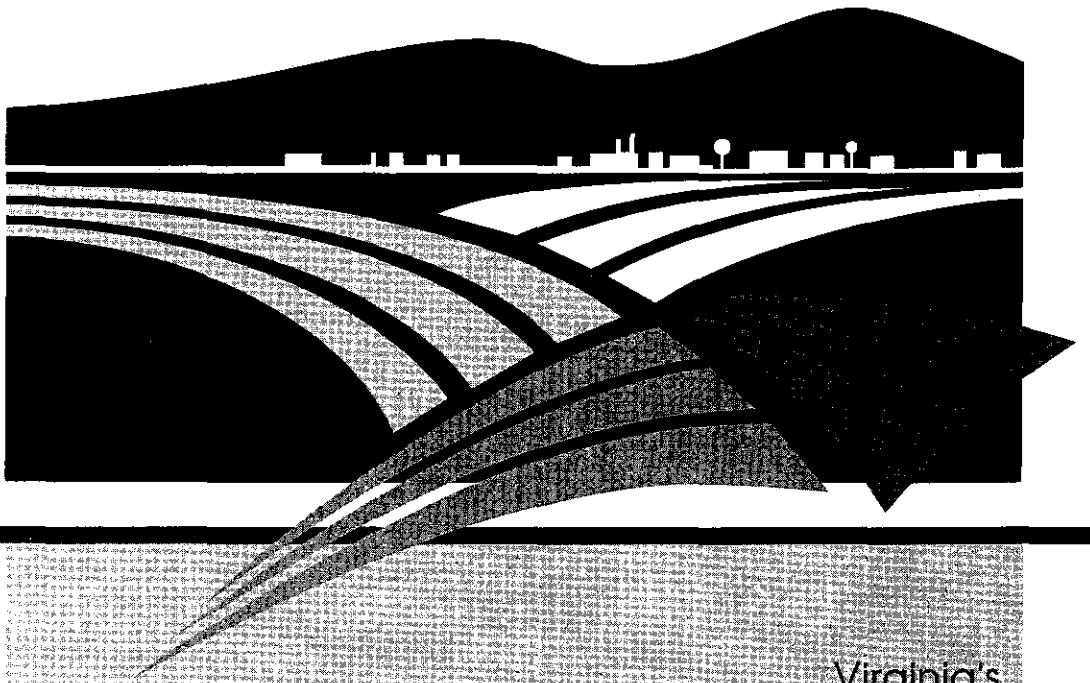
Coal Taxation Revenues and County Finances in Southwestern Virginia

By Eduardo Romano and George McDowell



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EXECUTIVE SUMMARY

This paper describes the relative importance of coal severance tax revenue to county government finances in southwestern Virginia's coal-producing region, which includes Buchanan, Dickenson, Lee, Russell, Scott, Tazewell, and Wise Counties (the "coal counties"). The analysis is based on statistical comparisons between coal counties and other jurisdictions with similar financial conditions. The study identifies and evaluates sources of revenue and categories of expenditures that might be affected by a decline in coal tax revenues. For most analyses, the study is based on data for the year 1990. All revenues and expenses are considered on a per-capita basis. The major findings are:

- In 1990, Buchanan, Dickenson and Wise counties (the "high production counties") would not be able to match current levels of expenditures without coal severance tax revenues, unless other taxes were raised significantly.
- Lee, Russell, Scott, and Tazewell counties (the "low production counties") are far less dependent on severance tax revenues than the high production counties. In 1990, the low-production counties would have been able to balance their budgets in the absence of coal severance tax revenues.
- Real property values and retail sales demonstrate a statistical dependence on coal production in Buchanan and Dickenson counties, but not in the other five counties studied.
- Per-capita public expenditures for education and public works are greater in the high production counties than in other Virginia counties with comparable economic characteristics.
- Per-capita education expenditures for administration in all seven coal counties are below the averages of other economically comparable Virginia counties.
- From all categories of expenditures in education, instruction appears most vulnerable to a decline in coal tax revenue. Instruction includes expenses that affect classroom performance, such as chalk, computers, and classroom equipment.
- Six of the seven coal counties (all but Tazewell) increased property taxation rates between 1981 and 1991, in response to the decline in federal and state aid and other factors. Over this period, the largest property tax rate increases occurred in the three high-production coal counties (Buchanan, Wise, and Dickenson). In 1991, real property tax rates in most of the coal counties differ only slightly from property tax rates in economically comparable Virginia counties, which suggests that these rates have reached a practical ceiling. Among the seven coal counties, Wise County levies property taxes at the lowest rate.

ACKNOWLEDGMENTS

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INTRODUCTION

This report describes the impact of coal severance taxes on the public finances of seven southwestern Virginia counties. Local governments in Virginia balance their budgets with three sources of revenue: federal, state, and local. The relative contribution of these sources to local government finances has changed dramatically over the past two decades. Federal financial aid has fallen from 15 percent of total revenues in 1978, to 5 percent in 1992. State aid and local revenue have increased to compensate for the decline in federal funds (JLARC).

Coal has long been a source of both public and private revenue in southwestern Virginia. In Buchanan, Dickenson, and Wise counties, more than 90 percent of the land overlies coal seams. Coal is also present in Lee, Russell, Scott, and Tazewell counties, but less than 20 percent of the land in these latter four counties overlies coal (Hibbard and Clutter). Together, these seven counties will be referred to as the "coal counties" in the remainder of this report. Buchanan, Dickenson, and Wise will be referred to as the "high-production counties," while Lee, Russell, Scott, and Tazewell will be referred to as the "low-production counties."

The *Code of Virginia* authorizes any city or county to apply a severance tax on coal extracted within its jurisdiction, which must be applied *in lieu of* the property tax (*Va. Code*, Sec. 58.1-3712). Apparently because of this limit placed on collection of property taxes, no city or county has enacted a "true" coal severance tax. Instead, counties and cities levy license taxes on persons engaging in the business of extracting ("severing") coal. The Virginia *Code* authorizes this license tax at a rate not larger than one percent of the gross receipts (*Va. Code*, Sec. 58.1-3703).

Counties and cities in Virginia are also authorized to levy license taxes for the purpose of improving the roads used in transportation of coal or coal workers. This tax, known as the coal haul road tax, cannot exceed another one percent of the gross receipts (*Va. Code*, Sec. 58.1-3713).

All seven of the coal counties levy both of these taxes, for the full two percent on gross receipts from coal mining. The receipts from these taxes are referred to collectively in this report as "coal severance tax revenues." This is how the revenues are referred to locally, even though they are indeed coal extraction license taxes, not true coal severance taxes as defined in the *Virginia Code*. One half of this revenue goes to general revenues of the coal counties, and the other half is divided between the coal haul road fund (.75 percent) and the Virginia Coalfield Economic Development Authority (.25 percent).

The Virginia Coalfield Economic Development Authority was created in 1988 with a primary purpose to "enhance the economic base for the seven counties and one city coalfield region of Virginia" (*Va. Code*, Sec. 15.1-1637). An additional one-percent severance tax on the gross receipts from the sales of natural gas was authorized in 1990. In the jurisdictions represented by the Coalfield Authority, 50 percent of the natural gas tax goes to the Authority to support economic development, according to the Coalfield Authority's 1990 annual report.

Economic development activities have become more important in southwestern Virginia as employment in the coal industry has declined. Employment in the mines peaked in Virginia at 19,416 in 1942 (Hibbard and Clutter). By 1993, the total number of coal production workers had fallen to 9,146 (Randolph *et al.*). Unemployment rates in all seven Virginia coal counties are often higher than the state average. In 1992, for example, the state average unemployment rate was 6.4 percent. Among the coal counties, only Scott County had an unemployment rate under 10 percent; rates in the other counties ranged from 11.0 percent to 17.3 percent (Zipper *et al.*). Partly because of the relatively high unemployment rates, in 1991 per capita personal income was less than $16,000 in these counties; this was well below the state average of $20,046 (Center for Public Service[a]). One result is that properties in the coal counties are valued below the average in Virginia (Kraybill *et al.*), and consequently the capacity to generate revenue from property taxation, the major source of revenue for most Virginia localities, is relatively low in the coal counties.

The economic importance of coal mining in southwestern Virginia has also made the level of coal reserves an important issue. According to a 1984 report from the Virginia Division of Mines cited by Hibbard and Clutter, the estimated coal reserves in southwestern Virginia can support another 100 years of production at current levels. More recent and detailed investigations, however, estimated far lower minable reserves. A 1993 survey of coal producers in Virginia (Crabtree *et al.*). found that many of them believe a reserve problem may arise within 15 to 20 years, or sooner.

