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# **Central Appalachia Severance Taxation and Policies for Future Economic Growth**

By Nathan Frisbie

A thesis submitted to the faculty of The University of Mississippi in partial fulfillment of  
the requirements of the Sally McDonnell Barksdale Honors College

Oxford

May 2021

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# **Abstract**

**Nathan Frisbie: Central Appalachian Severance Taxation and Policies for Future  
Economic Growth**

**(Under the direction of Charles Hilterbrand)**

Central Appalachia is a region in the United States that has been referred to as a paradox by researchers who have studied it. The area is rich with natural resources, yet the region lacks economic development. The mineral extraction industry has been the center of the economy for over a hundred years. The reliance on the industry has caused Central Appalachia to fall behind in several categories. The region has unusually high concentrations of poverty and low high school graduation rates. The revenue from the taxation of coal is the primary source of income for many of the rural counties. This paper will examine the effects of the coal industry on the region and the revenue being generated from the taxation of these minerals. The goal of this research is to determine potential policy changes that could strengthen the economy and end generational poverty.

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## **Introduction**

Central Appalachia is a region in the eastern part of the United States that spans across four different states. The areas that comprise Central Appalachia are Eastern Kentucky, Southwest Virginia, Northern Tennessee, and Southern West Virginia. This area of the country is characterized by numerous mountain ranges located in the region. These mountains have been formed over thousands of years and are the product of friction points between shifting tectonic plates. As a result, there are many mineral formations that makeup the mountains in this geographic area. Companies have been extracting these minerals for since the early 19<sup>th</sup> century and the industry remains prevalent in the area.

## **Background**

Coal is the most abundant fossil fuel in the United States (National Geographic). Fossil fuels are naturally occurring sources of energy that are formed over time from the remains of ancient organisms. As the tectonic plates that make up the earth begin to move and shift, they create geological events such as mountains. The pressure caused from these moving plates help create the right environment for coal to form (American Association of Petroleum Geologists). Under immense heat and pressure, carbonization takes place on buried ancient organisms resulting in the formation of coal. This process takes millions of years and is believed to have begun in the Carboniferous period nearly 300 million years ago (National Geographic). Due to this extensive amount of time, it takes for coal to form, there is a limited amount, making it a nonrenewable energy source.

The coal industry first began in the United States in middle of the 19<sup>th</sup> century in areas such as Virginia and Pennsylvania. Coal was believed to be the future of energy and would help drive economic growth and development across the nation. The Civil War called for an increased industrial output which drove the demand for coal extraction in the United States. The war increased demand for coal which facilitated the need for more coalfields and increased prices. During this period coal prices increased by almost 50% (Arcadia). Railroads were utilized alongside coal operations to help expand the distribution of coal and satisfy the increased demand. After the end of the civil war, the industry began to evolve as new technology had been created to improve production (Arcadia). Coal extraction had gone underground and as a result, companies were now requiring machinery and pumps to aid in extraction efficiency.

Between 1860 and 1880 the industry experienced many fluctuations in prices, but the industry was still steadily growing. During 1880, the national coal production reached 80 million tons (Arcadia). From 1880 to 1910, production increased by 133% for an average rate of 2.9% increase per year (Lipton, 1962). This booming period would be short lived due to the introduction of oil during the 1900's. The industry experienced a decline of 35% from 1920 to 1950 (Lipton, 1962). Automobiles displaced trains as a primary mean of transportation. This change altered the nation's energy mix which was reflected into a high demand for oil often at the expense of coal. Also, during this time, the United States invested in large scale hydroelectric power projects which provided an efficient and less labor-intensive form of electrical power generation than coal fired electricity plants.

The coal industry reached its peak employment in 1924 when over 860,000 miners were employed. However, after 1924 this total number of miners would decline with the occasional uptick in workers during World War II. Data collected in 2016 showed that the industry

employed just over 75,000 miners. As technology has advanced, miners have been replaced by machines that can extract coal more efficiently than human workers. Competition in the industry contributed to the decrease in mining jobs.

Today, the main competitors of coal are natural gas, solar, wind, and other fuel sources. As the need for new cleaner energy increases, solar and wind energy have become much more prevalent. The need for coal-fired plants is decreasing and will continue to do so as it becomes harder to mine the nonrenewable resource (Maize, 2018).

