

The Cruel Coal Facts: The Impact on West Virginia Counties from the Collapse of the Coal Economy

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The National Association of Counties (NACo)
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Major Conclusions

- 1. The 38 percent decline in West Virginia coal production plus the 71 percent fall in coal prices since 2008 have led to a collapse of the State's coal economy.**
- 2. The decline in coal production is projected to continue. With output this year falling to between 71 and 90 million tons.**
- 3. There are two distinct coal fields: north and south with different types of coal and different impacts.**
- 4. The southern coal counties are severely impacted and northern counties to a much lesser degree.**
- 5. The collapse of coal has significantly reduced personal income in southern West Virginia coal counties**
- 6. Property taxes to county governments and schools based on coal production, reserves, equipment and other coal property have been significantly reduced**
- 7. While the State's general fund has been adversely effected due to declines in coal severance taxes, so have the budgets of coal producing counties which share a portion of the severance tax.**
- 8. The reduction in property and severance tax revenues have forced some county governments to reduce services and employment and others to use reserves.**
- 9. While not part of county government, county school districts have also been impacted forcing layoffs and program reductions.**
- 10. In the future it is unlikely that coal is going to return as a major economic driver in coal counties. The only bright spot is the production of metallurgical coal for which demand remains stronger.**

Specific Findings

The recent, steep and continuing decline in the demand and price for coal has had a negative impact on many county governments in West Virginia. From this study of the 10 highest coal producing counties in the West Virginia, these findings are advanced.

- West Virginia is the second largest coal producing state in the nation and the largest source for coal exports from the United States.
- Nationwide the total use of coal for industrial production and in the generation of electricity has declined due to the use of substitute fuels primarily natural gas.
- Coal production in West Virginia has declined by 38 percent between 2008 and 2015.
- Forecasts indicate further reductions in the use of coal over the next 20 years.
- The collapse in the West Virginia coal economy can not only be tied to the sharp decline in coal production, but also to the even greater reduction in coal prices which have declined on average by 71 percent since 2008.
- Total employment related to coal extraction, processing and distribution after an increase has started to decline
- The impact among West Virginia coal counties has been uneven with the southern coal fields seeing the greatest declines in production of as much as 67 percent.
 - The greater decline in the south is due to the reduced demand for low sulfur coal and the presence of thinner and less productive seams.
 - In the north the impact has been less as the relative demand for the high sulfur coal produced there has been supported by the installation of scrubbers on electric generating plants which can use that coal. Plus, these counties have seen natural gas production from Marsalis shale.

- There are several interrelated causes for the coal economy’s situation which are covered in the report.
 - Competition from cheaper natural gas
 - Environment regulations
 - Closure of coal fired electric generating plants
 - Decrease in productive coal seams
 - Competition with Western coal
 - Erosion of international coal markets
- The decline in coal production and prices has significantly reduced the income received by those living in the West Virginia southern coal counties with a lesser impact in the north.
 - For Boone County total personal income has fallen to less than 70 percent of its 2011 level. The other southern counties have seen similar declines: Mingo at 67 percent of 2011 levels, Logan at 85 percent
 - Wyoming has seen a slight uptick at 101 percent of the 2011 high and Raleigh at is at 98 percent.
 - Although in most northern counties coal related personal income has fallen, total personal income has remained static or has actually risen due to other factors. In Marshall, Monongalia, Ohio counties total income received is over 112 percent of 2011 with Marion holding at almost 100 percent.
 - Not surprising those counties where income from coal is above 30 percent of their total income have fared the worse. (Boone, Logan, Mingo). In counties with coal dependency of five percent or less (Kanawha and Monongalia) there is a much lesser impact.
- County government budgets have been strained most especially in the southern counties.
 - In West Virginia due to constitutional and statutory provisions, county governments are highly dependent on revenues directly related to coal property and severance taxes.
 - Property Taxes
 - Real property taxes on coal reserves have fallen by 30 percent in Mingo and 17 percent in Boone. All other counties north or south have seen increases. This is due to the averaging process used in property valuations which spreads prices and production over a three-year period. As the impact of the lower production and prices become included in the averaging process, these valuations will drop.
 - Personal property taxes on coal related machinery and equipment have actually increased as much of this property is “captive”. Low coal prices everywhere have provided little incentive to move it elsewhere.
 - Severance Taxes
 - The State levies a 5 percent severance tax on the gross value of coal extracted. This is split with 4.65 percent going to the State’s general fund and 0.35 percent distributed to the counties
 - Of the county share 75 percent returns to the county where the coal was produced and 25 percent is distributed to the municipalities within those counties based on population.¹
 - As coal production and prices have decreased so has the severance tax to both the State and the counties creating severe fiscal difficulties.
 - In 2012 a Reallocation Severance Tax was enacted allocating a small portion of the State tax to counties to partially offset the loss in their portion of the severance tax. The percentage of the State severance tax to be reallocated began at one percent and rises to five percent with a \$20 million cap. This reallocation has not compensated for the loss of severance tax revenue.
- Other Economic Impacts from the Crisis in Coal

¹ The county keeps whatever percentage of the county population is not in a municipality.

- No attempt is made in this paper to measure the indirect impacts of the coal crisis. These should not be minimized as the crisis has reduced incomes, retail sales, and employment. Added to those declines is the yield from property taxes on non-coal related property.
 - Reduced railroad shipments of coal which have led to reduced employment, track closures and terminals. In addition, headquarter operations have been closed and consolidated.
 - Closure of retail outlets and reduced sales at those remaining
 - Decreases in employment in coal service industries: trucking, contracting, construction and finance
 - Expanded demand for government services like training and transfer payments
- These impacts are not limited to just the West Virginia coal counties, but are spread over a wider area of the State and adjacent states.
- It is unlikely that coal is going to return as a major factor in these counties in the predictable future. While coal production in the short run will continue to fall and then stabilize the anticipated level will be well below even the depressed current levels. The best outcome for the southern counties is the continued demand for met coal used in steel production which is available in the south.

Background

For most of the period from 1860 until the turn of this century, West Virginia's coal field activity mirrored the national economy. Coal production was closely related to industrial activity. When the economy boomed coal prices and production followed only to fall during periods of recession. As the demand for electricity rose, so did the demand for coal generated power. Beginning in the 1840's demand for coal also was buoyed by the growth of railroads and their use of coal fired steam locomotives. The latter demand ended with the switch to diesel locomotion during the early 1950s.

As the manufacturing became relatively less important in the United States economy, as power plant efficiency increased, as the use of natural gas and renewable fuels expanded, and as the shift to a knowledge economy continued; coal and GNP became less tightly linked. (Energy Information Administration May 17, 2016)

As Table I shows, West Virginia remains the second largest producer of coal in the United States contributing Over 11 percent of the nation's supply. While there has been a slow, uneven decline in West Virginia coal production over the past few decades, the current collapse began following the banner years of 2008-2011. Contract employment related to the closure of mines and mine remediation shows an increase for the past few years, but this is not expected to continue. Figures 1 and 2 provide graphic representations.

