Ad Valorem Taxation of Coal Property in West Virginia and Other States—Part 2

BY CALVIN A. KENT, PH.D.

This article is the second of a two-part series exploring the issues in ad valorem taxation of coal-mining properties. The first installment appeared in volume 7, issue 3. This topic was first presented by the author at the International Association of Assessing Officers' (IAAO) 76th Annual International Conference on Assessment Administration held in Orlando, Florida, August 30–September 1, 2010. The two articles are a condensation of a research report prepared as a requirement for the AAS designation.

Several trends and issues are expected to influence the appraised value of coal property for ad valorem tax purposes. Among these are fluctuations in the price of coal plus environmental regulations on surface mining and CO_2 emissions. The process of carbon capture and sequestration (CCS), which has the potential to dispose of CO_2 emissions from utility and industrial sources by injecting them deep underground, creates several issues of its own directly related to ad valorem taxation of coal interests.

Other taxes are levied on coal production as well and their application within the states studied is discussed. While local governments rely on the ad valorem tax, the severance tax is often employed at the state level. In addition, reclamation fees are levied for the purpose of remediating abandoned coal mines and abating acid mine drainage. Coal interests likewise are subject to the same taxes paid by other businesses in the states where they are located.

Finally, the issue of how well the ad valorem tax on coal property complies with the standards of a *good* tax is explored. The discussion shows that when compared to these standards, the tax on coal property does not equate closely. The reliance of local governments on property taxes in coal-producing states means these levies will continue. There is a need, however, for better assessment practices in most states and recognition of the impact that these levies have on the use of coal.

Fluctuation in Coal Production and Prices

Coal reserves, particularly higher quality reserves in West Virginia, Kentucky, and

Calvin A. Kent, Ph.D., *is Vice President for Business and Economic Research and Director of the Center for Business and Economic Research, Marshall University, Huntington, West Virginia. He is a member of West Virginia's Property Valuation and Training Procedures Commission and teaches assessment administration and tax policy as an international instructor for IAAO.*

other Appalachian states, are on the decline (Energy Information Administration 2010). Central Appalachian coal has commanded a higher price than coal from other regions because of its high BTU and low sulfur content. As a result of this premium price, the coal has been heavily mined with the thicker seams and better quality grades already extensively excavated (Energy Information Administration 2010, 79). The remaining coal is in thinner seams and in less accessible locations. As a result, coal production in Central Appalachia is predicted to decline significantly in the next 20 years (Childs and Hammond 2009).

After remaining steady for almost two decades, coal prices spiked in 2008–2009 almost doubling from previous levels (Energy Information Administration 2010, 80). Since the formula used in most states to value coal reserves is based on previous years' prices, this increase will lead to higher valuations in the short term. If coal prices do not remain as high in the future, the valuation of coal interests will decline.

Environmental Regulation

Cap and Trade

Over the years, many legislative measures have been proposed to reduce the level of greenhouse gas emissions (primarily CO_2). The *American Clean Energy and Security Act of 2009* (ACESA), commonly referred to as the Waxman–Markey bill or as the Cap and Trade bill, was passed by the U.S. House of Representatives on June 26, 2009. The cap and trade of greenhouse gas emissions (carbon dioxide and other gases measured in terms of their carbon dioxide equivalence) is the prime component of ACESA. The legislation also includes regulations regarding clean energy and energy efficiency (Holt and Whitney 2009). Under ACESA, the government would place a cap, or ceiling, on greenhouse gas emissions. Credits or allowances would be issued up to the limit of the cap. These credits would then be auctioned. Firms which had excess credits could "trade them" to firms that needed the credits to stay below their cap. Such a system already exists in 10 New England and Mid-Atlantic states (Regional Greenhouse Gas Initiative 2011).

Title I of the act contains clean energy provisions including the Combined Efficiency and Renewable Electricity Standard (CERES) that will require utilities to have 20 percent of the electricity they generate come from alternate energy sources or efficiency savings by 2020. Title I also promotes carbon capture and sequestration and establishes the Clean Energy Deployment Administration. Title II of ACESA promotes energy efficiency through building codes, lighting and appliance efficiency, transportation efficiency, and industrial energy efficiency.

Titles III and V provide for the reduction in greenhouse gas emissions through a cap-and-trade program on carbon dioxide (and carbon dioxide equivalent) emissions. The cap-and-trade program would begin in 2012. The amount of permitted emissions would be reduced gradually from 2005 levels starting with a 3 percent reduction in 2012 and ending in a cumulative 83 percent reduction by 2050. Title IV addresses industry competitiveness and distributional effects on low-income households. These issues are addressed through a variety of rebates, refunds, and tax credits.

The passage of ACESA or similar legislation would have a negative impact on coal production. It is estimated that the provisions of ACESA would reduce coal production in West Virginia by 29 percent by 2030 (Childs 2010). Such a reduction in the use of coal probably would result in lower property valuations for both active and reserve coal in all states which produce it.

Clean Water Act

Under the provisions of the *Clean Water Act* (1972, sections 401–404), three gov-

ernmental agencies—U.S. Department of the Army, U.S. Department of the Interior, and U.S. Environmental Protection Agency (EPA)—issued a memorandum of understanding that found:

> *[A] surface mining technique commonly referred to as "mountaintop mining" has become increasingly prevalent in the Appalachian region. Although its scale and efficiency has enabled the mining of once-inaccessible coal seams, this mining practice often stresses the natural environment and impacts the health and welfare of surrounding human communities.* (2009, 1)

The agencies agreed to take steps to implement an "Interagency Action Plan (IAP) designed to significantly reduce the harmful environmental consequences of Appalachian surface coal mining operations…" (U.S. Department of the Army, U.S. Department of the Interior, and U.S. Environmental Protection Agency 2009, 2).

Since the issuance of that memorandum of understanding, several actions have been taken. In 2010, the EPA issued *Detailed Guidance: Improving EPA Review of Appalachian Surface Coal Mining Operation under the* Clean Water Act*,* National Environmental Policy Act*, and the Environmental Justice Executive Order.* That memorandum stated:

> *It has been a high priority of this Administration…to reduce the substantial environmental and human health consequences of surface coal mining in Appalachia, and minimize further impairment of already compromised watersheds. …EPA has a legal responsibility to address the environmental consequences of Appalachian surface coal mining.* (EPA 2010, 3)

The EPA's *Guidance* contains stringent provisions regarding the quality of water entering streams through valley fills used in surface mining. The head of the EPA was quoted, "You are talking about no or very few valley fills that would meet the standards" (Kasey 2010, 3).

