DIGITALCOMMONS @WAYNESTATE

Sociological Practice

Volume 8
Issue 1 *Community Development and Other Community Applications*

Article 20

January 1990

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ABSTRACT

One hundred eight-eight coal-producing counties in fifteen states were examined to determine the relationship of coal severance tax allocations to community economic development and change in socio-economic conditions. The one hundred counties receiving coal severance taxes were identified as an "experimental group" and the eighty-eight counties not receiving these funds were used as a "control group" and the eighty-eight counties not receiving these funds were used as a "control group" in a quasi-experimental model. The five key socio-economic variables examined were (1) per capita income, (2) poverty rate, (3) employment growth, (4) unemployment rate, and (5) bank deposits. Coal counties which received coal severance tax allocations and community economic development programs improved all five socio-economic conditions at a significantly higher rate than counties not benefitting from these dollars and programs. Policy implications are discussed including the need to further examine/refine coal and other resource taxation and reallocation programs of supporting rural community economic development.

Scarcely had the coal trade of Great Britain begun (than) it became subjected to a system of heavy taxation (becoming) . . . a prolific source of revenue to the Crown (Galloway, 1969).

. . . the argument has been advanced that a (severance) tax on Kentucky's (coal) would promote the development of the Commonwealth by permitting the financing of necessary development projects (Curtis and Karst, 1972).

From the seventeenth-century England to the modern American coalfields, coal mining and coal severance taxes have been important social and economic issues. The legends and music of America have recorded the poverty and suffering of the miners and other residents of the nation's coal country. The songs and images are numerous including Pete Seeger's "Which Side Are You On," Loretta Lynn's "Coalminer's Daughter," and the movie *Harlan County, USA*. Some of these songs poetically address major social issues (such as exploitation) related to coal production. One of the most famous, "Sixteen Tons," was number one on the pop charts for more than two months in the 1950s:

> You load 16 tons and what do you get
> Another day older and deeper in debt
> St. Peter don't you call me cause I can't go
> I owe my soul to the company store
> ("Sixteen Tons," Tennessee Ernie Ford, 1956)

Others, like "Muhlenberg County," (Kentucky) directly address issues of coal mining's environmental damage:

> O'Daddy won't you take me down to Muhlenberg County
> Down by the Green River where the water did flow
> I'm sorry my son but you're too late in askin'
> Mr. Peabody's coal train has done hauled it away
> ("Muhlenberg County," popular folk song, anonymous)

Television documentaries depicting strip mine land damage, tar paper shacks, "busted" Appalachian "company" towns, coal county illiteracy, "black lung," mine disasters, and other social and economic travesties of America's coal fields have graphically brought these social issues to the national conscience. The negative economic and social externalities associated with coal mining are all too numerous in the history of coal mining. There is also a strong empirical correlation between coal mining areas and poverty and economic underdevelopment (U.S. Census, 1982). In the late 1960s and 1970s numerous states began adopting coal severance tax policies to gain revenue to cope with the problems of local impact and community economic development needs in their coal-producing communities.

Coal Severance Taxes

Coal severance taxes are based on a simple concept and procedure. For various reasons states impose a tax per ton or, as now more common, a percent of sale price (also called *ad valorem)* for each ton of coal removed or "severed"

from the ground. These revenues are then used to address "externalities" and provide for programs the state might otherwise be unable to fund. The rate of taxation and the patterns and purposes of allocation of these revenues varies greatly by state.

Coal severance tax allocations have become a significant community and economic development tool and social justice policy instrument. Coal severance tax dollars have become a large share of state revenue in a number of states (notably Kentucky and Wyoming) and a major source of revenue for community development projects at the city and county levels. From the western coal states of Montana, Wyoming, Colorado, and North Dakota (where severance allocations are used to build schools, roads, and water systems to accommodate the "boom" style growth of their rapidly expanding coal fields) to Kentucky (where coal severance dollars are used for the state's general education and highway funds and to fight historic and endemic poverty), coal severance tax allocations are making a difference in the lives of the people and communities of America's coal fields.

Coal tax rates vary from Montana's 30% gross value rate to approximately 1% in Alabama. In Colorado and Wyoming most dollars are returned directly to coal communities in grants and loans for economic development ventures and community infrastructure and amenities (e.g., community centers, schools, public swimming pools and parks). While these funding programs are not inherently tied to the community development process, they finance enormous numbers of community development projects and are thus worthy of attention by community developers and sociological practitioners.