Table II gives the information for coal production in West Virginia 2003-2015 Production fell by 38 percent from its high in 2008. The forecast for 2016 shows a further decline in production of West Virginia coal to between 71-90 million short tons. (Lego 2015) (Risch July 8, 2015). If that figure proves to be correct, then coal production will have declined by the end of this year by 42 percent from its 2008 high.

Table I
Coal Production by State, by Rank and Year of Highest Production
(Thousand Short Ton)

Info

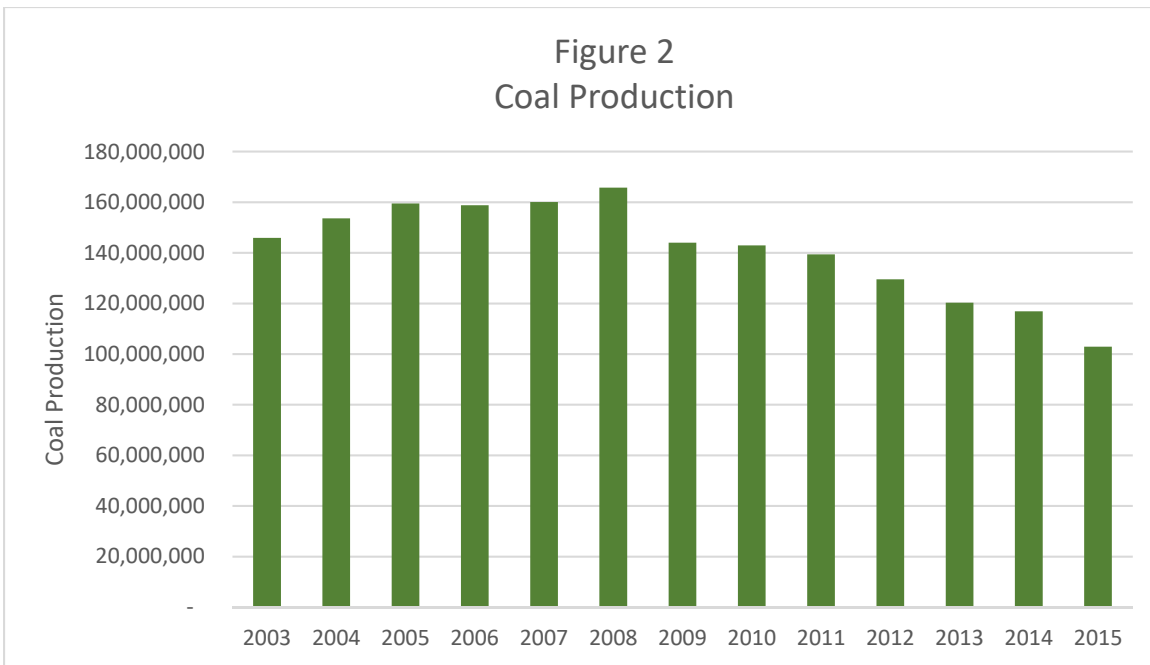
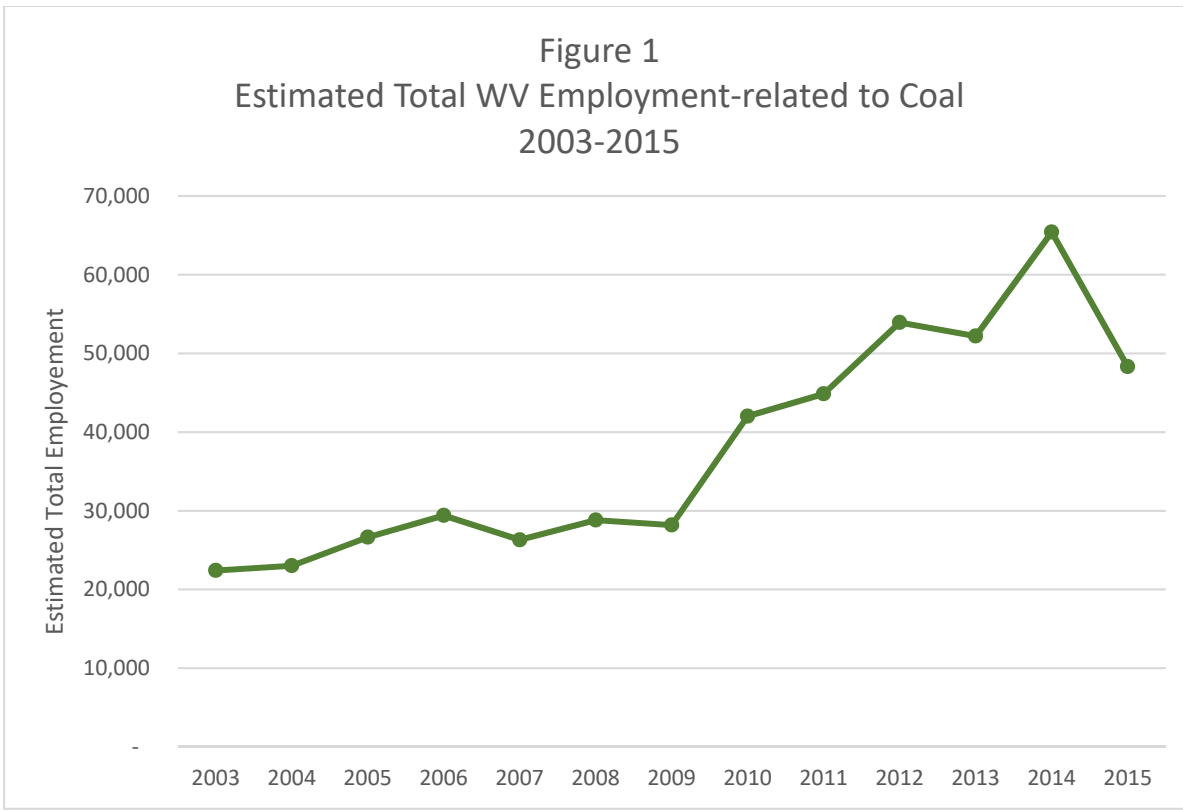
	State	2014 Total	% of Total U.S.	Historical High	Year
1	Wyoming	395,665	39.6%	467,644	2008
2	West Virginia	112,187	11.2%	176,157	1947
3	Kentucky	77,335	7.7%	173,322	1990
4	Pennsylvania	60,910	6.1%	89,281	1918
5	Illinois	57,969	5.8%	277,377	1918
6	Montana	44,562	4.5%	44,732	2010
7	Texas	43,654	4.4%	55,755	1990
8	Indiana	39,267	3.9%	39,267	2014
9	North Dakota	29,157	2.9%	30,775	2003
10	Colorado	24,007	2.4%	39,870	2004
	All Other	113,710	11.4%	1,394,180	
Total: United States		1,000,049	100%	1,171,809	2008

Table II
Employment and Coal Production in WV

Year	Estimated Total	
	Employment	Coal Production
2003	22,421	145,899,599
2004	23,031	153,631,633
2005	26,648	159,498,069
2006	29,419	158,835,584
2007	26,321	160,043,930
2008	28,832	165,750,817
2009	28,196	144,017,758
2010	42,034	142,944,106
2011	44,865	139,424,080
2012	53,934	129,538,515
2013	52,213	120,342,846
2014	65,428	116,900,140
2015	48,327	102,954,676

Employment includes those working in mines and directly associated with mining production, distribution, remediation, marketing and finance.