Falling prices for coal are a major cause of this more pessimistic reevaluation, because estimates of "minable reserves" reflect not only the quantity of coal in the ground but also the profit margin for mining and selling coal. Virginia coal production in 1993 was at the lowest level since 1983. Some reserves will likely not be extracted unless current market conditions improve (Crabtree *et al.*).

In summary, then, these three factors—declining federal and state aid to counties; high unemployment and the resulting low per capita incomes and property taxing capacity in southwestern Virginia; and the potential for a decline in coal-related taxes—combine to make it important to understand how current coal tax revenues affect public finances in the coal counties. This report assesses the importance of coal as a local source of revenue affecting the fiscal well-being of Virginia's seven coal counties. The report has three components:

1. Establishing a basis for comparing the fiscal situation in coal-producing counties to that in other counties;
2. Comparing revenues and expenditures between coal-producing counties and counties with otherwise similar fiscal characteristics;
3. Evaluating the impacts of a decline in coal tax revenue.

The remainder of this report discusses each of these topics in turn. The report ends with a summary and conclusions.

Establishing a Basis for Comparing County Fiscal Characteristics

To assess the importance of coal-based revenues, we compared the revenue and spending patterns in the coal counties to those in Virginia jurisdictions with generally similar financial characteristics, but which do not receive revenue from the coal industry. We assumed that differences in fiscal patterns between these groups

of counties could be attributed to the existence of coal severance tax revenue in the coal counties.

Unfortunately, it is not easy to assess fiscal similarity among jurisdictions. Several characteristics that can affect public finances can differ across jurisdictions, including natural resources, population, and the tax and spending preferences of the residents.

In this report, we draw on previous research using a statistical method called "cluster analysis" to develop a grouping of counties by fiscal similarities (Elías *et al.*). Two measures are used in this analysis to define comparable jurisdictions: 1) *discretionary income*, a family's capacity to pay taxes after meeting its basic living requirements; and 2) *estimated true value per capita of locally taxed property*. These two factors were chosen because they are among the most important in defining the capacity of a county to generate local tax revenue.

In the cluster analysis, one group of jurisdictions was identified as a "high tax-capacity" group (hereafter referred to as the "HTC" group) based on the existence of high discretionary income, high property values, or both. Conversely, a "low tax-capacity" group (hereafter referred to as the "LTC" group) included counties with low discretionary income, low property values, or both. Counties within each group are broadly financially comparable.

A list of all counties in the LTC and HTC groups appears in Tables 1 and 2, respectively. All seven coal counties fall in the group with low property values and low income (the LTC group). Thus, the impact of coal taxes on the revenues and expenditures of the coal counties can be studied by comparison with the revenues and expenditures in the remaining counties of the LTC group. The coal and non-coal counties in the LTC group differ primarily in the coal-related revenues that are received by the coal counties. Consequently, differences in other revenues or expenditures detected between these two groups are attributed to the availability of coal-related revenue in the coal counties.

Once the comparable set of jurisdictions is identified, the ways public expenditures in various categories differ between coal counties and comparable non-coal counties can be measured. In most cases, however, it is not immediately clear if observed differences, which could be attributed to the presence of coal tax revenue, are really *significant*. Statistical tests (Mann-Whitney) were done, therefore, to determine whether there were significant differences in spending between the coal-producing counties and comparable counties. Such statistical tests were applied to all categories of expenditures, first to see if there were differences between expenditures of all seven coal counties versus comparable LTC counties, and second to see if there were differences between expenditures of the three high-production coal counties versus comparable LTC counties.

In our assessment of the potential impacts of a decline in coal tax revenue, we made the following assumption: If coal counties spend significantly more in a certain category of public expenditure, that category of spending is a likely candidate for reductions if coal revenues decline. In making such an assumption, however, a word of caution is in order. Quantifying the effects of a reduction in coal tax revenue is not a precise exercise. Various factors can influence how a county would actually respond to declining coal severance tax revenues. For example, jurisdictions might choose to reduce spending, to increase tax rates, or to do some combination of these. Different political, economic, and social preferences will lead to different responses by communities. Our analysis only puts plausible upper and lower bounds on the potential impact of reduced coal tax revenue.

Table 1. Discretionary income and property values (both per capita) in Virginia counties with low tax capacity, 1990.

County	Income	Property Value	County	Income	Property Value	County	Income	Property Value
Accomack	23,028	35,653	Franklin	23,833	39,863	Prince Edward	23.569	26,818
Amelia	29,281	43,688	Giles	24,251	28,512	Prince George	26,014	25,447
Amherst	24,094	26,235	Gloucester	25,030	41,733	Pulaski	23,372	27,645
Appomattox	25,703	30,457	Grayson	18,582	25,640	Richmond	27,452	37,692
Bland	23,173	22,750	Greene	28,390	39,805	**Russell**	**20,789**	**23,714**
Brunswick	25,699	29,943	Halifax	26,471	25,007	**Scott**	**16,964**	**18,194**
Buchanan	**23,469**	**30,793**	King and Queen	27,979	43,208	Smyth	24,006	22,597
Buckingham	26,387	36,211	**Lee**	**17,234**	**18,302**	**Tazewell**	**25,438**	**22,214**
Carroll	18,704	26,315	Lunenburg	19,231	27,441	Washington	26,145	27,069
Charlotte	24,128	32,095	Mecklenburg	25,355	33,300	**Wise**	**26,168**	**21,994**
Craig	23,409	34,718	Montgomery	26,246	28,628	Wythe	23,550	29,172
Cumberland	22,981	39,232	Northampton	20,310	39,533			
Dickenson	**21,036**	**30,536**	Page	27,358	37,066			
Floyd	24,457	35,952	Patrick	26,908	29,561			

Source: Elias et al., "One state but several Virginias..."; and Carlos Elias, personal communication.

Table 2. Discretionary income and property values (both per capita) in Virginia counties with high tax capacity, 1990.

County	Income	Property Value	County	Income	Property Value	County	Income	Property Value
Arlington	51,165	124,772	Lancaster	37,926	84,076	Middlesex	31,118	72,780
Fairfax	63,667	102,623	Loudoun	58,360	166,029	Northumberland	32,160	89,773
Fauquier	53,628	102,698	Louisa	28,551	129,008	Rappahannock	35,634	105,940
Highland	22,055	78,564						

Source: Elias et al., "One state but several Virginias..."; and Carlos Elias, personal communication.

COMPARISONS OF REVENUES AND EXPENDITURES

Importance of Coal Tax Revenue

Sources of revenue and expenditures (dollars per capita, 1990) in the seven Virginia coal counties and in comparable LTC counties are shown in Tables 3 and 4, respectively. In addition to the coal severance taxes, real estate taxes from coal properties contribute to total local revenue. The real estate taxes from coal properties are separate from other real estate taxes and included in the coal taxes reported in Table 3.

Table 3. Per capita revenues in the Virginia coal counties, 1990.

Coal Counties	Sources of Revenue							
					Local Taxes			
	Total	Federal	State	Local	Non-Coal Property Tax	Local Option Sales Tax	Coal Taxes	Other
Buchanan	1,599	155	712	732	262	45	325	100
Dickenson	1,454	143	705	607	321	25	231	30
Lee	1,111	157	676	278	162	26	43	47
Russell	1,088	112	626	350	200	28	42	80
Scott	991	94	618	279	149	33	1	96
Tazewell	1,049	78	605	366	210	53	43	60
Wise	1,322	118	682	522	212	49	170	91
Non-Coal Counties								
Average HTC	1,365	69	386	910	673	55	0	183
Average LTC	1,006	85	547	374	232	36	0	105
Minimum LTC	718	37	343	243	144	12	0	63
Maximum LTC	1,305	186	714	587	409	103	0	267

Notes: Total revenue received by the local government does not include collections that were not anticipated, such as the sale of land or buildings and insurance recoveries, nor transfers from capital projects, debt service or enterprise activities to general governments.

Other local revenue includes: Property tax on Public Service Corporations, personal property tax, consumer utility tax, permits, privilege fees and regulatory licenses, fines and forfeitures, charges for services, revenue from rental and sale of property, and others.

HTC refers to counties with high tax capacity, LTC to counties with low tax capacity, as described in the text.

Source: Virginia Auditor of Public Accounts, *Comparative Report of Local Government Revenues and Expenditures*.

Table 4. Per capita expenditures in the Virginia coal counties, 1990.