Methodology

This research examines U.S. coal county socio-economic conditions and documents the change in these conditions over one decade (1971- 1980). It then assesses the impact on these conditions of state coal severance tax allocations to community economic development programs and projects in these historically poor rural areas. One hundred eighty-eight coal counties were examined in the study and were divided in a quasi-experimental model into (1) a control group with no coal severance tax allocations for community and economic development programs (88 counties) and (2) an experimental group with substantial coal severance tax allocations for community and economic development programs (100 counties).

The 188 counties represent a *total enumeration* of "significant" coal producing counties (defined as having an average production of 100,000 tons per year for 1871-1980). The 100 counties receiving direct coal severance tax allocations were in eight states: Alabama, Colorado, Kentucky, Montana, North Dakota, Tennessee, Utah, and Wyoming. The 88 counties not recipients of coal

severance funded community and economic development programs were in seven states: Illinois, Indiana, Ohio, Pennsylvania, Texas, Virginia, and West Virginia. (Note: West Virginia is not regarded as returning dollars to the local level because the combination of level of taxation and amount returned to the local level make the dollars returned insignificant.) The 1971-1980 period was studied because it is the last period for which accurate data on key socioeconomic variables are available (many are from the 1980 U.S. census) and because it allowed a decade-long study, something which will not be possible again until the early 1990s. The author acknowledges that the "boom" of the coal economy in the 1970s due to the energy crisis may have affected data in some counties, but any period will reflect some abnormalities. Five key socioeconomic variables (job growth, unemployment, income, poverty, and bank deposits) were measured with U.S. Census and other data for the period. Coal severance tax allocations for local community and economic development projects and programs in the experimental counties were quantified in dollar terms by collecting actual dollar figures from the various states. Changes in the five socio-economic variables were then analyzed with a simple comparative analysis given the total enumeration for the control and experimental groups. The results of this analysis are reported along with some discussion of coal severance tax policies and the implications for rural community and economic development policies in general.

Coal County Conditions

The communities of America's coal counties are among the most economically impoverished and underdeveloped in the country. The problems of economic welfare of coal miners and coal mining areas have been an important issue and source of conflict since coal production began. The most violent labor struggles in U.S. history have taken place in the American coal fields. The names Joe Hill and Mother Jones are part of this legacy. So also is the stern face of John L. Lewis and his role in the evolution of the United Mine Workers of America and the AFL-CIO. The Cripple Creek Coal Rebellion and the 1936 Herrin, Illinois mine riot which partly inspired the book *Bloody Williamson* (Angle, 1952) demonstrate the historic sentiment of exploitation and inequality held by coal miners and coal area residents toward the coal industry.

The theme of exploitation of depressed rural coal-producing areas by "big" national and multinational corporations is common in the literature. Regan and Walsh (1977) used Ireland's coal-producing areas as an example to argue that mineral extraction areas remained "dependent and under-developed." Gills (1982) documents the relationship of this Third World feeling of exploitation to the emergence of mineral taxes in these countries. The issue of economic justice

is echoed by Sherafat, who concluded that maintenance of a relatively monolithic coal economy invited continued underdevelopment and exploitation of eastern Kentucky. According to Sherafat (1979):

> . . . the economy of the area was heavily dependent on the coal industry. Some 56 percent of GRP (gross regional product) is generated by the coal industry and 25 percent of the . . . labor force is employed by this industry . . . most of the contribution of the coal industry to GRP was in the form of rents, profits, and interest; however, due to the absentee ownership . . . most of this capital leaves the area. Thus, the primary contribution of the coal industry . . . is in the form of wages and salaries . . . the coal industry cannot serve as a long-run source of economic growth for the region . . . to promote economic growth . . . the coal counties' economy needs to be *diversified* (emphasis added).

These social costs taken together have provided the impetus for coal severance tax legislation. While some would question the mixing of labor and "externality" issues in discussing the coal severance tax, it is justified on two important grounds: (a) the political impetus for coal severance tax legislation and return of dollars to local levels has often come from a coalition of environmental, labor, and civic groups and (b) the academic rational cited in the literature tends to overlap the twin concerns of negative environmental impact and economic distributional fairness. The rationale for coal severance taxes is a fundamental issue which provides a point of departure to begin to look at coal severance taxes.

Many of the more commonly cited rationales for coal severance taxes overlap. "Exportability" of the tax to consumers in other states is frequently mentioned. So is compensation for coal production related costs (Conrad and Hoole, 1980; Verrecchia, 1981)—also called "socioeconomic impacts" by Ervin, Desai, and Foster (1981). The use of the tax to replace part of the lost mineral "value" (Conrad and Hoole, 1980) or "irretrievable loss" (Ervin, Desai, and Foster, 1981) or loss of "natural heritage" (Verrecchia, 1981) is also mentioned quite often. This is also related to the economic development incentive mentioned by Curtis and Karst (1972). The various rationales and their proponents are summarized in Table 1.