Source: West Virginia Office of Miner's Health, Safety and Training, Statistical Reports



Economic Conditions in West Virginia Coal Counties

For this report ten West Virginia coal producing counties are included as those counties produce over 60 percent of all coal in the State. Their location can be seen on the map on the next page. Counties in the northern coal field include: Ohio, Marion, Marshall and Monongalia. The southern coal field counties consist of: Kanawha, Logan, Mingo Raleigh and Wyoming. It is to be anticipated these rankings will change dramatically as early as next year due to the closure of mines, particularly in the south, and the surplus of coal now on the market. Table II provides general socio-economic data for the ten coal counties covered in this report.

Table II
Economic Indicators Selected WV Counties

County	Unemployment Rate	Job Growth Rate	GDP	Poverty Rate
Southern Coal Fields				
Boone	9.1%	-2.8%	-12.5%	20.7%
Logan	11.3%	-2.3%	-4.1%	19.8%
Mingo	12.9%	-2.8%	-12.2%	22.9%
Raleigh	7.6%	-2.0%	3.6%	17.1%
Kanawha	6.3%	-1.9%	1.8%	16.3%
Wyoming	10.3%	-2.6%	-5.8%	21.5%
Northern Coal Fields				
Monongalia	5.1%	-1.5%	-0.4%	22.8%
Marshall	7.7%	-0.5%	1.5%	16.4%
Ohio	5.6%	-0.4%	-1.3%	15.9%
Marion	6.5%	-1.2%	-0.1%	15.2%

Source: National Association of Counties, County Economies (NACo), January 2016

Note: Unemployment is average for 2015. Job Growth is average 2002-2015
GDP is average 2002-2015. Poverty figures are for 2015 and the national average was 14.5 percent

All the counties have poverty rates well above the national average of 14.5 percent. Job growth in all these counties has been negative over the past 13 years. With the exceptions of Raleigh, Kanawha and Marshall, growth in county total output (GNP) has been negative over the same time span.

Coal Production in Selected West Virginia Counties

Table III shows the change in production in many counties has been dramatic. These are the 10 counties with the highest tonnage in 2015. Kanawha, home of the State capitol and Monongalia home of West Virginia University are outliers.

Table III
Coal Production (short tons) and Percentage Changes in in Production for WV Counties
2011-2015

County	2011	2012	2013	2014	2015	% Change
Boone	20,903	15,752	11,386	11,485	7,012	-67%
Kanawha	9,624	8,769	9,715	10,314	8,219	-15%
Logan	14,211	13,060	10,932	9,915	7,250	-50%
Marion	11,640	11,180	11,256	13,244	13,180	12%
Marshall	17,085	17,154	17,293	16,891	16,364	-4%
Mingo	9,803	8,909	7,481	7,092	6,054	-39%
Monongalia	10,457	8,693	8,118	9,327	5,937	-43%
Ohio	571	4,392	7,658	11,130	10,654	97%
Raleigh	9,104	8,989	7,361	7,305	6,520	-28%
Wyoming	4,666	5,394	6,081	4,635	4,179	-10%

Source: West Virginia Office of Miner's Health, Safety and Training

There are stark geographical differences in production over the 2011-2015 period. The southern counties (Boone, Logan, Mingo, Raleigh) have seen the most substantial decreases. Counties in the northern coal field (Marion, Marshall, Ohio) have been stable or seen increases. This is due to the installation of scrubbers on electric generating plants allowing them to use the higher sulfur coal mined in the northern fields. The opening of a new deep mine explains the Ohio County increase.

Until 2012, Boone County was the major coal producing county in the State. Now there appears to be only a few small mines still producing there. In Mingo County, also a top producer as late as 2012, only one major mine continues production. (Herholdt 2016) The result is further deterioration of county government finances.

The disparity between the northern and southern counties has increased because of the production of natural gas. Due to the use of horizontal drilling into the Marcellus shale. Ohio, Marshall and Marion counties experienced natural gas booms until the recent decline in natural gas prices. While there is gas and oil production in southern West Virginia coal counties, extraction comes from shallow wells with limited production.

Collapse in West Virginia Coal Economy

The collapse of the West Virginia Coal economy is in response to two overarching factors

- Decline of Coal Production: Coal mining in West Virginia began in 1745, but production was first recorded in 1863 when 444,648 short tons was reported. Production has varied dramatically reaching peaks in 1924 (156,570,631), 1947 (173,653,816), 1990 (171,155,053), 1997 (181,914,000) and then began a steady decline during the 21st century to 102,954,676 estimated short tons for 2015. As late as 2008 West Virginia production was 165,750,817 short tons. The 2015 output was a reduction of 43 percent from the 1997 peak and 38 percent in just the last 18 years. In 2016 output is forecast to fall to between 71-90 tons
- Decline in Coal Prices. While coal production has experienced dramatic recent declines, the fall in average price for coal is even more notable. Average short ton prices for Central Appalachian coal have declined from a high of \$139.05 in January 2011 to a May 2016 all-time low of \$40.50. This 71 percent drop in less than five years coupled with the decline in production has devastated some coal counties in West Virginia.

Causes of the Crisis in Coal

There are many complicated and intertwined reasons for what has transpired in the nation's and West Virginia coal economy (Cunningham 2014) (Energy Information Administration March 2016) (Witt February 2010) (Lego 2015). (Hodge March 2016) While some writers tend to focus on only one of these, it is the combination which has created the current situation.

- Competition with Natural Gas. In the United States 97 percent of all steam coal is used in the generation of electricity. From a high of over 60 percent dependence on coal, natural gas has taken 33 percent of the electricity generation market while coal's share has fallen to 32 percent. The growth of the use in natural gas is the result of the significant increase in natural gas production since 1990 because of extraction due to horizontal drilling technology in deep shale deposits. As the supply of natural gas has exploded, prices have declined making natural gas the cheaper fuel. Natural gas is also less of a pollutant than is coal.