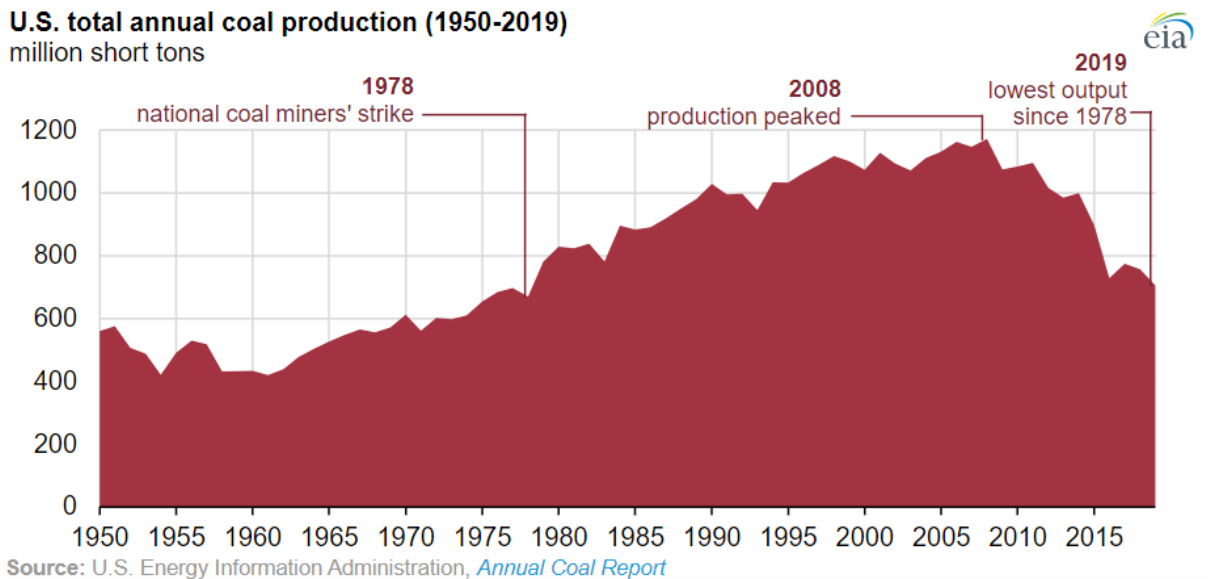
## **Economic Trends**

Researchers look at the Appalachian region as a paradox due to the extensive poverty despite the region's rich resources. How has the region lacked the economic development that the surrounding regions have experienced over time? During the 1960's, there was a tendency to view the South and Appalachia as regions outside the social and economic mainstream. The assumption was that the mainstream economy was healthy, and the struggling regions were those simply "left behind" (Gaventa, 1990). The issue with these regions was finding a way to integrate these areas into the mainstream economy. During the 1970's, the region began to experience growth. Southern states had pushed for industrial recruitment, which brought employment, income, and increased populations to areas, specifically southern metropolitan areas. Despite this growth, there was still a large disparity between the healthy economies along the coast and the heartland where agriculture, industrial and mineral extraction were in decline. The traditional poor pockets in Appalachia had expanded. This was felt even more so after many industrial jobs were being outsourced to areas that had cheaper production and labor costs.



Coal remains a primary source of energy for generating electricity, yet its production has been trending downward over the last 10 years. According to the Energy Information Administration, in 2019 the total amount of coal produced in the United States was 706,309 thousand short tons. Figure 1 illustrates how this was the lowest output of coal since 1987. The decline of the coal production after 2008 coincides with the increased use in natural gas and oil. This natural gas and oil industry benefitted from changes in technology that helped increase production. The decline in coal over the last 11 years is causing the Central Appalachian region to suffer due to its reliance on industry.

Figure 1 – Energy Information Administration



Although urban poverty commands more attention from popular media, recent surveys document the deepening poverty rate in rural areas throughout the United States. The rural poverty rate is 50% higher than in urban areas and it is estimated that one out of every four

children in rural America is living in poverty (Billings and Blee, 2000). Central Appalachia is a region synonymous with both rural poverty and with difficulty of implementing effective policies of social betterment. Central Appalachia has a median household income \$36,993 (ARC Snapshot). This is the lowest out of all five regions in Appalachia.

An important dimension of poverty is its persistence over time. Figure 2 below details the nonmetro counties with persistent high poverty in the United States. To be considered “persistent poverty” a county must have a poverty rate of 20% or higher. This statistic is measured by the U.S. Department of Agriculture using data from the Census Bureau that has been gathered over the course of several decades shows a large area persistent poverty in the Central Appalachian region.

Figure 2 – US Census Bureau Persistent Poverty Counties



Persistent poverty counties are those where 20 percent or more of county residents were poor, measured by the 1980, 1990, 2000 censuses, and the 2007-11 American Community Survey.

Note that county boundaries are drawn for the persistent poverty counties only.

Source: USDA, Economic Research Service using data from U.S. Census Bureau.

Land rights have been a major factor in the economic disparity found in the region. In particular, the severance and sale of mineral rights from the surface of the land has been devastating to the local inhabitants. Researchers argue that it is this history that has left the region economically deprived, and poverty stricken (Who Owns Appalachia). Mineral rights in the region were sold to coal production company over a century ago. Most rights to rents and royalties were conveyed with the severance. The surface owner, who may have been sitting over a rich vein of productive coal, received nothing after the rights were sold. The money generated was granted to the owner of the rights who generally did not live in the area. So economic growth was found for workers in the mines, but wealth was transferred to the mineral rights holders who were often foreign to the region.

The ownership and use of land affect the options available for future developments. In rural areas, there is a strong connection that between people and land within work, culture, and community. In recent years, there has been a big question of who owns the land in the United States. It is a common belief that those who own privately held land place high value on individual freedom and the ability to act as they please. However, this attitude has changed in recent years with the idea that the use of land by one can have a large impact on the well-being of others. This is especially true when it comes to mineral extraction and the effects on local communities.

A recent and controversial coal extraction method is causing additional hardship to the area. The use of mountain top removal as a form of mineral extraction requires the detonation of explosives to literally remove the tops of mountains. This technique changes the landscape, and, in some cases, streams are covered with rock and dirt. The water draining from these filled valleys may contain pollutants that can harm aquatic wildlife downstream. According to the U.S.

Energy Information Administration, emission from coal operations make up 11% of all methane emissions and 1% of total greenhouse gas emissions. As a result, states have created ways to be compensated by companies due to environmental concerns for this extraction of natural resources, but not economic concerns.

The regions abundant with coal are receiving the brunt of the negative effects from extraction operations. The ironic part of this type of extraction method is that it increases production at the expense of jobs. Less workers are required for production compared to the use of conventional mining methods (Maize, 2018). Again, the wealth from this the production of coal is transferred to the coal mining operations and/or mineral owners who are not inhabitants of the region.