Under the *Clean Water Act* (1972), the U.S. Army Corps of Engineers (USACE) has the responsibility of granting permits for surface mines. In June 2010, USACE suspended issuance of surface mining permits under the Nationwide Permit 21 process (DOD [Department of Defense] 2010). As a result of the new EPA *Guidance*, surface mine permit requests now have to meet more stringent review requirements including longer periods of public comment. The USACE does contend that it will continue to issue permits under section 404 of the *Clean Water Act* if it determines that "it is not contrary to the public interest" (DOD 2010).

This action has brought the issuance of new surface mine permits to an almost complete halt in Appalachian states. The implications of the EPA *Guidance* are significant for property taxation of active coal and coal reserves. Forty percent of all West Virginia coal is surfaced mined (BBER [Bureau of Business and Economic Research] and CBER [Center for Business and Economic Research] 2010). If no new surface mine permits are issued or can be modified to meet the guidelines, then those coal reserves have lost their economic value. In turn, the loss of economic value will translate into lower taxable values for the coal reserves. Many coal seams which were classified as mineable will now have to be re-classified as unmineable. Valuations would then drop from $1,000 to $5 per acre.

Furthermore, in many locations, a symbiotic relationship exists between surface and underground mining. For example, both use the same loading facilities and prep plants. Because surface and underground mines share the same facilities, the cost of underground mining will rise if surface mining is curtailed. Therefore the value of coal reserves that would be extracted through underground mining is likely to decline if new surface mining is limited, along with a corresponding

drop in the taxable value (Burton, Hicks, and Kent 2002).

Carbon Capture and Sequestration

Faced with the strong prospect of a carbon-constrained future, coal-producing companies and states are seeking alternatives that will allow coal to continue as a major source of electric power and industrial uses in the United States. One of the most discussed alternatives is carbon capture and sequestration or CCS (Ansolabehere et al. 2007). This process consists "of separation of CO_2 from industrial and energy-related sources, transport to a storage location, and long-term isolation from the atmosphere" (Metz et al. 2005). Two researchers found, "Even in a carbon-constrained world, coal mining and coal power can stay in business, thanks to carbon capture and storage" (Socolow and Pacala 2006, 53).

Significant legal, technical, and economic issues must be resolved, however, if CCS is to be implemented at a cost which will make coal competitive with other fuels, including renewables (Kent and Truex 2010). Recognizing this reality, the West Virginia Legislature in 2009 enacted legislation noting the criticality of CCS to the state's economy and establishing a Carbon Dioxide Sequestration Working Group (CCS Group) to study the scientific, technical, legal, and regulatory issues pertaining to CCS (*West Virginia Code* §22-11A-6). The group released its preliminary report to the legislature in July 2010 (CSS Group 2010).

Property tax issues raised by CCS include:

- Who owns the underground pore space into which captured carbon will be sequestered?
- Who owns the injected CO_2?
- Is captured CO_2 a commodity similar to coal which could be subject to property taxation?
- Is the pore space into which the captured CO_2 is injected an object for property taxation?

Ownership of Pore Space

Pore space is defined as the "space between rock or sediment grains that can contain fluids" (Metz et al. 2005, 410). When injected into deep formations (2,500 feet or below), CO_2 compresses, becomes "supercritical," and then turns into a liquid. There are several types of pore spaces into which CO_2 can be injected. Of primary interest to coal-producing states are deep formations of sedimentary rocks including depleted oil and gas reservoirs, deep unmineable coal seams, and deep unused water-saturated saline reservoir rock (Metz et al. 2005, 199).

For CCS, "the major legal issue is who owns or controls the pore spaces used for the sequestration of CO_2" (Knee 2010, 24). This question is of concern to property tax officials because if CCS creates a taxable situation, then ownership must be determined. A related question is: once the CO_2 is injected, who owns it—the injector or the owner of the pore space into which it was injected? If CO_2 has value, such as use in coal-bed methane extraction or enhanced oil and natural gas recovery, will the same logic that makes coal reserves taxable property be applied to injected CO_2?

While there is significant precedent established regarding pore space ownership in the underground injection of natural gas for temporary storage and the use of CO_2 injection for enhanced oil recovery (EOR), this issue has only recently received legislative attention in the context of carbon sequestration (de Figueiredo and Fadil 2008). If the surface owner has not severed the mineral interests, then no ownership issue exists. But if the severed mineral rights have been granted to parties other than the surface owner, legal issues arise. The first issue is whether there has been a severance of the interests in pore space and what was covered by the severance.

The second issue concerns ownership of pore space after the mineral covered by the severance has been extracted.

In determining the ownership of pore space, some states follow the *English Rule* which provides that the owner of the mineral rights owns the pore space even after the mineral has been exhausted. Most states use the *American Rule* in which the surface owner retains the rights to the pore space unless they have been specifically granted in the severance along with the mineral rights. Once the mineral has been extracted, possession of the pore space returns to the surface owner (de Figueiredo et al. 2007).

The first state to explicitly address the issue of CO_2 injection in pore space was Wyoming which follows the American Rule (Fish 2009). Legislation passed in 2008 states that ownership of all pore space belongs to the surface owner unless the conveyance of that space has been specifically granted (HB 57; HB58; HB89). Judicial decisions nearly 60 years ago established the same principle, although in the context of natural gas storage, in two Appalachian states—West Virginia in *Tate v. United Fuel Gas Co. et al.* (1952) and Kentucky in *Central Kentucky Natural Gas v. Smallwood* (1952).

Since CO_2 becomes a liquid when injected into very deep saline or other formations, laws regarding water rights may be more applicable in some states than those covering mineral rights. Fortunately there is no substantive difference between the laws relating to severing and obtaining mineral rights and water rights (de Figueiredo et al. 2007). But state regulations concerning water rights do vary which will create confusion should stored CO_2 migrate across state boundaries.

The World Resources Institute (WRI) conducted an extensive investigation of storage concerns (Forbes et al. 2008). Finding there is not "full clarity" on the issue of subsurface ownership rights, the organization encouraged all states to work toward clarification. WRI offered as an alternative to the "private ownership" model in which the owner has all the property rights, a "public interest" model in which the government could exercise power over property rights much like in the case of air space where flight patterns are established by the Federal Aviation Administration (FAA) for reasons of public safety. A report prepared for the Interstate Oil and Gas Compact Commission (IOGCC) recommended that states should have the legal authority to define ownership of pore space and to require "compulsory joining of all participating interests in the reservoir" as in the rules suggested by IOGCC (Anderson et al. 2007, 26). In the European Union, national governments own the pore space (Forbes et al. 2008, 83).