Environmental Regulations. There are over 30 different federal laws which cover all aspects of the production, distribution and use of coal. Among the most discussed are: the Environmental Policy Act, Clean Air Act, Clean Water Act, Surface Mining Control and Reclamation Act, Solid Waste Disposal Act, Safe Drinking Water Act. The Mercury and Toxics Standards (MATS) rule from the EPA. Although suspended due to Supreme Court action, these regulations could further reduce the use of coal generation by electric utilities.

Electric generation is included in the Clean Coal Plan (CCP). The CCP goal is to substantially reduce CO2 emissions from 2005-2015 levels by 2040. The 32 percent reduction called for by the CCP in carbon emissions from the 2005 level, can be obtained by each state using different means. (U.S. Environmental Protection Agency nd) Each state is now being tasked with determining the impact of the CCP. Add to these the thousands of pages of federal regulations, orders, directives and guidelines related to coal plus the myriad of state laws and regulations, the coal industry claims to be the most regulated in the nation.

Without debating the merits of these actions, the cost of producing coal has significantly increased. Nor has coal benefited from the benign legislative environment created for alternative fuels including: tax credits for production and installation of alternate energy, state level mandates for use of renewable fuels, and government incentives for development of new and less costly non-coal technologies.

- Closure of Coal Fired Electric Generating Plants. Since 2012 six coal generating electric plants in West Virginia have been shut down. Some of these were smaller “peaker” plants only used during periods of high demand. All of them were old and could not economically be retrofitted to meet current and anticipated regulations or to use less costly fuels such as natural gas.

Three of these were in major coal counties². The other three³ are not. The closures have not had a major impact on the property taxes received in the coal counties. Utilities are assessed by the State on a “unit basis”. Individual power plants are not “isolated” for tax purposes. (Amburgey 2016). Increases in the value of electric utilities due to upgrades and new construction have actually gone up. But valuations would have been even higher with the plants included.

But the closures have led to unemployment of those who worked in those facilities and reduced the use of coal mined in West Virginia. Since 60 percent of West Virginia coal is “exported” to other states for use in electrical generation, the impact of closures of out-of-state plants will also diminish the demand for West Virginia’s coal.

- Decrease in Productive Coal Seams. Adding to the problems of coal in southern West Virginia, is the decrease in the most productive, thicker coal seams. Southern West Virginia coal increasingly is found in relatively thin seams which can only be accessed by costly underground mines. To an extent that has been offset by the expansion of surface mining. Currently 82 percent of West Virginia production is from underground mines.
- Competition with Western Coal. Coal from the middle and western basins is less desirable in terms of heat capacity and emissions. Since western coal is often surface mined, it is cheaper to mine and transport to eastern U.S. markets than the costlier West Virginia fuel. Powder River Basin (WY) coal now sells for only 23 percent per short ton (\$9.95) compared to Central Appalachian deposits.
- Erosion of International Markets. Exporting of coal has been a major sustaining force to the West Virginia coal market. Between 2014 and 2015 total United States coal exports fell by 24 percent with exports to China dropping by 87 percent. (Energy Information Administration October-December 2015) West Virginia is this nation’s largest exporter of coal. The most recent figures show a 40 percent decline since 2012.

The primary reason is the slowdown in international coal exports is the decline in the growth rates of the economies of China, Japan and India. As these economies recover coal exports may as well. Further depressing the West Virginia market is the expansion of coal exports to far east and India from Australia and Indonesia. Exports from these countries have begun to invade European markets traditional serviced by U.S. producers. In addition, there has been an increase of imports from Columbia into the U.S.

² Kanawha River in Kanawha, Kramer in Marshall, Riverside in Marion

³ Phillip in Mason County, Albright in Preston, Willow Island in Pleasants

Impact on County Income

There are many ways to measure the impact of the decline of the coal on a county's economy. One of the most easily understood is to compare the percentage of Total Personal Income (TPI) in a county represented by the amount of TPI which can be attributed to coal⁴, Coal Personal Income (CPI).

When this measure is used, differences among the counties are evident as shown in Table V. In Boone county TPI is only 65 percent while CPI is only 50 percent of what they were in the 2011. While not as startling, declines in both TPI and CPI are evidence in Logan, Mingo and Raleigh. Comparable data is not available for the northern counties of Marshall Marion and Ohio due to confidentiality issues. But in these counties coal production has either gone up or remained steady. Monongalia County, location of West Virginia University, and Kanawha County, home of the state capital Charleston, while having significant coal production, are primarily dependent on other sources of personal income.

Table IV
Personal Income and Total Personal Income from WV Coal Counties
(1,000 of \$)

County	Total PI 2011	Coal PI 2011	Total PI 2012	Coal PI 2012	Total PI 2013	Coal PI 2013	Total PI 2014	Coal PI 2014	% Change TPI	% Change CPI	CPI%TPI
Boone	603,472	357,146	524,415	306,247	443,732	241,016	391,488	178,125	64.9%	49.9%	60-45%
Kanawha	5,741,960	235,473	5,903,796	225,882	5,781,329	168,575	5,859,889	178,558	102.1%	75.8%	4-5%
Logan	592,916	188,619	599,087	193,295	551,179	159,726	509,196	135,629	85.9%	71.9%	32-27%
Marion	1,043,143	(D)	1,072,795	(D)	1,051,844	(D)	1,042,422	186,251	99.9%	NA	24%
Marshall	765,816	(D)	847,823	202,835	858,010	220,222	879,007	219,038	114.8%	NA	25%
Mingo	539,758	244,493	517,367	239,941	441,089	199,083	362,869	158,897	67.2%	65.0%	45-43%
Monongalia	2,445,670	87,778	2,542,076	79,952	2,634,517	54,764	2,749,652	56,584	112.4%	64.5%	4-2%
Ohio	1,152,662	(D)	1,233,517	(D)	1,285,779	(D)	1,319,444	(D)	114.5%	NA	NA
Raleigh	1,612,936	280,174	1,732,709	318,023	1,625,014	264,238	1,584,955	240,453	98.3%	85.8%	17-15%
Wyoming	243,010	114,013	250,807	126,549	257,334	133,140	245,945	113,752	101.2%	99.8%	47%

1/ The estimates of earnings for 2001-2006 are based on the 2002 North American Industry Classification System (NAICS)

⁴ Personal Income (PI) is usually defined as all compensation received from any source (salaries, wages, bonuses, income from self-employment, dividends, income from investments, rents, profit-sharing and distributions from investments). PI is often referred to as "gross income" or "pretax income" It can be viewed as the total income received by individuals and other entities in a given period of time. PI for a county is the sum of all income received by individuals and entities in that jurisdiction during a given year. U.S. Bureau of Economic Analysis.

