

# The Use of Severance Taxes In Tenth District States

*By James Prescott and Tim R. Smith*

Taxes on mineral production have been a source of revenues for most states in the Tenth Federal Reserve District for many years. Mineral tax revenues increased during the energy boom of the 1970s as increased fuel prices boosted the value of mineral production and some states changed their tax structures. In the early 1980s, however, world fuel prices have softened and the demand for nonfuel minerals has declined.

This article examines the extent to which recent changes in fuel and nonfuel mineral markets have affected mineral tax revenues of Tenth District states—Colorado, Kansas, Missouri, Nebraska, New Mexico, Oklahoma, and Wyoming. The first section reviews some of the key economic and political issues associated with taxes on mineral production. The second section outlines the mineral tax structures of Tenth District states, and the third and

fourth sections explore recent trends in mineral production and tax revenues. The article concludes that there has been substantial erosion of the various bases for mineral taxation during the 1980s that has, in turn, exerted downward pressure on mineral tax revenues in district states.

## **Economic issues in mineral taxation**

Taxes levied on mineral production are commonly called severance taxes. They usually take the form of unit excise taxes or ad valorem taxes and are ordinarily levied on “severers,” or producers of mined output. Revenues from unit excises depend only on the amount of ore mined since they are defined as a fixed money charge per unit of product. Ad valorem taxes are based on a percentage of the gross value of mined ore, so tax revenues vary with both the price of the ore and quantity produced. Though severance taxes have been in place for some time in district states, they became very popular during the 1970s as a source of revenue. High crude

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oil prices resulting from OPEC's price fixing and the subsequent rise in the prices of oil substitutes made fuels an attractive tax base for producing states. Some district states also produced large quantities of nonfuel minerals, such as copper and molybdenum, making these commodities lucrative sources of tax revenues as well. Thus, the district mineral tax structures developed under generally increasing demand for both fuel and nonfuel minerals during the 1970s.

In addition to being an attractive source of revenue, mineral taxes were considered desirable from the point of view of individual

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states because the incidence of many of the taxes could be shifted to buyers in other states. This ability to "export" the taxes further enhanced their revenue generating capabilities and political acceptability.

There are two major factors that contribute to a state's ability to export severance taxes. One is low in-state purchases of the taxed mineral. If most processors are outside state boundaries, the tax can be shifted to these out-of-state buyers. The other contributing factor is the price sensitivity of buyers. The extent to which unit excises and ad valorem taxes raise the price buyers pay depends, among other things, on the availability of substitutes for the taxed mineral. If out-of-state buyers cannot obtain the mineral from producers in other states, or cannot substitute another mineral, the tax can be exported in the form of higher prices. For example, copper is an excellent electrical conductor with few close substitutes. On the other hand, it is one of many materials used in producing tubing. A copper-producing

state is therefore expected to be more successful at exporting a tax on copper to wire producers than to pipe manufacturers.

Even in cases where the production of a particular mineral occurs in more than one state, tax rate setting coalitions of states are possible. If a few states can tax a large percentage of the mineral's production (and its substitutes) they can act together to tax producers, thereby avoiding substitution away from individual taxing states. As the number of states and geographic diversity increases, coalitions tend to be more unstable because of a variety of economic interests and separation of market areas.<sup>1</sup>

In addition to the incidence of severance taxes being shiftable, "market failure" arguments have also been used in support of severance taxes. Unlike most economic activities, the owner of a mine (a depletable resource) produces a fixed amount of output over the life of the mine. The higher the rate of extraction, the shorter the production life of the mine. Since ore prices and extraction costs vary over time, the mine owner tries to concentrate production in high profit periods, thereby increasing the present value of net revenues. In other words, the mine owner varies output to maximize the value of the mine. This extraction path over time may be optimal from the resource owner's viewpoint, but not for society as a whole, because private market rates of extraction may impose costs on society that exceed the direct expenses of producing ore.

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<sup>1</sup> See Malcom Gillis, "A Tale of Two Minerals: Severance Taxes on Energy Resources in the United States," *Growth and Change*, Vol. 10, No. 1, January 1979, pp. 55-71. Gillis suggests that New Mexico and Wyoming might pursue a common taxing policy for uranium. However, depressed market conditions in recent years led New Mexico to reduce both severance tax rates and assessed valuation percentages for the period 1981-84, while Wyoming's tax rate remained at 5.5 percent during 1979-83 despite a decline in uranium revenues of 43 percent between 1981 and 1982.