Income and Income Changes

Per capita income in all coal counties in 1980 was $5,934–only 58.6 percent of the national average. Severance coal counties were in even worse shape

Table 1
Coal Severance Tax Rationale

Rationale:	Cited by:
Replaces Partial Mineral Value, Natural Heritage or State Wealth	Conrad and Hoole Ervin, Desai, and Foster Verrecchia
Tax Mineral Wealth for Economic Development	University of Kentucky Research Team Kentucky Fair Share Coalition Pittman, Illinois South Hawkins, UMWA
Compensation for Socially Negative Mining	Conrad and Hoole Ervin, Desai and Foster Verrecchia Kentucky Fair Share Coalition Illinois South
Tax is Exportable to Consumers in Other States	Conrad and Hoole Ervin, Desai and Foster Verrecchia
Public Compensation for Hight Coal Profits	Smith, Ostendorf and Schectman
Relationship between supply-demand (i.e., tax can be "gotten away with"	Ervin, Desai and Foster
Compensation for coal industry's "preferential" tax treatment (underassessment and loopholes)	Verrecchia

than coal counties in general with per capita incomes of $5,691 or just 56.2 percent of the national scale. This illustrates the poverty of America's coal communities relative to the rest of the nation. As Table 2 indicates, western coal counties have per capita incomes 24.4 percent higher than eastern coal counties, although western coal counties at $6,891 are still only 68.0 percent of the national average. Eastern severance counties are the poorest of the four groups (eastern sev., eastern non-sev., western sev., and western non-sev.) with a per capita income of only $5,277 of 52.1 percent of the national average. Western severance counties are the highest income group with income of $7,148 which equals 70.6 percent of the national average.

Table 2
COAL COUNTY PER CAPITA INCOME (PCI) CHANGES

County Group	PCI 1 (1970)	PCI 2 (1980)	Real Increase*
	$	$	
ALL	2221	5934	26%
SEV	2038	5691	32%
NONSEV	2447	6235	20%
EAST	2056	6891	28%
WEST	2534	6891	28%
SEV EAST	1874	5277	33%
SEV WEST	2616	7148	29%

National Average
(All Counties–
Coal & Noncoal) $ 10,129
*Adjusted For Inflation Using Consumer Price Index

More important to this study is the fact that the coal counties receiving coal severance tax allocations for community economic development projects showed greater increases in income during the decade 1971-1980 than those coal counties without coal severance tax allocations. The magnitude of these differences is striking. Nonseverance counties showed an increase in "real" income of 20 percent (adjusted for inflation), severance counties income increased 32 percent (a full 60 percent faster). The eastern severance counties showed the fastest increase of all groups (33 percent). The magnitude of coal

severance tax grants, loans, and transfers help to explain these differences and will be detailed later in this paper.

Poverty

Poverty data show similar trends. Coal counties have higher poverty rates than the national average but coal severance counties reduced their poverty rates at a much sharper rate than coal counties lacking the benefit of coal severance programs and dollars. In 1970 all coal counties had over one-fifth of their residents (20.3 percent) below the poverty line, almost twice the national average. Coal severance counties were among the poorest with a collective average of 25.6 percent below poverty. Coal severance counties saw a reduction in their poverty rates by 20 percent while counties not receiving coal severance tax allocations saw only a 4 percent reduction.

Total Employment Growth

Total employment also showed faster growth in counties receiving coal severance tax dollars than in counties not receiving coal severance tax reimbursements, further evidence of the economic impact of coal severance taxes on coal communities. While all coal counties had a 33 percent average growth rate in total employment, severance counties had a 45 percent growth rate in jobs compared to only 19 percent for the nonseverance cousins. The faster economic growth rate held for severance counties in both east and west although the west in general had higher employment growth rates.

Unemployment Changes

Unemployment grew throughout the U.S. in the decade of the 1970s because of rising oil prices, foreign competition, and the resulting structural unemployment. Unemployment in all coal counties increased 65 percent during this period. Unemployment in severance counties, however rose "only" 56 percent compared to a 76 percent rise in nonseverance counties.

Bank Deposit Growth

Bank deposits are yet another measure of socio-economic change and well-being. Bank deposits from 1970 to 1980 in severance counties grew at 55 percent (real increase; i.e., adjusted for inflation) while nonseverance counties grew at a real rate of only 15 percent. Western counties grew much faster (74 percent) than eastern (24 percent). Clearly increases in bank deposits are associated with severance tax allocations and severance taxes would appear to have a positive impact on social and economic conditions in coal counties.