Note-- All dollar estimates are in current dollars (not adjusted for inflation)

Impact on County Budgets

The importance of property tax revenue to county governments in West Virginia cannot be overemphasized. Counties have almost no fiscal autonomy. Their basic source of revenue is the property tax plus the allocations from the state severance tax discussed below. In addition, there are constitutional and legislative limits placed on the rates which can be applied to assessed valuations⁵. Which means in many cases, property taxes at the county level are calculated “backwards”. After consideration of fees and miscellaneous income, the maximum allowable levy is taken times the assessed valuation to calculate the county budget rather than having the budget determine the rate of property taxation.

There are ad valorem property taxes on both real coal (mineral) property and personal property (commercial and industrial). These valuations are determined by the State Property Tax Division.⁶

Real Property Assessments.

Unlike some other mineral producing states, West Virginia levies its ad valorem tax on coal reserves rather than on extraction. (Kent, State and Local Ad Valorem Taxation of Mineral Interests WP15CK1 March 2015) Coal is assessed for all counties by the State Property Tax Division using the Reserve Coal Valuation Mode (RCVM). (WVC 11-1A-11;11-1C-5(b), (WVCR 110-011) The model employs a discounted cash flow income approach to value both active coal mines and coal reserves. (Kent 2010) While complex, the RCVM closely parallels that used by private appraisers to establish the expected market value of a coal property.

The RCVM puts coal reserves in six property categories: active mining, reserve coal, unmineable coal, mined-out coal, and barren coal. Only the first two produce any significant amounts of property tax revenue. For active coal the present value is calculated by taking the weighted average of the previous three year’s production and converting those figures into estimated income using average coal prices over the previous year. That result is discounted using a rate established by the State.

The calculation for reserve coal property is more complex. It is applied to coal deposits not under mining permit or being actively mined but capable of being mined. Factors considered in valuing each acre in the seam include the average coal price per million BTU, the average royalty rate, the sulfur adjustment factor, clean coal recovery rate and the BTU content of the coal seam. The result is discounted over the estimate life of bed of 20, 40 or 80 years which is the estimated number of years remaining in which the seam is to be mined. Unmineable coal beds have seams of less than 30 inches and are valued at a flat \$5 per acre while mined out coal and barren coal are valued at \$1 per acre.

Table VI indicates not all coal counties have suffered decreases in valuations The amounts received in assessed values for real coal property for the selected West Virginia Counties since 2011 are provided. The northern counties (Marshall, Marion, Ohio) have actually experience increases. At the same time southern coal counties (Kanawha, Boone, Mingo)

⁵ Coal property both real and personal has a maximum levy rate of \$1.50 for each \$100 (WV Constitution Article 10-1) In addition county commissions face a maximum limit of 1 percent for annual increases in property tax revenues (WVC 11-8-6e). This means that the actual rate may be less than the Constitutional rate if the 1 percent maximum has been reached.

⁶ In West Virginia all property is to be valued at 60 percent of its market value, unless otherwise provided. WV Constitution Article 10-1

have realized decreases. While Boone county has seen an erosion of 17 percent in valuations of coal real property. Mingo experienced a 30 percent decline. All other counties saw increases ranging from 256 percent in Ohio county, due to the opening of a new deep mine, to three percent in Marion. For all West Virginia counties real property valuations are up two (2) percent despite an 11 percent decrease for the counties not included.

This is the result of the averaging of prices for production for active coal. Coal valuations “look back” for three years output and prices. The full impact of the recent dramatic fall in prices and output has yet to be fully recognized.

Table V
Coal Mineral Real Property Valuations and Percentage Changes in Selected WV Counties
2011-2015

	2011	2012	2013	2014	2015	4 YR % CHG
Marshall	169,185,676	187,167,931	207,714,631	233,877,041	268,221,319	59%
Marion	115,138,745	126,866,386	101,240,302	99,311,194	118,968,980	3%
Ohio	8,949,419	8,624,065	4,011,268	14,852,989	32,396,616	262%
Kanawha	137,636,002	156,598,225	167,114,565	136,987,602	134,295,928	-2%
Logan	198,375,412	240,263,055	279,655,226	231,087,865	250,205,732	26%
Boone	319,886,677	385,255,086	400,974,862	311,296,919	264,978,926	-17%
Raleigh	134,887,292	132,431,562	187,893,865	161,550,360	153,607,299	14%
Mingo	106,342,748	110,375,416	133,163,879	83,147,944	74,453,972	-30%
Monongalia	62,366,306	67,410,586	72,595,909	71,080,770	67,158,277	7%
Wyoming	108,649,060	117,853,091	136,750,484	146,365,423	125,167,737	15%
All Other	704,312,757	696,637,142	895,921,601	713,184,456	623,520,729	-11%
Total	2,065,730,094	2,229,482,545	2,587,036,592	2,202,742,563	2,112,975,515	2%

Source: West Virginia Property Tax Division

Industrial Personal Property. West Virginia also levies a property tax on coal related personal property including machinery and equipment used to access, extract and process coal as well as furniture, fixtures, inventory, materials and supplies. This property is usually valued using replacement cost less depreciation. Machinery and equipment are extremely valuable components of the property tax base in coal counties.

Both surface and underground mining equipment is very expensive often running into millions of dollars or more for a single piece. Most underground mining equipment and machinery cannot be moved out of state to avoid taxation, but surface mining equipment can but only at significant expense. This, plus the overall national market for coal, has kept substantial amounts of that property in-state. The value of commercial and industrial coal property has been also reduced by action of the State Tax Department. The level of assessment was lowered to “salvage value” of 30 percent.

Since Coal industrial personal property is taxed on the cost basis less depreciation and does not depend on production, all counties have seen an increase. This increase is most obvious in the northern coal counties as shown in Table VI

Table VI
Coal Industrial Personal Property and Percentage Changes in WV Selected Counties
2011-2015

	2011	2012	2013	2014	2015	4 YR % CHG
Marshall	169,237,640	233,173,669	303,996,904	374,770,568	424,220,402	150%
Marion	147,951,090	178,068,293	198,259,028	211,476,224	166,373,948	12%
Ohio	63,887,072	60,869,089	116,474,609	140,929,395	140,199,756	119%
Kanawha	232,786,131	297,486,389	314,940,386	295,675,472	304,538,098	31%
Logan	410,417,779	491,312,839	533,913,353	523,071,589	444,129,991	8%
Boone	579,421,729	742,003,386	745,629,442	489,446,547	574,645,090	1%
Raleigh	265,480,366	282,467,644	347,561,825	292,606,063	282,440,971	6%
Mingo	262,813,375	317,032,308	357,266,390	333,353,936	293,952,960	12%
Monongalia	105,072,505	141,168,288	148,497,779	108,289,208	131,332,124	25%
Wyoming	162,664,532	245,325,308	287,299,237	234,367,657	260,505,585	60%
All Other	979,217,395	1,133,558,722	1,405,125,680	1,417,733,341	1,142,427,096	17%
Total	3,378,949,614	4,122,465,935	4,758,964,633	4,421,720,000	4,164,766,021	23%