In recent years, the following legislative actions were taken in various states regarding ownership of pore space:

- Louisiana in 2009 passed legislation giving the state the right to expropriate storage facilities owned by certain corporations (La. Rev. Stat. Ann. 30:1101–1111).
- Montana in 2009 passed a bill which provides that the surface owner also owns the pore space unless specifically indicated otherwise (Montana SB 498).
- North Dakota, in two bills passed in 2009, established the right of the surface owner to the pore space but also required that pore space owners agree to "amalgamation" of pore space if necessary to allow sequestration (North Dakota SB 2139; SB 2095).
- Oklahoma granted ownership of pore space to surface owners in 2009 but gave the state corporation commission power to condemn pore space if needed

to site a storage facility (Oklahoma SB 610).

- Wyoming passed three bills in 2008 which vested ownership of pore space with surface owners but did allow for "unitization" of pore space if necessary (Wyoming HB 57; HB 58; HB 89).
- Pennsylvania introduced legislation in 2010 which would declare deep pore space as owned by the state (Pennsylvania HB 80). The legislation also would establish a "carbon dioxide sequestration network" on state-owned land and give the Department of Conservation and Natural Resources regulatory authority over CCS storage.
- Kentucky had pore space legislation introduced in 2009 but it did not pass. The legislation would give the state all rights, title, and interest in sequestered carbon dioxide plus any economic benefits, including carbon credits that might result from the sequestration (Kentucky 09RS HB 351).

This issue was settled in West Virginia with the passage in 2009 of HB 2860 which vested pore space ownership with the surface owner unless specifically transferred in the deed severing the subsurface interests. The Legal Subcommittee of the CCS Group has recommended though that "legislation should declare that pore space…within the boundaries of the state and 12,500 feet beneath the surface or between 2,500 feet and 12,000 feet beneath the surface that are not under an existing or reasonably foreseeable use by the respective property owner are part of the public domain…" (CSS Group 2010, 89).

Ownership of CO_2

The legal issue of who owns the CO_2 after injection into the pore space appears to be "settled law." If the precedents regarding natural gas hold, then injected CO_2 remains the property of the one who owned it at injection (de Figueiredo et al. 2007). All the state legislation discussed in the previous section follows this precedent.

Captured CO_2 as a Taxable Commodity

A further issue concerns the classification of CO_2 either as a commodity or as a pollutant (Anderson et al. 2007; Parfomak and Folger 2007). When CO_2 is used for enhanced oil recovery (EOR), it has a commercial value and states containing EOR operations consider it a commodity. Great potential exists for the use of CO_2 in enhanced coal bed methane recovery (ECBM) in coal-producing states. Should CO_2 be considered industrial pollution under the U.S. Supreme Court's decision in *Massachusetts v. EPA* (2007), it would be subject to EPA regulation and thus would have little commercial value. If captured CO_2 is a commodity with economic value, then it may be subject to property taxation as a "reserve" as well as severance taxation. To date, no state has taken this action.

Property Taxation of Pore Space

An issue which has not been considered in the literature either on CCS or property taxation relates to the pore space itself. For CO_2 to be stored, a pore space must be obtained. This acquisition necessarily involves either leasing the space or buying it from the owner unless the pore space has been declared to be public domain. This transaction provides a justification and a nexus for property taxation of the interest in the pore space. The state legislation previously mentioned all provides that if pore space is the subject of a taking, then compensation must be paid to the owner. These provisions ensure that there is no violation of the takings clause in the Fifth and Fourteenth Amendments to the U.S. Constitution (Noe 2010). The takings provisions raise the property tax issue

of whether the pore space itself should carry a taxable burden. If so, should taxation occur only if the pore space is actually being used for storage?

Alternate Methods of Coal Taxation

Coal interests are subject to a variety of other forms of taxation in addition to ad valorem taxation. A comparative analysis of these taxes follows. This review shows a lack of uniformity among the states regarding which taxes are applied to coal, how the tax bases are determined, what the rates are, and which level of government administers the taxes (Kent and Eastham 2010). A summary table of taxes, other than property, levied on coal in each of the 13 studied states is provided in appendix A.

The variations in approaches to taxation of the coal industry in the major coal-producing states can be explained by several reasons. One is the importance of coal in the state's economy. The more important coal is as an industry in determining the state's gross domestic product (GDP), the higher the rates and the more uniform the taxes.

Regrettably, coal mining as an industry is not reported separately from other forms of hard rock mining in the federal government statistics. Based on the North American Industry Classification System (NAICS) category 2121, Mining (Except Oil and Gas), coal and other metal and nonmetallic minerals represent nearly 16.5 percent of GDP for the total NAICS mining classification. Table 1 ranks the 13 major coal-producing states by 2008 GDP for this NAICS classification.

Unfortunately, including coal mining with extraction of metals and nonmetals in this classification blurs the data. But the three states with the highest coal production, Wyoming, Kentucky, and West Virginia, are also the most economically dependent on coal and those with the most extensive taxes on coal.

Geographic location of coal-mining areas appears important as well. In states where coal is produced only in a limited number of locations, local control of taxation is more likely (Kent and Eastham 2010). Variations in the types of taxes reflect the state's philosophy of taxation

Table 1. Mining (except oil and gas) contribution to state GDP (2008)

Mining Industry GDP Rank*	State	Mining Industry Contribution to State GDP	Mining as Percentage of Total State GDP**
1	West Virginia	$5,310,000,000	10.885%
3	Kentucky	$3,812,000,000	7.814%
4	Wyoming	$3,582,000,000	7.343%
6	Pennsylvania	$3,237,000,000	6.635%
7	Texas	$1,946,000,000	3.989%
9	Colorado	$1,867,000,000	3.827%
10	Virginia	$1,850,000,000	3.792%
12	Illinois	$1,485,000,000	3.044%
16	Montana	$1,047,000,000	2.146%
18	Indiana	$964,000,000	1.976%
19	Ohio	$940,000,000	1.927%
31	North Dakota	$246,000,000	0.504%
32	Maryland	$244,000,000	0.500%

Source: U.S. Bureau for Economic Analysis (2010)

** Indicates where mining (less oil and gas) ranks among all industries contributing to state gross domestic product (GDP)*

*** Indicates what percentage of the state's GDP was generated by the mineral industry*

as some states place more emphasis on certain taxes than on others. Lack of uniformity raises legal questions as well as economic issues which are beyond the scope of this study.