A summary of the conditions shows that severance tax counties are better (and improving faster) by all five measures (per capita income, poverty rate of change, total employment growth, unemployment percent change, and bank deposit growth). Related changes show that severance counties are also more likely: (1) to have experienced faster increases in coal production (493 percent to 163 percent), (2) to have less costly coal and more moderate coal price and increases, (3) to have coal with lower sulfur content, and (4) to have lower population densities but more rapidly rising populations. While some might question the relationship of coal severance tax allocations to the positive economic trends, a separate factor analysis (not included here due to space limitations) also found coal severance allocations to be strongly "loaded" on the economic growth factor when controlling for other independent variables such as coal production.

Coal Severance Tax Allocations Quantified

In order to understand more fully the magnitude of the coal severance tax allocations to coal areas, the actual allocations to each county over the study period were analyzed and quantified. The comparison of severance tax allocations in annual dollars per capita is shown in Table 3:

Table 3
Severance Tax Allocations Per Capita by Region and State

	STAPC		
All Severance	$72.70		
Severance East	10.19		
Severance West	292.85		
East:		West:	
Alabama	$ 5.68	Colorado	$ 624.75
E. Kentucky	9.60	Montana	184.61
Tennessee	11.27	North Dakota	87.07
W. Virginia	10.61	Wyoming	109.27
W. Kentucky	15.11		

STAPC = Total Local Severance Tax Allocations Per Capita (1980 dollars) 1971-80/ number of years allocations actually received.

These data indicate that *local* coal severance tax allocations averaged roughly $73 (1980 dollars) per capita in all coal severance counties for the decade. Allocations varied from state to state by a ratio of 100:1, however, with Colorado's $625 per capita versus Alabama's $6. The relative importance of these expenditures can be seen more clearly when we compare them to other sources of revenue and expenditures by county.

Revenue Sources Compared

As a source of community economic development revenue compared to local government revenue (including county and local school operations), coal severance tax dollars equalled more than one-third of all property tax revenues for all coal severance counties. (See Table 4.) Table 4 also shows that while coal severance revenues equalled only 4 percent of state/federal revenues in eastern severance counties, they equalled 86 percent in the west. By any measure these are very important revenues to local governments in the coal severance tax states and make possible the funding of many community development, infrastructure, and economic development activities and projects. In addition, Table 4 shows that coal severance tax revenues average 8 percent of total expenditures, 18 percent of educational spending, 140 percent of highway spending and 711 percent of service expenditures.

Table 4:
Severance Tax Revenue as a Percentage of
Other Sources of Revenue and Expenditure

Region	Prop Tax	State-Fed	Expen	Ed	Hi	Serv
All Sev.	34%	22%	8%	18%	140%	711%
Sev. East	33%	4%	3%	4%	131%	348%
Sev. West	75%	86%	25%	62%	171%	1986%

PropTax = Property tax per capita
State-Fed = State and Federal expenditures per capita
Expen = Total expenditures
Ed = Educational expenditures
Hi = Highway expenditures
Serv = Service expenditures

Policy Analysis Discussion

Based on this study, it is possible to discuss coal severance tax policy and its relationship to community and economic development on a number of different levels. Conclusions and speculations are presented relative to coal county conditions, severance tax allocation effects, and implications for future coal severance tax policy development.

Coal County Conditions

Coal mining counties differ greatly in population and population density, socio-economic vitality, coal mining conditions and stages of coal and general economy.

This study has already established the clear difference in "coal places." Appalachian coal places are typified by poverty, unemployment, low per capita income, and deep mining. New western coal areas stand in contrast with their low population densities, high population and economic growth rates, and strip-mining land damage. Midwest coal areas such as southern Illinois and western Kentucky are typified by flat population and economic growth, mixed mining patterns, and problems with high sulfur coal. Community economic development strategies and use of coal severance tax allocations to alter or improve socio-economic conditions must take these factors into account.

Economic/Population Growth "Stages" and Implications

Coal county economics can be understood in terms of stages and these stages imply distinct community and economic development strategies.

The data revealed distinct patterns in growth and decline in coal production in many coal producing communities. This suggests "stages" of economic/population growth which have clear relevance to coal severance tax policy development in relation to allocation to coal localities. Based on the previous policy discussion and the research data, one can identify three stages of economic/population development (1) "boom," (2) "plateau," and (3) "decline."