## **Severance Taxes**

Severance tax is a state tax imposed on the extraction of non-renewable natural resources and are intended as compensation for this removal. States that makeup the Central Appalachian region all use different methods for determining taxes on mineral extraction. The taxes are an important part for communities centered around coal mining because they often bring in large amounts of revenue. The states then allocate percentages of this revenue back to the counties in which the coal was extracted. Not only do the taxation rates in these states differ, but there is also large disparity in the way funds are reallocated to counties. Examining three states located in the Central Appalachian region will give a better understanding of the policies determining the rates, allocation, and distribution, and intended uses for severance taxes.

## **Kentucky**

Kentucky enacted a severance tax on coal in 1972, and then added a severance tax on natural gas and other natural resources in 1980 (Groeschen, 2015). Within Kentucky there is currently a base rate of 4.5% of gross value with a minimum tax of \$0.50 per ton. In 1992, the Kentucky State Legislature recognized the need for economic development in Eastern Kentucky and apportioned fifty percent of the proceeds of the tax back to the counties where the coal was produced. The remaining fifty percent was kept in the Kentucky general fund.

In 2012, the Kentucky severance tax revenue hit a peak of \$298 million collected (KY Legislature). Despite this large amount, only a small portion is being used for education. Instead, the money was used to fund per projects. For example, in 2012, \$2.5 million of the severance tax revenue was used to fund renovations at Rupp Arena (University of Kentucky Basketball Arena) which is in Lexington, KY (Groeschen, 2015). Lexington does not produce coal and is one of the larger cities in Kentucky located in the center of the state. Kentucky legislatures are ignoring the current problems in the coal producing region of the state and instead are allocating funds to nonessential projects.

In 2013 a bill was introduced in Kentucky for the purpose of allocating 100% of severance taxes back to the counties in which the minerals were extracted, however this bill was not passed. Currently, of the 50% of severance taxes in Kentucky that are returned, 30% is used for the upkeep of coal roads. The remaining 50% of funds is put into a Kentucky general fund. For the year 2009, the coal severance tax was responsible for producing nearly \$240 million in revenue for the state. The counties only producing the coal only received \$97.3 million (Groeschen, 2015). The total revenue brought in from severance taxes is expected to continue

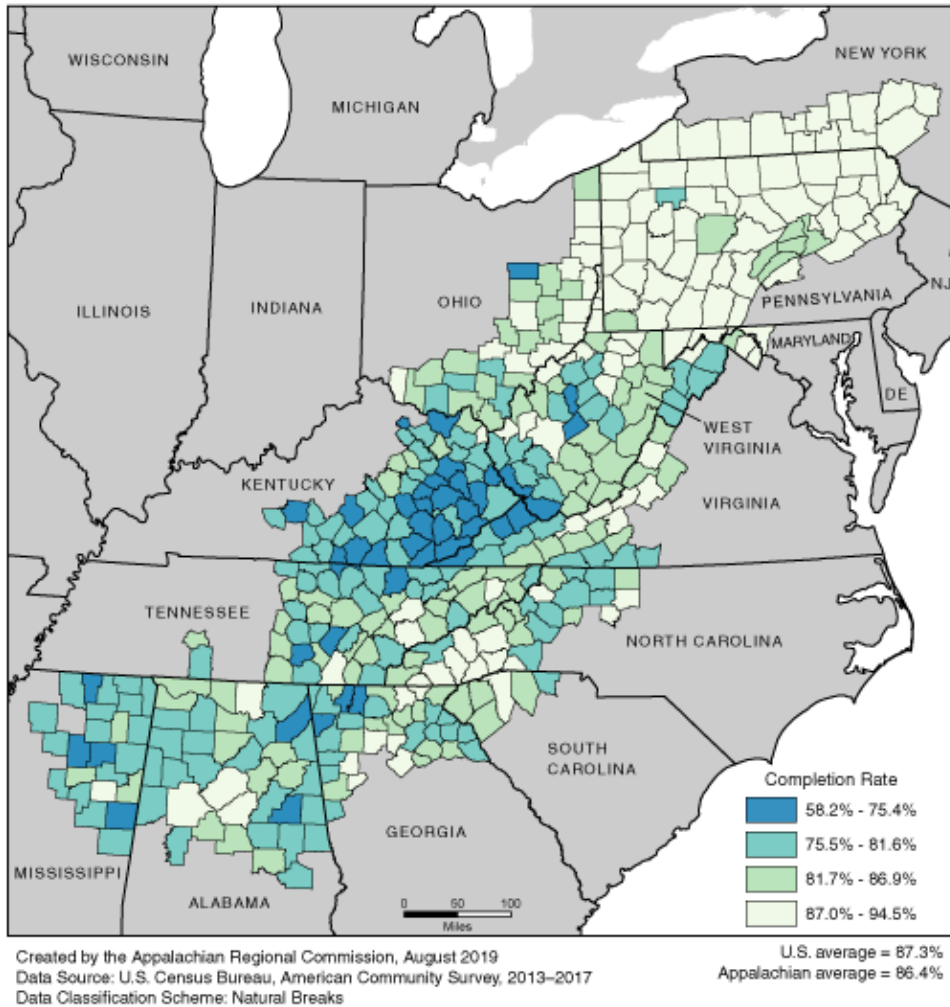
decreases and coal counties that are still trailing in many educational benchmarks need to prepare for the future (Groeschel, 2015).

The residents of these coal counties are only seeing a small portion of this tax allocation which is then spread across eleven different areas. Only two of the eleven areas are distributed for educational purposes. The two areas that pertain to education are vocational education and educational facilities. The other 9 areas include: public safety, environmental protection, public transportation, health, recreation, social service, industrial and economic development, workforce training, and secondary wood industry development.