Environmental side effects can cause private and social costs to differ. For example, environmental damages due to strip mining are added social costs due to a private economic activity and, if assessed to producing firms, would reduce the output of strip-mined coal. Severance taxes marked for restoring strip-mined land reimburse society for these costs, reduce the production of coal to levels considered more socially optimal, and extend the production of mining operations.

Another market-failure argument in favor of using severance taxes to reduce mining output is aimed at resource conservation. Conservation objectives are usually directed at two future uses of the taxed mineral resource. First, strategic military considerations may warrant low rates of present consumption of domestic mineral reserves and stockpiling for future use. This is primarily a national defense policy, however, and is not likely to be consistently pursued through the uncoordinated tax policies of various states. Second, concern over the availability of depletable resources for future generations is often a motivation for conservation legislation. Problems with this argument include determining the preferences of generations still unborn, estimating mineral reserves, and assessing the technological possibilities of finding future substitutes for the resource.

There are also more direct arguments against the use of severance taxes. One argument, although not unique to mineral taxes, applies to a tax on any competitively produced commodity. Such a tax usually reduces the production of ore, raises the price to buyers, and reduces the net price to producers (buyers' price minus the tax). The reduction in output represents a loss to society of valuable units of product, units that would be produced in the absence of the tax.

Policy conflicts among states and between

states and the federal government often complicate the implementation of severance taxes. The OPEC-induced oil price increases of the 1970s stimulated demand for oil substitutes (coal, oil shale, and uranium) with price increases that usually exceeded rises in the cost of production. In the case of coal, it has been argued that the benefits generated during this period accrued primarily to railroads hauling the coal and to state governments that increased their severance tax rates.<sup>2</sup> The tax rate increases were sufficient to induce coal-consuming states to introduce protective legislation in the 97th Congress that would have limited total state and local coal severance taxes to 12.5 percent of the mineral's value.

Federal government objectives in fuel mineral use also conflicted with the severance tax policies of mineral-producing states during the 1970s. While the federal government encouraged the use of oil substitutes, tax rate increases by producing states tended to discourage consumption by raising the prices of these fuels.

Despite arguments against their use, severance taxes became an important revenue-generating tool in most district states during the 1970s. This increased dependency on mineral taxation has led, in turn, to variability in revenues because of cyclical movements in mineral prices and production.

### **Mineral tax structures of Tenth District states**

Some states in the Tenth District began taxing mineral resources in the early 1900s.

<sup>2</sup> See John H. Mutti and William E. Morgan, "Changing Energy Prices and Economic Rents: The Case of Western Coal," *Land Economics*, Vol. 59, No. 2, May 1983, pp. 163-176. The authors cite Wyoming's severance tax rate increases from 1 percent to 10.5 percent over the period 1973-79, while production increased from 11 million to 71 million tons.

Oklahoma first imposed a tax on crude oil in 1916 and on natural gas in 1935. Nebraska's oil and gas severance tax was enacted in 1956. Both states' increased their severance taxes during the 1970s. In addition, Colorado began taxing mineral resources in 1978. There appears to be no consistent trend in very recent severance tax changes among district states. Some states have granted tax relief to troubled mineral industries while others have enacted new taxes. Most notably, Missouri and Kansas passed severance tax legislation in 1982 and 1983, respectively.

District states tax a variety of minerals, including crude oil, natural gas, coal, oil shale, molybdenum, uranium, potash, trona, copper, gold, and silver. Table 1 summarizes the current tax structure of each state. Most district mineral taxes are applied to the gross value of the minerals when they are removed from the ground, although some unit excises and indexed unit excises are used.