Source: West Virginia Property Tax Division

Valuation of Electric Power Plants. As explained earlier, electric power plants in West Virginia are valued by the state as a “unit”. (WVC 11-11C-5(b)) (WVLCR 110-1M-1) In a unit assessment, all utility property (generating, distribution and transmission) is valued as a whole and then the value is allocated to the taxing jurisdictions. (Schneider March 1998) So long as power plants are operating they are subject to valuation usually employing the cost less depreciation approach. When the plant ceases to produce, its value is reduced to zero and it is no long in the tax base. (Amburgey 2016)

West Virginia Severance Tax on Coal Local Distributions

In order to comprehend the full plight facing Coal County governments due to the decline in the coal industry, the local government share of the State’s severance tax must also be included. While 28 of the State’s 55 counties produce coal, all local governments share in the local coal severance tax.

Distribution of State Severance Tax.

The State tax of five (5) percent of net value of coal production is divided between the State’s general fund and distributions to the counties and municipalities. The State retains 4.65 and the local portion is 0.35 percent of the net value of coal mined. This 0.35 percent is divided with 75 percent going to the county where the coal was mined and 25 percent being distributed among all the municipalities and counties in the State based on population. (WVC 11-12B-1 et.seq.)

Table VII shows the Yield from the 75 percent portion returned to the selected coal producing counties.

Table VII					
Coal Severance Taxes for Selected WV Counties					
2010-2015					
	2011	2012	2013	2014	2015
Marshall	3,288,250	3,373,429	3,780,488	4,391,928	3,468,375
Marion	2,193,501	2,538,069	2,103,949	2,227,066	2,083,604
Ohio	48,289	764,814	765,748	921,929	1,007,918
Kanawha	1,432,819	1,410,276	1,386,857	1,134,838	986,880
Logan	3,506,560	3,157,191	2,510,283	1,797,486	1,415,064
Boone	4,962,049	4,018,719	2,876,011	2,331,107	1,605,391
Raleigh	2,135,623	1,813,024	1,694,422	1,779,837	1,038,173
Mingo	1,870,471	1,652,853	1,089,178	1,006,209	838,928
Monongalia	1,298,732	1,178,611	856,279	651,597	511,498
Wyoming	1,001,278	983,394	997,492	711,571	631,044
Total	30,084,835	27,553,620	22,530,712	20,044,900	16,117,353

Source: West Virginia State Budget Office

All Coal Counties (except Ohio) have seen their severance tax distribution fall paralleling the decline in production and prices. As Table VII, shows revenues to West Virginia counties from the coal severance tax has declined both sharply and quickly. From a high of almost \$30.5 million in 2011, the last five years have witnessed as drop to slightly over \$16 million. The 47 percent fall, coupled with property tax declines, has been the source of West Virginia county’s problems.

The impact on the counties of the severance tax revenue has been very uneven. The rural coal counties of the southern tier of the State have suffered most while the northern counties have seen more stability or even increases. For example, Boone County located in the southern coal fields saw its severance tax revenue decline from almost \$5 million in 2011 to only \$1.4 million in 2015 a 67 percent decrease. Other southern counties also realized substantial percentage losses: Logan 60, Mingo 55, Raleigh 51, Wyoming 40.

For the majority of northern coal fields, the impact was not so devastating. The northern most West Virginia County (Ohio) actually saw a dramatic increase from slightly more than \$48 thousand to \$1,008 million close to a 500 percent increase.⁷ This increase in Ohio County was due almost entirely to the opening of a new mine. Marshall County, the current state leader in production, saw an increase from \$3.3 million to \$3.4 million or two (2) percent. Marion decreased by one (1) percent. The only major decrease was the south most of the northern counties, Monongalia at 60 percent due to reduced production.

Reallocation Severance Tax Distribution.

In addition to the 0.35 percent severance tax allocation, legislation which became effective in July 2012 reallocates 1 percent of the State severance tax yield to the coal producing counties. This is distributed based on coal production in the county. This figure will rise by one percent a year until it is five percent in 2016 with a cap of \$20 million per year. Table IX from the West Virginia Budget Office shows the reallocation distributions since the inception of the program.

**Table IX
Coal County Reallocation Severance Tax Selected WV Counties
2012-2015**

	2012	2013	2014	2015	Total
Marshall	179,517.00	766,625.00	1,514,144.00	1,743,004.00	4,203,290.00
Marion	150,248.00	424,628.00	775,886.00	1,090,717.00	2,441,479.00
Ohio	79,350.00	152,979.00	213,596.00	399,652.00	845,577.00
Kanawha	82,228.00	277,056.00	395,273.00	481,312.00	1,235,869.00
Logan	179,714.00	495,242.00	625,407.00	709,000.00	2,009,363.00
Boone	191,498.00	568,818.00	795,924.00	791,970.00	2,348,210.00
Raleigh	101,979.00	338,055.00	388,160.00	443,216.00	1,271,410.00
Mingo	82,972.00	223,268.00	353,000.00	417,370.00	1,076,610.00
Monongalia	61,228.00	161,622.00	215,730.00	253,259.00	691,839.00
Wyoming	55,268.00	208,012.00	245,819.00	324,453.00	833,552.00
Total	1,471,108.00	4,516,365.00	4,516,365.00	6,091,124.00	16,594,962.00

While making up part of the loss in the property tax and severance tax, this reallocated tax comes short of filling the fiscal gap. Further the counties where production is declining do not see as much relief as those where production is rising. Yet the former are the counties facing the greatest fiscal issues.

Indirect Impacts

⁷ This increase for Ohio County is due to the 2010 opening of the Tunnel Ridge Mine which is expected to produce 5.5 million short tons.

In determining the economic consequences of the collapse of coal on West Virginia county governments, consideration must be given to the indirect or multiplier effects of the lost income and employment from coal's demise. While not evaluated in this report, these additional effects are not inconsequential. While incomplete these are the most frequently cited indirect results. (Moore 2016) (Witt February 2010) (Roemaker 2001)

- Reduced railroad shipments of coal have leading to reduced, employment, track closures and idling of terminals particularly in West Virginia and nearby states.
- Closure of retail outlets and smaller sales at remaining stores forcing layoffs and abandonments.
- Increased bankruptcies and mortgage foreclosures for homes and commercial firms
- Decreases in employment in coal service industries such as trucking, contracting, construction finance.
- Expanded demand for governmental services and transfer payments
- Reduced property values for residential and commercial properties

These impacts are not confined to just the coal producing counties. Due to the trade flows between counties and into other adjacent states the impact has much broader effects.