Figure 3 demonstrates how education is not seen as a priority in the region. The Commonwealth of Kentucky has some of the lowest high school graduation rates in all of Appalachia. The United States high school graduation average is 87.3% while the Appalachian average is 86.4%. The figure below details the large concentration of counties in Eastern Kentucky that fall into the 58.2% - 75.4% range which is well below both averages previously mentioned. This achievement gap can be found in clusters, specifically the worst performing counties in the state are in regions that rely heavily on the Kentucky coal industry.

The high school graduation rates are important because they have a direct role in the number of people obtaining a post-secondary education degree. The Commonwealth of Kentucky ranks the fourth lowest state in the nation in the rate of adults holding a bachelor's, professional, or doctoral degree. As less and less people are getting the education necessary to obtain higher level jobs, there is a reliance on the blue-collar positions located in their region.

Figure 3 – ARC High School Graduation Rates (2013-2017)



Coal production is on the decline which means that Kentucky is losing many jobs and tax revenue. In 2012, counties in Kentucky produced 94.1 million tons of coal which was the third highest output in the country. However, this number has been on a steady decline. In fact, this was the lowest output of Kentucky coal since 1965 (Groeschel, 2015). In 2019, the total amount of coal produced in Kentucky was 36 million tons of coal which represented a 9% decrease from the previous year (Energy Information Administration). This production will continue to diminish as the supply of coal becomes more depleted every year. Severance tax revenue will

continue to get smaller as it is based on a percentage of total production. As the amount reduces, it is crucial for the area to capitalize on the amount of money currently being generated.

## **West Virginia**

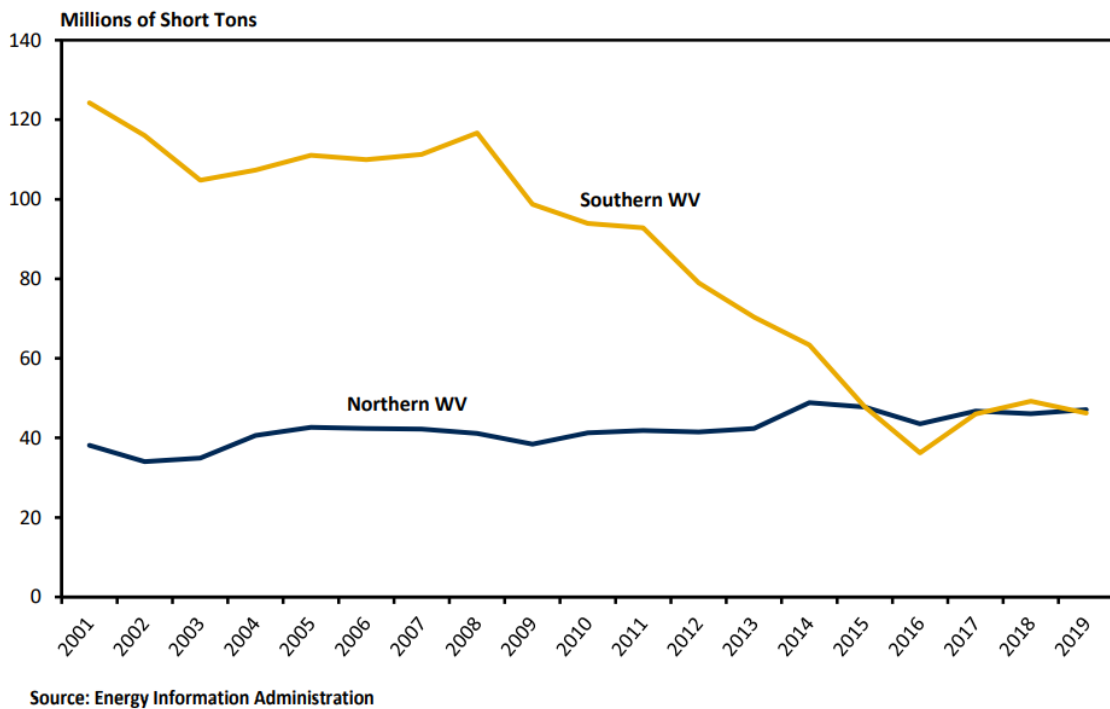
The extraction of coal and natural gas has long been a foundation of the economy in the state of West Virginia. In 2019, West Virginia accounted for more than one-eighth of the nation's coal production (Energy Information Administration). Coal deposits can be found in 53 out of 55 counties that make up the state (Energy Information Administration). Due to the reliance of the extraction industry, West Virginia uses severance taxes to generate revenue for the state. The Central Appalachia Regional Network found that in 2010, West Virginia received just over 417 million in severance tax revenue which was 9% of the states total revenue for the year (CARN). The state of West Virginia imposes a severance tax on coal that has base rate of 5.0% of the gross value. Of the amounts collected each year, 75% of the revenue is distributed to coal producing counties on the basis of production while the other 25% is put into a general fund for the state (West Virginia State Treasury). The use of revenue in specific funds are determined by the state. The 75% of revenue that is allocated to coal producing counties is expended by the county commission or the governing body of the municipality for public purposes that are determined to be in the best interest of the people.

Recently, West Virginia has experienced a major decline in the coal production industry. According to the West Virginia Bureau of Business and Economic Research, coal production fell from more than 128 million short tons in 2012 to just over 70 million short tons in 2016. This marks the state's worst non-strike level of output in several decades. Figure 4 below illustrates



the dramatic decrease in production from the southern region of West Virginia. The production has been on a steady decrease since 2009 with a slight rebound in 2017. West Virginia’s economy is highly vulnerable to the fluctuations in the coal production and demand.