Coal mining and coal-related businesses also pay taxes which are common to all businesses operating in each state. These include personal income taxes, sales and use taxes, workers compensation taxes, unemployment compensation taxes, fuel taxes, and road fees. These are not covered in this article. In some states, additional permit fees are required for trucks that haul coal to compensate for road damage and extra construction costs.

Severance Taxes

Once in production, coal is usually subject to a severance (or production) tax. A severance tax is a tax on the privilege of extracting (or severing) a nonrenewable natural resource from the ground. The amount of severance tax levied is based on various criteria in each state. Only Illinois, Pennsylvania, and Texas do not impose a state severance tax on coal. In Virginia, severance taxes may be imposed at the local level only.

The economic theory which provides the justification for a severance tax is stated by Brunori (2005):

> *Severance taxes are imposed both for the substantial revenue they raise…and to reimburse the state for the loss of its natural resources. Many natural resources, such as coal, are depletable; once extracted, they cannot be replaced. Severance taxes are a way to compensate the state for that permanent loss. For that reason, severance tax revenue is often placed in a trust or other long-term fund designed to produce revenue when the natural resources are no longer available.* (p. 105–106)

Richardson (2005) carries the idea further:

> *The long-term depletion of the energy reserves can be accommodated for current and future citizens by a permanent trust fund that converts the depletable…coal resource into a nondepletable financial asset. A permanent trust fund preserves the use of the natural wealth of a state for future generations.* (p. 359)

The concept of placing the severance tax revenues in a separate fund and using the income from the fund to cover lost revenues as the resource is depleted has not been followed in the states considered in this study.

Corporate Taxes

Every state in this study except Wyoming imposes a tax on the income earned by incorporated companies including those involved in the production and sale of coal. Ohio and Texas do not use the traditional corporation net income base (Bjur et al. 2008), but the other states more or less follow the federal tax base with modifications. The corporation income tax rate varies from a low of 4.63 percent in Colorado to 9.99 percent in Pennsylvania.

There is considerable and long-continuing debate concerning the propriety of taxing corporation income and its impact at either the state or federal level. (Brunori 2005; McLure 1979; Pechman 1983; Tax Institute 1947) This debate is not continued in this report. Nonetheless, one justification of the use of the corporate income tax at the state level is pertinent to the discussion of property taxation.

> *The state corporate income tax can be justified on a number of grounds. One widely noted rational is that it compensates for deficiencies in the property tax. …The property tax does not take into account that businesses require varying degrees of property inputs to produce the same level of profit. Consequently, capital-intensive operations are taxed more heavily by the property tax than are labor-intensive companies.* (Brunori 2005, 85)

The argument justifying corporate income taxes is strengthened when states repeal the taxes on intangible personal property such as stocks, bonds, and deposits. But the argument for imposing corporate taxes is weakened particularly in the case of coal production because it is a capital-intensive industry with coal reserves and personal property frequently the subject of ad valorem taxation. Furthermore, owners of active coal mines and coal reserves often organize as pass-through entities such as limited liability corporations to avoid corporate taxation.

Reclamation Fees

Twelve of the states studied in this report impose a reclamation fee to cover the costs of reclaiming forfeited mining sites. The funds are used to restore the land after surface mining and to correct the effects of acid mine drainage which can result from underground mining methods. In seven states, the reclamation fee is a single fee that covers both surface and underground mining. In four other states, a different fee is charged depending on the mining method. These state-imposed reclamation fees are in addition to the federal fees levied on coal production through the *Surface Mining Control and Reclamation Act of 1977* (SMCRA).

SMCRA is federal regulation which sets the minimum reclamation fee paid by coal-mining operations. The funds collected from this fee are used to reclaim abandoned mine lands. The fee imposed by this act currently is set at $0.315 per ton of coal which is produced by surface mining methods and $0.135 per ton or 10 percent of the coal value, whichever is less, of coal produced by underground mining methods (*Surface Mining Control and Reclamation Act* amendments. 2006, section 202(a)(1)). Additionally, a reclamation fee of $0.09 per ton or two percent of the coal value, whichever is less, is levied on the production of lignite coal.

West Virginia imposes a reclamation tax of $0.144 per ton of coal produced, a permit fee of $1,000, and a bond requirement of between $1,000 and $5,000 per acre with a $10,000 minimum. A minimum bond of $10,000 is required in six other states examined. Permit fees range from $125 in Illinois to $5,000 in Texas.

This discussion demonstrates that property taxes are not the only levies placed on coal production in the major coal-producing states. Severance taxes, corporate income taxes, and reclamation fees are major sources of income to the states which use them. The justification for using severance taxes is weakened since, in those states that apply the tax, the monies are used to support the general fund rather than placed in a trust to provide income when coal is exhausted. Contending that corporate taxes are justified to "fill the gaps" in property taxation is also questionable for coal production because it is a capital-intensive industry and coal companies pay significant property taxes on active coal, coal reserves, and machinery and equipment.

Reclamation fees could be viewed as benefit taxes, but in reality they are taxes on current production to pay for social costs created by previous operators. Coal companies are now required to remediate their sites under various federal and state legislation. The reclamation fees charged are used primarily for clean-up of the legacy sites abandoned prior to SMCRA.

Evaluation of Ad Valorem Taxation of Coal Interests

Two observations on property taxation are in order. Based on the research, the property tax, despite its critics, will remain as the mainstay of local finance (Bahl, Martinez-Vazquez, and Youngman 2010; Fisher 1996; Netzer 1966). As Kenyon (2010) comments, "The argument, in a nutshell, is this: if you like local government, you had better appreciate the property tax"

(p. 297). On the other hand, as Sheffrin (2010) notes, "The…fact is that the tax-paying public hates the property tax" (p. 241). The latter observation may be an overstatement, but it was supported by a recent survey which discovered that 55 percent of the respondents saw the local property tax as either "unfair" or "not at all fair" (Moon 2009, 13).

Although there has been extensive research on many aspects of the property tax, no published research has focused on the economics of property taxation of coal interests. This section addresses that deficiency by putting mineral interests in the framework of the overall economic analysis of the property tax.

Mineral interests are immobile. Like land, minerals are not subject to "voting with their feet" as the thesis by Tiebout (1956) suggests. Since the value of minerals is determined by the discovery of uses for those minerals and the subsequent supply and demand of those minerals, they are fit objects for taxation according to the single tax theory (Brown 1926). There is, nevertheless, a fundamental difference between the two. While land cannot be destroyed, minerals (when extracted) are.