Response of County Governments

It is difficult for the most severely impacted counties to maintain basic services. Wyoming, Boone, Logan and Mingo are all considered by the Appalachian Regional Commission as "distressed counties".⁸ Falling revenues at a time of high demand for social services has further strained county budgets. According to the U.S. Census Bureau, government: local, state, health, federal and public education is the major employer in most of the southern counties and a major source of private income is transfer payments.

All the southern counties have been victimized by the bankruptcies of the major coal companies, Alpha and Patriot, as well as smaller firms. These companies have outstanding tax liabilities in the millions of dollars. It is anticipated that some of the loss will be paid as these firms emerge from bankruptcy⁹. County officials in the southern counties report, due to unemployment related to coal, there has been a spike in foreclosures and tax delinquencies on owner occupied homes.

Specific responses in the study counties are given below. School districts are included even though they are separate entities from the county governments.¹⁰

Southern Counties

Boone County

The situation in Boone county was summed by the *Wall Street Journal*.

⁸ The other study counties are classified as "transitional".

⁹ Alpha came out of bankruptcy on July 27, 2016

¹⁰ While school districts follow county boundaries, they are independent not relying on county government for financial support. School finance comes from local property taxes and state aid. State aid is allocated using a complex minimum foundation formula. (WVC 18 article 9A) A minimum level of funding for each student is set by the State That minimum depends on seven factors primarily the number and types of students. As enrollment declines, as is the case in most coal counties, state aid decreases. What of that minimum cannot be filled by local property taxes is allocated to the district by the State. (Kent September 9,2008) While state aid partially offsets the loss in property tax revenue, this assumes State aid is fully funded. State Aid accounts for 60-75 percent of schools budgets in the selected counties. This year due to decreases in the severance tax, state aid to local school districts was cut by \$1.6 million.

Boone County has lost 2,700 coal mining jobs since 2011, the most of any county in the U.S. The county took in \$5.5 million in coal-severance tax money in 2010. That fell to \$2 million last year {2015} and officials expect about \$1.5 million this year. The county's budget for this fiscal year totals \$13 million. The county plans to end free trash removal in January and a private contractor will begin charging residents \$15 a month. The service the county \$1.2 million a year and was funded entirely by coal taxes (Maher and Frosch 2015)

Boone County will have to close three of its 10 elementary schools¹¹. In order for teachers to receive their pay until the end of the 2015-2016 school year the legislature had to appropriate over \$2 million as an emergency grant. Faced with a \$6.9 million drop in revenue related to coal, the school district was forced to also cut teachers and other employee's pay by an average of \$4,000.

In June 2016 the unemployment rate was 8.8 percent compared to a state average of 6.4 percent and a national rate of 5.6 percent¹². Of the county's top five employers in 2013, four were coal companies which have ceased or almost ceased production. The bankruptcies of the major coal producers have left the County with \$8 million in uncollected property taxes.

Mingo County

Mingo County shows depressing statistics with an unemployment rate of 12.5 percent. The Mingo county school district for the 2016-2017 school saw their property tax base fall from \$22.6 million to \$13.6 million. This drop has necessitated either the laying off 48 teachers or elimination of almost all extra-curricular activities.

County government saw dramatic drops in both coal property taxes and severance taxes receipts of over \$2 million forcing elimination of support for fairs, library, fire departments, parks, ambulance services and cuts to county departments ranging from nine to 28 percent.

Logan County

Logan County unemployment rate is 10.7 percent. Logan has lost over \$200 million in coal property valuations. During the "good times" the County Commission built a sizeable contingency fund which to date has not had to be utilized. County services have not had to be cut and no near future cuts are anticipated. Property tax revenues have been supported by the construction of three new coal processing plants.

Due to having a reserve fund, Logan County School District has not this year cut any staff or programs. But they anticipate having to do so next year and into the future. Coal company bankruptcies have cost the district \$2.6 million in unpaid property taxes.

Wyoming County

Wyoming County's unemployment rate was 10 percent in June, 2016. Of the 34 mines which were open, only four remain active. Wyoming County has seen its severance tax revenue drop by \$300,000 and its property tax revenue fall by over \$1.2 million. In addition, the bankruptcies of Alpha and Patriot coal have left an unpaid property tax of over \$1.7 million.

Among county services being cut are: answering nuisance dog complaints, reduced landfill employment from 8 eight to three workers, discontinuation of cardboard pickup from business and reducing the hours for the transfer/compactor

¹¹ Part of the reason for the closures was declining enrollment

¹² The unemployment figures are artificially low as they do not count discouraged workers who have left the labor force or those holding part-time jobs but seeking fulltime employment. US Bureau of Labor Statistics

stations to be open. As county positions become open they are not planned to be filled. The school district cut 18 positions.

Raleigh County

Raleigh County has an unemployment rate of 6.7 percent which is the lowest among the southern coal counties. The County has a more diversified economy than the other southern counties being a tourism and transportation hub. West Virginia University is establishing a campus there.

While tax dollars from coal property taxes have dropped with the county government receiving \$500,000 less, this decrease was offset by increases in other property values. To date there has not been any layoffs or reduction in services. While the schools lost \$2.4 million in tax dollars from coal property, this decrease has been offset by increases in other valuations primarily new construction.

It is not expected that these offsets will continue into next year. There is almost \$2 million in unpaid property taxes due to coal company bankruptcies. Residential foreclosures and listings are at an all-time high. The effects of the coal economy collapse are being felt in retail and commercial values as well.

Kanawha County

The 25 percent decrease in coal severance receipts caused the Kanawha County Commission to reduce their budget by almost \$580,000. Most of the coal severance money supported services for the coal producing parts of the county. The drop in revenue necessitated cuts to outside agencies and a three percent cut in pay for county elected officials. Services experiencing cuts included fire services and police officers. Outside agencies experiencing reductions included, health department, WVU Extension, Charleston Area Alliance and Chemical Alliance Zone.

The school district has experience a “very tight budget” due to cuts in state aid tied to enrollment and a drop in property tax revenue. It was reported that 25 positions were to be eliminate with 21 being teacher aids.

Northern Counties

Marion County

Marion County has an unemployment rate of 6.5 percent. Marion has been less negatively impacted than southern counties. Extraction is from deep mines producing higher sulfur coal which can be used in electric generators with scrubbers. The county has seen its coal mines idled or put on reduced shifts due to the decrease in coal demand from power plants. County government has seen a drop in severance tax revenue of almost 50 percent from its 2011 high. The decrease has been offset by the use of reserve funds and taxes on oil and natural gas production. While there is a hiring freeze, no jobs have been lost or services cut.