All district states, except Missouri, tax crude oil and natural gas. Of these states, New Mexico and Kansas have the highest tax rate (about 8 percent) while Nebraska's rate is

**TABLE 1**  
**Mineral tax structure in 1985\***  
 Tenth Federal Reserve District states

<b>Colorado:</b>	Crude Oil and Natural Gas	Tax on gross value:	
		\$0-\$24,999	2% of gross income
		\$25,000-\$99,999	\$500 + 3% of excess over \$25,000
		\$100,000-\$299,999	\$2,750 + 4% of excess over \$100,000
	\$300,000 and over	\$10,750 + 5% of excess over \$300,000	
	Coal	\$0.60 per ton for production in excess of 25,000 tons plus a surtax based on the Producer Price Index (PPI) (current rate \$.816 per ton)	
Oil Shale	1% of gross value in first year 2% of gross value in second year 3% of gross value in third year 4% of gross value in fourth and subsequent years (First 15,000 tons per day of oil shale or 10,000 barrels of shale oil exempt)		
Molybdenum	\$0.15 per ton		
Metallic Minerals	2.25% on gross value exceeding \$11,000,000		
<b>Kansas:</b>	Crude Oil and Natural Gas	8% of gross value	
	Coal	\$1 per ton (mine is exempt if less than 350,000 tons produced in previous calendar year)	
<b>Missouri:</b>	Coal	\$0.30 per ton for first 50,000 tons sold per year	
		\$.20 per ton for next 50,000 tons sold per year	
*Individual statutes define "gross value" differently, depending on the tax. Most states allow royalties paid to federal or state governments and Indian tribes to be deducted. The information in this table was simplified by omitting most credits, exemptions, and deductions and by substituting "gross value" for individual state terminology. Names given to individual taxes are, however, those given by individual states.			

**TABLE 1 (continued)**

<u>Nebraska:</u>	Crude Oil and Natural Gas	2% of gross value for stripper wells (under 10 barrels per day) 3% of gross value for non-stripper wells Conservation tax of 0.1% on gross value
<u>New Mexico:</u>	Crude Oil	All taxes on gross value:  3.75% Severance Tax 0.18% Conservation Tax 3.15% Emergency School Tax 1.25% Average Ad Valorem Production Tax (varies by taxing district)
	Natural Gas	Severance tax of \$0.087 per thousand cubic feet (MCF) plus a surtax based on the Consumer Price Index (CPI) (current rate \$0.152 per MCF)  Taxes on gross value:  0.18% Conservation Tax 3.15% Emergency School Tax 1.25% Average Ad Valorem Production Tax (varies by taxing district) 0.45% Gas Processor Tax
	Coal	\$0.57 (surface), \$0.55 (underground) per ton + CPI surtax (current rates \$0.994/ton (surface), \$0.959/ton (underground))  Taxes on gross value:  0.75% Resource Tax 0.75% Processor Tax
	Uranium	3.75% Severance Tax on 50% of gross value
	Molybdenum	All taxes on gross value:  0.125% Resource Excise 0.125% Processor Tax 0.125% Severance Tax
	Copper	0.5% Severance Tax on 33% of gross value
	Potash	All taxes on gross value:  0.5% Resource Excise 0.125% Processor Tax 2.5% Severance Tax
	Gold	0.2% Severance Tax on 50% of gross value
	Silver	0.2% Severance Tax on 40% of gross value
	Other minerals (Includes pumice, gypsum sand, clay, lead, zinc, thorium, manganese, and other nonmetallic and metallic minerals)	All taxes on gross value:  0.75% Resource Excise 0.75% Processor Tax 0.125% Severance Tax

**TABLE 1 (continued)**

<b>Oklahoma:</b>	Crude Oil	All taxes on gross value: 7% Gross Production Tax 0.085% Petroleum Excise
	Natural Gas	Gross Production Tax of 7% on gross value Petroleum Excise Tax of 0.085% on gross value Gas Conservation Excise of \$0.07 per MCF less 7% of gross value
	Uranium	5% tax on gross value
	Other Mineral Ores	0.75% tax on gross value
	<b>Wyoming:</b>	
	Crude Oil and Natural Gas	4% of gross value for stripper wells 6% of gross value for non-stripper wells
	Coal	10.5% of gross value (surface) 7.25% of gross value (underground)
	Uranium	5.5% of gross value
	Trona	5.5% of gross value
	All other minerals	2% of gross value

Source: Annual Report, Colorado Department of Revenue, 1983  
 Annual Report, Nebraska Department of Revenue, 1982  
 Annual Report, State of New Mexico, Tax and Revenue Department, Santa Fe, New Mexico, FY 1982-83  
 1983 Wyoming Mineral Yearbook, Mineral Division of State Department of Economic Planning and Development  
 Updated by telephone conversations with individual state departments of revenue

lowest. Colorado's oil and gas tax is the most complex with a stepped rate beginning with 2 percent for up to \$25,000 and three other brackets up to \$300,000 and over.

