation eligibility period for the GO! Opportunities Grant Program, or creating an entirely new program.

- **Increase funding and income eligibility for the GO! Opportunities Grant Program.** This program, created under Act 1030 of 2007, effective with the 2007-08 school year provides need-based scholarships of up to $1,000 per year for students in lower income-families. The adjusted gross income limit is $25,000 a year for a family with one child; for each additional child, a family is allowed an additional $5,000 in income to qualify for the program. GO! Opportunities could be enhanced by increasing the scholarship dollar amount or increasing the base adjusted gross income limit. Because GO! Opportunities Grants can be combined with other forms of state and federal student financial aid, the proposed enhancements would significantly increase access to higher education in Arkansas.

Once these priorities are met, and as Arkansas Promise Trust Fund interest revenues continue to build, the state could eventually begin to guarantee the opportunity for college to all Arkansans. The state could establish an Arkansas Promise scholarship to guarantee every Arkansan with a high school diploma or GED the opportunity to earn an associate's degree or even a bachelor's degree. Such a guarantee would be similar to the El Dorado Promise and at the state level Georgia's HOPE Scholarship.

Arkansas Promise Scholarship: Potential Cost and Impact

Potential costs for an Arkansas Promise scholarship would depend greatly on how many of the state's high school graduates and GED recipients chose to participate. Recent data shows that an average of 27,086 students graduate from high school each year in Arkansas, and an average of 6,659 students receive a GED each year. Initially, depending on available funding, the Arkansas Promise scholarship could provide each high school graduate a maximum annual scholarship equal to the highest in-state tuition and fees charged among Arkansas' two year colleges. In both 2006-07 and 2007-08, the highest in-state tuition and fees charged at two-year colleges was $2,520 a year. Multiplying the current top two-year tuition and fee cost ($2,520 a year) by the combined average number of Arkansas high school graduates and GED recipients (33,745) the first-year cost of the Arkansas Promise scholarship program, at current college prices, would be $85 million. If all 33,745 graduates completed a second year, the total second-year and ongoing annual costs, again at current prices, would run $170 million. These figures are certainly the upper range of cost; not all high school graduates will enroll in college and not all first-year students will complete a second year.

Based on the interest earnings estimates provided above, a 5 percent to 7 percent of market value severance tax would generate between $245 million to $345 million
annually in 10 years—more than enough to fund the Arkansas Promise scholarship program at current college prices.

Increasing educational attainment would have an immense positive economic and social impact on the state. A recent report by the College Board titled *Education Pays: The Benefits of Higher Education for Individuals and Society* estimates the earnings premium connected with higher educational attainment.

The report estimates that a typical associate’s degree recipient can expect to earn about 28 percent more over a 40-year working life than the typical high school graduate earns over the same period. That adds an estimated $354,000 in income over the associate’s degree recipient’s working life. For a bachelor’s degree recipient, the typical earnings premium over a high school graduate is 61 percent—adding an estimated $787,650 in income over the degree recipient’s working life.  

More specifically, the median annual earnings premium over a high school diploma is $9,100 for an associate’s degree recipient and $19,400 for a bachelor’s degree recipient. These are national median income figures. Obviously, median income levels in Arkansas are lower. State-specific figures linking median income with different levels of educational attainment were not included in the College Board report. Arkansas’ median income in recent years has been about three-quarters of the national median income. Using this formula, the earnings premium in Arkansas over a high school diploma would be $6,825 for an associate’s degree and $14,550 for a bachelor’s degree.  

In the 2006-07 academic year in Arkansas, 5,586 students earned associate’s degrees and 11,423 students earned bachelor’s degrees. This brings Arkansas’ total higher education output to 17,009 in postsecondary credentials, with about two-thirds receiving bachelor’s degrees and one-third receiving associate’s degrees.  

Using the median annual earning premiums estimated above for associate’s and bachelor’s degrees in Arkansas, the potential annual impact of this overall output is $201.7 million in increased earnings for the cohort of 17,009 Arkansas students. If the larger college-eligible group of high school graduates and GED recipients cited above (33,745 students) earned bachelor’s and associate’s degrees at current rates (two-thirds bachelor’s, one-third associate’s), the annual earnings premium for the state would be $405 million.  

The *Education Pays* report also noted that higher income levels correspondingly generate higher tax revenues for state and local governments. The median annual state and local sales, income, and property taxes paid by a high school graduate total $2,588, compared with $3,314 for an associate’s degree recipient, and $4,131 for a bachelor’s degree recipient, according to this report.