In 1776, Adam Smith set forth his four axioms for a *good tax*:

- The subjects of every state ought to contribute towards the support of the government, as nearly as possible, in proportion to their respective abilities.
- The tax which each individual is bound to pay out is to be certain and not arbitrary.
- Every tax ought to be levied at the time, or in the manner in which it is most likely to be convenient for the contributor to pay.
- Every tax ought to be so contrived as both to take out and to keep out of the pockets of the people as little as possible, over and above what it brings into the public treasury of the state. (Heilbroner 1986, 313–314)

The International Association of Assessing Officers has simplified Smith's canons: "…a tax must meet certain broadly agreed-upon criteria that tend to define a good tax system. Notions of *fairness, equity,* and *uniformity* predominate" (Almy, Dornfest, and Kenyon 2008, 28). IAAO has further refined the criteria as: fairness and equity, neutrality, uniformity, buoyancy, practicality and cost-effectiveness, and public acceptance plus openness and transparency. How does the ad valorem tax on coal interests measure against these standards?

Fairness and Equity

IAAO states, "The two basic principles of an equitable tax system are the *benefits principle* and the *ability-to-pay principle* (Almy, Dornfest, and Kenyon 2008, 28). "The benefits principle suggests that a tax is considered equitable when it pays for services that consumers desire" (p. 29). This view sees the property tax as a user fee paid by those who benefit from the services they receive as a result of paying the tax. It is difficult to justify property taxation of coal interests on these grounds since there is a very loose connection, if any, between the taxes on coal interests and the benefits received by those in the industry. The ad valorem tax on coal interests can be captured in Netzer's words, which he applied to the property tax in general: "…a tax based on the value of taxable property does not closely resemble, in its distribution of payments among individual users of the service, a price-like user charge, even for local government services to a property" (Netzer 1966, 71).

Does the property tax on coal and coal reserves fare better under the ability-to-pay concept?

> *Taxation based on the ability-to-pay principle rests on two beliefs: horizontal equity and vertical equity. Horizontal equity calls for equal treatment of tax-*

> *payers who are the same in all relevant economic aspects… . Vertical equity essentially means that taxpayers who are in unequal economic positions should be treated differently. In practice, this means that people with low incomes should pay less in taxes that those with high incomes.* (Almy, Dornfest, and Kenyon 2008 29)

Academics have become increasingly skeptical of the value of both concepts.

> *Economists have…been critical of horizontal equity as an independent mechanism for judging tax fairness. Complex judgments need to be made to determine if two parties are, in fact, situated equally. Would the recipient of $100,000 in workers' compensation after an accident be similarly situated to a non-injured worker earning $100,000? … Clearly, judgments need to be made independently to determine if parties are similarly situated. If that is the case, why have a separate theory of horizontal equity?* (Sheffrin 2010, 244)

Vertical equity depends on an appropriate determination of horizontal equity. Before it can be determined which taxpayers are to be treated unequally, it is necessary to determine which taxpayers are to be treated equally. There is continuing debate about the appropriate measure of ability-to-pay. Should it be measured by income, wealth, or consumption? If income is used, should it be current income or lifetime income?

Musgrave (2005) refers to the concept of ability-to-pay as "appealing," but then notes,

> *To begin with, an index has to be chosen to measure taxable capacity or ability to pay. Two centuries ago, property and wealth measured ability to pay; income has since replaced property and wealth as the best indicator. Recently support has increased for using consumption as a measure.* (p. 1)

Even so, the terms *progressive* (those with the greatest incomes pay proportionately more), *regressive* (those with lower incomes pay proportionately more), and *proportional* (all income groups pay the same proportion) are still in use. Suffice it to say that in the *old* view, property taxes, particularly on homes, were seen as regressive. This thinking has largely been rejected for the *new* view, which sees the property tax as either proportional or progressive when the tax is capitalized into the price of the property (Sheffrin 2010).

Whether the ad valorem tax on coal interests is consistent with the ability-to-pay doctrine depends not only on the definition of the ability to pay but also on the determination of the tax's economic incidence as opposed to its statutory burden. The statutory burden falls on the one legally responsible for paying the tax while the economic incidence falls on the one whose income is reduced because of the tax. When statutory burden and economic incidence differ, the tax has been "shifted" (Pechman and Okner 1974).

The property tax on coal reserves probably has the same economic incidence as the tax on land. The owners will bear most of the cost in the form of lower royalty rates or lease payments (Aaron 1975, 18–55; Netzer 1966, 31–37; Pechman and Okner 1974, 32). This means that the tax is capitalized becoming a tax on investment. Zodrow (2005) notes, "…although capital still tends to bear the overall burden of a tax on capital,… the outflow of capital caused by the tax lowers returns to immobile factors in the jurisdiction…" (p. 188). Although no empirical studies have been completed on the ownership of coal reserves, the assumption in the popular press is that coal reserves are predominantly owned by wealthy corporations and individuals (Goodell 2006). If this is so, then the ad valorem tax on coal and coal reserves is progressive to current income.

Neutrality

According to IAAO,

> *Neutrality means that a tax does not distort economic decisions. … Neutrality fosters economic efficiency. An efficient tax encourages an optimal mix of the factors of production (labor, capital, management, and land), which according to economic theory increases general welfare.* (Almy, Dornfest, and Kenyon 2008, 29)

It is difficult to square the property tax on coal interests with this standard. As noted, if the ad valorem tax on coal properties is capitalized, with the resulting devaluation of returns, investment capital will flow to other alternatives which are not taxed or lesser taxed. As with the tax on land, the tax on coal does not reduce the amount available, but it does lower returns which will lead to less investment (Netzer 1996, 71). This effect will be evidenced in the West Virginia formula for reserve coal valuation by moving high-cost deposits into the unmineable classification. Since returns on investment in coal are lower in the states with higher taxes, including property taxes, coal production will be favored in lower tax jurisdictions other things being equal.

Uniformity

According to the uniformity standard, "assessment ratios or effective tax rates should not vary significantly with property value" (Almy, Dornfest, and Kenyon 2008, 30). The West Virginia ad valorem tax on coal interests may not meet this criterion in two ways. First, coal seams that are 30 inches or less are exempt from taxation. Critics claim these seams can often be worked by surface mining and should be subject to taxation (McIlmoil et al. 2010).