Figure 4 – WV Bureau of Business and Research



Counties throughout West Virginia’s southern coalfields that rely on severance tax as a primary source of revenue have been forced to make cuts to employments and essential community programs (WV Coal Counties Losing Revenue). Figure 5 below demonstrates the coal industry employment of West Virginia over the past 20 years. From the period of 2012 to 2016, nearly fifteen thousand people lost jobs in the states coal industry (WV Bureau of Business and Economic Research). With the number of jobs decreasing, the poverty rates in West Virginia

continue to increase. According to ARC, the state's poverty rate is at 18% compared to the national average of 14.7%. Government officials in West Virginia must make changes to ensure that its residents can find employment and stop living in poverty.

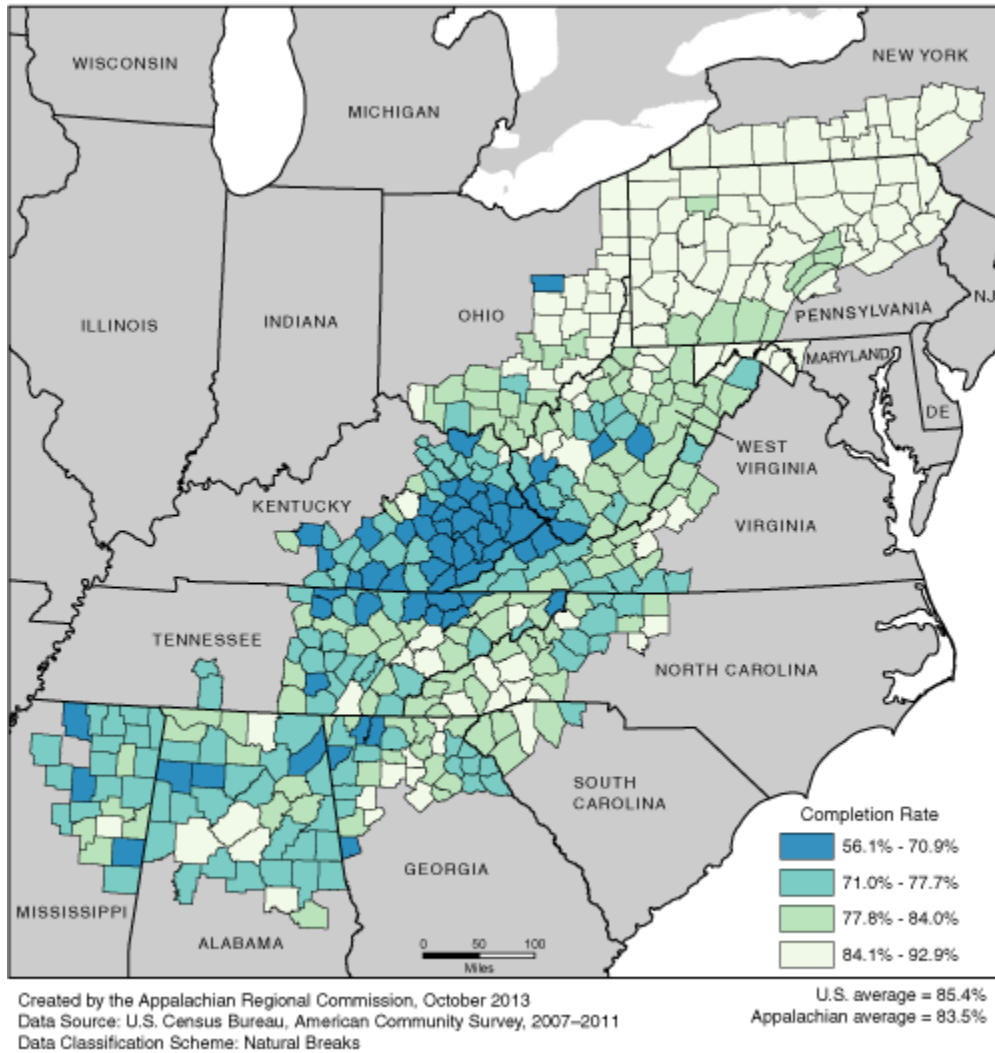
## **Tennessee**

In the state of Tennessee, the severance tax collected on coal is \$1.00 per ton extracted. In 2009, this number was only \$.20 per ton (Energy Information Administration). Tennessee lawmakers decided in 2009, to increase amount per ton by 400% over the course of the next 5 years. Tennessee has had an aggressive approach to its taxation of coal and is using this revenue to provide the foundations for economic growth. While Tennessee does not produce as much coal as states like West Virginia or Kentucky, it is currently the only state in the Central Appalachia region that allocates all the tax revenue back to the county. Furthermore, Tennessee passed a bill in 2009 that requires that 50% of the revenue be dedicated towards education. The change policy indicates that the state of Tennessee places value on promoting education.

The total coal production from Tennessee coal operations in 2019 was 436 thousand short tons (Energy Information Administration). This number is drastically smaller than both the production in Kentucky and West Virginia as it is being produced by only three coal mines. The three working coal mines are in the northeast region of the state located within Claiborne county (Energy Information Administration). Based on the production in 2019, revenue generated from severance taxes would be \$436 thousand with \$213 thousand designated solely to the education. For comparison, if the county were in Kentucky with identical production, that county would only receive around \$10 thousand based on the 4.5% tax rate and 50% allocation.

Tennessee began investing in the future of its people and the effects of this investment are already starting to show. Figure 6 depicts the high school graduation rates from 2007 to 2011. In this figure, Claiborne County high school completion rates were 56.1% to 70.9%. During this time period, legislatures decided to increase its amount of severance tax on coal incrementally over five years beginning in 2009. Since this increase, the most recent data from Figure 2 shows the high school graduation rates in Claiborne, Tennessee were in the range of 75.5% to 81.6% from 2013 to 2017. This rate is still below the national average; however, it ranks much higher than the coal counties it borders to the north in Kentucky which did not improve. The policies in place are allocating more money to schools and are creating a more educated work force.