Coal Counties	Expenditure								
	Total	General Government	Judicial Admin.	Public Safety	Health & Welfare	Education	Public Works	Parks, Recreation, & Cultural	Community Development
Buchanan	1,474	27	18	62	125	948	240	13	42
Dickenson	1,448	63	31	56	140	952	191	9	7
Lee	1,054	28	12	53	92	830	27	7	6
Russell	1,119	29	25	50	131	772	74	8	30
Scott	958	31	27	42	64	748	32	8	7
Tazewell	1,002	25	15	47	105	753	34	16	7
Wise	1,274	36	14	52	89	925	109	14	35
Non-Coal Counties:									
Average HTC	1,233	80	24	142	127	732	56	37	34
Average LTC	947	41	18	63	82	692	30	10	11
Minimum LTC	695	23	8	39	41	515	11	0	4
Maximum LTC	1,118	71	30	97	167	874	59	17	37

Note: HTC refers to counties with high tax capacity, LTC to counties with low tax capacity, as described in the text.

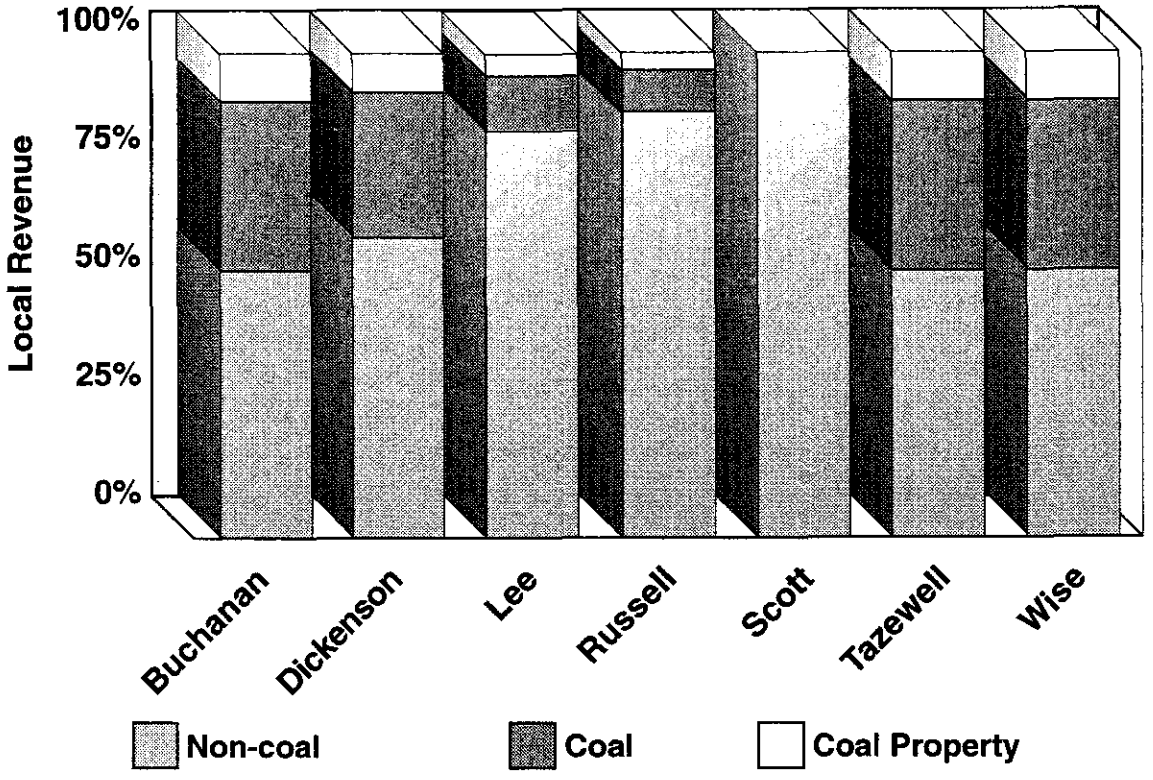
Source: Virginia Auditor of Public Accounts, *Comparative Report of Local Government Revenues and Expenditures*.

The contribution of coal severance tax revenue and coal property taxes to the local budget of the seven coal counties is shown graphically in Figure 1. As one would expect, the contribution of coal severance and property taxes to local revenue is larger in Buchanan, Dickenson, and Wise Counties than in the other southwestern Virginia coal counties. Coal-related taxes do not contribute much to the budgets of the four low-production counties, especially Scott County, where the contribution from coal revenue is negligible.

Figure 2 shows per capita total revenue, the contribution of coal-related revenue to total revenue in each coal-producing county, and total expenditures in the seven coal counties, the comparable non-coal LTC counties, and the HTC counties. Figure 2 illustrates three important points:

- The three high-production counties are more dependent on coal revenue than the four low-production coal counties.
- In the low-production counties, revenues nearly balance expenditures even without coal severance tax revenue.

Figure 1. Local tax revenue in Virginia coal counties, 1990.



Sources: Virginia Auditor of Public Accounts' *Comparative Report of Local Government Revenues and Expenditures*; and county commissioners of revenue.

- Although high-production counties are members of the LTC group of counties, their levels of revenue and spending per capita are comparable to, or even higher than, HTC counties. Thus coal tax revenue is allowing high-production coal counties to spend more money per capita than other LTC counties, and at levels comparable to the HTC counties.

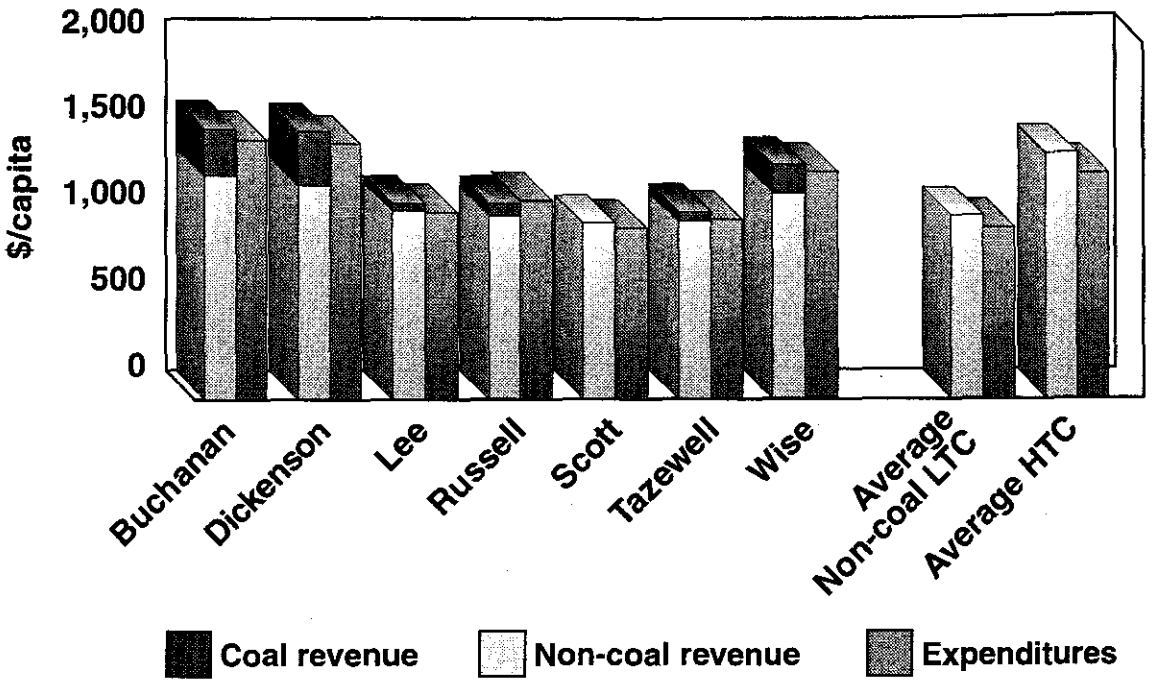
Because per capita expenditures are higher in high-production coal counties than in other LTC counties, any significant reduction in coal tax revenue would have to be accompanied by a reduction in expenditures or an increase in non-coal revenue in order not to cause a budget deficit. In low-production coal counties, however, a reduction in coal severance tax revenue would not likely require significant changes in current expenditures.

Differences in Spending

The *Comparative Report of Local Government Revenues and Expenditures* (Virginia Auditor of Public Accounts) classifies local government spending per capita into eight categories: general government administration; judicial administration; public safety; health and welfare; education; public works; parks, recreation and cultural; and community development. Per capita expenditures in these eight categories are shown in Table 4.

In our analysis, expenditures in each of these categories were compared between coal-producing counties and comparable non-coal LTC counties. In two categories, education and public works, the high-production coal counties spend significantly more per capita than non-coal, LTC counties. These differences are illustrated in Figures 3 and 4. In each figure (and in Figures 5-8 to follow), the upper and lower

Figure 2. Per capita revenue and expenditures in Virginia coal counties, 1990.