Second, coal reserves in West Virginia are now assigned to one of five categories for tax purposes: active, reserve, unmineable, mined out, or barren. In addition, a coal reserve's value is based on the time of expected extraction: 20, 40, or 80 years (Kent 2010). Reserves that have not been precisely mapped will not be classified as 20-year reserves. Therefore, these parcels have an advantage over those parcels that have been mapped.

Still, the West Virginia approach makes a significant effort toward uniformity by considering all the factors which determine a particular coal seam's value such as thickness, sulfur content, and BTU content. Other states with appraisal formulas that do not consider these factors and treat all coal reserves as the same probably violate the uniformity standard.

In a number of states, ad valorem taxation of coal interests has been left in local hands. Those local officials have either turned the process over to consultants or not changed valuations in years. During interviews by the author (Kent 2010), some county assessors had little idea how the consultants determined the appraised values or how the old values were originally determined. Since different local governments can use dramatically different methods of assessing coal seams, even in the same state, coal seams that cross county boundaries can raise issues of uniformity which are fit subjects for litigation.

Buoyancy

As used by IAAO, buoyancy "refers to the ability of tax yields to rise (and fall) with the economy and with revenue needs" (Almy, Dornfest, and Kenyon 2008, 31). Until recently, the stability of coal prices has made its ad valorem taxation a stable source of revenue for local governments in West Virginia and in other states. "A tax on capital value, or current market value, of immovable property can be an important part of a balanced revenue system. …taxes on immovable property are considered to be good local taxes because the immovability of the tax base makes clear which government is entitled to the tax revenue" (Almy, Dornfest, and Kenyon 2008, 31).

The recent variability in coal prices has introduced a degree of instability because average coal prices are used in states employing the income approach to valuation. Coal prices are closely linked to the business cycle. The recent decline in prices can be attributed directly to the recession as less electricity is being generated (Energy Information Administration 2010). As the quality of the remaining coal seams in West Virginia and other Appalachian states declines and/or as restrictions on the use of coal for environmental reasons continue, ad valorem coal taxation is likely to become less stable and less reliable in the future.

Practicality and Cost-effectiveness

The criterion of practicality and cost-effectiveness relates to how simple the tax is to administer (Almy, Dornfest, and Kenyon 2008, 32). Property tax administration has been criticized continuously in the United States for more than 100 years. Seligman (1895) found the property tax incapable of administration. "Practically, the general property tax as actually administered is beyond all doubt one of the worst taxes know in the civilized world" (p. 11). Recently, Bahl, Martinez-Vazquez, and Youngman (2010) wrote, "…the heart of the problem with property taxes lies in the assessment of taxable values" (p. 5).

The process of valuing coal reserves used in West Virginia, Kentucky, Colorado, and other states using similar approaches is complex. To ensure a high degree of uniformity, appraisal was moved to the state level. Administering the tax is also expensive. In West Virginia, the Department of Taxation employs a private contractor to oversee the process. The West Virginia Geological Survey does the geological mapping on a state contract. The state employs four individuals to do the parcel digitization work for the geographic information system (GIS). The cost of the administrative process in other states and local governments using less complex approaches may be lower, but the determination of value may be impaired.

Public Acceptance, Openness, and Transparency

IAAO, along with other authorities, claims that public satisfaction with the property tax increases when the public sees a direct benefit from the services funded by the tax, the tax system is not biased either for or against certain groups of taxpayers, and the administration is open with a method for appeal (Almy, Dornfest, and Kenyon 2008, 33; Fisher 1996; Netzer 1966). As just noted, there is an overall dissatisfaction with the property tax among the general public. No studies have been completed on the level of satisfaction with the ad valorem tax on mineral interests.

From the previous discussion of coal valuation approaches, it should be clear that the canon of simplicity is not met by the ad valorem tax on coal interests in West Virginia or other states which use a similar approach such as Colorado and Kentucky. A definite tradeoff must be made between simplicity and accuracy. The West Virginia process is open and, to the extent it can be understood, transparent. Public acceptance of all taxes on coal interests is high because the public perceives that the properties are owned by wealthy and/or out-of-state interests and thus such taxation is justified (Goodell 2006). In addition, the controversy over the environmental effects of coal mining has led advocates to seek even higher property and severance taxes.

A frequently quoted observation about the condition of the property tax in most states is that it "resembles a structure designed by a mad architect, erected on a shaky foundation by an incompetent builder and made worse by the well intentioned repair work of hordes of amateur tinkerers" (Stocker 1991). This description does not appear to apply to ad valorem taxation of mineral interests in West Virginia, but as indicated earlier, it

may well be valid in some other states. The methods of coal taxation reflect the political process which, according to Fisher (1996), has dominated determination of real property taxes in general. Politics rather than economic theory or sound administrative principles have shaped the ad valorem tax on coal interests.

Conclusion

The future of property taxation of coal interests will be determined by two factors: the future of coal as a fuel for electric generation and industrial use and the future of federalism. Whether coal will continue as an important fuel source in the generation of electricity is not clear. Environmental issues with surface mining and the push for renewable fuels such as solar, wind, water, and biomass plus the reemergence of nuclear create the uncertainty. The passage of federal cap-and-trade legislation for CO_2 would significantly reduce the value of both active coal and reserve coal as the use of coal diminishes. In addition, whether entities owning coal reserves that require federal permits for surface mining under the *Clean Water Act* will be able to obtain them leaves in limbo whether these reserves are mineable or not. The uncertainty about coal's future creates an environment in which less investment in coal reserve development is likely. If that occurs, the property tax on active coal and coal reserves will become a less certain source of revenue for local governments in the future.

The prediction of declining coal prices in the future is based on the expanded use of alternate fuels, increased energy efficiency, and the shift in production from high-cost Appalachian coal to lower-cost western and interior sources (Energy Information Administration 2010). The result will likely be lower property valuations on both active and reserve coal in states where coal is valued using the income approach.

Carbon capture and sequestration if implemented would allow coal to continue as a fuel in electric generation and industrial use. However, the process would raise the cost of using coal, reducing its market price and appraised value. CCS also creates issues for ad valorem taxation of pore space and the captured carbon dioxide which have not yet been fully addressed.

The importance of coal reserves depends on how large a part they are of the real property base and their geographical distribution within the state. Where coal is a significant part of the total property tax base, the assessment process is more centralized at the state level and more sophisticated methods of valuation are employed. Also, in states in which coal reserves are located in only a limited number of counties, appraisal has remained a local function which is either performed by consultants or done poorly.

The past decades have seen a shift in fiscal federalism as power has become more centralized either at the state or federal level.