Marshall County

Marshall County has an unemployment rate of 7.7 percent. Marshall County has not seen decreases in property valuations for either coal real or personal property. For the current year valuations have actually increased. But for the coming year this “good fortune” is not expected to continue. The Marshall County School District has also not seen a decrease in property tax revenues.

Monongalia County

Monongalia County has a comparatively low unemployment rate of 5.6 percent. Monongalia County has experienced a significant drop in severance tax revenue. The County Commission in the past had placed the severance tax money in a separate fund to support outside entities. It was not being used for general county government expenses

The drop in severance tax money caused various organizations which would have seen their county income reduced or eliminated to place special levies on the May 2016 ballot. Four of the six proposals passed by more than the required 60 percent. The result is an average 4.5 percent increase in property taxes. The services supported by the new excess levies include volunteer fire departments, county library, parks and recreation activities and public transportation.

A construction boom has largely replaced the loss in property taxes including those for school support.

Ohio County

The unemployment rate in Ohio county is 5.6 percent. Due to the opening of the Tunnel Ridge Mine, Ohio County has seen increases in both coal related property valuations and severance taxes. As a result, they have not experienced the problems with county and school finance found elsewhere.

The Future for West Virginia Coal Counties

There should be no expectation that coal will return as a significant source of West Virginia county revenue in the predictable future. All the major forecasts for coal (Lego 2015) (Energy Information Administration May 17, 2016) (Risch July 8, 2015), while differing slightly see a small uptick in West Virginia coal production and then a steady, slow decline over the forecast period 2015-2040. West Virginia estimated coal output for 2035 ranges from a high of 114.0 to 81.4 million short tons with a consensus of 97.3.¹³

The impact of the forecast decline among West Virginia coal counties will continue to be uneven¹⁴. All the forecasts see the greatest declines in the southern coal counties as the seams continue to play out. Coal from the northern coal counties will be either stable or increase slightly as the remaining coal fueled electric generation plants are able to use the higher sulfur coal. The movement from south to north has started. In 2011 the southern coalfields produced 69 percent of all West Virginia coal and now account for only half.

One of the positives for southern counties is being the source of the high quality metrological coal which is essential to making steel. "Met" coal is in high demand in Europe and Asia. This demand will continue to support coal exports for at least some time in the future. Implementation of the CPP and MATS will have a greater impact on the northern counties, but northern production will continue to exceed their neighbors in the south.

West Virginia coal counties, particularly southern ones, are already struggling to overcome other issues including: lack of economic diversification, high incidence of poverty, isolation of many residents from adequate transportation, little flat land for industrial development, drug related crime, limited supply of quality housing, absence of amenities and a

¹³ All of these projections consider only the environmental regulations in effect in October 2014. Adoption of the CPP and the MATS would significantly alter these.

¹⁴ According to the US Census Bureau, American Community Survey, 2016, Most of the southern counties have higher percentages of people living in poverty than the national average of 17.9: Mingo 22.9, Wyoming 21.5, Boone 20.7., Logan 19.8. But the majority of northern counties have poverty rates better than the national average: Marshall 16.1, Marion 15.9, Ohio 15.4..

workforce with low educational achievement. While these problems are being addressed, the solutions are long term (Ezzell February 2012) .

The decline in property and severance tax revenues makes the solutions more difficult of attainment. Unless there are new sources of revenue found for county governments in West Virginia their capacity to deal with these issues will be constrained.

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Bibliography

- Amburgey, Jeff, interview by Calvin Kent. 2016. *Director, Property Tax Division, Department of Taxation, West Virginia* (July 25).
- Cunningham, Nick. 2014. "West Virginia Unprepared for Future Without Coal." *Oil Price.com*, August 29.
- Energy Information Administration. May 17, 2016. *AEO2016 Early Release*. Washington DC: U.S. Department of Energy, Energy Information Administration.
- Energy Information Administration. March 2016. *Annual Coal Report 2014*. Washington D.C.: U.S. Energy Information Administration, U.S. Department of Energy.
- Energy Information Administration. October-December 2015. *Quarterly Coal Report*. Washington DC: U.S. Energy Information Administration, U. S. Department of Energy.
- Ezzell, Tim, Dayton Lambert, Eric Ogle. February 2012. *Strategies for Economic Improvement in Appalachia's Distressed Counties*. Knoxville TN: University of Tennessee, Knoxville.
- Herholdt, Jeff. June 17, 2016. *E-mail correspondance with Calvin A. Kent*. Charleston, WV, June 17.
- Hodge, Dan. March 2016. *Appalachian Coal Industry, Power Generation and Supply Chain*. Washington DC: Appalachian Regional Commission.
- Kent, Calvin. 2010. "Ad Valorem Taxation of Coal Property in West Virginia and Other States-Part 1." *Journal of Property Tax Assessment & Administration* 41-60.
- Kent, Calvin and Kent Sowards. September 9, 2008. *Property Taxation and Equity in Public School Finance*. Huntington, WV: Center for Business and Economic Research, Marshall University.
- Kent, Calvin. March 2015. *State and Local Ad Valorem Taxation of Mineral Interests WP15CK1*. Cambridge MA: Lincoln Institute of Land Policy.
- Lego, Brian and John Deskins. 2015. *Coal Production in West Virginia 2015-2035*. Morgantown WV: Bureau of Business and Economic Research, West Virginia University.
- Maher, Kris, and Dan Frosch. 2015. "Coal Downturn Hammers Budgets in West Virginia and Wyoming." *The Wall Street Jopurnal*, December 22.
- Moore, Daniel. 2016. "As Coal Cools Off, Railroads Close Tracks and Cut Jobs Across the Country." *Pittsburgh Post-Gazette*, February 15.
- NACo. January 2016. *County Economies 2015*. Washington, DC: National Association of Counties.
- Risch, Christine, Jennifer Shand and Alicia Copley. July 8, 2015. *Consensus Coal Production Forecast for West Virginia:2015*. Huntington WV: Center for Business and Economic Research Marshall University.
- Roenker, Jonathan. 2001. *Ther Economic Impact of Coal in Appalachian Kentucky*. Lexington KY: Center for Business and Economic Research, University of Kentucky.

Schneider, Steven. March 1998. "Evaluating Power Plant Property Tax Burdens in a Changing Industry." *Public Utilities Fortnightly*.

U.S. Environmental Protection Agency. nd. *Fact Sheet: Overview of the Clean Power Plan*. Washington DC: U.S. Environmental Protection Agency.

Witt, Tom, and Calvin Kent. February 2010. *The West Virginia Coal Economy 2008*. Morgantown and Huntington WV: Bureau of Business and Economic Research, West Virginia University and Center for Business and Economic Research Marshall University.