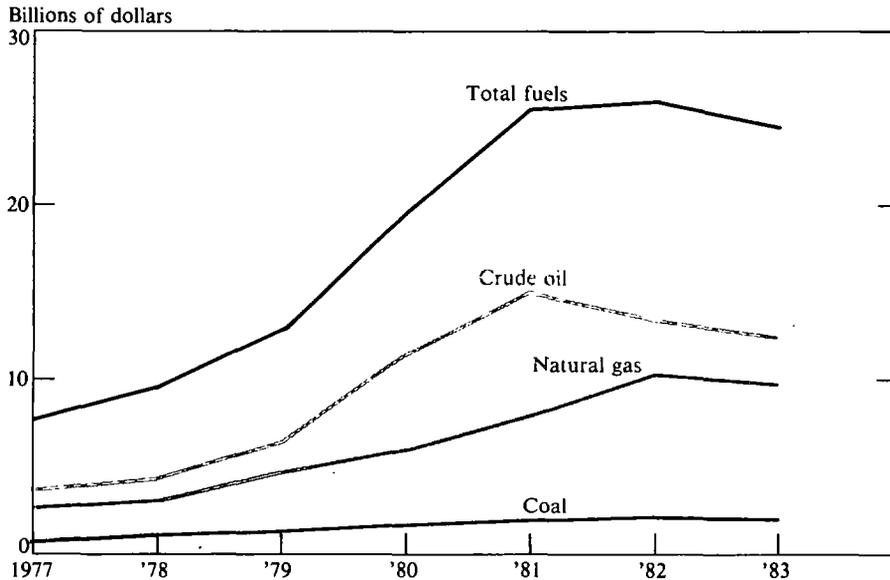
Coal is taxed in Colorado, New Mexico, Wyoming, Kansas, and Missouri. The Kansas and Missouri taxes are unit excises and the Wyoming tax is a 10.5 percent ad valorem tax on strip-mined coal with a lower rate of 7.25 percent on underground coal. Colorado's unit coal tax includes an adjustment mechanism based on the Producers Price Index (PPI) and New Mexico adjusts its coal tax to the Consumer Price Index (CPI). As a result of price inflation in recent years, the escalators have increased the effective tax rate. The Colorado coal rate, for example, has increased from 60 cents a ton in 1978 to a current 81.6 cents. Thus, the escalator effectively converts a unit

excise into an ad valorem type of tax, although the percentage rate may not be constant over time and the base is the general price level, not the price of the taxed mineral. If individual mineral prices are more stable than the CPI and PPI, states would find tax revenues rising faster under inflationary conditions than a flat ad valorem rate on the specific minerals. However, a more stable price level may be expected in the future compared with rapid price increases of the 1970s.

Uranium is taxed in New Mexico, Oklahoma, and Wyoming. All three states currently maintain flat ad valorem taxes on this mineral at rates ranging from 5.5 percent in Wyoming to an effective rate of less than 2 percent in New Mexico.

Colorado and New Mexico tax molybdenum. The Colorado tax is a unit excise at 15

**CHART 1**  
**Value of fuel mineral production**  
 Tenth Federal Reserve District states combined



Note: Estimated crude oil production for 1977 represents a doubling of the value for the last half of the year. Coal value represents only mines producing 10,000 or more tons of coal per year. Total fuels value includes crude oil, natural gas, and coal.

Source: U.S. Department of Energy

cents a ton. New Mexico's three ad valorem levies on molybdenum have a combined effective rate on gross value of nearly 0.4 percent.

Other nonfuel minerals are taxed individually or under broadbased taxes that apply to "all other minerals." New Mexico taxes copper, potash, gold, and silver individually, Wyoming taxes trona, and Colorado has a separate tax for metallic minerals. Any remaining minerals are taxed under broad "all other minerals" categories in New Mexico, Oklahoma, and Wyoming.

### Tenth District mineral production

There have been clearly identifiable trends in recent mineral production in the Tenth District. The increase in the value of mineral pro-

duction that stimulated district states to impose severance taxes in the 1970s did not continue beyond 1980. In fact, the value of production fell substantially between 1980 and 1983 and it has not recovered.