> *Federalism and the general property tax are, arguably, American innovations, but often the connection between the two is overlooked. …one of the major political issues of the day has to do with the scope and scale of governmental organizations. Federalism was invented as a way of allowing state governments to retain elements of sovereignty while delegating certain functions…to a central government. States in turn delegated much of the day-to-day operation of government to counties or towns.* (Fisher 1996, 206–214)

The use of the property tax as a source of revenue at the state level has virtually disappeared although state centralization of the assessment process has increased (Pagano and Jacob 2010). Restrictions on property tax rates and exemptions of certain property or favorable classification systems have caused local governments to employ sales and income taxes or to impose

fees. This trend has reduced the overall importance of property taxes for local governments which may be reflected in the lack of concern for better appraisals of coal interests in most states (Pagano and Jacob 2010).

Author's Note

The full research report on which this article is based, "Ad Valorem Taxation of Mineral Interests: Coal in West Virginia and Other Coal-Producing States," can be obtained by contacting the IAAO library.

References

Aaron, H.J. 1975. *Who pays the property tax: A new view.* Washington, DC: Brookings Institution.

Almy, R., A. Dornfest, and D. Kenyon. 2008. *Fundamentals of tax policy.* Kansas City, MO: International Association of Assessing Officers.

American Clean Energy and Security Act. 2009. H.R. 2454. Introduced May 15.

Anderson, A.S. 2007. *Storage of carbon dioxide in geologic structures: A legal and regulatory guide for states and provinces.* Task Force on Carbon Capture and Geologic Storage, Interstate Oil and Gas Compact Commission.

Ansolabehere, S., et al. 2007. *The future of coal: An interdisciplinary MIT study.* Cambridge: Massachusetts Institute of Technology.

Bahl, R., J. Martinez-Vazquez, and J. Youngman, eds. 2010. *Challenging the conventional wisdom on the property tax.* Cambridge, MA: Lincoln Institute of Land Policy.

BBER and CBER. 2010. *The West Virginia coal economy 2008.* Bureau of Business and Economic Research, West Virginia University, and Center for Business and Economic Research, Marshall University.

Bjur, T., et al., eds. 2009. *State tax handbook.* Chicago: CCH.

Brown, H. 1926. *The taxation of unearned incomes.* Columbia, MO: Lucas Brothers.

Brunori, D. 2005. *State tax policy: A political perspective.* Washington, DC: Urban Institute Press.

Burton, M.L., M.J. Hicks, and C.A. Kent. 2002. *The fiscal implications of judicially imposed surface mining in West Virginia.* Center for Business and Economic Research, Marshall University.

Central Kentucky Natural Gas v. Smallwood, 252 S.W.2d 866 (1952).

Childs, R.A. 2010. *Economic impact of the American Clean Energy and Security Act of 2009 on the West Virginia economy 2009–2030.* Bureau of Business and Economic Research, College of Business and Economics, West Virginia University.

Childs, R.A., and G.W. Hammond. 2009. Consensus coal production forecast for West Virginia: 2009–2030. Bureau of Business and Economic Research, College of Business and Economics, West Virginia University.

Clean Water Act. 1972. U.S. Code 33, sections 1251 et seq.

CSS Group. 2010. *Preliminary report.* West Virginia Department of Environmental Protection and West Virginia Geological and Economic Survey.

de Figueiredo, M.A., and A. Fadil. 2008. Emerging property and liability issues for carbon sequestration. *Bloomberg Sustainable Energy Law Report.* September.

de Figueiredo, M.A., H.J. Herzog, P.L. Joskow, K.A. Oye, and D.M. Reiner. 2007. *Regulating carbon dioxide capture and storage,* WP-07-003. Cambridge, MA: Center for Energy and Environmental Policy Research, Massachusetts Institute of Technology.

DOD. 2010. *Federal Register* 75, No. 117. U.S. Army Corps of Engineers, Department of Defense.

Energy Information Administration (EIA). 2010. *Annual energy outlook 2010: With projections to 2035*. Washington, DC: Energy Information Administration.

EPA. 2010. Memorandum—Detailed guidance: Improving EPA review of Appalachian surface coal mining operations under the *Clean Water Act*, *National Environmental Policy Act*, and the Environmental Justice Executive Order. April 1. Washington, DC.

Fish, J.R. 2009. Geologic carbon sequestration: Property rights. Paper presented at the 8th Annual Conference on Carbon Capture and Sequestration hosted by National Energy Technology Laboratory, U.S. Department of Energy, Pittsburgh, PA, May 4–7.

Fisher, G. 1996. *The worst tax? A history of the property tax in America*. Lawrence: Kansas University Press.

Forbes, S.M., P. Verma, T.E. Curry, S.J. Friedmann, and S.M. Wade. 2008. *CCS guidelines for carbon dioxide capture, transport, and storage*. Washington, DC: World Resources Institute.

Goodell, J. 2006. *Big coal with a new afterword: The dirty secret behind America's energy future*. New York: Houghton Mifflin Company.

Heilbroner, R.L., ed. 1986. *The essential Adam Smith*. New York: W.W. Norton and Company.

Holt, M., and G. Whitney. 2009. Greenhouse gas legislation: Summary and analysis of H.R. 2454 as reported by the House Committee on Energy and Commerce. Congressional Research Service.

Kasey, P. 2010. EPA salinity standard could significantly reduce mining. *The State Journal*. Charleston, WV. April 12.

Kent, C. 2010. Ad valorem taxation of coal property in West Virginia and other states—Part 1. *Journal of Property Tax Assessment & Administration* 7 (3): 41–60.

Kent, C., and E. Eastham. 2010. Taxation of coal: A comparative analysis. Center for Business and Economic Research, Marshall University.

Kent, C., and E. Truex. 2010. Carbon capture and storage: Issues and policies in Appalachia. Paper presented at Southern Regional Science Association, Washington, DC, March 24.

Kenyon, D. 2010. Commentary. In *Challenging the conventional wisdom on the property tax*, ed. R. Bahl, J. Martinez-Vazquez, and J. Youngman, 293–298. Cambridge, MA: Lincoln Institute of Land Policy.

Knee, L. 2010. Carbon capture and sequestration: The future for coal? *Views and Visions—Coal: Powering Our Future* September:24–25.

Massachusetts v. EPA, 549 U.S. 497 (2007).

McIlmoil, R., et al. 2010. *Coal and renewables in Central Appalachia: The impact of coal on the West Virginia state budget*. Charleston: West Virginia Center on Budget and Policy.

McLure, C.E., Jr. 1979. *Must corporate income be taxed twice?* Washington, DC: Brookings Institution.