Notes: Coal revenue includes coal severance taxes and property taxes on coal property.

HTC refers to counties with high tax capacity, LTC to counties with low tax capacity, as described in the text.

Sources: Virginia Auditor of Public Accounts' *Comparative Report of Local Government Revenues and Expenditures*; and county commissioners of revenue.

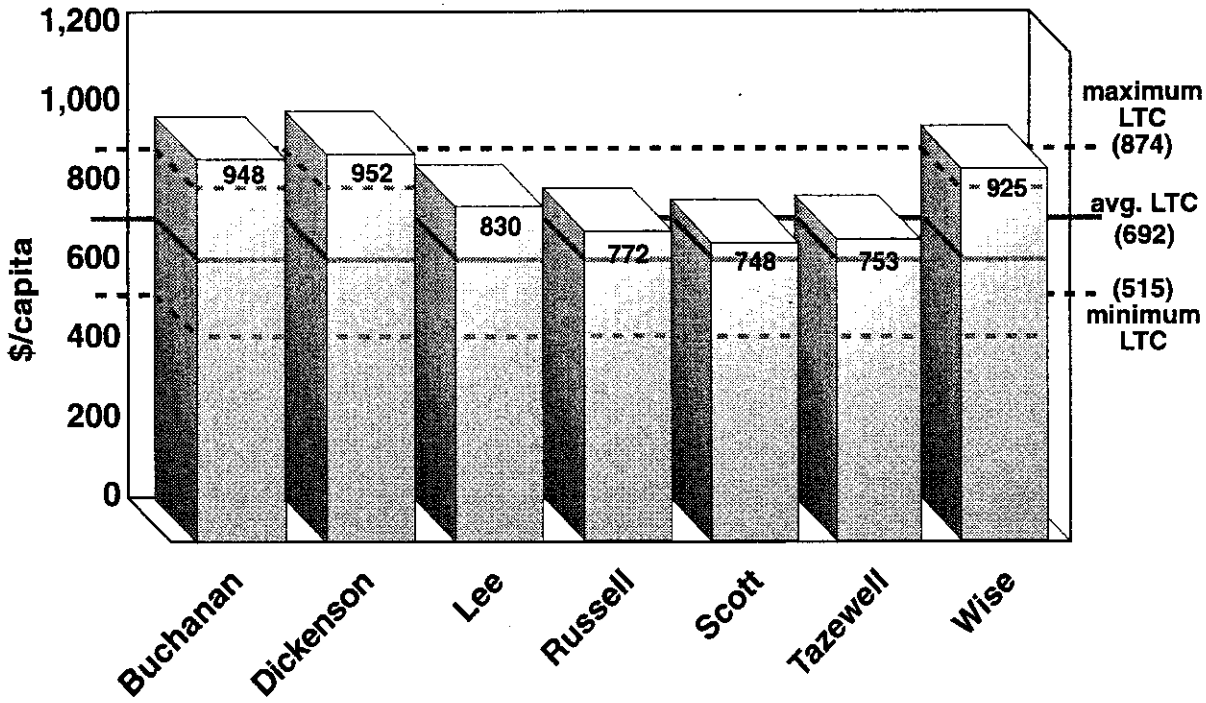
limits of spending in comparable non-coal counties are shown by the dashed horizontal lines, while the solid horizontal line in the figures indicates the *average* expenditure level in the non-coal LTC counties. Because of the statistically significant differences in education and public works, these two categories appear as the most likely to be affected if a reduction in tax revenue from coal production were to occur.

Education and public works spending in the high-production coal counties was also compared to expenditures in these categories in the HTC counties (see Table 4 above). In this case, no statistical differences were found. Again, this suggests that current spending levels in education and public works in the high-production coal counties are closer to those of the HTC counties (none of which have coal revenues) than to those of the non-coal LTC counties.

Levels of spending in the coal counties for all other spending besides education and public works fall inside the range for comparable LTC counties. All LTC counties spend significantly less money per capita in general government administration, public safety, and parks/recreation/cultural categories than the average HTC county.

Although similar, coal counties' spending does not exactly match spending in the non-coal LTC counties. There is considerable variation in the spending patterns among coal counties. For instance, Wise County spends more money per capita on the parks, recreation and cultural category than any other LTC county, so this category might be vulnerable to budget cuts in Wise County. Still, the amount of

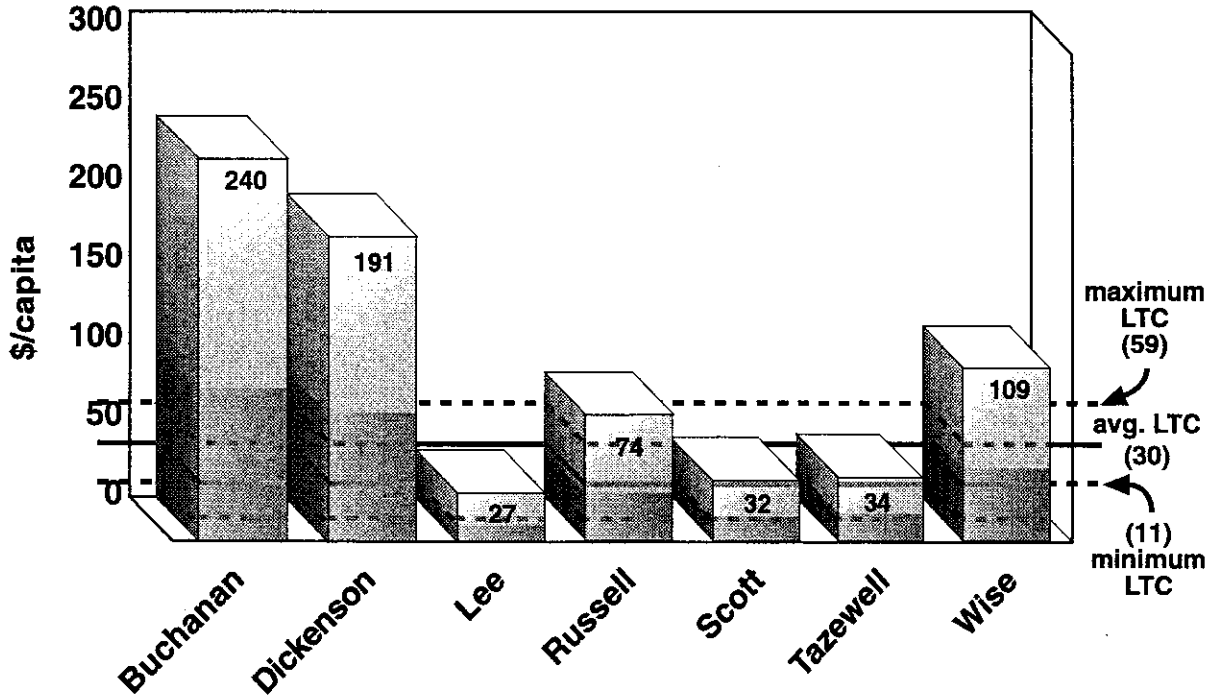
Figure 3. Per capita education expenditures in Virginia coal counties, 1990.



Note: Horizontal lines represent the maximum, average, and minimum per capita expenditure in comparable low tax capacity (LTC), non-coal counties.

Source: Virginia Auditor of Public Accounts' *Comparative Report of Local Government Revenues and Expenditures*.

Figure 4. Per capita public works expenditures in Virginia coal counties, 1990.



Notes: Shaded area represents coal haul road fund expenditures; horizontal lines represent the maximum, average, and minimum per capita expenditure in comparable low tax capacity (LTC), non-coal counties.

Source: Virginia Auditor of Public Accounts' *Comparative Report of Local Government Revenues and Expenditures*.

money designated for parks, recreation and cultural expenditures is negligible when compared to public works or education (see Table 4).

We now take a closer look at differences in education and public works spending in the coal counties and in the comparable jurisdictions.

Education Spending

The Virginia Superintendent of Public Instruction's annual report divides education expenditures into administration, instruction, attendance and health services, pupil transportation services, operation and maintenance services, school food services, summer school, adult education, and others. Table 5 compares spending in eight educational categories in the coal counties versus comparable LTC counties.

Table 5. Per capita education expenditures in the Virginia coal counties, 1989-90.