Figure 5 – ARC High School Graduation Rates (2007-2011)



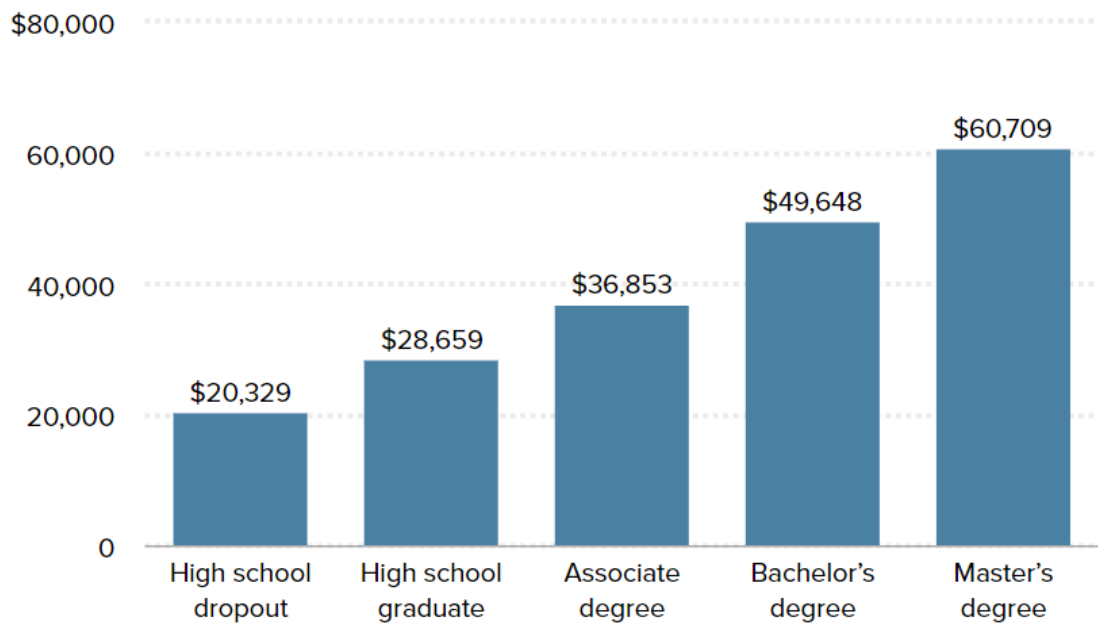
## Policy Proposal and Analysis

According to the Economic Policy Institute, the best way for states to foster a productive economy is to invest in a well-educated workforce. Expanding access to high quality education will create more economic opportunity for residents and strengthen a state's overall economy. The Central Appalachian region is very much behind with its high school graduation rates compared to the national average. Figure 6 demonstrates how the effect each level of education

has on earnings. A big step in the progression of the Central Appalachian region is to place a larger emphasis on improving education in coal counties.

Figure 6 – Economic Policy Institute

Median annual earnings of U.S. workers, age 25+, by education, 2011

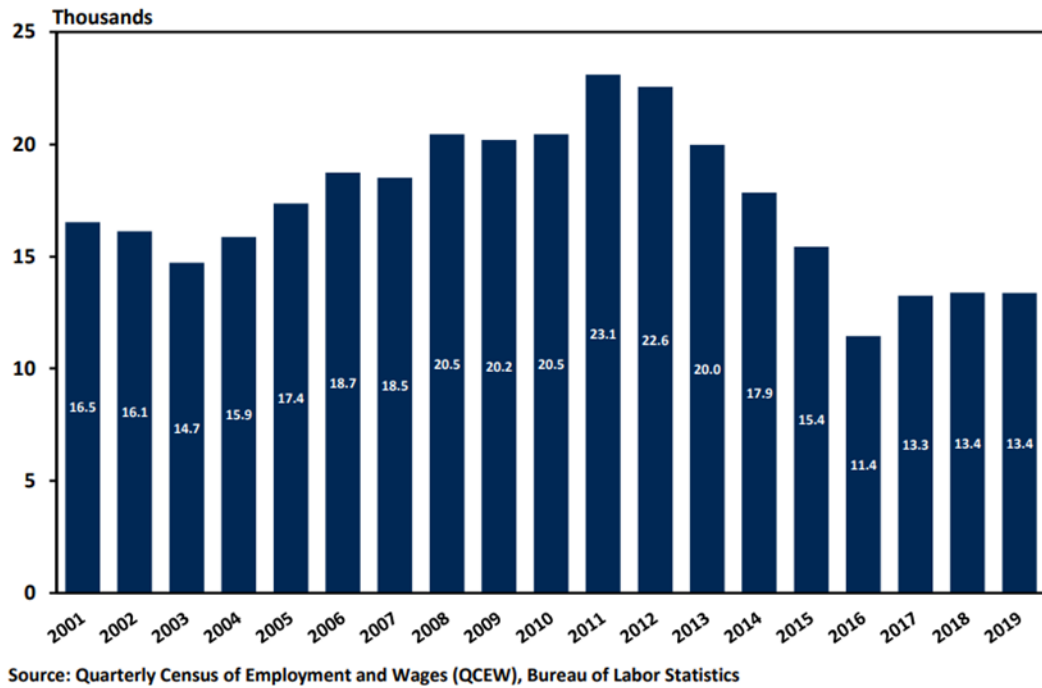


Education is considered as an investment to human capital since the benefits accrue to an educated individual over a lifetime of activities. It is difficult to garner support for short term investments given the long-term nature of the benefits. The purpose of educational investment is to create conditions in which people can obtain higher paying jobs and gain economic security. This then leads to virtuous cycle as working people who can afford to buy goods and services support local businesses and the local economy (EPI). Workers with higher incomes will also contribute more through taxes over the course of their lifetime. A more educated individual is also more likely to participate in the jobs market. A study by Federal Reserve economists

examined the factors contributing to greater state prosperity over a 65-year period and found that a state's high school and college attainment rates were important factors in explaining its per capita income growth relative to other states between 1939 and 2004 (Bauer, Schweitzer, and Shane 2006).