Each stage is characterized by quite different problems which have and rightly should evoke quite different responses in coal severance tax allocation policies. Those in the "boom" stage need assistance in the planning and funding for coping with growth-related problems such as population growth, planning and zoning, infrastructure requirements, extension of road, water, and sewer lines, and the provision of local services and social programs to meet the needs of a growing population. Assistance in projecting local government budgets also is needed. Those in the "plateau" stage will also be concerned with population and infrastructure assessments and sound planning and funding to meet these needs.

Additionally, however, they will be concerned with efforts to provide industrial parks, tourism strategies, and business and labor training and opportunities to diversify the economy in anticipation of future decline of their coal-based economy. Those in the decline stage will need assistance in increasing certain retraining and relocation programs to assist displaced coal labor, assistance in planning for consolidation and downsizing of key social and government services and economic transition teams to act quickly to develop strategies to support an alternative economic base.

While this model somewhat oversimplifies, it roughly describes patterns of coal production and economic growth in coal counties. Clearly, western coal counties are more in the "boom" stage with rapidly expanding coal production and growing populations. There are also numerous boom counties in the east, especially in eastern Kentucky. Many eastern and midwestern counties have

already experienced their boom and have seen their coal economies reach the plateau stage. Jackson and Jefferson Counties in Alabama, Saline and Williamson Counties in Illinois, and Davies County in western Kentucky are examples of plateau counties. Decline counties have begun to appear in both the east and the midwest: the Illinois counties of Peoria, Fulton, and Knox; the Ohio counties of Belmont and Jefferson, and Luzerne County of Pennsylvania are presently in the decline stage.

Severance Tax Formulas

Taxation levels and distributional formulas are critical to the community development impact of coal severance tax programs in the various states.

Generally, the higher the level of taxation the better it will be for the local community because the state will have larger revenues to "share" with the locales. Market conditions for the coal must be considered, however, and taxes set too high can actually dampen demand for the coal to the point where revenues (and community development impact) are actually decreased. Montana's 30 percent tax is a case in point. On the other hand, many states with little or no tax (Illinois is the foremost example) are clearly missing an opportunity to support community and economic development in their coal county communities by not enacting or raising taxes.

If the level of taxation and total revenues represent the economic "pie," then the severance tax distributional formula represents the "slice." It is clearly in the interest of the local community to fight for the highest percentage of the pie to go back to the local community. Many states have very low percentages returned to the local level and community developers in those areas should be vigilant in fighting for a higher return to their communities. West Virginia comes to mind as a case in point. Some states may want to consider formulas of distribution based upon need rather than the more common production-based formulas.

Severance Programs and Community Development Policies

Coal communities should fight for continued and expanded coal severance tax funding for community economic development projects and programs.

These programs have made a measurable difference in the quality of life in traditionally impoverished coal communities. New money has been provided for infrastructure development, industrial park development and business loans and grants. New schools, parks, and community centers have been built. Incomes and bank deposits have been improved, jobs increased, and poverty and unemployment rates reduced. Coal counties with coal severance tax community economic development programs have seen their position improve relative to coal counties not benefitting from these programs.

Implications for Practitioners

Rural America cries out for more funding support for basic community development and infrastructure programs. More attention needs to be given to how to replicate this resource taxation and reallocation program to benefit other sectors of rural America. Identifying "exports" from the state and reasonable levels of taxation and allocation is the first step. Once this is done, the next step is to meet with local leaders and legislators to prepare draft programs as policy or law. A good example is the work of Kentucky's Fair Share Coalition in developing and shaping favorable legislation. The evidence here argues that community practitioners must not be solely fixated on working with the individual communities but also must consider involvement in state policy and legislation. These larger level actions may have greater impact on social and economic conditions in the community than all of the good intentions and results of "grass roots" work. Community developers must consider these potential larger resources and tie grass roots efforts to state and federal policy initiatives that will benefit local communities. A University of Wisconsin economist argues in his new book that capturing higher government level revenues is one of the five basic strategies for communities to increase jobs and income (Shaffer, 1989).

Conclusion

When states have allocated coal severance tax revenues in coal-producing counties there has been a major impact on socio-economic conditions.These dollars compare significantly with other forms of revenue for local government use in community development and economic and infrastructure development. Thus, they are quite useful in efforts at economic diversification. Analysis is needed to measure ongoing impact of coal severance tax allocations on local social and economic conditions. Nevertheless, it would seem safe to say that those states which can effectively levy a coal severance tax (without significantly and adversely affecting their coal sales) should do so and return significant portions of the revenue to coal-producing areas for community and economic development projects. That is, if they share the desire to improve social and economic conditions and diversify coal community economies.

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