Coal Counties	Expenditure							
	Admin-istration	Instruc-tion	Attendance & Health	Trans-portation	Operations & Maintenance	Food Services	Summer Schoool	Adult Education
Buchanan	18	639	12	50	127	64	5	0
Dickenson	17	643	17	75	94	72	1	3
Lee	32	603	10	50	69	49	4	5
Russell	14	523	7	52	79	42	3	3
Scott	13	520	8	57	95	24	1	5
Tazewell	8	556	6	48	76	46	2	2
Wise	14	777	7	49	85	43	3	22
Non-Coal Counties:								
Average HTC	30	445	10	46	74	30	2	4
Average LTC	23	500	8	49	66	26	1	2
Minimum LTC	11	366	2	23	42	0	0	0
Maximum LTC	51	621	17	103	98	42	4	6

Note: HTC refers to counties with high tax capacity, LTC to counties with low tax capacity, as described in the text.

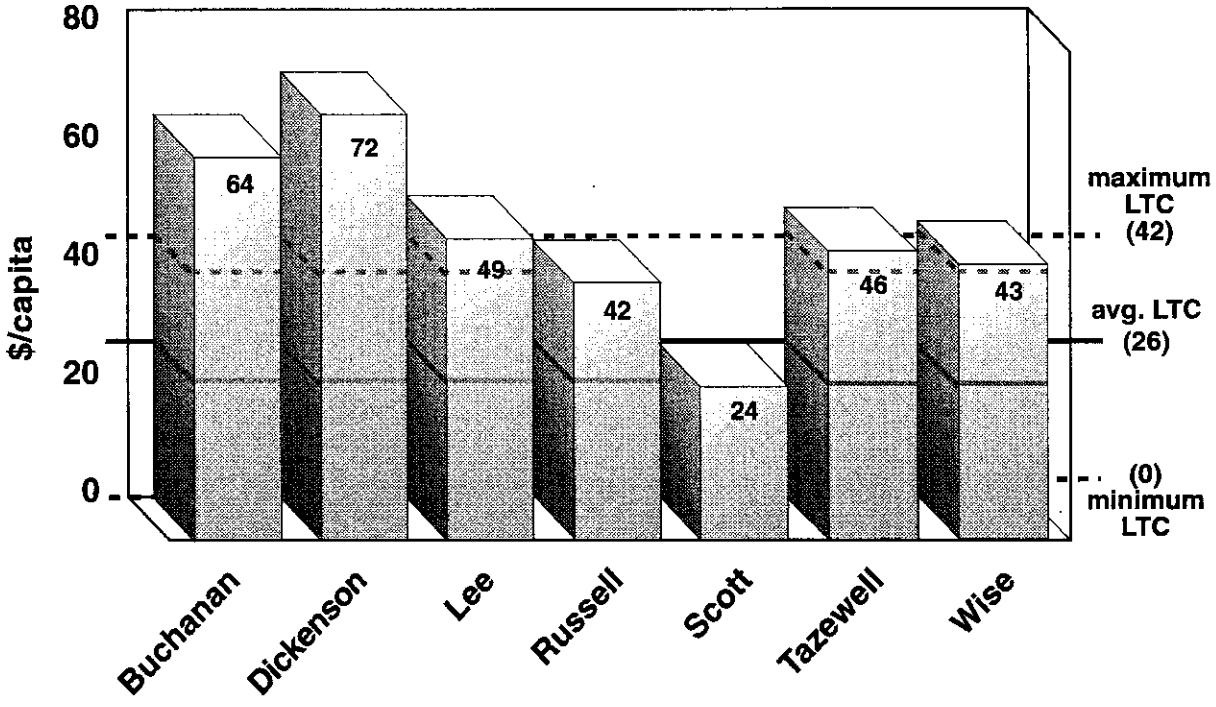
Source: Virginia Superintendent of Public Instruction's annual report for 1992.

Several categories of spending would not likely be affected by declining coal tax revenue, because coal counties spend equal or lesser amounts in these categories than other LTC counties. As Table 5 shows, all coal counties except Lee County spend less money per capita in the administrative aspects of education than the average of comparable LTC counties. Because of their current low levels, reductions in the administrative expenses of education in the coal counties are not likely.

Similarly, coal counties' spending in the categories of attendance and health services, pupil transportation services, and operation and maintenance services are not likely to be severely impacted by a decline in coal severance tax revenue, because spending on these items in the coal counties is currently within the range of other LTC counties. (The exception is operations and maintenance spending in Buchanan County, which, at $127 per capita, exceeds the maximum LTC level of $98.)

Figure 5 shows that all coal counties except Scott County spend more money per capita in school food services than the average of the LTC counties. The largest difference is seen in Buchanan and Dickenson counties.

Figure 5. Per capita school food services expenditures in Virginia coal counties, 1989-90.

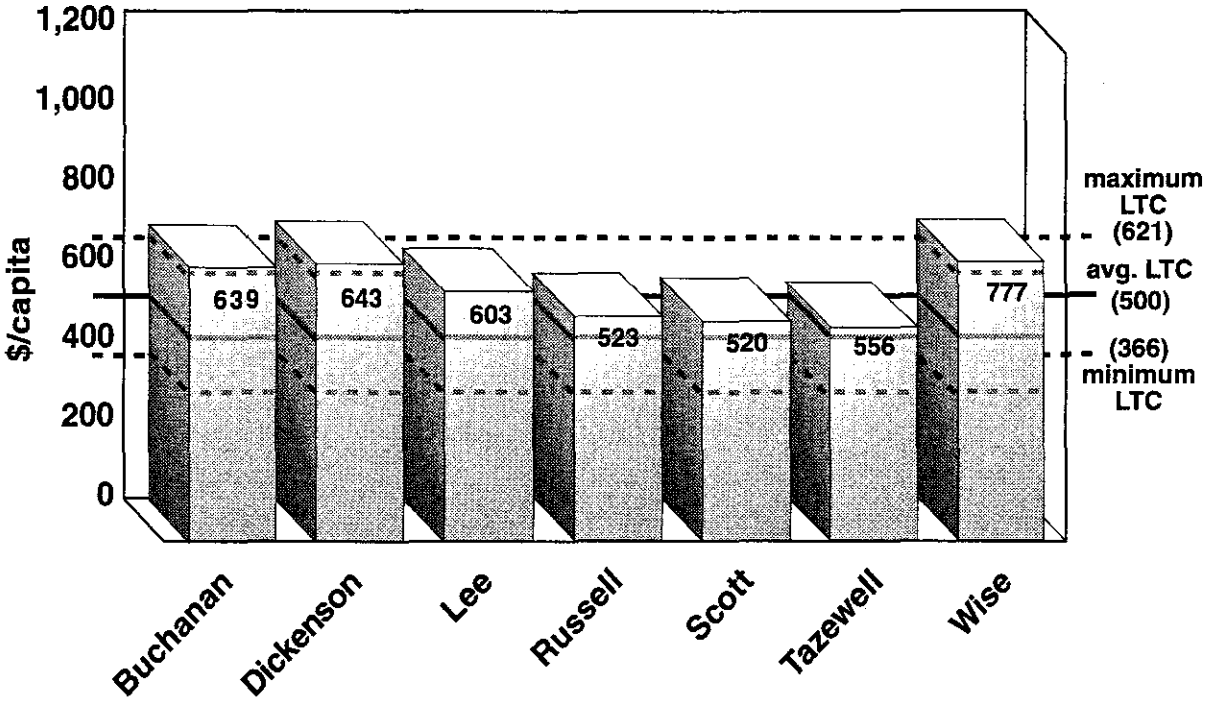


Note: Horizontal lines represent the maximum, average, and minimum per capita expenditure in comparable low tax capacity (LTC), non-coal counties.

Source: Virginia Superintendent of Public Instruction's annual report for 1992.

The five educational spending categories mentioned so far, though fundamental to the educational process, do not have a direct effect on teaching in the classroom. But several educational spending categories that appear vulnerable to a decline in coal severance tax revenue *are* closely related to the classroom: instruction (including teachers' salaries and classroom equipment), adult education, and summer school. Figure 6 shows that the seven coal counties tend to spend more on instruction than the average LTC counties. Figure 7 shows that all coal counties except Scott and Dickenson spend more on summer school than the average comparable jurisdiction. Figure 8, showing adult education spending, indicates that Wise County tends to spend more on adult education than other coal counties, but per capita adult education spending in the remaining coal counties does not differ much from the average of comparable jurisdictions.