In West Virginia, only 53% of the adult population is either working or looking for work (Appalachian Regional Commission). This is the lowest rate of labor force participation among all 50 states. High school graduation rates in Southern West Virginia are below the national average. According to Figure 2, the southern region of West Virginia, which is dominated by the coal industry, has graduation rates that range from 58.2% to 81.6% compared to the national average of 87.3%. Currently, West Virginia ranks last in all 50 states in terms of people who hold a bachelor's degree or above. Less than 12% of people above the age of 25 hold a degree (Appalachian Regional Commission). By devoting a portion of severance tax revenue into education, these rates would improve and would directly impact the long-term wellbeing of the state.

Figure 7 – WV Bureau of Business and Research



States in Central Appalachia should place a larger emphasis on improving education.

States like Kentucky and West Virginia continue to fall below the national average in education with no plans to change or make improvements. Tennessee, on the other hand, has acknowledged the gap in its educational efforts and thus enacted policies to increase educational development through investment. Kentucky and West Virginia need to amend their severance allocations and devote a portion of revenue solely for education.. An educated workforce not only would allow people to earn higher paying jobs, but it would also help entice companies to set up operations in the area.

An organization that has worked to help the improve the region is the Central Appalachia Regional Network. The Central Appalachia Regional Network’s mission statement is to connect diverse organizations to promote policy and action to improve the quality of life available to the

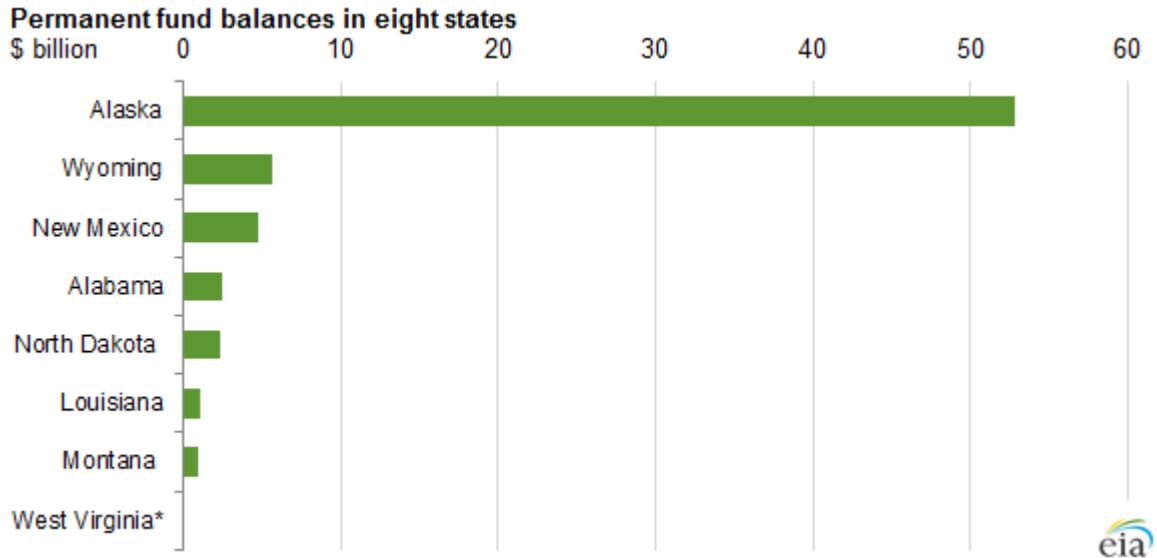
people of Central Appalachia. The CARN was established as a part of the W.K. Kellogg's Rural People, Rural Policy initiative. One of the goals of the Rural People, Rural Policy initiative is for a deliberate effort to build networks focused on rural policy change. They argue that by taking a greater role in examining policies allows for increased opportunities and prioritized public funding.

## **Permanent Trust Funds**

Major policy changes that CARN wishes to see implemented are focused on setting up permanent trust funds. While severance taxes are often used for immediate mining local and state needs, designating a percentage of severance tax revenues for permanent trust funds can create economic legacy for resource rich communities. Permanent mineral trust funds have been around in various forms since the early 1970's. Some states that have already begun implementing such taxes include Wyoming, Alaska, Montana, and Colorado. In some examples, the tax revenues have yielded millions of dollars for community development (States News Service). Figure 8 details the amounts from permanent funds in 8 separate states. A closer look into states that have permanent funds will give insight to how they were successful and why other states should create funds of their own.



Figure 8 - EIA



## Wyoming

Legislatures in Wyoming understood the importance of capitalizing on the annual revenue from mineral extraction and began investing for the future. The permanent Wyoming mineral trust fund was approved by voters in 1974 and is created from a 2.5% severance tax of the extraction of natural resources. The fund consists of revenue derived from coal, oil, natural gas, and other minerals. The funds income is annually distributed to support the state general fund. In 2010, 36 years after its creation, the fund held \$4.7 billion (Kasey). Currently the fund is at \$8 billion with the interest income generating hundreds of millions of dollars for the state (SWFI 2021). The state legislature can use portions of this fund each year for general fund expenditures.