Mineral production can be divided generally into fuels and nonfuels. Fuel minerals—crude petroleum, natural gas, and coal—are the more important source of severance tax revenues for district states. Chart 1 summarizes production values in the district between 1977 and 1983 for this group of fuels. The value of district fuel production increased at an average annual rate of nearly 35 percent between 1977 and 1981, and fell almost 2 percent between 1981 and 1983. Falling crude oil values accounted for most of the decline in value. The value of natural gas production began

**TABLE 2**  
**Value of production of fuel minerals**  
**Tenth Federal Reserve District states**

	<u>Millions of dollars</u>			<u>Average annual growth rate</u>	
	<u>1977</u>	<u>1981</u>	<u>1983</u>	<u>1977-81</u>	<u>1981-83</u>
Colorado	687	1,897	1,744	29.3	-3.4
Kansas	1,004	2,997	2,753	32.1	-4.1
Missouri	66	117	132	17.1	6.6
Nebraska	45	247	189	54.3	-12.4
New Mexico	1,838	5,267	4,748	30.5	-5.0
Oklahoma	2,862	9,623	9,815	36.0	1.5
Wyoming	1,601	6,127	5,876	40.6	-2.1
Tenth District	8,037	26,158	25,125	34.7	-1.9

Source: U.S. Department of Energy

falling in 1983, and the value of coal production remained relatively flat between 1980 and 1983. This erosion of the bases for a large number of district severance taxes has continued since 1983 due to further downward pressure on world crude oil prices and a persistent natural gas surplus.

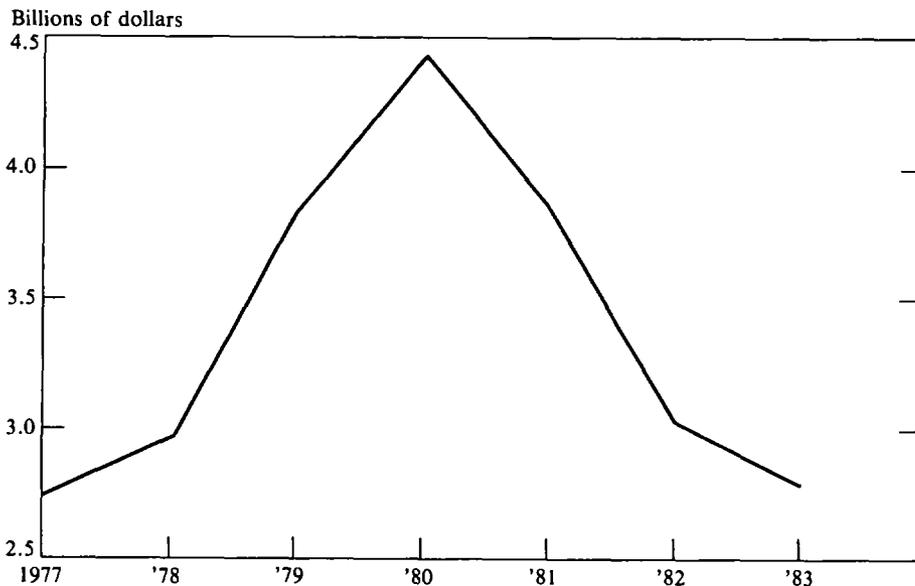
Individual district states exhibited a similar pattern in the growth of fuel production value. Table 2 lists the value of fuel production for each state and the average annual rates of growth over two periods, 1977-81 and 1981-83. The rate of growth slowed in all district states between 1981 and 1983. The value of fuel mineral production actually declined in five states in this latter period. The biggest change in production growth was in Nebraska, but this state, along with Missouri, has very low overall values of fuel production. Other states, especially in the western part of the district, produce far greater quantities of fuel minerals. Oklahoma, Wyoming, Kansas, and New Mexico are the district's major producers of crude oil, and Oklahoma and New Mexico also lead district states in natural gas production. Coal is produced mostly in Wyoming, New Mexico, and Colorado. The totals in

Table 2 do not include uranium, often used as a fuel. This mineral is found primarily in New Mexico and Wyoming.

A wide variety of nonfuel minerals is also produced in Tenth District states. Production of such construction minerals as cement, crushed stone, sand, and gravel is widely distributed throughout the district. Important metals mined in the district are lead, molybdenum, and copper. Missouri ranks first in the nation in the production of lead, accounting for 92 percent of the national total. Colorado is the leading producer of molybdenum. New Mexico ranks third nationally in the production of copper and first in the production of potassium salts ("potash"). Wyoming is the nation's largest producer of sodium carbonate ("soda ash" or "trona") and bentonite clay.