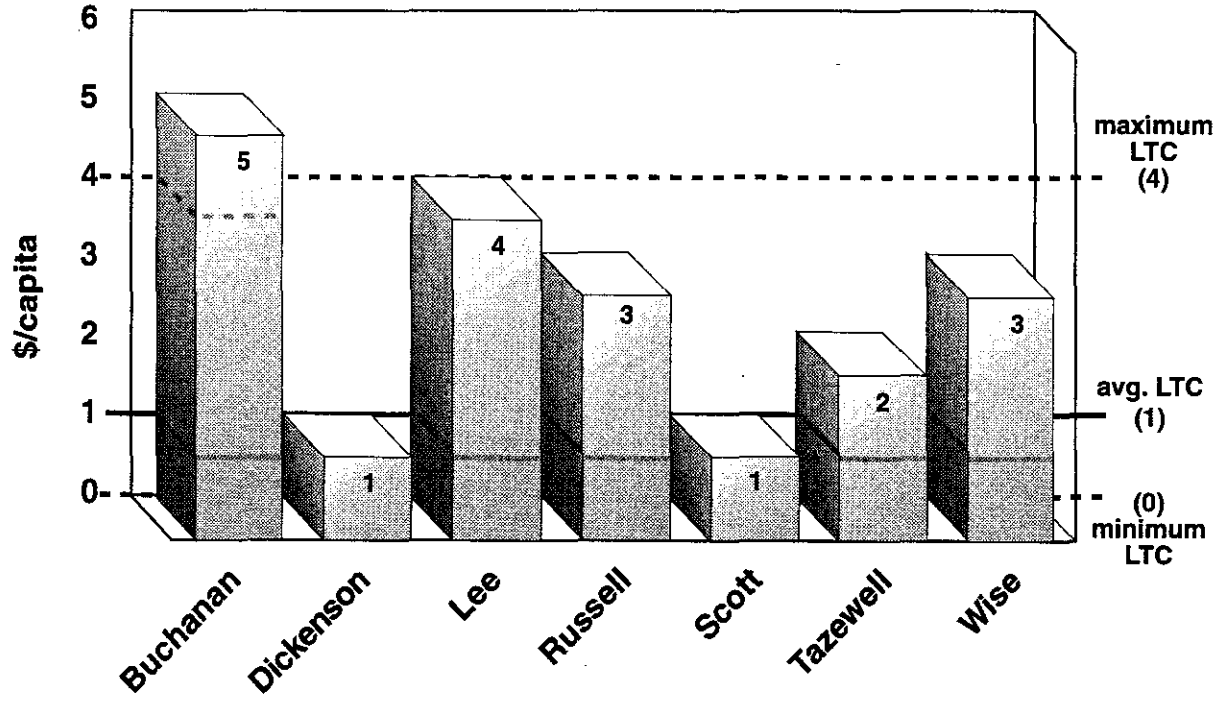
Figure 6. Per capita educational instruction expenditures in Virginia coal counties, 1989-90.



Note: Horizontal lines represent the maximum, average, and minimum per capita expenditure in comparable low tax capacity (LTC), non-coal counties.

Source: Virginia Superintendent of Public Instruction's annual report for 1992.

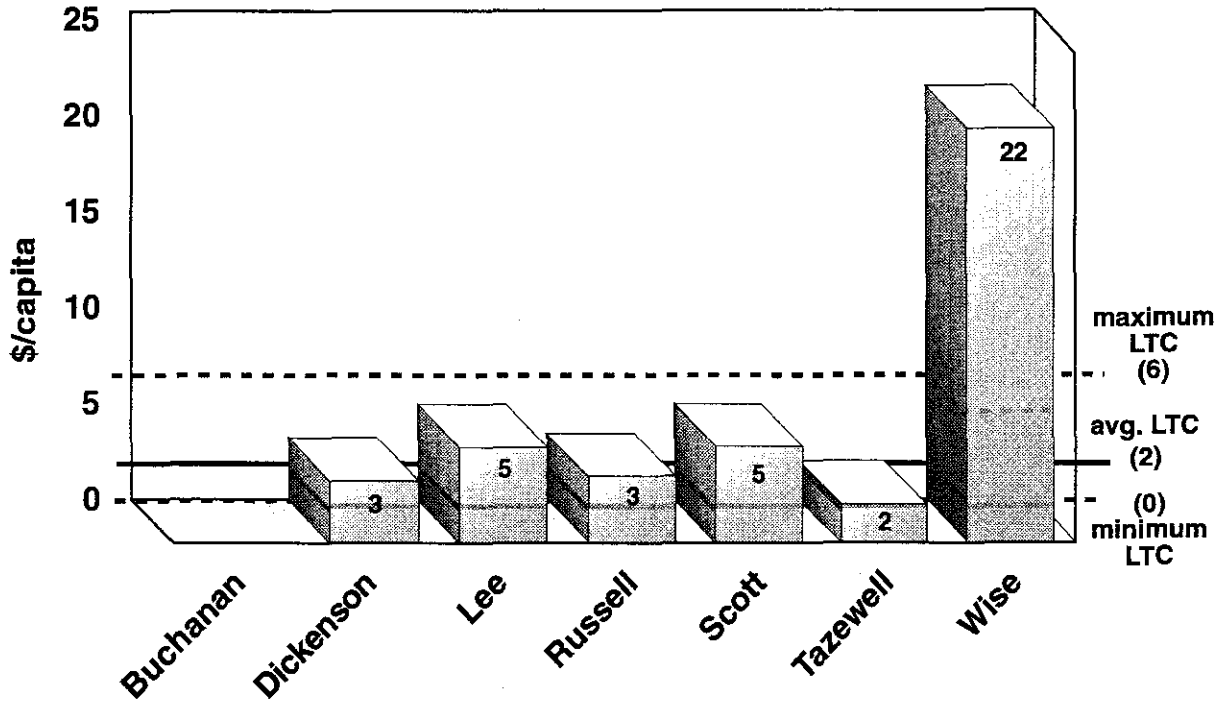
Figure 7. Per capita summer school expenditures in Virginia coal counties, 1989-90.



Note: Horizontal lines represent the maximum, average, and minimum per capita expenditure in comparable low tax capacity (LTC), non-coal counties.

Source: Virginia Superintendent of Public Instruction's annual report for 1992.

Figure 8. Per capita adult education expenditures in Virginia coal counties, 1989-90.



Note: Horizontal lines represent the maximum, average, and minimum per capita expenditure in comparable low tax capacity (LTC), non-coal counties.

Source: Virginia Superintendent of Public Instruction's annual report for 1992.

The results shown in Figures 6-8 suggest that coal counties are using coal severance tax revenue to invest in the educational well-being—the human capital—of their citizens. This investment is basically made in areas with a direct impact on the teaching process. These are the areas which appear to be most vulnerable to a decline in coal tax revenue.

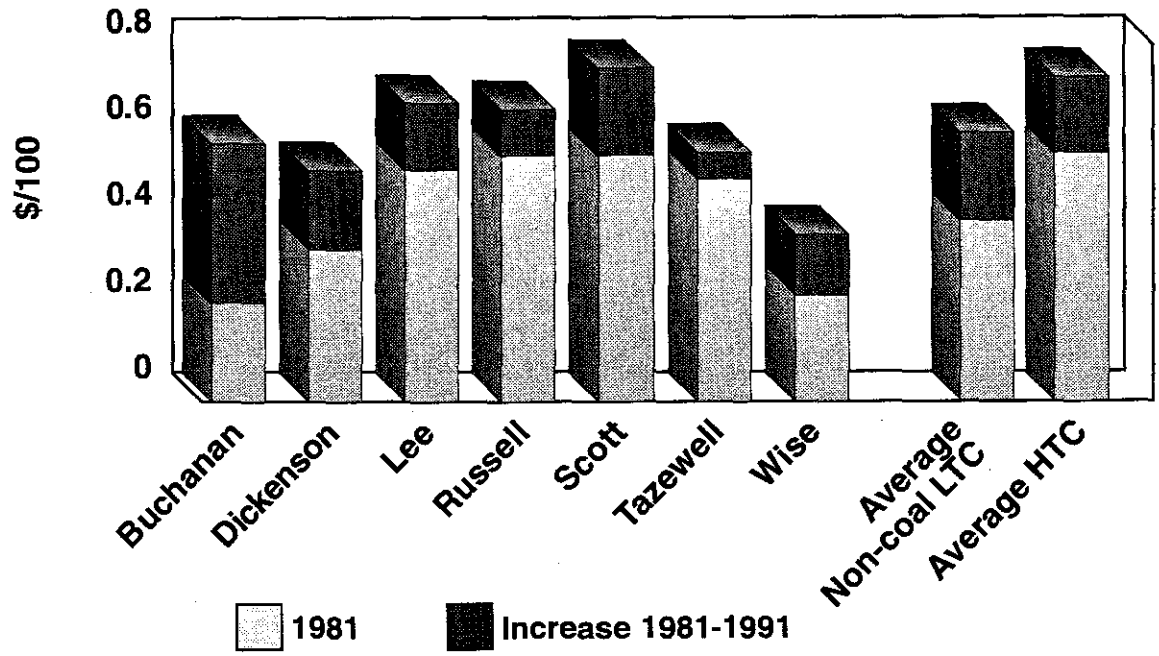
Public Works Spending

The other major local spending category that appears vulnerable to a decline in coal severance tax revenue is public works. The *Comparative Report of Local Government Revenues and Expenditures* classifies public works spending into three categories: sanitation and waste removal; maintenance of highways, streets, bridges, and sidewalks; and maintenance of general buildings and grounds. Table 6 shows public works spending in the coal counties and comparable jurisdictions.