## **West Virginia**

West Virginia is the nation's second largest coal producer trailing only Wyoming. With the amount of coal being produced in West Virginia, the state would have been able to raise billions of dollars if it had followed the actions of Wyoming and invested in a permanent fund. If such a fund had been established in 1980, using one percent of the severance taxes generated from coal, it would have accumulated \$2.1 billion by 2010 (Kasey). In addition, the state could have spent \$1.3 billion in interest income. This money would have been vital to fund various projects to help progress the economy. In 2014 West Virginia created a permanent fund, however, the fund draws solely from natural gas taxes. The state is refusing to tap into the taxes generated from its largest resource and thus will not be able to generate as much income.

## **Kentucky**

Kentucky is another prominent coal producer in the United States that lacks a permanent mineral fund. Kentucky is the third largest producer of coal in the United States and brings in hundreds of millions in severance tax revenue yearly. Using the annual revenue from the severance taxes in Kentucky, one can estimate the amount generated from the creation of a permanent fund. The calculations for the model were found using one percent of severance tax revenues and expecting a yearly return of 7.5% and a 5% withdrawal for spending.

Had Kentucky created a permanent fund in 1980, the fund would have accumulated \$144 million by 2019. This would also have included interest income of \$125 million. The fund would not have produced as much revenue as states like Wyoming and West Virginia due to the

differences in production amounts and tax rates, however, it still would have generated hundreds of millions for the Commonwealth of Kentucky.

Based on the results of the models for West Virginia and Kentucky, it is imperative that the states push for the creation of a permanent fund. The revenue created from the fund would be crucial for the growth and development of the region. Revenue from the fund could be used to incentivize firms to enter the market which in turn would create jobs. This money would also be helpful in revitalizing the education systems in the more impoverished regions of the state.

## **Analysis of Proposals**

This alternative which has been suggested by the Central Appalachia Regional Network, would provide income long after non-renewable resources are depleted. The CARN estimates that if Kentucky, Maryland, Ohio, Tennessee, Virginia, and West Virginia had implemented such a fund in 1990, it would have generated approximately 1.4 billion in earnings and a combined fund of \$2.8 billion. Funds raised from the permanent endowments should then be made available through a variety of organizations centered around the community. Some communities are already taking steps to manage local assets that complement other local, state, and federal financial resources. It is important that these policies are enacted so that these states can truly benefit from the extraction of its valuable natural resources. A permanent fund converts nonrenewable resource wealth into a renewable source of wealth for future generations (Kriesky 2012).

In addition to severance tax revenue, there are several organizations that have been working to improve and grow the current economic standing of Appalachia. One of these

organizations is the Appalachian Regional Commission. The ARC has been working on growing impoverished areas in Appalachia through grants and various investment projects. In 2020, the ARC funded 474 projects totaling investments of just over \$161 million to the 13 states that make up the entire Appalachian region. The results of this funding have retained and/or created an estimated 26,300 jobs in the region. The ARC also uses its projects to train and educate students and workers. In 2020, it was expected to have taught 20,800 people. ARC is an example of what can be done to improve the region, but money and positive results must continue to grow the economy in the area. States need to be proactive and amend policies to facilitate the development and progression of Central Appalachia.

## **Conclusion**

The region of Central Appalachia has long been a region suffering from lack of economic diversity and growth. The mineral extraction industry was introduced to the region in the late 1800's. As the years went on, the demand for coal experienced many boom-and-bust periods, having a direct effect on the supplying regions. States that makeup the region continue to rely on the mineral extraction industry as a primary revenue source. The production of coal in the region has been declining as depicted in Figure 1. The country is experiencing it lowest output of coal since the early 70's. The regions that rely on this production are being negatively affected and this is being shown through its poverty rates. Central Appalachia is characterized as a region with persistent poverty. Despite the revenue being generated from the taxation of these minerals, the region is still very much behind the rest of the country in terms of economic and educational advancement.

One of the increasingly apparent problems in the area is the lack of investment in education. States like Kentucky and West Virginia have some of the nation's lowest high school graduation rates with little to no plans for improvement. To counteract these poor rankings, states should devote portions of their severance taxes on coal to be used on education. Currently, the severance tax revenue is being spread thin across many different areas. Education should receive greater importance and have a larger portion of funds allocated for this purpose. Tennessee imposed such a policy and are beginning to see the positive effects. Claiborne County has already improved its graduation rates in the few years since Tennessee increased investment. The benefits of educational investment are received by both the state and its residents. States in Central Appalachia should create policies that dedicate a portion of their severance taxes to improve education. This will create a chain of events that will pay off with higher graduation rates, higher wages, and more income from taxes.

Policy changes must be enacted in Central Appalachia to prevent the continuous cycle of poverty and underdevelopment. Legislatures in the region should begin investing the profits generated from severance taxation into permanent funds that would generate revenue for the foreseeable future. Several states in the United States have already been successful with the creation of their own permanent funds. Wyoming has capitalized on its revenues from severance taxation and implemented a permanent fund that has provided billions in interest income alone. Kentucky and West Virginia are two of the largest producers of coal in the United States and generate hundreds of millions of dollars yearly in severance tax revenue. States in the Central Appalachian region would be smart to begin the process of forming their own permanent funds by investing a small percentage of annual severance tax revenues. The interest generated from the funds would fund many different projects in the area creating job opportunities and economic

diversification. It is crucial to take advantage of the income currently being brought in by the extraction of non-renewable resources and invest it to create a renewable source of income for the foreseeable future.

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