The value of nonfuel mineral production turned down before the value of fuel production, and the downturn has been more pronounced. Chart 2 shows values of nonfuel mineral production in the Tenth District from 1977 to 1983. The value of production increased in all states between 1977 and 1980, and declined substantially after 1980. The value of district nonfuel production grew at an

**CHART 2**  
**Value of nonfuel mineral production**  
 Tenth Federal Reserve District states combined



Source: Bureau of Mines, U.S. Department of the Interior

average annual rate of 9.9 percent between 1977 and 1981, but declined at an average rate of 14.8 percent between 1981 and 1983. This decline, which reflects decreases in prices and production of such nonfuel minerals as molybdenum and copper, has continued due primarily to increased foreign production and a strong U.S. dollar that has made imported mineral products more attractive to domestic processors and manufacturers.

Individual states of the district also show declining rates of growth in the value of their nonfuel mineral production. Table 3 lists the value of nonfuel production for each state and the average annual rates of growth over two periods, 1977-81 and 1981-83. The rate of growth declined between 1981 and 1983 for all district states except Nebraska. Five states had negative rates of growth. The largest change was in Colorado, where the depressed

molybdenum industry helped push the average annual rate of growth in nonfuel value from 19.4 percent over the 1977-81 period to -40.5 percent during the 1981-83 period.

While the increase in values of district fuel and nonfuel production in the 1970s prompted district states to raise severance tax rates in order to reap some of the benefits of their geology, decreases in values have placed substantial downward pressure on the bases for state severance tax collections.

### **State severance tax revenues**

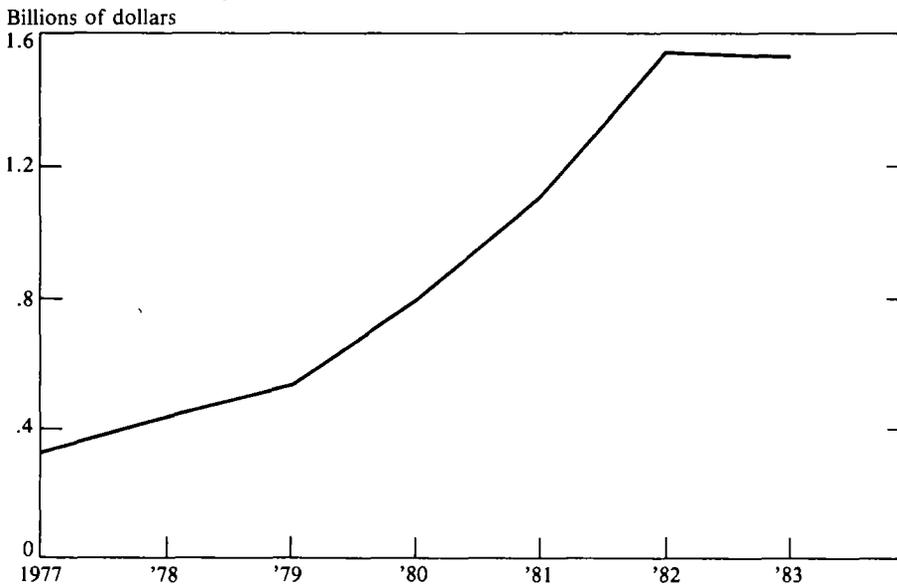
Severance taxes have become increasingly important as a source of revenue in district states since the mid-1970s. Chart 3 shows the substantial growth in severance tax revenues over the 1977-83 period. Despite a substantial decline in the value of mineral production,

**TABLE 3**  
**Value of production of nonfuel minerals**  
 Tenth Federal Reserve District states

	<u>Millions of dollars</u>			<u>Average annual growth rate</u>	
	<u>1977</u>	<u>1981</u>	<u>1983</u>	<u>1977-81</u>	<u>1981-83</u>
Colorado	538	967	338	19.4	-40.5
Kansas	208	249	267	4.9	3.5
Missouri	826	875	726	3.2	-8.6
Nebraska	78	80	87	1.4	4.9
New Mexico	497	696	517	10.1	-9.1
Oklahoma	163	235	226	9.6	-1.8
Wyoming	442	768	630	15.2	-9.4
Tenth District	2,752	3,870	2,791	9.9	-14.8