Only in spending for maintenance of highways, streets, bridges, and sidewalks did we find a statistically significant difference between coal counties and comparable LTC counties. This is not surprising because of the mandatory aspects of the Virginia *Code* with respect to coal taxes: three-eighths of coal severance tax revenue must necessarily go to coal road maintenance. Spending in this public works category would probably decline following any reduction in coal severance tax revenue. On the other hand, if coal production—and the resulting heavy truck traffic on local roadways—were to decline, the need for local road maintenance spending would probably decrease, too.

Although statistically non-significant, per capita spending for sanitation and waste removal is greater in Wise County than in the average comparable jurisdiction. Wise County is also the only jurisdiction of the seven coal counties that, at the time of this report, had a landfill built to comply with new solid-waste regulations.

Figure 9. Effective real property tax rates in Virginia coal counties, 1981 and 1991.



Note: HTC refers to counties with high tax capacity, LTC to counties with low tax capacity, as described in the text.

Source: Center for Public Service, *Tax Rates in Virginia's Cities, Counties, & Selected Towns.*

difference in 1991 tax rates was found between the coal counties and other comparable jurisdictions.

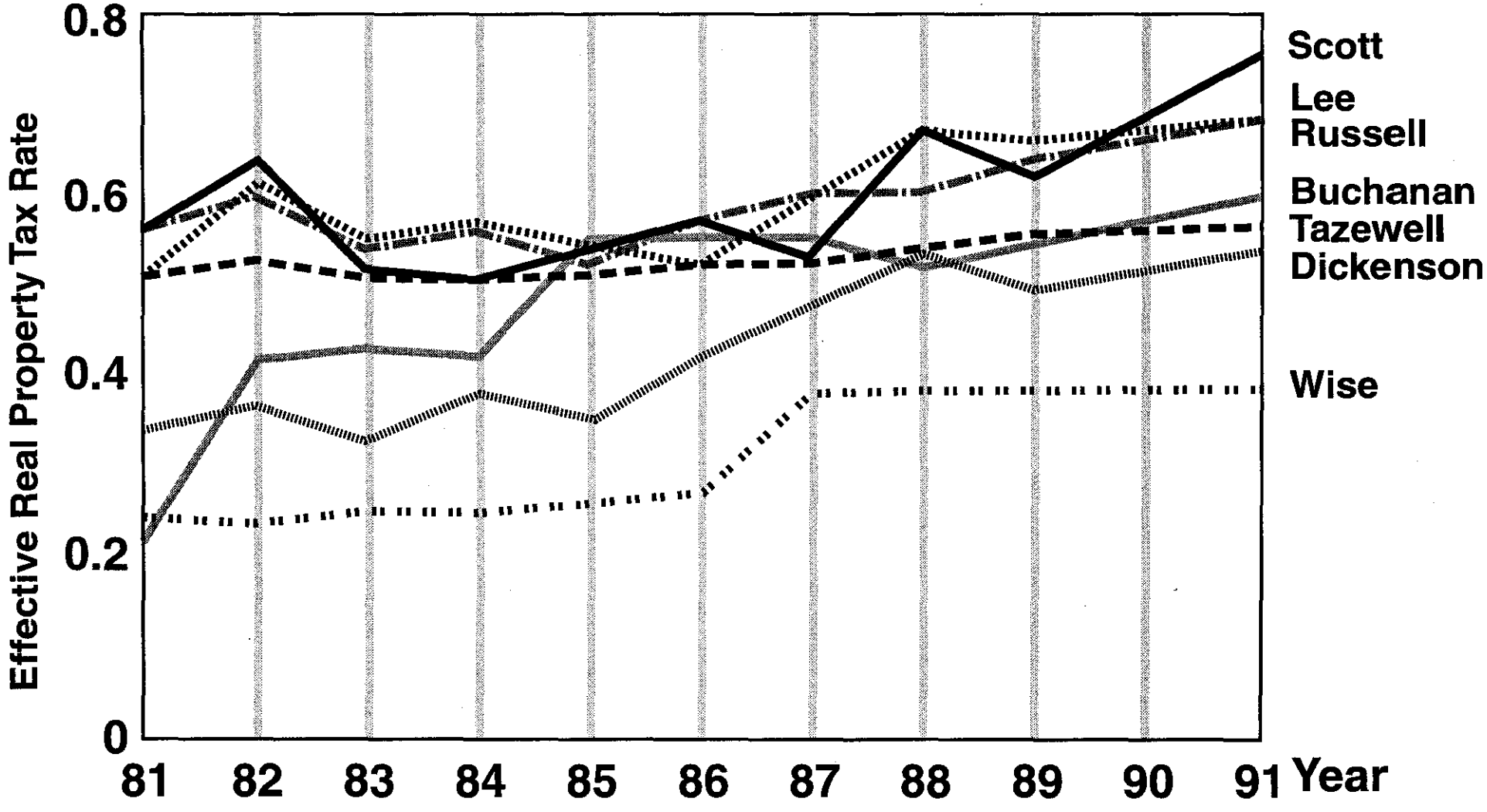
On the other hand, average effective true real property tax rates in the coal counties have increased over the last few years, and this increase was larger in the high-production counties than in the other counties. Statistical tests on the 1981 data show that high-production coal counties had lower real property tax rates than other comparable LTC counties at that time. This indicates that high-production counties have in the past offered their citizens reduced real property tax rates, but these rates have been increasing in recent years. In Wise and Dickenson Counties, some of these increases were instituted to comply with conditions imposed by the state to allow emergency use of coal haul road funds in education budgets. Figure 10 illustrates that, except for Wise County, differences among property tax rates in the coal counties narrowed between 1981 and 1991.

The lack of statistical differences for the 1991 tax rates suggests that coal counties are reaching the average level of taxation of comparable LTC tax-capacity counties. As a result, it would probably be difficult for the coal counties to use further increases in property tax rates to generate more revenue.

A second issue that arises in evaluating the effects of a possible decline in coal tax revenue concerns the effect of coal activities on other sources of tax revenue. Real property and sales taxes are the two most important sources of local revenue for most counties in Virginia, and both may be affected by changes in the coal industry. (For example, a decline in wages paid by the coal industry or in coal production might reduce real property valuation, or changes in wages and salaries paid to coal labor might affect the volume of retail sales.)

Dependence of sales taxes and property tax revenues on coal production for each of the seven counties was determined through regression analyses using data from

Figure 10. Changes in effective real property tax rates in Virginia coal counties, 1981-1991.



Source: Center for Public Service, *Tax Rates in Virginia's Cities, Counties, & Selected Towns* Effective real property tax rates expressed as per $100 of assessed value.

the years 1986 through 1990. The statistical analysis suggests that real property value and the volume of retail sales are significantly influenced by coal severance tax revenue (i.e., coal production) in Buchanan and Dickenson counties, but not in Wise, Lee, Russell, Scott, and Tazewell counties. In Wise County (a high-production county), the lack of statistical association between coal tax revenue and other sources of revenue probably results from a relatively diversified economy in that county. Likewise, business other than coal in the low-production counties is less dependent on the coal industry than in Buchanan and Dickenson counties.

Estimated Effects of a Decline in Coal Tax Revenue

The potential impact of a future decline in coal severance tax revenue in the high-production coal counties was evaluated for hypothetical decreases in coal tax revenue from current levels. The possible decreases considered were 5, 25, 50, 75 and 100 percent. Tables 7-9 show, for Buchanan, Dickenson and Wise counties, respectively, the total per capita revenue in 1990 and the changes to that revenue under the different hypothetical decreases in coal tax revenue. In these scenarios, fed-

Table 7. Estimated per capita revenue with a decline in coal taxes, Buchanan County.

Source of Revenue	Actual 1990	% of Decline in Coal Tax Revenue				
		5	25	50	75	100
Coal	325	309	244	162	81	0
Real Property	262	249	227	199	169	144
Sales	45	45	44	42	40	40
TOTAL LOCAL	732	665	590	494	399	379
TOTAL L/S/F	1,599	1,482	1,406	1,309	1,213	1,118

Notes: TOTAL LOCAL revenues include Coal, Real Property, Sales and other local taxes. Local sources of revenue not included in this Table are: Property tax to Public Service Corporations, personal property tax, consumer utility tax, permits, privilege fees and regulatory licenses, fines and forfeitures, charges for services, revenue from rental and sale of property, and others.