Metz, B., O. Davidson, H. de Coninck, M. Loos, and L. Meyer, eds. 2005. Working Group III of the Intergovernmental Panel on Climate Change. *IPCC special report on carbon dioxide capture and storage*. New York: Cambridge University Press.

Moon, M. 2009. *How do Americans feel about taxes today? Special Report no. 166*. Tax Foundation.

Musgrave, R.A. 2005. Ability to pay. In *The encyclopedia of taxation and tax policy*, ed. J.J. Cordes, R.D. Ebel, and J.G. Gravelle, 1. Washington, DC: Urban Institute Press.

Netzer, D. 1966. *Economics of the property tax: Studies of government finance*. Washington, DC: Brookings Institute.

Noe, S.D. 2010. Legal aspects of CO_2 sequestration. *Views and Visions—Coal: Powering Our Future* September:54–55.

Pagano, M., and B. Jacob. 2010. Framing the political economy of property taxation and land taxation. In *Challenging the conventional wisdom on the property tax*, ed. R. Bahl, J. Martinez-Vazquez, and J. Youngman, 269–292. Cambridge, MA: Lincoln Institute of Land Policy.

Parfomak, P., and P. Folger. 2007. *Carbon dioxide (CO_2) pipelines for carbon sequestration: Emerging policy issues.* Washington, DC: Congressional Research Service.

Pechman, J.A. 1983. *Federal tax policy.* Washington, DC: Brookings Institution.

Pechman, J.A., and B.A. Okner. 1974. *Who bears the tax burden?* Washington, DC: Brookings Institution.

Regional Greenhouse Gas Initiative. 2011. Program design. http://www.rggi.org/design (accessed January 10, 2011).

Richardson, J.A. 2005. Severance tax, state. In *The encyclopedia of taxation and tax policy*, ed. J.J. Cordes, R.D. Ebel, and J.G. Gravelle, 359. Washington, DC: Urban Institute Press.

Seligman, E.R.A. 1895. *Essays in taxation.* New York: Athena University Press.

Sheffrin, S. 2010. Fairness and market value: Property taxation. In *Challenging the conventional wisdom on the property tax*, ed. R. Bahl, J. Martinez-Vazquez, and J. Youngman, 241–262. Cambridge, MA: Lincoln Institute of Land Policy.

Socolow, R.H., and S.W. Pacala. 2006. A plan to keep carbon in check. *Scientific American* September:50–57.

Stocker, F.D., ed. 1991. *Proposition 13: A ten year retrospective.* Cambridge, MA: Lincoln Institute of Land Policy.

Surface Mining Control and Reclamation Act (SMCRA). 1977. U.S. Code 30, sections 1201 et seq.

Surface Mining Control and Reclamation Act amendments. 2006. Public Law 109-432.

Tate v. United Fuel Gas Co. et al., 71 S.E.2d 65 (1952).

Tax Institute. 1947. *How should corporations be taxed?* New York: Tax Institute, Incorporated.

Tiebout, C. 1956. A pure theory of local expenditures. *Journal of Political Economy* 64 (5): 416–424.

U.S. Bureau for Economic Analysis. 2010. Gross domestic product (GDP) by state and metropolitan area. http://www.bea.gov/regional/gsp/ (accessed November 18, 2010).

U.S. Department of the Army, U.S. Department of the Interior, and U.S. Environmental Protection Agency. 2009. Memorandum of understanding: Implementing the interagency action plan on Appalachian surface coal mining. June 11. Washington, DC.

Zodrow, G.R. 2005. Incidence of taxes. In *The encyclopedia of taxation and tax policy,* ed. J.J. Cordes, R.D. Ebel, and J.G. Gravelle, 188. Washington, DC: Urban Institute Press.

Appendix A. Taxation Methods in Selected Coal-producing States

Severance Tax	Corporation Income Tax	Reclamation Tax or Fee
Colorado		
$0.54 per ton after 300,000 tons produced each quarter	4.63% of taxable income	Fee: $25 + $10 per acre Bond: $10,000 minimum
Illinois		
No tax imposed	4.8% of taxable income	Surface permit fee: $125 per acre Other area permit fee: $5 per acre
Indiana		
Surface: $0.055 per ton Underground: $0.03 per ton	8.5% of taxable income	Bond: $10,000 minimum
Kentucky		
4.5% gross value with minimum of $0.50 per ton	4% of first $50,000 taxable income 5% of next $50,000 taxable income 6% of taxable income exceeding $100,000	Fees: All fees total no more than $450 per acre. Bond: $10,000 minimum
Maryland		
Surface: $0.17 per ton Deep mine: $0.15 per ton	8.25% of taxable income	Open pit mine: $75 per acre permitted
Montana		
Surface: 15% of value for high-energy coal; 10% for low-energy coal Underground: 4% of value for high-energy coal; 3% for low-energy coal	6.75% of taxable income	Surface: $0.09 per ton for lignite Surface: $0.315 per ton for all other coal
North Dakota		
$0.375 per ton base tax plus additional $0.02 per ton for lignite research	Tiered rates for 5 income ranges	Fee: $500 + $10 per acre Bond: $10,000 minimum

Ohio		
$0.10 per ton base $0.12–$0.16 per ton with coal mining and reclamation permit in addition to base. Rate varies depending on balance in reclamation fund. $0.012 per ton for surface mining in addition to base and $0.12–$0.16 per ton tax	$150 for gross receipts between $150,000 and $1,000,000 $150 plus 0.26% on gross receipts greater than $1,000,000	No separate reclamation fees are charged. All three severance taxes are divided among four funds dedicated to reclamation or abandoned sites.
Pennsylvania		
No tax imposed	9.99% of taxable income	Permit fee: $250 Reclamation fee: $100 per acre Bond: Amount determined by Department of Environmental Protection
Texas		
No tax imposed	Franchise tax: Tiered rates for 4 income ranges	Permit fees: $500 to $5,000 Bond: $10,000 minimum
Virginia		
Determined at the local level; rate cannot exceed 1% of gross receipts	6% of taxable income	Surface: $0.04 per ton produced Underground: $0.03 per ton produced Loading facility: $0.015 per ton processed Bond: $10,000 minimum
West Virginia		
5% gross value 2% gross value (for seam thickness between 37 and 45 inches) 1% gross value (for seam thickness less than 37 inches)	8.75% of taxable income	$0.144 per ton produced
Wyoming		
Surface: 7% taxable value Underground: 3.75% taxable value	No tax imposed	No tax imposed