Applying Arkansas’ lower annual median income proportion (three-quarters of the national level) as illustrated above, the annual “tax premium” for state and local governments in Arkansas could potentially total $32.2 million annually if those 33,745 students completed associate’s and bachelor’s degrees at current rates instead of merely graduated from high school.

**Summary**

Arkansas has an historic opportunity to finally and permanently change the dynamics that have driven the economic and social development of the state. Arkansas has historically relied on natural resources—land, timber, and waterways—and a low cost of doing business as the engines of prosperity. These dynamics do not position Arkansas well for prosperity in today’s economy which requires new kinds of resources, particularly a well-educated workforce.

The Fayetteville Shale Play offers a very unique, perhaps once-in-a-lifetime, opportunity to change the dynamics that have driven the economic and social development of the state. With very reasonable state policy changes, the Fayetteville Shale Play can be turned into a permanently renewable resource rather than the one-time, depleting resource it is under current state policy. More importantly, the Fayetteville Shale Play—a natural resource of the state that belongs to all Arkansans—could benefit many rather than a relatively fortunate few.

Fortunately, the merits of a severance tax increase are beginning to be debated. As this debate occurs, there is one fact that policymakers should keep in mind: Arkansas has the nation’s second-lowest bachelor’s degree and associate’s degree attainment. Unless this changes, the future prosperity of the state and its residents will not significantly change. Incremental steps and half-measures are a luxury the state can no longer afford.
Endnotes


6. Information on El Dorado Promise is available at http://www.eldoradopromise.com
   Information on the Georgia HOPE Scholarship Program is available at http://www.gsfc.org/hope/


10. Arkansas Department of Higher Education, Arkansas Public Two-Year Institution Fall On-Campus Enrollment Profile, 2001-2005. The population of students ages 24 and younger increased by 3.8 percent (from 23,743 to 24,643) between fall 2001 and fall 2005. The population of students ages 25 and older increased by 8.1 percent (from 17,284 to 18,677) during the same period.

11. Act 1229 of 2007, the appropriation law for the Arkansas Department of Higher Education for fiscal 2008 (July 1, 2007 to June 30, 2008) and fiscal 2009 (July 1, 2008, to June 30, 2009). Note that the GO! Opportunities Grant Program was enacted into law as the Higher Education Opportunities Grant Program; the name was subsequently changed. Available online at http://www.arkleg.state.ar.us/acts/2007/public/Act1229.pdf

12. High school graduation totals compiled from Arkansas Department of Education data at http://adedata.k12.ar.us/ Graduation totals were 26,707 in 2005-06; 27,004 in 2004-05; 27,181 in 2003-04; 27,555 in 2002-03; and 26,984 in 2001-02.


14. Education Pays: The Benefits of Higher Education for Individuals and Society. Earnings premiums are based on expected median lifetime earnings for each educational attainment level, for full-time, round-year workers ages 25 and older, calculated by the authors using 2006 U.S. Census Bureau income data. The median is the midpoint of a range of data; in other words, half of the values are lower than the median and half of the values are higher than the median.

15. According to the U.S. Census Bureau’s Two-Year Average Median Household Income by State data, average median household income in 2005-06 was $48,023 nationally and $37,458 in Arkansas (78 percent of the national figure); in 2004-05 it was $47,854 nationally and $37,601 in Arkansas (79 percent of the national figure). Income in 2006 dollars.

Endnotes, continued on back

17. The $201.7 million is calculated as follows: 5,586 associate’s degree recipients, each with estimated Arkansas median earnings premium of $6,825 ($38.1 million); and 11,243 bachelor’s degree recipients, each with a median annual earnings premium of $14,550 ($163.6 million). The $405 million is calculated as follows: applying the proportion of educational credentials in 2006-07 (67 percent bachelor’s, 33 percent associate’s) to the 33,745 college-eligible population: 22,609 bachelor’s degree recipients, each with a median annual earnings premium of $14,550 ($329 million); and 11,136 associate’s degree recipients, each with a median earnings premium of $6,825 ($76 million).

18. Using the three-quarters of national median income standard, the median annual state and local sales, income, and property taxes paid by a high school graduate in Arkansas would total $1,941, compared with $2,485 for an associate’s degree recipient, and $3,098 for a bachelor’s degree recipient. The $32.2 million is calculated as follows: applying the proportion of educational credentials in 2006-07 (67 percent bachelor’s, 33 percent associate’s) to the 33,745 college-eligible population: 22,609 bachelor’s degree recipients, each offering a median “tax premium” of $1,157 ($26.2 million); and 11,136 associate’s degree recipients, each offering a median “tax premium” of $544 ($6 million).