Source: Bureau of Mines, U.S. Department of the Interior

**CHART 3**  
**Severance tax revenues**  
 Tenth Federal Reserve District states combined



Source: Bureau of the Census, U.S. Department of Commerce

severance tax revenues continued to increase for the district as a whole through 1982. Though the base for severance taxation began falling around 1980, the growth of tax reve-

nues did not slow until 1983. The rate of growth in district severance tax revenues began slowing in 1980, however, and declined substantially in 1982 and 1983. Table 4 shows

**TABLE 4**  
**Severance tax revenues**  
**Tenth Federal Reserve District states**

	Millions of dollars			Average annual growth rate	
	1977	1982	1983	1977-82	1982-83
Colorado	2.3	49.2	35.9	213.2	-27.0
Kansas	.816	1.0	2.3	5.2	130.9
Missouri	0	.030	.025	6.6	-16.7
Nebraska	1.1	6.0	5.2	42.4	-13.2
New Mexico	102.8	377.8	351.3	30.7	-7.0
Oklahoma	191.4	742.7	777.7	31.8	4.7
Wyoming	47.0	389.4	388.9	61.2	-0.1
Tenth District	345.4	1,566.1	1,561.4	35.5	-0.3

Note: Severance taxes are "taxes imposed distinctively on removal of natural products—e.g., oil, gas, other minerals, timber, fish, etc., from land or water and measured by value of quantity of products removed or sold" as reported by the state to the Bureau of the Census.

Source: Bureau of the Census, U.S. Department of Commerce

that while severance tax revenues grew in the district at an average annual rate of over 35 percent between 1977 and 1982, they fell slightly between 1982 and 1983.

The reason for the delayed decline in reve-

*The rate of growth in district severance tax revenues began slowing in 1980 and declined substantially in 1982 and 1983.*

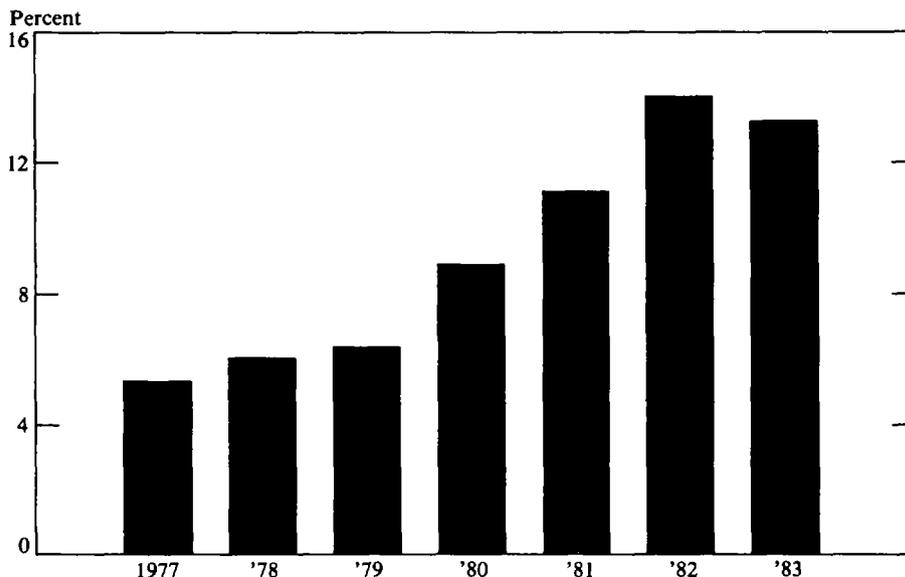
nues is twofold. First, most district states rely heavily on fuel taxes (Table 1). A comparison of Charts 1 and 2 shows that the value of fuel production continued to rise through 1982 even though the value of nonfuel production was well into its downward slide. Second, some state severance taxes are indexed to the CPI or the PPI, both of which were increasing during the early 1980s while the values of the taxed minerals were falling. Therefore, the effective rate of taxation increased on these indexed taxes, forestalling the decline in revenues.

The increased importance of severance taxes in the district is further emphasized by Chart 4. This chart shows that severance tax revenue as a share of total tax revenue in the district more than doubled between 1977 and 1983.