TOTAL L/S/F includes local revenue, plus federal and state aid.

eral and state aid to the counties was assumed to be constant.

The point we considered in these hypothetical decreases was this: How much would coal revenues have to decrease before the total local tax revenue would reach the average of the non-coal LTC counties? The non-coal LTC average value for local tax revenues, as shown in Table 3 above, was $374 in 1990. Tables 7-9 show that quite substantial reductions in coal revenue would be required before the total local tax revenue of the three high-production coal counties would decline to the average total local tax revenue of non-coal LTC counties. If such large declines were to occur, it might be reasonable to assume that expenditures in the coal counties would regress to levels similar to the other LTC counties. In this case, expendi-

Table 8. Estimated per capita revenue with a decline in coal taxes, Dickenson County.

Source of Revenue	Actual 1990	% of Decline in Coal Tax Revenue				
		5	25	50	75	100
Coal	231	219	173	115	58	0
Real Property	321	306	193	164	144	144
Sales	25	25	24	21	18	15
TOTAL LOCAL	607	588	520	460	400	339
TOTAL L/S/F	1,454	1,441	1,380	1,322	1,264	1,205

Notes: TOTAL LOCAL revenues include Coal, Real Property, Sales and other local taxes. Local sources of revenue not included in this Table are: Property tax to Public Service Corporations, personal property tax, consumer utility tax, permits, privilege fees and regulatory licenses, fines and forfeitures, charges for services, revenue from rental and sale of property, and others.

TOTAL L/S/F includes local revenue, plus federal and state aid.

Table 9. Estimated per capita revenue with a decline in coal taxes, Wise County.

Source of Revenue	Actual 1990	% of Decline in Coal Tax Revenue				
		5	25	50	75	100
Coal	170	161	127	85	42	0
Real Property	212	212	212	212	212	212
Sales	49	49	49	49	49	49
TOTAL LOCAL	522	513	479	437	394	352
TOTAL L/S/F	1,322	1,248	1,216	1,176	1,135	1,095

Notes: TOTAL LOCAL revenues include Coal, Real Property, Sales and other local taxes. Local sources of revenue not included in this Table are: Property tax to Public Service Corporations, personal property tax, consumer utility tax, permits, privilege fees and regulatory licenses, fines and forfeitures, charges for services, revenue from rental and sale of property, and others.

TOTAL L/S/F includes local revenue, plus federal and state aid.

tures on education and public works would be likely to fall, as we have argued above. Of course, this analysis assumes that a decline in coal severance tax revenue would result in coal counties adjusting their spending patterns to approach those shown by comparable non-coal counties. While this assumption seems reasonable, it might not always be the case. Some jurisdictions might be able to attract alternative sources of local income to replace the lost coal severance tax revenue, or might choose a unique pattern of spending.

Another way to look at this question is to ask what levels of tax increases would be required in the high-production coal counties to maintain current levels of education and public works expenditures in the event of declining coal tax revenue. Table 10 shows the real property tax rates that would be required to compensate for different percentage declines in coal severance tax revenue in Buchanan, Dickenson, and Wise Counties. These compensatory tax rates were estimated for two cases: first, where local governments sacrifice some public works spending to maintain current levels of education spending; and second, where local governments maintain all current spending. The first alternative assumes governments might not be

Table 10. Property tax rates required to maintain current expenditures as coal tax revenues decline in high-production counties.

County	Expenditure Maintenance	Actual 1990 rate (per $100 of assessed value)	% of Decline in Coal Tax Revenue				
			5%	25%	50%	75%	100%
Buchanan	Education	.54	.58	.73	1.19	1.58	2.06
	Total	.54	.62	.93	1.84	2.08	3.04
Dickenson	Education	.49	.51	.80	.97	1.13	1.30
	Total	.49	.54	1.12	1.45	1.78	2.11
Wise	Education	.39	.41	.49	.59	.69	.80
	Total	.39	.43	.60	.80	1.00	1.21

Note: Maximum rate among non-coal LTC counties in 1991 was 0.89.

interested in maintaining high levels of expenditures in roads when it is not mandated by law (i.e., for coal haul road funds).

The maximum property tax rate in non-coal LTC counties in 1991 was 0.89 (89 cents per $100 of assessed value). We assumed that this maximum sets a limit on how high tax rates could feasibly go in the coal counties. In the first situation considered—maintaining education spending—Buchanan and Dickenson Counties would reach this point of infeasibility before coal severance tax revenue declines by 50 percent. At this point (if not before), a reduction in their current spending would certainly be expected to occur. Wise County, however, would have somewhat more flexibility. Its currently low tax rate, together with its lesser dependency on coal tax revenue, would allow this jurisdiction more opportunity to raise taxes, under more stringent coal tax losses, than any of the other high-production coal counties.

Under the second situation—maintaining education *and* public works spending—even higher property tax rates would be required to compensate for lost coal tax revenue. The 0.89 rate level would be reached after only a 25-percent decline in coal tax revenue in Buchanan and Dickenson; in Wise, however, revenues could decline over 50 percent. Almost the entire difference between public works spending in the three high-production counties and in comparable counties can be attributed to mandated use of coal tax revenue. Without the 37.5 percent of coal tax revenues devoted to the coal-haul road fund, public works spending in the high-production counties would appear close to other LTC counties.

Summary and Conclusions

This report confirms that coal severance taxes are an important source of revenue in southwestern Virginia. While all seven coal counties make use of coal tax revenue, the financial well-being of Buchanan, Dickenson, and Wise Counties—the high-production coal counties—depends on coal tax revenue more than is the case in Lee, Russell, Scott, and Tazewell Counties, the low coal-production counties.

Current levels of public spending in the high-production counties would be difficult to achieve without coal tax revenue. For instance, in 1990, none of the three high-production counties would have been able to achieve the expenditures they did without coal severance tax revenues, unless other taxes had been raised significantly. On the contrary, the low-production counties are far less dependent on coal tax revenues. In 1990, the low-production counties would have been able to balance their budgets in the absence of coal severance tax revenues.

The financial dependence on coal tax revenue in Buchanan and Dickenson Counties also stems from a close statistical relationship among this source of revenue, real property value, and retail sales. Because of the close linkage found among them, a decline in coal production and in coal tax revenue in these two jurisdictions would also reduce the other two sources of revenue, aggravating the financial stress.

This strong statistical relationship among the several sources of revenue was not found in the other five coal counties. In the four low-production counties, this can easily be attributed to their lesser dependence on coal production and coal tax revenue. In Wise County (a high-production county), the lack of statistical association between coal tax revenue and other sources of revenue probably results from a relatively diversified economy in that county.

Although the coal counties depend on coal tax revenue to different degrees, the three high-production counties all appear to use coal tax revenue to fund a higher per capita level of public expenditures than is found in non-coal counties with otherwise comparable economic characteristics. Most of this extra public spending is directed toward education and public works. Indeed, per capita school spending in the three counties with the largest coal tax revenues is comparable to expenditures in many of Virginia's wealthier localities. As a result, education and public works would most likely be the two public expenditure categories affected by a decline in coal tax revenue.

Among specific categories of education spending, instruction appears to be one of the most vulnerable to a decline in coal tax revenue. In the high-production coal counties, per capita expenditures for instruction (both salaries and operating expenses) greatly exceeds average levels in comparable non-coal counties.

Public works expenditures in the high coal-production counties are also far above those made by any other comparable jurisdiction. Because of the legal mandate, all seven coal counties assign 37.5 percent of all coal severance tax revenue to a coal-haul road fund. When this amount of revenue is removed from the public works expenditures of the high-production counties, per capita expenditures approximate the levels found in comparable non-coal jurisdictions.

Based on recent taxation levels, we do not find that the availability of coal tax revenue has resulted in lower taxation in the coal counties than would have been the case without the coal tax. Six of the seven coal counties (all but Tazewell) increased property taxation rates between 1981 and 1991 in response to decreasing federal and state aid and other factors. Over this period, the largest property tax rate increases occurred in the three high-production coal counties (Buchanan, Dickenson, and Wise). Current real property tax rates in most of the coal counties differ only slightly from property tax rates in economically comparable Virginia counties, which suggests that these rates have reached a practical ceiling. Thus, if coal tax revenues decline, further raising of local property taxes will not offer an easy solution to maintaining current spending.

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