All district states have shared in the growth in severance tax revenues. Table 4 shows the behavior of severance tax revenues for each district state over two periods, 1977-82 and 1982-83. Severance tax collections increased in all the states between 1977 and 1982. Colorado had the largest average annual growth—213 percent. Between 1982 and 1983, severance tax revenues fell in all the states except Oklahoma and Kansas, and the rate of growth slowed substantially in Oklahoma. The high rate of growth in Kansas during 1982-83 reflects the imposition of new fuel taxes. Note, though, the very low total of collections in Kansas during those years.

The increased dependence of each state on severance tax revenues is shown in Table 5. Between 1977 and 1983, severance taxes rose as a proportion of total taxes in all the district

**CHART 4**  
**Severance tax revenues as a share of total tax revenues**  
 Tenth Federal Reserve District states combined



Source: Bureau of the Census, U.S. Department of Commerce

states except Kansas. Wyoming, New Mexico, and Oklahoma had the largest proportions of their total revenues coming from severance taxes at the end of the period. Growth in the importance of severance taxes as a share of

total taxes was strongest in Wyoming and Colorado. As a share of total taxes, severance taxes remained flat in Kansas.

States also receive revenue from related sources, such as lease royalties, and they have

**TABLE 5**  
**Severance tax revenues as a share of total tax revenues**  
 Tenth Federal Reserve District states

	Percent		
	1977	1981	1983
Colorado	0.2	2.5	2.0
Kansas	0.1	0.1	0.1
Missouri	0	0	*
Nebraska	0.2	0.5	0.5
New Mexico	17.2	27.4	30.1
Oklahoma	16.8	26.9	29.7
Wyoming	20.1	29.5	52.8
Tenth District	5.5	11.3	13.6

\*Less than 0.001 percent  
 See note from Table 4

Source: Bureau of the Census, U.S. Department of Commerce

**TABLE 6**  
**Dependence on the natural resource sector**  
**Tenth Federal Reserve District states**

	Natural Resource Revenues as a Percent of Total Taxes* (1983)	Net Transfers as a Percent Total Taxes** (1983)
Colorado	4.73	1.15
Kansas	0.240	-3.67
Missouri	1.01	-2.98
Nebraska	3.25	-1.91
New Mexico	48.40	45.40
Oklahoma	30.97	28.23
Wyoming	62.32	57.30

\*(Mineral taxes + royalties + rents) ÷ total taxes

\*\*[(Mineral taxes + royalties + rents + minor license fees) - (operating and capital expenditures for natural resource programs)] ÷ total taxes

Source: State Government Finances in 1983, Government Finances, GF83, No. 3, U.S. Department of Commerce, Bureau of Census

expenditure programs that make payments to the natural resources sector. In the first column of Table 6, royalty and rent receipts are added to severance tax revenues and divided by total state taxes to arrive at a broader measure of each state's reliance on the natural resource sector. This measure includes royalties received from the federal government for mineral production on federal land, a particularly significant source of revenue for states in the western part of the district. For example, New Mexico received \$146.8 million in 1982, half of all mineral leasing rents, royalties, and bonuses the federal government received from its holdings in the state.

Not all district states are net recipients of revenues from the natural resource sector. A measure of net receipts from the natural resource sector is shown in the last column of Table 6. Operating and capital expenditures for natural resource programs in each state are subtracted from the total of severance taxes, rents, royalties, and minor license fees for

hunting and fishing, and divided by total tax revenues. The negative measures for Kansas, Missouri, and Nebraska suggest that these states are not net recipients of tax revenues from this more broadly based natural resource sector. The positive measures for Colorado, New Mexico, Oklahoma, and Wyoming illustrate the dependence of western states on the resource sector.

### Conclusion

Tenth District states, especially New Mexico, Oklahoma, and Wyoming, have come to depend increasingly on severance taxes. Their dependence increased substantially in the 1970s, when the prices of fuels and other minerals rose sharply. Shares of severance taxes in total taxes increased in all but one district state.

Since 1980, however, severance tax revenues have declined in district states. The value

of mineral production in the district has fallen due to downward pressure on prices and outputs. Although the decline in value of fuel production lagged the decline in the value of nonfuel production, both began to depress state tax revenues by 1983. Estimates of 1984

production indicate a slight upturn in mineral production in the Tenth District, but as recovery to prerecession levels is unlikely in the near future, mineral tax revenues are not expected to turn around soon, given current state mineral tax structures.